

APPENDIX A

*Notice of Preparation (NOP),
Initial Study, NOP and
Scoping Comments, Revised
NOP, Revised NOP
Comments*

NOTICE OF PREPARATION
of an Environmental Impact Report for the
General Plan Biological Resources Policy Update
and Oak Resources Management Plan

Date: July 17, 2015

To: State Clearinghouse
 Responsible Agencies
 Trustee Agencies
 Interested Parties

NOP Comment Period: Written comments must be submitted to the County's
 Community Development Agency, Long Range Planning
 Division no later than August 17, 2015 by 5:00 p.m.

Project Location: El Dorado County

**Lead Agency Contact
 Person:** Shawna Purvines, Principal Planner



1.0 INTRODUCTION

This Notice of Preparation (NOP) has been issued to notify interested parties that an Environmental Impact Report (EIR) will be prepared, and to solicit feedback on the scope and content of the analysis in the EIR. The County of El Dorado (County) will be the lead agency under the California Environmental Quality Act (CEQA) and will prepare an EIR to evaluate the environmental effects associated with the proposed project, which includes proposed updates to specific policies contained in the County's General Plan, referred to as the Biological Resources Policy Update, and the proposed adoption of an Oak Resources Management Plan (ORMP). Agencies should comment on such information as it relates to their statutory responsibilities in connection with the proposed project.

The EIR is intended to be a program-level document that will analyze the effects of the proposed General Plan Biological Resources Policy update and the ORMP. Program EIRs generally analyze broad environmental effects of the program, with the acknowledgment that site-specific environmental review may be required for future actions (14 CCR 15168(a)). Because no specific development projects are being proposed, the analysis will not be parcel-specific. The analysis will focus on the reasonably foreseeable direct and indirect physical environmental effects that could result from implementation of the General Plan Biological Resources Policy update and the ORMP.

The County has prepared an Initial Study/Environmental Checklist to identify potential and probable environmental impacts that will be evaluated in the EIR. Where the analysis in the

Initial Study demonstrates that impacts to particular resources would be less than significant or have been previously evaluated in a prior EIR, those resources will not be evaluated in the EIR in accordance with CEQA Guidelines Section 15063(c)(3). The County has determined that the proposed project may have a significant effect on the environment; therefore, an EIR is being prepared. Based on this Initial Study, it is anticipated that the EIR will focus on the potential environmental effects related to aesthetics, biological resources, forestry, land use, and greenhouse gas emissions.

This NOP includes the following sections:

- Section 1.0 Introduction
- Section 2.0 Project Background and History
- Section 3.0 Project Description
- Section 4.0 Potential and Probable Environmental Effects of the Project
- Section 5.0 Project Alternatives

This NOP, the IS, the proposed General Plan Biological Resource policies, and the proposed ORMP are posted on the County's **General Plan Biological Policies Update** webpage at:

<http://www.edcgov.us/Government/LongRangePlanning/Environmental/BioPolicyUpdate.aspx>

NOP Comment Period: In accordance with the time limits identified in state law, your response to this NOP must be submitted to the County at the earliest possible date, but not later than August 17, 2015 (30 days following the date this notice was first posted). Please submit comments to the El Dorado County Community Development Agency no later than 5 p.m. on August 17, 2015. Please provide written comments, including the contact person's full name and address to:

Shawna Purvines, Principal Planner
 El Dorado County Community Development Agency, Long Range Planning Division
 2850 Fairlane Court,
 Placerville CA 95667

Scoping Meeting: A scoping meeting will be held on August 13, 2015 at 1:00 p.m. at 2850 Fair Lane Court in the Planning Commission Hearing Room. The meeting will take place during a regular scheduled meeting of the Planning Commission.

2.0 PROJECT BACKGROUND AND HISTORY

Policy 7.4.2.8 of the 2004 El Dorado County General Plan anticipates development of an Integrated Natural Resource Management Plan (INRMP) to guide protection of the County's biological resources, including oak woodlands, sensitive habitats, and wildlife. Beginning in September 2006, the County worked to implement Policy 7.4.2.8 by conducting a public

workshop process, preparing a work program for development of the INRMP, retaining consultants to prepare the INRMP, and convening two advisory committees. While a resource inventory and various assessment reports prepared by consultants and the advisory committees were accepted by the El Dorado County Board of Supervisors (BOS) as part of the INRMP Phase I process, the County has not initiated the INRMP Phase II process.

The County also prepared an Oak Woodlands Management Plan (OWMP) as an initial and discrete component of the INRMP. The OWMP and its implementing ordinance Ord. 4771 (May 6, 2008) provided a mechanism for mitigation of development impacts on oak canopy through payment of an in-lieu fee (as anticipated under General Plan Policy 7.4.4.4 Option B) and subsequent acquisition by the County of oak woodland areas for conservation. Under the 2004 General Plan, Policy 7.4.4.4 requires that a land development project meet the oak canopy retention standards identified under Option A of the policy and replace or conserve offsite oak woodlands at a 1:1 ratio in proportion to the amount of oak canopy lost onsite or, under Option B of the policy, pay the in-lieu fee at a 2:1 ratio.

The County's adoption of the OWMP was challenged. The Appellate Court held that the County had not adequately evaluated the environmental effects of the OWMP as required by CEQA. The County rescinded the OWMP and its implementing ordinance in September 2012. With no in-lieu fee available (per General Plan Policy 7.4.4.4 Option B), land development projects must meet the retention standards in Option A to be consistent with the General Plan.

On September 24, 2012, the BOS directed County staff to retain consultants to assist the County in the process of considering amendments to General Plan Policies 7.4.4.4, 7.4.4.5, 7.4.5.1, 7.4.5.2, 7.4.2.8, and 7.4.2.9 and their related Implementation Measures, with the goals of "...clarify[ing] and refine[ing] the intent and scope of all of those policies, ensur[ing] the consistency of all the related biological policies, consider[ing] changes in state law, and finally harmoniz[ing] the General Plan Policies."

For additional discussion of the County's past efforts in preparing and implementing the 2004 General Plan, please refer to May 1, 2014 Draft General Plan Biological Policies Background memo available at the County's **General Plan Biological Policies Update** webpage.

3.0 PROJECT DESCRIPTION

Under the proposed project, El Dorado County proposes to adopt specific revisions to biological resource objectives, policies, and implementation measures included in the Conservation and Open Space Element of the County's 2004 General Plan and to adopt an ORMP that revises and updates the 2008 OWMP. Consistent with the Board direction provided in September 2012, revisions to policies 7.4.2.8, 7.4.2.9, 7.4.4.4, 7.4.4.5, 7.4.5.1, and 7.4.5.2 are proposed. Revisions are also proposed to additional objectives and policies within the County's General

Plan Conservation and Open Space Element, as listed in Section 3.2. The proposed General Plan revisions are intended to establish a program for County-wide management of impacts to biological resources and mitigation for those impacts.

3.1 Project Location

The proposed General Plan objectives, policies, and implementation measures would be effective throughout the entire County, which encompasses an approximately 1,711 square-mile area in the east-central portion of the State, while the ORMP would be applicable to areas within the County at or below the 4,000-foot elevation.

3.2 Proposed Project Elements

General Plan Biological Resources Policy Revisions

The County proposes revisions to several of the General Plan Biological Resources objectives, policies, and implementation measures, as listed in Table 1. As proposed, revised policy 7.4.2.8 would establish a comprehensive Biological Resource Mitigation Program to govern evaluation, impact assessment, and mitigation for biological resources within the county with the objective of conserving:

1. Habitats that support special status species;
2. Aquatic environments including streams, rivers, and lakes;
3. Wetland and riparian habitat;
4. Important habitat for migratory deer herds; and
5. Large expanses of native vegetation.

As proposed, policy 7.4.2.8 establishes standards for completion of Biological Resource Technical Reports, defines the categories of plant and wildlife species that are considered special-status species, sets minimum ratios for mitigation of impacts to habitats that may support special-status species, and provides criteria for identification of mitigation sites.

It is anticipated that under the proposed General Plan Biological Resources policies, development projects within the County that require discretionary approvals would be required to submit to the County a Biological Resource Technical Report that meets the requirements of Policy 7.4.2.8, determine the area of impact to each habitat type supported at the project site, and mitigate impacts through preservation and/or creation to ensure that the current range and distribution of special-status species within the County are maintained. Off-site mitigation sites that are acquired (through conservation easements or in fee title) must meet the criteria in Policy 7.4.2.8.D.

Table 1
Proposed General Plan Revisions

General Plan Objective/Policy/Implementation Measure	Changes Made
Objective 7.4.1	Revised to focus on Pine Hill plants
Policy 7.4.1.1	Add "where feasible" following reference to County Code Chapter 130.71.
Policy 7.4.1.2	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.3	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.4	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.5	Delete text
Policy 7.4.1.6	Delete policy
Policy 7.4.1.7	Policy moved to Policy 7.4.2.2
Policy 7.4.2.1	Revise language to address coordinating wildlife and vegetation protection programs with appropriate Federal and State agencies
Policy 7.4.2.2	Delete policy; replace with prior policy 7.4.1.7 regarding noxious weeds
Policy 7.4.2.4	Revise text to clarify that active management is not required.
Policy 7.4.2.6	Delete policy
Policy 7.4.2.7	Delete policy to remove requirement to maintain the PAWTAC, but does not preclude the County from re-convening the PAWTAC when necessary.
Policy 7.4.2.8	Revise policy to delete INRMP and to include: <ul style="list-style-type: none"> • Requirement for wildlife movement studies for 4-, 6-, and 8- lane roadway projects. • Requirement for a biological resources technical report and establishment of mitigation ratio for special-status biological resources. • Identification of criteria for conservation lands. • Establish a voluntary database of willing sellers. • Biological resource mitigation program • Habitat protection strategy
Policy 7.4.2.9	Add provisions for lands within the Important Biological Corridor (IBC)- overlay.
Objective 7.4.3	Incorporated objective into Policy 7.4.1.5.
Objective 7.4.4	Consolidate Objective 7.4.4 and 7.4.5 to address oak woodlands and trees together.
Policy 7.4.4.2	Revise to reflect the conservation portion of the mitigation/conservation approach.
Policy 7.4.4.3	Revise Policy language to accurately reflect County's role in development planning.
Policy 7.4.4.4	Revise policy to refer to oak woodland and oak tree mitigation requirements in the Oak Resources Management Plan (ORMP). The Draft ORMP reflects the following revisions to the requirements previously contained in Policy 7.4.4.4: <ul style="list-style-type: none"> • Use of 'oak woodland' as a measurement. • Development of a 2-tiered mitigation approach that incorporates oak woodland mitigation (Policies 7.4.4.4) and oak tree mitigation (including heritage trees

Table 1
Proposed General Plan Revisions

General Plan Objective/Policy/ Implementation Measure	Changes Made
	<p>(Policy 7.4.5.2). Framework removes necessity for two oak woodland mitigation options (Option A and B) and removes retention standards by incorporating an incentive-based approach for oak woodland impact avoidance.</p> <ul style="list-style-type: none"> • Revisions to projects or actions exempt from oak woodland and oak tree mitigation requirements. • Addition of criteria for conservation area identification outside of Priority Conservation Areas (PCA).
Policy 7.4.4.5	Delete Policy- Draft ORMP provides requirements for mitigation.
Objective 7.4.5	Merged Objective 7.4.5 with Objective 7.4.4 to address oak woodlands and individual oak trees (including Heritage Trees). Remove 'Vegetation' as non-tree vegetation is addressed in Policy 7.4.2.8.
Policy 7.4.5.1	Remove Policy 7.4.5.1 as it is redundant with Policy 7.4.5.2 which has been merged with Policy 7.4.4.4.
Policy 7.4.5.2	Merge Policy 7.4.5.2 with Policy 7.4.4.4 to comprehensively address oak woodlands and oak tree resources in a 2-tiered framework as identified in the ORMP.
Measure CO-L	Revise to reflect changes to Policy 7.4.2.8.
Measure CO-M	Deleted to reflect changes to Policy 7.4.2.8.
Measure CO-N	Deleted to reflect changes to Policy 7.4.2.9.
Measure CO-P	Revise to reflect changes to Policy 7.4.4.4 and the ORMP.
Measure CO-U	Deleted to reflect changes to Policy 7.4.2.8.

Oak Resources Management Plan

The project includes proposed adoption of an Oak Resources Management Plan (ORMP) that updates and revises the OWMP adopted by the BOS on May 6, 2008 (El Dorado County 2008). The purpose of the ORMP is to define mitigation requirements for impacts to oak woodlands, individual native oak trees, and Heritage Trees and to outline the County's strategy for oak resource management and conservation. The ORMP is designed to function as the oak resources component of the County's biological resources mitigation program identified in General Plan Policy 7.4.2.8. To this end, the ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate oak woodland and native oak tree impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from mitigation requirements. The ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and native oak trees, identifies Priority Conservation Areas (PCAs) where oak woodland conservation efforts may be focused, and outlines minimum standards for

identification of oak woodland conservation areas outside the PCAs. Requirements for monitoring and maintenance of conserved oak woodland areas and identification of allowable uses within conserved oak woodland areas are also included in the ORMP. Lastly, the ORMP also provides guidance for voluntary oak woodland and oak tree conservation and management efforts by landowners and land managers.

An Oak Resources Conservation ordinance that incorporates the standards outlined in the ORMP is also anticipated to be developed in conjunction with adoption of the ORMP.

The ORMP is designed to serve multiple purposes. It defines the County's conservation strategy for oak resources and provides a framework for mitigating impacts to oak resources. It also complies with Implementation Measure CO-P and constitutes the oak portion of the County's biological resources mitigation program (General Plan Policy 7.4.2.8). Finally, it establishes a plan for voluntary conservation that landowners, the County, and others can use to seek grants and cost-sharing from state and federal programs for oak woodland conservation in El Dorado County.

4.0 PROBABLE ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR for the proposed project will focus on the resource areas/issues germane to this particular project. The EIR will evaluate the potentially significant environmental impacts of the proposed project and will evaluate whether there are feasible mitigation measures that may lessen or avoid such impacts. As the proposed project would amend the County's General Plan and influence development activities throughout the County and does not include any specific construction or development, the impact analysis will be programmatic and cumulative in nature. The EIR will also identify and evaluate alternatives to the proposed project. The EIR will evaluate potentially significant environmental effects related to the following environmental issues:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions
- Land Use and Planning

As evaluated in the Initial Study, it is not anticipated that impacts would occur within the following environmental topic areas, and therefore these specific environmental issues will not be evaluated further in the EIR.

- Air Quality
- Cultural Resources
- Geology/Soils

- Greenhouse Gas Emissions
 - Hazards and Hazardous Materials
 - Hydrology/Water Quality
 - Mineral Resources
 - Noise
 - Population/Housing
 - Public Services/Utilities
-
- Transportation

5.0 PROJECT ALTERNATIVES

In accordance with Section 15126.6 of the State CEQA Guidelines, an EIR must “describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most the basic objectives of the Project, but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives.” As required by CEQA, the EIR will evaluate a reasonable range of project alternatives including a No Project Alternative, which will assume no change to the 2004 General Plan policies. Additional alternatives will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.

INITIAL STUDY & ENVIRONMENTAL CHECKLIST

Project Title	Biological Resource Policy Update and Oak Resources Management Plan Project
Project Location	El Dorado County
Project Description	Update specific policies included in the Conservation and Open Space Element of the County's General Plan that address biological and oak woodland resources and prepare an Oak Resources Management Plan.
Lead Agency Contact	Shawna Purvines, Principal Planner

This Initial Study (IS) has been prepared to identify and assess the anticipated environmental impacts of the proposed project.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000 et seq.), the State CEQA Guidelines (14 CCR 15000 et seq.), and El Dorado County Code Chapter 130.72 Environmental Impact Reports. CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The IS is a public document used by the lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an Environmental Impact Report (EIR).

The County of El Dorado (County) has analyzed the potential environmental impacts that would be created by the proposed General Plan Biological Resources Policy Update and ORMP project and determined that at least one impact is considered to be potentially significant. Therefore, on the basis of the following initial evaluation, the County finds that the proposed project may have a significant effect on the environment, and an EIR will be required. Because many impacts will be less than significant the EIR will be focused on those impacts that are determined to be potentially significant. Based on the findings of the IS, impacts in the following issue areas will be further evaluated in the EIR:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions
- Land Use and Planning

Project Background

Policy 7.4.2.8 of the 2004 El Dorado County General Plan anticipates development of an Integrated Natural Resource Management Plan (INRMP) to guide protection of the County’s biological resources, including oak woodlands, sensitive habitats, and wildlife. Beginning in September 2006, the County worked to implement Policy 7.4.2.8 by conducting a public workshop process, preparing a work program for development of the INRMP, retaining consultants to prepare the INRMP, and convening two advisory committees. While a resources inventory and various assessment reports prepared by consultants and the advisory committees were accepted by the BOS as part of the INRMP Phase I process, the County has not initiated the INRMP Phase II process.

The County also prepared an Oak Woodlands Management Plan (OWMP) as an initial and discrete component of the INRMP. The OWMP and its implementing ordinance provided a mechanism for mitigation of development impacts on oak canopy through payment of an in-lieu fee (as anticipated under General Plan Policy 7.4.4.4 Option B) and subsequent acquisition by the County of oak woodland areas for conservation. Under the 2004 General Plan, Policy 7.4.4.4 requires that a land development project meet the oak canopy retention standards identified under Option A of the policy and replace or conserve offsite oak woodlands at a 1:1 ratio in proportion to the amount of oak canopy lost onsite or, under Option B of the policy, pay the in-lieu fee at a 2:1 ratio.

The County’s adoption of the OWMP was challenged. The Appellate Court held that the County had not adequately evaluated the environmental effects of the OWMP as required by CEQA. The County rescinded the OWMP and its implementing ordinance in September 2012.

Project Description

The project does not include any land disturbance or development and it would not directly increase the County’s population or increase demand for public services or utilities. Rather, the project would establish new procedures and requirements for new land development projects and the County’s assessment of and mitigation for impacts to biological resources.

The proposed project includes proposed amendments to several General Plan objectives, policies, and implementation measures to address the County’s need for a clear, defensible, feasible, and reasonable approach to managing biological resource impacts, including impacts to oak trees and oak woodland resources.

It is anticipated that under the proposed General Plan Biological Resources policies, applicants for development projects within the County that require discretionary approval would be required to submit to the County a Biological Resource Technical Report that meets the requirements of Policy 7.4.2.8, determine the area of impact to each habitat type supported at the

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project site, and mitigate impacts through preservation and creation of vegetation communities to ensure that the current range and distribution of special-status species within the County are maintained. Where off-site mitigation is required, mitigation locations meeting the criteria in Policy 7.4.2.8.D would be acquired (through conservation easements or in fee title).

The proposed amendments to the General Plan content are summarized in Table 1 and the full text of the proposed policies are available for review on the County’s **General Plan Biological Policies Update** webpage at:

<http://www.edcgov.us/Government/LongRangePlanning/Environmental/BioPolicyUpdate.aspx>.

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Proposed General Plan Revisions

General Plan Objective/Policy/ Implementation Measure	Changes Made
Objective 7.4.1	Revised to focus on Pine Hill plants
Policy 7.4.1.1	Add “where feasible” following reference to County Code Chapter 130.71.
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Policy 7.4.1.3	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.4	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.5	Delete text
Policy 7.4.1.6	Delete policy
Policy 7.4.1.7	Policy moved to Policy 7.4.2.2
Policy 7.4.2.1	Revise language to address coordinating wildlife and vegetation protection programs with appropriate Federal and State agencies
Policy 7.4.2.2	Delete policy; replace with prior policy 7.4.1.7 regarding noxious weeds
Policy 7.4.2.4	Revise text to clarify that active management is not required.
Policy 7.4.2.6	Delete policy
Policy 7.4.2.7	Delete policy to remove requirement to maintain the PAWTAC, but does not preclude the County from re-convening the PAWTAC when necessary.
Policy 7.4.2.8	Revise policy to delete INRMP and to include: <ul style="list-style-type: none"> • Requirement for wildlife movement studies for 4-, 6-, and 8- lane roadway projects. • Requirement for a biological resources technical report and establishment of mitigation ratio for special-status biological resources. • Identification of criteria for conservation lands. • Establish a voluntary database of willing sellers. • Biological resource mitigation program • Habitat protection strategy

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

**Table 1
Proposed General Plan Revisions**

General Plan Objective/Policy/ Implementation Measure	Changes Made
Policy 7.4.2.9	Add provisions for lands within the Important Biological Corridor (IBC)- overlay.
Objective 7.4.3	Incorporated objective into Policy 7.4.1.5.
Objective 7.4.4	Consolidate Objective 7.4.4 and 7.4.5 to address oak woodlands and trees together.
Policy 7.4.4.2	Revise to reflect the conservation portion of the mitigation/conservation approach.
Policy 7.4.4.3	Revise Policy language to accurately reflect County's role in development planning.
Policy 7.4.4.4	Revise policy to refer to oak woodland and oak tree mitigation requirements in the Oak Resources Management Plan (ORMP). The Draft ORMP reflects the following revisions to the requirements previously contained in Policy 7.4.4.4: <ul style="list-style-type: none"> • Use of 'oak woodland' as a measurement. • Development of a 2-tiered mitigation approach that incorporates oak woodland mitigation (Policies 7.4.4.4) and oak tree mitigation (including heritage trees (Policy 7.4.5.2). Framework removes necessity for two oak woodland mitigation options (Option A and B) and removes retention standards by incorporating an incentive-based approach for oak woodland impact avoidance. • Revisions to projects or actions exempt from oak woodland and oak tree mitigation requirements. • Addition of criteria for conservation area identification outside of Priority Conservation Areas (PCA).
Policy 7.4.4.5	Delete Policy- Draft ORMP provides requirements for mitigation.
Objective 7.4.5	Merged Objective 7.4.5 with Objective 7.4.4 to address oak woodlands and individual oak trees (including Heritage Trees). Remove 'Vegetation' as non-tree vegetation is addressed in Policy 7.4.2.8.
Policy 7.4.5.1	Remove Policy 7.4.5.1 as it is redundant with Policy 7.4.5.2 which has been merged with Policy 7.4.4.4.
Policy 7.4.5.2	Merge Policy 7.4.5.2 with Policy 7.4.4.4 to comprehensively address oak woodlands and oak tree resources in a 2-tiered framework as identified in the ORMP.
Measure CO-L	Revise to reflect changes to Policy 7.4.2.8.
Measure CO-M	Deleted to reflect changes to Policy 7.4.2.8.
Measure CO-N	Deleted to reflect changes to Policy 7.4.2.9.
Measure CO-P	Revise to reflect changes to Policy 7.4.4.4 and the ORMP.
Measure CO-U	Deleted to reflect changes to Policy 7.4.2.8.

The proposed project also includes proposed adoption of an Oak Resources Management Plan (ORMP) and implementing ordinance that updates and revises the OWMP adopted by the County's BOS in May 2008. The purpose of the ORMP is to define mitigation requirements for

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impacts to oak woodlands, individual native oak trees, and Heritage Trees and to outline the County's strategy for oak woodland conservation. The ORMP is designed to function as the oak resources component of the County's biological resources mitigation program, as identified in the proposed amendments to General Plan Policy 7.4.2.8.

The proposed ORMP is available for review on the County's **General Plan Biological Policies Update** webpage at:

<http://www.edcgov.us/Government/LongRangePlanning/Environmental/BioPolicyUpdate.aspx>.

It is anticipated that under the proposed ORMP, applicants for development projects within the County on sites that contain individual oak trees and/or oak woodland habitat and are not exempt from the ORMP would be required to submit to the County an Oak Resources Technical Report that meets the requirements of the ORMP, determine the impact to individual oak trees and/or oak woodland habitat, and mitigate impacts to oak resources through one or more of the following options:

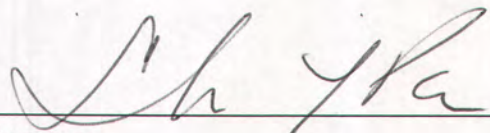
1. Deed restriction or conservation easement acquisition (off-site), and/or acquisition in fee title by a land conservation organization (off-site);
2. In-lieu fee payment;
3. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of numbers 1 through 4 above.

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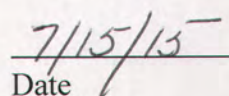
DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

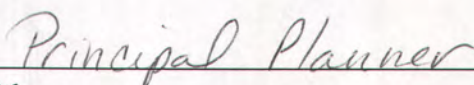
- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature



Date



Title

EVALUATION OF ENVIRONMENTAL IMPACTS

The following Initial Study Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist.

For this Initial Study, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less-Than-Significant With Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA based on the appropriate and applicable criteria and standards.

No Impact: The project would not have any impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b & c) The proposed project involves amending biological resources policies contained in the County’s General Plan and adopting an ORMP. The project does not include new construction or land uses that would have the potential to create a substantial adverse effect on a scenic vista, remove scenic resources from within view of a scenic highway, or degrade the existing visual quality of the County. However, development that proceeds under the proposed General Plan amendments and ORMP could adversely affect such resources by altering and/or removing vegetation communities and/or oak trees. While mitigation for loss of vegetation communities would include conservation of

similar vegetation communities, ongoing General Plan implementation under the proposed project could result in substantial changes to scenic vistas, views from scenic highways, and visual quality as a result of changes in the presence and distribution of vegetation communities throughout the County. This is considered a potentially significant impact and will be evaluated further in the EIR.

- d) The project does not include any new construction or land use development and would not introduce new sources of light and glare.

The proposed General Plan Biological Resources Policies and ORMP would not alter the types of land uses planned throughout the County, the allowable intensity of development (e.g., height, lot coverage), or project design considerations (e.g., building materials and colors, placement and design of parking lots, landscaping). It is expected that the proposed project could influence project layout in order to minimize a project's impacts to biological resources and associated mitigation requirements, however these determinations would be made on a site-specific basis and would not substantially alter a project's need for outdoor lighting. Lighting associated with a proposed project would be required to meet the applicable General Plan policy requirements, which would not be altered as a result of the proposed project. Therefore, the proposed project would have no impact related to lighting and glare.

It is noted that as part of the County's Targeted General Plan Amendment and Zoning Ordinance Update (TGPA-ZOU) project, the County is considering adoption of Outdoor Lighting Standards, Landscaping and Irrigation Standards, and design standards applicable to specific types of land use. If adopted, these standards would provide additional design requirements to control potential light and glare impacts.

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a, b) The proposed project involves amending biological resources policies contained in the County’s General Plan and adopting an ORMP. The project does not include new construction or land uses that would conflict with high-quality land designated for agriculture or conflict with existing zoning for agricultural use, or a Williamson Act contract. While the proposed project would allow for conservation easements to protect biological resources to be placed on agricultural land, the easements would not prohibit agricultural activities already occurring on such land. Therefore, there would be no impact to agricultural resources.

c) The proposed project does not include any rezoning of land, including of forestland or timberland. There would be no impact related to conflicts with existing zoning or rezoning.

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d, e) Development under the proposed General Plan policies and ORMP could involve the conversion of forest land to developed uses or other non-forest uses. These impacts have the potential to be significant and will be further evaluated in the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-e) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The project does not include new construction or land uses that would generate air pollutants or odors. The proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in an increase in air pollutant emissions. The project would have no impact on air quality.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) The proposed project involves amending biological resources policies contained in the County’s General Plan and adopting an ORMP. The project does not include new construction or land uses that would have the potential to adversely affect biological resources. However, development that proceeds under the proposed General Plan amendments and ORMP could adversely affect such resources by altering and/or removing vegetation communities, which support special-status species and provide habitat for plants and wildlife, and/or oak trees. While the proposed amendments to the policies are intended to protect biological resources and establish mitigation requirements for loss of vegetation communities, ongoing General Plan implementation under the proposed project could result in substantial changes in the presence and distribution of vegetation communities throughout the County. This is considered a potentially significant impact and will be evaluated further in the EIR.

f) There is no adopted habitat conservation plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan

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applicable to lands within El Dorado County. Therefore, there would be no impact related to consistency with an HCP, NCCP, or other conservation plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-d) The proposed project involves amending specific biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction or land disturbance that could potentially affect prehistoric, historic, paleontological resources or disturb human remains. While ongoing implementation of the General Plan could result in development that adversely affects cultural resources, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not increase or decrease the potential for impacts to cultural resources to occur. The project would have no impact on cultural resources.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-e) The proposed project involves amending specific biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction or land disturbance that could potentially put people or buildings in areas subject to seismic events or be located on unstable soils. While ongoing implementation of the General Plan could result in development that exposes people and structures to seismic hazards and soil instability, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not increase or decrease the potential for impacts related to geology and soils to occur. The project would have no impact on geology or soils.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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a, b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. While, the project does not include new construction or land uses that would generate greenhouse gas (GHG) emissions, development that proceeds under the proposed General Plan amendments and ORMP could alter and/or remove vegetation communities, including oak woodlands, and/or oak trees. Conversion of woodlands and other natural vegetation communities to developed uses could generate GHG emissions during the construction process. Further, oak woodlands and other natural vegetation communities serve as a carbon sink, in that they remove GHGs from the atmosphere and store carbon. Therefore, removal of woodlands and other natural vegetation communities could release GHGs into the atmosphere and reduce the natural absorption of GHG emissions. These effects could contribute to adverse climate change effects and could impair the ability of the region and the state to achieve GHG reductions required under state law. These effects will be evaluated in the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-h) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction or land disturbance that would either expose workers or a new population to an existing hazardous condition or result in the use, transport or storage of hazardous materials. The proposed ORMP provides that “activities taken pursuant to an approved Fire Safe Plan for existing structures or in accordance with defensible space maintenance requirements for existing structures in state responsibility areas (SRA) as identified in California Public Resources Code (PRC) Section 4291” are exempt from the impact assessment and mitigation requirements of the ORMP. The project would not result in exposure of people or structures to potential wildfires, and would not impair implementation of an emergency response plan. While ongoing implementation of the General Plan could result in development that increases the use, transport, and disposal of hazardous materials and could expose people to hazardous conditions, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not increase or decrease the potential for impacts related to hazards and hazardous materials to occur. Therefore, the proposed project would have no impact related to hazards and hazardous materials.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-j) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The project does not include new construction or land uses that would adversely affect storm drainage, change hydrologic conditions, or locate people in areas with a risk of flooding. While ongoing General Plan implementation would result in development of new land uses that could result in such effects, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in an increase in the potential for adverse effects to hydrologic

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conditions including water quality. Additionally, while development that proceeds under the proposed general plan policy update and ORMP could result in alterations to natural vegetation communities including oak woodlands, which could alter drainage patterns, volumes, and rates within a project site, all projects would be required to meet the applicable water quality and stormwater management requirements of the General Plan and the National Pollutant Discharge Elimination System. These requirements would not be altered as a result of the proposed project. Therefore, the proposed project would have no impact related to hydrology and water quality.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The project does not include new construction or land uses that could physically divide an established neighborhood. The project would not alter the land use and zoning designations throughout the County and would not contribute to any impacts related to physically dividing an established neighborhood.
- b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The EIR will evaluate the potential for policy language to conflict with the overarching goals, objectives and values set forth in the General Plan as well as the potential to conflict with mitigation adopted as part of the General Plan EIR. This is considered a potentially significant impact that will be further addressed in the EIR.
- c) There is no adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan applicable to lands within El Dorado County. Therefore, there would be no impact related to consistency with an HCP, NCCP, or other conservation plan.

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project would not increase restrictions on the recovery of mineral resources and the proposed project does not include new construction or land disturbance that could adversely affect access to or availability of known mineral resources. Therefore, there would be no impact to mineral resource recovery or economic values.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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a-f) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction or land disturbance that could generate short-term construction noise or long-term operational noise. While ongoing implementation of the General Plan could result in development that adversely affects noise conditions in a localized area, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not increase or decrease the potential for noise impacts to occur. The project would have no impact related to noise.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction nor would the project induce substantial population growth that could displace existing housing or people. While ongoing implementation of the General Plan could result in development that adversely affects population and housing, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not increase or decrease the potential for population and housing impacts to occur. The project would have no impact on population and housing in the county.

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-e) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction nor would the project induce substantial population growth that could result in an increased demand for public services. While ongoing implementation of the General Plan would result in development that increases demand for public services, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in greater public service demands than are presently anticipated. The project would have no impact on provision of public services in the county.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION – Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction nor would the project induce substantial population growth that could result in an increased demand for recreation facilities. While ongoing implementation of the General Plan would result in development that increases demand for parks and

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

recreation, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in greater recreation demands than are presently anticipated. The project would have no impact on provision of parks and recreation facilities in the county.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC – Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-f) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. The proposed project does not include new construction nor would the project generate growth that could result in increased vehicle trips throughout the County. While ongoing implementation of the General Plan would result in development that increases vehicle trips, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in greater trip

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

generation than is currently anticipated. The project would have no impact on transportation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-g) The project proposes amendments to biological resources policies contained in the County's General Plan and adoption of an ORMP. The proposed project does not include new construction nor would the project induce substantial population growth that could result in an increased demand for utility services. While ongoing implementation of the General Plan would result in development that increases demand for utility services, the proposed General Plan amendments and ORMP would not increase the amount or intensity of land use development allowed within the County and therefore would not result in greater utility demands than are presently anticipated. The project would have no impact on provision of utility services in the county.

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a-c) The EIR prepared for the project will address cumulative impacts associated with the proposed General Plan Amendment and adoption of the ORMP. As noted in this IS the proposed project does not include construction or operation of any buildings or facilities, or any land disturbance and would not result in any direct physical environmental impacts. However, the project would change current County policies addressing the management, preservation and mitigation of impacts to vegetation communities (which support special-status species as well as other plants and wildlife), oak trees, and oak woodland resources. Because there is the potential these changes could result in significant adverse effects and could contribute to cumulative impacts related to aesthetics, biological resources, forestry, greenhouse gas emissions, and land use. The project's potential to result in a cumulatively considerable contribution to significant cumulative impacts to these resources will be further addressed in the EIR.

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**General Plan Biological Resources Policy Update
and Oak Resources Management Plan**

Environmental Impact Report Notice of Preparation (NOP)

**Agency, Group and Organization Comments received
during the 30-day NOP Comment Period
July 17, 2015 – August 17, 2015**

Comment Period closed at 5:00 p.m. on August 17, 2015

Date Submitted	Name	Agency, Group, Organization	Submittal Method	Pdf Page Numbers
7/20/15	Janet Cobb	California Oaks	Email/attachment	2 – 11
7/20/15	Steve Love	California Oaks	Email/attachment	12 – 21
8/11/15	Roger Lewis	El Dorado Sr. Housing, LLC	Email/attachment	22 – 24
8/13/15	Carol Louis	El Dorado Council	Letter/attachment	25 – 28
8/14/15	Roger Lewis	El Dorado Sr. Housing, LLC	Email/attachment	29 – 32
8/14/15	Trevor Cleak	Central Valley Regional Water Quality Board	Letter dated 10 August 2015	33 – 36
8/17/15	Scott Morgan	State of CA Office of Planning and Research	Letter	37 – 40
8/17/15	Susan Britting	California Native Plant Society	Email/attachment	41 – 93
8/17/15	John Hidahl	EL Dorado Hills Area Planning Advisory Committee	Email/attachment	94 – 97

Shawna Purvines <shawna.purvines@edcgov.us>

Re: NOP letter by California Oaks

1 message

Janet Cobb <jcobb@californiawildlifefoundation.org>
To: Shawna Purvines <shawna.purvines@edcgov.us>

Mon, Jul 20, 2015 at 2:59 PM

Thank you, Shawna. Janet

From: Shawna Purvines <shawna.purvines@edcgov.us>
Sent: Monday, July 20, 2015 2:56 PM
To: Janet Cobb
Subject: Re: NOP letter by California Oaks

Will do.

Thank you Janet.

Shawna

On Monday, July 20, 2015, Janet Cobb <jcobb@californiawildlifefoundation.org> wrote:

Shawna, Please make sure our letter is submitted into the record for the just-released NOP. Thank you. California Oaks

--

Shawna L. Purvines
Principal Planner

County of El Dorado
Community Development Agency
Long Range Planning
2850 Fairlane Court
Placerville, CA 95667
Phone:(530) 621-5362/Fax: (530) 642-0508
shawna.purvines@edcgov.us
www.edcgov.us



Preserving and perpetuating California's oak woodlands and wildlife habitats

July 6, 2015

Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667
shawna.purvines@edcgov.us

Re: Biological Policy Update Project

Shawna Purvines, Principal Planner:

California Oaks appreciates the opportunity to comment on the Biological Policy Update Project. Review of the project finds that it fails to consider California Environmental Quality Act (CEQA) greenhouse gas (GHG) emission requirements concerning the conversion of native forest resources to another land use. Specifically, the DEIR provides no analysis regarding potential forest conversion carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emission effects or proportional mitigation measures. This DEIR omission is contrary to California forest GHG policy and law.

The 2008 California Air Resources Board's AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: "*This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources.*"¹ Gov. Brown reiterated this point in his January 2015 inaugural address: "*And we must manage farm and rangelands, forests and wetlands so they can store carbon.*" Further, the CEQA Guidelines specifically address biogenic GHG emissions due to the conversion of forest land to non-forest use.² Biogenic GHG emissions are those derived from living plant cells. Fossil fuel GHG emissions are derived from living plant cells but are categorized differently.

The following 2009 Natural Resources Agency CEQA GHG Amendments response to comments quotation supports the contention that direct and indirect biogenic GHG emissions effects occur when native forest resources are converted. The response use of the word "and" clearly indicates that there are two potentially significant GHG emission effects to be analyzed regarding forest conversion to another land use. CEQA recognizes these secondary biogenic GHG emissions in the indirect effects language of Guidelines § 15358(2), "*... are later in time or farther removed in distance, but are still reasonably foreseeable.*"

¹ The AB32 Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.
http://www.climatechange.ca.gov/forestry/documents/AB32_BOF_Report_1.5.pdf

² Oak woodlands are defined as "forest land" by Public Resources Code Section 12220(g)(l). This section is referenced in CEQA Appendix G, forest resources checklist.

Natural Resources Agency Response 66-7

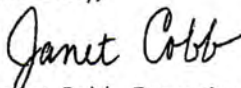
"As explained in the Initial Statement of Reasons, conversion of forest lands to non-forest uses may result in greenhouse gas emissions and reduce sequestration potential. (Initial Statement of Reasons, at pp. 63-64.)" See Exhibit A for a detailed CEQA discussion of forest conversion biogenic GHG emission effects.

When a native tree species is felled biomass carbon sequestration ceases. This immediate loss of biomass carbon sequestration capacity represents the direct forest conversion biogenic GHG emission effect. Upon disposal of the biomass carbon, the decomposition of biomass does in all cases result in indirect CO₂ and CH₄ emissions³ and the combustion of biomass does in all cases result in indirect CO₂, CH₄ and N₂O emissions.⁴ Thus, a CEQA oak woodlands GHG emission effects analysis requires carbon dioxide equivalent⁵ estimations for both the direct effect from loss of carbon sequestration and the indirect effect due to biogenic emissions associated with oak forest biomass disposal. Notably, burning biomass emits GHG instantaneously, while biomass decomposition takes years and even decades. See Exhibits B, C and D for biomass decomposition and combustion biogenic GHG emission citations.

Summary

Substantial evidence has been presented that project biogenic GHG emissions due to forest land conversion will result in potentially significant environmental effects that have not been sufficiently analyzed or feasibly mitigated. The project has not made "a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (CEQA Guidelines § 15064.4(a)). Therefore the Biological Policy Update Project is deficient as an informational document, in that it fails to apprise decision-makers/public of the full range and intensity of the adverse GHG emission effects on the environment that may reasonably be expected if the project is approved.

Sincerely,



Janet Cobb, Executive Officer
attachments (4)

³ "Anaerobic digestion, chemical process in which organic matter is broken down by microorganisms in the absence of oxygen, which results in the generation of carbon dioxide (CO₂) and methane (CH₄) ... Sugars, starches, and cellulose produce approximately equal amounts of methane and carbon dioxide." Encyclopædia Britannica (2013). <http://www.britannica.com/EBchecked/topic/22310/anaerobic-digestion>

⁴ "... the combustion of biomass does in all cases result in net additions of CH₄ and N₂O to the atmosphere, and therefore emissions of these two greenhouse gases as a result of biomass combustion should be accounted for in emission inventories under Scope 1" (at p. 11). World Resources Institute/World Business Council for Sustainable Development (2005). http://www.ghgprotocol.org/files/ghgp/tools/Stationary_Combustion_Guidance_final.pdf

⁵ AB32 defines "Carbon dioxide equivalent" to mean ... "the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change." The IPCC's best available science lists methane as having 34 times more global warming impact than carbon dioxide over a 100-year time horizon and nitrous oxide as having 298 times more global warming impact than carbon dioxide over the same period. Myhre, G., D. et al., 2013: *Anthropogenic and Natural Radiative Forcing*. In: *Climate Change 2013: The Physical Science Basis* (at pp. 713, 714).

Letter 97

Kari Fisher
Associate Counsel
California Farm Bureau Federation

Tim Schmelzer
Legislative and Regulatory Representative
Wine Institute

November 10, 2009

Comment 97-1

Comment is introductory in nature and expresses the organizations' concerns on the guidance for analysis and mitigation for GHG emissions in the proposed amendments. The Natural Resources Agency should reevaluate and revise Appendix G, Section II: Agriculture prior to adopting the proposed amendments.

Response 97-1

The comments object generally to the inclusion of forestry resources among the questions in Appendix G related to agricultural resources. The Initial Statement of Reasons explained the necessity of the added questions:

The proposed amendments would add several questions addressing forest resources in the section on Agricultural Resources. Forestry questions are appropriately addressed in the Appendix G checklist for several reasons. First, forests and forest resources are directly linked to both GHG emissions and efforts to reduce those emissions. For example, conversion of forests to non-forest uses may result in direct emissions of GHG emissions. (L. Wayburn et al., A Programmatic Approach to the Forest Sector in AB32, Pacific Forest Trust (May 2008); see also California Energy Commission Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (March, 2004) at p. 19.) Such conversion would also remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere). (Scoping Plan, Appendix C, at p. C-168.) Thus, such conversions are an indication of potential GHG emissions. Changes in forest land or timberland zoning may also ultimately lead to conversions, which could result in GHG emissions, aesthetic impacts, impacts to biological resources and water quality impacts, among others. Thus, these additions are reasonably necessary to ensure that lead agencies consider the full range of potential impacts in their initial studies. In the same

way that an EIR must address conversion of prime agricultural land or wetlands as part of a project (addressing the whole of the action requires analyzing land clearance in advance of project development), so should it analyze forest removal. [¶] During OPR's public involvement process, some commenters suggested that conversion of forest or timber lands to agricultural uses should not be addressed in the Initial Study checklist. (Letter from California Farm Bureau Federation to OPR, February 2, 2009; Letter from County of Napa, Conservation, Development and Planning Department, to OPR, January 26, 2009.) As explained above, the purpose of the Proposed Amendments is to implement the Legislative directive to develop Guidelines on the analysis and mitigation of GHG emissions. Although some agricultural uses also provide carbon sequestration values, most agricultural uses do not provide as much sequestration as forest resources. (Climate Action Team, Carbon Sequestration (2009), Chapter 3.3.8 at p. 3.21; California Energy Commission, Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (2004), at p. 2.) Therefore, such a project could result in a net increase in GHG emissions, among other potential impacts. Thus, such potential impacts are appropriately addressed in the Initial Study checklist.

(Initial Statement of Reasons, at pp. 63-64.) Specific objections to the questions related to forestry are addressed below.

Comment 97-2

Amendments to Appendix G, Section II: Agriculture, adding forest resources, distort the section from its original intent of protecting agriculture resources and will subject projects to extensive and unnecessary analysis beyond what is already legally required. Amendments to Section VII: Greenhouse Gas Emissions will adequately address any significant impact a project may have on greenhouse gas emissions.

Response 97-2

The comment's assertion that the addition of questions related to forestry "specifically target[s] the establishment of [agricultural] resources for extensive and unnecessary analysis above and beyond what is already legally required," is incorrect in several respects. First, the addition of questions related to forestry does not target the establishment of agricultural operations. The only mention in the Initial Statement of Reasons of agricultural operations in relation to those questions was in response to comments that the Office of Planning and Research received indicating that only conversions of forests to non-agricultural purposes should be analyzed. Moreover, the text of the questions themselves demonstrate that the concern is *any* conversion of forests, not just conversions to other agricultural operations.

Second, analysis of impacts to forestry resources is already required. For example, the Legislature has declared that "forest resources and timberlands of the state are among the most valuable of the natural resources of the state" and that such resources "furnish high-quality timber, recreational opportunities,

and aesthetic enjoyment while providing watershed protection and maintaining fisheries and wildlife.” (Public Resources Code, § 4512(a)-(b).) Because CEQA defines “environment” to include “land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance” (Public Resources Code, section 21060.5), and because forest resources have been declared to be “the most valuable of the natural resources of the state,” projects affecting such resources would have to be analyzed, whether or not specific questions relating to forestry resources were included in Appendix G. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (“in preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect”).) If effect, by suggesting that the Appendix G questions be limited to conversions to “non-agricultural uses,” the comment asks the Natural Resources Agency to adopt changes that are inconsistent with CEQA, which it cannot do.

The comment’s suggestion that the questions related to greenhouse gas emissions are sufficient to address impacts related to greenhouse gas emissions does not justify deletion of the questions related to forestry resources. As explained in the Initial Statement of Reasons, not only do forest conversions result in greenhouse gas emissions, but may also “remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere).” Further, conversions may lead to “aesthetic impacts, impacts to biological resources and water quality impacts, among others.” The questions related to greenhouse gas emissions would not address such impacts. Thus, the addition of forestry questions to Appendix G is appropriate both pursuant to SB97 and the Natural Resources Agency’s general authority to update the CEQA Guidelines pursuant to Public Resources Code section 21083(f). The Natural Resources Agency, therefore, rejects the suggestion to removal all forestry questions from Appendix G.

Comment 97-3

The amendment adding forest resources to Appendix G: Section II loses sight of the intent and purpose of the Legislature’s directive in SB 97. The amendments do not further the directive or intent of SB 97 and unfairly attack and burden all types of agriculture, both crop lands and forest lands.

Response 97-3

SB97 called for guidance on the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. (Public Resources Code, § 21083.05.) As explained in the Initial Statement of Reasons, forest conversions may result in direct greenhouse gas emissions. Further, such conversions remove existing forest stock and the potential for further carbon sequestration. (Initial Statement of Reasons, at p. 63.) Sequestration is recognized as a key mitigation strategy in the Air Resources Board’s Scoping Plan. (Scoping Plan, Appendix C, at p. C-168.) Thus, the Natural Resources Agency disagrees with the comment, and finds that questions in Appendix G related to forestry are reasonably necessary to effectuate the purpose of SB97. Notably, such questions are also supported by the Natural Resources

Agency's more general authority to update the CEQA Guidelines every two years. (Public Resources Code, § 21083(f).)

The Natural Resources Agency also disagrees that the questions related to forestry "unfairly attack and burden all types of agriculture." Nothing in the text of the proposed amendments or the Initial Statement of Reasons demonstrate any effort to attack, or otherwise disadvantage, any agricultural use. Questions related to forestry impacts are addressed to any forest conversions, not just those resulting from agricultural operations. Further, the questions do not unfairly burden agriculture. To the extent an agricultural use requires a discretionary approval, analysis of any potentially significant impacts to forestry resources would already be required, as explained in Response 97-2, above.

Comment 97-4

The amendments adding forest resources to Appendix G: Section II go beyond the scope of mandate by SB 97 and will adversely affect California's agricultural industry. The only alternative is to recognize the loss of forest land or conversion of forest is only significant when it results in a non-agricultural use.

Response 97-4

The Natural Resources Agency finds that the addition of questions related to forest impacts are reasonably necessary to carry out the directive both in SB97 and the general obligation to update the CEQA Guidelines, as described in both the Initial Statement of Reasons and Responses 97-2 and 97-3, above.

Though the comment states "the proposed changes in Section II [of Appendix G] ... are highly onerous to the State's agricultural industry," the comment provides no evidence to support that claim. On the contrary, as explained in Responses 97-2 and 97-3, above, CEQA already requires analysis of forestry impacts, regardless of whether Appendix G specifically suggests such analysis.

The Natural Resources Agency declines to revise the forestry-related Appendix G questions as suggested. As explained in Response 97-2, above, exempting agricultural projects from the requirement to analyze impacts to forest resources is inconsistent with CEQA.

Exhibit B

Forest Land Conversion Biomass Combustion and Decomposition GHG Emissions

California Air Resources Board

"California is committed to reducing emissions of CO₂, which is the most abundant greenhouse gas and drives long-term climate change. However, short-lived climate pollutants [methane, etc.] have been shown to account for 30-40 percent of global warming experienced to date. Immediate and significant reduction of both CO₂ and short-lived climate pollutants is needed to stabilize global warming and avoid catastrophic climate change The atmospheric concentration of methane is growing as a result of human activities in the agricultural, waste treatment, and oil and gas sectors." *Reducing Short-Lived Climate Pollutants in California*, 2014.

UN Framework Convention on Climate, Deforestation Definition

"Those practices or processes that result in the change of forested lands to non-forest uses. This is often cited as one of the major causes of the enhanced greenhouse effect for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present and contributing to carbon storage." http://www.gofc-gold.uni-jena.de/redd/sourcebook/Sourcebook_Version_June_2008_COP13.pdf

Stanford University Engineering

Biomass burning also includes the combustion of agricultural and lumber waste for energy production. Such power generation often is promoted as a "sustainable" alternative to burning fossil fuels. And that's partly true as far as it goes. It is sustainable, in the sense that the fuel can be grown, processed and converted to energy on a cyclic basis. But the thermal and pollution effects of its combustion - in any form - can't be discounted, [Mark] Jacobson said.

"The bottom line is that biomass burning is neither clean nor climate-neutral," he said. "If you're serious about addressing global warming, you have to deal with biomass burning as well."

engineering.stanford.edu/news/stanford-engineers-study-shows-effects-biomass-burning-climate-health

Jacobson, M. Z. (2014). *Effects of biomass burning on climate, accounting for heat and moisture fluxes, black and brown carbon, and cloud absorption effects.*

European Geosciences Union

"Biomass burning is a significant global source of gaseous and particulate matter emissions to the troposphere. Emissions from biomass burning are known to be a source of greenhouse gases such as carbon dioxide, methane and nitrous oxide" (at 10457). *A review of biomass burning emissions, part I: gaseous emissions of carbon monoxide, methane, volatile organic compounds, and nitrogen containing compounds.*

R. Koppmann, K. von Czapiewski and J. S. Reid, 2005.

<http://www.atmos-chem-phys-discuss.net/5/10455/2005/acpd-5-10455-2005-print.pdf>

Phoenix Energy

"As wood starts to decompose it releases roughly equal amounts of methane (CH₄) and carbon dioxide (CO₂)." 2014. <http://www.phoenixenergy.net/powerplan/environment>

Macpherson Energy Corporation

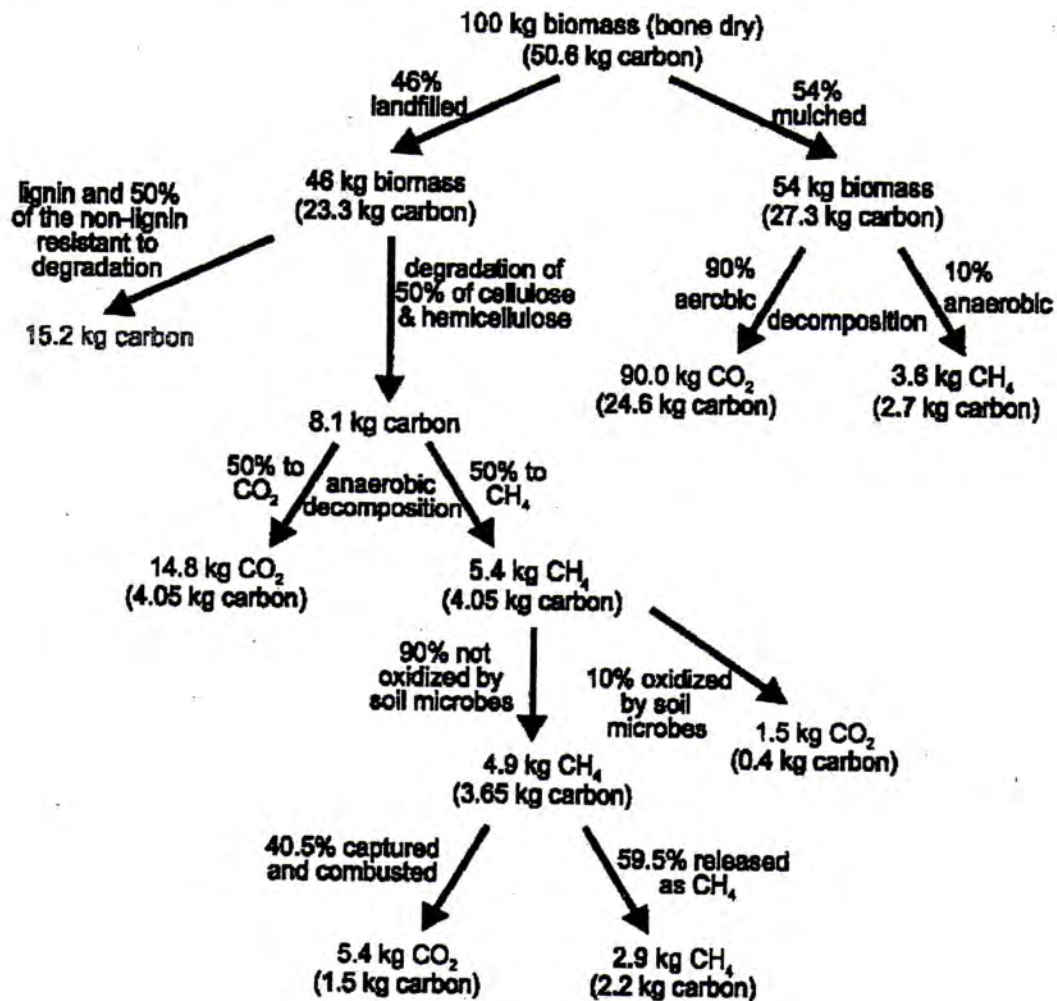
"Rotting produces a mixture of up to 50 percent CH₄, while open burning produces 5 to 10 percent CH₄." 2014. <http://macphersonenergy.com/mt-poso-conversion.html>

Exhibit C

Biomass Decomposition Greenhouse Gas Emissions

Biomass presentation by Alex Hobbs, PhD, PE to the Sierra Club Forum at North Carolina State University (November 24, 2009).

- If 100 kilograms of bone dry biomass were dispersed to a controlled landfill (46%) and mulched (54%) greenhouse gas emissions would be: 111.7 kilograms of CO₂ emissions + 6.5 kilograms of CH₄ emissions = 274.2 kilograms CO₂-equivalent emissions.



Landfill: 46 kg biomass/23.3 kg CO = 21.7 kg CO₂ + 2.9 kg CH₄ = 94.2 kg CO₂-equivalent.

Mulch: 54 kg biomass/27.3 kg CO = 90 kg CO₂ + 3.6 kg CH₄ = 180 kg CO₂-equivalent.

Total: 100 kg biomass/50.6 kg CO = 111.7 kg CO₂ + 6.5 kg CH₄ = 274.2 kg CO₂-equivalent.

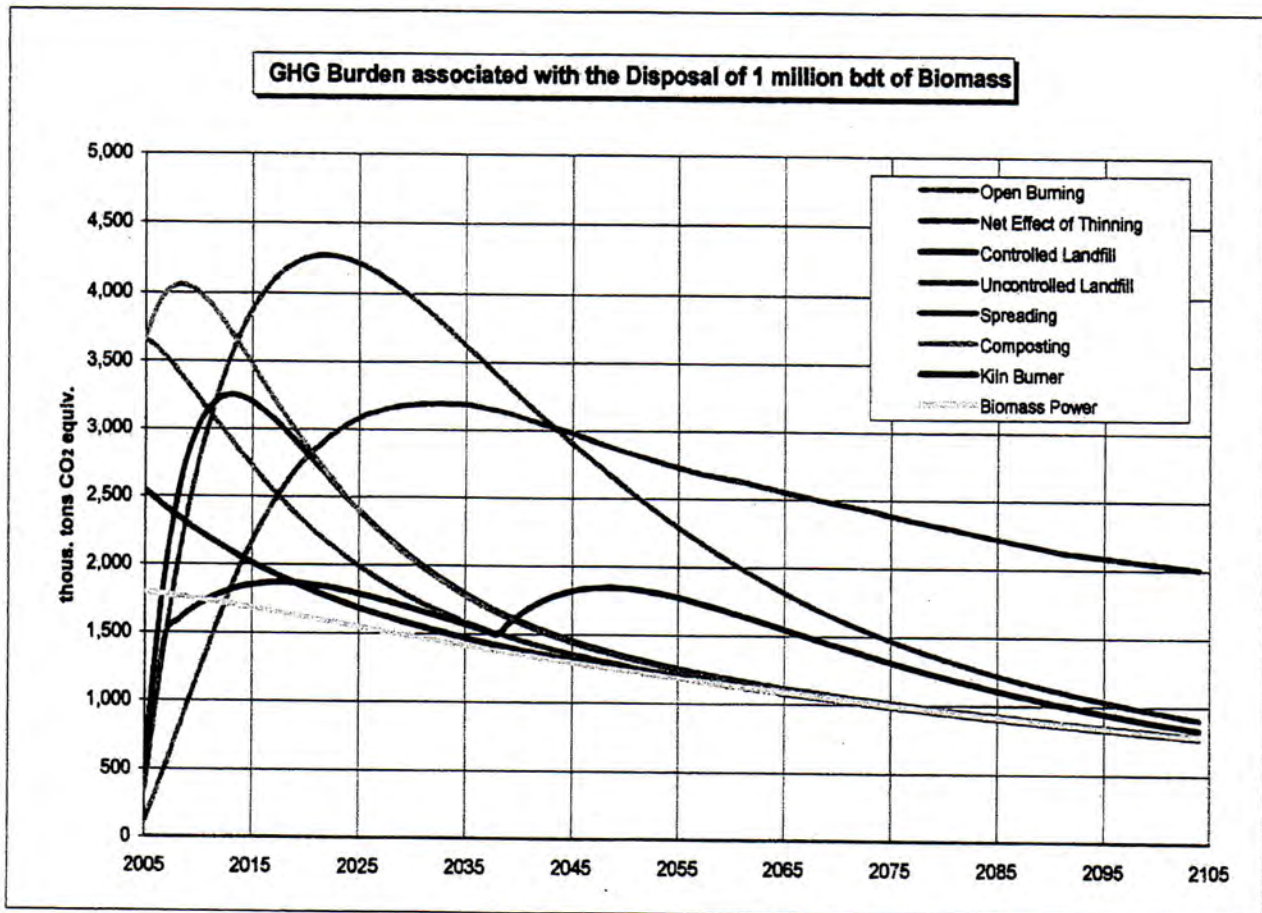
Exhibit D

Biomass Disposal Greenhouse Gas Emissions

The following chart illustrates the relative biogenic GHG emission effects from common methods of vegetation (biomass) disposal.¹ However, for a variety of reasons these chart values are too unrefined to be applied for project site-specific biogenic GHG emissions analysis.

Uncontrolled landfill disposal produces the greatest biomass GHG emissions followed by composting, open burning, mulching, forest thinning, firewood burning, controlled landfills and biomass power. Notably, biomass power emissions do not include methane and nitrous oxide emissions. The chart demonstrates that peak greenhouse gas emissions vary substantially depending on the means of biomass disposal.

Terminology: Net effect of thinning emissions apply to forest thinning emissions; Spreading emissions are equivalent to mulching emissions and Kiln Burner emissions are analogous to fireplace burning emissions.



Graphic: Gregory Morris, PhD. *Bioenergy and Greenhouse Gases*. Published by Pacific Institute (2008).

¹ One bone dry ton (bdt) is a volume of wood chips (or other bulk material) that would weigh one ton (2000 pounds, or 0.9072 metric tons) if all the moisture content was removed.



Shawna Purvines <shawna.purvines@edcgov.us>

Notice of Preparation

1 message

Steven Love <slove@californiawildlifefoundation.org>
To: "shawna.purvines@edcgov.us" <shawna.purvines@edcgov.us>
Cc: Janet Cobb <jcobb@californiawildlifefoundation.org>

Mon, Jul 20, 2015 at 3:02 PM

Ms. Purvines,

Please find our attached comments for NOP for El Dorado County Oak Plan. We request that you notify us of receipt of our comments.

Thank you,

Steve

Steven Love
External Relations Manager
California Wildlife Foundation
428 13th Street Suite 10A
Oakland, CA 94612
Office: 510.763.0282
Cell: 925.212.9056



Placerville Letter.pdf
5616K



Preserving and perpetuating California's oak woodlands and wildlife habitats

July 6, 2015

Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667
shawna.purvines@edcgov.us

Re: Biological Policy Update Project

Shawna Purvines, Principal Planner:

California Oaks appreciates the opportunity to comment on the Biological Policy Update Project. Review of the project finds that it fails to consider California Environmental Quality Act (CEQA) greenhouse gas (GHG) emission requirements concerning the conversion of native forest resources to another land use. Specifically, the DEIR provides no analysis regarding potential forest conversion carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emission effects or proportional mitigation measures. This DEIR omission is contrary to California forest GHG policy and law.

The 2008 California Air Resources Board's AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: "*This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources.*"¹ Gov. Brown reiterated this point in his January 2015 inaugural address: "*And we must manage farm and rangelands, forests and wetlands so they can store carbon.*" Further, the CEQA Guidelines specifically address biogenic GHG emissions due to the conversion of forest land to non-forest use.² Biogenic GHG emissions are those derived from living plant cells. Fossil fuel GHG emissions are derived from living plant cells but are categorized differently.

The following 2009 Natural Resources Agency CEQA GHG Amendments response to comments quotation supports the contention that direct and indirect biogenic GHG emissions effects occur when native forest resources are converted. The response use of the word "and" clearly indicates that there are two potentially significant GHG emission effects to be analyzed regarding forest conversion to another land use. CEQA recognizes these secondary biogenic GHG emissions in the indirect effects language of Guidelines § 15358(2), "*... are later in time or farther removed in distance, but are still reasonably foreseeable.*"

¹ The AB32 Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.
http://www.climatechange.ca.gov/forestry/documents/AB32_BOF_Report_1.5.pdf

² Oak woodlands are defined as "forest land" by Public Resources Code Section 12220(g)(l). This section is referenced in CEQA Appendix G, forest resources checklist.

Natural Resources Agency Response 66-7

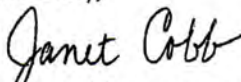
"As explained in the Initial Statement of Reasons, conversion of forest lands to non-forest uses may result in greenhouse gas emissions and reduce sequestration potential. (Initial Statement of Reasons, at pp. 63-64.)" See Exhibit A for a detailed CEQA discussion of forest conversion biogenic GHG emission effects.

When a native tree species is felled biomass carbon sequestration ceases. This immediate loss of biomass carbon sequestration capacity represents the direct forest conversion biogenic GHG emission effect. Upon disposal of the biomass carbon, the decomposition of biomass does in all cases result in indirect CO₂ and CH₄ emissions³ and the combustion of biomass does in all cases result in indirect CO₂, CH₄ and N₂O emissions.⁴ Thus, a CEQA oak woodlands GHG emission effects analysis requires carbon dioxide equivalent⁵ estimations for both the direct effect from loss of carbon sequestration and the indirect effect due to biogenic emissions associated with oak forest biomass disposal. Notably, burning biomass emits GHG instantaneously, while biomass decomposition takes years and even decades. See Exhibits B, C and D for biomass decomposition and combustion biogenic GHG emission citations.

Summary

Substantial evidence has been presented that project biogenic GHG emissions due to forest land conversion will result in potentially significant environmental effects that have not been sufficiently analyzed or feasibly mitigated. The project has not made "a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (CEQA Guidelines § 15064.4(a)). Therefore the Biological Policy Update Project is deficient as an informational document, in that it fails to apprise decision-makers/public of the full range and intensity of the adverse GHG emission effects on the environment that may reasonably be expected if the project is approved.

Sincerely,



Janet Cobb, Executive Officer
attachments (4)

³ "Anaerobic digestion, chemical process in which organic matter is broken down by microorganisms in the absence of oxygen, which results in the generation of carbon dioxide (CO₂) and methane (CH₄) ... Sugars, starches, and cellulose produce approximately equal amounts of methane and carbon dioxide." Encyclopædia Britannica (2013). <http://www.britannica.com/EBchecked/topic/22310/anaerobic-digestion>

⁴ "... the combustion of biomass does in all cases result in net additions of CH₄ and N₂O to the atmosphere, and therefore emissions of these two greenhouse gases as a result of biomass combustion should be accounted for in emission inventories under Scope 1" (at p. 11). World Resources Institute/World Business Council for Sustainable Development (2005). http://www.ghgprotocol.org/files/ghgp/tools/Stationary_Combustion_Guidance_final.pdf

⁵ AB32 defines "Carbon dioxide equivalent" to mean ... "the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change." The IPCC's best available science lists methane as having 34 times more global warming impact than carbon dioxide over a 100-year time horizon and nitrous oxide as having 298 times more global warming impact than carbon dioxide over the same period. Myhre, G., D. et al., 2013: *Anthropogenic and Natural Radiative Forcing*. In: *Climate Change 2013: The Physical Science Basis* (at pp. 713, 714).

Letter 97

Kari Fisher
Associate Counsel
California Farm Bureau Federation

Tim Schmelzer
Legislative and Regulatory Representative
Wine Institute

November 10, 2009

Comment 97-1

Comment is introductory in nature and expresses the organizations' concerns on the guidance for analysis and mitigation for GHG emissions in the proposed amendments. The Natural Resources Agency should reevaluate and revise Appendix G, Section II: Agriculture prior to adopting the proposed amendments.

Response 97-1

The comments object generally to the inclusion of forestry resources among the questions in Appendix G related to agricultural resources. The Initial Statement of Reasons explained the necessity of the added questions:

The proposed amendments would add several questions addressing forest resources in the section on Agricultural Resources. Forestry questions are appropriately addressed in the Appendix G checklist for several reasons. First, forests and forest resources are directly linked to both GHG emissions and efforts to reduce those emissions. For example, conversion of forests to non-forest uses may result in direct emissions of GHG emissions. (L. Wayburn et al., A Programmatic Approach to the Forest Sector in AB32, Pacific Forest Trust (May 2008); see also California Energy Commission Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (March, 2004) at p. 19.) Such conversion would also remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere). (Scoping Plan, Appendix C, at p. C-168.) Thus, such conversions are an indication of potential GHG emissions. Changes in forest land or timberland zoning may also ultimately lead to conversions, which could result in GHG emissions, aesthetic impacts, impacts to biological resources and water quality impacts, among others. Thus, these additions are reasonably necessary to ensure that lead agencies consider the full range of potential impacts in their initial studies. In the same

way that an EIR must address conversion of prime agricultural land or wetlands as part of a project (addressing the whole of the action requires analyzing land clearance in advance of project development), so should it analyze forest removal. [¶] During OPR's public involvement process, some commenters suggested that conversion of forest or timber lands to agricultural uses should not be addressed in the Initial Study checklist. (Letter from California Farm Bureau Federation to OPR, February 2, 2009; Letter from County of Napa, Conservation, Development and Planning Department, to OPR, January 26, 2009.) As explained above, the purpose of the Proposed Amendments is to implement the Legislative directive to develop Guidelines on the analysis and mitigation of GHG emissions. Although some agricultural uses also provide carbon sequestration values, most agricultural uses do not provide as much sequestration as forest resources. (Climate Action Team, Carbon Sequestration (2009), Chapter 3.3.8 at p. 3.21; California Energy Commission, Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (2004), at p. 2.) Therefore, such a project could result in a net increase in GHG emissions, among other potential impacts. Thus, such potential impacts are appropriately addressed in the Initial Study checklist.

(Initial Statement of Reasons, at pp. 63-64.) Specific objections to the questions related to forestry are addressed below.

Comment 97-2

Amendments to Appendix G, Section II: Agriculture, adding forest resources, distort the section from its original intent of protecting agriculture resources and will subject projects to extensive and unnecessary analysis beyond what is already legally required. Amendments to Section VII: Greenhouse Gas Emissions will adequately address any significant impact a project may have on greenhouse gas emissions.

Response 97-2

The comment's assertion that the addition of questions related to forestry "specifically target[s] the establishment of [agricultural] resources for extensive and unnecessary analysis above and beyond what is already legally required," is incorrect in several respects. First, the addition of questions related to forestry does not target the establishment of agricultural operations. The only mention in the Initial Statement of Reasons of agricultural operations in relation to those questions was in response to comments that the Office of Planning and Research received indicating that only conversions of forests to non-agricultural purposes should be analyzed. Moreover, the text of the questions themselves demonstrate that the concern is *any* conversion of forests, not just conversions to other agricultural operations.

Second, analysis of impacts to forestry resources is already required. For example, the Legislature has declared that "forest resources and timberlands of the state are among the most valuable of the natural resources of the state" and that such resources "furnish high-quality timber, recreational opportunities,

and aesthetic enjoyment while providing watershed protection and maintaining fisheries and wildlife.” (Public Resources Code, § 4512(a)-(b).) Because CEQA defines “environment” to include “land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance” (Public Resources Code, section 21060.5), and because forest resources have been declared to be “the most valuable of the natural resources of the state,” projects affecting such resources would have to be analyzed, whether or not specific questions relating to forestry resources were included in Appendix G. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (“in preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect”).) If effect, by suggesting that the Appendix G questions be limited to conversions to “non-agricultural uses,” the comment asks the Natural Resources Agency to adopt changes that are inconsistent with CEQA, which it cannot do.

The comment’s suggestion that the questions related to greenhouse gas emissions are sufficient to address impacts related to greenhouse gas emissions does not justify deletion of the questions related to forestry resources. As explained in the Initial Statement of Reasons, not only do forest conversions result in greenhouse gas emissions, but may also “remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere).” Further, conversions may lead to “aesthetic impacts, impacts to biological resources and water quality impacts, among others.” The questions related to greenhouse gas emissions would not address such impacts. Thus, the addition of forestry questions to Appendix G is appropriate both pursuant to SB97 and the Natural Resources Agency’s general authority to update the CEQA Guidelines pursuant to Public Resources Code section 21083(f). The Natural Resources Agency, therefore, rejects the suggestion to removal all forestry questions from Appendix G.

Comment 97-3

The amendment adding forest resources to Appendix G: Section II loses sight of the intent and purpose of the Legislature’s directive in SB 97. The amendments do not further the directive or intent of SB 97 and unfairly attack and burden all types of agriculture, both crop lands and forest lands.

Response 97-3

SB97 called for guidance on the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. (Public Resources Code, § 21083.05.) As explained in the Initial Statement of Reasons, forest conversions may result in direct greenhouse gas emissions. Further, such conversions remove existing forest stock and the potential for further carbon sequestration. (Initial Statement of Reasons, at p. 63.) Sequestration is recognized as a key mitigation strategy in the Air Resources Board’s Scoping Plan. (Scoping Plan, Appendix C, at p. C-168.) Thus, the Natural Resources Agency disagrees with the comment, and finds that questions in Appendix G related to forestry are reasonably necessary to effectuate the purpose of SB97. Notably, such questions are also supported by the Natural Resources

Agency's more general authority to update the CEQA Guidelines every two years. (Public Resources Code, § 21083(f).)

The Natural Resources Agency also disagrees that the questions related to forestry "unfairly attack and burden all types of agriculture." Nothing in the text of the proposed amendments or the Initial Statement of Reasons demonstrate any effort to attack, or otherwise disadvantage, any agricultural use. Questions related to forestry impacts are addressed to any forest conversions, not just those resulting from agricultural operations. Further, the questions do not unfairly burden agriculture. To the extent an agricultural use requires a discretionary approval, analysis of any potentially significant impacts to forestry resources would already be required, as explained in Response 97-2, above.

Comment 97-4

The amendments adding forest resources to Appendix G: Section II go beyond the scope of mandate by SB 97 and will adversely affect California's agricultural industry. The only alternative is to recognize the loss of forest land or conversion of forest is only significant when it results in a non-agricultural use.

Response 97-4

The Natural Resources Agency finds that the addition of questions related to forest impacts are reasonably necessary to carry out the directive both in SB97 and the general obligation to update the CEQA Guidelines, as described in both the Initial Statement of Reasons and Responses 97-2 and 97-3, above.

Though the comment states "the proposed changes in Section II [of Appendix G] ... are highly onerous to the State's agricultural industry," the comment provides no evidence to support that claim. On the contrary, as explained in Responses 97-2 and 97-3, above, CEQA already requires analysis of forestry impacts, regardless of whether Appendix G specifically suggests such analysis.

The Natural Resources Agency declines to revise the forestry-related Appendix G questions as suggested. As explained in Response 97-2, above, exempting agricultural projects from the requirement to analyze impacts to forest resources is inconsistent with CEQA.

Exhibit B

Forest Land Conversion Biomass Combustion and Decomposition GHG Emissions

California Air Resources Board

"California is committed to reducing emissions of CO₂, which is the most abundant greenhouse gas and drives long-term climate change. However, short-lived climate pollutants [methane, etc.] have been shown to account for 30-40 percent of global warming experienced to date. Immediate and significant reduction of both CO₂ and short-lived climate pollutants is needed to stabilize global warming and avoid catastrophic climate change The atmospheric concentration of methane is growing as a result of human activities in the agricultural, waste treatment, and oil and gas sectors." *Reducing Short-Lived Climate Pollutants in California*, 2014.

UN Framework Convention on Climate, Deforestation Definition

"Those practices or processes that result in the change of forested lands to non-forest uses. This is often cited as one of the major causes of the enhanced greenhouse effect for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present and contributing to carbon storage." http://www.gofc-gold.uni-jena.de/redd/sourcebook/Sourcebook_Version_June_2008_COP13.pdf

Stanford University Engineering

Biomass burning also includes the combustion of agricultural and lumber waste for energy production. Such power generation often is promoted as a "sustainable" alternative to burning fossil fuels. And that's partly true as far as it goes. It is sustainable, in the sense that the fuel can be grown, processed and converted to energy on a cyclic basis. But the thermal and pollution effects of its combustion - in any form - can't be discounted, [Mark] Jacobson said.

"The bottom line is that biomass burning is neither clean nor climate-neutral," he said. "If you're serious about addressing global warming, you have to deal with biomass burning as well." engineering.stanford.edu/news/stanford-engineers-study-shows-effects-biomass-burning-climate-health

Jacobson, M. Z. (2014). *Effects of biomass burning on climate, accounting for heat and moisture fluxes, black and brown carbon, and cloud absorption effects.*

European Geosciences Union

"Biomass burning is a significant global source of gaseous and particulate matter emissions to the troposphere. Emissions from biomass burning are known to be a source of greenhouse gases such as carbon dioxide, methane and nitrous oxide" (at 10457). *A review of biomass burning emissions, part I: gaseous emissions of carbon monoxide, methane, volatile organic compounds, and nitrogen containing compounds.* R. Koppmann, K. von Czapiewski and J. S. Reid, 2005. <http://www.atmos-chem-phys-discuss.net/5/10455/2005/acpd-5-10455-2005-print.pdf>

Phoenix Energy

"As wood starts to decompose it releases roughly equal amounts of methane (CH₄) and carbon dioxide (CO₂)." 2014. <http://www.phoenixenergy.net/powerplan/environment>

Macpherson Energy Corporation

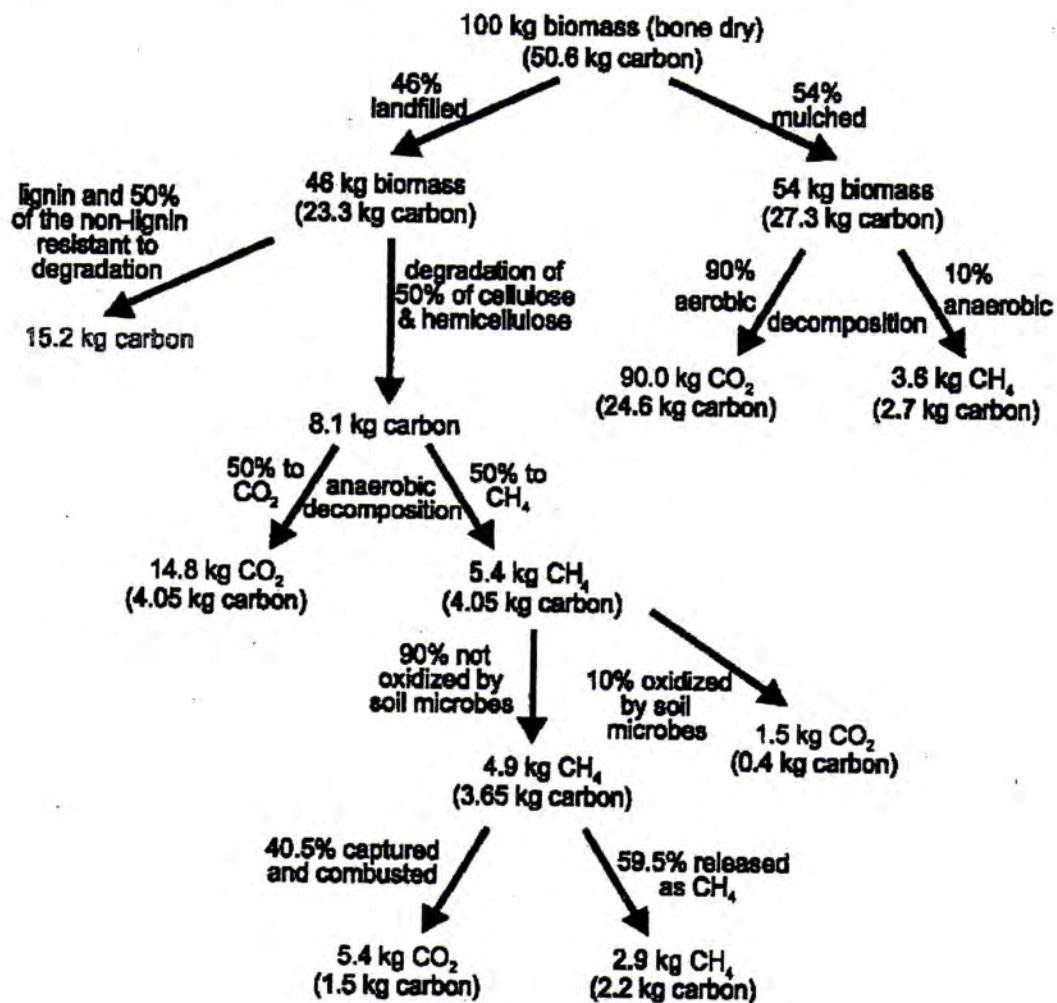
"Rotting produces a mixture of up to 50 percent CH₄, while open burning produces 5 to 10 percent CH₄." 2014. <http://macphersonenergy.com/mt-poso-conversion.html>

Exhibit C

Biomass Decomposition Greenhouse Gas Emissions

Biomass presentation by Alex Hobbs, PhD, PE to the Sierra Club Forum at North Carolina State University (November 24, 2009).

- If 100 kilograms of bone dry biomass were dispersed to a controlled landfill (46%) and mulched (54%) greenhouse gas emissions would be: 111.7 kilograms of CO₂ emissions + 6.5 kilograms of CH₄ emissions = 274.2 kilograms CO₂-equivalent emissions.



Landfill: 46 kg biomass/23.3 kg CO = 21.7 kg CO₂ + 2.9 kg CH₄ = 94.2 kg CO₂-equivalent.

Mulch: 54 kg biomass/27.3 kg CO = 90 kg CO₂ + 3.6 kg CH₄ = 180 kg CO₂-equivalent.

Total: 100 kg biomass/50.6 kg CO = 111.7 kg CO₂ + 6.5 kg CH₄ = 274.2 kg CO₂-equivalent.

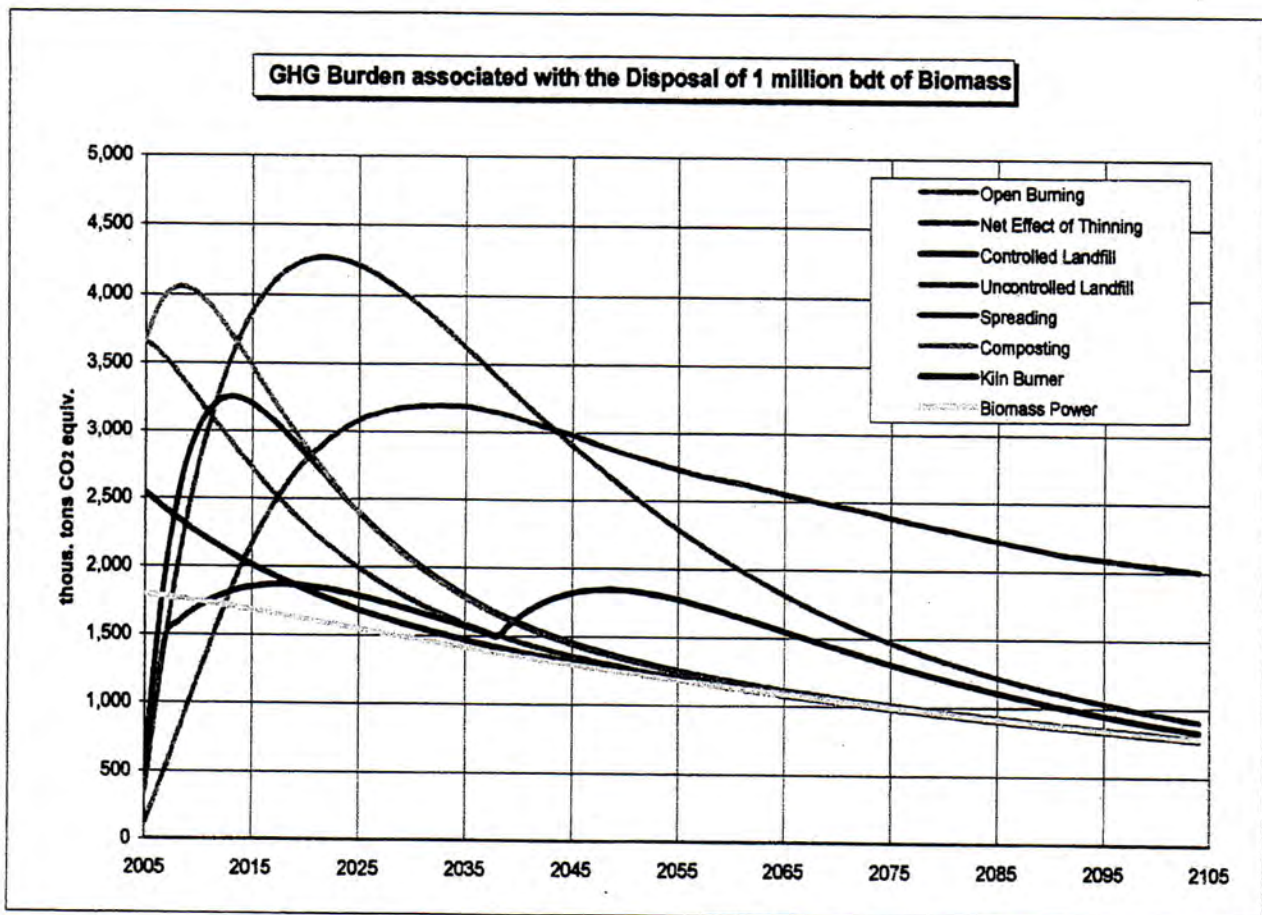
Exhibit D

Biomass Disposal Greenhouse Gas Emissions

The following chart illustrates the relative biogenic GHG emission effects from common methods of vegetation (biomass) disposal.¹ However, for a variety of reasons these chart values are too unrefined to be applied for project site-specific biogenic GHG emissions analysis.

Uncontrolled landfill disposal produces the greatest biomass GHG emissions followed by composting, open burning, mulching, forest thinning, firewood burning, controlled landfills and biomass power. Notably, biomass power emissions do not include methane and nitrous oxide emissions. The chart demonstrates that peak greenhouse gas emissions vary substantially depending on the means of biomass disposal.

Terminology: Net effect of thinning emissions apply to forest thinning emissions; Spreading emissions are equivalent to mulching emissions and Kiln Burner emissions are analogous to fireplace burning emissions.



Graphic: Gregory Morris, PhD. *Bioenergy and Greenhouse Gases*. Published by Pacific Institute (2008).

¹ One bone dry ton (bdt) is a volume of wood chips (or other bulk material) that would weigh one ton (2000 pounds, or 0.9072 metric tons) if all the moisture content was removed.



Shawna Purvines <shawna.purvines@edcgov.us>

Notice of Preparation (NOP) for the General Plan Biological Resources Policy Update Draft Environmental Impact Report (EIR) - Comments

Roger Lewis <re.lewis@comcast.net>

Tue, Aug 11, 2015 at 11:12 AM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Cc: Shirley Parker <sparker07@comcast.net>, jim davies <j854davies@att.net>, Ron Kooyman <ron@thekooymans.com>, bosone@edcgov.us, bostwo@edcgov.us, bosthree@edcgov.us, bosfour@edcgov.us, bosfive@edcgov.us, edc.cob@edcgov.us

Ms. Shawna Purvines

Principal Planner

El Dorado County Community Development Agency

Long Range Planning Division

2850 Fairlane Court,

Placerville, CA 95667

Dear Ms. Purvines,

We have reviewed the subject NOP and submit herewith our comments. We trust they will be considered and incorporated where possible into the draft EIR.


Sincerely,

Roger Lewis

El Dorado Sr. Housing, LLC.

854 Diablo Rd.

Danville, CA 94526

 EDSH_comments_on_NOP_of_draft_EIR.pdf
195K

**Comments on the Notice of Preparation (NOP) of an Environmental
Impact Report (EIR) for the General Plan Biological Resources Policy
Update and Oak Resources Management Plan (ORMP)**

By El Dorado Sr. Housing, LLC

August 11, 2015

These comments pertain primarily to the Oak Resources Management Plan

Use Quantitative Analysis for Impact Assessments

1. As stated in Section 2.0 of the NOP, Project Background and History, the County's adoption of the May 6, 2008 OWMP was challenged and the Appellate Court held that the County had not adequately evaluated the environmental effects of the OWMP. It is therefore essential that the County perform a proper evaluation at this time. However, in accordance with CEQA Guidelines Section 15063(c)(3), if it is demonstrated that impacts to particular resources would be less than significant, those resources need not be evaluated. It is therefore incumbent upon the authors of the EIR to unequivocally demonstrate significance, or non-significance, of all impacts that are being evaluated.
2. The environmental impact report should evaluate the impact of specific, quantifiable actions on the environment, not of subjective, unsubstantiated opinions or hypothetical "what-if" situations, especially when there are studies and existing data that can be referenced. Such an evaluation can be done even though specific construction or development projects may not be contemplated.
3. Resource inventories, referenced in Section 2.0 of the NOP, apparently are available to facilitate the necessary quantitative evaluations. Reports state that there are from 250,000 to 300,000 acres of oak resources in El Dorado County. It is the impact of development on these resources that must be quantified.
4. The EIR must quantify the expected overall impact of development, i.e. the report must stipulate how many acres of resources and individual heritage trees are expected to be removed as a result of planned and unplanned development. Consider that, according to the El Dorado County Economic and Demographic Profile, 2010-2011, in the past 25 years there have been an average of only 500 acres of development per year in El Dorado County, and within that development, an estimated 20%, about 100 acres, resulted in impact to oak resources. This is an impact of just 0.04% of existing resources.
5. Determine and include the effects of natural regeneration of resources in any assessment of impact. This obviously will have the effect of mitigating any impacts. In fact it might be revealed that natural regeneration of resources more than offsets impacts from development.

6. Supervisor Veerkamp opined that in his many years of residency in El Dorado County, he has notice a marked increase in the number of trees. At June 22, 2015 BOS meeting (video 2:31:09) he said, “having lived here 57 years now, I’ve seen an overall increase in the amount of trees in the County to the point where we’re getting bombarded from the fire safe councils, and insurance companies pulling out, so somehow we’ve got to strike a balance to all this.” This statement reaffirms the need to consider natural regeneration as a mitigating factor in the EIR.

Oak Tree Retention Standards are Unnecessary

7. Conservationists have made multiple requests to not amend the retention requirements of the original OWMP and to disallow 100% tree removal on a project. In fact removing 100% of the trees on just a single project should not be a major issue because the effects of this action are not cumulatively considerable. What is important is the cumulative effect of all resource usage compared to available resources and the impact that any reduction has.
8. If it can be quantitatively demonstrated that a large percentage of developers want to remove 100% of the oak trees from their projects, then retention requirements may be reevaluated.

Public Comments Drift from Mitigation Process

9. There have been public arguments put forth that are irrelevant to the EIR process, e.g. trees are a health benefit, trees remove pollutants, trees produce oxygen for people. Obviously trees are beneficial, but that is not the issue, and pointing out statistical facts does nothing to foster solutions to the problem of how to mitigate the impact of loss of oak trees during development.
10. Carol Lewis concluded her remarks on June 22, 2015 with a statement that she and others find it unacceptable that that County is allowing developers to remove a “great percentage” of our oak trees. She used as an example a developer who cut down 300 trees one weekend and paid a fee of \$30,000. Her statement that “we don’t need to be removing a great percentage of our oak trees because it is detrimental to our health” is a commendable statement; however, it was not backed up by an estimate of what that percentage is. County reports will verify that on average developers remove less than 0.04% of the oak trees each year. 300 trees is approximately 0.001%. Are these numbers a “great percentage” and what exactly is the impact to health from removing this amount? If being considered, the EIR must quantitatively address this issue.
11. Hopefully, this process will not deter from the idea that we seek “mitigation” answers to whatever impact is realized. The mitigation should not become a detriment to the development of privately owned properties to such a degree that development cannot be realized. Instead the process needs to take into account the rights of the individual property owners.

**EL DORADO COUNTY
RECEIVED
AUG 13 2015
LONG RANGE PLANNING**

August 14, 2015

El Dorado County Planning Commission

RE: El Dorado County General Plan Biological Policy Oak Tree and Woodland Mitigation

TREES SAVE LIVES

Outdoor air pollution is a serious environmental health risk linked to both chronic and acute health conditions including:

- *Heart Disease
- *Asthma
- *Stroke
- * Lung Cancer
- *Respiratory Infections

- *Chronic Pulmonary Disease

Trees and forests in the US remove 17.4 million tons of air pollution in one year with human health effects valued at over \$6.8 million a year.

Trees remove air pollution primarily by uptake of pollutants via leaf stomata (pores on the outer skin layers of the leaf).

Most of the pollution removal occurs in RURAL AREAS where tree cover can be as high as 88 percent.

TREES ARE LIVING AIR PURIFIERS - Every tree helps the environment and the people living around them. Trees around homes can increase property values by as much as 15%.

They also:

- *Decrease carbon dioxide and increase oxygen levels in the atmosphere
- *Improve water quality and reduce erosion
- *Provide food for wildlife
- *Reduce cooling and heating costs by providing shade in summer and wind breaks in winter
- *Plus provide natural beauty to El Dorado County, a county who historically has been known for its oaks

The EPA, over the last 40 years, has done studies to develop more refined and focused regulations and strategies for decreasing pollution thru our forests worldwide.

These policies have aided in a better understanding of clean air science which has led directly to these policies widely credited with better air quality, which in turn reduces hospitalizations, worsening levels of asthma, cardiac events and even death.

WHAT ARE YOU AND I BREATHING? These are some of the major air pollutant:

- *Carbon Dioxide
- *Sulfur Dioxide
- *Hydrogen Fluoride and Silicon Tetrafluoride
- *Ozone
- *Methane

*Nitro Oxide *Chlorofluorocarbons

The burning of fossil fuels for energy and large scale forest fires are major contributors to the buildup of CO2 in the atmosphere.

The destruction of our trees by drought and disease in California has led to the loss of 12.5 million trees to beetle infestation alone. Forest fires, removal of orchards and development are jeopardizing the health of all of us for generations to come.

We should demonstrate our responsibility to our children and grandchildren, that we care about our air quality for their future. This means being conscious in analyzing the removal of our oaks and other trees, this impact will last well beyond our life time.

Myself and other residents are opposed to the Board of Supervisors DENIAL of including an AIR QUALITY COMPONENT dealing with oaks in the general plan.

The Highway 50 corridor is the chosen area for development. This corridor, because of the traffic it generates, is the higher pollutant producer with the ability of multi-developers to mitigate the tree removal, (up to 100% of the tree canopy) then plant 1 to 15 gallon oak trees in a preserve far away from the polluted impacted area, does not serve to benefit county residents living in that area.

Large oak tree canopies are the greater air filters, this also includes large pines as great filters because of their needle density.

Trees:

- *Help to settle out, trap and hold particle pollutants (dust, ash, pollen and smoke)

- *Absorb CO2 and other dangerous gasses and, in turn, replenish the atmosphere with oxygen

- *Produce enough oxygen on each acre for 18 people everyday

- *Absorb enough CO2 on each acre, over a year's time to equal the amount you produce when you drive 26,000 miles

Trees remove gaseous pollutants by absorbing them through the pores on the leaf surface. Particles are trapped and filtered by leaves, stems, and twigs and washed to the ground by rainfall. This is why large canopies are so important.

As more and more cars travel Highway 50 and other arterial roads, county residents, their children and especially the elderly will have a higher incidents of chronic health issues.

The responsibility of this board and other governing boards is to develop policies to benefit and protect the residents that exist in this county, not to accommodate a developers need for higher density housing or other types of development for future residents to the detriment of those of us now living here.

The impact of large sections of oak tree removal should not be done without the thorough evaluation of its impacts to air quality. The Oak Tree/Air Quality Component should be included in the General Plan. Once these trees are removed it will take decades and life times to replenish their loss to the community.

I and others I represent, are strongly requesting you to include Air Quality and the Oak Heritage components in the general plan update. This is too important for future generations and too important to our health to ignore.

Carol Louis

El Dorado Council.org

CC: Letter from the California Oaks .org

Oaks

California Oaks

California Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460
board.public.comments@fire.ca.gov

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
dmallery@arb.ca.gov

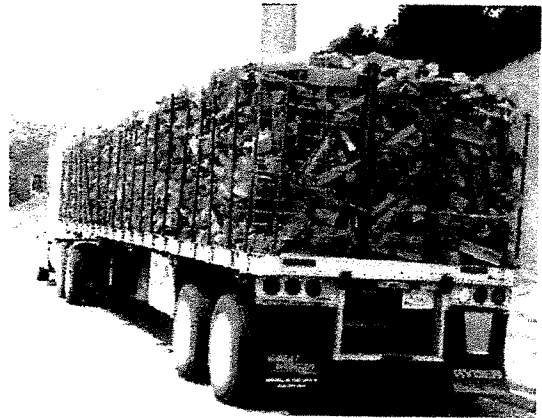
June 29, 2015

Re: Oak Woodland Greenhouse Gas Emissions

California Board of Forestry and Fire Protection and California Air Resources Board Members:

California Oaks would like to raise the incongruity of the accompanying photo relative to the Board of Forestry and Air Resources Board joint policy regarding meeting AB32 Scoping Plan forest targets. Although the state's forest greenhouse gas (GHG) focus may be on "timberland," in fact California's GHG policies and laws apply equally to all native "forest land."

The 2008 AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: *"This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources."* The Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.



Blue oak firewood en route to Bay Area markets.

California Oaks would appreciate a cogent explanation of how the pictured blue oak firewood is consistent with the state's natural and working lands sector targets, given that unregulated/unmitigated oak tree cutting for "commercial purposes" results in: (1) the loss of carbon sequestration capacity; (2) produces carbon dioxide, methane and nitrous oxide emissions from burning the firewood.

Sincerely,

A handwritten signature in cursive script that reads "Janet Cobb".

Janet Cobb, Executive Officer



Shawna Purvines <shawna.purvines@edcgov.us>

RE: Notice of Preparation (NOP) for the General Plan Biological Resources Policy Update Draft Environmental Impact Report (EIR) - Additional Comments

1 message

Roger Lewis <re.lewis@comcast.net>

Fri, Aug 14, 2015 at 2:53 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Cc: Shirley Parker <sparker07@comcast.net>, jim davies <j854davies@att.net>, Ron Kooyman <ron@thekooymans.com>, bosone@edcgov.us, bostwo@edcgov.us, bosthree@edcgov.us, bosfour@edcgov.us, bosfive@edcgov.us, edc.cob@edcgov.us, rich.stewart@edcgov.us, gary.miller@edcgov.us, tom.heflin@edcgov.us, dave.pratt@edcgov.us, brian.shinault@edcgov.us

Ms. Shawna Purvines

Principal Planner

El Dorado County Community Development Agency

Long Range Planning Division

2850 Fairlane Court,

Placerville, CA 95667

Dear Ms. Purvines,

Having attended the Planning Commission hearing of August 13, 2015, we offer the attached comments which are additional to those offered on August 11, 2015. We trust they will be considered and incorporated where possible into the draft EIR.

Sincerely,

Roger Lewis

El Dorado Sr. Housing, LLC.

854 Diablo Rd.

Danville, CA 94526

From: Roger Lewis [mailto:re.lewis@comcast.net]

Sent: Tuesday, August 11, 2015 11:13 AM

To: 'Shawna Purvines'

Cc: 'Shirley Parker'; jim davies (j854davies@att.net); Ron Kooyman (ron@thekooymans.com); bosone@edcgov.us; bostwo@edcgov.us; bosthree@edcgov.us; bosfour@edcgov.us; bosfive@edcgov.us; edc.cob@edcgov.us

Subject: Notice of Preparation (NOP) for the General Plan Biological Resources Policy Update Draft Environmental Impact Report (EIR) - Comments

Ms. Shawna Purvines

Principal Planner

El Dorado County Community Development Agency

Long Range Planning Division

2850 Fairlane Court,

Placerville, CA 95667

Dear Ms. Purvines,

We have reviewed the subject NOP and submit herewith our comments. We trust they will be considered and incorporated where possible into the draft EIR.


Sincerely,

Roger Lewis

El Dorado Sr. Housing, LLC.

854 Diablo Rd.

Danville, CA 94526

 **EDSH_comments_on_NOP_of_draft_EIR_2.pdf**
267K

**Comments on the Notice of Preparation (NOP) of an Environmental
Impact Report (EIR) for the General Plan Biological Resources Policy
Update and Oak Resources Management Plan (ORMP)**

By El Dorado Sr. Housing, LLC

August 13, 2015

These comments are further to our comments of August 11, 2015 and are prompted by our attendance at the Planning Commission hearing of August 12, 2015

Use Quantitative Analysis for Impact Assessments

1. During the Planning Commission hearing Commissioner Platt opined that there are a lot of trees in El Dorado County and pointed out that natural, ambient regeneration of oak resources occurs at the rate of approximately 2% every ten years. This statement reaffirms our Comment No. 6 of August 11, 2015, see footnote (a) below. This number is extremely significant because if correct, natural regeneration becomes the most predominant mitigating factor in the oak resources issue. Simple mathematics and historical records of development in El Dorado County back up this point.

Oak resource inventory reports state that there are from 250,000 to 300,000 acres of oak resources in the County. At the rate of growth of 2% in 10 years, our resources will increase by at least 5,000 acres over the 10-year period, or 500 acres per year on average.

According to the El Dorado County Economic and Demographic Profile, 2010-2011, in the past 25 years there have been an average of just 500 acres of development per year in the entire County, and of that development, only an estimated 20%, i.e. about 100 acres per year, resulted in impact to oak trees.

By comparing the number of trees lost to development to the number gained through natural regeneration, it is clearly seen that natural mitigation results in an increase in resources of five times the amount lost to estimated development. We therefore must reiterate our Comment No. 5 of August 11, 2015, see footnote (b) below, and suggest strongly that the effects of natural regeneration be quantitatively included in the EIR.

Impact on Property Owners

2. With all of the focus on determining the impact on oak trees, habitat, animal life, etc. ... resulting from development, we believe we are omitting one important consideration, i.e. the impact on humans by restrictively regulating development. Accordingly, we propose that the EIR include an assessment and evaluation of the impact on the health and well-being of property owners and local residents of **NOT** being able to reasonably develop a property. Specifically, disallowing the removal of oak trees or making their removal prohibitively difficult

or expensive can result in grave economic consequences and detrimental health issues to owners of property who could otherwise develop their properties. A case in point is El Dorado Sr. Housing, LLC where the stress of not knowing how to proceed with project development has taken its toll on the well-being of the member/owners. Moreover, adopting overly restrictive policies and adverse mitigation measures with respect to ongoing development may result in degradation of the entire local economy with the consequential loss of jobs and quality of life for all residents.

These are important points that should be considered in the preparation of the EIR

Foot Notes:

- a. Supervisor Veerkamp opined that in his many years of residency in El Dorado County, he has notice a marked increase in the number of trees. At June 22, 2015 BOS meeting (video 2:31:09) he said, “having lived here 57 years now, I’ve seen an overall increase in the amount of trees in the County to the point where we’re getting bombarded from the fire safe councils, and insurance companies pulling out, so somehow we’ve got to strike a balance to all this.” This statement reaffirms the need to consider natural regeneration as a mitigating factor in the EIR.
- b. Determine and include the effects of natural regeneration of resources in any assessment of impact. This obviously will have the effect of mitigating any impacts. In fact it might be revealed that natural regeneration of resources more than offsets impacts from development.



EDMUND G. BROWN JR.
GOVERNOR



MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

10 August 2015

**EL DORADO COUNTY
RECEIVED**

Shawna Purvines
El Dorado County
2850 Fairlane Court
Placerville, CA 95667

AUG 14 2015

LONG RANGE PLANNING

**CERTIFIED MAIL
7014 2870 0000 7535 4852**

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, BIOLOGICAL RESOURCES POLICY UPDATE AND OAK RESOURCES MANAGEMENT PLAN PROJECT, SCH# 2015072031, EL DORADO COUNTY

Pursuant to the State Clearinghouse's 17 July 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environment Impact Report for the Biological Resources Policy Update and Oak Resources Management Plan Project*, located in El Dorado County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program.

There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board’s website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory

Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.



Trevor Cleak
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

Notice of Preparation

July 17, 2015

To: Reviewing Agencies

Re: Biological Resources Policy Update and Oak Resources Management Plan
SCH# 2015072031

Attached for your review and comment is the Notice of Preparation (NOP) for the Biological Resources Policy Update and Oak Resources Management Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Shawna Purvines
El Dorado County
2850 Fairlane Court
Placerville, CA 95667

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

**EL DORADO COUNTY
RECEIVED
AUG 17 2015
LONG RANGE PLANNING**

RECEIVED
PLANNING DEPARTMENT
18 JUL 23 AM 10:48

**Document Details Report
State Clearinghouse Data Base**

SCH# 2015072031
Project Title Biological Resources Policy Update and Oak Resources Management Plan
Lead Agency El Dorado County

Type NOP Notice of Preparation
Description El Dorado County proposes to amend several General Plan objectives, policies, and implementation measures addressing biological resources and to adopt an Oak Resources Management Plan.

Lead Agency Contact

Name Shawna Purvines
Agency El Dorado County
Phone 530 621 5362 **Fax**
email
Address 2850 Fairlane Court
City Placerville **State** CA **Zip** 95667

Project Location

County El Dorado
City
Region
Cross Streets
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Cal Fire; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 2; Native American Heritage Commission; Caltrans, District 3 S; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Sacramento)

Date Received 07/16/2015 **Start of Review** 07/17/2015 **End of Review** 08/17/2015

Notice of Completion & Environmental Document Transmittal

SCH 201507203 1

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

Project Title: El Dorado County Biological Resources Policy Update and Oak Resources Management Plan
 Lead Agency: El Dorado County Contact Person: Shawna Purvines
 Mailing Address: 2850 Fairlane Court Phone: 530.621.5362
 City: Placerville Zip: 95667 County: El Dorado

Project Location: County: El Dorado City/Nearest Community: County-wide
 Cross Streets: _____ Zip Code: _____
 Longitude/Latitude (degrees, minutes and seconds): _____ ° _____ ' _____ " N / _____ ° _____ ' _____ " W Total Acres: _____
 Assessor's Parcel No.: _____ Section: _____ Twp: _____ Range: _____ Base: _____
 Within 2 Miles: State Hwy#: _____ Waterways: _____
 Airports: _____ Railways: _____ Schools: _____

Document Type:

CEQA: NOP Draft EIR Supplement/Subsequent EIR (Prior SCH No.) Mit Neg Dec
 NEPA: NOI EA Draft EIS FONSI
 Other: Joint Document Final Document Other: _____

RECEIVED
 NEPA: EIR 16 2015
 2:20 pm
 STATE CLEARING HOUSE

Local Action Type:

General Plan Update Specific Plan Rezone Annexation
 General Plan Amendment Master Plan Prezone Redevelopment
 General Plan Element Planned Unit Development Use Permit Coastal Permit
 Community Plan Site Plan Land Division (Subdivision, etc.) Other: oak resource management plan

Development Type:

Residential: Units _____ Acres _____
 Office: Sq. ft. _____ Acres _____ Employees _____
 Commercial: Sq. ft. _____ Acres _____ Employees _____
 Industrial: Sq. ft. _____ Acres _____ Employees _____
 Educational: _____
 Recreational: _____
 Water Facilities: Type _____ MGD _____
 Transportation: Type _____
 Mining: Mineral _____
 Power: Type _____ MW _____
 Waste Treatment: Type _____ MGD _____
 Hazardous Waste: Type _____
 Other: _____

Project Issues Discussed in Document:

Aesthetic/Visual Fiscal Recreation/Parks Vegetation
 Agricultural Land Flood Plain/Flooding Schools/Universities Water Quality
 Air Quality Forest Land/Fire Hazard Septic Systems Water Supply/Groundwater
 Archeological/Historical Geologic/Seismic Sewer Capacity Wetland/Riparian
 Biological Resources Minerals Soil Erosion/Compaction/Grading Growth Inducement
 Coastal Zone Noise Solid Waste Land Use
 Drainage/Absorption Population/Housing Balance Toxic/Hazardous Cumulative Effects
 Economic/Jobs Public Services/Facilities Traffic/Circulation Other: _____

Present Land Use/Zoning/General Plan Designation:

Click here to enter text.

Project Description: (please use a separate page if necessary)

El Dorado County proposes to amend several General Plan objectives, policies, and implementation measures addressing biological resources and to adopt an Oak Resources Management Plan.

IP Distribution List

County: EL Dorado

SCH# 2015072031

Regional Water Quality Control Board (RWQCB)

- Resources Agency
- Resources Agency
Nadell Gayou
- Dept. of Boating & Waterways
Denise Peterson
- California Coastal Commission
Elizabeth A. Fuchs
- Colorado River Board
Lisa Johansen
- Dept. of Conservation
Elizabeth Carpenter
- California Energy Commission
Eric Knight
- Cal Fire
Dan Foster
- Central Valley Flood Protection Board
James Herota
- Office of Historic Preservation
Ron Parsons
- Dept of Parks & Recreation
Environmental Stewardship Section
- California Department of Resources, Recycling & Recovery
Sue O'Leary
- S.F. Bay Conservation & Dev't. Comm.
Steve McAdam
- Dept. of Water Resources
Resources Agency
Nadell Gayou
- Fish and Game
- Depart. of Fish & Wildlife
Scott Flint
Environmental Services Division
- Fish & Wildlife Region 1
Curt Babcock

- Fish & Wildlife Region 1E
Laurie Harnsberger
- Fish & Wildlife Region 2
Jeff Drongesen
- Fish & Wildlife Region 3
Charles Armor
- Fish & Wildlife Region 4
Julie Vance
- Fish & Wildlife Region 5
Leslie Newton-Reed
Habitat Conservation Program
- Fish & Wildlife Region 6
Tiffany Ellis
Habitat Conservation Program
- Fish & Wildlife Region 6 I/M
Heidi Calvert
Inyo/Mono, Habitat Conservation Program
- Dept. of Fish & Wildlife M
George Isaac
Marine Region

Other Departments

- Food & Agriculture
Sandra Schubert
Dept. of Food and Agriculture
- Depart. of General Services
Public School Construction
- Dept. of General Services
Anna Garbeff
Environmental Services Section
- Delta Stewardship Council
Kevan Samsam
- Housing & Comm. Dev.
CEQA Coordinator
Housing Policy Division

Independent Commissions, Boards

- Delta Protection Commission
Michael Machado

- OES (Office of Emergency Services)
Marcia Scully
- Native American Heritage Comm.
Debbie Treadway
- Public Utilities Commission
Supervisor
- Santa Monica Bay Restoration
Guangyu Wang
- State Lands Commission
Jennifer Deleong
- Tahoe Regional Planning Agency (TRPA)
Cherry Jacques

Cal State Transportation Agency CalSTA

- Caltrans - Division of Aeronautics
Philip Crimmins
- Caltrans - Planning
HQ LD-IGR
Terri Pencovic
- California Highway Patrol
Suzann Ikeuchi
Office of Special Projects

Dept. of Transportation

- Caltrans, District 1
Rex Jackman
- Caltrans, District 2
Marcelino Gonzalez
- Caltrans, District 3
Eric Federicks - South
Susan Zanchi - North
- Caltrans, District 4
Patricia Maurice
- Caltrans, District 5
Larry Newland
- Caltrans, District 6
Michael Navarro
- Caltrans, District 7
Dianna Watson

- Caltrans, District 8
Mark Roberts
- Caltrans, District 9
Gayle Rosander
- Caltrans, District 10
Tom Dumas
- Caltrans, District 11
Jacob Armstrong
- Caltrans, District 12
Maureen El Harake

Cal EPA

Air Resources Board

- All Other Projects
Cathi Slaminski
- Transportation Projects
Nesamani Kalandiyur
- Industrial/Energy Projects
Mike Tollstrup
- State Water Resources Control Board
Regional Programs Unit
Division of Financial Assistance
- State Water Resources Control Board
Karen Larsen
Division of Drinking Water
- State Water Resources Control Board
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality
- State Water Resources Control Board
Phil Crader
Division of Water Rights
- Dept. of Toxic Substances Control
CEQA Tracking Center
- Department of Pesticide Regulation
CEQA Coordinator

- RWQCB 1
Cathleen Hudson
North Coast Region (1)
- RWQCB 2
Environmental Document Coordinator
San Francisco Bay Region (2)
- RWQCB 3
Central Coast Region (3)
- RWQCB 4
Teresa Rodgers
Los Angeles Region (4)
- RWQCB 5S
Central Valley Region (5)
- RWQCB 5F
Central Valley Region (5)
Fresno Branch Office
- RWQCB 5R
Central Valley Region (5)
Redding Branch Office
- RWQCB 6
Lahontan Region (6)
- RWQCB 6V
Lahontan Region (6)
Victorville Branch Office
- RWQCB 7
Colorado River Basin Region (7)
- RWQCB 8
Santa Ana Region (8)
- RWQCB 9
San Diego Region (9)
- Other _____
- _____
- _____
- _____
- Conservancy



Shawna Purvines <shawna.purvines@edcgov.us>

Comments on biological resources GP amendment

1 message

Susan Britting <britting@earthlink.net>

Mon, Aug 17, 2015 at 1:10 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Hi Shawna --

See attached comments on behalf of CNPS and CSNC on GP amendment. I will drop a paper copy at the front desk of the Planning Department this afternoon.

- Sue

--

Susan Britting, Ph.D.
Executive Director
Sierra Forest Legacy

britting@earthlink.net

(530) 295-8210

www.sierraforestlegacy.org**CNPS CSNC comments on bio resources amendment 8-17-15.pdf**

157K



Shawna Purvines <shawna.purvines@edcgov.us>

Attachments now included -- Re: Comments on biological resources GP amendment

1 message

Susan Britting <britting@earthlink.net>
To: Shawna Purvines <shawna.purvines@edcgov.us>

Mon, Aug 17, 2015 at 2:04 PM

Hi Shawna --

In my eagerness to send, I forgot to include the attachments. They are here now. I will drop a paper copy with same at front desk today.

- Sue

On 8/17/2015 1:10 PM, Susan Britting wrote:

Hi Shawna --

See attached comments on behalf of CNPS and CSNC on GP amendment. I will drop a paper copy at the front desk of the Planning Department this afternoon.

- Sue

--

Susan Britting, Ph.D.
Executive Director
Sierra Forest Legacy

britting@earthlink.net
(530) 295-8210

www.sierraforestlegacy.org

--

Susan Britting, Ph.D.
Executive Director
Sierra Forest Legacy

britting@earthlink.net
(530) 295-8210

www.sierraforestlegacy.org



CNPS CSNC comments on bio resources amendment 8-17-15.pdf
2702K



August 17, 2015

Shawna Purvines, Principal Planner
El Dorado Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

Re: Comments on notice of preparation for general plan amendments to biological resources plan components

Ms. Purvines:

We have reviewed the notice of preparation (NOP) for the biological resources policy update to the general plan (GP) and offer the following comments on behalf of the California Native Plant Society and Center for Sierra Nevada conservation.

1) Changes in Objectives 7.4.1 and 7.4.2 and Associated Policies

We raised in earlier comments a concern about the lack of integration between objectives and policies. We remain concerned that the project description in the NOP and supporting documents still does not provide the integration provided by the existing general plan. The project description in the NOP also does not clearly define some terms, e.g., "special-status vegetation communities" or more specifically the "vegetation communities" to which the mitigation ratios in Policy 7.4.2.8 will apply. We ask that the assumptions about which "vegetation communities" that will be subject to the mitigation ratios be clearly stated and evaluated in the draft environmental impact report (DEIR).

We also think that the emphasis on Pine Hill plants in Policy 7.4.1 without providing equal emphasis on other species protected by state and federally de-emphasizes the commitment in the GP to other protected species. The lack of emphasis on other protected species is illustrated by Policy 7.4.2.1 which commits only to coordinating wildlife programs with state and federal agencies. The affirmation from the County in the existing Objective 7.4.1 protect all state and federally recognized rare, threatened or endangered species and their habitat consistent with state and federal law should be retained in the proposed action and preferred alternative.

"Large expanses of native vegetation" are to be "conserved" through the programs implemented in the GP (Policy 7.4.2.8) yet it is unclear which policies under Objective 7.4.2 specifically implement this direction. Fragmentation of habitats through the development centered along Highway 50 has long been known to be a significant impact. We ask that the

DEIR evaluate the impacts of the project description and alternatives on their potential to fragment existing areas of native vegetation in the county. When evaluating expanses of native vegetation, we also ask that you consider habitat patches of all sizes and not arbitrarily limit the evaluation to patches of certain size or exclude areas based on parcel size.

2) In-lieu Fee to Conserve Oak Woodlands

The NOP indicates the County's intent to use the Oak Resources Management Plan and supporting policies to provide an option that allows a project proponent to mitigate for all projects impacts by paying a fee in-lieu of any other mitigations requirements. We do not believe that this mitigation approach in the project description is legally sufficient to reduce significant impacts of development to the extent feasible. We come to this conclusion since the in-lieu fee program does not address mitigation in the area where the principle impacts occur – the Highway 50 development corridor.

Presently, the in-lieu fee program does not include any Priority Conservation Areas (PCAs) in the central portion of the county near Highway 50. Yet we know from presentations made by to the Board of Supervisors (BOS) in February 2015 that there are biological "shortfalls" in the existing PCA system. The analysis provided indicated that the estimated impacts to woodland values cannot be mitigated only by the PCAs. In response, the BOS agreed to allow conservation to occur on lands outside the PCAs and would establish criteria for identifying additional conservation areas.

Having agreed that the locations of the existing PCAs were not by themselves sufficient to address impacts to oak woodlands, the proposed in-lieu fee program (designed solely on the cost to acquire lands in the PACs) is not sufficient to mitigate the impacts on oak woodlands in the areas where development is expected. Because the in-lieu fee does not incorporate the higher cost of the "additional areas" needed to make the PCA strategy sufficient, payment of an in-lieu fee alone cannot be assured to reduce impacts to the extent feasible. Also, the ORMP only states that conservation outside of the PCAs may occur, but fails to identify when it must occur due to the location of project related impacts.

We propose the following as mitigation measures to provide for conservation and to feasibly lessen impacts on oak woodlands:

- Require a combination of on-site mitigation and in-lieu fee for those projects in the central portion of the county that contribute to impacts on oak woodlands; or
- Develop PCAs in the central portion of county that reduce impacts from fragmentation in the central portion of the County and incorporate the acquisition costs of these areas into the in-lieu fee program.

There may well be other options for mitigation measures. Our principle point is that for the in-lieu fee program to be relied upon it must include the costs of all the lands needed to make the

program sufficient to meet the conservation objectives and planning requirements for oak woodlands. We also believe that it is necessary to mitigate project impacts as close as possible to the area of impact.

3) Analysis of the Impacts of Development on Oak Woodland Fragmentation

We ask that you complete a spatial analysis of potential impacts of development on oak woodlands that utilizes the current condition as the baseline. We ask that you not limit the characterization of current condition by arbitrarily defining “large” patches of oak woodland or constraining the sizes of the parcels considered. We note that by accepting in the draft ORMP land dedications of 5-acres or greater having conservation value, any analysis of impacts should include patches of oak woodland at least this size and greater. We would argue that depending on the woodland type (e.g., rarity) and location, patches smaller than 5 acres can be biologically significant.

We also ask that the spatial analysis take into account the variety of woodland types encountered in the county (e.g., species and woodland density). We have attached information on habitat values of oak woodland of various types to inform the evaluation of existing condition and potential impacts.

4) The Project Description is not Stable

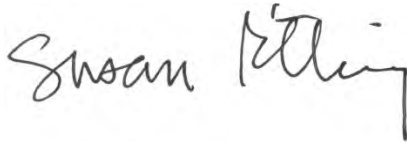
Simultaneous with this amendment of the biological policies and objectives is a targeted GP amendment and zoning ordinance update (TGPA/ZOU). Changes as a result of that process have the potential to increase the impacts on oak woodland resources. We ask that the DEIR analyze both the existing GP and the changes proposed in the TGPA/ZOU to ensure that the analysis for this proposal covers the range of conditions that may be in existence upon implementation.

Conclusion

We believe the project description still lacks clarity about the habitat that will be conserved under objective 7.4.2. We also identified a fundamental flaw in the design of the in-lieu fee program, i.e., its failure to adequately address the “shortfall” in the existing PCAs. We believe these deficiencies are sufficiently severe that the project description should be revised to provide remedies prior to completing a DEIR.

We appreciate the opportunity to comment on the proposed changes to the general plan. Please include us on future notifications as the process moves forward. Please contact Sue Britting, if you have questions or wish to discuss our comments.

Sincerely,



Susan Britting, Ph.D.
Conservation Chair
El Dorado Chapter
PO Box 377
Coloma, CA 95613



Karen Schambach
President
Center for Sierra Nevada Conservation

Attachments: Guidelines for Managing California’s Hardwood Rangelands (1996)

Saving, S. C., & Greenwood, G. B. (2002). The potential impacts of development on wildlands in El Dorado County, California. In *Proceedings of the 5th Symposium on California’s Oak Woodlands: Oaks in California’s Landscape*. USDA Forest Service Gen. Tech. Rep. PSW-GTR-184 (pp. 443-461).

*Guidelines for
Managing California's
Hardwood Rangelands*



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UNIVERSITY OF CALIFORNIA
INTEGRATED HARDWOOD RANGE MANAGEMENT PROGRAM

CALIFORNIA DEPARTMENT OF FISH & GAME

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION

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ON THE COVER: Oaks on a foggy morning — Murphy's Laurelwood Ranch, Sonoma County, California. Photograph courtesy of Michael Brigham, Photographix, 131 E. First Street, Cloverdale, CA 95425. Inside photographs by Michael Brigham, Richard B. Standiford, and Douglas R. McCreary.



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Technical Coordinator: Richard Standiford
Editor: Pamela Tinnin

Contributing Authors (Listed Alphabetically):

Ted Adams, UCD	Doug McCreary, UC - IHRMP
James Bartolome, UCB	Neil McDougald, UC - IHRMP
Mike Connor, UC Sierra Foothill Research & Extension Center	Kevin Shaffer, CDF&G
Lee Fitzhugh, UCD	Tom Scott, UC - IHRMP
Bill Frost, UC - IHRMP	John Shelly, UC Forest Products Laboratory
Barry Garrison, CDF&G	Richard Standiford, UC - IHRMP
Mel George, UCD	Bill Tietje, UC - IHRMP
Greg Giushi, UC - IHRMP	Bob Timm, UC Hopland Research and Extension Center
John Maas, UCD	



Chapter Three

Resource Assessment and General Hardwood Rangeland Values

Primary authors: Richard Standiford, Univ. of California, Berkeley; and Barry Garrison, Calif. Dept. of Fish and Game

General Assessment of Property

Once you have completed an assessment of the goals for your hardwood rangeland property, it is necessary to assess the various resources to determine if it is possible to accomplish these goals, and where management activities should be directed. In this chapter, we will present two general worksheets. Worksheet 3-1 gives a framework for evaluating the overall hardwood rangeland property, while worksheet 3-2 will help you assemble basic information about your hardwood stands. Most of the information for 3-1 is easily available from a general reconnaissance of the property, as well as an evaluation of maps and aerial photos. The section on sources of assistance gives advice on ordering maps and photos if you do not already have these. You should plan on completing this entire resource assessment exercise because it can provide a foundation upon which sound land management actions may be built. This is a good activity for all family members or parties interested in a particular property to participate in together. The information gained in this exercise will ensure that everyone has a common base of knowledge about the existing resources on a property.

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Stand Level Assessment

Once you have completed the general property assessment in Worksheet 3-1, take a look at the information in table 3-1 for some general resource enterprises that may work on your property. These possible enterprises can be compared with those which fit in with your goals developed from the worksheets in chapter 1, to decide on the management potential for your hardwood rangeland property. Then you will be able to direct your attention to detailed discussions in chapters 4 through 9 of this book on various hardwood rangeland enterprises. You may need to collect additional information for a detailed assessment of the individual enterprises. This should help guide your decision about which types of management activities will be best for your situation.

Seen at left is a large madrone tree located on a ranch in Sonoma County. In the background are black oak trees. Madrone trees frequently occur on montane hardwood rangelands.



Worksheet 3-1. Hardwood Rangeland Property Assessment

General Property Information

Property name _____ Parcel size _____ acres Elevation _____ feet

Describe how property was acquired (date, method acquired, original purchase price/basis)

Current Property Value _____

Nature of ownership

- Sole Joint Partnership Other _____

Property location (describe general location of property; use local maps where possible)

Accessibility (describe road access to various parts of the property and locate on map/photo)

Adjacent land uses (describe all adjacent land uses)

- Ag./open space Suburban Rural Residential Urban Public land Protected Areas

Topography (show on map/photo)

Acres on slopes less than 30% _____ Acres on slopes greater than 30% _____

Distance to markets

Distance to urban areas/clientele base for hunt clubs and customers for firewood: _____ miles

Distance to livestock markets: _____ miles

Other markets: _____ miles

Legal/political/social constraints (list ordinances, deed restrictions, zoning, and neighbor concerns affecting property)

Water

Sources of water (describe all sources of water on property and locate on map/photo where appropriate)

- Ponds Water troughs Springs Intermittent streams Perennial streams
 Wells Irrigation ditch Municipal water source Other _____

Water quality concerns (describe and locate areas with specific water quality concerns)

General Vegetation Information

Acres by general vegetation cover types (locate vegetation types on map/photo)

- Grassland _____ acres Oak woodlands _____ acres Shrubland _____ acres
Irrigated agric. _____ acres Residential areas _____ acres Wetlands/riparian zones _____ acres
Other forested type _____ acres Other () _____ acres



Worksheet 3-1. Hardwood Rangeland Property Assessment (cont.)

Current Management/Economic Uses

Grazing/livestock (check current enterprises that apply, and general information below)

- Cow/ealf Stocker Sheep; ewe/lamh Lease grazing to others
- Other livestock _____

Current livestock inventory: ____ head on ____ acres

Season of use (check all that apply): Fall Winter Spring Summer

Other sources of forage: Public land lease Private lease Another ranch Other _____

Tree harvest (describe current tree harvest and marketing programs)

Type of wood products sold: Firewood Sawtimber Biomass Other _____

Species of tree sold: Blue oak Live oak Foothill pine Other _____

Harvest ____ cords every ____ years on ____ acres

Hunt Club (describe any hunt club activities you have)

Game species hunted: Deer Turkey Other gamebirds Pigs Elk Other _____

Lease description (describe hunt club economic arrangement)

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List other economic uses of hardwood rangeland property

Capital improvements (list of all capital improvements and show on map/photo)

Buildings	Fencing	Road systems	Other Improvements

Resource Constraints

Soils (list all soil series, general productivity, and constraints)

Erodible areas (list all eroded and erodible areas and locate on map/photo where possible)

Threatened and endangered plant and animal species



Table 3-1. Matrix of resource assessment and management enterprises (for assessment chapter)

Assessment Criteria	Livestock grazing	Hunt club/ recreation	Conservation land	Wood products	Specialty products
Parcel size	>25 acres	>500 ac (deer); >100 ac. (turkeys)	>100 ac.	>100 ac.	Depends on product
Cover type and pattern	Must have patches of open or low density woodlands for forage	Mixture of dense and open woodlands with large patches of dense connected woodlands	Must have some special cover type being lost near property or a highly desirable habitat	Must have stands with over 40 percent cover	Sufficient amount of vegetation type for product
Water	Need water	Need water	May enhance value	Not important	May be important
Access	Not important	Need road system for transport	Not essential unless public access desired	Need road system for hauling	Need access for transportation and management
Adjacent land use	Urban uses may present social conflicts	Urban uses may present social conflicts: Rely on neighbors for some habitat needs	Opportunities are best in areas close to urban/residential areas	Urban uses may present social conflicts	Urban uses may present conflicts or opportunities depending on product
Topography	Most areas <50 pct. slope	Need areas with <50 pct. slope for access	Slope class has little effect	Operate only in areas with <30 pct. slope	Most likely need areas <30 pct. slope
Distance to market	Unlimited with new video marketing sales	Need to be <120 miles	Generally near to urban areas or areas with some adverse impact	<100 miles	Should be <100 miles to market to minimize transportation
Capital improvements	Fences, water facilities	Not critical	Not critical	Depends on product	Depends on product
Legal constraints	Local ordinances. T&E species	T&E species. hunting regulations	Often restricts future land use; may be constraints on compatible enterprises	Local ordinances. T&E species, deed restrictions. Forest Practice Act	Need to check health codes, zoning restrictions, T&E species
Resource constraints	Need residual biomass	Species of interest should be present in sufficient numbers to support harvest (i.e. turkeys, deer, etc.)	Presence of critical habitat or threatened and endangered species may enhance value	Site must be capable of regeneration from seedlings or sprouting	Need to ensure that "product" management does not disrupt site ecological processes



Assessing Legal Concerns

Today's land management must often comply with numerous laws and regulations that are imposed at all levels - local, state, and federal. Federal laws and regulations are implemented by either the federal agency which has jurisdiction, or are delegated to a state agency. State laws and regulations for the most part are the responsibility of the jurisdictional agency, although responsibilities can be delegated to county or district agencies. Local ordinances are implemented by the county or district agency. An important part of an assessment is finding out which of these legal concerns apply to your situation, and what these require you to do. Some of the different types of laws and regulations you should be investigating are described, as well as where you might find more information.

Water: Water rights and water quality are both the responsibility of the California State Water Resources Board, who further delegate the water quality responsibilities to nine Regional Water Quality Control Boards. Federal laws such as the Federal Clean Water Act, Safe Drinking Act, and Coastal Zone Act are tailored for implementation in California by the Porter-Cologne Act. Water rights are involved when considering pond or spring development and diversions for water supplies. Water rights applications and information for land parcels are obtained at the county recorder's office. Stream water diversions require a "1603 permit" from the California Department of Fish and Game. Water quality considerations for hardwood rangelands most often involve nonpoint source pollution factors, including sedimentation, nutrients, and/or pathogens. Riparian vegetation management is frequently considered along with these other nonpoint source pollution factors.

Wetlands: Wetlands jurisdiction is confusing and landowners and managers should check to see what issues are of local concern and which agency is involved. Laws and regulations are under a state of revision. For most agricultural lands, the Natural Resources Conservation Service (NRCS) has the lead role for wetlands management. In some cases, the Army Corps of Engineers, the US Fish and Wildlife Service, or the California Department of Fish and Game may be the lead agency.

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Air Quality: Any burning activities are under the jurisdiction of local Air Quality Management Districts (AQMD). Check with your local AQMD to determine air quality restrictions that would apply to management of your hardwood rangelands.

Wildlife: The County Agricultural Commissioner handles issues related to controlled materials for predator control. The California Department of Fish and Game is responsible for issuing predation permits for some animals (deer, mountain lions, bear, etc.), and for setting regulations over hunting and fishing. Furthermore, the Department protects species listed as threatened, endangered, or protected by state law, and it has general jurisdiction and public trust responsibility for the state's fish and wildlife and their habitats.

Timber: Most tree species on hardwood rangelands are currently not considered "commercial species" and are not subject to the Forest Practice Rules administered by the State Board of Forestry. However, a number of counties and cities have ordinances that affect the harvest of oak trees on rangelands. Several other counties have voluntary oak tree harvesting guidelines and suggested best management practices. Check with local experts to see what local rules and guidelines apply to your area.

Endangered Species: Both federal and state laws list plants and animals that are threatened or endangered. The US Fish and Wildlife Service has jurisdiction over the federally listed species, while the California Department of Fish and Game has jurisdiction of those listed by the state (see Appendix A and B). Specific circumstances may prohibit certain management practices or changes in land use if they affect a listed plant or animal. Check locally with California Department of Fish and Game, U.S. Fish and Wildlife Service, or UC Farm Advisors for the situation in your area. This is discussed in more detail in chapter 4.

Archaeological Sites: There is increasing public concern about preserving historically and culturally significant



sites. The presence of such sites may impact proposed changes in land use or management. County planning, Community Colleges, State Colleges, and local museums are good sources of information on archaeological sites in your area.

Land Use: A number of land use related issues may influence certain management decisions. The California Land Conservation Act (Williamson Act) contracts with certain counties to provide tax relief for agreeing to not develop land for 10 years. County General Plans often have restrictions on parcel size, land use, and zoning. Easements for utilities, conservation, open space, and wildlife habitat are becoming more common. Other laws and ordinances to be aware of are those relating to the right to farm and fence, trespass laws, as well as private property rights laws.

Livestock: There are a number of laws relating to livestock including: animal identification (branding) law; laws relating to diseases such as TB and brucellosis; and laws concerned with the disposal of dead animals. Your local agricultural commissioner can provide information on each of these.

Professional Certification: The State Board of Forestry has the licensing authority over natural resource professionals to protect the natural resources of the state and to protect the public interest by ensuring competent professional work. Designations for Certified Rangeland Managers (CRM) and Registered Professional Foresters are maintained by the State Board of Forestry. Details on qualifications, duties, and a list of certified professionals are available.

Values for Hardwood Rangeland Stands

Worksheet 3-2 helps you to collect basic information on hardwood rangeland cover type, canopy cover, slope class, and associated habitat elements, and will allow you to look up some general ecological and managerial recommendations. Table 3-2 shows how the information on tree cover type and canopy density can be used to refer you to a specific description. For example, if your stand is a blue oak woodland with a 50 percent canopy cover, you would go to the description for site C, found on page 11 of this chapter.

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Each of the 12 broad site descriptions gives general recommendations and assessments on four categories: oak cover/forestry; recreation; wildlife diversity; and grazing. These are based on some very broad statewide conclusions from practical experiences and research studies. These descriptions, assessments, and recommendations are intended to guide you through some general ideas on the potential uses for hardwood rangeland stands on your property. As you evaluate these recommendations, the rainfall zone, slope class, and presence of wildlife habitat elements such as snags, riparian zones, or downed woody debris, which you are assessing in worksheet 3-2, will allow you to refine these recommendations. These general recommendations must be followed up with site specific information for your local area. Chapters 4 through 9 will help you develop this site specific information for your property.

Table 3-2. Classification for hardwood rangeland sites based on tree cover type and canopy cover.

Tree Cover Type	Tree Canopy Cover			
	10 - 24%	25 - 39%	40 - 59%	60 - 100%
Blue oak woodland, blue oak-foothill pine woodland	A	B	C	D
Valley oak woodland	E	F	G	H
Coastal oak woodland, montane hardwood	I	J	K	L



Worksheet 3-2. Hardwood Rangeland Stand Assessment

Property name _____

Location of Stand (describe general location on property, use maps where possible) _____

Acres in Stand	Elevation		Soil Series	
Aspect	<input type="checkbox"/> North	<input type="checkbox"/> South	<input type="checkbox"/> East	<input type="checkbox"/> West
Av. Annual Rainfall	<input type="checkbox"/> <15"	<input type="checkbox"/> 15 - 25"	<input type="checkbox"/> 25 - 35"	<input type="checkbox"/> >35"
Slope Class	<input type="checkbox"/> Gentle (<30%)		<input type="checkbox"/> Steep (>30%)	
Erosion	<input type="checkbox"/> None	<input type="checkbox"/> Sheet/rill	<input type="checkbox"/> Gullies	
Ground cover	<input type="checkbox"/> <25%	<input type="checkbox"/> 25 - 50%	<input type="checkbox"/> 51 - 75%	<input type="checkbox"/> >75%
Tree Cover Type	<input type="checkbox"/> Blue oak woodland, Blue oak-foothill pine woodland <input type="checkbox"/> Valley oak woodland <input type="checkbox"/> Coastal oak woodland, montane hardwood			
Tree Canopy Cover	<input type="checkbox"/> Minimal (<10%)	<input type="checkbox"/> Sparse (10 - 24%)	<input type="checkbox"/> Open (25 - 39%)	
	<input type="checkbox"/> Moderate (40 - 59%)	<input type="checkbox"/> Dense (60 - 100%)		
Average Tree Size	<input type="checkbox"/> Seedling (<1 in. DBH)		<input type="checkbox"/> Sapling (1 - 6 in. DBH)	
	<input type="checkbox"/> Pole (6 - 11 in. DBH)		<input type="checkbox"/> Small tree (11 - 24 in. DBH)	
	<input type="checkbox"/> Med./Large tree (>24 in. DBH)		<input type="checkbox"/> Multi-layered	
Tree Mortality	<input type="checkbox"/> None	<input type="checkbox"/> Light (<5 % trees)	<input type="checkbox"/> Heavy (>5% trees)	
Regeneration status (check all that apply)	<input type="checkbox"/> none evident	<input type="checkbox"/> Small seedlings (<1' tall)	<input type="checkbox"/> Large seedlings (1 - 3' tall)	
	<input type="checkbox"/> Saplings (3 - 10' tall)			
Shrub canopy cover	<input type="checkbox"/> Minimal (<10%)	<input type="checkbox"/> Sparse (10 - 24%)	<input type="checkbox"/> Open (25 - 39%)	
	<input type="checkbox"/> Moderate (40 - 59%)		<input type="checkbox"/> Dense (60 - 100%)	
Shrub age class (yrs. since fuel reduction)	<input type="checkbox"/> <5 years	<input type="checkbox"/> 5 - 15 years	<input type="checkbox"/> 15 - 25 years	
	<input type="checkbox"/> >25 years			
Habitat elements (check all that apply)	<input type="checkbox"/> Brush piles	<input type="checkbox"/> Snags	<input type="checkbox"/> Dead and down logs	
	<input type="checkbox"/> Riparian zones			
Water sources	<input type="checkbox"/> None	<input type="checkbox"/> Perennial streams	<input type="checkbox"/> Intermittent streams	
	<input type="checkbox"/> Springs	<input type="checkbox"/> Water developments	<input type="checkbox"/> Other _____	

Threatened and endangered plants and animals present: _____



Site A: Blue oak woodland, blue oak foothill pine woodland; 10 – 24 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 20 to 170 cubic feet per acre, and 10-year growth rate ranges from 2 to 40 cubic feet per acre. These are not good areas for commercial harvesting activities due to very low stocking and low growth rates. Many open blue oak savannahs lack oak regeneration, especially on low elevation and/or low rainfall zones. Managers should compare current levels of mortality to regeneration. In areas where mortality exceeds regeneration, it may be necessary to adopt management procedures to encourage regeneration.

Recreation Assessment:

These areas offer only limited opportunities for hunt clubs in their current condition because of low cover and acorn production. Medium populations of quail can be expected, which can be improved by providing additional water and cover with brush piles. It may be desirable to increase cover if feasible to improve habitat for deer and turkeys.

Wildlife Diversity Assessment:

These open blue oak savannah stands contain both grassland and woodland wildlife species. In general, the habitat is good for open grassland species such as western meadowlark, but marginal for woodland species such as Pacific-slope flycatchers. Habitat elements, such as riparian zones, snags, trees with cavities, and large woody debris, have an important effect on biodiversity by making habitats more complex. More complex habitats support greater numbers of wildlife. According to the California Wildlife Habitat Relationships system (CWHHR) there are 21 amphibian species, 33 reptile species, 73 mammal species, and 137 bird species which are predicted to occur in these habitats if various elements occur. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur in these habitats falls to 10 amphibian species, 31 reptiles, 39 mammals, and 101 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 3,000 pounds per acre with a range from 1,500 to 4,500 pounds. In low rainfall areas, the presence of scattered trees has been found to increase overall range forage production. However, thistles and other undesirable plants may occur under the tree canopy, although this is not common. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site B: Blue oak woodland, blue oak foothill pine woodland; 25 – 39 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 170 to 425 cubic feet per acre and the 10-year growth is 25 to 70 cubic feet per acre. These areas are generally not good for commercial firewood harvesting. The existing stocking level is good for diverse resource values, and managers should not take canopy density much lower. Some light thinning may be possible in dense clusters, but avoid using equipment on areas with over 30 percent slope to minimize erosion. Perhaps 40 to 85 cubic feet could be harvested per acre in higher productivity sites every 20 years. Many areas like these have an absence of oak regeneration, especially on low elevation and/or rainfall areas. Managers should assess current levels of mortality and compare this to seedling and sapling regeneration. In areas where mortality exceeds regeneration, it may be necessary to adopt management procedures to encourage regeneration.

Recreation Assessment:

These areas have good overall habitat for mule and black-tailed deer, wild pigs and California quail. Habitat can be improved by enhancing acorn production, planting legumes, and maintaining these through proper livestock and deer management. Any reductions in oak cover will also decrease habitat value for many desired game spe-



cies. Areas with slopes greater than 30 percent will have lower values for hunt clubs because of the difficult access.

Wildlife Diversity Assessment:

These blue oak woodland stands support both grassland and woodland wildlife species. In general, the habitat is fairly good for a large number of wildlife species. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 21 amphibian species, 31 reptile species, 64 mammal species, and 128 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 10 amphibian species, 29 reptiles, 30 mammals, and 95 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 3,000 pounds per acre with a range from 1,500 to 4,500 pounds. In low rainfall areas, the presence of scattered trees has been found to increase overall range forage production. However, thistles and other undesirable plants may occur under the tree canopy, although this is not typical. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site C: Blue oak woodland, blue oak foothill pine woodland; 40 – 59 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volumes range from 425 to 1200 cubic feet per acre. Ten year growth ranges from 50 to 130 cubic feet per acre. Firewood harvest potential exists, but avoid using equipment on slopes over 30 percent to minimize erosion. Harvest levels should approximately equal growth to maintain existing oak cover for diverse resource values. Approximately 85 to 250 cubic feet per acre can be harvested every 20 years from these stands. Ensure adequate oak regeneration after harvest.

Recreation Assessment:

These areas are excellent for medium to large populations of mule and black-tailed deer, squirrel, wild pigs, wild turkeys, mourning dove, and band-tailed pigeons. On areas with less than 30 percent slope, the terrain is excellent for hunter access. Careful tree thinning can complement game habitat. Where controlled fire can be used, it can help stimulate palatable shrub browse. Seeding clover and other legumes and maintaining it through grazing will benefit deer, turkey and quail.

Wildlife Diversity Assessment:

These blue oak woodland stands support a large number of wildlife species. The higher tree density makes these areas less desirable for open grassland species such as western meadowlarks and western kingbirds, but very desirable for woodland species such as Pacific-slope flycatchers and wild pigs. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. 19 amphibian species, 28 reptile species, 64 mammal species, and 128 bird species are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or water sources, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 10 amphibian species, 26 reptiles, 30 mammals, and 95 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 2,000 pounds per acre with a range from 1,000 to 2,800 pounds. In areas with less than 20 inches of annual rainfall and during drought years on higher average rainfall areas, range productivity and forage nutritional value is often enhanced by the presence of this level of oak cover. In higher rain-



fall areas, the shading effect of the canopy suppresses total production. Thistles and other undesirable plants may occur under the tree canopy, although this is not typical. Potential for range improvement on slopes less than 30 percent through seeding, fertilization, and grazing management may increase productivity by two- to three-fold where production is currently at the low end of the scale. Tree thinning will increase forage production under the removed canopy in the higher rainfall zones of the state (over 20 inches per year).

Site D: Blue oak woodland, blue oak-foothill pine woodland; 60 – 100 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 1200 to 3800 cubic feet per acre. Estimated growth ranges from 170 to 510 cubic feet per acre over 10 year. Firewood harvest can be carried out to permanently reduce cover and improve habitat for selected wildlife species and range productivity. Areas with less than 30 percent slope are a good place to prioritize for harvesting on the ranch. 500 to 2500 cubic feet per acre can be harvested from these stands to permanently reduce stands to 40 to 60 percent canopy cover after 20 years. If stand openings are absent, you may wish to make some small openings through the firewood operation to encourage blue oak regeneration.

Recreation Assessment:

These areas provide excellent habitat for mule and black-tailed deer, squirrel, wild pig, wild turkey, mourning dove, and band-tailed pigeons. On areas with over 30 percent slope, hunter access is too difficult for commercial operations. Thinning stands back to 50 percent cover in a patchy pattern can enhance deer habitat. Turkeys do best with a dense canopy, and California quail do best with less tree canopy, but both species prefer dense shrub layers and ample water sources.

Wildlife Diversity Assessment:

These dense blue oak woodland stands support a large number of wildlife species, although the higher tree density makes these areas undesirable for open grassland species. A few species such as Cooper's hawks and orange-crowned warblers, actually prefer the dense conditions found in these stands. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 19 amphibian species, 25 reptile species, 62 mammal species, and 102 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 10 amphibian species, 23 reptiles, 28 mammals, and 77 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species. Some thinning may help enhance overall biological diversity.

Grazing Assessment:

Average forage production capability is 900 pounds per acre with a range from 500 to 1,500 pounds. The dense tree cover suppresses forage production, leaving less available for livestock operations. Thinning stands on slopes less than 30 percent will increase forage production under the removed canopy for about 15 years by 50 to 100 percent especially on poor sites. After tree thinning, seeding, fertilization, and grazing management may increase forage production. Little improvement potential exists on steeper slopes.

Site E: Valley oak woodland; 10 – 24 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 40 to 340 cubic feet per acre. Growth ranges from 17 to 80 cubic over 10 years. The canopy in these open valley oak savannahs needs to be maintained. These areas are poor candidates for any harvest activity. Managers should encourage the recruitment of young seedlings to sapling size through management activities.

Recreation Assessment:

These areas offer only limited opportunities for hunt clubs in their current condition because of low shrub cover



and acorn production. Medium populations of quail can be expected, which can be improved by providing additional water and cover with brush piles. It may be desirable to increase cover, if feasible, to improve habitat for deer and turkeys.

Wildlife Diversity Assessment:

These open valley oak savannah stands contain both grassland and woodland wildlife species. In general, the habitat is good for open grassland and open woodland species such as western meadowlark, and marginal for woodland species such as Pacific-slope flycatcher. The presence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 19 amphibian species, 32 reptile species, 72 mammal species, and 132 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 8 amphibian species, 30 reptiles, 38 mammals, and 99 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 3,500 pounds per acre with a range from 2,000 to 5,000 pounds. In low rainfall areas, the presence of scattered trees has been found to increase overall range forage production. Thistles and other undesirable plants may occur under the tree canopy, although this is not typical. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site F: Valley oak woodland; 25 – 39 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 340 to 1100 cubic feet per acre. Ten year growth ranges from 60 to 150 cubic feet per acre. Although these are not good areas for commercial harvesting, there is some potential for light thinning due to the relatively high productivity of valley oak stands. It may be desirable to utilize trees being lost to mortality if not needed to provide snags in the stand. Perhaps 40 to 170 cubic feet per acre could be harvested every 20 years on slopes less than 30 percent. The existing stocking level is good for diverse resource values, and managers should not take canopy density much lower. Attempts should be made to encourage recruitment of oak seedlings to sapling size through management practices. Rapid growth of seedlings is possible.

Recreation Assessment:

These areas have good overall habitat for mule and black-tailed deer, wild pigs and California quail. Habitat can be improved by enhancing acorn production, planting clover and other legumes, and maintaining these through proper livestock and deer management, and enhancing shrub cover. Any reductions in oak cover will also decrease habitat value for most commercial game species. Areas with slopes greater than 30 percent will have lower values for hunt clubs because of the difficult access.

Wildlife Diversity Assessment:

These valley oak woodland stands have both grassland and woodland wildlife species. In general, the habitat is fairly good for a large number of wildlife species. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 19 amphibian species, 30 reptile species, 71 mammal species, and 128 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 8 amphibian species, 28 reptiles, 37 mammals, and 96 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.



Grazing Assessment:

Average forage production capability is 3,000 pounds per acre with a range from 1,500 to 4,500 pounds. In low rainfall areas, the presence of scattered trees has been found to increase overall range forage production. However, thistles and other undesirable plants may occur under the tree canopy, although this is not typical. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site G: Valley oak woodland; 40 – 59 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 1100 to 2900 cubic feet per acre. Ten year growth ranges from 120 to 420 cubic feet per acre. Some thinning on a sustainable basis is possible, especially in stands with large numbers of small trees to improve individual tree growth rate. There is some possibility to utilize harvested trees for solid wood products, such as white oak lumber or barrel staves. 170 to 680 cubic feet per acre could be harvested every 20 years on stands with less than 30 percent slope. It is important to ensure that adequate oak regeneration results after the harvest.

Recreation Assessment:

These areas are excellent for medium to large populations of mule and black-tailed deer, squirrel, wild pigs, wild turkeys, mourning dove, and band-tailed pigeons. On areas with less than 30 percent slope, the terrain is excellent for hunter access. Some careful tree thinning can complement game habitat. Where controlled fire can be used, it can help stimulate palatable shrub browse. Seeding clover and other legumes and maintaining these through grazing, as well as increasing shrub cover, will benefit deer, turkey and quail.

Wildlife Diversity Assessment:

These valley oak woodland stands support a large number of wildlife species. The tree density makes these areas less desirable for open grassland species such as western meadowlarks and western kingbirds, but very desirable for woodland species such as Pacific-slope flycatchers and orange-crowned warblers. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 17 amphibian species, 27 reptile species, 63 mammal species, and 123 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 8 amphibian species, 25 reptiles, 29 mammals, and 93 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 2,000 pounds per acre with a range from 1,000 to 2,800 pounds. On such sites, the shading effect of the canopy usually suppresses total production. Thistles and other undesirable plants may occur under the tree canopy, although this is not typical. Potential for range improvement on slopes less than 30 percent through seeding, fertilization, and grazing management may increase productivity by two- to three-fold where production is currently at the low end of the scale. Tree thinning will increase forage production under the removed canopy in the higher rainfall zones of the state (over 20 inches per year).

Site H: Valley oak woodland; 60 – 100 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 2900 to 5100 cubic feet per acre. Estimated ten year growth rate ranges from 220 to 420 cubic feet per acre. Harvest could be carried out to increase individual tree diameter and crown growth rate on areas with less than 30 percent slope and high stem density and small diameter trees. This may help improve acorn production and create conditions favorable for seedling establishment. Seedlings are likely to be absent or very slow growing due to little sunlight reaching the ground. Harvest levels of 420 to 1700 cubic feet per acre can be



carried out every 20 years. There is some possibility to utilize harvested trees for solid wood products, such as white oak lumber or barrel staves. It is important to ensure that adequate oak regeneration results after the harvest.

Recreation Assessment:

These areas offer good opportunities for habitat for mule and black-tailed deer, western gray squirrel, wild pig, wild turkey, mourning dove, and band-tailed pigeons. On areas with over 30 percent slope, hunter access is too difficult for commercial operations. Thinning stands to 50 percent cover in a patchy pattern may enhance deer habitat if shrub cover is increased. Turkeys do best with a dense canopy, and California quail do best with somewhat less canopy.

Wildlife Diversity Assessment:

These dense valley oak woodland stands support a large number of wildlife species. The tree density makes these areas undesirable for open grassland species. A few species such as orange-crowned warblers and house wrens, actually prefer the dense conditions found in these stands. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 17 amphibian species, 24 reptile species, 61 mammal species, and 96 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 8 amphibian species, 22 reptiles, 27 mammals, and 74 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species. Thinning may enhance biological diversity.

Grazing Assessment:

Average forage production capability is 1,200 pounds per acre with a range from 800 to 1,500 pounds. The dense tree cover suppresses forage production, leaving less available for livestock operations. Thinning stands on slopes less than 30 percent will increase forage production under the removed canopy for about 15 years by 50 to 100 percent at lower levels of current production. After tree thinning, improvement potential through seeding, fertilization, and grazing management may increase forage production. Little improvement potential exists on steeper slopes.

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Site I: Coastal oak woodland, montane hardwood; 10 – 24 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 35 to 250 cubic feet per acre and growth ranges from 17 to 50 cubic feet every 10 years. These areas are not good locations for firewood harvests due to very open stocking. Regeneration concerns are not as pronounced in live oak stands due to rapid resprouting in most areas of the state.

Recreation Assessment:

These areas may offer only limited opportunities for hunt clubs in their current condition because of low tree cover. Medium populations of quail can be expected, which can be improved by providing additional water and cover with brush piles. It may be desirable to increase cover if feasible to improve habitat for mule and black-tailed deer and turkeys. The presence of sprouting live oaks allows greater latitude in quail management than deciduous oaks with similar cover.

Wildlife Diversity Assessment:

These open live oak savannah stands contain both grassland and woodland wildlife species. In general, the habitat is good for open grassland species such as western meadowlark and western kingbirds, and marginal for woodland species such as Pacific-slope flycatcher and western gray squirrels. The presence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 18 amphibian species, 35 reptile species, 74 mammal species, and 135 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush



piles on the site, the number of vertebrate wildlife species predicted to occur on these habitats falls to 7 amphibian species, 33 reptiles, 38 mammals, and 101 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 2,700 pounds per acre with a range from 1,800 to 4,000 pounds. Oak canopy in these lightly stocked areas may enhance forage production in low rainfall areas or during drought years. These low canopy levels have only minimal impact on forage production in higher rainfall zones, although thistles and other undesirable plants may occasionally occur under the tree canopy. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site J: Coastal oak woodland, montane hardwood; 25 – 39 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 250 to 850 cubic feet per acre, with a ten year growth of 50 to 100 cubic feet per acre. Rapid regrowth of stump sprouts and fairly high growth potential of live oaks would allow some commercial harvest to take place. Harvest levels of 85 to 250 cubic feet per acre every 20 years are possible on areas with less than 30 percent slope. It is important to ensure that regeneration from seedlings or stump sprouts is adequate to replace trees being harvested.

Recreation Assessment:

These areas provide good overall habitat for deer, wild pigs and California quail. Habitat can be improved by enhancing acorn production, planting clover and other legumes and maintaining these through proper livestock and deer management, and enhancing shrub cover. Some selective thinning of dense stands may improve habitat for some game species, although leaving some denser areas will maintain habitat values for species using denser cover. If brush is present, brush piles can considerably improve quail habitat. Areas with slopes greater than 30 percent will have lower values for hunt clubs because of the difficult access.

Wildlife Diversity Assessment:

These live oak woodland stands support both grassland and woodland wildlife species. In general, the habitat is fairly good for a large number of wildlife species. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 18 amphibian species, 34 reptile species, 74 mammal species, and 131 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur in these habitats falls to 7 amphibian species, 32 reptiles, 38 mammals, and 98 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

Average forage production capability is 2,500 pounds per acre with a range from 1,500 to 3,500 pounds. Tree cover will cause some suppression of winter and spring production except in areas of low rainfall. Thistles and other undesirable plants may sometimes occur under the tree canopy. Potential for range improvement on slopes less than 30 percent through seeding, fertilization, and grazing management may increase productivity by two- to three- fold where production is currently at the low end of the scale. Tree thinning may increase forage production under the removed canopy in the higher rainfall zones of the state (over 20 inches per year).

Site K: Coastal oak woodland, montane hardwood; 40 – 59 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 850 to 2200 cubic feet per acre. Growth rates of 100 to 190 cubic feet per acre are expected every 10 years. These stands are excellent candidates for sustainable wood harvest operation if slopes are



less than 30 percent. There is some potential for utilization of trees for sawtimber in larger straight-stemmed trees. Harvest levels of 170 to 510 cubic feet per acre every 20 years are possible. It is important to ensure that regeneration from seedlings or stump sprouts are adequate to replace trees being harvested.

Recreation Assessment:

These areas are excellent for quail and moderately good for deer, wild pigs, wild turkeys, and band-tailed pigeons. On areas with less than 30 percent slope, the terrain is excellent for hunter access. Some careful tree thinning can complement game habitat, although some dense areas should be left for cover and breeding purposes. If brush is absent, brushpiles can improve quail habitat considerably. If possible, prescribed burning can stimulate shrub layer browse. Seeding clover and other legumes and maintaining it through grazing, and enhancing shrub cover will benefit deer, turkey and quail.

Wildlife Diversity Assessment:

These live oak woodland stands support a large number of wildlife species. The tree density makes these areas less desirable for open grassland species such as western meadowlarks and western kingbirds, but very desirable for woodland species such as Pacific-slope flycatchers and orange-crowned warblers. The occurrence of more complex habitats, through the presence of habitat elements such riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 16 amphibian species, 30 reptile species, 66 mammal species, and 126 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur in these habitats falls to 7 amphibian species, 28 reptiles, 30 mammals, and 95 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species.

Grazing Assessment:

32 Average forage production is 2,000 pounds per acre, ranging from 1,000 pounds to 2,800 pounds. Forage production is usually suppressed by tree canopy except in low rainfall zones. Thinning may increase forage under some removed canopies by 100 to 200 percent. Brush understory may occur in some locations and is suitable for management burns. Potential for range improvement through seeding, fertilization, and grazing management may increase productivity where production is currently at the lower end of the scale and available soil and soil moisture is not limiting.

Site L: Coastal oak woodland, montane hardwood; 60 – 100 percent canopy cover

Oak Cover/Forestry Assessment:

Oak volume ranges from 2200 to 5100 cubic feet per acre. Growth ranges from 190 to 310 cubic feet every 10 years. These very dense stands could benefit from thinning to improve overall biological diversity, acorn production, and forage yields. Restrict harvest to areas with less than 30 percent slope. Harvest levels of 510 to 1700 cubic feet per acre can be carried out every 20 years. There is some potential to utilize larger diameter logs for sawtimber, especially if boles have few branches. It is important to ensure that regeneration from seedlings or stump sprouts are adequate to replace trees being harvested.

Recreation Assessment:

These areas offer good opportunities for habitat for deer, western gray squirrel, wild pig, wild turkey, mourning dove, and band-tailed pigeons. On areas with over 30 percent slope, hunter access is too difficult for commercial operations. Thinning stands back to 50 percent cover in a patchy pattern may enhance deer habitat if shrub and herbaceous cover are improved. Turkeys do best with a dense canopy, and California quail do best with somewhat less canopy, but both prefer moderately dense shrub layers.

Wildlife Diversity Assessment:

These dense live oak woodland stands support a large number of wildlife species. The tree density makes these areas undesirable for open grassland species. A few species such as orange-crowned warblers, actually prefer the dense conditions found in these stands. The occurrence of more complex habitats, through the presence of habitat



elements such as riparian zones, snags, trees with cavities, and large woody debris, has an important effect on biodiversity. There are 16 amphibian species, 26 reptile species, 64 mammal species, and 99 bird species which are predicted to occur by CWHR on the most diverse habitats in these stands. If there are no riparian zones or sources of water, no snags or cavity trees, and no large woody debris or brush piles on the site, the number of vertebrate wildlife species predicted to occur in these habitats falls to 7 amphibian species, 24 reptiles, 28 mammals, and 76 bird species. This points to the importance of maintaining diversity in the habitat elements present in the stand to provide for the highest possible diversity of wildlife species. Some thinning may help enhance overall biological diversity.

Grazing Assessment:

Average forage production capability is 900 pounds per acre with a range from 500 to 1,500 pounds. The dense tree cover suppresses forage production, leaving less available for livestock operations. Thinning stands on slopes less than 30 percent will increase forage production under the removed canopy for about 15 years by 50 to 100 percent at lower levels of current production. After tree thinning, improvement potential through seeding, fertilization, and grazing management may also increase forage production. Little improvement potential exists on steeper slopes.



Chapter Four

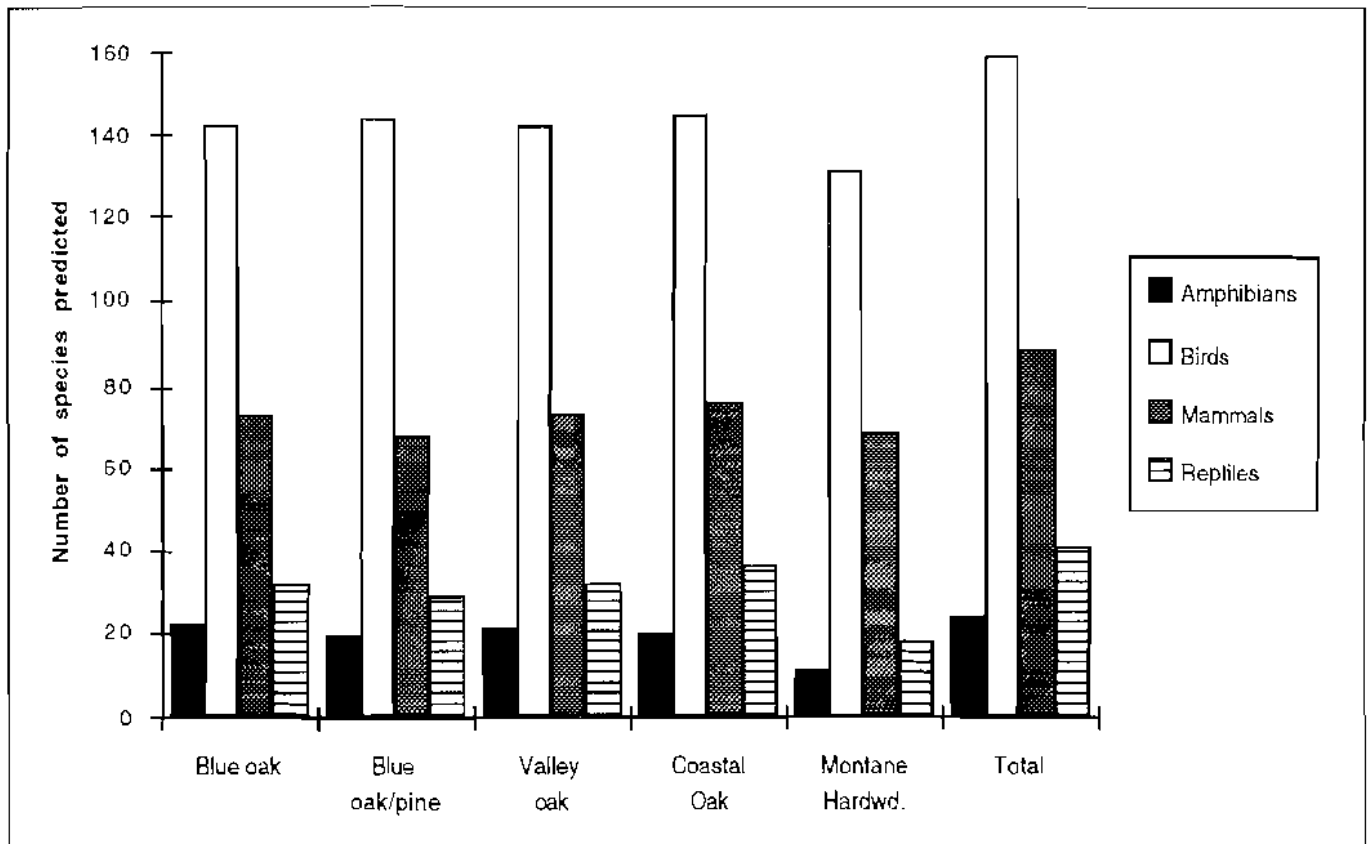
Oak Woodland Wildlife Ecology, Native Plants, and Habitat Relationships

Primary authors: Greg Giusti, Univ. of California, Mendocino Co.; Tom Scott, Univ. of California, Berkeley; Barry Garrison, Calif. Dept. of Fish and Game; and Kevin Shaffer, Calif. Dept. of Fish and Game

The five habitat types occurring in California's hardwood rangelands (also known as oak woodlands) provide habitat for at least 313 species of birds, mammals, reptiles, and amphibians; more than 2000 plant species; and an estimated 5000 species of insects. Figure 4-1 graphically shows the diversity of vertebrate wildlife species predicted for each of the five major habitat types described in chapter 2. A complete list of all 313 species and their habitat associations is given in Appendix A. The management and long-term sustainability of California's hardwood rangeland habitats will best be served if ecological components and their inter-relationships are recognized and addressed by owners and managers. This chapter provides information on oak woodland ecology

Figure 4-1. Numbers of amphibians, birds, mammals, and reptiles predicted to occur in the five California hardwood rangeland habitats by Version 5.0 of the California Wildlife Habitat Relationships System (CWHRS). This list only includes those species in the CWHRS System that are predicted to use one or more tree size and canopy cover classes for breeding, feeding, and/or cover.

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and wildlife-habitat relationships to serve as a guide for land management activities. The presence and sustainability of specific plant and animal species on hardwood rangeland properties needs to be evaluated with scientific information.

Wildlife Habitat Relationships

Habitats are the specific locations where the factors needed for wildlife survival and reproduction are provided. Successful long-term perpetuation of California's hardwood rangeland wildlife is best achieved by managing habitats because they are the foundation on which wildlife depend. California's five major hardwood rangeland vegetation types (see Chapter 2) and associated riparian types provide habitat for the largest number of vertebrate wildlife species in the state, when compared to habitats dominated by conifers, shrubs, grasses and wetlands. Hardwood rangeland habitats must be able to supply food, water, protection from weather and predators, and locations to reproduce in order to support viable wildlife populations.

In eastern Tehama County, deer use of the lower elevation blue oak and blue oak-foothill pine woodlands are an example of wildlife habitat relationships. These areas are important winter habitat with food and cover for deer that have migrated from higher elevation conifer and meadow habitats around Mount Lassen where they spend the spring and summer to produce fawns. Their autumn migrations take them through montane hardwood habitats where they feed on acorns and browse to gain weight for the strenuous rutting period where bucks (male deer) compete for breeding opportunities. Breeding takes place during the fall and early winter on the lower elevation oak woodlands. Does (female deer) feed on acorns and herbaceous vegetation of oak woodland wintering habitats to provide energy for fawning. These activities are critical and their populations would be dramatically reduced if hardwood habitats failed to provide these key breeding, food, and cover resources.

Habitat Scale Concepts

One way to understand the management complexities of hardwood rangelands is to look at the relationships among its component parts. Wildlife biologists typically evaluate woodland habitats on five levels, providing a convenient system for explaining woodland ecology. Although each level has its applications, it is critical for you to select the management level that is appropriate for your goals. From smallest to largest, these levels are:

1. *Individual*: The interactions of individual plants or animals with their surroundings is the most tangible level of woodland ecology. Survival and reproduction are results that you can observe from the interactions of individual plants or animals.
2. *Population*: The interactions among individuals of the same species and the interactions with their woodland environment form the population level of organization. A population is typically described by the shared characteristics of its individuals, including where they occur, the range of things they eat, when and how they produce young, and how they disperse or migrate. We use this composite picture to define the wildlife habitat relationships between a species and the areas where it occurs. Although this composite picture is somewhat abstract, population data allows biologists to predict the consequences of management activities in woodlands.
3. *Community*: The interactions among species that occur together in a community form the next step in the hierarchy. Species interactions define this level; some species prey on others, some compete with each other for resources, some share resources or recycle nutrients for one another, and some interact in hundreds of other ways. Examples include a deer browsing on oak seedlings, bees pollinating wildflowers, or jays planting acorns. Community interactions are often difficult to detect, and may occur over long time periods.
4. *Ecosystem*: The physical processes and structure that link living things to each other and their ecosystem is the next level of organization. Ecosystems are often defined by their resident or dominant species, such as the hardwood rangeland vegetation types discussed previously. This level of management is somewhat abstract, with boundaries that often blend into adjacent ecosystems.
5. *Landscape*: The geographic patterns of all the other levels creates the landscape level of organization. Some aspects of landscapes are quite tangible, such as the boundaries of a watershed. Others are abstract, such as the patterns of gene flow across the oaks in the coast ranges.

If you protect a 400-year-old oak in your backyard, then you are operating at the individual level of conservation. However, it is often impractical for landowners to manage their woodlands tree by tree. If your goal is to



maintain a specific density or age distribution of oak trees on your property, then you're working at the population level. If you control exotic plants to reduce their effect on oak seedling survival, then you're altering community level interactions among your understory plants. Altering fire frequency to re-establish oak understory would be an ecosystem level of action. Finally, fires burn many different patterns across a landscape, from small patches to catastrophic sweeps of multiple watersheds. Using prescribed burning to create a mosaic of burned and unburned habitats would be a landscape management action.

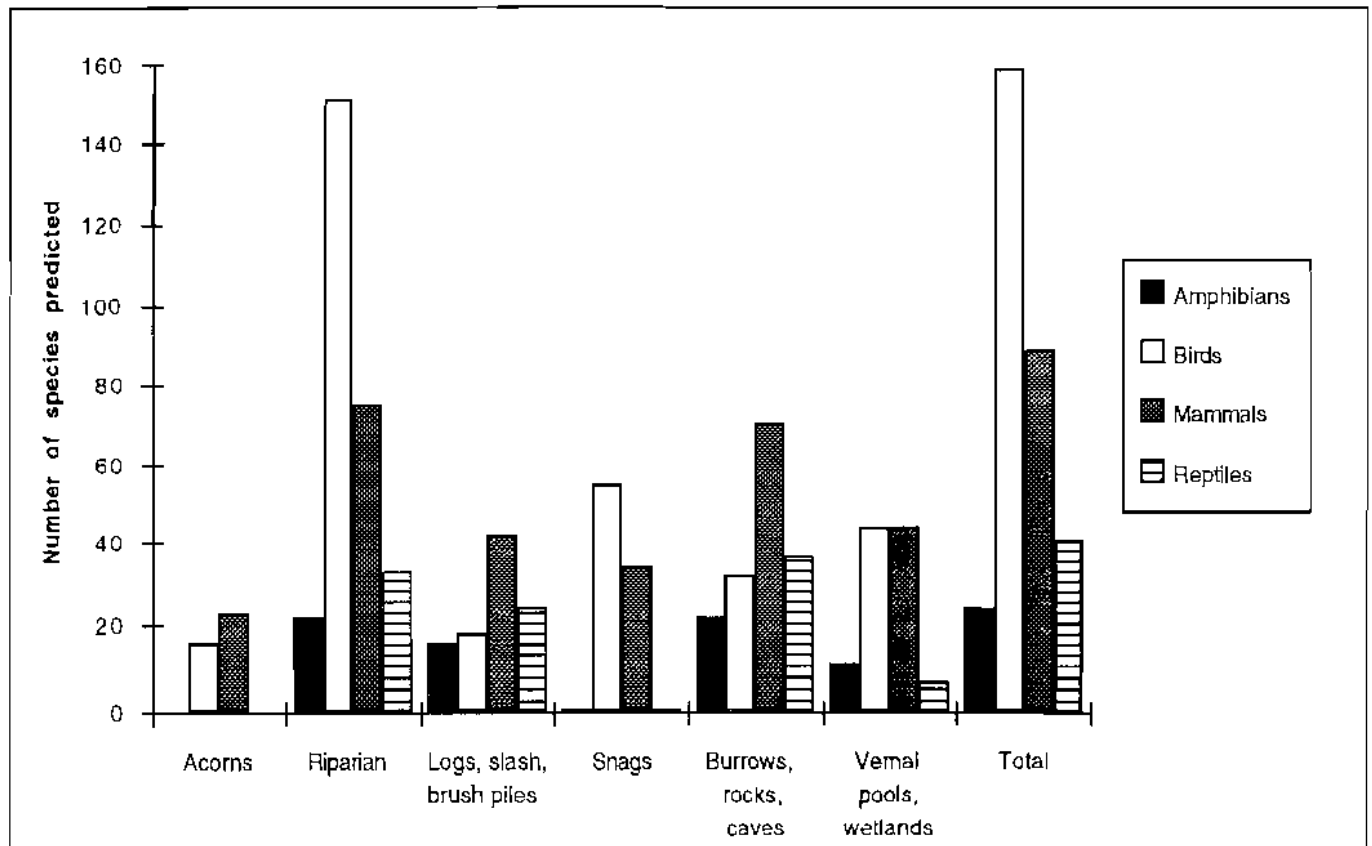
Habitat Structure

Favorable hardwood rangeland habitats supply food, water, and cover to sustain wildlife species. Each habitat element provides unique niches, favoring particular wildlife species. Conversely, the absence of a particular element in a habitat may limit species diversity.

Examples of elements of a hardwood rangeland habitat that are important to consider include riparian zones, vernal pools, wetlands, dead and downed logs and other woody debris, brush piles, snags, rock outcroppings, and cliffs. Figure 4-2 gives the relative number of wildlife species that are predicted to use various elements found on hardwood rangelands. The complete species list in Appendix A shows the specific species that are predicted to use these elements on hardwood rangeland habitats.

Riparian areas are those habitats influenced by the presence of adjacent seasonal or yearlong watercourses. They tend to have a higher biomass level of vegetation due to better water availability throughout the growing season. In general, they have higher tree crown cover, a more diverse assortment of vegetation species, and herbaceous material that stays green later into the summer. As shown, riparian habitat elements are used by almost 90 percent of all hardwood rangeland wildlife species, illustrating the importance of conserving this habitat element where present.

Figure 4-2. Number of amphibians, birds, mammals, and reptiles predicted to use several important habitat elements of California hardwood rangeland habitats by Version 5.0 of the California Wildlife Habitat Relationships System (CWHRS). This list includes those species in the CWHRS System that are predicted to use one or more of these elements for breeding, feeding, and/or cover.





Over one-third of all bird species on hardwood rangelands make use of snags, or standing dead trees in the stand. This suggests that management strategies to maintain an appropriate number of snags will result in greater wildlife species diversity.

Another important aspect of hardwood rangeland habitat structure is the spatial arrangement of the vegetative cover. The vertical and horizontal distribution of vegetation are both readily visible and easily measured.

Vertical Distribution

Vegetation often occurs in layers from grasses, to shrubs, to trees. This vertical layering affects the duration and intensity of light reaching the ground, which in turn, affects the insects, plants and subsequently those vertebrates dependent on them. Multi-layered habitats provide a diversity of elements offering more niches for wildlife. Most hardwood rangeland species, including California quail, western fence lizards, rufous-sided towhee and acorn woodpeckers, depend on multi-layered vegetation structure. Land managers should consider the consequences of activities that tend to simplify or eliminate vegetation layers.

Horizontal Distribution.

The distribution of different types of habitat or successional stages across a landscape creates diversity in all habitat elements needed for breeding, food and cover. Considering horizontal distribution is important for species that rely on large blocks of land, such as black-tailed deer, mountain lions, and red-tailed hawks.

Alteration of the horizontal distribution of habitats across large landscapes from fire, weather, residential development, rangeland conversion, or oak harvesting, can result in smaller, fragmented habitat patches. Small, isolated patches can eventually become *islands* of habitat that have a similar biological function to oceanic islands. The movement of populations of species isolated on these islands are restricted, so these populations are more susceptible to local extinction than populations which have free access to larger habitat patches. Less mobile species, such as many amphibians, have greater risks of local extinctions than those with greater mobility, such as bird species.

Maintenance of free interaction between reproducing adults is key to the survival of any wildlife species. Connecting patches of habitat through habitat *linkages* or *corridors* improves the interaction of breeding individuals between otherwise isolated populations. These linkages reduce predation and minimize impacts of harsh environmental conditions. Riparian areas often serve as linkages to hardwood rangeland habitats.

Resources Change Through Time

Important wildlife habitat attributes from oaks such as acorn-producing trees, snags, logs, and large and/or dead branches require considerable amounts of time to develop, even though they may persist for decades once they develop these characteristics. Land use practices that remove these attributes without allowing replacement will negatively alter the wildlife community. For example, it may take almost a century for most oaks to grow from acorn-produced seedlings to mature trees capable of producing abundant acorn crops. Oaks must be mature and several centuries old before they are large enough to have large diameter branches. Also, dead branches often result from heart rot which typically affects older, less healthy trees that are more susceptible to decay agents. An oak tree typically must live its entire life of several centuries before it dies and becomes a snag. Once developed, snags persist for many decades before they fall down and become logs. Logs will persist for many decades until they decay and become part of the soil. Furthermore, individual trees may produce more acorns, have more large branches, and make larger snags and logs than other trees. Therefore, trees with these desirable characteristics should be identified and retained so that wildlife communities will benefit. For example, observing acorn production of individual trees for two or three years over several weather cycles should allow most landowners to identify trees that produce large acorn crops relative to other trees on their lands (see chapter 9).

Habitat Use

The functional relationships among plants, animals and their physical environments are the foundation of ecosystems. Most wildlife species can use a variety of habitat types. The deer mouse is an example of a habitat generalist. It is thought to be the most widely distributed and abundant mammal in North America, and occurs in virtually every terrestrial vegetation type. Deer mice feed on a wide variety of plant and animal materials. They store food for use during periods of shortages, and build nests in almost any form of confined cover, such as rocks, leaves, or logs. The deer mouse can get its water from free water sources, dew, or from its food.

However, some wildlife species are so specialized that they occur in a relatively small number of habitats. The acorn woodpecker is an example of a habitat specialist. Although it has a widespread distribution, its habitat use



patterns are relatively restricted, coinciding with acorn-producing tree and shrub oaks in oak and oak-pine forests and woodlands.

Every wildlife community consists of both habitat generalists and specialists. Habitat generalists are more tolerant of a variety of land use practices than the habitat specialists. The challenge to any manager or landowner is to ensure that habitat needs are provided for all members of the wildlife community. This can be achieved by designing land use activities that ensure the continued presence of habitats and habitat elements needed by all members of the wildlife community.

For example, consider a large tract with a mosaic of oak woodlands, brush patches, riparian areas, savannas, pastures and grasslands. Cyclic, seasonal vegetation changes provide a diversity of food resources, including forbs, insects, fruits, and seeds, including acorns, that allow species with differing foraging strategies to co-exist. Birds that frequent oak woodlands throughout the year, both resident and migratory species, will partition these resources to minimize competition for them. If the necessary habitat elements are present, herbivores (plant eaters), insectivores (insect eaters), carnivores (meat eaters), omnivores (plant and meat eaters) and even highly specialized piscivores (fish eaters) can co-exist on this tract because of the way each group selects its food.

Species grouped according to a particular habit are referred to as a *guild*. (see Figure 4-3). For example, herbivorous species that eat seeds and are restricted to habitat edges are in a single guild. This includes song sparrows, California towhees, and rufous-crowned sparrows. If the necessary food and habitat elements are removed from an area, all species associated with this guild will also be removed. Similarly, insectivorous species that forage on wood would be negatively impacted if all standing and dead trees were removed from the site. Pileated woodpeckers, white-breasted nuthatches, and hairy woodpeckers are examples of species in this guild.

Wildlife use habitats at two broad levels usually defined as *macro* and *micro* levels. Management activities must consider both levels to sustain the biological integrity of hardwood rangeland habitats. The *macro*-level consists of all the habitats and their inter-relationships. *Macro*-level characteristics include habitat patch size and shape, edges with other habitats, and adjacent habitats. *Macro*-level features are used over a wide area during a time period that ranges from several weeks to several years.

Micro-level habitat characteristics are more focused on the individual features of the plants and the physical environment within an individual stand of trees. These features include species of plants, snags, rocks, water, acorns and other food items, tree size, and amount of vegetation cover. *Micro*-level elements are items an individual wildlife species uses throughout their daily and yearly cycles for breeding, feeding, and cover.

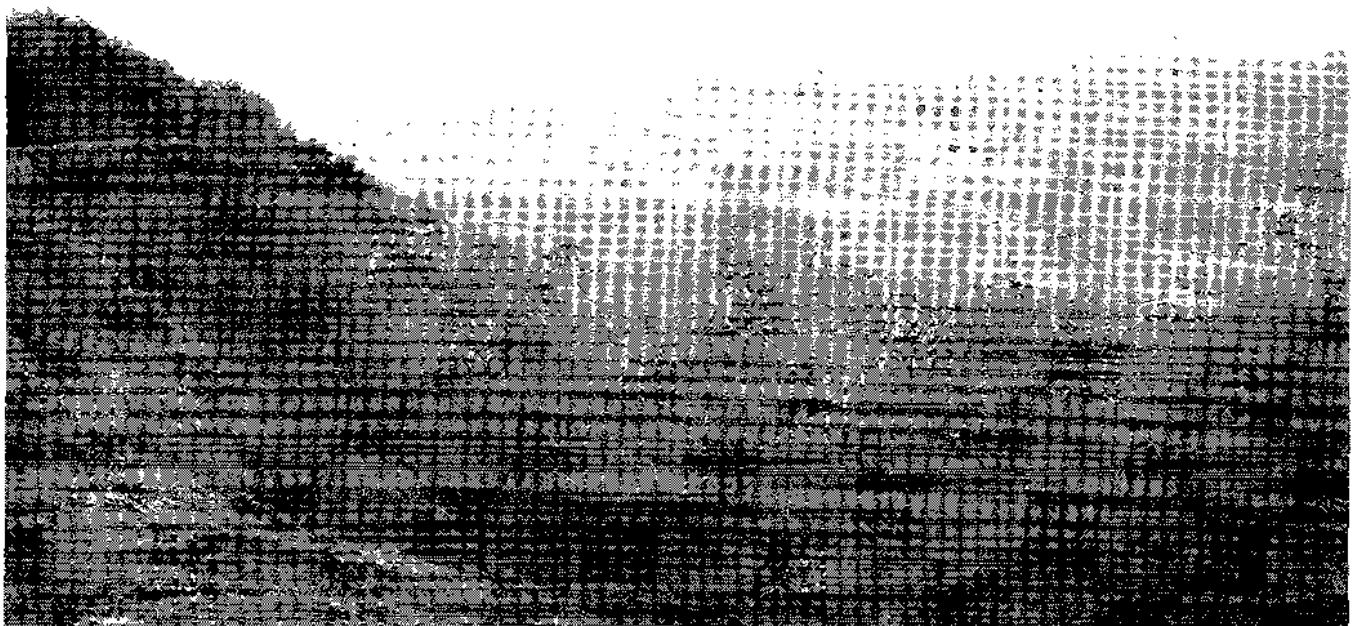
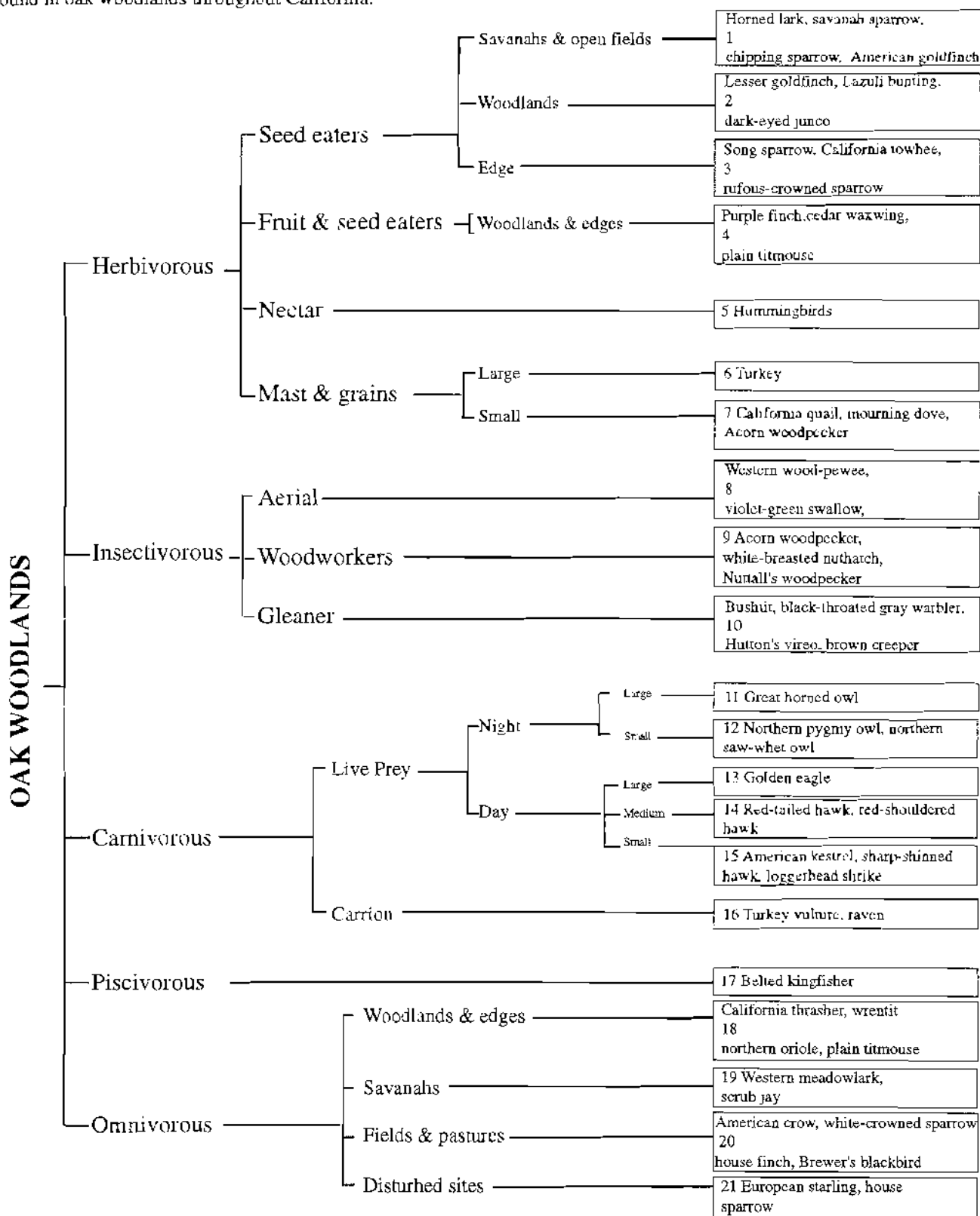




Fig. 4-3. An example of resource partitioning based on food habits of some land-dwelling birds that are commonly found in oak woodlands throughout California.





Wildlife respond to many different environmental characteristics when they select habitats to use. The three primary characteristics known to be important to many wildlife are: 1) habitat structure (e.g., size, height, amount of vegetation cover); 2) vegetation species composition; and 3) presence of *micro*-habitat elements.

Acorn woodpeckers are a good example illustrating the selection for the three broad habitat characteristics: structure, composition, and elements. They are found almost exclusively in open canopied, tree-sized habitats with substantial numbers of oaks, demonstrating selectivity in the structure and composition of their habitat. Their selection of habitats dominated by tree-sized oaks to provide live trees and snags large enough for granaries and nest cavities, demonstrates habitat selection on the basis of micro-habitat element characteristics. All three characteristics are inter-related to varying degrees, and the overall importance of a particular characteristic varies by season and geographic location.

Studies have also demonstrated the importance of habitat characteristics in California's hardwood habitats to other species. The importance of blue oak woodlands to wintering deer in Tehama County were discussed earlier in this chapter. Black bears showed greater use of habitats dominated by canyon live oak in the San Bernardino Mountains in spring, summer, and fall because these habitats provide cool environments, sufficient water, and low levels of human activity.

Wildlife habitat use changes over time and across landscapes. The migratory and wintering habitat use patterns of deer previously discussed is a good example. Black-tailed deer along the Coast Ranges are year-round residents and do not have pronounced migratory patterns. Yet, these resident deer use many habitats throughout the year, relying on oak-dominated habitats when acorns are available.

Golden eagles display fairly pronounced locational habitat use patterns. In hardwood rangelands, their nesting habitat includes area with large diameter, tall foothill pines with large branches, or tall cliffs with ledges for nests. Therefore, their nesting habitats are typically blue oak woodlands, blue oak-foothill pine woodlands, shrublands, or other habitats located in canyons or along cliffs. However, they feed in grasslands and open oak-dominated woodlands with sufficient populations of prey such as California ground squirrels, black-tailed hares, other medium-sized mammals, and ground-dwelling birds. These different nesting and feeding habitats must occur together over a large area in order to support a pair of nesting golden eagles.

Native Plants within Oak Woodlands

Oak woodlands are a diverse and dynamic ecosystem in California. In fact, for many people, oaks are a symbol of this State. Within oak woodlands, the several species of oak are the most striking plants present. But they represent only a small portion of the plant diversity which occurs in oak woodlands. As stated above, over 2,000 species of California native plants occur in oak woodlands. The scope of this book does not allow for detailed description of the many native plants of oak woodlands. For the more common plants associated with oak woodlands, refer to Appendix C. This section provides information on fundamental habitat relationships of plants that are considered to be sensitive to land use practices in oak woodlands. These species are a small, but special portion of those 2,000+ plant species that coexist with oaks.

Sensitive Plants

There are 130 known sensitive plant species that occur in oak woodlands. Sensitive is defined as plant species that are considered rare, threatened, or endangered within California, whether or not they are state or federally listed. Many of these plants are naturally rare because unique biological needs limit their distribution. Others may have been affected by human activities such that they have become rare, threatened, or endangered within California. Appendix B lists 130 sensitive plant species and their known oak habitat relationships. If a particular oak habitat exists on your property, you may have a particular sensitive plant species depending on the plants' distribution and special habitat relationships (see *Investigating the Occurrence of Sensitive Plants*)

Different Designations of Sensitive Plants

Appendix B designates sensitive species in three categories: federally listed, state listed, and California Native Plant Society (CNPS) categories 1B and 2. Eight oak woodland plant species are federally listed as threatened or endangered, while the State of California has listed 42 as rare, threatened, or endangered. The federal Endangered Species Act establishes protection for federally listed species. Plants state-listed as rare, threatened, or endangered are protected under the Native Plant Protection Act or the California Endangered Species Act. CNPS maintains an inventory that evaluates native plants on their rarity, endangerment, and distribution. This chapter lists only two of their five categories: 1B and 2. Category '1B' is defined as *rare or endangered in California and elsewhere*, while



category '2' is defined as *rare and endangered in California; more common elsewhere*. For a more thorough list of sensitive plant species and a detailed explanation of CNPS's inventory system, you may refer to the electronic or printed California Native Plant Society's INVENTORY of Rare and Endangered Vascular Plants of California (5th Edition). You may also wish to attain a copy the California Department of Fish and Game's (CDFG) *Special Plants List*.

Investigating the Occurrence of Sensitive Plants

As stated above, the list of plants in Appendix B does not reveal whether a particular plant species does occur on your land. The table does inform you if a particular plant has been found in a particular oak habitat(s). Additionally, the table lists unique ecological characteristics of each plant species. This information is a starting point for you to determine the possibility of one or more rare plants being found on your land. In many cases, the type, periodicity, and intensity of the land use determines whether rare, native plants exist, just as is the case for wildlife.

When determining what plants occur on your land, surveying your land for all plants (*floristic survey*) allows you gain detailed knowledge about the occurrence, distribution, and abundance of all plants, whether they be oaks, common trees, shrubs, grasses, and herbs, or sensitive species. In some cases, plant survey information may already exist for your property. In addition, there are other sources of useful information. These sources would be the local university or college, the regional resource conservation district, individuals or firms involved in biological consulting, your regional CDFG Plant Ecologist or District Biologist, and CDFG's Natural Diversity Database (NDDB). NDDB maintains location information for sensitive plants, animals, and natural communities for all of California. Regional CDFG staff have access to NDDB information, and you may contact NDDB directly if you wish to investigate what is already known about sensitive plants in your area. However, if the NDDB does not include any known records of sensitive plants on your property, this is no guarantee that sensitive plants do or do not occur there. Only plant surveys can determine that.

Management of Lands for Sensitive Native Plants

In a nutshell, there is no recipe for maintaining an area's native flora. For certain species with certain needs, avoidance or minimum activity for a period of time may be crucial (i.e., removing cattle while plants are flowering and setting seed). On the other hand, management for native plants might involve a certain activity for a particular period of time (i.e., prescribed burning to allow seeds to sprout; maintaining grazing so to reduce exotic grasses which in turn allows native species to exist, etc.). Each sensitive plant has specific needs, and it is best to consult with your local botanists, field biologists, and other plant and vegetation experts when deciding on land management activities to meet your needs and the needs of the sensitive plants that may exist on your land.

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A Worksheet for Evaluating Woodland Habitat Impacts

There are many ways landowners can manage their oak woodlands for wildlife or to maintain native plants. One can choose to manage on the basis of vegetation composition, percent canopy cover, or even a single wildlife species such as deer. Yet, when assessing various management enterprises, land managers should consider a broad scale approach to management. This *system-wide* management approach considers both ecological and economic effects prior to implementing a management plan. This is really just a new way of saying "don't put all of your eggs in one basket".

When evaluating the impacts of various management actions, there are often unforeseen consequences. It is easy to recognize the consequences of harvesting individual oaks (e.g., they become firewood), but more difficult to recognize the potential consequences at the population (e.g. loss of acorn producers), community (loss of bird nesting locations), ecosystem (increased light to forage plants), and landscape (increased edge with grasslands or loss of habitat linkages) levels. Worksheet 4-1 is provided to help assess these broader effects by examining the resources present in the area proposed for management and the anticipated changes of the proposed enterprise to the woodland ecosystem. It is suggested that you work through this process for any enterprise you are considering, to allow you to assess the concepts presented in this chapter.

This worksheet is designed to help assess the impact of the proposed hardwood rangeland enterprise on a particular habitat element. In column one of the worksheet, you should assess the particular habitat element in the area proposed for a particular enterprise. Column two is used to describe how significant that element in the enterprise area is in relationship to the broad region or landscape surrounding the enterprise area. Column three



is used to describe anticipated changes that are expected to occur as a result of the particular enterprise. Column four is used to list the anticipated regional impacts expected as a result of undertaking a specific enterprises. In order to undertake this exercise, you will need a map of your property and basic knowledge of its resources. It is best to have an aerial photograph of your land and the surrounding landscape, but you may use other estimates if a photograph is unavailable. The material you have developed from chapter 3 will help you get started. Instructions on the use of the worksheet and definitions of terms used will follow.



The Potential Impacts of Development on Wildlands in El Dorado County, California¹

Shawn C. Saving² and Gregory B. Greenwood³

Abstract

We modeled future development in rapidly urbanizing El Dorado County, California, to assess ecological impacts of expanding urbanization and effectiveness of standard policy mitigation efforts. Using raster land cover data and county parcel data, we constructed a footprint of current development and simulated future development using a modified stochastic flood-fill algorithm. We modeled combinations of constraints from the 1996 County General Plan and parcel data—slope, stream buffers, oak canopy retention, existing development, public ownership, regional clustering, and acquisition programs—and overlaid development outcomes onto the land cover data. We then calculated metrics of habitat loss and fragmentation for natural land cover types. Rural residential development erodes habitat quality much more than habitat extent. Policy alternatives ranging from existing prescriptions to very restrictive regulations had marginal impact on mitigating habitat loss and fragmentation. Historic land parcelization limits mitigation of impacts by the current General Plan prescriptions that only apply when a parcel requires subdivision before development. County-wide ordinances were somewhat more effective in preserving habitat and connectivity. These solutions may not offer enough extra protection of natural resources to justify the expenditures of “political capital” required for implementation. Custom, parcel based acquisition scenarios minimized habitat loss and maximized connectivity. Better analysis of public policy and planning design may be a more effective “smart growth” tool than generic policy prescriptions.

Introduction

The California Department of Finance projects the State's population to increase from 34 million to over 45 million by the year 2020 (California Department of Finance 2001). During the past 20 years, the spatial distribution of California's population has also changed as more people moved to the periphery of the dense Los Angeles and San Francisco Bay metropolitan areas and to the historically lower density Central Valley and Sierra Nevada foothills (U.S. Census Bureau 1991, 2001). Since the eastern half of many of these Sierran counties is predominantly national forest above 1,500 meters, the vast majority of this additional population will reside in the lower elevation foothills, a region dominated by oak hardwood savannah. The hardwood rangeland region of the Sierra, extending from 100 to 1,500 meters in elevation, is almost exclusively privately owned and has historically been used for grazing and some dryland farming (Duane 1996, Greenwood and others 1993). The switch from large parcel, low to moderate intensity agriculture to small parcel, high intensity urban and ex-urban land use promises great change to the natural

¹ An abbreviated version of this paper was presented at the Fifth Symposium on Oak Woodlands: Oaks in California's Changing Landscape, October 22-25, 2001, San Diego, California.

² GIS Specialist, Fire and Resource Assessment Program, Department of Forestry and Fire Protection, State of California, 1920 20th St., Sacramento, CA 95814.

³ Science Advisor, Resources Agency, State of California, 1416 9th St., Sacramento, CA 95814.

ecosystems of the foothills region. These 5-acre to 40-acre ranchettes will likely contain the majority of naturally functioning hardwood landscape in the near future.

One such region of rapid change is El Dorado County in the Central Sierra Nevada Mountains. We conducted a policy analysis of the El Dorado County General Plan by modeling development in the western, foothill portion of the county. We were interested in two topics: 1) ecological impacts on wildland habitat resulting from expanding urbanization under the County's General Plan; and 2) the effectiveness of commonly proposed land use policy initiatives to mitigate those impacts. Several models exist for projecting development expansion at the county and regional scale (Landis 1994, 1995, 1998a, 1998b; Johnston 2000, 2001; US Environmental Protection Agency 2000). These models focus on dense urban development (1 - 2 acre parcels or smaller) using economic formulas of land values and empirically derived "attractors" of development such as proximity to existing infrastructure (roads, sewer, water, etc.) to guide development probabilistically and incrementally over time. However, in rural areas (5 - 40 acre parcels), where attractors are less obvious or more difficult to model, or where tractable economic factors are not the primary drivers behind development decisions, these models generally ignore rural development or resort to random allocation (Johnston 2001). In El Dorado County, the General Plan designates 23 percent of the county for development in this rural density range. In order to adequately predict impacts in these regions, we needed to place the existing and potential footprint of development as explicitly as possible. We developed a cell-based, empirical model that characterizes development patterns from existing development and then extends those patterns across the landscape onto vacant lands. Because we were primarily concerned with the relative impacts of the county's General Plan and alternative policy proposals, we chose to extend development to full "buildout" of the General Plan, approximately a 20-year time horizon, rather than incorporating an economic component which might allow the phasing of development over time.

We began by determining where development existed in 1996, the most recent year for which digital parcel data were available. We then predicted where development would be at full buildout of the General Plan under various scenarios (e.g., uncontrolled vs. smart growth, strict vs. loose environmental land use policy, and combinations thereof). For any given scenario, our model can assess the implications for a variety of issues ranging from natural ecosystem functions to local and regional economies to general quality of life. At present, we have analyzed a wide range of land use policies in the County and their relative impacts on two major areas of concern, wildland habitat quality (characterized by extent, fragmentation, and configuration) and economic costs and losses due to wildfire. This paper presents our research on the former.

Study Area

El Dorado County is a predominantly rural county in the Central Sierra region of California stretching from the floor of the Central Valley east of Sacramento to the crest of the Sierras and the southern portion of Lake Tahoe (mean latitude 38.75° N, mean longitude 120.5° W). The county's 463,500 hectares cover a wide diversity of habitats including low elevation annual grasslands and blue oak (*Quercus douglasii*) savannah at the western edge, mid-elevation oak woodlands and mixed oak-conifer-shrub complexes in the central region, and Sierran mixed conifer forest dominated by



Figure 1—Location of study area with major highways and cities.

ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*Pinus jeffreyi*), and lodgepole pine (*Pinus contorta*) in the eastern half. According to the 2000 Census (U.S. Census Bureau 2001), 156,299 people lived in El Dorado County at an overall density of 33.7 persons/km². However, because the eastern half of the county is almost entirely national forest except for settlements on the southern littoral edge of Lake Tahoe, the average density for private lands is 63.3 persons/km². Housing density is 28.9 units/km². Our study area encompasses 220,954 ha and is restricted to the predominantly privately owned western foothills region of the county (*fig. 1*).

From the time Gold Rush pioneers settled in the 1850s, the population of El Dorado County fluctuated between 6,000 and 20,000 people until the 1950s. Since that time the decadal growth rate has ranged from 20 percent to 100 percent, with growth rates of 46.8 percent and 24.0 percent in the 1980s and 1990s, respectively (U.S. Census Bureau 1991, 2001). State Department of Finance projections indicate this magnitude of growth continuing for the next two decades resulting in 252,900 residents by 2020 (California Department of Finance 2001).

Methods

Study Design

The purpose of this study was to evaluate the potential impact of El Dorado County's General Plan on wildland habitat in the county (primarily oak woodland) and how policy alternatives might mitigate these impacts. We modeled several

alternative scenarios, three iterations each, by varying one or more of the General Plan prescriptions, as well as the possible spatial configuration of future development (*table 1*), and overlaying the resulting footprint of development onto the land cover data and measuring the core extent, fragmentation and configuration of wildland. As we intended this work to be directly relevant to issues facing the county, many of these scenarios were devised from suggestions by residents and county officials. Thus, we did not attempt to analyze every possible combination of variables, especially as it became apparent that one of them was not proving to be effective in mitigating the impacts on wildland.

We used three main geographic information system (GIS) datasets as inputs: 1) 1990 Hardwood Rangelands Pixel Data (Pacific Meridian Resources 1994) for land cover and current footprint of development (*fig. 2a*); 2) 1996 County Assessor's parcel data for land tenure information; and 3) 1996 Adopted County General Plan for future potential development densities (*fig. 2b*). We converted the parcel and General Plan data to 25 m raster grids and snapped them to the Hardwoods data. We conducted all spatial modeling with ESRI's ARC/INFO and GRID software (vers. 7.1.1 - 8.1) on UNIX workstations except the fragmentation metrics, which we calculated using APACK v. 2.15 (Mladenoff and DeZonia 2000) on a Windows2000 operating system. An in-depth detail of our methodology has been previously published on the CDF-FRAP website (Greenwood and Saving 1999). Here, we present only a basic overview.

Creating the Footprint of Development

In order to model future development, we first had to construct a pixel-based *footprint of current development* which showed as explicitly as possible where structures and other human disturbances to the natural landscape exist. Remote sensing-based pixel data, such as the Hardwoods data, serve this purpose to some degree, especially in rural areas (Merenlender and others 1998, Ridd and Liu 1998), but provide no context of land use. Such data also miss development obscured by tree canopy and tend to confuse some urban and non-urban land cover types (e.g., rock outcrops and concrete) (Bruzzone and others 1997, Fisher and Pathirana 1990, Quarmby and Cushnie 1989). From the parcel data we determined the land use of each parcel and thus derived two binary layers—development status (*developed* or *vacant*) and intensity of use (*intense* or *not intense*) at the parcel level. For *developed* and *intense* parcels smaller than 1 hectare (2.5 acres), we included the entire parcel in the footprint. However, for larger parcels we turned to the Hardwoods data to identify specific areas of human disturbance within the parcel. We compared the classes Urban and Other (U/O) from the Hardwoods data to the development status of the parcel data. Where a U/O pixel(s) existed inside a *developed* parcel, we included those U/O pixels in the *footprint of current development*. Where a U/O pixel(s) existed in a *vacant* parcel, we considered those pixels "false positives" and did not include them in the *footprint of current development*, although they did remain in the land cover layer as Barren. For *developed* parcels with no U/O pixel(s), we simulated a pattern of development in the parcel using the same technique to project future development patterns (see below). Thus, we created a picture of current development composed of three elements: 1) small, intensely used parcels; 2) scattered pixels of development in larger parcels; and 3) stochastically placed pixels in developed parcels within which we could not determine the explicit location of development (*fig. 2c*).

Table 1—Descriptions of the combinations of restrictions used for each scenario tested.

Scenario	Slope/Stream Restrictions		Canopy Retention ¹		Other Restrictions		Total Area (ha)	
	Description	Extent Area (ha)	Description	Extent Area (ha)	Description	Extent Area (ha)	Restricted ⁶	Restricted ⁶
500	Present Condition	-	-	-	-	-	-	-
503	25 m stream setbacks, < 40% slope	subdiv. 19,567	as per GP subdiv.	5,980	-	-	-	122,774
504	25 m stream setbacks, < 40% slope	all 26,983	as per GP subdiv.	5,980	-	-	-	128,389
505	50 m stream setbacks, < 40% slope	subdiv. 23,319	as per GP subdiv.	5,980	-	-	-	125,988
506	50 m stream setbacks, < 40% slope	all 31,819	as per GP subdiv.	5,980	-	-	-	132,694
507	25 m stream setbacks, < 40% slope	subdiv. 19,567	as per GP subdiv.	5,980	Clustering ³	LDR, subdiv.	12,526	122,774
508	25 m stream setbacks, < 40% slope	subdiv. 19,567	as per GP subdiv.	5,980	Clustering ⁴	LDR, subdiv.	12,526	122,774
509	25 m stream setbacks, < 40% slope	subdiv. 19,567	Increased ²	7,096	-	-	-	123,920
513	25 m stream setbacks, < 40% slope	subdiv. 19,567	as per GP all	6,409	-	-	-	123,368
514	25 m stream setbacks, < 40% slope	all 26,983	as per GP all	6,409	-	-	-	128,944
515	50 m stream setbacks, < 40% slope	subdiv. 23,319	as per GP all	6,409	-	-	-	126,564
516	50 m stream setbacks, < 40% slope	all 31,819	as per GP all	6,409	-	-	-	133,217
520	50 m stream setbacks, < 40% slope	all 31,819	as per GP all	6,409	Clustering ⁴	LDR, subdiv	12,526	133,127
543	25 m stream setbacks, < 40% slope	subdiv. 19,657	as per GP subdiv.	5,980	Acquisition ⁵	AOC	2,071	124,513

¹ Canopy retention restricts development by limiting the amount of development. In most cases, this does not mean complete restriction but rather a reduction in density only (table 2). See Greenwood and Saving, 1999.

² For details, see Greenwood and Saving, 1999.

³ Proportion (B) of developed cells increased from 9% to 14%. Adjacency (C) increased from 55% to 95%.

⁴ Proportion (B) of developed cells increased from 9% to 14%. Adjacency (C) increased from 55% to 98%.

⁵ We manually selected parcels to be restricted from development in Areas of Concern (AOC).

⁶ Includes all restrictions plus existing developed parcels, parcels closed to development, public ownership, and areas designated Open Space (OS) in the General Plan.

Impacts of Development—Saving and Greenwood

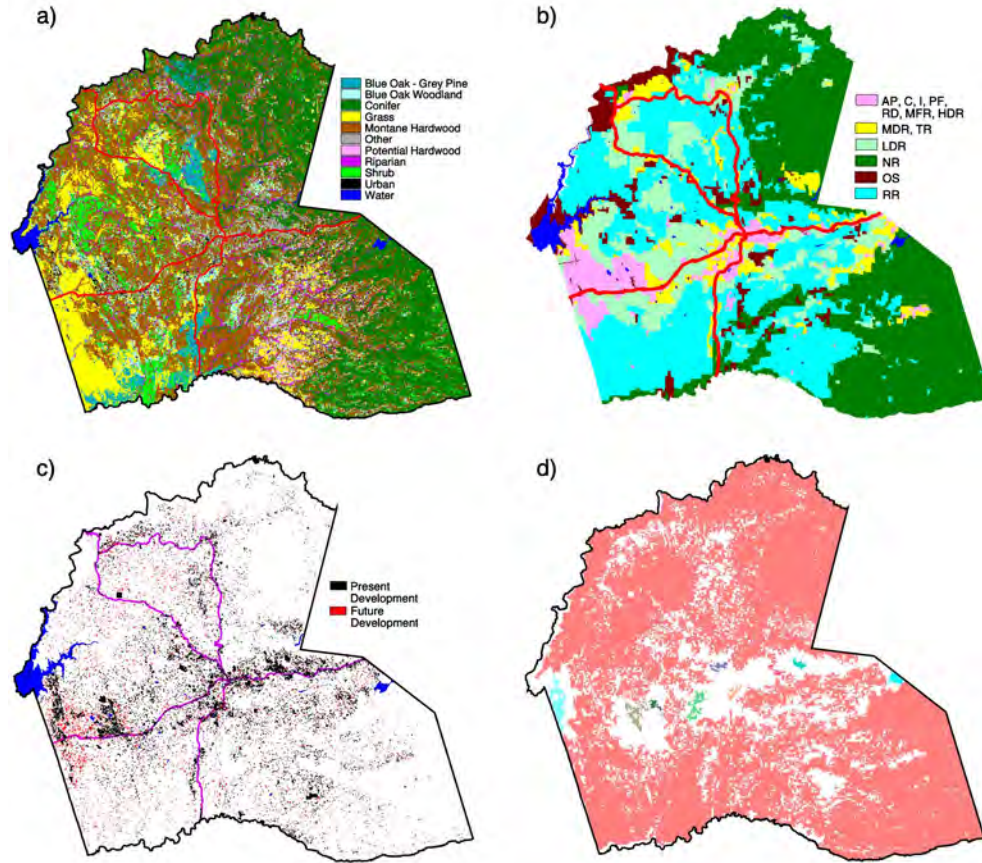


Figure 2—a) Land cover types from 1990 Hardwoods Pixel Data (Pacific Meridian Resources 1994), b) 1996 El Dorado County Adopted General Plan land use classes collapsed to 6 categories (see *table 2* for land use codes), c) footprint of current and future development under General Plan scenario (503), and d) map of current wildland habitat in the study area.

The first step in creating the *footprint of future development* required knowing where development could *not* occur. From the General Plan we derived a restriction status for each parcel. A parcel was *closed to future development* if it were already developed and already at the minimum allowable lot size for that General Plan density class. Alternatively, a parcel was *open to development with restrictions* imposed by the General Plan (i.e., discretionary permit review) if it were *developed* or *vacant* but at least twice as large as the allowable minimum lot size, meaning the lot could be further subdivided. Finally, a parcel was *open to development without restriction* (i.e., ministerial review) if it were *vacant* and already at the minimum allowable lot size for that General Plan density class and therefore could not be subdivided further.

The General Plan contained three major restrictions applying to discretionary permit review that we were able to model spatially – 25 m (1 pixel) stream setbacks,⁴

⁴ The Adopted General Plan calls for 100' stream setbacks. Since our model is raster based, we used a one pixel (25 m) buffer as the closest estimate.

Impacts of Development Saving and Greenwood

Table 2—Canopy retention guidelines from Adopted General Plan. Values represent percentage of canopy that must be retained for each combination of General Plan Land Use Class and Current Oak Canopy Closure percentage. Where 100 percent of the canopy must be retained, no development can occur on oak pixels.

General Plan land use class	Current oak canopy closure (pct)				
	≤ 19	20-39	40-59	60-79	80-100
Multi-family Residential (MFR)	90	85	80	70	60
High Density Residential (HDR)	100	90	80	70	65
Medium Density Residential (MDR)	100	90	80	70	65
Low Density Residential (LDR)	100	100	90	85	80
Rural Residential (RR)	100	100	100	95	90

no development on slopes over 40 percent, and an oak canopy retention guideline based on the density class of development and the existing canopy cover (*tables 1, 2*). We created a separate mask for each of these restrictions which could be turned on or off or, in order to simulate an ordinance, be applied to all parcels *open to development* regardless of restriction class. We also created similar masks reflecting 50 m stream buffers and increased canopy retention. Lastly, some areas were off limits to development in every scenario—areas classified as Urban or Other in the Hardwoods data, parcels that were *developed* and *closed to future development*, public lands, private reserves, easements, and open space designated in the General Plan.

Once we determined where development was allowable, we then determined the spatial configuration of development at the 25 m pixel scale. McKelvey and Crocker (1996) developed a stochastic flood-fill algorithm to create theoretical landscapes burned by fire using two aspects of spatial configuration—proportion (B) of landscape burned by fire, and the spatial adjacency (C) of the burned pixels. Adjacency is defined as the probability that if a cell is burned, an adjacent cell is also burned.⁵ We modified their algorithm to create binary neutral landscapes that mimic the development patterns for each housing density class in the General Plan. By overlaying the Urban and Other pixels from the Hardwoods data onto classified 1990 Census block housing density data, we calculated proportion (B) and adjacency (C) for landscapes settled at different densities. The proportion of Urban and Other pixels ranged from 27 percent for housing density classes greater than 1 unit/acre down to 3 percent for density classes less than 1 unit/40 acres (*table 3*). Adjacency values varied to a lesser degree, ranging from 62 percent to 50 percent over the same housing density range (Greenwood and Saving 1999). By masking non-developable areas and inserting portions of these theoretical landscapes into the appropriate General Plan density region, we created potential *footprints of future development* for the study area (*fig. 2c*).

⁵ McKelvey and Crocker refer to the adjacency measure (C) as contagion. To avoid confusion with the contagion indices of O'Neill and others (1988) and Li and Reynolds (1993), we have chosen to use the term adjacency.

Table 3—General Plan land use classes and allowable lot sizes with proportion of cells (B) from the Hardwoods data classified as Urban or Other and likelihood of adjacency (C) of Urban and/or Other cells.

General Plan land use class	Allowable lot size (ac)	Proportion of urban or other cells (B)	Probability of adjacency (C)
Multi-family Residential (MFR),			
High Density Residential (HDR) ¹	<= 1	0.27	0.62
Medium Density Residential (MDR) ²	1 - 5	0.14	0.61
Low Density Residential (LDR)	5 - 10	0.09	0.55
Rural Residential (RR)	10 - 40	0.06	0.55
Natural Resources (NR)	40 - 160	0.03	0.50

¹ Includes these General Plan Land Use Classes - Adopted Plan (AP), Commercial (C), Industrial (I), Public Facilities (PF), and Research and Development (RD)

² Includes Tourist Recreation (TR)

For most scenarios, we assumed the spatial configuration of development for a given density class would not be significantly different in the future than at present. In other words, the values of B and C for a given density class did not change. However, the model did not limit us to this assumption. The General Plan allows for the doubling of total housing density in the Low Density Residential (LDR) class (5 - 10 acre parcels) if the development is highly “clustered.” Our landscape generator allowed us to easily simulate how this development pattern might appear (scenarios 507 and 508). We created two clustered density patterns for LDR by increasing B from 9 percent to 14 percent to simulate the density bonus, and by increasing C from 55 percent to 95 percent and 98 percent to simulate clustering (*table 1*).

Quantifying Impacts to Wildland Habitat

For this analysis, we defined *habitat* as all land cover types in the 1990 Hardwoods Pixel Data that were not Urban, Other, or Water. We combined Urban and Other pixels, along with developed cells from the *footprint of future development*, into one class called *developed*. Water was masked from the analysis environment. We defined *wildland habitat* as *habitat* more than 50 m (2 pixels) from a *developed* pixel, in patches greater than 100 hectares and containing no constrictions, or narrow necks, of *wildland habitat* narrower than 50 m. *Urban habitat* were those areas of natural vegetation within 50 m of a *developed* pixel. *Marginal habitat* were all areas not defined as *urban* or *wildland habitat* (narrow constrictions or patches less than 100 hectares, and > 50 m from *developed* pixels). This overlay of the footprint of development onto the natural land cover creates a landscape mosaic of *wildland*, *marginal* and *urban habitats*.

A quick review of the landscape ecology literature reveals many highly specialized metrics for capturing specific characteristics of a landscape. Several studies (Hargis and others 1999; McGarigal and McComb 1995, 1999; Ritters and others 1995; Tinker and others 1998) have shown that the simplest, most basic measures are the easiest to understand and serve well to compare and contrast landscapes. We calculated the following fragmentation metrics for wildland habitat for each scenario—total area, number of patches, mean patch size, largest patch size, mean shape index (Frohn 1998, McGarigal and Marks 1995, Ritters 1995), corrected

mean perimeter/area (P/A) ratio (Baker and Cai 1992), and total edge density. Ritters (1995) inverts McGarigal and Marks' (1995) mean shape index for raster data, calling it "average normalized area, square model," to make the values range from 1.0 for a perfectly square patch to 0.0 for patches that are long and narrow. The APACK software calculates Ritters' metric. As this metric measures the same landscape attribute as McGarigal's mean shape index (shape complexity - patch shape relative to a square), we have chosen to use McGarigal's name, mean shape index, when referring to it rather than Ritters' more cumbersome moniker. Although these metrics provide an objective means of comparing landscapes, they do not quantify all aspects of landscape configuration. Therefore, we also assessed model results through visual inspection of the output maps of *wildland habitat* extent.

Results

General Plan

Figure 2d shows the present extent of *wildland habitat* in the study area. The dominant feature of the landscape is a single patch of wildland (mean area of three iterations, 159,535 ha) that extends across the county from north to south and bridges the Highway 50 corridor. The influence of development is substantial yet would appear not to have significantly disrupted the contiguity of wildlands outside of the Highway 50 corridor and the communities of Pilot Hill and Georgetown. *Figure 3a* shows how the county's wildlands might appear if the General Plan were completely built out (scenario 503). The most apparent impact is the increase in number of patches and the cleaving of the wildland into distinctly separate northern and southern regions. Compared to present conditions, mean number of patches per iteration double from 10.0 to 19.67 and mean patch size accordingly drops from 16,182 ha to 6,337 ha (*table 4*). Mean largest patch size similarly declines to 59,603 ha. As patch sizes drop, measures of total edge density and corrected perimeter-to-area (P/A) perforce increase. Mean total edge density rises from 46.6 m/ha to 68.4 m/ha while mean corrected patch P/A ratio increases from 8.97 to 9.76. Mean shape index decreases from 0.070 to 0.043 indicating that not only does wildland shrink and fragment, it also becomes more complex spatially due to low density development perforating the existing wildland matrix. It is important to note, however, that the significant loss of wildland does not mean that large portions of the county have been paved over. While the mean loss of wildland is 23 percent, only 4.5 percent of wildland is actually converted to urban use. For oak woodland land cover types, 40 percent of wildland becomes *marginal* or *urban* woodland but only 4 percent is physically lost to development. In other words, areas that once functioned under a more natural state and presumably provided functional habitat for species are degraded, either due to proximity to urban land uses or by isolation from larger patches of contiguous natural vegetation.

Table 4—Mean values of wildland habitat landscape metrics for three iterations of the Present Condition (500) and General Plan (503) scenarios.

	Present condition scenario 500	General Plan scenario 503
Total area	161,825 ha	123,267 ha
Number of patches	10.00	19.67
Mean patch size	16,182 ha	6,337 ha
Largest patch size	159,535 ha	59,603 ha
Mean shape index	0.070	0.043
Mean patch P/A ratio, corrected	8.974	9.762
Total edge density	46.57 m/ha	68.38 m/ha

General Plan Alternatives Increased Development Restrictions

Figure 3 (b-d and g-k) shows extents of wildlands for the General Plan alternatives meant to mitigate impacts through increased restrictions to development. The most noticeable aspect of the maps is their similarity to the General Plan scenario. The north and south patches remain highly separated in all scenarios except for scenario 543 where a few small patches come close to reconnecting the north and south patches. The differences become more apparent when the metrics are examined. All scenarios maintain a greater area of wildland than the General Plan. Scenarios that increase the areal extent of development restrictions (504, 505, 506, 509, 513, 514, 515, 516) generally indicate a decrease in fragmentation (mean number of patches decreases slightly and mean patch size increases slightly) (fig. 4). However, the range for number of patches and mean patch size for these scenarios is high, indicating site-specific sensitivity to placement of development. Scenarios 506 and 516 show the greatest increase in wildland mean total area (126,716 ha and 126,877 ha, respectively) and mean largest patch size (60,906 ha and 61,105 ha, respectively). Scenarios 506, 509 and 516 have the highest mean patch sizes (6,805 ha, 7,021 ha, and 6,952 ha), although 509 has a large range (1,238 ha). These results are consistent with those expected as the scenarios 506 and 516 restrict the largest amounts of land from development (132,694 ha and 133,217 ha, respectively). Patch shape complexity shows little difference in all scenarios as mean shape index remains virtually unchanged as does the mean corrected patch P/A ratio. Mean total edge density declines slightly with 506 and 516 having the greatest decrease (67.02 m/ha and 67.00 m/ha, respectively).

General Plan Alternatives Development Clustering

For scenarios 507 and 508 we examined the efficacy of clustering development for mitigating wildland habitat loss. For General Plan density classes of Low Density Residential (LDR), we increased adjacency (C) values to 95 percent and 98 percent, respectively. Because the General Plan allowed for a density bonus to the next higher density class, Medium Density Residential (MDR), we also increased the proportion (B) of developed pixels in LDR from 9 to 14 percent for both scenarios. Neither scenario shows a demonstrable increase in wildland habitat retention over the General Plan scenario, while some metrics indicate increased fragmentation. Mean

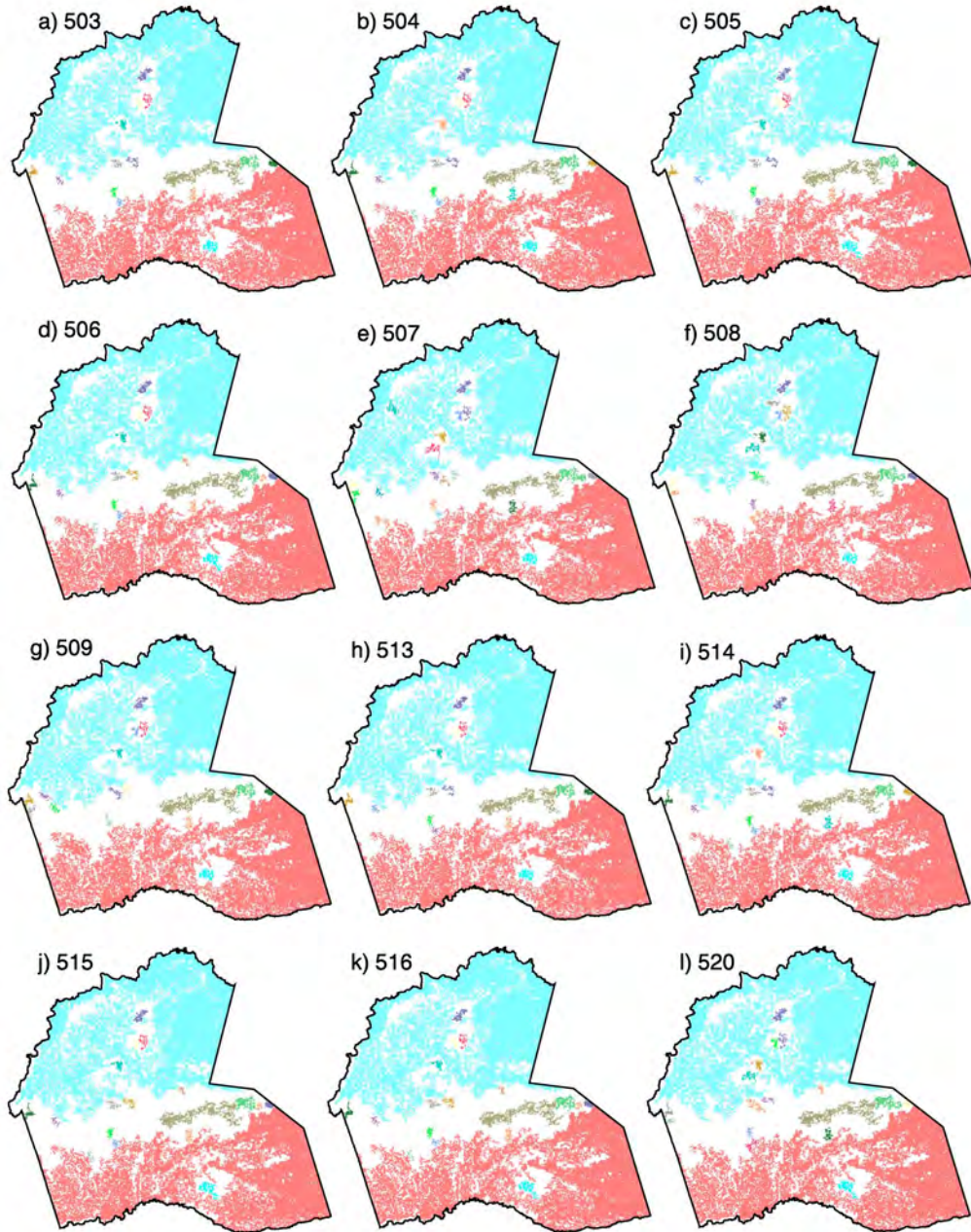


Figure 3—Maps of wildland habitat after full buildout for all scenarios. Areas of the same shade are a contiguous patch.

total area for scenario 507 (123,310 ha) is virtually the same as the General Plan and only slightly higher for scenario 508 (123,831 ha) (*fig. 4*). Mean largest patch size (507 = 59,502 ha, 508 = 59,847 ha) and mean corrected patch P/A ratio (507 = 0.044, 508 = 0.047) show similar behavior while mean total edge density does decrease slightly for 508 (67.39 m/ha). Mean number of patches (507 = 20.67, 508 = 19.0) remains within the range of values of those of the General Plan. Mean patch size actually goes down for 507 (5,979 ha) and remains unchanged for 508 (6,517 ha).

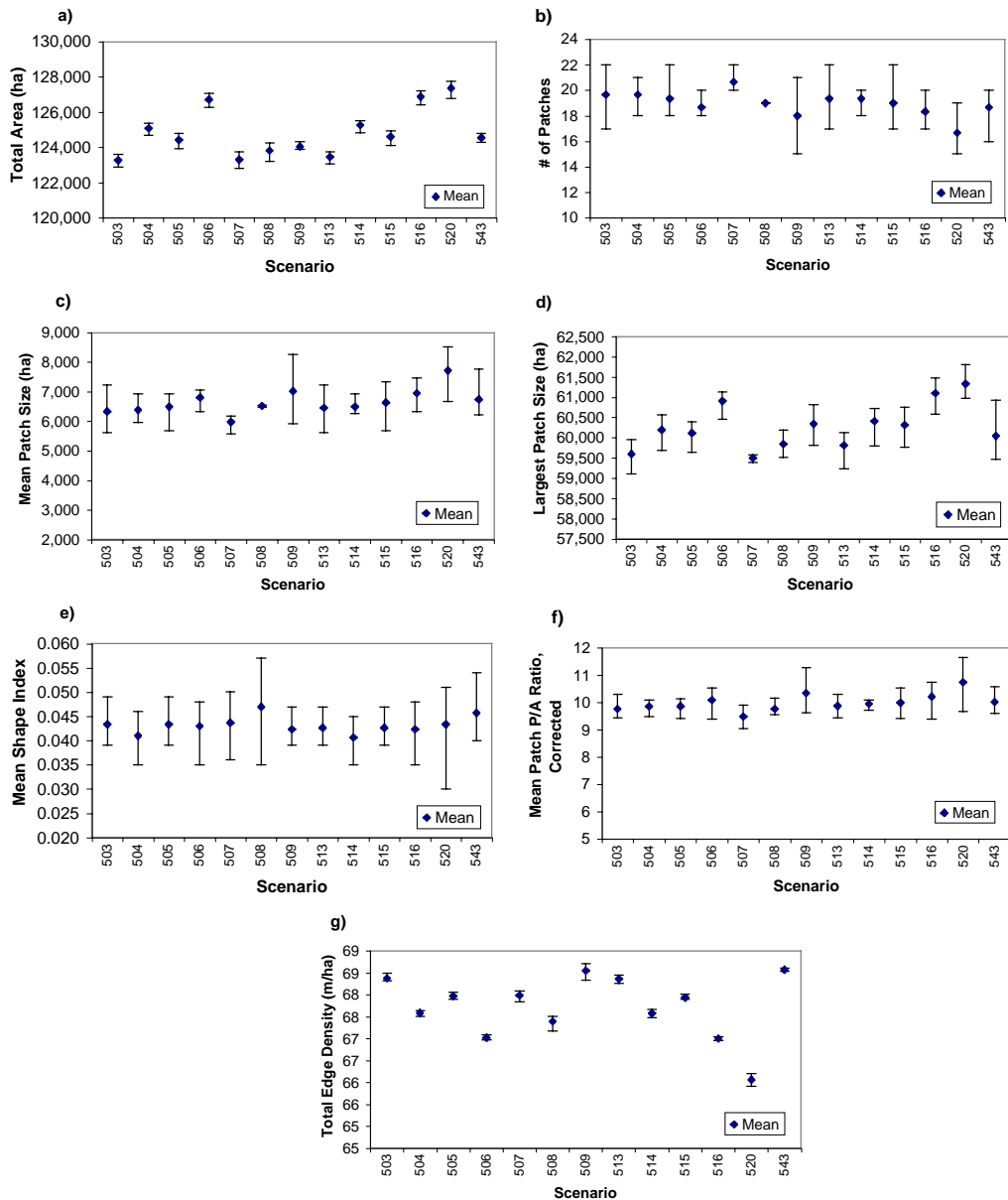


Figure 4—Values of wildland habitat landscape metrics for three iterations of the General Plan scenario (503) and alternatives (504-543). a) total area, b) number of patches, c) mean patch size, d) largest patch size, e) mean shape index, f) mean patch P/A ratio, corrected, and g) total edge density.

One of the iterations for scenario 508 has the highest mean shape index of all scenarios (0.057) but another iteration of 508 has the second lowest (0.035). Neither scenario was effective at maintaining the north-south connection (*figs. 3e, 3f*).

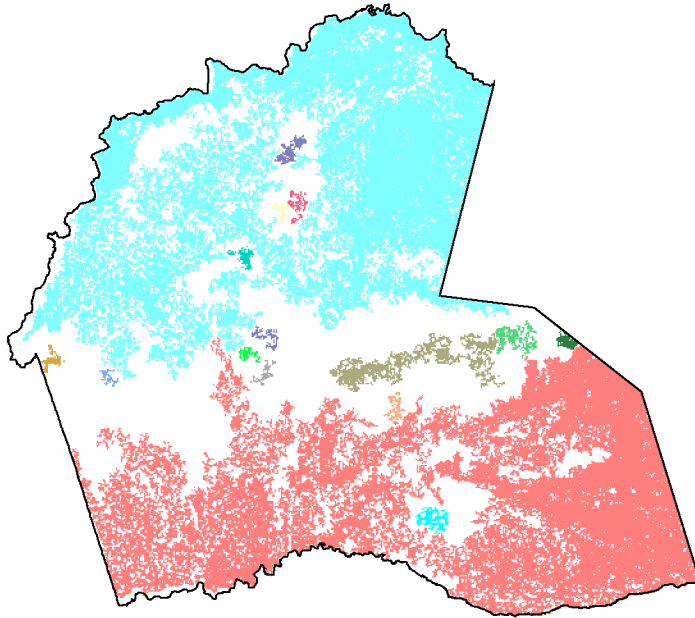


Figure 5—Map of wildland habitat after full buildout for parcel acquisition scenario (543).

General Plan Alternatives "Kitchen Sink" and Planned Acquisition

Given that scenarios 504-516 were ineffective at increasing wildland habitat retention over the General Plan scenario or at maintaining the north-south connection, we tested two additional approaches. Scenario 520, dubbed the “Kitchen Sink” scenario, combined all of the most restrictive policies yet tested – 50 m stream buffers, 40 percent slope restriction, oak canopy retention for all developable land regardless of restriction status, plus clustering as per scenario 508 (B = 14 percent, C = 98 percent) (*table 1*). In contrast, Scenario 543 took a completely different approach leaving all original General Plan restrictions intact but expanding the area of non-developable land by restricting select parcels from development in key areas of concern. This scenario simulates a planned acquisition approach through the use of easements and/or outright purchase of development rights by the county. We selected several vacant parcels in the Indian Creek canyon area where it crosses Highway 50 between Placerville and Shingle Springs in an attempt to reconnect the northern and southern portions of wildland. In those selected parcels, we only restricted development on oak pixels and areas within 50 meters of oak pixels. This left some parcels still potentially developable.

As expected, scenario 520 retains the highest mean total area (127,376 ha) of wildland because it restricts the greatest area of land from development (133,217 ha) (*table 1*). Mean number of patches (16.67) is the lowest for all scenarios and subsequently mean patch size (7,721 ha) is the highest (*fig. 4*). Mean largest patch size (61,332 ha) is also the highest of all scenarios. Shape complexity does not

decrease, however. Shape index is the same (0.043) as the General Plan scenario and mean corrected patch P/A ratio is the highest of all scenarios (10.74). In contrast, mean total edge density is the lowest of all scenarios (66.1 m/ha). Scenario 520 also does not come close to maintaining the north-south connection (*fig. 3l*).

As we made no attempt to preserve amount, but rather configuration, of wildland, scenario 543 only preserves an average of 1,296 more hectares than the General Plan (mean total area = 124,563 ha) and actually has slightly more average patches (20.0) and a smaller mean patch size (6,229 ha) (*fig. 4*). However, mean shape index is the second highest for all scenarios (0.046) while mean corrected patch P/A ratio is only slightly better than the General Plan (10.013). Mean total edge density is the same as the General Plan (68.57 m/ha). Most importantly, however, scenario 543 comes the closest of all scenarios to maintaining a connection between the northern and southern wildland patches (*fig. 5*).

Discussion

Our study demonstrated that the General Plan for El Dorado County will not allow the county to become one giant suburban subdivision. The General Plan allocates 43.0 percent of private land to development in the 1 unit/5 acre to 1 unit/40 acre density range (LDR and RR). Moreover, only 4 percent of the existing oak canopy will actually be removed by, or converted to, development. However, the configuration of this development is of concern as full buildout could force as much as 40 percent of the County's existing *wildland* oak woodlands into *marginal* or *urban* habitats. When counties are faced with such impacts, a popular mitigation approach is to implement prescriptions in the General Plan that regulate, and/or limit, how and where development can occur (e.g., stream setbacks, slope restrictions, etc.). However, such prescriptions can only apply to development that will undergo discretionary permit review, that is, parcels that have yet to be subdivided to the smallest allowable density in the General Plan. In the case of El Dorado County, 31 percent of *vacant* land that is *open to development* in the county (86 percent of parcels) had been subdivided prior to the adoption of the General Plan and is therefore not subject to these prescriptions. These parcels only require ministerial review (i.e., a building permit) before construction can occur. To impose a restriction that would regulate where development could occur in those parcels would require a county-wide ordinance. Our model allowed us to test both alternative General Plan prescriptions and county-wide ordinances. The former had little effect decreasing wildland habitat loss or fragmentation over existing General Plan policies. We attribute this to the large portion of the county not subject to the prescriptions due to prior subdivision. Ordinances showed greater wildland retention over the General Plan but that increase was still small. Scenario 516, the most restrictive ordinance scenario, only preserved 3,610 hectares more wildland than the General Plan and made little difference to patch configuration, shape complexity or edge density. The political expense in implementing ordinance-type solutions would seem to far outweigh the potential ecological benefits to oak woodlands.

Clustered development is a popular prescription proposed by the smart growth community. By holding overall density constant for an area but decreasing the space between structures, less space is scattered between structures which could otherwise serve as habitat and perform other ecosystem functions. The perceived advantages are so great that in order to promote clustering, El Dorado County offers a density

bonus for clustered development in the Low Density Residential category (5 - 10 acre parcels). We modeled two clustering scenarios allowing densities to increase to the Medium Density Residential level (1 - 5 acre parcels). Neither scenario improved wildland habitat condition over the General Plan and some metrics for scenario 507 (mean number of patches, mean patch size and largest patch size) were actually worse. The increase in density, and therefore the increase in the amount of land developed, offset any benefit that would be gained from clustering. Furthermore, clustering can only occur in *vacant parcels open to development with restriction* in LDR. This occurs only in a few small areas in the northern portion of the county.

Scenario 520, the Kitchen Sink scenario, employed the strictest policy restrictions we tested, plus clustering. Looking solely at the fragmentation metrics (*fig. 4*), this scenario offered the most improvement in wildland habitat condition over the General Plan. Yet when examining the maps, we did not notice any significant difference in wildland amount or configuration (*fig. 3l*). Most notably, the north-south separation was still very pronounced. Implementing county-wide ordinances which mandate 50 m stream buffers, 40 percent slope restrictions and oak canopy retention on all undeveloped parcels, plus requiring clustering in LDR, is highly unrealistic, not to mention, very politically expensive. Again, we contend that the political costs of such a scenario are probably greater than the ecological benefits.

Alternatively, we examined a limited parcel acquisition, or easement, strategy (scenario 543) for areas of concern which removes key parcels from the potential development landscape. One such area is the Indian Creek Canyon region. Here, a stringer of oak woodlands presently connects the northern and southern wildland patches. Although this scenario did not actually maintain the connection, several small patches do extend through the area indicating that the concept has the potential to maintain this critical corridor. This area of the county is highly desirable for development, therefore making this scenario potentially fiscally expensive. However, unlike the ordinance approach, an acquisition approach would encounter fewer stakeholders directly and would offer owners compensation for the loss of development rights on their property. Involving private conservation groups or land trusts could greatly reduce costs to the public sector.

Rural residential development erodes habitat quality much more than habitat extent, requiring a more nuanced approach to assessing impacts than when natural habitats are simply removed or paved over. At these low densities, we were unable to use polygons of housing density to determine the relationship of naturalness to density. At certain scales, the landscape still looks much as it once did. Rather, we modeled the real impacts of site alteration which required an entirely unique set of variables and characteristics such as determining the exact footprint of development (e.g., Do lightly used roads count? Do outbuildings?) and establishing the sphere of influence from a structure (e.g., How far from the structure is natural vegetation disturbed? How far does sound travel? What impact does it have? What influence do pets have and at what distance?). We can easily adjust these variables in our model to examine their sensitivity and ability to assess other issues besides wildland connectivity such as impacts to specific species habitat requirements, watershed degradation from increased sediment generation, and changes in wildfire probability due to vegetative fuel alteration. Most people can agree that high density urban and suburban development do not provide much high quality habitat for most species, but seldom can stakeholders, land managers, public officials, or even scientists agree on the thresholds or the degrees at which rural development begins to impact the

landscape. As more of the landscape of California transitions from large extents of wilderness owned by relatively few private individuals to a landscape divided up amongst thousands of owners regularly dotted with houses every few thousand feet, understanding these impacts and enacting policies that are effective, fair, and feasible become ever more important and challenging.

Future Directions

One aspect of development and conversion of natural land cover that we have not addressed is agricultural expansion. In El Dorado County this primarily involves vineyards. Agricultural expansion has the potential for far greater impact to habitat extent and connectivity than residential development as a greater area of land in larger contiguous patches is generally more greatly disturbed. Agricultural expansion can also be more difficult to predict. Heaton and Merenlender (2000) have developed a model to determine site suitability for vineyard expansion in Sonoma County which could be adapted for use in El Dorado County.

More investigation of the effects of riparian corridors on habitat connectivity is needed, including the effectiveness of stream setbacks and the development of methods to characterize linear features, as opposed to the two dimensional patch features analyzed here.

Better knowledge of the likelihood of development would enhance our ability to tailor solutions to specific areas of concern. The incorporation of economic models of development such as Johnston's UPLAN (2001) and Landis's CURBA (1998a, 1998b) would provide more realistic future scenarios as well as the ability to model development in stages over time rather than only at full buildout as we have done. Implementing other constraining factors to development such as water availability and habitat conservation plans could also improve our predictions of future development.

Conclusion

Fine-grained spatial models with highly detailed datasets are required for evaluating impacts of development on ecological, economic, or social systems at the local level. Such large-scale, high-resolution models also enable stakeholders to more easily relate the data portrayed on maps to their perception of the landscape in which they live. However, most site-specific models of development have been created for dense urban areas, using complex economic formulas of land value and empirically derived patterns of past development trends. These models prove less than reliable at predicting low-density development of the rural ranchette variety which is now so prominent in the Sierra foothills and which has such great impact on habitat quality. We have developed a model that is both fine-grained and capable of predicting potential rural ranchette development and its impacts. Moreover, by having a tool that can operate under various assumptions and constraints, we can actually test a proposed solution's efficacy at achieving a desired goal, which in this case is maintaining wildland connectivity. We have also used our model of predicting footprint of development to assess impacts of wildfire on future structure loss. Our explicit model of development could prove useful for studies of water quality and cumulative impacts for watersheds by incorporating elements such as sediment

generation from road development, nutrient loading from septic systems, and conversion of natural land cover to impervious surfaces.

Existing land tenure (the historic parcelization of land) limits effective control of development by General Plan prescriptions that are only applicable when a parcel requires subdivision before development, thus leaving solutions that require large expenditures of political capital such as ordinances or downzoning. The political expense in implementing such solutions would seem to far outweigh the potential benefits. For El Dorado County, our study concludes that the most effective way to maintain wildland oaks in large contiguous patches would be a land acquisition program focused on those critical areas of connectivity, often referred to as habitat corridors. More importantly, broad-brush, “best management practice” type solutions (i.e., the conventional wisdom) applied evenly across the landscape are not necessarily the most effective approach. Site-specific design may be a more effective tool in minimizing negative impacts of development than generic policy prescriptions. “Good” policy should be a process by which better analysis of the problem leads ultimately to better design of the solution.

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Impacts of Development Saving and Greenwood

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Shawna Purvines <shawna.purvines@edcgov.us>

EDH APAC Letter on the NOP-EIR BioResources and ORMP

1 message

Hidahl@aol.com <Hidahl@aol.com>

Mon, Aug 17, 2015 at 3:53 PM

To: shawna.purvines@edcgov.us

Cc: david.defanti@edcgov.us, jeff.h@ix.netcom.com, aerumsey@sbcglobal.net, hpkp@aol.com, jjrazz@sbcglobal.net, bosone@edcgov.us, bostwo@edcgov.us, bosthree@edcgov.us, bosfour@co.el-dorado.ca.us, bosfive@edcgov.us, rich.stewart@edcgov.us, gary.miller@edcgov.us, tom.heflin@edcgov.us, dave.pratt@edcgov.us, brian.shinault@edcgov.us

Shawna,

Attached is APAC's letter regarding the subject NOP for EIR. Please note that the first portion of the letter was approved by the APAC board, while the second portion (new project alternative) is only a subcommittee level recommendation at this time.

If you have any questions, please contact me @ (916) 933-2703

Thanks, John
EDH APAC TGPA/ZOU Subcommittee Chair

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El Dorado Hills
Area Planning Advisory Committee
1021 Harvard Way
El Dorado Hills, CA 95762

2015 Board
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August 17, 2015

El Dorado County Development Services Department, Planning Services
Attn: Shawna Purvines, Senior Planner
2850 Fairlane Court, Building "C"
Placerville, CA 95667

Subject: APAC Comments-NOP EIR GP-Biological Resources and Oak Resources Management Plan

Dear Shawna,

An El Dorado Hills APAC subcommittee reviewed the subject NOP EIR, and recommended the questions/responses at the APAC meeting held on Wednesday August 12th. APAC voted 4-0 to submit the information below. Subsequent participation in the County Planning Commission's scoping meeting held on Thursday August 13th resulted in a new project alternative being proposed, which is addressed separately at the bottom of the letter as a subcommittee recommendation. The full APAC will review the subcommittee's recommendation at our monthly meeting on September 9th.

Biological Resources:

Objective 7.4.1: Why is 'protection for' Federal and State Rare Plant Species being eliminated?

General: How do these proposed changes affect the County's enforcement requirements (more enforcement required/less enforcement required/no change)?

Oak Resources Management Plan

2.1: Discretionary approvals are mentioned. Please identify by whom, and under what rule would these approvals be given and where it applies?

Road widening and re-alignment projects are being exempted- We disagree, partial mitigation should be considered.

Affordable housing projects are being exempted- need to add definition of affordable housing projects to Section 6.0. Some form of mitigation should be considered.

Agricultural exemption- need to preserve historical wildlife corridors.

Williamson Act Contract exemptions- must prohibit removal of any trees for the purpose of eventually rezoning the property to residential

Personal Property exemption- need to define further what “for the owner’s personal use” means? How is this enforced by County?

2.4: ‘Replacement trees shall be regularly monitored and maintained.....’ By whom? The ‘Serrano’ oak and native plantings achieved nothing and the sticks for the trees can still be seen on the boulevard with no follow up.....

“On-Site replacement trees are to be planted to the satisfaction of the Development Services Director”. We would suggest this be to the satisfaction of an arborist or forester

If you have any questions on any of the comments and/or concerns expressed herein, please contact the Sub-Committee Chairmen; John Hidahl @ (916 933-2703).

APAC appreciates having the opportunity to comment.

Sincerely,

Jeff Haberman

Jeff Haberman,
Chairman, APAC

APAC Subcommittee recommendation for a new Project Alternative

County planning should consider a new project alternative focused on maximizing the preservation of Oak Resources, and providing incentives for existing land owners to be good stewards of their oak resources, while providing reasonable access and enjoyment of their property.

This alternative could use an aerial survey of the private property oak resources combined with county documented Priority Conservation Areas (PCAs) and the Important Biological Corridor (IBC) overlay to achieve a comprehensive oak resource/owner needs balance. This could be entitled something like the ‘Biologically Balanced’ alternative?

The project could pictorially define the current oak tree resources (total inventory), then address the PCAs and the criteria/requirements for oak tree removal and incentives for Oak Tree retention within the PCAs. It would next address the IBCs and the criteria/requirements for oak tree removal and incentives for Oak Tree retention within the IBCs. The ‘remainder’ consists of the areas with current oak tree resources that are not within the bounds of the PCA and/or IBC. The ‘remainder’ would similarly have

criteria/requirements (possibly using the GP land use designations?) for oak tree removal and incentives for Oak Tree retention.

This approach should balance the needs/desire to maintain the look and feel of our rural County (Rural Regions), while recognizing that urbanized areas (Community Regions) require more stringent mitigation measures and fees to retain the desired population of native oak trees.

John Hidahl

John Hidahl,
TGPA/ZOU SubCommittee Chairman, APAC

cc: BOS1, BOS 2, BOS 3, BOS 4, BOS 5
Planning Commission
APAC Read File

**General Plan Biological Resources Policy Update
and Oak Resources Management Plan**

Environmental Impact Report Notice of Preparation (NOP)

**Public Comments received during the 30-day NOP Comment Period
July 17, 2015 – August 17, 2015**

Comment Period closed at 5:00 p.m. on August 17, 2015

Date Submitted	Name	Community	Submittal Method	Pdf Page Numbers
7/18/15	Ellen Van Dyke	Rescue	Email	2 -4
8/13/15	Charlet Burcin	El Dorado Hills	Letter	5
8/17/15	Monique Wilbur	Shingle Springs	Email/attachment	6 - 9
8/17/15	Ronald M. Lanner	Placerville	Email	10
8/17/15	Karen Mulvany	Lotus	Email/attachment	11 - 14
8/17/15	Jaime Buetler	EDC Resident	Email/attachment	15 - 20
8/17/15	Scot Bernstein	EDC Resident	Email/attachment	21 - 30
8/17/15	Cheryl Langley	Shingle Springs	Letter	31 - 66
8/17/15	Ellen Van Dyke	Rescue	Letter/attachment	67 -71



Shawna Purvines <shawna.purvines@edcgov.us>

Bio Resources Policy NOP questions

1 message

Ellen Van Dyke <vandyke.5@sbcglobal.net>
To: Shawna Purvines <shawna.purvines@edcgov.us>
Cc: Jim Mitrisin <edc.cob@edcgov.us>

Sat, Jul 18, 2015 at 9:15 AM

Hello Shawna- I have three questions I could use some clarification on for the NOP.

- 1) The NOP pretty specifically gives only the County's physical address as the place to send in comments. I think email is actually ok, but can you confirm?
- 2) Will there be hardcopies of the NOP/IS placed in the County's libraries? and
- 3) Is it safe to assume the Greenhouse Gas emissions WILL be included in the EIR per the Initial Study, and that this is a typo in the NOP? -

Thank you for any information- Ellen Van Dyke

[\(NOP page 7\)](#)

The EIR for the proposed project will focus on the resource areas/issues germane to this particular project. The EIR will evaluate the potentially significant environmental impacts of the proposed project and will evaluate whether there are feasible mitigation measures that may lessen or avoid such impacts. As the proposed project would amend the County's General Plan and influence development activities throughout the County and does not include any specific construction or development, the impact analysis will be programmatic and cumulative in nature. The EIR will also identify and evaluate alternatives to the proposed project. The EIR will evaluate potentially significant environmental effects related to the following environmental issues:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions
- Land Use and Planning

As evaluated in the Initial Study, it is not anticipated that impacts would occur within the following environmental topic areas, and therefore these specific environmental issues will not be evaluated further in the EIR.

- Air Quality
- Cultural Resources
- Geology/Soils

Biological Resources Policy Update and ORMP
Notice of Preparation of an EIR

7

El Dorado County
July 2015

SCH# 2015072031

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Mineral Resources
- Noise
- Population/Housing
- Public Services/Utilities
- Transportation

(Initial Study, p 14/24 of the pdf)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS - Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DUDEK

13

Initial Study
July 2015

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

a, b) The project proposes amendments to biological resources policies contained in the County's General Plan and adoption of an ORMP. While, the project does not include new construction or land uses that would generate greenhouse gas (GHG) emissions, development that proceeds under the proposed General Plan amendments and ORMP could alter and/or remove vegetation communities, including oak woodlands, and/or oak trees. Conversion of woodlands and other natural vegetation communities to developed uses could generate GHG emissions during the construction process. Further, oak woodlands and other natural vegetation communities serve as a carbon sink, in that they remove GHGs from the atmosphere and store carbon. Therefore, removal of woodlands and other natural vegetation communities could release GHGs into the atmosphere and reduce the natural absorption of GHG emissions. These effects could contribute to adverse climate change effects and could impair the ability of the region and the state to achieve GHG reductions required under state law. **These effects will be evaluated in the EIR.**

Planning Commission
2850 Fairlane Court Building C
Placerville, CA 95667

August 13, 2015

Attn: Char Tim

Dear Planning Commission Members,

I have reviewed the draft of the update version to the Oak Tree Woodland Ordinance and strongly disagree with the County's position of deleting Option A which currently requires maintaining a percentage of Oak trees.

Removing Option A will destroy habitat, worsen air quality, and remove the aesthetic beauty that the Oak Woodlands provide to our county.

Furthermore, Option B shall not be permitted to facilitate the cutting down of 100% of on-site Oak Tree Woodlands which serves no advantage except to developers, unless a project is unable to obtain a reasonable use of the parcel.

Respectfully,



Charlet Burcin

**2650 Mormon Island Drive
El Dorado Hills, CA 95762**

**EL DORADO COUNTY
RECEIVED**

AUG 13 2015

LONG RANGE PLANNING



Shawna Purvines <shawna.purvines@edcgov.us>

Bio Resources NOP comments

Monique Wilber <monique.w@comcast.net>

Mon, Aug 17, 2015 at 7:22 AM

To: shawna.purvines@edcgov.us

Cc: charlene.tim@edcgov.us, edc.cob@edcgov.us

Please find attached my comments on the Biological Resources Update NOP. Thank you for the opportunity to comment on the NOP.

Monique Wilber
Shingle Springs



Biological Resources NOP 081715.docx

32K

Biological Resources NOP 08/17/15 Comments
Monique Wilber, Shingle Springs Resident

Thank you for the opportunity to comment on the Biological Resources NOP.

As a Senior Environmental Scientist, and former El Dorado County Senior Planner in Long-Range Planning working as Project Manager on the former Oak Woodland Management Plan, I have serious concerns regarding the policies that were already decided without pausing to consider public comment. The Notice of Preparation indicates that the lead agency has finished its initial scoping – gathering public comments – and is moving forward with drafting the Environmental Impact Report, *based on policies which should include public opinion*. If EDC has not included public comment in its policies for which the project description is based, then the project description should be reconsidered and the NOP reissued.

Please address the following concerns:

1. Option A was the result of the settlement Writ and should not be eliminated. Please explain how deviating from the Settlement Agreement does not violate the Settlement or CEQA. Please explain how eliminating the Option A incentive to retain oaks benefits the biological resources of the county, as it will direct in-lieu funds into merely retaining patches of oak woodland, disrupting connectivity. Please explain how allowing clear cutting of oaks benefits the biological resources of the county. Please explain the County's record of using biological mitigation funds in a timely manner and utilizing the best science to expend those funds. Where have the Option B oak woodland funds gone? The County did collect some Option B funds before the OWMP was sued. How were these funds used to mitigate for loss of oak woodland?
2. PAWTAC is an advisory body of experts on natural resources. Please explain if PAWTAC is to be removed from biological resources planning. Please advise who on your staff is a natural resources expert and has the biological/ecosystem education? That knows everything from fish and wildlife to oak trees and other habitat to watersheds?
3. Policies that you are eliminating or changing are MITIGATION for development, approved by the voters in the 2004 General Plan. Many of the policies that are being eliminated or changed were NEVER implemented, in violation of CEQA. Please explain which items being proposed are being tiered off the 2004 GP. El Dorado County is out of compliance with CEQA, and anything tiered off the GP is out of compliance with CEQA.
4. Mitigation monitoring, required by CEQA, is not something that the County requires staff to complete. Please explain how mitigation on the 2004 GP was monitored. Please address the success rate of acorn planting and oak tree planting from 2004 to 2015. Please address follow-up that was conducted for parcels with projects that preserved or had a conservation easement placed for rare plants and oaks trees, to be sure the rare plants or oak trees were not removed, from 2004 to 2015. Please explain how many reports were collected by property owners as required by the OWMP and the Oak Woodlands Interim Guidelines. If monitoring was not conducted during those eleven years, please explain how monitoring will be different this time. Have annual reports been received from property owners and

reviewed by staff, to conform to CEQA? What is the measurable ratio of success of replanting? The Oak Woodland Interim Guidelines require that property owners submit reports on health and survivability of oak tree mitigation. Where are these reports housed? Who on staff is assigned to follow-up with oak woodland mitigation? What is the net loss of oak woodland based on these performance standards that were instituted? Have you mapped parcels that have removed oak woodland? Without implementation, there is non-compliance with CEQA, and it is not mitigation at all. Will the County self-monitor?

5. A 1997 study by CalFIRE of EDC oak policies states that higher canopy retention standards and other policy and scenarios don't mitigate oak woodland fragmentation, because they don't explicitly target critical connectivity areas. The former BOS that approved the changed OWMP (changed from this scientific construct) did not allow connectivity issues, and deferred connectivity to the INRMP, which lacked any teeth and was quietly shelved. Any oak plan will need to be a landscape level tool to target critical regional connectivity areas, while project level reports tracked via GIS can provide a tool for analysis of cumulative impacts. EDC did a similar analysis in arrears for the Pine Hill Plants, requiring a great deal of staff time in identifying parcels that had projects, pulling the physical files, copying maps, reviewing biological reports, and then having an intern map said rare plants impacted.

Small isolated patches of woodland, for the oak species and for wildlife and other flora that depend on it, is not a sustainable practice. When projects and their cumulative impacts are worked with in isolation from regional significance, cumulative impacts cannot be assessed for CEQA.

Please explain how this issue will be addressed.

6. Avoidance of impacts is the best form of mitigation. Option A, with its 1:1 replacement ratio, provides incentive over Option B with its 2:1 ratio to retain and conserve canopy. This is a financial and environmental incentive. The idea of removing Option A will create a landscape with no oak trees. This will create a significant impact to habitat, connectivity, watersheds/water quality, air quality, aesthetics, and economics (oak trees in the county increase property values and tourism).

Preservation of acreage in areas that are not legally threatened with imminent development or will be in the foreseeable future is not meaningful preservation. Preserving hinterland that is not in danger of being lost does not mitigate the permanent destruction of the loss of connectivity of oak woodlands that are threatened (for example, along the Highway 50 corridor). Calling this mitigation is saying that a developer is mitigating by not destroying all of a natural resource.

Please explain how this will be addressed.

7. The EDC General Plan EIR, Biological Resources, page 5.12-60 states that Mitigation Measure 5.12-1(f) is to Require Mitigation for Loss of Woodland Habitat. Let us not forget that GP policies are MITIGATION MEASURES for development occurring from the 2004 GP. This mitigation measure states that Policy 7.4.4.4 is applicable to woodland habitat that is not defined as "Important" under the INRMP mitigation measure. On page 5.12-61, there is clear intent in the EIR that Policy 7.4.4.4 will provide protection for smaller stands or groves of oak trees with at least 10% canopy cover. Is "providing

protection" eliminating Option A, which actually does provide protection? Is providing protection, being able to completely clear land of oak woodland? I would also like to point out, that at eleven years post GP implementation, that Mitigation Measure 5.12-1 (g), the Oak Tree Preservation Ordinance, was never implemented.

In order to comply with CEQA the GP must specify measurable performance standards to maintain oak woodland habitat and connectivity. Net loss of woodland occurs over the short term when some trees are protected as a condition for removing other trees (e.g., 1:1 mitigation could lead to a 50% loss). In the long term, there is net loss when mitigation trees/acorns die, as replacements for mature trees.

The EDC GP on page 5.12-31 states that "Standiford et al. (2002), using a modeling approach to evaluate blue oak plantation development, found that average blue oaks were still quite small and that canopy cover was relatively low 50 years after being planted, even with a fairly aggressive restoration effort."

Please explain how this will be addressed.

8. How will the deletion of Option A/Canopy Retention be explained regarding air quality, aesthetics, water quality, and economic sustainability (tourism)?

9. Will the draft policies being developed conform with the TGPA/ZOU, concurrently being developed? These parallel processes cannot be reviewed independent of each other as the cumulative impacts will each affect the other.

10. EIRs are very costly to the taxpayers. Potential policies should be fully vetted WITH the public prior to beginning the EIR process.

11. Please explain all of the outreach that occurred during the scoping process that notified County residents of the plan to allow 100% clearcutting of oaks with no incentive to retain any oaks by developers (removal of Option A).

12. How is the INRMP being utilized? How much did this document cost the taxpayers? At least \$500,000 – or more.

Thank you for allowing me to submit my comments.

Respectfully,

Monique Wilber

Shingle Springs resident



Shawna Purvines <shawna.purvines@edcgov.us>

El Dorado County's war on oaks

1 message

RONALD LANNER <PINETREE30@comcast.net>

Mon, Aug 17, 2015 at 2:21 PM

To: shawna.purvines@edcgov.us

El Dorado County Supervisors:

I would like to endorse Ms. Van Dyke's comments on this topic, and I see no way to add substantially to it. Except to say-

—

As a forester of over half a century, and an appreciator of beautiful habitat long before that, I find the 100% oak removal concept a total travesty and a shameful lack of responsibility to the public and to future county residents. The next step after that can only be strip mining, and it looks like the supervisors have the lack of judgment to go there.

Ronald M. Lanner
2651 Bedford Ave.
Placerville, CA 95667
530-626-7158
www.ronaldlanner.com

Let trees show you the way.



Shawna Purvines <shawna.purvines@edcgov.us>

(no subject)

1 message

Karen Mulvany <kmulvany@gmail.com>

Mon, Aug 17, 2015 at 2:34 PM

To: shawna.purvines@edcgov.us

Dear Ms. Purvines;

Attached please find my comments on the Initial Study & Environmental Checklist for the Biological Resource Policy Update and Oak Resources Management Plan Project.

Thank you,
Karen Mulvany



2015 0817 K Mulvany Biological Resources comment letter signed.pdf

286K

PO Box 768
Lotus, CA 95651
March 16, 2015

El Dorado County Community Development Agency
Long Range Planning
Attn: Shawna Purvines
2850 Fairlane Court, Placerville, CA 95667

Submitted by email to:
Shawna Purvines
Principal Planner
shawna.purvines@edcgov.us

To Whom It May Concern:

I am writing to submit comments with respect to the “Initial Study & Environmental Checklist for the Biological Resource Policy Update and Oak Resources Management Plan Project” (the “Initial Study”) dated July 2015.

Pages 10- 11 of the Initial Study states:

“ a, b) The proposed project involves amending biological resources policies contained in the County’s General Plan and adopting an ORMP. The project does not include new construction or land uses that would have the potential to adversely affect biological resources. *However, development that proceeds under the proposed General Plan amendments and ORMP could adversely affect such resources by altering and/or removing vegetation communities, which support special-status species and provide habitat for plants and wildlife, and/or oak trees. While the proposed amendments to the policies are intended to protect biological resources and establish mitigation requirements for loss of vegetation communities, ongoing General Plan implementation under the proposed project could result in substantial changes in the presence and distribution of vegetation communities throughout the County. This is considered a potentially significant impact and will be evaluated further in the EIR.*”

(Italics added)

The above passage in the Initial Study specifically references riparian habitat. In order to fulfill the promise of this passage, the Initial Study should also evaluate the impact of the county’s proposal in the Targeted General Plan Amendment (TGPA) to eliminate historical restrictions in the General Plan that have prohibited new parcel formation within Dam Failure Inundation (DFI) areas, all of which lie along riparian streambeds.

This TGPA proposal is cited on p. 2-9 of the the Partial Recirculated Draft Program EIR (RDEIR) for El Dorado County Targeted General Plan Amendment (TGPA) and Zoning Ordinance Update (ZOU) dated January 2015 as follows:

“Policy 6.4.1.4 and 6.4.1.5: New Parcels in Flood Hazard Areas. Reference to the flood insurance rate maps would be removed from these policies to address recommendations by the Office of Emergency Services and Homeland Security regarding dam failure inundation.”

The proposed changes to the General Plan are as follows (see p. 21 of Proposed TGPA track changes document):

**‘PUBLIC HEALTH, SAFETY, AND NOISE ELEMENT
OBJECTIVE 6.4.1: [Flood Hazards] DEVELOPMENT REGULATIONS**

Policy 6.4.1.4 Creation of new parcels which lie entirely within the 100-year floodplain as identified on the most current version of the flood insurance rate maps provided by FEMA ~~or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County~~ shall be prohibited.

Policy 6.4.1.5 New parcels which are partially within the 100-year floodplain ~~or dam failure inundation areas as delineated in dam failure emergency response plans maintained by the County~~ must have sufficient land available outside the FEMA ~~or County~~ designated 100-year floodplain ~~or the dam inundation areas~~ for construction of dwelling units, accessory structures, and septic systems. Discretionary applications shall be required to determine the location of the designated 100-year floodplain ~~and identified dam failure inundation areas~~ on the subject property.”

New development is capped on a per-parcel basis, so by allowing new parcel formation within dam failure inundation areas, the TGPA allows for increased development within DFI areas, including residential structures.

As noted in my March 16, 2015 comment letter on the RDEIR,

“The RDEIR does not address the environmental impact of newly allowed development that would be feasible under the proposed TGPA which would allow for new parcel formation within the 100 year floodplain or dam failure inundation areas. New parcel formation in flood prone areas means new development in riparian and wetlands zones which are subject to a host of environmental regulations which have not been assessed in this RDEIR. The EIR must include the impact analysis for all flood risk areas that will be affected by new parcel formation and the inevitable incremental development.”

I understand that the Initial Study adopts the position that the increase in the maximum allowed development in the county is unlikely to result in a change in density over what would likely have occurred under the existing General Plan. However, when a newly revised policy specifically targets a riparian area for increased allowed development, this assumption is likely wrong. The Initial Study author may wish to note that the Zoning Ordinance Update (ZOU) proposes that numerous parcels within the Dam Failure Inundation area be rezoned to smaller parcel sizes, for the purpose of allowing even more new parcel formation to occur than would currently be possible should the DFI new parcel formation restrictions be lifted. Consequently, the riparian impact of the proposed TGPA and ZOU changes must be presumed to be significant.

The Initial Study table should address these impacts until the board of supervisors has formally withdrawn the proposed changes to Policy 6.4.1.4 and 6.4.1.5 of the General Plan, as recommended by staff.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Karen Mulvany". The signature is fluid and cursive, with a large initial "K" and a long, sweeping tail.

Karen Mulvany



Shawna Purvines <shawna.purvines@edcgov.us>

public Comment/Bio Resources NOP

Jamie Beutler <beutlerjamie@gmail.com>
To: shawna.purvines@edcgov.us

Mon, Aug 17, 2015 at 3:58 PM

Hi Shawna,

The above are Ellen Van Dyke's comments and I'd like to go on record as supporting those comments in principle.

Thank you,

Jamie Beutler



NOP Comments_Bio Policies_8.17.15.pdf
793K

Van Dyke Public Comment for Biological Resources NOP, 8/17/15

An NOP signals that the drafted policies have been vetted and are ready to be analyzed in the EIR. Yet the multiple outreach meetings largely disregarded public comment. The removal of Option A to allow 100% oak tree removal may please developers and staff, but it is NOT supported by residents. *Initiation of this EIR is premature if the drafted policies do not yet reflect the will of County residents. Please reconsider the Project Description and reissue this NOP.*

Additionally, I would like to see the following concerns addressed regarding the biological policies as drafted:

1. The Project cannot be reviewed 'in a vacuum', and changes resulting from the TGPA/ZOU must be included in the cumulative impacts analysis if that project has not been concluded or is tied up in litigation.

Some of the TGPA/ZOU changes that have not been reviewed relative to removal of the Option A retention standards are:

- a. reduced open space requirements (ordinance 17.28.050B)
 - b. increased hillside development (policy 7.1.2.1)
 - c. reduced riparian setback (ordinance 17.30.030G3d)
 - d. allowance for development within the riparian setback (ordinance 17.30.030G5)
 - e. intensification of zoning (ie, minimum 20 acre parcels changed to minimum 10 acre zoning)
 - f. expanded uses within zone districts (use matrices throughout the ZOU: 17.21.020, 17.22.020...)
 - g. expanded uses under the Home Occupancy Ordinance
 - h. expanded uses into Rural Regions (Table 2-1, Policy 2.2.1.1)
 - i. expanded exemptions to the biological policies, such as agricultural activities, hillside development, and underground utilities(ordinance 17.30.060D)
 - j. reduced agricultural setback requirements (policies 8.1.3.1/8.1.3.2)
 - k. the 2004 General Plan impacts that are no longer being mitigated -see 2. below.
2. Any elements of the 2004 General Plan that counted on mitigations now being eliminated must be factored back in to the impact analysis. For example, if constraints to development in 2004 included open space protections and restricting hillside development, and those mitigations are revised, the impact of having the Community Regions expanded by some 300 parcels via the 2004 Gen Plan will have to be reviewed relative to the removal of Option A and mitigation measures CO-A, -L, -M, -N, -O and -P.
 3. Neither the NOP nor the ROI's it is based on (ROI 118-2015 & 109-2015) reflect the June 22nd motion of the Board to include oak tree retention standards in the alternatives (minutes attached). In the July 14th hearing staff asserted they needed further direction, and it appears none has been given. The project description is flawed and should be revised, possibly with a new NOP circulated for public review.
 4. How can Option A be deleted when it was required by the 2005 court decision that lifted the writ of mandate? This may necessitate a different/additional analysis.
 5. Broaden the impact analysis of heritage tree designation to potentially protect trees 24" in diameter and greater, which would be in alignment with other similarly rural counties. If only 36" is analyzed as proposed, "lesser" options will not be possible; this process is supposed to be helping to inform the Board's decision.
 6. Fully analyze acorn planting as a mitigation, per Board direction June 22nd. While acorn planting may be excellent for restoration and supported by the Kuehl Bill, it is not utilized for actual *replacement mitigation* in other counties. Provide monitoring results from other Counties as well as El Dorado County.

7. Provide analysis for the impact of allowing conservation easements to occur within Community Regions and Rural Centers. The drafted policies currently exclude this, but there are MANY acres of oak woodland and other habitat within these regions that will be subject to 100% oak removal and fragmentation. Provide accurate and detailed mapping showing where oak woodlands, rare plant habitat, and migratory trails exist.
8. Discuss what mitigations would be required to encourage regeneration of oak trees if cattle grazing is to be allowed concurrent with conservation easements.
9. Policy 7.4.2.8 currently requires mapping of five specific major habitats to be updated every three years, to identify the amount of important habitat removed because of new development. This requirement has not been complied with and is now being deleted. Why?
 - a. New maps that are accurate, detailed, and legible, should be provided with a comparison to the last maps done (10 years ago?)
 - b. Has *not* having these updates done as required contributed to connectivity and habitat loss?
 - c. Rather than remove the requirement, would an effective solution be to actually comply with it?
10. It is not clear why ministerial development, or agricultural activities, or low income housing, should be exempt from the biological policy requirements- please discuss this, and provide analysis of impacts if they were NOT to be exempted.
11. The NOP (page 7) mentions an Oak Resources Conservation ordinance that is "to be developed" for adoption with the ORMP. This is a vague reference to an important document that the public has not seen. If the retention standards lacked specificity for inclusion, surely this does too, and I would object to this EIR 'blessing' an unknown document.
12. These policies will allow an increase in the conversion of biological habitat into residential use - an impact on Air Quality, Greenhouse Gases, Transportation and Noise seems likely. These categories should not be exempt in this EIR.
13. County staff has expressed to the public that the policies proposed are essentially consistent¹ with the current General Plan. If this were true an EIR would not be necessary. The change to allow 100% tree removal is a significant change that has not been made clear to the public. It must be clarified in the EIR and not buried with declarations of '*there's not really any change*'. There must be a true good faith effort to communicate the policy changes and encourage public discourse in order to be CEQA compliant.
14. If the comments submitted for this NOP reflect general dissatisfaction in the policies themselves, please revisit the drafted policies prior to initiating a costly EIR.

A few policy references are attached below for convenience.

Ellen Van Dyke, Rescue

¹ Principle Planner, Purvines, Mountain Dem article "County updating General Plan biological policies"

For Reference:

6/22/15 Motion of the Board requiring oak tree retention standards be included in the EIR:

Public Comment: E. Vandyke, J. Buetler, K. Payne, R. Hargrove, L. Christensen, C. Louis, R. Louis, A. Cantwell, J. Davies

A motion was made by Supervisor Ranalli, seconded by Supervisor Veerkamp to Approve this matter, Adopt Resolution's 108-2015 and 109-2015 and direct staff to:

Consider project alternatives as part of the environmental review process including:

- 1) Adding oak resource retention standards;
- 2) Options for Individual Oak Tree (IOT) replacement mitigation (e.g. acorn to 15 gallon potted tree) and associated analysis of the implications for the In-lieu Fee Nexus study based on these options, and
- 3) Oak resource mitigation requirements related to discretionary and ministerial projects.

Yes: 4 - Mikulaco, Veerkamp, Frentzen and Ranalli

Absent: 1 - Novasel

From the 2005 court decision that lifted the 1999 writ of mandate against the county:

PROCEEDINGS: MOTION FOR REVIEW OF COUNTY'S RETURN TO WRIT OF MANDATE-RULING

process. Thus, issues concerning changes made in former versions of the General Plan are no longer relevant.

Moreover, the County has gone well beyond the direction of the 1999 writ. It has provided a new analysis of the impacts of replacement versus retention of oak woodlands, and it has also eliminated the "replacement" option from the policy as approved. The new, revised canopy protection measure keeps the retention percentages that were adopted in 1996, eliminates replacement as an option in lieu of retention, and requires a replacement of any canopy not required to be retained under the policy. In addition, the current DEIR proposed an alternative to the retention requirements, "Option B", which allows the County to require a project applicant to provide funding for woodland preservation in lieu of on-site canopy retention. The preservation would be at a 2:1 ratio and would allow the County to pool funds and apply them towards acquisition and restoration projects that would preserve larger contiguous blocks of habitat. The County adopted other new mitigation measures regarding oak woodland habitat. (See Mitigation Measures 5.12-1(e) and 5.12-1(g).)

Policy 7.4.1.6 All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance is not possible, the development shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall be defined in the Integrated Natural Resources Management Plan (INRMP) (see Policy 7.4.2.8 and Implementation Measure CO-M).

The County Agricultural Commission, Plant and Wildlife Technical Advisory Committee, representatives of the agricultural community, academia, and other stakeholders shall be involved and consulted in defining the important habitats of the County and in the creation and implementation of the INRMP.

MEASURE CO-A

Review the Zoning Ordinance (Title 17 of the El Dorado County Code) to identify revisions that accomplish the following:

- A. Incorporate tree canopy coverage standards outlined in Policy 7.4.4.4;
- B. Develop standards for use of native plants in landscaping [Policy 7.4.5.2];
- C. Establish Historic Design Control Combining Zone District and design guidelines for reconstruction and construction of new buildings and the demolition of existing buildings in such districts. Adopt an ordinance amendment implementing historic design review requirements and recordation procedures. [Policies 7.5.2.1, 7.5.2.2, and 7.5.2.4];
- D. Develop buffer standards for new non-mining land uses next to existing mining operations [Policy 7.2.2.3];
- E. Develop standards for minimizing erosion and sedimentation associated with earthwork and grading [Policy 7.1.2.2].

MEASURE CO-U

Mitigation under Policy 7.4.1.6 shall include providing sufficient funding to the County’s conservation fund to acquire and protect important habitat at a minimum 2:1 ratio. The cost associated with acquisition, restoration, and management of the habitat protected shall be included in the mitigation fee. For larger development projects (i.e., those that exceed a total of 10 acres), in addition to contributing to the conservation fund at a minimum 2:1 ratio, onsite preservation and/or restoration of important habitat shall be required at a 1:1 ratio. Impacts on important habitat and mitigation requirements shall be addressed in a Biological Resources Study and an Important Habitat Mitigation Program (described below).

- A. Biological Resources Study. The County shall adopt biological resource assessment standards that apply to all discretionary projects that would result in disturbance of soil and native vegetation in areas that include important habitat as defined in the INRMP. The assessment of the project site must be in the form of an independent Biological Resources Study, and must be completed by a qualified biologist. The evaluation shall quantify the amount of important habitat, by habitat type, as defined in the General Plan and delineated on maps included in the INRMP. The Biological Resources Study shall also address the potential for the project to adversely affect important habitat through conversion or fragmentation. This requirement shall not apply to projects that are on lands that either (1) have already been the subject of a study and for which all mitigation requirements are being implemented or (2) have been evaluated by the County and found to not possess any important habitat resources.
- B. Important Habitat Mitigation Program. The Biological Resource Study shall include an Important Habitat Mitigation Program that identifies options that would avoid, minimize, or compensate for impacts on important habitats in compliance with the standards of the INRMP and the General Plan. All mitigation programs shall include a monitoring and reporting component requiring reports to the County not less than once each year for a period of not less than 10 years. The report will include a description of the lands included in the mitigation program (including location and size), a summary of the evaluation criteria established at the time the mitigation program was approved, an evaluation of the mitigation program based on those criteria, and recommendations for action during the following year. The County shall adopt standards for evaluating mitigation programs proposed as part of the Biological Resources Study described above. The standards shall ensure that the mitigation reduces direct and cumulative impacts of proposed development on important habitats to less than significant levels in accordance with CEQA thresholds.

Policy 7.4.4.4 For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County’s Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

Option A

The County shall apply the following tree canopy retention standards:

The County shall apply the following tree canopy retention standards: Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Policy 7.4.2.8. Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Article excerpt referenced in footnote 1:

Mountain Democrat

PLACERVILLE, CALIFORNIA

News

County updating General Plan’s biological policies

By **Chris Daley** From page A1 | July 27, 2015

Public hearings will be set

El Dorado County’s 2006 Oak Woodlands Management Plan, newly re-christened as the Oak Resources Management Plan, is once again getting a makeover.

Developed by the Long Range Planning Division of the Community Development Agency, the biological policy update project’s new resolution of intention was presented by Principal Planner Shawna Purvines at the Board of Supervisors’ July 14 meeting. Initially slated on the Consent Calendar, the items were moved off for discussion at the urging of local resident/activist Jamie Beutler and others.

As explained by Purvines, the new ROI was needed because an earlier version “didn’t accurately reflect the language of dealing with the ORMP and Rare Plants.” Both are part of the General Plan’s Chapter 7 —

Conservation and Open Space Element — and the issue goes back nearly a decade. The original Oak Woodlands Management Plan was overturned by a court decision, in part, because the county did not adequately address mitigation methods regarding removal or disruption of oaks and oak woodlands in its environmental impact report.

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The recommended amendment removes the A and B Options in favor of “an incentive-based approach.”

In separate e-mails and copies of e-mails, Purvines wrote to the Mountain Democrat and to the Green Valley Alliance’s Ellen Van Dyke. She said in part, “The board’s decision to revise General Plan policy 7.4.4.4 related to oaks is consistent with the 2004 General Plan and essentially consistent with the 1996 General Plan which both included the options of retention ‘or’ mitigation.”



Shawna Purvines <shawna.purvines@edcgov.us>

Comment Letter Regarding Notice of Preparation of EIR re Oak Resources Management Plan

1 message

Scot Bernstein <swampadero@sbernsteinlaw.com>
To: Shawna.purvines@edcgov.us
Cc: swampadero@sbernsteinlaw.com

Mon, Aug 17, 2015 at 4:55 PM

Dear Ms Purvines,

Attached is my comment letter regarding the Notice of Preparation of the Environmental Impact Report for the General Plan Biological Resources Policy Update and Oak Resources Management Plan.

Thank you for your attention to this matter and for the opportunity to comment.

Scot Bernstein

Scot Bernstein
Law Offices of Scot D. Bernstein
A Professional Corporation
101 Parkshore Drive
Suite 100
Folsom, California 95630

Telephone: 916-447-0100
Fax: 916-933-5533

www.sbernsteinlaw.com

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EIR EI Dorado Oak Ord Comment 2015 0817.pdf

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Shawna Purvines <shawna.purvines@edcgov.us>

FW: Comment Letter Regarding Notice of Preparation of EIR re Oak Resources Management Plan

1 message

Scot Bernstein <swampadero@sbernsteinlaw.com>

Mon, Aug 17, 2015 at 5:00 PM

To: Shawna.purvines@edcgov.us, charlene.tim@edcgov.us, edc.cob@edcgov.us, rich.stewart@edcgov.us

Cc: swampadero@sbernsteinlaw.com

All –

Please see email below and attachment.

Thank you.

Scot Bernstein

Scot Bernstein
Law Offices of Scot D. Bernstein
A Professional Corporation
101 Parkshore Drive
Suite 100
Folsom, California 95630

Telephone: 916-447-0100
Fax: 916-933-5533

www.sbernsteinlaw.com

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From: Scot Bernstein [mailto:swampadero@sbernsteinlaw.com]
Sent: Monday, August 17, 2015 4:56 PM
To: 'Shawna.purvines@edcgov.us'
Cc: Scot Bernstein <swampadero@sbernsteinlaw.com>
Subject: Comment Letter Regarding Notice of Preparation of EIR re Oak Resources Management Plan

Dear Ms Purvines,

Attached is my comment letter regarding the Notice of Preparation of the Environmental Impact Report for the General Plan Biological Resources Policy Update and Oak Resources Management Plan.

Thank you for your attention to this matter and for the opportunity to comment.

Scot Bernstein

Scot Bernstein
Law Offices of Scot D. Bernstein
A Professional Corporation
101 Parkshore Drive
Suite 100
Folsom, California 95630

Telephone: 916-447-0100
Fax: 916-933-5533

www.sbernsteinlaw.com

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 **EIR EI Dorado Oak Ord Comment 2015 0817.pdf**
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LAW OFFICES OF
SCOT D. BERNSTEIN
A PROFESSIONAL CORPORATION
101 PARKSHORE DRIVE
SUITE 100
FOLSOM, CALIFORNIA 95630
TELEPHONE (916) 447-0100
FACSIMILE (916) 933-5533
www.sbernsteinlaw.com

August 17, 2015

Shawna Purvines
Principal Planner
El Dorado County
Shawna.purvines@edcgov.us

VIA EMAIL ONLY to Shawna.purvines@edcgov.us

**RE: Comment on Notice of Preparation of Environmental Impact Report for the
General Plan Biological Resources Policy Update and
Oak Resources Management Plan**

Dear Ms Purvines:

I am a long-time resident of El Dorado County. I write this letter to express concerns regarding the proposal to weaken oak tree and oak canopy protections in El Dorado County. This letter will serve as my comment on the Notice of Preparation of Environmental Impact Report (“EIR”) for the for the General Plan Biological Resources Policy Update and Oak Resources Management Plan

Let me begin by stating that it is my understanding that the proposals would allow for reduced canopy protections and, with the payment of a mitigation fee, no canopy retention requirement whatsoever. The latter sounds like permission to clearcut oak woodlands can be bought for a fee. If that is incorrect, I am interested in understanding how and why.

I have reviewed the list of subjects that will and will not be covered in the EIR. The list of subjects that the EIR will evaluate are as follows:

Aesthetics
Agricultural and Forestry Resources
Biological Resources
Greenhouse Gas Emissions
Land Use and Planning

The list of environmental topic areas with respect to which “it is not anticipated that impacts would occur” and which therefore “will not be evaluated further” are as follows:

Shawna Purvines
Principal Planner
El Dorado County
August 17, 2015
Page 2

Air Quality

Cultural Resources

Geology/Soils

Greenhouse Gas Emissions

Hazards and Hazardous Materials

Hydrology/Water Quality

Mineral Resources

Noise

Population/Housing

Public Services/Utilities

Transportation

I will comment on the subjects that are highlighted in the lists above.

The starting point for this analysis is that the proposed changes are not happening in a vacuum. Permission to reduce oak canopy protections is being sought so that oak woodlands can be replaced with housing developments. Thus, to be valid, any analysis of the environmental impacts of the proposals must consider not just their direct or first order effects but also their inevitable consequences.

With that in mind, here are my comments regarding the highlighted topic areas above.

Greenhouse Gas Emissions.

You may have noticed that this subject is included in both the “will evaluate” and the “will not be evaluated” categories. Obviously, one of those inclusions is incorrect. I cannot tell which one. But on the chance that the real intention is not to evaluate Greenhouse Gas Emissions, my comment is that it should be studied.

First, oak trees are photosynthesizing organisms. They break down carbon dioxide and release oxygen into the atmosphere. They are large, so they do that on a large scale.

The use of the term “emissions” in the above heading may be a bit of a misnomer. Emitting a carbon dioxide molecule has exactly the same impact as failing to break down a carbon dioxide molecule that otherwise would have been broken down. Either way, you have one more carbon dioxide molecule than you otherwise would have had. So removing oak trees, whether or not the removal process increases “emissions” in a literal sense, clearly increases the total carbon dioxide in the atmosphere.

But the consequences of permitting oak tree removal will increase greenhouse gas emissions in a direct way. The oaks that are removed will not be replaced by grasslands. They will be replaced by housing developments. And with houses come cars – thousands and thousands of cars. And cars emit greenhouse gases.

How much greenhouse gas is emitted by them is impacted by both the number of cars and the amount of time they spend on the road. With key transportation corridors in this county already very congested during commute hours and other peak-traffic times of day, that time on the road can be expected to be quite long. If the EIR does not address greenhouse gas emissions in the context of not just the direct consequences of removing the oak trees but also the indirect consequences of what will replace the oak trees, it will be providing an incomplete analysis.

Aesthetics

Oak trees and oak woodland are beautiful. That is a widely-held view. The beauty of El Dorado County is why a lot of its residents live here. Permitting large-scale destruction of oak trees and oak woodland, in and of itself, will damage the aesthetics and natural beauty of the County. Replacing them with housing developments, as inevitably will happen, will be far worse. An analysis that looks only at the direct effects of removing some oak trees and does not account for their likely large-scale removal and replacement with housing subdivisions cannot serve as a complete analysis of the impacts of the proposed change.

Biological Resources

Oak woodland is an entire ecosystem. Allowing oak trees to be clear-cut cannot help but impact biological resources. And replacing them with asphalt and houses will have a greater impact still.

Land Use and Planning

Weakening protection of oak woodlands is a big step toward further, large-scale urbanization of a beautiful county whose residents prize its natural beauty and rural lifestyle. Once again, an analysis that assumes that the removal of oaks will happen on a small or intermediate scale, and does not account for the thousands of houses thousands of cars that inevitably will take their place, will be an incomplete analysis.

Air Quality and Hazards and Hazardous Materials

The direct impact of removing large numbers of oak trees from the local environment will be less photosynthesis and less carbon dioxide reduction. But the larger impact by far will be the air quality degradation that will result from the building of thousands of houses and the arrival and use of several cars for each household. If oaks can be clear-cut for the payment of a “mitigation” fee, the result will be urban air quality in El Dorado County. Because many of the pollutants in motor vehicle exhaust are hazardous materials, the EIR should address the impacts in both of these categories.

Hydrology/Water Quality

Water quality will suffer as well. Not only will the biological processes of oak woodlands be missing, but they will be replaced with housing developments and their inevitable use and disposal of a multiplicity of household chemicals, many of which will end up in the groundwater. Once again, an EIR that ignores this inevitable impact of allowing replacement of oak woodlands with housing developments cannot be considered complete.

Transportation

Replacing oak woodlands with thousands of houses and two to four times as many cars will worsen traffic congestion dramatically. If the average commuting resident spends an extra ten minutes a day in traveling each direction five days a week, fifty weeks a year, the extra time in the car will amount to more than 83 hours each year. That’s two workweeks of *extra time* behind the wheel each year. If that isn’t a transportation problem, a degradation in the quality of life in El Dorado County, it’s hard to imagine what is. To be complete, the EIR must address the transportation problems that inevitable will arise from a loosening of oak tree protections.

Noise

Woodlands are sound barriers. Clear-cutting them eliminates that protection. Worse, the increased traffic and increased population that will result from replacing oak woodland with housing subdivisions inevitably will increase noise levels and further disturb what still is a rural lifestyle in El Dorado County. Thus, the EIR, to be complete, must analyze noise issues as well.

Shawna Purvines
Principal Planner
El Dorado County
August 17, 2015
Page 5

Thank you for your attention to these important matters and for the opportunity to comment.

Very truly yours,

Scot Bernstein

SDB:msw

Cheryl Langley
5010 Mother Lode Drive
Shingle Springs, CA 95682

Ms. Shawna Purvines, Principal Planner
EDC Development Agency, Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

August 17, 2015

RE: Notice of Preparation for the Biological Resources Policies Update & Oak Resources Management Plan

Ms. Purvines:

Thank you for the opportunity to comment on the Biological Resources Policy Update (BRPU). I request the following information be included in the draft Environmental Impact Report (dEIR).

Impact to Efficacy of the 2004 General Plan

- Discuss how the removal of specific biological resources mitigation policies will impact the “legitimacy” and “viability” of the 2004 General Plan, since its approval was based in part on the presence of specific mitigation measures (e.g., the Integrated Natural Resources Management Plan, etc.).
- Because both the INRPM and Option A have been eliminated under the BRPU, include a discussion that specifies how the Oak Resources Management Plan (ORMP) satisfies the court decision brought relative to the Oak Woodlands Management Plan. How can both elements (INRMP and Option A) be deleted and yet satisfy mitigation requirements under that decision?

Targeted General Plan Amendment/Zoning Ordinance Update (TGPA/ZOU) Approval/Implementation

Multiple TGPA/ZOU policy changes will impact on oak woodlands—such as the TGPA/ZOU sanctioned conversion of open space to agricultural land—and will not be evaluated under any EIR: not under the TGPA/ZOU EIR, and not under the BRPU/ORMP EIR.

Impact to biological resources will be significant and adverse because agriculture is exempt from oak woodland protection measures (as well as other measures that protect biological resources—riparian protections, and so forth). The TGPA/ZOU will also amend **Policy 2.2.3.1 (open space in –PD zones)**; this will “...reduce the open space available for wildlife habitat in –PD zones and thereby increase the potential to adversely impact special-status species.” It will also exempt **Residential Agriculture** from the list of zoning regulations that provide for maintenance of permanent open space, allow development on slopes ≥ 30 percent, adversely impact riparian woodland, and impact the groundwater resources oak woodlands rely upon.

In addition, Dudek estimates of oak woodland acreage impacted are based on the 2004 General Plan, not on TGPA/ZOU policies. Specifically, Dudek excluded an estimate of oak woodlands on slopes ≥ 30 percent, but **the TGPA/ZOU will enable development on these slopes**. Thus, the estimates in Dudek’s *Oak Woodland Impact and Conservation Summary Table 5* are short-lived, if the TGPA/ZOU is adopted.

- Discuss the impact on the BRPU/ORMP if the TGPA/ZOU is approved. That is, discuss whether a revision of the BRPU EIR will be required to accommodate the additional impacts the TGPA/ZOU will have on elements in the BRPU.

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- Explain how the BRPU can legitimately be separated from the TGPA/ZOU evaluation. (The current BRPU is evaluated only in the context of the 2004 General Plan.)
- The TGPA/ZOU was evaluated as if Option A, the INRMP, and *multiple* other mitigations were “viable.” Because these mitigations have been stripped away under the proposed BRPU, will the TGPA/ZOU EIR be recirculated if the proposed ORMP is adopted? Please explain.
- Provide information on the TGPA/ZOU impact to oak woodlands (including its impact on oak woodlands in agricultural-zoned lands, and as a result of the reduction in open space requirements, allowance of construction on sites with > 30% slope, the depletion of groundwater that oak woodlands rely upon, etc.)

Support Information for Approaches A, B & C

County staff prepared documents for the November 21, 2014 Biological Resources Workshop that included three **approaches (A, B and C)** to facilitate the completion of the ORMP project description and environmental review (County documents 7A and 7B). On page 5 of Staff Memo 7B, staff included a table that presents three approaches and their relative level of “*significant and unavoidable impacts.*” When asked how these impact levels were derived, staff did not (or could not) answer. References (supporting documentation) were not supplied at that time, nor subsequent to the workshop. Despite the absence of supporting documentation, the Board of Supervisors made the decision to proceed with **Approach A.**

Thus, it is not known what information the impact levels were based upon. This information was not available to the public, and it is reasonable to assume it was not available to the decision making body (Board of Supervisors).

- I am requesting that the evidence/studies/science that served as the basis for the level of impact determinations for **Approaches A, B and C** be made available and included in the dEIR. Please include any and all documentation, (letters, emails, etc.) used to support the impact determinations (such as communications with outside agencies, etc.).

Mitigation Performance

According to *A Planner’s Guide for Oak Woodlands*:¹

...ecologists now recognize that **replacing a century old tree with 1, 3, or 10 one-year-old seedlings does not adequately replace the lost habitat value of large trees.** It has become evident that **simply focusing on mitigation plantings based on a tree to seedling ratio is not a sufficient strategy to ensure the viability of oak woodlands.** [R]eplacement seedlings as a mitigation measure for removal of older stands of trees cannot meet the immediate **habitat needs** of forest-dependent animal species.

It is apparent that **preservation of oak woodland on-site is the preferred “mitigation.”** Short of on-site preservation, **the purchase of oak woodlands that will remain undeveloped in perpetuity** is to be preferred over on-site (or off-site) planting of saplings. Revegetation on- or off-site is a poor substitute for mature woodland, especially when value as **wildlife habitat** is part of the equation. **It is likely that**

¹ Giusti, G.A. et al (editors). 2005. *A planner’s guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

the loss of oak woodlands cannot be adequately mitigated under the current ORMP, especially in the absence of Option A retention requirements.

Mitigation Strategy

The proposed mitigation options need to be defined—or actually— redefined.

According to *A Planner's Guide for Oak Woodlands*:²

[T]he ultimate goal for planting mitigations should be tree establishment and long-term survival. The impact should be compensated for by replacing or providing substitute resources, such as **planting large container-grown trees, rather than seedlings or acorns** to expedite the recovery of the lost habitat component, or off-site mitigation actions, or mitigation banking. **However, off-site measures should be considered sparingly and should not be viewed as a convenient way to achieve mitigation objectives; off-site mitigation proposals should be carefully considered so that the strategy *is not abused*.**

If replacement planting *is* chosen as a means of mitigation in the ORMP, the mitigation must meet performance standards:

- Please specify performance standards for mitigation plantings. For instance, in the Interim Interpretive Guidelines (IIG) (7)(b), page 10, and IIG (7)(c), page 11, replacement plantings are “designed” to achieve oak woodland canopy coverage equal to the canopy removed **no more than 15 years from the date of planting**. **What is the performance standard for the mitigations described in the ORMP?**

Acorn planting as mitigation for the removal of mature stands of oaks is wholly inadequate. While it has been stated during ORMP workshops that acorn planting is sometimes the preferred method of achieving oak mitigation, there are many caveats that make this method of oak woodland replacement ineffective.

According to McCreary,³ the planting of acorns will be impacted by a whole host of factors such as conditions at the planting site, including the kinds of animals present. **Because acorns are an important food source for a whole host of animals, acorn plantings are difficult to protect.** McCreary also warns that the type of care necessary for survival and growth may not be logistically feasible for remote planting sites,⁴ making a difficult prospect more even more susceptible to failure.

² Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

³ McCreary, D.D. Undated. *How to Grow California Oaks*. University of California Oak Woodland Management. Available at: http://ucanr.edu/sites/oak_range/Oak_Articles_On_Line/Oak_Regeneration_Restoration/How_to_Grow_California_Oaks/

⁴ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

Oak Regeneration and Acorn Plantings

The issue of oak regeneration comes into play when acorn planting is chosen as the path to oak woodland replacement.

According to *A Planner's Guide for Oak Woodlands*:⁵

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

There is substantial evidence suggesting that several species, including blue oak, valley oak, and Engelmann oak (*Quercus engelmannii*) are not reproducing at sustainable levels in portions of California. Simply stated, there are not enough young seedlings or saplings to take the place of mature trees that die, raising questions about the future of these species in the state.

Numerous causes have been cited, including increased populations of animals and insects that eat acorns and seedlings, changes in rangeland vegetation, adverse impacts of livestock grazing (direct browsing injury, soil compaction, and reduced organic matter), and fire suppression. Some people also suspect that climate change is a factor...

This troubling condition—that of poor regeneration—means the viability of acorn plantings, too, will be problematic, **making replacement of woodlands via the planting of acorns a fragile, ineffective strategy.**

According to McCreary,⁶ **an effective alternative to directly sowing acorns is growing oak seedling in containers and then planting the saplings out in the field.** McCreary indicates propagating oaks in this manner results in starts that "...have higher survivorship than directly planted acorns, but they also cost far more."

Regarding acorn planting, I have the following requests for information:

- Please identify in the dEIR **other counties that utilize acorn planting** for mitigation and **describe the success rate** (efficacy) of such plantings **for each species of oak.** Describe locations at which such mitigation has taken place, and the date of plantings. Please include photographs of the site.
- The *Biological Resources Study and Important Habitat Mitigation Program Interim Guidelines (November 9, 2006)*, pages 15-16 (under Discretionary Project Reporting Requirements) specify a **15 year (annual) monitoring period for oak regeneration projects that utilize acorns.** This monitoring period has been changed to 7 years (based most likely on Kuehl bill requirements). **Explain in the dEIR the reason for the monitoring period reduction.** (That is, explain why what

⁵ Giusti, G.A. et al (editors). 2005. *A Planner's Guide for Oak Woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

⁶ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

was once acceptable/recommended has been reduced, given the more “protective” nature of the longer monitoring period).

- The IIG (7)(c), page 11 indicates maintenance and monitoring shall be required for a minimum of 10 years after the planting of trees (saplings, etc.) **Explain in the dEIR why this maintenance and monitoring period has been reduced under the ORMP**, given it was once acceptable/recommended and is more “protective.”

Mitigation Efficacy

According to the California Environmental Quality Act (CEQA) 15126.4a1(B) “Where several measures are available to mitigate an impact, each should be discussed and **the basis for selecting a particular measure should be identified.**” And, according to the Oak Woodland Impact Decision Matrix⁷ conservation planning grounded in science-based information supports the development of sensitive planning scenarios. But, **while mitigation strategies are identified in the ORMP, the strategies themselves do not represent vetted processes. Efficacy of the measures must be proven; evidence must be provided.**

- Please include in the dEIR references for the science-based information used as a basis for mitigation strategies proposed in the ORMP.
- Include a discussion of mitigation efforts undertaken in the County. Discuss **failed mitigations**, and the **reason(s) for their failure**. (Such as the mitigation plantings adjacent to Serrano Village D2—see the following photos.)
- Describe mitigation efforts (oak replanting efforts) that have been **successful** in the County. Describe the location of the plantings, the type of oak replanting that took place (i.e., acorns, container plants, etc.—including the size of the container plants), when they were planted, and the current status (size, condition, mortality rate, etc.) Please include photographs of the site.
- Given the many examples of failed mitigation efforts in the County, discuss why the public should have confidence that future mitigations will be successful. (That is, **past performance is the best predictor of future performance.**)

The following photos were taken of **mitigation plantings** by Serrano Village D2 in “tree shelters.” (This village was built around 2001-2003.) Photos taken **June, 2015**.

⁷ Giusti, G., et al. 2008. *Oak Woodland Impact Decision Matrix: a guide for planner’s to determine significant impacts to oaks as required by SB 1334 (Public Resources Code 21083.4)*. UC Integrated Hardwood Range Management Program, 2008.



This is a photo of a "tree shelter" around a blue oak; it was probably planted around the time of adjacent village construction (2001-2003).

Photo taken June, 2015.



Note the low success rate of blue oak plantings, even with tree shelters



The tree shelters in this area (as seen in foreground) are mostly devoid of trees (approximately 12-14 years after planting).

Revised Definition of Woodland

“Oak Woodland” needs to be redefined to include not only standing living oaks, “...but also trees of other species, damaged or senescent (aging) trees, a shrubby and herbaceous layer beneath the oak canopy, standing snags, granary trees, and downed woody debris in conjunction with [oaks].”⁸

Existing oak woodlands need to be evaluated under these criteria and, if on-site retention is not possible, **mitigation for the loss of all woodland components** through either conservation easement or fee title acquisition in perpetuity of biologically equivalent (or greater) woodland must take place to ensure replacement of viable woodland/wildlife habitat. (Napa County, for instance, evaluates all woodland components and employs a 60/40 retention in sensitive water drainages: 60% tree cover; 40% shrubby/herbaceous cover.)⁹

- Explain why the ORMP defines oak woodland in the following manner, and not in the manner described above in the Tuolumne County document (that acknowledges oak woodlands as wildlife habitat):

Oak Woodlands: An oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover (California Fish and Game Code Section 1361).

Source: ORMP, page 27.

- Discuss how the definition of oak woodland in the ORMP serves to limit mitigation effectiveness, and how the definition from Tuolumne County (above) expands mitigation viability.

⁸ Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 32. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

⁹ Napa County. 2010. Napa County Voluntary Oak Woodlands Management Plan. October 26, 2010; page 20. Available at: <http://www.countyofnapa.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=4294973990>

Exempt Actions

- **Exemption for Personal Use of Oak Woodland Resources.** ORMP, page 7: *“When a native oak tree, other than a Heritage Tree, is cut down on the owner’s property **for the owner’s personal use.**”* This provision for “personal use” is problematic.
 - **Explain what deters a property owner from “pre-clearing” oaks under the guise of “private use.”**
 - Include a discussion—and some options for defining “personal use”—that may include **restricting personal use to certain zoning classifications** (i.e., residential parcels of 10 acres or less, for example) and eliminating from “personal use” land zoned for commercial, industrial, and other properties subject to planned development, area specific plans, etc.
 - Include a discussion that evaluates incorporating measures that **restrict for a period of time—say 10 years—the rezoning of land that has been pre-cleared, even if oak woodland was removed while the land was under a zoning district that *allows* oak tree removal for personal use** (parcels of 10 acres or less, for example).

This discussion is necessary (as is the provision of a measure designed to prevent such behavior) because it is well known—and documented—that sites within the County have been cleared of oak trees immediately prior to development proposal. (Documentation provided upon request.)
- **Exemption for Non-Commercial Agricultural “Operations.”** ORMP, page 7: *“Agricultural cultivation/operations, whether for personal or commercial purposes (excluding commercial firewood operations).”*
 - Include in the dEIR why this measure is necessary, and how much oak woodland is potentially impacted by this measure. The El Dorado Irrigation District (EID) is already on the threshold of eliminating a reduction in water rates for such operations, thus threatening their viability. Thus, while EID policies undercut such activity, the ORMP allows for the removal of oak resources minus mitigation. A reasoned outcome is that oaks are removed for a “hobby” agricultural operation that has little chance of being maintained.

Commercial Wood-Cutting Operations

There are too few restrictions placed on commercial firewood cutting operations. This lack of restrictions places oak woodland—especially blue oak woodland—in jeopardy.

The following is an excerpt from page 11 of the ORMP:

Commercial firewood cutting operations shall also require a tree removal permit if not approved under an oak woodland removal permit. In reviewing a tree removal permit application for commercial firewood cutting operations, the County shall consider the following:

- Whether the removal of the tree(s) would have a **significant negative environmental impact**;
- Whether the tree proposed for removal is a Heritage Tree;
- Whether replanting would be necessary to ensure **adequate regeneration**;
- Whether the removal would create the **potential for soil erosion**; and
- Whether any other limitations or conditions should be imposed in accordance with **sound tree management practices**.

- Please include in the dEIR the **specific criteria (thresholds)** used to determine the following:
 - “significant negative environmental impact”;
 - “adequate regeneration”;
 - “potential for soil erosion”; and
 - “sound tree management practices.”
- Include in the dEIR a discussion of specific criteria/thresholds/restrictions applied to **restrict removal activity** to a level that precludes impact to a level of “significant environmental impact,” and that supports adequate regeneration, avoids soil erosion, and institutes sound management practices.
- While **commercial firewood cutting operations** would be required to obtain a permit under the proposed plan, **there is no mention of minimum retention standards**. Shasta and Tehama counties adopted resolutions calling for **30 percent crown cover retention**.



Photo Source: Standiford, et al., 1996. *Impact of Firewood Harvesting on Hardwood Rangelands Varies with Region*. California Agriculture, March-April, 1996.



Blue oak firewood en route to Bay Area markets.

**Blue oak firewood
en route to
Bay Area markets.**

Photo Source: Cobb, J. 2015. California Oaks, letter to the California Board of Forestry and Fire Protection and the California Air Resources Board dated June 29, 2015 ([Attachment 1](#)).

In-Lieu Fee Use

- **Define in the dEIR exactly what the in-lieu fee will be used for.** Include a discussion of the benefit of a clause that addresses unexpended funds in the following manner: change existing language from *“revenues shall be allocated for some other purpose”* to *“revenues shall be dedicated to land conservation or natural lands stewardship.”* This suggested language **provides some flexibility while keeping the use of the funds focused** if the County has difficulty expending all the funds specifically for oak woodlands within the five year time frame.

Willing Sellers in Community Regions/Rural Centers

- Discuss how allowing **willing sellers** in Community Regions and Rural Centers to “sell” their property into **conservation easement** status would impact County conservation efforts. Discuss the reasoning behind *not* allowing willing sellers in these designations to sell, and discuss whether or not this restriction is based upon habitat evaluation (study).

Site Concurrence

- Include an evaluation of the viability/impact of **site concurrence by the California Department of Fish and Wildlife (CDFW)** in the process of establishing **conservation easements**. At least one county (Tuolumne) recommends dedication of such lands to a land conservation group **approved by the county with concurrence** by CDFW.ⁱⁱ Such concurrence would ensure easements provide the maximum benefit to wildlife.
- Discuss how this site concurrence by CDFW may assist developers with identification of appropriate conservation zones.

Advisory Body

- Evaluate in the dEIR the establishment of an **advisory body** (like PAWTAC) to review mitigation plans, mitigation implementation, and efficacy. (Ideally this advisory body would make recommendations to appropriate governing bodies, work with land conservation groups, and be responsible for homeowner education (protection of oaks in the landscape).

Initial Study

Following is a discussion of the Initial Study. The dEIR **will evaluate environmental impacts in the following areas:**

4.0 PROBABLE ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR for the proposed project will focus on the resource areas/issues germane to this particular project. The EIR will evaluate the potentially significant environmental impacts of the proposed project and will evaluate whether there are feasible mitigation measures that may lessen or avoid such impacts. As the proposed project would amend the County's General Plan and influence development activities throughout the County and does not include any specific construction or development, the impact analysis will be programmatic and cumulative in nature. The EIR will also identify and evaluate alternatives to the proposed project. The EIR will evaluate potentially significant environmental effects related to the following environmental issues:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions
- Land Use and Planning

The following issues are not to be covered (although Greenhouse Gas Emissions [GHG] are listed in both areas—to be covered, and not to be covered, I assume from additional discussion in the Initial Study that GHGs will be covered, but would like this clarified).

As evaluated in the Initial Study, it is not anticipated that impacts would occur within the following environmental topic areas, and therefore these specific environmental issues will not be evaluated further in the EIR.

- Air Quality
- Cultural Resources
- Geology/Soils

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Mineral Resources
- Noise
- Population/Housing
- Public Services/Utilities
- Transportation

Air Quality/Greenhouse Gas Emissions

While GHGs are listed on both the “to do” and “not to do” lists, the Initial Study acknowledges GHG emissions from the removal of oak woodlands ***“could contribute to adverse climate change and could impair the ability of a region...to achieve GHG reductions required under state law.”***

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

a, b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. While, the project does not include new construction or land uses that would generate greenhouse gas (GHG) emissions, development that proceeds under the proposed General Plan amendments and ORMP could alter and/or remove vegetation communities, including oak woodlands, and/or oak trees. Conversion of woodlands and other natural vegetation communities to developed uses could generate GHG emissions during the construction process. Further, oak woodlands and other natural vegetation communities serve as a carbon sink, in that they remove GHGs from the atmosphere and store carbon. Therefore, removal of woodlands and other natural vegetation communities could release GHGs into the atmosphere and reduce the natural absorption of GHG emissions. **These effects could contribute to adverse climate change effects and could impair the ability of the region and the state to achieve GHG reductions required under state law.** These effects will be evaluated in the EIR.

And yet, the following notation in the Initial Study stands in contradiction:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a discussion of this contradiction.
- Discuss the impact on air quality caused by the increase in development—residential, commercial, industrial, etc.—and the associated increase in emissions from increased vehicular traffic, construction activities, etc. **(Developers are now constrained under Option A restrictions, in combination with the lack of an in-lieu fee option; now that numerous mitigation options will be available, growth/development will inevitably occur.)**
- Include in the dEIR a complete evaluation of Air Quality issues, including GHGs, and other emissions from commercial woodcutting operations, and the large-scale removal of oaks for planned development projects, specific area plans, agricultural operations, etc.
- Include in the dEIR a complete evaluation as required under AB 32, as described below.

Assembly Bill (AB) 32 (See also Attachments 1 & 2).

The goal of AB 32—the California Global Warming Solutions Act—is to reduce carbon dioxide (CO₂) emissions by 2020 to 1990 levels, with a further 80 percent CO₂ reduction by 2050. The bill emphasizes the evaluation of CO₂ associated with the conversion of forests to other uses. **Oak woodland CO₂ emission effects must be considered for projects that convert native forests to non-forest use.** Both direct CO₂ emission impacts from dead tree disposal and cumulative impacts due to the loss of future increases in live tree carbon sequestration represent a biological emission subject to CEQA analysis and mitigation. Live tree biomass (including roots), standing dead tree biomass, and wood lying on the ground are to be evaluated to measure oak woodland biological emissions under CEQA.

CEQA CO₂ questions to be answered include:

- how much potential CO₂ sequestration over the next 100 years will be lost due to impacts to live native trees three (3) inches or greater diameter at breast height (dbh); and
- how much sequestered CO₂ will be released if the live trees, standing dead trees or woody debris are burned?

The County must analyze and mitigate CO₂ biological emissions associated with the land use changes that result in the loss of oak woodland sequestration capacity (the conversion of oak woodlands to non-forest use) and CO₂ release from burning oak debris/wood. If such an analysis is not done, the County disregards not only CEQA, but the Office of Planning and Research (OPR) guidelines, California Attorney General opinions and Court decisions. (See Center for Biological Diversity, et al. v. City of Desert Hot Springs, et al. (2008) Riverside County Superior Court - Case No. RIC 464585 and Berkeley Keep Jets Over the Bay Committee vs. Board of Port Commissioners (2001) 91 Ca.App.4th 1344, 1370-71.)

Because California has designated CO₂ emissions a grave human health risk, local jurisdictions cannot invoke ministerial or overriding considerations in determining proportional mitigation for carbon biological emissions due to oak woodlands conversion to non-forest use. It is considered an abuse of discretion to declare an inadequately mitigated oak woodland conversion a **public benefit** when in fact woodland conversion represents a demonstrable **public health hazard**.

- Provide a complete analysis as required under AB 32.

Cultural Resources

Disregarding oaks and oak woodlands as important cultural resources is an error. Many cultural resources are closely associated with oaks and oak woodlands, and this important aspect needs to be evaluated in the dEIR.

A. CULTURAL/HISTORICAL

Artifacts of the Native American people who historically lived in Napa County tend to be co-located with oak woodlands, which provided them with the acorns they relied upon for food. According to local historian Lin Weber, shamans of the Wappo people would offer prayers for the health of the oak trees, and the Wappo named months of the year after the seasonal phases of oaks.¹ Present day oak stands or individual trees may have historical significance due to past events or structures that were associated with them. Many historical accounts mention the trees and the use of specific trees as landmarks or as boundary markers. The earliest European settlers found refuge from the hot valley sun for themselves and their livestock under oaks and benefited economically from the use of oaks for building material and firewood. Oak woodlands also created venues for recreation and public events. Napa County's remaining oak woodlands continue to serve as a reminder of our cultural and historical heritage.



Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 8.

- Discuss in the dEIR the cultural significance of oaks. Identify specific oaks/oak woodlands/woodland areas that have historical significance in El Dorado County, and describe the basis for their significance.

Geology and Soils

While the Initial Study cites no impact to geology and soils from the anticipated removal of oaks and oak woodland, it is nonetheless known that numerous significant impacts can occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS – Would the project:				
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Removal of oaks—especially on sloped land—can cause serious soil erosion, and can cause slope instability (landslides). The presence of oak trees can also facilitate the uptake of moisture from septic systems and improve their performance (VI)(e).

In fact, the ORMP, page 8, cites the potential for erosion during woodcutting operations, and cites (page 4) the following benefits from the preservation of oaks and oak woodlands:

1.4 Economic Activity, Land, and Ecosystem Values of Oak Resources

Agriculture and recreation-based tourism are important economic generators in El Dorado County. Oak resources provide value for these activities, including forage value for ranching, soil retention and watershed function benefits that contribute to agricultural activities, and aesthetic value for agri-tourism. Oak resources contribute to soil retention and provide watershed benefits, which have benefits to the agricultural community. Deer and other game species are dependent on oak woodland habitat and provide recreational hunting opportunities, which can generate revenues for ranching land owners through hunting leases. Oak resources contribute to a high-quality visit for recreation tourists, whose activities may include camping, fishing, hiking, bird-watching, and equestrian trail riding.

Studies have also concluded that the presence of oak resources enhances property value by providing shade, wind breaks, sound absorption, land use buffers, erosion control, and aesthetic beauty. Oak resources also contribute to healthy lands and watersheds. They do this by providing habitat for animals, maintaining water quality, and improving soil characteristics. Oak resources have also been identified as a valuable component in greenhouse gas reduction, trapping and storing atmospheric carbon dioxide.

Other sources also identify oaks and oak woodlands as providing erosion control and soil stability.

C. EROSION CONTROL

Oaks help control soil erosion in several ways. Oak woodland canopy intercepts raindrops and dissipates rainfall energy, reducing potential surface erosion. Oak leaf-fall and twigs that accumulate on the soil surface under oak woodland canopy also provide further protection against the erosive action of rainfall. In addition, tree roots and their associated symbiotic soil fungi promote the formation and stability of fine and coarse soil aggregates which help to promote soil cohesion and stability, reducing the risk of landslides and gully/rill erosion. Oak woodland located on soils and slopes prone to erosion can also help prevent degradation in water quality and uphold soil/land productivity. The planting of oaks in areas historically known to support oak woodland that currently exhibit accelerated erosion from lack of tree cover can help to stabilize and prevent further erosion in these areas.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 9.

- Provide in the dEIR a complete description of the potential impacts of oak tree/oak woodland removal, including the impact on soil stability, erosion, septic tank performance, etc.

Hazards/Hazardous Materials

In El Dorado County, the removal of oaks and oak woodland can disturb layers of soil and rock **containing asbestos.**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a discussion of oak woodlands that are located in areas known to be asbestos bearing. Describe and map those areas, and include the land use designations in those areas.

Hydrology/Water Quality

The removal of oaks/oak woodlands will have broad impact on hydrology/water quality; the dEIR needs to discuss/disclose these impacts. In fact, the ORMP, page 4 describes the benefit of oak tree/oak woodland retention on hydrology:

1.4 Economic Activity, Land, and Ecosystem Values of Oak Resources

Agriculture and recreation-based tourism are important economic generators in El Dorado County. Oak resources provide value for these activities, including forage value for ranching, soil retention and watershed function benefits that contribute to agricultural activities, and aesthetic value for agri-tourism. Oak resources contribute to soil retention and provide watershed benefits, which have benefits to the agricultural community. Deer and other game species are dependent on oak woodland habitat and provide recreational hunting opportunities, which can generate revenues for ranching land owners through hunting leases. Oak resources contribute to a high-quality visit for recreation tourists, whose activities may include camping, fishing, hiking, bird-watching, and equestrian trail riding.

Studies have also concluded that the presence of oak resources enhances property value by providing shade, wind breaks, sound absorption, land use buffers, erosion control, and aesthetic beauty. Oak resources also contribute to healthy lands and watersheds. They do this by providing habitat for animals, maintaining water quality, and improving soil characteristics. Oak resources have also been identified as a valuable component in greenhouse gas reduction, trapping and storing atmospheric carbon dioxide.

And yet, the Initial Study does not acknowledge this benefit, nor the impact the removal of oaks/oak woodland will have on hydrology—and, by association—water quality.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a complete discussion of the impacts of oak/oak woodland removal on hydrology/water quality.
- Discuss the impact on oaks/oak woodland that will occur as a result of new development that is groundwater dependent, and the impact on County residents that rely on groundwater resources.

Below is a discussion of some issues related to oak/oak woodland removal and hydrology/water quality from other sources.

B. FLOOD PROTECTION

The Napa River is historically prone to flooding, causing damage to homes and vineyards within its floodplains. Oak woodlands play a part in minimizing the strength and effect of the river's floodwaters. Oaks slow the eroding energy of rainfall with their canopies by temporarily hold rainwater on their leaf and stem surfaces during a rainstorm, increasing the amount of time rain takes to reach the ground and contribute to runoff. Oak woodland canopies capture 20-30% more rainfall than do grasslands, and their contribution to organic matter in the soil improves its water holding capacity. As a result, they have a high capacity for detaining peak flows from rainfall events that

would otherwise run in larger volumes and at higher velocities into streams, contributing to flooding, erosion, and sediment and nutrient concentrations that can harm water quality. The greatest flood protection/attenuation benefits related to tree canopy cover are in watersheds that quickly concentrate flows and pose a risk of flash flooding and in areas where runoff conveyance is already near capacity. Oak trees also capture and transpire moisture from the soil during the growing season. Compared to annual vegetation, oaks can extract water from the soil profile to a greater depth. Consequently, soils under oak woodland canopy are able to absorb and hold greater amounts of rainfall than equivalent soils with only annual grassland cover. This extra storage capacity further reduces the potential for flooding during the rainy season and promotes groundwater recharge.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 8 - 9.

D. WATER QUALITY PROTECTION

Oak woodlands, whether located on the hillsides or on level lands near streams, play an important role in protecting water quality. By minimizing soil erosion as noted above, oak woodlands can help reduce sediment transport and washing of fine sediments into local waterways. High levels of sediment in waterways can negatively impact the aquatic food supply by reducing habitat available for fish, aquatic invertebrates and other organisms



important to the diets of fish and birds. The Napa River is currently listed as impaired for sediment and a Sediment Total Maximum Daily Load (TMDL) is in the process of being adopted by the State.

The contribution of oaks and other vegetation to erosion prevention near waterways is especially important if soils contain excessive nutrients, pathogens or high levels of toxic material (natural or human concentrated), such as chemical contaminants, mercury or other heavy metals. Putah Creek, for example, has elevated levels of mercury in the soils of the bed and banks of its tributaries and is the focus of State regulatory efforts (TMDL)

to reduce mercury levels. Oaks and other vegetation also help reduce soil contamination by absorbing heavy metals, fertilizer nutrients, and pesticides from the soil and intercepting sediments containing these pollutants, thereby preventing these materials from reaching surface waters. Oaks and associated permanent vegetation along waterways can also reduce potential waterway contamination from airborne pesticide or herbicide drift, since oak foliage can intercept airborne pesticides/ herbicides.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 9 - 10.

Noise

The large-scale removal of oaks for some projects—commercial woodcutting operations, planned development projects, specific area plan implementation, agricultural operations, etc., will have an impact on noise levels in the County.

- Please include in the dEIR a discussion of noise from the activities described above, and describe the mitigation measures that may be employed to reduce the impact (e.g., limitations on the hours of operation of chain saws, dozers, or other tree removal equipment).

Population/Housing

There will inevitably be an increase in the amount of housing (and therefore population) as a result of the adoption of the ORMP. As stated under Air Quality, **developers are now constrained under Option A restrictions, in combination with the lack of an in-lieu fee option. Now that numerous mitigation options will be available, growth/development will inevitably occur.**

- Discuss the impact of the increase in population on County services, etc., that will result from ORMP adoption.

Public Services/Utilities

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The removal of oak trees/oak woodland can have a significant impact on the need to construct storm water drainage facilities (see discussion under Hydrology/Water Quality).

- Include in the dEIR a discussion of the impact of oak/oak woodland removal on hydrologic patterns, and how that may result in the need to construct new storm water drainage facilities, etc.

Project Alternatives

I respectfully request that the following project alternatives/alternative elements be evaluated:

Project Alternative 1. Retention of the Option A oak retention schedule. Oak retention should be the priority. Other alternatives/mitigations should be utilized **only after it has been determined the project cannot meet the Option A retention schedule through any reasonable means.** A discussion of the necessity of Option A retention follows.

The Standiford Study¹⁰ (NOTE: This study was relied upon for development of the County's IIG.) According to Standiford, the results of this study (cited in the footnote below) call into question whether planted stands adequately mitigate the loss of mature stands. The mitigated blue oak stand wildlife species list (specific to the Sierra Nevada foothills) was compared to a natural blue oak stand, averaging 10 inches dbh, with a 30 percent canopy cover. The natural stand was assumed to have small and medium size downed wood, snags, acorns and trees with cavities and was projected to have 102 vertebrate wildlife species. The number of vertebrate species projected to occur in a mitigated stand—after 50 years—was 73 species (1 amphibian, 40 bird, 19 mammal, and 13 reptile species). The results of this study underscore the fact that blue oak woodlands develop habitat conditions slowly, and that it may take in excess of 50 years to replace mature habitat that is lost in a particular project.

The results suggest it is important to evaluate if tree planting is a viable method of mitigation, especially because many important habitat elements such as cavities, acorns, snags, and woody debris may not be mitigated—at least in the 50-year interval evaluated in the study. **Thus, it is important to conserve oak woodland in a natural state, whenever possible.**

At the June 22, 2015 Biological Resources meeting, the Board of Supervisors agreed it was important to evaluate the addition of oak retention standards to the ORMP process.

A motion was made by Supervisor Ranalli, seconded by Supervisor Veerkamp to Approve this matter. Adopt Resolution's 108-2015 and 109-2015 and direct staff to:
Consider project alternatives as part of the environmental review process including:
1) Adding oak resource retention standards;
2) Options for Individual Oak Tree (IOT) replacement mitigation (e.g. acorn to 15 gallon potted tree) and associated analysis of the implications for the In-lieu Fee Nexus study based on these options, and
3) Oak resource mitigation requirements related to discretionary and ministerial projects.

Mitigation options should only be entertained for those projects that **absolutely cannot come to fruition without some deviation from Option A retention standards.** **Incentivizing** oak woodland retention rather than **requiring** retention is not an acceptable option, **nor is establishing a policy that allows 100 percent removal of oaks.**

For reasons cited in the Sandiford study (previously described), the following project alternatives should be considered as well.

Project Alternative 2. Redefinition of “Oak Woodland” to include other associated tree and shrub species (understory) to maintain wildlife habitat value; require mitigation to replace these elements as well.

Project Alternative 3. Redefinition of a Heritage Tree as 24” dbh—**if not for all oaks, for blue oaks** (*Quercus douglassi*). (A discussion follows that identifies why this change is essential.)

The Standiford Study¹¹ (NOTE: This study was relied upon for development of the County's IIG.)

¹⁰ Standiford, R., et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

¹¹ Standiford, R., et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

This study modeled development of blue oak (*Quercus douglasii*) stand structure over 50 years after planting. The growth model was based on actual blue oak stand age and structure data (Standiford 1997). For this study, data was collected from 55 sample blue oak trees in a ten-year old blue oak plantation at the Sierra Foothill Research and Extension Center in Yuba County, California.

In this study, two different management regimes were utilized, a **high management** intensity scenario that assumed these stands would **average 2 inches dbh** after **10 years**, and there would be a 90 percent seedling survival. A **moderate management** scenario assumed that the stands would **average 1.5 inches dbh**, with an 85 percent seedling survival. **These assumptions are based on actual plantation growth** (McCreary 1990, 1995a, 1995b; McCreary and Lippit 1996; McCreary and Tecklin 1993) **and observations of operational restoration projects.**

For a planting density of **200 trees per acre 10 years** after planting (under a high management intensity), it was anticipated trees would average 2 inches dbh with 90 percent survival; under moderate intensity management, trees were anticipated to average 1.5 inches dbh with 85 percent survival, and **20 years** after planting: 2.5, 2.0, respectively.

Canopy cover after 50 years was projected to range from 7 to 33 percent, with an average dbh after 50 years ranging from 3.4 to 4.1 inches. Even under fairly aggressive restoration efforts the largest mean diameter of the stand was quite small, only 3.9 inches, with a canopy cover of 33 percent.

The following photographs serve to illustrate the growth rates for blue oak. The blue oaks depicted below are **10-16 years old**.¹²



- Large blue oaks are likely **153 to 390 years old** (White, 1966).
- Growth is extremely slow **or even ceases** after trees reach **26 inches dbh** (McDonald, 1985).¹³ (**dbh**=diameter at breast height: 4 feet 6 inches from ground.) Thus, many blue oaks—although extremely old—**will never reach Heritage Tree status.**

¹² Phillips, R. L., et al. 1996. Blue Oak Seedlings May be Older than they Look. California Agriculture, May-June 1996. Available at: <http://ucanr.edu/repositoryfiles/ca5003p17-69761.pdf>

¹³ Ritter, L.V. Undated. *Blue Oak Woodland*. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group.



The blue oaks on this page illustrate a point. Although one has achieved Heritage Oak status, one can see the tremendous size required to arrive at Heritage Oak status.

This blue oak **IS NOT** a Heritage Oak, it is **32.5" dbh**.



This blue oak **IS** a Heritage oak **by one inch—37" dbh**.

Because blue oaks are slow growers, Tuolumne County has worked to establish a separate standard for blue oaks under their *old growth oaks* or “specimen oaks” category.¹⁴ Given this acknowledgement that blue oaks—given their slow growth rates—warrant separate consideration, it seems reasonable that El Dorado County establish a separate size requirement for blue oak for Heritage Oak designation.

In addition, it is known blue oak regeneration is a problem in many areas of the State. In fact, “Few areas can be found in California where successful recruitment of blue oaks has occurred since the turn of the century” (Holland, 1976).¹⁵

For these reasons—slow growth, poor regeneration rates, and the fact that blue oak growth often ceases after trees reach 26” dbh—it is necessary to establish a threshold for Heritage Oak designation for blue oak that is less than the 36” dbh threshold now proposed. It is only reasonable (and necessary) to protect this resource with a separate Heritage Oak threshold designation.

Growth Estimates for Black and Live Oak

The growth rates discussed previously for blue oak demonstrate what can be expected in terms of replant growth rates in the Western portion of El Dorado County. But other oak species exhibit slow growth rates as well. According to McDonald,¹⁶ black oak (*Quercus kelloggii*) growth rates (from acorns) are estimated to be 3.4 inches dbh at 20 years and 9 inches dbh at 50 years. Interior live oak (*Quercus wislizeni*) is also reported as slow-growing.¹⁷ These oaks, too—all oaks—would benefit from a redefinition of “Heritage Oak” to 24” dbh.

Project Alternative 4. Require sapling/specimen tree replacement for oak mitigation; eliminate the option for acorn planting.

Project Alternative 5. Establish a minimum retention standard for commercial firewood cutting operations, and define standards for site protection.

Project Alternative 6. Application of a more robust mitigation ratio. A revision of the mitigation ratios to a 2:1 mitigation ratio (at a minimum), and up to 5:1 in the case of environmentally sensitive areas, would motivate the developer to look more seriously at oak woodland retention, and would ensure the preservation of more oak woodland.

¹⁴ Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 38. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

¹⁵ Ritter, L.V. Undated. Blue Oak Woodland. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67340>

¹⁶ McDonald, P.M. Undated. *California black oak (Quercus kelloggii)*. Available at: http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/quercus/kelloggii.htm.

¹⁷ Fryer, Janet L. 2012. *Quercus wislizeni*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2015, February 6].

Requests for Clarification

- Provide in the dEIR a **detailed map** of the Important Biological Corridors (IBCs) and Priority Conservation Areas (PCAs). This is necessary to provide the public with the information necessary to determine which parcels are included—or excluded—from the IBCs and PCAs.
- BRPU Decision Point 3: **“Determine whether to require undercrossings for future four- and six-lane roadway projects to provide for wildlife movement, and if so, determine specific standards for undercrossings (i.e., size, location).”**

It is crucial to provide wildlife undercrossings (or overcrossings) particularly (although not exclusively) where roadways cross streams, creeks, seasonal creeks, other drainages, and riparian areas. Wildlife are most likely to frequent, and most likely to attempt roadway crossings at these sites. Providing wildlife undercrossings/overcrossings supports both wildlife preservation and motorist safety. However, some clarification is necessary in this instance.

A motion was made by Supervisor Ranalli, seconded by Supervisor Frentzen to require, **when necessary**, undercrossings for future four (4)-, six (6)- and eight (8) - lane roadway projects to provide for wildlife movement.

Yes: 5 - Mikulaco, Veerkamp, Frentzen, Ranalli and Novasel

- Please specify in the dEIR the criteria that would meet the standard **“when necessary,”** established by the Board of Supervisors.

Oak Planting, Conservation, etc.

Some issues need to be resolved to ensure appropriate mitigation planning. For instance, the following measures need to be overseen by a PAWTAC committee, and/or by the concurrence of CDFW, or a land conservation organization, or—in the case of the first item—through examination by a qualified arborist.

- ORMP, page 14: States that on-site planting is to be done *“to the satisfaction of the Planning Services Director.”*
- ORMP, page 14: Off-site planting: *“The applicant may be permitted to procure an off-site planting area for replacement planting.”*
- ORMP, page 16: *“Off-site mitigation may be accomplished through private agreements between the applicant and a private party.”*
- ORMP, page 21: The acquisition of parcels that constitute *“opportunities for active land management to be used to enhance or restore natural ecosystem processes.”*
- ORMP, page 21: *“Parcels that achieve multiple agency and community benefits.”*
- ORMP, page 24: the in-lieu fee payment **may be phased** to reflect timing of the oak resources removal/impact.”

Assembly Bill 1600

It is important **not** to limit the in-lieu fee evaluation to the criteria included in AB 1600. It is vital to remember that other funding *“tools”* that lack the narrow findings required under AB 1600 can be enacted to acquire the necessary amount of mitigation funds: Propositions 62 and 218, for instance, can provide for a special tax (but require voter approval). And, while a fee study provides the quantified basis for imposition of fees, **the County is free to determine that the level of service it would like to provide cannot be met simply through the imposition of the impact fee.**

AB 1600 impact fees are often based on staff's *professional judgment or opinion* regarding potential impact—and on a County's growth projection—the basis for all conclusions must be supported by *substantial evidence*. Because El Dorado County's water supply is arguably "uncertain" at this time, it will be difficult to project potential growth realistically.

After all is said and done, it is important to remember that—while some individuals have requested that the in-lieu fees be kept as low as possible—this provision is intended to provide *viable mitigation*, and as such must be adequate to mitigate loss. **Affordability is not a criterion under which the effectiveness of mitigation can legitimately be degraded.**



California Board of Forestry and Fire Protection
 P.O. Box 944246
 Sacramento, CA 94244-2460
board.public.comments@fire.ca.gov

California Air Resources Board
 P.O. Box 2815
 Sacramento, CA 95812
dmallory@arb.ca.gov

June 29, 2015

Re: Oak Woodland Greenhouse Gas Emissions

California Board of Forestry and Fire Protection and California Air Resources Board Members:

California Oaks would like to raise the incongruity of the accompanying photo relative to the Board of Forestry and Air Resources Board joint policy regarding meeting AB32 Scoping Plan forest targets. Although the state's forest greenhouse gas (GHG) focus may be on "timberland," in fact California's GHG policies and laws apply equally to all native "forest land."

The 2008 AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: *"This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources."* The Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.



Blue oak firewood en route to Bay Area markets.

California Oaks would appreciate a cogent explanation of how the pictured blue oak firewood is consistent with the state's natural and working lands sector targets, given that unregulated/unmitigated oak tree cutting for "commercial purposes" results in: (1) the loss of carbon sequestration capacity; (2) produces carbon dioxide, methane and nitrous oxide emissions from burning the firewood.

Sincerely,

Janet Cobb, Executive Officer



Preserving and perpetuating California's oak woodlands and wildlife habitats

July 6, 2015

Community Development Agency
 Long Range Planning Division
 2850 Fairlane Court
 Placerville, CA 95667
shawna.purvines@edcgov.us

Re: Biological Policy Update Project

Shawna Purvines, Principal Planner:

California Oaks appreciates the opportunity to comment on the Biological Policy Update Project. Review of the project finds that it fails to consider California Environmental Quality Act (CEQA) greenhouse gas (GHG) emission requirements concerning the conversion of native forest resources to another land use. Specifically, the DEIR provides no analysis regarding potential forest conversion carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emission effects or proportional mitigation measures. This DEIR omission is contrary to California forest GHG policy and law.

The 2008 California Air Resources Board's AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: *"This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources."*¹ Gov. Brown reiterated this point in his January 2015 inaugural address: *"And we must manage farm and rangelands, forests and wetlands so they can store carbon."* Further, the CEQA Guidelines specifically address biogenic GHG emissions due to the conversion of forest land to non-forest use.² Biogenic GHG emissions are those derived from living plant cells. Fossil fuel GHG emissions are derived from living plant cells but are categorized differently.

The following 2009 Natural Resources Agency CEQA GHG Amendments response to comments quotation supports the contention that direct and indirect biogenic GHG emissions effects occur when native forest resources are converted. The response use of the word "and" clearly indicates that there are two potentially significant GHG emission effects to be analyzed regarding forest conversion to another land use. CEQA recognizes these secondary biogenic GHG emissions in the indirect effects language of Guidelines § 15358(2), *"... are later in time or farther removed in distance, but are still reasonably foreseeable."*

¹ The AB32 Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.
http://www.climatechange.ca.gov/forestry/documents/AB32_BOF_Report_1.5.pdf

² Oak woodlands are defined as "forest land" by Public Resources Code Section 12220(g)(l). This section is referenced in CEQA Appendix G, forest resources checklist.

Natural Resources Agency Response 66-7

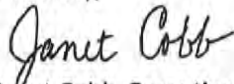
"As explained in the Initial Statement of Reasons, conversion of forest lands to non-forest uses may result in greenhouse gas emissions and reduce sequestration potential. (Initial Statement of Reasons, at pp. 63-64.)" See Exhibit A for a detailed CEQA discussion of forest conversion biogenic GHG emission effects.

When a native tree species is felled biomass carbon sequestration ceases. This immediate loss of biomass carbon sequestration capacity represents the direct forest conversion biogenic GHG emission effect. Upon disposal of the biomass carbon, the decomposition of biomass does in all cases result in indirect CO₂ and CH₄ emissions³ and the combustion of biomass does in all cases result in indirect CO₂, CH₄ and N₂O emissions.⁴ Thus, a CEQA oak woodlands GHG emission effects analysis requires carbon dioxide equivalent⁵ estimations for both the direct effect from loss of carbon sequestration and the indirect effect due to biogenic emissions associated with oak forest biomass disposal. Notably, burning biomass emits GHG instantaneously, while biomass decomposition takes years and even decades. See Exhibits B, C and D for biomass decomposition and combustion biogenic GHG emission citations.

Summary

Substantial evidence has been presented that project biogenic GHG emissions due to forest land conversion will result in potentially significant environmental effects that have not been sufficiently analyzed or feasibly mitigated. The project has not made "a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (CEQA Guidelines § 15064.4(a)). Therefore the Biological Policy Update Project is deficient as an informational document, in that it fails to apprise decision-makers/public of the full range and intensity of the adverse GHG emission effects on the environment that may reasonably be expected if the project is approved.

Sincerely,



Janet Cobb, Executive Officer
attachments (4)

³ "Anaerobic digestion, chemical process in which organic matter is broken down by microorganisms in the absence of oxygen, which results in the generation of carbon dioxide (CO₂) and methane (CH₄) Sugars, starches, and cellulose produce approximately equal amounts of methane and carbon dioxide." Encyclopædia Britannica (2013). <http://www.britannica.com/EBchecked/topic/22310/anaerobic-digestion>

⁴ "... the combustion of biomass does in all cases result in net additions of CH₄ and N₂O to the atmosphere, and therefore emissions of these two greenhouse gases as a result of biomass combustion should be accounted for in emission inventories under Scope 1" (at p. 11). World Resources Institute/World Business Council for Sustainable Development (2005). http://www.ghgprotocol.org/files/ghgp/tools/Stationary_Combustion_Guidance_final.pdf

⁵ AB32 defines "Carbon dioxide equivalent" to mean ... "the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change." The IPCC's best available science lists methane as having 34 times more global warming impact than carbon dioxide over a 100-year time horizon and nitrous oxide as having 298 times more global warming impact than carbon dioxide over the same period. Myhre, G., D. et al., 2013: *Anthropogenic and Natural Radiative Forcing*. In: *Climate Change 2013: The Physical Science Basis* (at pp. 713, 714).

Letter 97

Kari Fisher
Associate Counsel
California Farm Bureau Federation

Tim Schmelzer
Legislative and Regulatory Representative
Wine Institute

November 10, 2009

Comment 97-1

Comment is introductory in nature and expresses the organizations' concerns on the guidance for analysis and mitigation for GHG emissions in the proposed amendments. The Natural Resources Agency should reevaluate and revise Appendix G, Section II: Agriculture prior to adopting the proposed amendments.

Response 97-1

The comments object generally to the inclusion of forestry resources among the questions in Appendix G related to agricultural resources. The Initial Statement of Reasons explained the necessity of the added questions:

The proposed amendments would add several questions addressing forest resources in the section on Agricultural Resources. Forestry questions are appropriately addressed in the Appendix G checklist for several reasons. First, forests and forest resources are directly linked to both GHG emissions and efforts to reduce those emissions. For example, conversion of forests to non-forest uses may result in direct emissions of GHG emissions. (L. Wayburn et al., A Programmatic Approach to the Forest Sector in AB32, Pacific Forest Trust (May 2008); see also California Energy Commission Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (March, 2004) at p. 19.) Such conversion would also remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere). (Scoping Plan, Appendix C, at p. C-168.) Thus, such conversions are an indication of potential GHG emissions. Changes in forest land or timberland zoning may also ultimately lead to conversions, which could result in GHG emissions, aesthetic impacts, impacts to biological resources and water quality impacts, among others. Thus, these additions are reasonably necessary to ensure that lead agencies consider the full range of potential impacts in their initial studies. In the same

way that an EIR must address conversion of prime agricultural land or wetlands as part of a project (addressing the whole of the action requires analyzing land clearance in advance of project development), so should it analyze forest removal. [¶] During OPR's public involvement process, some commenters suggested that conversion of forest or timber lands to agricultural uses should not be addressed in the Initial Study checklist. (Letter from California Farm Bureau Federation to OPR, February 2, 2009; Letter from County of Napa, Conservation, Development and Planning Department, to OPR, January 26, 2009.) As explained above, the purpose of the Proposed Amendments is to implement the Legislative directive to develop Guidelines on the analysis and mitigation of GHG emissions. Although some agricultural uses also provide carbon sequestration values, most agricultural uses do not provide as much sequestration as forest resources. (Climate Action Team, Carbon Sequestration (2009), Chapter 3.3.8 at p. 3.21; California Energy Commission, Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (2004), at p. 2.) Therefore, such a project could result in a net increase in GHG emissions, among other potential impacts. Thus, such potential impacts are appropriately addressed in the Initial Study checklist.

(Initial Statement of Reasons, at pp. 63-64.) Specific objections to the questions related to forestry are addressed below.

Comment 97-2

Amendments to Appendix G, Section II: Agriculture, adding forest resources, distort the section from its original intent of protecting agriculture resources and will subject projects to extensive and unnecessary analysis beyond what is already legally required. Amendments to Section VII: Greenhouse Gas Emissions will adequately address any significant impact a project may have on greenhouse gas emissions.

Response 97-2

The comment's assertion that the addition of questions related to forestry "specifically target[s] the establishment of [agricultural] resources for extensive and unnecessary analysis above and beyond what is already legally required," is incorrect in several respects. First, the addition of questions related to forestry does not target the establishment of agricultural operations. The only mention in the Initial Statement of Reasons of agricultural operations in relation to those questions was in response to comments that the Office of Planning and Research received indicating that only conversions of forests to non-agricultural purposes should be analyzed. Moreover, the text of the questions themselves demonstrate that the concern is *any* conversion of forests, not just conversions to other agricultural operations.

Second, analysis of impacts to forestry resources is already required. For example, the Legislature has declared that "forest resources and timberlands of the state are among the most valuable of the natural resources of the state" and that such resources "furnish high-quality timber, recreational opportunities,

and aesthetic enjoyment while providing watershed protection and maintaining fisheries and wildlife.” (Public Resources Code, § 4512(a)-(b).) Because CEQA defines “environment” to include “land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance” (Public Resources Code, section 21060.5), and because forest resources have been declared to be “the most valuable of the natural resources of the state,” projects affecting such resources would have to be analyzed, whether or not specific questions relating to forestry resources were included in Appendix G. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (“in preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect”).) If effect, by suggesting that the Appendix G questions be limited to conversions to “non-agricultural uses,” the comment asks the Natural Resources Agency to adopt changes that are inconsistent with CEQA, which it cannot do.

The comment’s suggestion that the questions related to greenhouse gas emissions are sufficient to address impacts related to greenhouse gas emissions does not justify deletion of the questions related to forestry resources. As explained in the Initial Statement of Reasons, not only do forest conversions result in greenhouse gas emissions, but may also “remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere).” Further, conversions may lead to “aesthetic impacts, impacts to biological resources and water quality impacts, among others.” The questions related to greenhouse gas emissions would not address such impacts. Thus, the addition of forestry questions to Appendix G is appropriate both pursuant to SB97 and the Natural Resources Agency’s general authority to update the CEQA Guidelines pursuant to Public Resources Code section 21083(f). The Natural Resources Agency, therefore, rejects the suggestion to removal all forestry questions from Appendix G.

Comment 97-3

The amendment adding forest resources to Appendix G: Section II loses sight of the intent and purpose of the Legislature’s directive in SB 97. The amendments do not further the directive or intent of SB 97 and unfairly attack and burden all types of agriculture, both crop lands and forest lands.

Response 97-3

SB97 called for guidance on the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. (Public Resources Code, § 21083.05.) As explained in the Initial Statement of Reasons, forest conversions may result in direct greenhouse gas emissions. Further, such conversions remove existing forest stock and the potential for further carbon sequestration. (Initial Statement of Reasons, at p. 63.) Sequestration is recognized as a key mitigation strategy in the Air Resources Board’s Scoping Plan. (Scoping Plan, Appendix C, at p. C-168.) Thus, the Natural Resources Agency disagrees with the comment, and finds that questions in Appendix G related to forestry are reasonably necessary to effectuate the purpose of SB97. Notably, such questions are also supported by the Natural Resources

Agency's more general authority to update the CEQA Guidelines every two years. (Public Resources Code, § 21083(f).)

The Natural Resources Agency also disagrees that the questions related to forestry "unfairly attack and burden all types of agriculture." Nothing in the text of the proposed amendments or the Initial Statement of Reasons demonstrate any effort to attack, or otherwise disadvantage, any agricultural use. Questions related to forestry impacts are addressed to any forest conversions, not just those resulting from agricultural operations. Further, the questions do not unfairly burden agriculture. To the extent an agricultural use requires a discretionary approval, analysis of any potentially significant impacts to forestry resources would already be required, as explained in Response 97-2, above.

Comment 97-4

The amendments adding forest resources to Appendix G: Section II go beyond the scope of mandate by SB 97 and will adversely affect California's agricultural industry. The only alternative is to recognize the loss of forest land or conversion of forest is only significant when it results in a non-agricultural use.

Response 97-4

The Natural Resources Agency finds that the addition of questions related to forest impacts are reasonably necessary to carry out the directive both in SB97 and the general obligation to update the CEQA Guidelines, as described in both the Initial Statement of Reasons and Responses 97-2 and 97-3, above.

Though the comment states "the proposed changes in Section II [of Appendix G] ... are highly onerous to the State's agricultural industry," the comment provides no evidence to support that claim. On the contrary, as explained in Responses 97-2 and 97-3, above, CEQA already requires analysis of forestry impacts, regardless of whether Appendix G specifically suggests such analysis.

The Natural Resources Agency declines to revise the forestry-related Appendix G questions as suggested. As explained in Response 97-2, above, exempting agricultural projects from the requirement to analyze impacts to forest resources is inconsistent with CEQA.

Exhibit B

Forest Land Conversion Biomass Combustion and Decomposition GHG Emissions

California Air Resources Board

"California is committed to reducing emissions of CO₂, which is the most abundant greenhouse gas and drives long-term climate change. However, short-lived climate pollutants [methane, etc.] have been shown to account for 30-40 percent of global warming experienced to date. Immediate and significant reduction of both CO₂ and short-lived climate pollutants is needed to stabilize global warming and avoid catastrophic climate change The atmospheric concentration of methane is growing as a result of human activities in the agricultural, waste treatment, and oil and gas sectors." *Reducing Short-Lived Climate Pollutants in California*, 2014.

UN Framework Convention on Climate, Deforestation Definition

"Those practices or processes that result in the change of forested lands to non-forest uses. This is often cited as one of the major causes of the enhanced greenhouse effect for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present and contributing to carbon storage." http://www.gofc-gold.uni-jena.de/redd/sourcebook/Sourcebook_Version_June_2008_COP13.pdf

Stanford University Engineering

Biomass burning also includes the combustion of agricultural and lumber waste for energy production. Such power generation often is promoted as a "sustainable" alternative to burning fossil fuels. And that's partly true as far as it goes. It is sustainable, in the sense that the fuel can be grown, processed and converted to energy on a cyclic basis. But the thermal and pollution effects of its combustion - in any form - can't be discounted, [Mark] Jacobson said.

"The bottom line is that biomass burning is neither clean nor climate-neutral," he said. "If you're serious about addressing global warming, you have to deal with biomass burning as well." engineering.stanford.edu/news/stanford-engineers-study-shows-effects-biomass-burning-climate-health

Jacobson, M. Z. (2014). *Effects of biomass burning on climate, accounting for heat and moisture fluxes, black and brown carbon, and cloud absorption effects.*

European Geosciences Union

"Biomass burning is a significant global source of gaseous and particulate matter emissions to the troposphere. Emissions from biomass burning are known to be a source of greenhouse gases such as carbon dioxide, methane and nitrous oxide" (at 10457). *A review of biomass burning emissions, part I: gaseous emissions of carbon monoxide, methane, volatile organic compounds, and nitrogen containing compounds.* R. Koppmann, K. von Czapiewski and J. S. Reid, 2005. <http://www.atmos-chem-phys-discuss.net/5/10455/2005/acpd-5-10455-2005-print.pdf>

Phoenix Energy

"As wood starts to decompose it releases roughly equal amounts of methane (CH₄) and carbon dioxide (CO₂)." 2014. <http://www.phoenixenergy.net/powerplan/environment>

Macpherson Energy Corporation

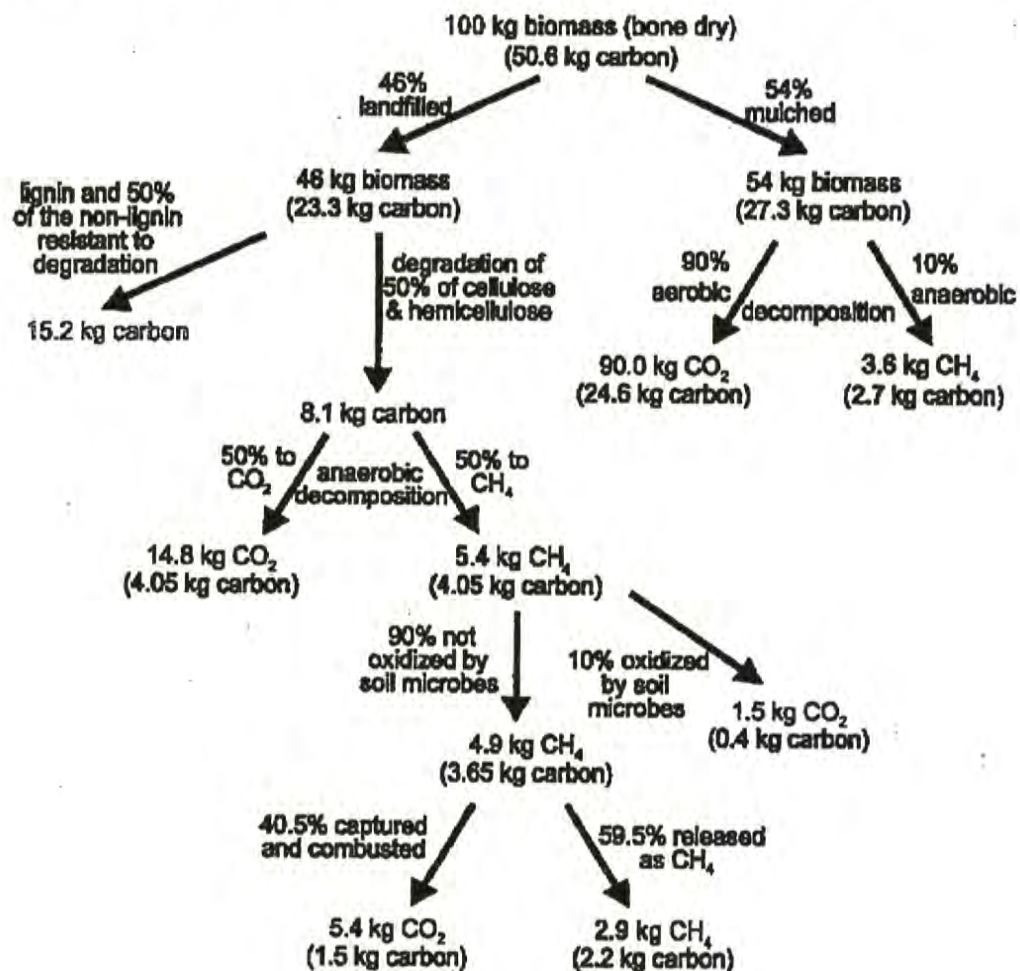
"Rotting produces a mixture of up to 50 percent CH₄, while open burning produces 5 to 10 percent CH₄." 2014. <http://macphersonenergy.com/mt-poso-conversion.html>

Exhibit C

Biomass Decomposition Greenhouse Gas Emissions

Biomass presentation by Alex Hobbs, PhD, PE to the Sierra Club Forum at North Carolina State University (November 24, 2009).

- If 100 kilograms of bone dry biomass were dispersed to a controlled landfill (46%) and mulched (54%) greenhouse gas emissions would be: 111.7 kilograms of CO₂ emissions + 6.5 kilograms of CH₄ emissions = 274.2 kilograms CO₂-equivalent emissions.



Landfill: 46 kg biomass/23.3 kg CO = 21.7 kg CO₂ + 2.9 kg CH₄ = 94.2 kg CO₂-equivalent.

Mulch: 54 kg biomass/27.3 kg CO = 90 kg CO₂ + 3.6 kg CH₄ = 180 kg CO₂-equivalent.

Total: 100 kg biomass/50.6 kg CO = 111.7 kg CO₂ + 6.5 kg CH₄ = 274.2 kg CO₂-equivalent.

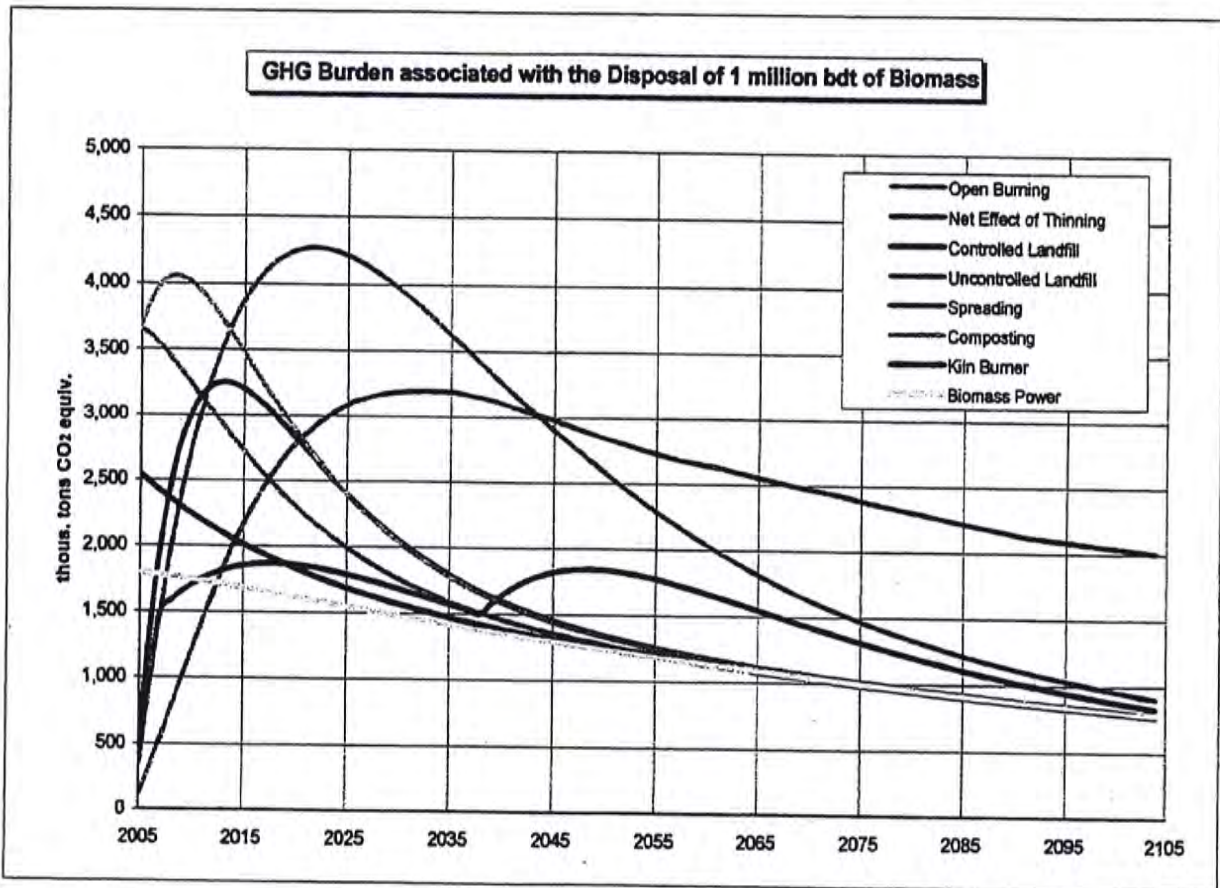
Exhibit D

Biomass Disposal Greenhouse Gas Emissions

The following chart illustrates the relative biogenic GHG emission effects from common methods of vegetation (biomass) disposal.¹ However, for a variety of reasons these chart values are too unrefined to be applied for project site-specific biogenic GHG emissions analysis.

Uncontrolled landfill disposal produces the greatest biomass GHG emissions followed by composting, open burning, mulching, forest thinning, firewood burning, controlled landfills and biomass power. Notably, biomass power emissions do not include methane and nitrous oxide emissions. The chart demonstrates that peak greenhouse gas emissions vary substantially depending on the means of biomass disposal.

Terminology: Net effect of thinning emissions apply to forest thinning emissions; Spreading emissions are equivalent to mulching emissions and Kiln Burner emissions are analogous to fireplace burning emissions.



Graphic: Gregory Morris, PhD. *Bioenergy and Greenhouse Gases*. Published by Pacific Institute (2008).

¹ One bone dry ton (bdt) is a volume of wood chips (or other bulk material) that would weigh one ton (2000 pounds, or 0.9072 metric tons) if all the moisture content was removed.

Van Dyke Public Comment for Biological Resources NOP, 8/17/15

An NOP signals that the drafted policies have been vetted and are ready to be analyzed in the EIR. Yet the multiple outreach meetings largely disregarded public comment. The removal of Option A to allow 100% oak tree removal may please developers and staff, but it is NOT supported by residents. Initiation of this EIR is premature if the drafted policies do not yet reflect the will of County residents. Please reconsider the Project Description and reissue this NOP.

Additionally, I would like to see the following concerns addressed regarding the biological policies as drafted:

1. The Project cannot be reviewed 'in a vacuum', and changes resulting from the TGPA/ZOU must be included in the cumulative impacts analysis if that project has not been concluded or is tied up in litigation.

Some of the TGPA/ZOU changes that have not been reviewed relative to removal of the Option A retention standards are:

- a. reduced open space requirements (ordinance 17.28.050B)
 - b. increased hillside development (policy 7.1.2.1)
 - c. reduced riparian setback (ordinance 17.30.030G3d)
 - d. allowance for development within the riparian setback (ordinance 17.30.030G5)
 - e. intensification of zoning (ie, minimum 20 acre parcels changed to minimum 10 acre zoning)
 - f. expanded uses within zone districts (use matrices throughout the ZOU: 17.21.020, 17.22.020...)
 - g. expanded uses under the Home Occupancy Ordinance
 - h. expanded uses into Rural Regions (Table 2-1, Policy 2.2.1.1)
 - i. expanded exemptions to the biological policies, such as agricultural activities, hillside development , and underground utilities(ordinance 17.30.060D)
 - j. reduced agricultural setback requirements (policies 8.1.3.1/8.1.3.2)
 - k. the 2004 General Plan impacts that are no longer being mitigated -see 2. below.
2. Any elements of the 2004 General Plan that counted on mitigations now being eliminated must be factored back in to the impact analysis. For example, if constraints to development in 2004 included open space protections and restricting hillside development, and those mitigations are revised, the impact of having the Community Regions expanded by some 300 parcels via the 2004 Gen Plan will have to be reviewed relative to the removal of Option A and mitigation measures CO-A, -L, -M, -N, -O and -P.
 3. Neither the NOP nor the ROI's it is based on (ROI 118-2015 & 109-2015) reflect the June 22nd motion of the Board to include oak tree retention standards in the alternatives (minutes attached). In the July 14th hearing staff asserted they needed further direction, and it appears none has been given. The project description is flawed and should be revised, possibly with a new NOP circulated for public review.
 4. How can Option A be deleted when it was required by the 2005 court decision that lifted the writ of mandate? This may necessitate a different/additional analysis.
 5. Broaden the impact analysis of heritage tree designation to potentially protect trees 24" in diameter and greater, which would be in alignment with other similarly rural counties. If only 36" is analyzed as proposed, "lesser" options will not be possible; this process is supposed to be helping to inform the Board's decision.
 6. Fully analyze acorn planting as a mitigation, per Board direction June 22nd. While acorn planting may be excellent for restoration and supported by the Kuehl Bill, it is not utilized for actual *replacement mitigation* in other counties. Provide monitoring results from other Counties as well as El Dorado County.

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LONG RANGE PLANNING

7. Provide analysis for the impact of allowing conservation easements to occur within Community Regions and Rural Centers. The drafted policies currently exclude this, but there are MANY acres of oak woodland and other habitat within these regions that will be subject to 100% oak removal and fragmentation. Provide accurate and detailed mapping showing where oak woodlands, rare plant habitat, and migratory trails exist.
8. Discuss what mitigations would be required to encourage regeneration of oak trees if cattle grazing is to be allowed concurrent with conservation easements.
9. Policy 7.4.2.8 currently requires mapping of five specific major habitats to be updated every three years, to identify the amount of important habitat removed because of new development. This requirement has not been complied with and is now being deleted. Why?
 - a. New maps that are accurate, detailed, and legible, should be provided with a comparison to the last maps done (10 years ago?)
 - b. Has *not* having these updates done as required contributed to connectivity and habitat loss?
 - c. Rather than remove the requirement, would an effective solution be to actually comply with it?
10. It is not clear why ministerial development, or agricultural activities, or low income housing, should be exempt from the biological policy requirements- please discuss this, and provide analysis of impacts if they were NOT to be exempted.
11. The NOP (page 7) mentions an Oak Resources Conservation ordinance that is "to be developed" for adoption with the ORMP. This is a vague reference to an important document that the public has not seen. If the retention standards lacked specificity for inclusion, surely this does too, and I would object to this EIR 'blessing' an unknown document.
12. These policies will allow an increase in the conversion of biological habitat into residential use - an impact on Air Quality, Greenhouse Gases, Transportation and Noise seems likely. These categories should not be exempt in this EIR.
13. County staff has expressed to the public that the policies proposed are essentially consistent¹ with the current General Plan. If this were true an EIR would not be necessary. The change to allow 100% tree removal is a significant change that has not been made clear to the public. It must be clarified in the EIR and not buried with declarations of '*there's not really any change*'. There must be a true good faith effort to communicate the policy changes and encourage public discourse in order to be CEQA compliant.
14. If the comments submitted for this NOP reflect general dissatisfaction in the policies themselves, please revisit the drafted policies *prior* to initiating a costly EIR.

A few policy references are attached below for convenience.

Ellen Van Dyke, Rescue

¹ Principle Planner, Purvines, Mountain Dem article "County updating General Plan biological policies"

For Reference:

6/22/15 Motion of the Board requiring oak tree retention standards be included in the EIR:

Public Comment: E. Vandyke, J. Buetler, K. Payne, R. Hargrove, L. Christensen, C. Louis, R. Louis, A. Cantwell, J. Davies

A motion was made by Supervisor Ranalli, seconded by Supervisor Veerkamp to Approve this matter, Adopt Resolution's 108-2015 and 109-2015 and direct staff to:

Consider project alternatives as part of the environmental review process including:

- 1) Adding oak resource retention standards;
- 2) Options for Individual Oak Tree (IOT) replacement mitigation (e.g. acorn to 15 gallon potted tree) and associated analysis of the implications for the In-lieu Fee Nexus study based on these options, and
- 3) Oak resource mitigation requirements related to discretionary and ministerial projects.

Yes: 4 - Mikulaco, Veerkamp, Frentzen and Ranalli

Absent: 1 - Novasel

From the 2005 court decision that lifted the 1999 writ of mandate against the county:

PROCEEDINGS: MOTION FOR REVIEW OF COUNTY'S RETURN TO WRIT OF MANDATE-RULING

process. Thus, issues concerning changes made in former versions of the General Plan are no longer relevant.

Moreover, the County has gone well beyond the direction of the 1999 writ. It has provided a new analysis of the impacts of replacement versus retention of oak woodlands, and it has also eliminated the "replacement" option from the policy as approved. The new, revised canopy protection measure keeps the retention percentages that were adopted in 1996, eliminates replacement as an option in lieu of retention, and requires a replacement of any canopy not required to be retained under the policy. In addition, the current DEIR proposed an alternative to the retention requirements, "Option B", which allows the County to require a project applicant to provide funding for woodland preservation in lieu of on-site canopy retention. The preservation would be at a 2:1 ratio and would allow the County to pool funds and apply them towards acquisition and restoration projects that would preserve larger contiguous blocks of habitat. The County adopted other new mitigation measures regarding oak woodland habitat. (See Mitigation Measures 5.12-1(e) and 5.12-1(g).)

Policy 7.4.1.6 All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance is not possible, the development shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall be defined in the Integrated Natural Resources Management Plan (INRMP) (see Policy 7.4.2.8 and Implementation Measure CO-M).

The County Agricultural Commission, Plant and Wildlife Technical Advisory Committee, representatives of the agricultural community, academia, and other stakeholders shall be involved and consulted in defining the important habitats of the County and in the creation and implementation of the INRMP.

MEASURE CO-A

Review the Zoning Ordinance (Title 17 of the El Dorado County Code) to identify revisions that accomplish the following:

- A. Incorporate tree canopy coverage standards outlined in Policy 7.4.4.4;
- B. Develop standards for use of native plants in landscaping [Policy 7.4.5.2];
- C. Establish Historic Design Control Combining Zone District and design guidelines for reconstruction and construction of new buildings and the demolition of existing buildings in such districts. Adopt an ordinance amendment implementing historic design review requirements and recordation procedures. [Policies 7.5.2.1, 7.5.2.2, and 7.5.2.4];
- D. Develop buffer standards for new non-mining land uses next to existing mining operations [Policy 7.2.2.3];
- E. Develop standards for minimizing erosion and sedimentation associated with earthwork and grading [Policy 7.1.2.2].

MEASURE CO-U

Mitigation under Policy 7.4.1.6 shall include providing sufficient funding to the County's conservation fund to acquire and protect important habitat at a minimum 2:1 ratio. The cost associated with acquisition, restoration, and management of the habitat protected shall be included in the mitigation fee. For larger development projects (i.e., those that exceed a total of 10 acres), in addition to contributing to the conservation fund at a minimum 2:1 ratio, onsite preservation and/or restoration of important habitat shall be required at a 1:1 ratio. Impacts on important habitat and mitigation requirements shall be addressed in a Biological Resources Study and an Important Habitat Mitigation Program (described below).

- A. Biological Resources Study. The County shall adopt biological resource assessment standards that apply to all discretionary projects that would result in disturbance of soil and native vegetation in areas that include important habitat as defined in the INRMP. The assessment of the project site must be in the form of an independent Biological Resources Study, and must be completed by a qualified biologist. The evaluation shall quantify the amount of important habitat, by habitat type, as defined in the General Plan and delineated on maps included in the INRMP. The Biological Resources Study shall also address the potential for the project to adversely affect important habitat through conversion or fragmentation. This requirement shall not apply to projects that are on lands that either (1) have already been the subject of a study and for which all mitigation requirements are being implemented or (2) have been evaluated by the County and found to not possess any important habitat resources.
- B. Important Habitat Mitigation Program. The Biological Resource Study shall include an Important Habitat Mitigation Program that identifies options that would avoid, minimize, or compensate for impacts on important habitats in compliance with the standards of the INRMP and the General Plan. All mitigation programs shall include a monitoring and reporting component requiring reports to the County not less than once each year for a period of not less than 10 years. The report will include a description of the lands included in the mitigation program (including location and size), a summary of the evaluation criteria established at the time the mitigation program was approved, an evaluation of the mitigation program based on those criteria, and recommendations for action during the following year. The County shall adopt standards for evaluating mitigation programs proposed as part of the Biological Resources Study described above. The standards shall ensure that the mitigation reduces direct and cumulative impacts of proposed development on important habitats to less than significant levels in accordance with CEQA thresholds.

Policy 7.4.4.4 For all new development projects (not including agricultural cultivation and actions pursuant to an approved Fire Safe Plan necessary to protect existing structures, both of which are exempt from this policy) that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards described below; or (2) the project applicant shall contribute to the County's Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

Option A

The County shall apply the following tree canopy retention standards:

The County shall apply the following tree canopy retention standards: Percent Existing Canopy Cover	Canopy Cover to be Retained
80–100	60% of existing canopy
60–79	70% of existing canopy
40–59	80% of existing canopy
20–39	85% of existing canopy
10-19	90% of existing canopy
1-9 for parcels > 1 acre	90% of existing canopy

Under Option A, the project applicant shall also replace woodland habitat removed at 1:1 ratio. Impacts on woodland habitat and mitigation requirements shall be addressed in a Biological Resources Study and Important Habitat Mitigation Plan as described in Policy 7.4.2.8. Woodland replacement shall be based on a formula, developed by the County, that accounts for the number of trees and acreage affected.

Article excerpt referenced in footnote 1:

Mountain Democrat

PLACERVILLE, CALIFORNIA

News

County updating General Plan’s biological policies

By **Chris Daley** From page A1 | July 27, 2015

Public hearings will be set

El Dorado County’s 2006 Oak Woodlands Management Plan, newly re-christened as the Oak Resources Management Plan, is once again getting a makeover.

Developed by the Long Range Planning Division of the Community Development Agency, the biological policy update project’s new resolution of intention was presented by Principal Planner Shawna Purvines at the Board of Supervisors’ July 14 meeting. Initially slated on the Consent Calendar, the items were moved off for discussion at the urging of local resident/activist Jamie Beutler and others.

As explained by Purvines, the new ROI was needed because an earlier version “didn’t accurately reflect the language of dealing with the ORMP and Rare Plants.” Both are part of the General Plan’s Chapter 7 —

Conservation and Open Space Element — and the issue goes back nearly a decade. The original Oak Woodlands Management Plan was overturned by a court decision, in part, because the county did not adequately address mitigation methods regarding removal or disruption of oaks and oak woodlands in its environmental impact report.

⋮

The recommended amendment removes the A and B Options in favor of “an incentive-based approach.”

In separate e-mails and copies of e-mails, Purvines wrote to the Mountain Democrat and to the Green Valley Alliance’s Ellen Van Dyke. She said in part, “The board’s decision to revise General Plan policy 7.4.4.4 related to oaks is consistent with the 2004 General Plan and essentially consistent with the 1996 General Plan which both included the options of retention ‘or’ mitigation.”

FROM THE PLANNING COMMISSION MINUTES OF AUGUST 13, 2015

AGENDA ITEMS

10. 12-1203 Community Development Agency, Long Range Planning Division, presenting a public scoping meeting on the draft Environmental Impact Report (EIR) for the proposed General Plan Biological Resources Policy Upgrade and Oak Resources Management Plan to inform interested parties about the proposed project, and to provide agencies and the public with an opportunity to provide comments on the scope and content of the EIR.

Public Comment: R. Hargrove, C. Lewis, C. Burcin, J. Hidal, S. Bernstein, R. Lewis, R. Stewart

No action taken.

Participants	Comments	EIR Section
Renee Hargrove, Farm Bureau	<ul style="list-style-type: none"> • Clearcutting concerns at BOS • Farm Bureau receives a lot of requests on how to maintain oaks • People DO value oak trees 	<ul style="list-style-type: none"> • Biological Resources • Aesthetics • Land Use
Carol Lewis- El Dorado Council	<ul style="list-style-type: none"> • Trees save lives • Air pollution is made better by preserving trees <ul style="list-style-type: none"> ○ Health concerns ○ 17 million tons of air pollution removed annually by trees • Living air purifiers • Water quality, reduces erosion • EPA studies- decreasing pollution.....worldwide • Lists air pollutants • Trees increase property value, decrease CO2, reduces erosion, increases energy efficiency, natural beauty • AQ oak tree component in GP <ul style="list-style-type: none"> ○ Reiterates health concerns- NEEDS the air quality issues in the GP 1. Concerned about the use of funds 2. No clearcutting before permits (Folsom) 3. 3 acorns planted <ul style="list-style-type: none"> a. Art Marinachio? 	<ul style="list-style-type: none"> • Air Quality • Land Use • Water Quality • Biological Resources
Charlotte Burcin- El Dorado Hills	<ul style="list-style-type: none"> • Cutting heritage trees by developers <ul style="list-style-type: none"> ○ Are there requirements for type/size of trees to be planted 	

	<ul style="list-style-type: none"> • Affordable housing exemption 	
<p>John Hidal- El Dorado Hills Advocacy Commission</p>	<ul style="list-style-type: none"> • Project alternative- max oak preservation <ul style="list-style-type: none"> ○ Use aerials to define certain areas where development is prohibited (other than very specific) • Define ambiguities <ul style="list-style-type: none"> ○ Diameter- trees aren't round, so the long or short side (shouldn't need an arborist) ○ w/ exemption- should still maintain wildlife corridors ○ enforcement? Success of tree planting? (correct location) • Preserving wildlife corridors- even with ag 	<ul style="list-style-type: none"> • Alternatives • Biological Resources • Forestry
<p>Scott Burnstein</p>	<ul style="list-style-type: none"> • Riverside Co. will be result of project (Aesthetics) • Removing one species will impact other species <ul style="list-style-type: none"> ○ Removed oaks will be replaced by cars not grass • GHG studied or not • Air Quality should be studied • Traffic problems are air pollution problems • Transportation needs to be studied • Noise impacts along 50 corridor from tree loss 	<ul style="list-style-type: none"> • Aesthetics • Air Quality • Transportation • Noise
<p>Roger Lewis- El Dorado Senior Housing</p>	<ul style="list-style-type: none"> • Property owners (senior housing) 8 acres <ul style="list-style-type: none"> ○ Can't meet option A requirements so is stuck because there is no option B • Wants to conserve oak trees <ul style="list-style-type: none"> ○ Quantify the issues- there are a lot of oaks already • Co report- 500 acres are 	<ul style="list-style-type: none"> • Land Use • Biological Resources

	<p>developed annually</p> <ul style="list-style-type: none"> ○ Almost 100 is oaks ○ Not accounting for natural regeneration ○ How many trees will we cut down, how many do we have ○ How much is significant? 	
Rick Stewart	<ul style="list-style-type: none"> ● Development in IBS (25 acres) ● Most of people in IBC don't know ● IBC requirements are a taking ● Deed restriction due to removing 2 oak trees (fire access) ● Doesn't want IBC period ● Policy should apply to entire County ● **project alternative- not just IBC but IBC objectives apply to entire County 	<ul style="list-style-type: none"> ● Land Use ● Biological Resources ● Alternatives
Dave Pratt	<ul style="list-style-type: none"> ● Under 2800' - lots of trees ● Tree type does matter ● Mitigation for tree type and locational impact in the EDH- should stay in EDH ● Smog zone- 2000' to 4000' good area for mitigation ● Herd migration is local, far less than previous, enough habitat to stay local ● Incentives versus penalties, what does property owner get back- what is the incentive <p>Incentives not penalties</p>	<ul style="list-style-type: none"> ● Biological Resources ● Land Use

**Revised NOTICE OF PREPARATION
of an Environmental Impact Report for the
General Plan Biological Resources Policy Update
and Oak Resources Management Plan**

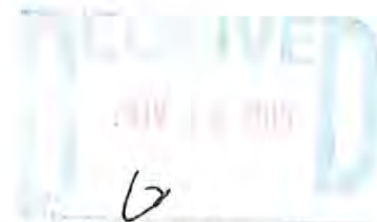
Date: November 23, 2015

To: State Clearinghouse
Responsible Agencies
Trustee Agencies
Interested Parties

NOP Comment Period: Written comments must be submitted to the County's
Community Development Agency, Long Range Planning
Division no later than **December 23, 2015 by 5:00 p.m.**

Project Location: El Dorado County

Lead Agency Contact Person: Shawna Purvines, Principal Planner



1.0 INTRODUCTION

This revised Notice of Preparation (NOP) has been issued to notify interested parties of revisions to the proposed project description for the County of El Dorado's (County) General Plan Biological Resources Policy Update and Oak Resources Management Plan.

The original NOP notifying interested parties that an Environmental Impact Report (EIR) will be prepared, and to solicit feedback on the scope and content of the analysis in the EIR was circulated between July 17, 2015 and August 17, 2015. The County will be the lead agency under the California Environmental Quality Act (CEQA) and will prepare an EIR to evaluate the environmental effects associated with the proposed project, which includes proposed updates to specific policies contained in the County's General Plan, referred to as the Biological Resources Policy Update, and the proposed adoption of an Oak Resources Management Plan (ORMP).

On September 29, 2015, following consideration of comments on the original NOP and proposed project, the County Board of Supervisors (Board) approved the following revisions to the draft ORMP:

1. Replace bulleted list format in Section 2.1, Applicability and Exemptions, with a numbered list format for easier reference.
2. Clarify the Fire Safe Activities exemption (now shown as Section 2.1.2) to provide that no mitigation is required for oak resources impacts associated with maintaining defensible space for existing structures and for impacts associated with fuel management and fire safety operations.

3. Revise language in Section 2.1, Applicability and Exemptions, to apply all oak woodland and individual oak tree mitigation requirements equally to projects requiring either discretionary or ministerial review by the County.
4. Clarify the Dead, Dying, or Diseased Trees exemption (now shown as Section 2.1.9) to include commonly used terms.
5. Add language to Section 3.1, Oak Woodlands, clarifying application of the in-lieu fee (or portions thereof) when a project applicant that independently negotiates purchase of a conservation easement with a willing seller to mitigate impacts.
6. Revise the in-lieu fee for individual oak trees, shown in Table 6 of Section 3.2, Oak Trees, to reflect the costs associated with planting and maintaining two 1-gallon or TreePot4 container trees for every 1-inch of tree diameter lost.

The revised draft ORMP is available for review on the County's **General Plan Biological Policies Update** webpage at:

<http://www.edc.gov.us/Government/LongRangePlanning/Environmental/BioPolicyUpdate.aspx>

This revised NOP has been issued to provide opportunity for interested parties and agencies to submit comments on the scope of the EIR relative to the revisions to the project description, as shown in the revised draft ORMP. Agencies should comment on such information as it relates to their statutory responsibilities in connection with the proposed project.

The EIR is intended to be a program-level document that will analyze the effects of the proposed General Plan Biological Resources Policy update and the ORMP. Program EIRs generally analyze broad environmental effects of the program, with the acknowledgment that site-specific environmental review may be required for future actions (14 CCR 15168(a)). Because no specific development projects are being proposed, the analysis will not be parcel-specific. The analysis will focus on the reasonably foreseeable direct and indirect physical environmental effects that could result from implementation of the General Plan Biological Resources Policy update and the ORMP.

The County has prepared an Initial Study/Environmental Checklist to identify potential and probable environmental impacts that will be evaluated in the EIR. Where the analysis in the Initial Study demonstrates that impacts to particular resources would be less than significant or have been previously evaluated in a prior EIR, those resources will not be evaluated in the EIR in accordance with CEQA Guidelines Section 15063(c)(3). The County has determined that the proposed project may have a significant effect on the environment; therefore, an EIR is being prepared. Based on this Initial Study, it is anticipated that the EIR will focus on the potential environmental effects related to aesthetics, agriculture and forestry resources, biological resources, greenhouse gas emissions (focused on the loss of carbon sequestration), and land use and planning.

This NOP includes the following sections:

- Section 1.0 Introduction
- Section 2.0 Project Background and History
- Section 3.0 Project Description
- Section 4.0 Potential and Probable Environmental Effects of the Project
- Section 5.0 Project Alternatives

This NOP, the IS, the proposed General Plan Biological Resource policies, and the proposed ORMP (revised November 23, 2015) are posted on the County's **General Plan Biological Policies Update** webpage at:

<http://www.edcgov.us/Government/LongRangePlanning/Environmental/BioPolicyUpdate.aspx>

NOP Comment Period: In accordance with the time limits identified in state law, your response to this NOP must be submitted to the County at the earliest possible date, but **not later than 5:00 p.m. on December 23, 2015** (30 days following the date this notice was first posted). Please submit written comments to the El Dorado County Community Development Agency (including the contact person's full name and address) to:

Shawna Purvines, Principal Planner
El Dorado County Community Development Agency, Long Range Planning Division
2850 Fairlane Court, Placerville CA 95667

Scoping Meeting: A scoping meeting was held on August 13, 2015 at 1:00 p.m. in the Planning Commission Hearing Room at 2850 Fairlane Court, Placerville during a regular scheduled meeting of the Planning Commission. No additional scoping meetings are anticipated.

2.0 PROJECT BACKGROUND AND HISTORY

Policy 7.4.2.8 of the 2004 El Dorado County General Plan anticipates development of an Integrated Natural Resource Management Plan (INRMP) to guide protection of the County's biological resources, including oak woodlands, sensitive habitats, and wildlife. Beginning in September 2006, the County worked to implement Policy 7.4.2.8 by conducting a public workshop process, preparing a work program for development of the INRMP, retaining consultants to prepare the INRMP, and convening two advisory committees. While a resource inventory and various assessment reports prepared by consultants and the advisory committees were accepted by the Board as part of the INRMP Phase I process, the County has not initiated the INRMP Phase II process.

The County also prepared an Oak Woodlands Management Plan (OWMP) as an initial and discrete component of the INRMP. The OWMP and its implementing ordinance Ord. 4771 (May 6, 2008) provided a mechanism for mitigation of development impacts on oak canopy through payment of an in-lieu fee (as anticipated under General Plan Policy 7.4.4.4 Option B) and subsequent acquisition by the County of oak woodland areas for conservation. Under the 2004 General Plan, Policy 7.4.4.4

requires that a land development project meet the oak canopy retention standards identified under Option A of the policy and replace or conserve offsite oak woodlands at a 1:1 ratio in proportion to the amount of oak canopy lost onsite or, under Option B of the policy, pay the in-lieu fee at a 2:1 ratio.

The County's adoption of the OWMP was challenged. The Appellate Court held that the County had not adequately evaluated the environmental effects of the OWMP as required by CEQA. The County rescinded the OWMP and its implementing ordinance in September 2012. With no in-lieu fee available (per General Plan Policy 7.4.4.4 Option B), land development projects must meet the retention standards in Option A to be consistent with the General Plan.

On September 24, 2012, the Board directed County staff to retain consultants to assist the County in the process of considering amendments to General Plan Policies 7.4.4.4, 7.4.4.5, 7.4.5.1, 7.4.5.2, 7.4.2.8, and 7.4.2.9 and their related Implementation Measures, with the goals of "...clarify[ing] and refine[ing] the intent and scope of all of those policies, ensur[ing] the consistency of all the related biological policies, consider[ing] changes in state law, and finally harmoniz[ing] the General Plan Policies."

For additional discussion of the County's past efforts in preparing and implementing the 2004 General Plan, please refer to May 1, 2014 Draft General Plan Biological Policies Background memo available at the County's **General Plan Biological Policies Update** webpage.

3.0 PROJECT DESCRIPTION

Under the proposed project, El Dorado County proposes to adopt specific revisions to biological resource objectives, policies, and implementation measures included in the Conservation and Open Space Element of the County's 2004 General Plan and to adopt an ORMP that revises and updates the 2008 OWMP. Consistent with the Board direction provided in September 2012, revisions to policies 7.4.2.8, 7.4.2.9, 7.4.4.4, 7.4.4.5, 7.4.5.1, and 7.4.5.2 are proposed. Revisions are also proposed to additional objectives and policies within the County's General Plan Conservation and Open Space Element, as listed in Section 3.2. The proposed General Plan revisions are intended to establish a program for County-wide management of impacts to biological resources and mitigation for those impacts.

3.1 Project Location

The proposed General Plan objectives, policies, and implementation measures would be effective throughout the entire County, which encompasses an approximately 1,711 square-mile area in the east-central portion of the State, while the ORMP would be applicable to areas within the County at or below the 4,000-foot elevation.

3.2 Proposed Project Elements

General Plan Biological Resources Policy Revisions

The County proposes revisions to several of the General Plan Biological Resources objectives, policies, and implementation measures, as listed in Table 1. As proposed, revised policy 7.4.2.8 would establish a comprehensive Biological Resource Mitigation Program to govern evaluation, impact assessment, and mitigation for biological resources within the county with the objective of conserving:

1. Habitats that support special status species;
2. Aquatic environments including streams, rivers, and lakes;
3. Wetland and riparian habitat;
4. Important habitat for migratory deer herds; and
5. Large expanses of native vegetation.

As proposed, policy 7.4.2.8 establishes standards for completion of Biological Resource Technical Reports, defines the categories of plant and wildlife species that are considered special-status species, sets minimum ratios for mitigation of impacts to habitats that may support special-status species, and provides criteria for identification of mitigation sites.

It is anticipated that under the proposed General Plan Biological Resources policies, development projects within the County that require discretionary approvals would be required to submit to the County a Biological Resource Technical Report that meets the requirements of Policy 7.4.2.8, determine the area of impact to each habitat type supported at the project site, and mitigate impacts through preservation and/or creation to ensure that the current range and distribution of special-status species within the County are maintained. Off-site mitigation sites that are acquired (through conservation easements or in fee title) must meet the criteria in Policy 7.4.2.8.D.

**Table 1
Proposed General Plan Revisions**

General Plan Objective/Policy/ Implementation Measure	Changes Made
Objective 7.4.1	Revised to focus on Pine Hill plants
Policy 7.4.1.1	Add "where feasible" following reference to County Code Chapter 130.71.
Policy 7.4.1.2	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.3	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.4	Add text to clarify which preserves are addressed by this policy.
Policy 7.4.1.5	Delete text
Policy 7.4.1.6	Delete policy
Policy 7.4.1.7	Policy moved to Policy 7.4.2.2
Policy 7.4.2.1	Revise language to address coordinating wildlife and vegetation protection programs with appropriate Federal and State agencies

Table 1
Proposed General Plan Revisions

General Plan Objective/Policy/ Implementation Measure	Changes Made
Policy 7.4.2.2	Delete policy; replace with prior policy 7.4.1.7 regarding noxious weeds
Policy 7.4.2.4	Revise text to clarify that active management is not required.
Policy 7.4.2.6	Delete policy
Policy 7.4.2.7	Delete policy to remove requirement to maintain the PAWTAC, but does not preclude the County from re-convening the PAWTAC when necessary.
Policy 7.4.2.8	Revise policy to delete INRMP and to include: <ul style="list-style-type: none"> • Requirement for wildlife movement studies for 4-, 6-, and 8- lane roadway projects. • Requirement for a biological resources technical report and establishment of mitigation ratio for special-status biological resources. • Identification of criteria for conservation lands. • Establish a voluntary database of willing sellers. • Biological resource mitigation program • Habitat protection strategy
Policy 7.4.2.9	Add provisions for lands within the Important Biological Corridor (IBC)- overlay.
Objective 7.4.3	Incorporated objective into Policy 7.4.1.5.
Objective 7.4.4	Consolidate Objective 7.4.4 and 7.4.5 to address oak woodlands and trees together.
Policy 7.4.4.2	Revise to reflect the conservation portion of the mitigation/conservation approach.
Policy 7.4.4.3	Revise Policy language to accurately reflect County's role in development planning.
Policy 7.4.4.4	Revise policy to refer to oak woodland and oak tree mitigation requirements in the Oak Resources Management Plan (ORMP). The Draft ORMP reflects the following revisions to the requirements previously contained in Policy 7.4.4.4: <ul style="list-style-type: none"> • Use of 'oak woodland' as a measurement. • Development of a 2-tiered mitigation approach that incorporates oak woodland mitigation (Policies 7.4.4.4) and oak tree mitigation (including heritage trees (Policy 7.4.5.2). Framework removes necessity for two oak woodland mitigation options (Option A and B) and removes retention standards by incorporating an incentive-based approach for oak woodland impact avoidance. • Revisions to projects or actions exempt from oak woodland and oak tree mitigation requirements. • Addition of criteria for conservation area identification outside of Priority Conservation Areas (PCA).
Policy 7.4.4.5	Delete Policy- Draft ORMP provides requirements for mitigation.
Objective 7.4.5	Merged Objective 7.4.5 with Objective 7.4.4 to address oak woodlands and individual oak trees (including Heritage Trees). Remove 'Vegetation' as non-tree vegetation is addressed in Policy 7.4.2.8.
Policy 7.4.5.1	Remove Policy 7.4.5.1 as it is redundant with Policy 7.4.5.2 which has been merged with Policy 7.4.4.4.

Table 1
Proposed General Plan Revisions

General Plan Objective/Policy/Implementation Measure	Changes Made
Policy 7.4.5.2	Merge Policy 7.4.5.2 with Policy 7.4.4.4 to comprehensively address oak woodlands and oak tree resources in a 2-tiered framework as identified in the ORMP.
Measure CO-L	Revise to reflect changes to Policy 7.4.2.8.
Measure CO-M	Deleted to reflect changes to Policy 7.4.2.8.
Measure CO-N	Deleted to reflect changes to Policy 7.4.2.9.
Measure CO-P	Revise to reflect changes to Policy 7.4.4.4 and the ORMP.
Measure CO-U	Deleted to reflect changes to Policy 7.4.2.8.

Oak Resources Management Plan

The project includes proposed adoption of an Oak Resources Management Plan (ORMP) that updates and revises the OWMP adopted by the Board on May 6, 2008 (El Dorado County 2008). The purpose of the ORMP is to define mitigation requirements for impacts to oak woodlands, individual native oak trees, and Heritage Trees and to outline the County's strategy for oak resource management and conservation. The ORMP is designed to function as the oak resources component of the County's biological resources mitigation program identified in General Plan Policy 7.4.2.8. To this end, the ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate oak woodland and native oak tree impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from mitigation requirements. The ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and individual native oak trees, identifies Priority Conservation Areas (PCAs) where oak woodland conservation efforts may be focused, and outlines minimum standards for identification of oak woodland conservation areas outside the PCAs. Requirements for monitoring and maintenance of conserved oak woodland areas and identification of allowable uses within conserved oak woodland areas are also included in the ORMP. Lastly, the ORMP also provides guidance for voluntary oak woodland and oak tree conservation and management efforts by landowners and land managers.

An Oak Resources Conservation ordinance that incorporates the standards outlined in the ORMP is also anticipated to be developed in conjunction with adoption of the ORMP. The ORMP is designed to serve multiple purposes. It defines the County's conservation strategy for oak resources and provides a framework for mitigating impacts to oak resources. It also complies with Implementation Measure CO-P and constitutes the oak portion of the County's biological resources mitigation program (General Plan Policy 7.4.2.8). Finally, it establishes a plan for voluntary conservation that landowners, the County, and others can use to seek grants and cost-sharing from state and federal programs for oak woodland conservation in El Dorado County.

4.0 PROBABLE ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR for the proposed project will focus on the resource areas/issues germane to this particular project. The EIR will evaluate the potentially significant environmental impacts of the proposed project and will evaluate whether there are feasible mitigation measures that may lessen or avoid such impacts. As the proposed project would amend the County's General Plan and influence development activities throughout the County and does not include any specific construction or development, the impact analysis will be programmatic and cumulative in nature. The EIR will also identify and evaluate alternatives to the proposed project. The EIR will evaluate potentially significant environmental effects related to the following environmental issues:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions (focused on the loss of carbon sequestration)
- Land Use and Planning

As evaluated in the Initial Study, it is not anticipated that impacts would occur within the following environmental topic areas, and therefore these specific environmental issues will not be evaluated further in the EIR.

- Air Quality
- Cultural Resources
- Geology/Soils
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Mineral Resources
- Noise
- Population/Housing
- Public Services/Utilities
- Transportation

5.0 PROJECT ALTERNATIVES

In accordance with Section 15126.6 of the State CEQA Guidelines, an EIR must "describe a range of reasonable alternatives to the Project, or to the location of the Project, which would feasibly attain most the basic objectives of the Project, but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives." As required by CEQA, the EIR will evaluate a reasonable range of project alternatives including a No Project Alternative, which will assume no change to the 2004 General Plan policies. Additional alternatives will be identified during the environmental review process. Once selected, the alternatives will be analyzed at a qualitative level of detail in the Draft EIR for comparison against the impacts identified for the proposed project, consistent with the requirements of CEQA.



Shawna Purvines <shawna.purvines@edcgov.us>

General Plan Biological Resources Policy Update

Richard Boylan PhD <drboylan@outlook.com>

Wed, Nov 25, 2015 at 10:58 AM

To: PlannerShawna Purvines -EDC <shawna.purvines@edcgov.us>, "planning@edcgov.us" <planning@edcgov.us>

Cc: Supervisor Brian Veerkamp-3 <bostthree@edcgov.us>, Supervisor Ron Mikulaco-1 <bosone@edcgov.us>, Supervisor Shiva Frentzen-2 <bostwo@edcgov.us>

County Planning staff:

This is comment on the [Draft ORMP Revised November 2015](#) (Oak Resources Management Plan).]

The mitigation standards section regarding in-lieu fees has a table which displays unrealistically-low costs per acre for locating, resourcing, planting and maintenance of oak tree plantings for seven years (\$7954). Given the costs of professionally-trained contract foresters or woodland biologists, the proposed costs of Initial Management and Monitoring (\$2,300) and Long-Term (7 years) Management and Monitoring (\$875) and Administration over seven years (\$379) are laughably low. These costs need to be realistically calculated. An upward adjustment factor of 150% of these figures would be conservative. Higher figures would be credible.

Please correct the Mitigation Measures section of the ORMP to reflect *realistic* costs.

Richard Boylan, Ph.D.
Diamond Springs, CA

Richard Boylan, Ph.D.

Richard Boylan, Ph.D.
Diamond Springs, CA 95619



Shawna Purvines <shawna.purvines@edcgov.us>

Revised NOP for Bio Resources

Cheryl <Cheryl.FMR@comcast.net>

Wed, Dec 23, 2015 at 1:44 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Hi Shawna—

I've attached **three (3)** files for the General Plan Biological Resources Policy Update and Oak Resources Management Plan **Revised Notice of Preparation**. These files include:

- Comments for the revised NOP, dated December 23, 2015
- Comments submitted for the initial NOP, dated August 17, 2015
- Comments submitted for the BOS meeting of September 29, 2015

I will also bring hard copy to your office today. The envelope will include the three files attached to this email, plus a disk (and disk copy) that contains the files and reference materials used to support the documents.

Please acknowledge receipt of comments and the disks via Cheryl.FMR@comcast.net.


Thank you—


Cheryl Langley

Shingle Springs Resident

3 attachments

 **1. Revised_NOP_Comments.Dec 23, 2015.pdf**
993K

 **2. Aug_17_2015 NOP Comments.pdf**
8665K

 **3. Sept_29_2015_BOS Comments.pdf**
645K

Cheryl Langley
5010 Mother Lode Drive
Shingle Springs, CA 95682

Ms. Shawna Purvines, Principal Planner
EDC Development Agency, Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

December 23, 2015

RE: Revised Notice of Preparation for the Biological Resources Policies Update & Oak Resources Management Plan

Ms. Purvines:

Thank you for the opportunity to comment on the revised Biological Resources Policy Update (**BRPU**) and Oak Resources Management Plan (**ORMP**).

In addition to comments submitted for this revised NOP, I have included comments submitted for the initial NOP (resubmitted here), and comments provided to the Board of Supervisors (BOS) at the September 29, 2015 meeting. (Specifically, I include the latter set of comments to support/add to discussion within this document.)

Based on these previously submitted comments, and other materials, I have the following requests for information to be included in the draft Environmental Impact Report (dEIR) for the BRPU/ORMP.

Retention of Option A

After reviewing the revisions to 2004 General Plan policies, the proposed ORMP, the BRPU, and Dudek memorandum (17A), it is clear that these policy revisions emphasize making oak mitigation the least onerous possible. This is good news for project applicants, but mitigation measures *must be effective*. The elimination of the Integrated Natural Resources Management Plan (INRMP), the disbanding of the Plant and Wildlife Technical Advisory Committee (PAWTAC), the elimination of Option A (oak retention standards), the reduction of tree sizes for mitigation plantings (from 15-gallon to acorns), the expansion of the number and kind of projects exempt from oak mitigation (including County road improvement projects) all signal a desire to make mitigation for the loss of oak woodland as “simple” and as affordable as possible, both for the County (which has struggled with oak mitigation projects), and for developers.

But this asset—oak woodland—*is* worth protecting. And, retention of ***Option A requirements in no way impedes development***—but it *does* serve to make certain a project has been assessed to determine if there is a way ***the developer can meet project objectives while at the same time retain the maximum number of oaks possible on-site***. If it is *demonstrated* a project cannot meet fruition *and* Option A oak retention standards, Option B “kicks in,” and other on- or off-site options for oak mitigation become available. **Why is this process—project evaluation as it relates to oak retention—deemed obstructive or impractical?** Aren’t our oak resources worth a serious project evaluation?

Members of the public have *continually* requested Option A retention standards be retained, and requested an equal-weight (co-equal) project alternatives analysis. Such an analysis would provide the BOS with the information necessary to make an informed decision and possibly approve a project alternative that could effectively reduce or avoid significant impact to oak resources. Without such an analysis, it is doubtful this project alternative will be evaluated to the extent necessary to make such a

determination. And, importantly, the BOS—in their July 22, 2015 meeting—*agreed* it was important to evaluate oak retention standards. But without an equal-weight analysis, a meaningful project alternative will not be prepared. Thus—by default—retention of Option A has been roundly rejected before a complete analysis has been conducted. In effect, **it has been predetermined that the County is “not going there.” This is contrary to the purpose and spirit of California Environmental Quality Act (CEQA) analysis.** And it sends message to the public that *“your participation in the process is not welcome here.”*

This is disturbing, and perhaps more so because the resource at stake cannot be easily replaced. And, while BOS members are charged with making decisions that will impact this resource, at least some are not conversant in biological principles, and Dudek does not correct misconceptions when BOS members make statements that lay bare their lack of understanding. While it may at times prove uncomfortable to correct a BOS member during public discussions, the consultant is there to provide expertise. When they do not, this is a failure of their responsibility to the BOS, and to the public, and serves to undermine their own credibility. And most importantly, it is a disservice to the resource being impacted.

The result? BOS members vote—make important decisions with long-term implications—without understanding basic biological or legal principles, or the seriousness and longevity of their decisions. And, while it is not the responsibility of the *public* to educate the BOS, that is where the task has come to rest—in the three minutes granted to any given individual—during meeting opportunities that County staff has purposefully limited to meetings during the workweek days/hours that fundamentally **limit public participation** in this **expedited** process:

NOTE: *“In recognition of the Board’s desire to expedite completion of this process, this approach would potentially limit public input to focused Planning Commission and Board meetings. The TGPA/ZOU process has used this approach to receive public comment rather than the public outreach program currently identified for input on revisions to the policies.”*

(Source: Document 7B under Meeting Details, PROCESS APPROACHES FOR THE OAK WOODLAND MANAGEMENT PLAN.)

This expedited process—based on a request by development interests for an “**interim policy**”—was no more than suggested than taken up by Long Range Planning’s Ms. Purvine who said—at the same meeting at which the request was launched—*“I’d actually like to look into that a little bit further and bring back a discussion on that.”*¹ That initiated a cascade of activity that evolved into an *expedited* BRPU and ORMP. But repeated requests by members of the public to evaluate the retention of Option A have fallen on deaf ears.

Retention of Option A was vilified by suggesting it would impose constraints on economic development, and may even constitute “property taking” by rendering some properties undevelopable.² But no such results could come to pass with implementation of Option B, whose development is clearly one of the primary thrusts of this ORMP. In this instance, Option A would simply provide a “first screening” of projects; it would not be the “last word” on project development or on a project’s ultimate impact on oak woodlands. But retention of Option A *could* serve to protect woodlands when a project *could* meet fruition while accommodating resident oaks.

¹ **Source of Quote:** Planning Commission meeting of Aug 15, 2014; TGPA/ZOU meeting RE: Biological Resources.

² Dudek. 2015. Memorandum from Kathy Spence-Wells to Shawna Purvines, September 18, 2015; 17A, page 8.

Request for Information

- I request a co-equal analysis of a project alternative based on retaining Option A (oak retention standards).
- In the past, Option A was considered restrictive to development interests largely because Option B *was not available*. With the availability of Option B (contingent upon approval of this ORMP), explain why Option A is not being evaluated in a co-equal analysis, especially in light of CEQA guidelines that state EIRs must describe alternatives “...which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project...”(14 CCR 1526.6[a]). (In fact, there is probably no other alternative—other than the **No Project** alternative—that could reduce the project’s significant impacts more than this alternative; it is a viable project alternative that deserves co-equal analysis.)

Oak Regeneration as a Mitigation Element

Because this notion of oak regeneration as a viable/plausible mitigation element seems to be persisting, it is necessary to expand on this topic.

First of all—this is not mitigation. Saying something will simply replace itself post-loss contradicts the meaning/purpose of mitigation. To identify *non-action* in this instance as mitigation defies logic, and it also defies scientific study on the topic. It is simply not credible. Even if this approach were *legally* defensible, **it is not supported by fact**.

I have cited numerous studies that discuss blue oak (*Quercus douglasii*) regeneration as inadequate to support the long-term survival of this woodland species in numerous areas of California (see discussion/citations in comments on the initial NOP, and in the September 29, 2015 comments to the BOS; reference materials are included for both documents [on disk] with this submitted material). These documents contain citations that describe the problems with blue oak regeneration (the species that will be most impacted [and replanted] as a result of development projects in EDC).

I add to this discussion on oak regeneration here. In a study by Swiecki, et al.,³ an in-depth evaluation was undertaken to assess the status of blue oak regeneration and determine how environmental and management factors influence blue oak sapling recruitment. This study was conducted in the counties listed in the table below on study sites of at least 150 acres in size dominated by blue oak

County	Regeneration Adequate to Maintain Blue Oak Woodland?		Comments
	Yes	No	
Napa		X	This study site had the highest number of blue oak saplings but there were fewer plots with an increase in blue oak density than a decrease in density; there were few small seedlings.
Glenn		X	No blue oak saplings were present anywhere in the entire study site

³ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

San Benito	X		The blue oak stand at this site appears to be viable; regeneration appears to be moderate—more plots showed an increase in blue oak density than a decrease
Yuba	X		More plots showed an increase in blue oak density than a decrease; about a quarter of the saplings originated as stump sprouts in an area where blue oaks were cut in 1989; 7 % of the sprout-oriented saplings were dead; mortality was higher among seedling-origin saplings (mesic site)
Mendocino		X	No blue oak saplings were present anywhere in the entire study area; a few seedlings were observed
Tulare		X	Recruitment was sparse; current levels of recruitment are insufficient to support offset mortality
Tehama		X	Blue oak saplings were uncommon, as were seedlings; sapling recruitment was inadequate to maintain current stand densities
Amador		X	Blue oak saplings and seedlings were uncommon; very little regeneration has occurred since the Gold Rush; current recruitment is insufficient to maintain stand; conversion to grassland appears inevitable
San Luis Obispo		X	Recruitment is insufficient to offset mortality
Monterey		X	Recruitment is insufficient to offset mortality
Madera		X	No blue oak saplings were seen in the study area; a few small seedlings were seen; there was no regeneration of woody species in the study area
Santa Clara		X	No blue oak saplings were seen in the study area but some seedlings were seen; this stand had the highest mortality of those studied
Contra Costa		X	Recruitment lags far behind mortality at this study site
Tulare		X	Mortality was far in excess of sapling recruitment

Tuolumne	Variable, but ultimately described as a site with more plots with “net loss” than “net gain”	Stump sprout-origin saplings outnumbered those of seedling origin (sprouts from previous tree removal) at this site (75% of saplings were of sprout origin); virtually the entire stand appeared to be second growth; a few seedlings were seen, particularly along creeks; although regeneration had apparently been successful in some portions of the site, blue oak had been eliminated from some large areas and no recolonization of these large clearings has occurred
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Swiecki study conclusions include:

- *“...it appears that most locations are losing blue oak density at the stand level due to unreplaced mortality.”*
- *“These observations support the assertion that current recruitment is inadequate to maintain existing tree populations in at least some areas.”*
- *“...the conversion of blue oak woodland to grassland is not likely to be easily reversed.”*
- *“...the extent of blue oak woodlands will continue to decrease due to unreplaced mortality...”*
- *“Because our study locations are distributed throughout the range of blue oak, we are confident that the trends we observed can be generalized over much of the range of blue oak.”*
- *“In many stands, sapling blue oaks are absent or rare.”*
- *“In most stands, the percentage of the stand area which is likely to show a decrease in blue oak density and canopy cover is greater than the percentage that may show an increase in density and canopy cover.”*

Blue Oak Regeneration in EDC

During the various meetings and workshops on the BRPU/ORMP, some individuals have brought up the issue of oak regeneration—presumably in “defense” of oak removal—and have stated—*anecdotally*—that there are more trees in EDC now than in the past. There have also been figures brought up (undocumented) to “substantiate” gains in EDC oak woodland.

The most current study I was able to find to quantify blue oak woodlands in EDC was presented in the report *“Monitoring Land Cover Changes in California.”*⁴ (**NOTE:** The northeastern California project area covers Amador, Butte, **El Dorado**, Lassen, Modoc, Nevada, Placer, Plumas, Sierra, Sutter, Yolo and Yuba counties.)

⁴ USDA Forest Service & California Department of Forestry and Fire Protection Fire and Resource Assessment Program. 2002. *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program. Northeastern California Project Area, January, 2002.*

Report findings are as follows:

For **blue oak woodland** (all owners):

- 509 acres with small, moderate, large woodland decrease (1.55% decrease)
 - 194 acres with small, moderate, large woodland increase (0.59% increase)
- 32,878 acres total
Net decrease of 315 acres or 0.96%

For **blue oak/foothill pine woodland** (all owners):

- 119 acres with small, moderate, large woodland decrease (0.66% decrease)
 - 95 acres with small, moderate, large woodland increase (0.53% increase)
- 17,995 acres total
Net decrease of 24 acres or 0.13%

TOTAL for **blue oak** and **blue oak/foothill pine woodlands** combined: **1.09% decrease**

Table C-14 Acres of Classified Change in El Dorado County by Hardwood Cover Type and Owner Class

	National Forest		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Blue Oak Woodland								
LDVC	0	0	0	0	17	0	17	0
MDVC	0	0	4	0	82	0	86	0
SDVC	5	6	11	1	390	1	406	1
NCH	71	93	1,576	97	30,386	97	32,033	97
SIVC	0	1	15	1	155	0	170	1
MIVC	0	0	0	0	22	0	22	0
LIVC	0	0	0	0	2	0	2	0
NVG	0	0	23	1	119	0	142	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	77	100	1,628	100	31,173	100	32,878	100
Blue Oak / Foothill Pine								
LDVC	0	0	0	0	3	0	3	0
MDVC	0	0	1	0	23	0	24	0
SDVC	0	4	3	0	89	1	92	1
NCH	4	82	1,097	99	16,637	99	17,738	99
SIVC	1	14	4	0	76	0	81	0
MIVC	0	0	0	0	14	0	14	0
LIVC	0	0	0	0	0	0	0	0
NVG	0	0	9	1	34	0	43	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	5	100	1,113	100	16,877	100	17,995	100

LDVC – large decrease in vegetation cover; MDVC – moderate decrease in vegetation cover; SDVC – small decrease in vegetation cover; NCH – little to no change in vegetation cover; SIVC – small increase in vegetation cover; MIVC – moderate increase in vegetation cover; LIVC – large increase in vegetation cover; NVG – non-vegetation change; CLD/SHA – cloud or shadow
Refer to Appendix D for WHR type descriptions.

Source: USDA Forest Service & California Department of Forestry and Fire Protection, *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program.*

McCreary⁵ also weights in on this topic of regeneration.

For nearly a century, there has been concern that several of California's 20 native oak species are not regenerating adequately (Jepson 1910). Such concern was partially responsible for the establishment of the Integrated Hardwood Range Management Program (IHRMP) in 1986, a cooperative effort between the University of California, the California Department of Forestry and Fire Protection, and the California Department of Fish and Game to promote oak woodland conservation (Standiford and Bartolome 1997). Evidence indicating that there is an "oak regeneration problem" in California has been based largely on observations of a paucity of young seedlings and saplings in the understories of existing oak stands. Describing the foothill woodland in the Carmel Valley, White (1966) stated that "A prevailing characteristic . . . is the lack of reproduction . . . with very few seedlings." Bartolome and others (1987) also concluded that "current establishment appears insufficient to maintain current stand structure for some sites." And Swiecki and Bernhardt (1998) reported that of 15 blue oak locations evaluated throughout the State, 13 were losing stand density at the stand level due to unreplaced mortality.

The species that are having the most difficulty regenerating are all members of the white oak sub-genera of *Quercus*, and include blue oak (*Quercus douglasii*), valley oak (*Q. lobata*), and Engelmann oak (*Q. engelmannii*) (Muick and Bartolome 1987; Bolsinger 1988). Blue and valley oak are endemic to the State, while Engelmann oak, which actually has a far narrower distribution range than the other 2 species, does extend into Baja California (Griffin and Critchfield 1972). Concern about poor

Request for Information:

- Please include in the NOP a discussion of why oak regeneration is being evaluated as a possible "mitigation" element. Discuss what is to be accomplished by this approach—if accepted—and who will benefit. Discuss the impact on oak woodland mitigation if this approach is implemented.
- Describe the science that *supports* the notion that relying on oak regeneration is a plausible approach to impact mitigation. Also provide scientific studies that *refute* this approach to impact mitigation.
- Identify other California counties that have used—or entertained the idea of using—oak regeneration to "*offset development impacts to oak woodlands.*" If other counties have used this approach, identify those counties and present their rationale for using this approach, and if this approach was actually pursued, the outcome of that decision (impact on oak resources).
- Describe what makes this approach viable under CEQA mitigation guidelines.
- Keeping in mind that blue oak is the species that will be most impacted by development projects—and that it is the species that will make up the bulk of mitigation efforts—discuss how its declining ability to regenerate can possibly be used as a mitigation element.
- From a workshop PowerPoint presentation (Document 5D), mitigation is identified as "*strategies to reduce impacts.*" "Reducing impacts" implies an active process. How does relying on a *natural process* (especially one in decline), meet this criterion?

Use of Acorns for Oak Woodland Replacement

The poor natural regeneration of blue oak woodlands means the viability of acorn plantings, too, will be problematic, making replacement of woodlands via the planting of acorns a fragile, ineffective strategy. According to A Planner's Guide to Oak Woodlands:⁶

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

⁵ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

⁶ Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

Thus, while it may be tempting to think planting acorns will provide a low-cost alternative to container-planting, acorns are prone to failure and could ultimately cost project developers *more* than container-planting. The excessive replacement of dying seedlings, the necessity for irrigation, weed and rodent control, and tree shelter or fencing placement (and replacement) means in-field acorn propagation will be costly and burdensome.

Studies have shown that mortality from direct seeding of acorns is high. According to Young,⁷ “Approximately 40% of the field-planted acorns disappeared in the first two months after planting, probably taken by ground squirrels or other seed predators.” And, according to Swiecke:⁸

A blue oak seedling observation plot was established just outside the study area in 1988 (Swiecki et al 1990), but was destroyed by ground squirrels before permanent markers could be installed. A second seedling plot located about 3 km south of the study area was resurveyed in July 1993, at which time only 6.5% of the seedlings tagged five years earlier were still surviving.

Not only is acorn planting fraught with difficulties and failure, the results—even under the best of circumstances—will be dismal. Blue oaks are slow growers. Harvey⁹ showed that many of the blue oak saplings less than four feet tall were between 40 and 100 years old. (**NOTE:** Both sets of comments submitted previously [August 17, 2015; September 29, 2015] include a discussion of blue oak growth rates and additional studies/citations, which see.)

Request for Information

- If acorn planting is to be pursued as a mitigation element under this ORMP, provide specific details/requirements for planting that include specific site treatment, monitoring, replacement schedules, equipment, and measures that will be employed to ensure success.
- Describe (and establish) a **performance standard** for acorn *and* sapling (container) plantings. That is, commit to a canopy coverage standard to be attained within X number of years (say 5 years, for example).

⁷ Young, T.P. and R.Y. Evans. 2002. *Initial Mortality and Root and Shoot Growth of Oak Seedlings Planted as Seeds and as Container Stock Under Different Irrigation Regimes*. Department of Environmental Horticulture, University of California, Davis; Final Report.

⁸ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

⁹ L.E Harvey. 1989. *Spatial and Temporal Dynamics of a Blue Oak Woodland*. Ph.D. Thesis, University of California, Santa Barbara.

Cattle Grazing on Conservation Easements

From the draft revised ORMP, November, 2015; Page 24:

4.2 Management of PCAs

Existing oak woodlands within the PCAs identified as mitigation for project impacts, whether on or off a project site, will be protected from further development through a conservation easement granted to the County or a land conservation group approved by the County or by acquisition in fee title by a land conservation group. Management activities would be conducted by land conservation organizations and may include, but are not limited to, one or more of the following activities, as determined appropriate and/or necessary through monitoring of the sites: inspections, biological surveys, fuels treatment to reduce risk of wildfire and to improve habitat, weed control, database management, and mapping. Agricultural use (i.e., grazing) shall be allowed in conserved oak woodlands as long as the activity occurred prior to the establishment of the conservation easement, the spatial extent of the agricultural use is not expanded on conserved lands, and the agricultural use does not involve active tree harvest or removal (e.g., fuelwood operations, land clearing for crop planting, etc.).

Livestock grazing can have serious implications for oak woodlands and wildlife. For instance, research conducted by Swiecki¹⁰ shows:

- Oak saplings are unlikely to be found in areas with high chronic levels of livestock browsing.
- In areas subject to at least moderate browsing, the majority of oaks are shorter than the browse line and show evidence of chronic browsing damage.
- Seedlings and saplings were more common in ungrazed natural areas than in grazed pastures.

To this end, Swiecki suggests:

- Alternative grazing regimes that reduce the duration and intensity of browsing pressure may help to reduce the negative impact of browsing on oak resources.
- In any gap-creating event (such as oak harvest or wildfire), livestock use should be minimized until oaks have grown taller than the browse line.

And McCreary¹¹ weighs in on this issue, too:

¹⁰ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

¹¹ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

Timing of Grazing Study

In 1989, a UC Davis graduate student named Lillian Hall initiated an experiment at the SFREC to evaluate how planted oak seedlings fare in pastures where cattle have access (Hall and others 1992). She planted 1-year-old blue oak seedlings in pastures grazed by cattle at different stock intensities, and included a control where cattle were excluded. She found that damage to seedlings was significantly less in the winter and fall when the deciduous oaks did not have foliage and were apparently less appetizing to the cattle. Cattle did not seem to seek out or prefer young oaks. However, in the spring green-forage season, they appeared drawn to clover patches near seedlings and browsed the oaks in the process. Heavy damage to seedlings in the summer at all cattle densities probably resulted from the fact that the young oaks were often the only green vegetation in the grazed pastures, and were therefore more palatable than the dry annual grasses. Within each season, total damage also increased with increasing stock density.

While some researchers suggest livestock management techniques can *lessen* the impact of grazing in oak woodlands, it is clear that **the best approach is to not graze these areas** unless absolutely necessary. For instance—speaking in terms of “real world” observation—while only spring grazing is done on the property north of Highway 50 by the Scott Road exit (in Sacramento County), it is clear that the blue oak woodland on these pastures is in decline; oak regeneration is largely absent.

Conservation easements should be managed for wildlife and woodlands—that is the purpose of a conservation easement. But if grazing is allowed on conservation easements, management (protection) of young oak trees must be actively performed. These protective practices may make cattle grazing on protected lands impractical/costly.

Request for Information

- Describe the grazing regime (management practices) that will/will not be allowed on conservation lands. For instance, will grazing be restricted to certain times of the year?
- Discuss/disclose the following: If the livestock owner is also the land owner, will this person receive a property tax reduction for the land being established as a conservation easement? Or, will they be charged a fee for use of a conservation easement for grazing purposes? And, if a fee is charged, will it go into a fund to be utilized for conservation easement acquisition?
- Similarly, discuss the situation described in the bullet above in the case where the livestock owner is *not* the landowner. Will “land rental fees” be levied, and if so how much, and how will the fees be used?

Discuss the following:

- How might the presence of grazing livestock on conservation easements impact wildlife and wildlife habitat?
- How might the presence of grazing livestock impact the oak woodland (specifically survival of young oaks)?
- How might the presence of grazing livestock impact water features, and the wildlife/ecology of those water features (e.g., vernal pools, seasonal creeks, drainages, ponds, etc.)

- If grazing is to be allowed on conservation easements, provide examples of EDC properties where grazing has occurred and oak regeneration is “active” (successful). Identify the amount of time grazing has occurred on the property (both in terms of years grazed and duration of grazing per season), the size and makeup of grazing herds (cattle, sheep, other), and the age classes and species of the oaks present.

Impact to Riparian Zones / Riparian Setbacks

While Long Range Planning staff touted the establishment of *permanent* riparian setback under the Targeted General Plan Amendment/Zoning Ordinance Update (TGPA/ZOU), it was not made clear that these setbacks were being *reduced* under the TGPA/ZOU. The BRPU had established the following interim guidelines:

From the BRPU, page 13D, page 10:

Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue.

The TGPA/ZOU reduced these interim guidelines to the following:

Title 130, Zoning Ordinance; Article 3, page 11:

Ministerial development, including single family dwellings and accessory structures, shall be set back a distance of 25 feet from any intermittent stream, wetland or sensitive riparian habitat, or a distance of 50 feet from any perennial lake, river or stream. This standardized setback may be reduced, or grading within the setback may be allowed, if a biological resource evaluation is prepared which indicates that a reduced setback would be sufficient to protect the resources.

All discretionary development which has the potential to impact wetlands or sensitive riparian habitat shall require a biological resource evaluation to establish the area of avoidance and any buffers or setbacks required to reduce the impacts to a less than significant level. Where all impacts are not reasonably avoided, the biological resource evaluation shall identify mitigation measures that may be employed to reduce the significant effects. These mitigation measures may include the requirement for compliance with the mitigation requirements of a state or federal permit, if required for the proposed development activity.

Any setback or buffer required by this subsection shall be measured from the ordinary high water mark of a river, perennial or intermittent stream, and the ordinary high water mark or spillway elevation of a lake or reservoir.

Because mitigation elements related to biological resources are the topic of this BRPU update, it is only reasonable that riparian setbacks should be evaluated, discussed, and developed under this BRPU process, not under the TGPA/ZOU process alone.

From the BRPU, 13C, page 35:

MEASURE CO-O

Prepare and adopt a riparian setback ordinance. The ordinance, which shall be incorporated into the Zoning Code, should address mitigation standards, including permanent protection mechanisms for protected areas, and exceptions to the setback requirements. The ordinance shall be applied to riparian areas associated with any surface water feature (i.e., rivers, streams, lakes, ponds, and wetlands) and should be prepared in coordination with Measure CO-B. [Policy 7.4.2.5]

When riparian setbacks were established under the TGPA/ZOU, it was clear that there was no scientific basis for setback size, and therefore no valid analysis of the impact of the reduction. This change in riparian setback distances needs to be evaluated within this dEIR (along with other numerous impacts to biological resources that are the result of TGPA/ZOU-based revisions.) Importantly—based on the importance of riparian systems—and the significant impact of the setback revision—setback revisions and/or additional mitigation measures are in order, and could be develop under this BRPU process.

For instance, it has been established that development and encroachment setbacks should include the entire *active floodplain*¹² of a creek or river to adequately preserve stream banks and associated riparian vegetation. And, while there is no single, abrupt, well-documented threshold setback width that would provide maximum benefits for all riparian functions (because riparian functions have different mechanistic bases and are affected by different site attributes), it is well known that most riparian functions would be affected if setbacks included a buffer of less than **66 feet beyond the active floodplain**.¹³ Consequently, narrower widths are not adequate for long-term conservation of riparian functions. (This conclusion is based on a review of the scientific literature.) A recent study of riparian buffers states that for first and second order stream segments¹⁴ **a minimum riparian setback that includes the entire active floodplain plus a buffer of 98 feet of adjacent land (on each side of the active floodplain)** is required; along higher order stream segments (i.e., third order and greater), and along those in or adjacent to conservation lands, **a setback of at least 328 feet—and preferably 656 feet from the active floodplain** is necessary to conserve stream and riparian ecosystem functions, including most wildlife habitat functions. Although these setbacks may seem large, even these setback distances would not be sufficient for the conservation of many wildlife species with large area requirements. (For instance, some species that live in riparian areas must move to other areas to reproduce, as is the case with pond turtles.)

¹² *Active floodplain* means the geomorphic surface adjacent to the stream channel that is typically inundated on a regular basis (i.e., a recurrence interval of about 2–10 years or less). It is the most extensive low depositional surface, typically covered with fine over-bank deposits, although gravel bar deposits may occur along some streams.

¹³ Jones & Stokes. *Setback recommendations to conserve riparian areas and streams in western Placer County*. 2005. February, 2005.

¹⁴ *First order* stream segments are upstream segments that have no tributaries, and *second order* segments are formed by the junction of first order segments.

The problem is simple: land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁵ Conversion of large portions of a watershed to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems (Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).¹⁶

What Some Relevant Science “Says” About Stream/Riparian Setbacks

The following information was taken from Jones & Stokes, 2005.¹⁷

- Development and encroachment setbacks should include the entire *active floodplain* of a creek or river to adequately preserve stream banks and associated riparian vegetation. Because active floodplain boundaries are more stable and measurable than stream banks or the boundaries of riparian vegetation (that are dynamic and change with time), the boundary of the active floodplain—which can be readily delineated—is a preferable basis for determining setback widths rather than edges of stream banks, stream centerlines (or thalwegs), or any boundaries based exclusively on channel widths or vegetation.
- There is no single, abrupt, well-documented threshold width setback that would provide maximum benefits for all riparian functions. Rather, because riparian functions have different mechanistic bases, they are affected by different site attributes, and the relationship between setback widths and reduction of human effects differs among riparian functions. Nevertheless, several defensible arguments can be constructed regarding the appropriate width for a buffer to include within riparian setbacks. First, most riparian functions would be affected if setbacks included a buffer of less than 20 m (66 feet) beyond the active floodplain; consequently, narrower widths are not adequate for long-term conservation of riparian functions. This conclusion is based largely on a review of the scientific literature. In addition, stream incision and a discontinuous cover of woody plants reduces the benefits of narrow buffers. This variability in vegetation extent and structure reduces the effectiveness of narrow setbacks.

Recommendations for riparian setbacks are presented below:

- Apply to first and second order stream segments a minimum riparian setback that includes the entire active floodplain plus a buffer of 30 m (98 feet) of adjacent land (on each side of the active floodplain), or the distance to the nearest ridgeline or watershed boundary, whichever is less. (First order stream segments are upstream segments that have no tributaries, and second order segments are formed by the junction of first order segments.) Though the purpose of this setback would be to conserve stream and riparian functions; it would not be sufficient for the conservation of many wildlife species with large area requirements.
- Along higher order stream segments (i.e., third order and greater), and along lower order segments at selected sites (e.g., those in or adjacent to conservation lands), apply a setback of at least 100 m (328 ft), and preferably 150 m (656 ft), from the active floodplain for the purpose of conserving and enhancing stream and riparian ecosystem functions including most wildlife habitat functions. Along these larger stream segments, floodplains and riparian areas are more extensive, continuous, and structurally diverse than for lower order stream segments (e.g., first

¹⁵ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

and second order). These areas constitute corridors connecting a watershed's lower order stream segments, and, at a watershed scale, the riparian areas of these higher order segments contain particularly important habitats for most riparian-associated species.

- The conservation of wildlife habitat functions within these areas may be necessary for the persistence of their populations. For this reason, a wider setback, sufficient for the retention of wildlife habitat functions, is recommended along stream segments. Recommendations would result in a total setback width ranging from slightly more than 30 m (98 feet) on most first- and second order stream segments to over 150-200 m (492-656 feet) on higher-order streams.
- By basing these recommendations, in part, on the width of active floodplains, a variable, site-specific setback width that accounts for stream size is created. The width of the active floodplain provides a clear, functional basis for a variable width criterion that accomplishes the same purpose more directly than criteria based on stream order, slope, and other attributes of streams and their settings.

Riparian woodland restoration and enhancement measures should include:

- Where feasible, contiguous areas larger than 5 ha (12 ac) should be maintained, enhanced and linked to provide habitat refuge areas for sensitive species. These areas should be connected by riparian corridors more than 30 m (98 feet) wide on both sides of the channel wherever possible, in order to provide movement and dispersal corridors for wildlife.
- The preservation, restoration and linkage of large parcels of undeveloped and uncultivated lands adjacent to riparian areas will provide significant benefits to riparian species. Thus, large contiguous areas of riparian vegetation surrounded by "natural" uplands should be conserved to the greatest extent possible.
- Potential effects of adjacent land uses on riparian areas should be thoroughly evaluated during regional land use planning, and during the environmental review and permitting processes for specific projects, and these effects should be avoided to the maximum extent practicable.
- Re-creation of regular disturbance events (e.g., high water) on the floodplain will enhance vegetation and breeding bird populations in most systems (Riparian Habitat Joint Venture 2004).
- Within setbacks, most developed land uses would be incompatible with the conservation of stream and riparian functions. Developed land uses should be restricted to unavoidable crossings by roads and other infrastructure, because any structures or alterations of topography, vegetation or the soil surface are likely to affect both stream and riparian functions, and could result in substantial effects both on-site and downstream.
- For the purpose of long-term conservation of plant habitat functions, riparian setbacks should include the entire active floodplain, regardless of the current extent of riparian vegetation on that surface. The distribution of riparian vegetation is not static within the active floodplain, and the diversity of vegetative structure and species composition is strongly related to the hydrologic and geomorphic processes within the active floodplain. Therefore, conversion of any portion of the active floodplain to developed or agricultural land-cover types would affect hydrologic and geomorphic functions and affect plant habitat functions.
- Riparian-associated wildlife species differ in the specific habitat attributes they require in riparian systems. Consequently, structurally diverse vegetation, as well as the full range of naturally occurring physical conditions and disturbance regimes, are necessary to provide suitable riparian habitat for the entire community of associated wildlife species. Many riparian-

associated wildlife species use, and often require, both riparian and adjacent upland habitats for reproduction, cover, and/or foraging.

Recommendations for riparian setbacks by agricultural operations are presented below:

- Along first- and perhaps second-order streams, mitigation for adjacent agricultural uses would include filter strips and riparian buffers managed according to standards established by the National Resources Conservation Service. Such practices would improve the buffers' effectiveness for conserving some functions. Along first- and perhaps second-order streams, compatible developed land uses could include open space and low-density residential development, provided no impervious surfaces, infrastructure, or irrigation are placed within the setback.

Request for Information

- Please provide the scientific basis upon which riparian/stream setbacks were developed (such as peer-reviewed research documents, studies from universities, reports from State agencies with expertise in riparian/stream protection).
- Discuss why the riparian setback for a ministerial project is different from a discretionary project, given a hypothetically equivalent environment in each case.
- Discuss the criteria used to determine both the impacts/mitigations for discretionary development projects and the setback size(s) for discretionary projects.
- Include in the dEIR a discussion detailing whether the individual performing the Biological Resource Assessment will be required to consult with agencies with expertise in the field of riparian/stream protection, wildlife protection, etc., and include information from such consultations in the report.
- Discuss who will conduct the monitoring and reporting requirements for ministerial and discretionary projects. (If they will be conducted, who will conduct them, and the qualifications of individuals conducting the monitoring.)
- Describe any penalties or corrective actions that will be required for violations to prescriptive mitigations, and the criteria upon which these actions will be based.
- Identify actions that will be taken to revise ordinances and policies if mitigation measures established in the zoning ordinance are found not to be effective.
- Discuss the impact of livestock on riparian areas and identify the mitigation measures designed to reduce these impacts. If Best Management Practices (BMP) are employed, identify where those BMPs are documented, and discuss their efficacy in terms of mitigating impacts.
- It has been stated that developed land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁸ Discuss why this is/ or is not the case.
- It is also widely believed that conversion of large portions of a watershed or region to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems.¹⁹ Discuss why this is/ is not the case.

¹⁸ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁹ Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).

- Discuss whether the existing riparian setbacks will result in unbuildable parcels in EDC. Quantify how many would become unbuildable if riparian setbacks were increased to protective levels (as discussed in the Jones & Stokes report).
- Discuss whether EDC has developed a database of important surface water features, and if not, when this will be developed. Discuss whether it is possible/legal for EDC to approve development projects that will impact these resources prior to the development of this database.

BRPU, 13D, page 10:

Policy 7.3.3.3 The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.

Agricultural Operations and Evaluation Under AB 32

Agricultural operations may be exempt from Public Resources Code 21083.4 (Kuehl) provisions under the TGPA/ZOU, but agriculture *is not* exempt from CEQA oak woodland biogenic greenhouse gas emissions (GHG) analysis. (There are no GHG exceptions or exemptions for any oak woodland conversion project.)

Request for Information

- Because the TGPA/ZOU adds 17,000 acres of agricultural land—some of which is currently designated Open Space—impact to oak woodlands is likely significant. While agricultural operations are exempt from oak mitigation (tree replacement measures), they are not exempt from the evaluation of impacts under AB 32. Therefore, this conversion of land from other zoning designations to agricultural land designations must be evaluated as an impact to oak woodlands under this dEIR.
- Discuss the following: Does the project fully account for direct and indirect oak woodland conversion biogenic soil/vegetation GHG emission effects, including carbon dioxide, methane, nitrous oxide and black carbon emission associated with biomass disposal (including from agricultural operations).

Valley Oak Replacement / Request for Information

- Include a discussion regarding valley oak (*Quercus lobata*). Specifically, given the designation of this species as a species of “*special concern*,” why is there no recognition of this fact in terms of enhanced mitigation to protect/replace this species?
- Discuss what mitigation elements will be included to protect this species of special concern.
- If specific mitigation elements are not to be included for this species, discuss why this is the case.
- Quantify the estimated decline of this species if special protections are not provided.

Tree Replacement Scenarios

There seems to be some confusion regarding the tree replacement

Replacement Tree Sizes:

During its June 22, 2015 hearing, the Board requested further clarification and discussion on the potential for allowing different sized container trees to be planted for mitigation. Currently, the draft ORMP requires individual native oak trees to be replaced with 15-gallon sized trees and allows replacement planting for oak woodland mitigation to utilize a variety of smaller sized containers (1-gallon (or equivalent)) or acorns (with a 3:1 replacement ratio).

Source: Dudek Memorandum, September 18, 2015; 17A, page 9.

I believe this is incorrect. The ORMP does not require “...*individual native oak trees to be replaced with 15-gallon sized trees...*”; on page 13 of the May, 2015 ORMP (identical language/criteria is in the revised November 2915 ORMP) it states under “*Individual Native Oak Tree and Heritage Tree Impacts*”:

Replacement tree sizes may vary and may include acorn plantings, based on documentation of inch-for-inch replacement consistency included in an oak resources technical report. If acorns are used, they shall be planted at a 3:1 ratio (3 acorns for every 1-inch of trunk diameter removed)

Source: ORMP, May 2015; 13F, page 13. (Identical language/criteria as in the revised November 2915 ORMP.)

In any case, the formula will presumably work in this manner:

Under the tree-for-inch standard, tree planting would not replace the number of diameter inches removed. However, it would require planting of the same number of trees that would have been planted under an inch-for-inch standard that requires use of 15-gallon trees. To compare the two replacement standards, mitigation for removal of one 12-inch tree under the current draft ORMP would require a project applicant to plant 12 15-gallon oak trees; under the tree-for-inch mitigation standard mitigation for the same impact would require planting of 12 trees of any container size, or 36 acorns.

Source: Dudek memorandum of September 18, 2015; 17A, page 13.

Request for Information

- Once again, **efficacy** (and **performance standards**) should dictate oak tree/woodland mitigation, not an arbitrary formula. Please identify in the dEIR the efficacy of such an approach, and identify specific performance standards (such as canopy cover over time).
- Efficacy of mitigation needs to be demonstrated. The two studies described in the Dudek memorandum 17A (Hobbs, et al., 2001; Young, et al., 2005) actually *do not* support the supposition that acorn planting is “better” than planting larger stock. McCreary—also cited by Dudek—mentions multiple caveats to acorn planting—as presented in my comments of September 29, 2015. But the difficulties of acorn use have been largely ignored, presumably due to its lower mitigation cost.

Tree-for-Inch Mitigation

The tree-for-inch (as opposed to the inch-for-inch) mitigation represents another approach to lessening the cost of mitigation for the project applicant at the expense of oak woodland replacement. As written, this tree-for-inch standard can include replacement of one inch of tree with three acorns. Thus, a 12 inch oak could be replaced with 36 acorns (which are intended to yield 12 live trees, not 36 trees). Based on the growth rate of blue oaks (the species most likely to be removed and replaced via mitigation plantings) it could take a *very* long time to replace an oak.



The oak seedling at left is 8 to 10 inches tall and **12 to 16** years old. Below is a 6 to 8 inch tall seedling estimated to be **10 to 15** years old.



Source: Phillips, et al., 1996



This cross section was derived from a blue oak that was 4.5 inches dbh. This oak was estimated to be 95 years old.

Photo Source: Don & Ellen Van Dyke

A study by Standiford²⁰ on blue oak growth rates revealed an average diameter at breast height (dbh) after 50 years that ranged from 3.4 to 4.1 inches. Even under fairly aggressive restoration efforts, the largest mean diameter of the stand was only 3.9 inches.

Request for Information

- How much “dilution” of mitigation can occur before “mitigation” is no longer mitigation? The following statement was taken from the Dudek memorandum dated September 18, 2015 (17A):

The tree-for-inch standard would be the lesser burden for applicants.

This is great for the applicant; not so good for oak woodland resources. After all is said and done, it is important to remember that—while some individuals have requested that mitigation costs be kept as low as possible—**mitigation must be adequate to mitigate loss**. Affordability is not a criterion under which the effectiveness of mitigation can legitimately be degraded.

As this BRPU/ORMP process has moved forward, more approaches to cost/effort reduction have been inserted. Interestingly, I have not seen documentation in the record, nor heard public testimony requesting these cost-saving changes. Therefore, please disclose in the dEIR the motivation behind the changes. That is, are these modifications based on discovery of what other counties have instituted, or based on mitigation successfully performed in other counties—or are these approaches simply designed to reduce costs/effort for applicants, in spite of the fact that there appears to be *no evidence* to support this approach to mitigation? (And by mitigation I mean the successful replacement of oak woodland within a reasonable amount of time—say five to seven years.) If other counties have instituted these changes (acorn use, tree-for-inch replacement, relying on natural regeneration as a mitigation element, etc.,) please supply documentation that supports the efficacy of these measures in “real world” applications.

- Because it is looking less likely any of the mitigation proposals put forth will realistically mitigate for the loss of oak woodland in a reasonable amount of time, it is reasonable to assume the most effective “mitigation” will be either on-site retention (avoiding the impact in the first place), or the purchase of conservation easements that already contain viable oak woodlands. Therefore, in the dEIR, please evaluate this latter form of mitigation as the primary mitigation scenario. Identify the areas of EDC in which conservation easements are most likely to be established, and the anticipated acreage that is available for easement purchase. Also, identify the plant/wildlife component of these areas, and whether these conservation easements will adequately retain/protect a variety of plant/animal communities, or whether they are limited in scope in terms of diversity.

Oak Tree Replacement

According to the ORMP, *“any trees that do not survive the 7-year monitoring and maintenance period shall be replaced by the responsible party listed on the Oak Tree Removal permit and shall be monitored and maintained for 7 years.”*

²⁰ Standiford, R, et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

Request for Information

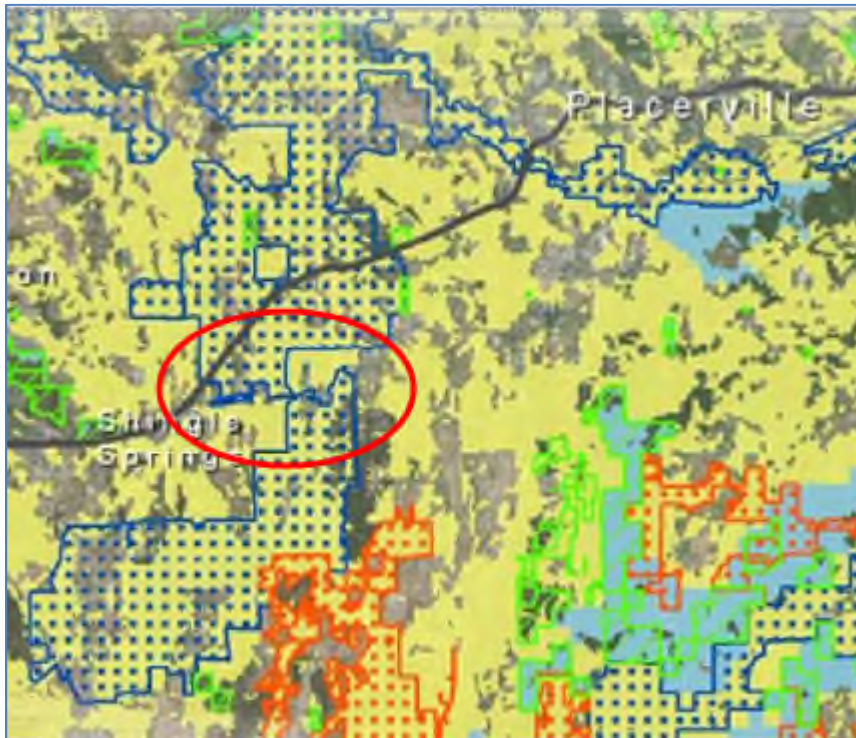
- Please explain in the dEIR how tree replacement is expected to work. That is, are dead trees monitored and replaced annually, or are dead trees only replaced at the end of the 7-year period?

Project Exemptions

- Discuss exemption for County road projects. This is a source of significant impact to oak resources. Bridge projects especially can disproportionately impact valley oak, a species of “special concern.” Discuss—based on scheduled road widening/bridge projects—the anticipated impact to oak resources.

IBC and PCA Maps, etc.

Closer examination of the IBC/PCA maps raises more questions than answers. For instance, in this section of the map, it appears the IBC is greatly constricted in this particular area. Discuss the reason for this constriction—it appears to be artificial.



Request for Information

- Please provide better (more detailed) IBC/PCA maps for each planning area. Identify any outstanding anomalies, and characterize the importance/necessity of each area (what they are designed to protect/serve.)

In Conclusion

In closing I'd like to say the policies proposed in the ORMP represent a significant weakening of environmental protection policies developed under the 2004 General Plan. Therefore, please consider revision to the draft ORMP that strengthen biological resource protections.

Cheryl Langley
5010 Mother Lode Drive
Shingle Springs, CA 95682

Ms. Shawna Purvines, Principal Planner
EDC Development Agency, Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

August 17, 2015

RE: Notice of Preparation for the Biological Resources Policies Update & Oak Resources Management Plan

Ms. Purvines:

Thank you for the opportunity to comment on the Biological Resources Policy Update (BRPU). I request the following information be included in the draft Environmental Impact Report (dEIR).

Impact to Efficacy of the 2004 General Plan

- Discuss how the removal of specific biological resources mitigation policies will impact the “legitimacy” and “viability” of the 2004 General Plan, since its approval was based in part on the presence of specific mitigation measures (e.g., the Integrated Natural Resources Management Plan, etc.).
- Because both the INRPM and Option A have been eliminated under the BRPU, include a discussion that specifies how the Oak Resources Management Plan (ORMP) satisfies the court decision brought relative to the Oak Woodlands Management Plan. How can both elements (INRMP and Option A) be deleted and yet satisfy mitigation requirements under that decision?

Targeted General Plan Amendment/Zoning Ordinance Update (TGPA/ZOU) Approval/Implementation

Multiple TGPA/ZOU policy changes will impact on oak woodlands—such as the TGPA/ZOU sanctioned conversion of open space to agricultural land—and *will not be evaluated under any EIR*: not under the TGPA/ZOU EIR, and not under the BRPU/ORMP EIR.

Impact to biological resources will be *significant* and *adverse* because agriculture is exempt from oak woodland protection measures (as well as other measures that protect biological resources—riparian protections, and so forth). The TGPA/ZOU will also **amend Policy 2.2.3.1 (open space in –PD zones)**; this will “...reduce the open space available for wildlife habitat in –PD zones and thereby increase the potential to adversely impact special-status species.” It will also exempt **Residential Agriculture** from the list of zoning regulations that provide for maintenance of permanent open space, allow development on slopes ≥30 percent, adversely impact riparian woodland, and impact the groundwater resources oak woodlands rely upon.

In addition, Dudek estimates of **oak woodland acreage impacted** are based on the 2004 General Plan, not on TGPA/ZOU policies. Specifically, Dudek excluded an estimate of oak woodlands on slopes ≥30 percent, but **the TGPA/ZOU will enable development on these slopes**. Thus, the estimates in Dudek’s *Oak Woodland Impact and Conservation Summary Table 5* are short-lived, if the TGPA/ZOU is adopted.

- Discuss the impact on the BRPU/ORMP if the TGPA/ZOU is approved. That is, discuss whether a revision of the BRPU EIR will be required to accommodate the additional impacts the TGPA/ZOU will have on elements in the BRPU.

- Explain how the BRPU can legitimately be separated from the TGPA/ZOU evaluation. (The current BRPU is evaluated only in the context of the 2004 General Plan.)
- The TGPA/ZOU was evaluated as if Option A, the INRMP, and *multiple* other mitigations were “viable.” Because these mitigations have been stripped away under the proposed BRPU, will the TGPA/ZOU EIR be recirculated if the proposed ORMP is adopted? Please explain.
- Provide information on the TGPA/ZOU impact to oak woodlands (including its impact on oak woodlands in agricultural-zoned lands, and as a result of the reduction in open space requirements, allowance of construction on sites with > 30% slope, the depletion of groundwater that oak woodlands rely upon, etc.)

Support Information for Approaches A, B & C

County staff prepared documents for the November 21, 2014 Biological Resources Workshop that included three **approaches (A, B and C)** to facilitate the completion of the ORMP project description and environmental review (County documents 7A and 7B). On page 5 of Staff Memo 7B, staff included a table that presents three approaches and their relative level of “*significant and unavoidable impacts.*” When asked how these impact levels were derived, staff did not (or could not) answer. References (supporting documentation) were not supplied at that time, nor subsequent to the workshop. Despite the absence of supporting documentation, the Board of Supervisors made the decision to proceed with **Approach A**.

Thus, it is not known what information the impact levels were based upon. This information was not available to the public, and it is reasonable to assume it was not available to the decision making body (Board of Supervisors).

- I am requesting that the evidence/studies/science that served as the basis for the level of impact determinations for **Approaches A, B and C** be made available and included in the dEIR. Please include any and all documentation, (letters, emails, etc.) used to support the impact determinations (such as communications with outside agencies, etc.).

Mitigation Performance

According to *A Planner’s Guide for Oak Woodlands*:¹

...ecologists now recognize that **replacing a century old tree with 1, 3, or 10 one-year-old seedlings does not adequately replace the lost habitat value of large trees. It has become evident that simply focusing on mitigation plantings based on a tree to seedling ratio is not a sufficient strategy to ensure the viability of oak woodlands.** [R]eplacement seedlings as a mitigation measure for removal of older stands of trees cannot meet the immediate **habitat needs** of forest-dependent animal species.

It is apparent that **preservation of oak woodland on-site is the preferred “mitigation.”** Short of on-site preservation, **the purchase of oak woodlands that will remain undeveloped in perpetuity** is to be preferred over on-site (or off-site) planting of saplings. Revegetation on- or off-site is a poor substitute for mature woodland, especially when value as **wildlife habitat** is part of the equation. **It is likely that**

¹ Giusti, G.A. et al (editors). 2005. *A planner’s guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

the loss of oak woodlands cannot be adequately mitigated under the current ORMP, especially in the absence of Option A retention requirements.

Mitigation Strategy

The proposed mitigation options need to be defined—or actually— **redefined**.

According to *A Planner's Guide for Oak Woodlands*:²

[T]he ultimate goal for planting mitigations should be tree establishment and long-term survival. The impact should be compensated for by replacing or providing substitute resources, such as **planting large container-grown trees, rather than seedlings or acorns** to expedite the recovery of the lost habitat component, or off-site mitigation actions, or mitigation banking. **However, off-site measures should be considered sparingly and should not be viewed as a convenient way to achieve mitigation objectives; off-site mitigation proposals should be carefully considered so that the strategy *is not abused*.**

If replacement planting *is* chosen as a means of mitigation in the ORMP, the mitigation must meet **performance standards**:

- **Please specify performance standards for mitigation plantings.** For instance, in the Interim Interpretive Guidelines (IIG) (7)(b), page 10, and IIG (7)(c), page 11, replacement plantings are “designed” to achieve oak woodland canopy coverage equal to the canopy removed **no more than 15 years from the date of planting**. **What is the performance standard for the mitigations described in the ORMP?**

Acorn planting as mitigation for the removal of mature stands of oaks is wholly inadequate. While it has been stated during ORMP workshops that acorn planting is sometimes the preferred method of achieving oak mitigation, there are many caveats that make this method of oak woodland replacement ineffective.

According to McCreary,³ the planting of acorns will be impacted by a whole host of factors such as conditions at the planting site, including the kinds of animals present. **Because acorns are an important food source for a whole host of animals, acorn plantings are difficult to protect.** McCreary also warns that the type of care necessary for survival and growth may not be **logistically feasible** for remote planting sites,⁴ making a difficult prospect more even more susceptible to failure.

² Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

³ McCreary, D.D. Undated. *How to Grow California Oaks*. University of California Oak Woodland Management. Available at: http://ucanr.edu/sites/oak_range/Oak_Articles_On_Line/Oak_Regeneration_Restoration/How_to_Grow_California_Oaks/

⁴ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

Oak Regeneration and Acorn Plantings

The issue of oak regeneration comes into play when acorn planting is chosen as the path to oak woodland replacement.

According to *A Planner's Guide for Oak Woodlands*:⁵

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

There is substantial evidence suggesting that several species, including blue oak, valley oak, and Engelmann oak (*Quercus engelmannii*) are not reproducing at sustainable levels in portions of California. Simply stated, there are not enough young seedlings or saplings to take the place of mature trees that die, raising questions about the future of these species in the state.

Numerous causes have been cited, including increased populations of animals and insects that eat acorns and seedlings, changes in rangeland vegetation, adverse impacts of livestock grazing (direct browsing injury, soil compaction, and reduced organic matter), and fire suppression. Some people also suspect that climate change is a factor...

This troubling condition—that of poor regeneration—means the viability of acorn plantings, too, will be problematic, **making replacement of woodlands via the planting of acorns a fragile, ineffective strategy.**

According to McCreary,⁶ **an effective alternative to directly sowing acorns is growing oak seedling in containers and then planting the saplings out in the field.** McCreary indicates propagating oaks in this manner results in starts that "...have higher survivorship than directly planted acorns, but they also cost far more."

Regarding acorn planting, I have the following requests for information:

- Please identify in the dEIR **other counties that utilize acorn planting** for mitigation and **describe the success rate** (efficacy) of such plantings **for each species of oak**. Describe locations at which such mitigation has taken place, and the date of plantings. Please include photographs of the site.
- The *Biological Resources Study and Important Habitat Mitigation Program Interim Guidelines (November 9, 2006)*, pages 15-16 (under Discretionary Project Reporting Requirements) specify a **15 year (annual) monitoring period for oak regeneration projects that utilize acorns**. This monitoring period has been changed to 7 years (based most likely on Kuehl bill requirements). **Explain in the dEIR the reason for the monitoring period reduction.** (That is, explain why what

⁵ Giusti, G.A. et al (editors). 2005. *A Planner's Guide for Oak Woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

⁶ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

was once acceptable/recommended has been reduced, given the more “protective” nature of the longer monitoring period).

- The IIG (7)(c), page 11 indicates maintenance and monitoring shall be required for a minimum of 10 years after the planting of trees (saplings, etc.) **Explain in the dEIR why this maintenance and monitoring period has been reduced under the ORMP**, given it was once acceptable/recommended and is more “protective.”

Mitigation Efficacy

According to the California Environmental Quality Act (CEQA) 15126.4a1(B) “Where several measures are available to mitigate an impact, each should be discussed and **the basis for selecting a particular measure should be identified.**” And, according to the Oak Woodland Impact Decision Matrix⁷ conservation planning grounded in science-based information supports the development of sensitive planning scenarios. But, **while mitigation strategies are identified in the ORMP, the strategies themselves do not represent vetted processes. Efficacy of the measures must be proven; evidence must be provided.**

- Please include in the dEIR references for the science-based information used as a basis for mitigation strategies proposed in the ORMP.
- Include a discussion of mitigation efforts undertaken in the County. Discuss **failed mitigations**, and the **reason(s) for their failure**. (Such as the mitigation plantings adjacent to Serrano Village D2—see the following photos.)
- Describe mitigation efforts (oak replanting efforts) that have been **successful** in the County. Describe the location of the plantings, the type of oak replanting that took place (i.e., acorns, container plants, etc.—including the size of the container plants), when they were planted, and the current status (size, condition, mortality rate, etc.) Please include photographs of the site.
- Given the many examples of failed mitigation efforts in the County, discuss why the public should have confidence that future mitigations will be successful. (That is, **past performance is the best predictor of future performance.**)

The following photos were taken of **mitigation plantings** by Serrano Village D2 in “tree shelters.” (This village was built around 2001-2003.) Photos taken **June, 2015**.

⁷ Giusti, G., et al. 2008. *Oak Woodland Impact Decision Matrix: a guide for planner’s to determine significant impacts to oaks as required by SB 1334 (Public Resources Code 21083.4)*. UC Integrated Hardwood Range Management Program, 2008.



This is a photo of a “tree shelter” around a blue oak; it was probably planted around the time of adjacent village construction (2001-2003).
Photo taken June, 2015.



Note the low success rate of blue oak plantings, even with tree shelters



The tree shelters in this area (as seen in foreground) are mostly devoid of trees (approximately 12-14 years after planting).

Revised Definition of Woodland

“Oak Woodland” needs to be redefined to include not only standing living oaks, “...but also trees of other species, damaged or senescent (aging) trees, a shrubby and herbaceous layer beneath the oak canopy, standing snags, granary trees, and downed woody debris in conjunction with [oaks].”⁸

Existing oak woodlands need to be evaluated under these criteria and, *if on-site retention is not possible, mitigation for the loss of all woodland components* through either conservation easement or fee title acquisition in perpetuity of biologically equivalent (or greater) woodland must take place to ensure replacement of viable woodland/wildlife habitat. (Napa County, for instance, evaluates all woodland components and employs a 60/40 retention in *sensitive water drainages*: 60% tree cover; 40% shrubby/herbaceous cover.)⁹

- Explain why the ORMP defines oak woodland in the following manner, and not in the manner described above in the Tuolumne County document (that acknowledges oak woodlands as wildlife habitat):

Oak Woodlands: An oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover (California Fish and Game Code Section 1361).

Source: ORMP, page 27.

- Discuss how the definition of oak woodland in the ORMP serves to limit mitigation effectiveness, and how the definition from Tuolumne County (above) expands mitigation viability.

⁸ Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 32. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

⁹ Napa County. 2010. Napa County Voluntary Oak Woodlands Management Plan. October 26, 2010; page 20. Available at:

<http://www.countyofnapa.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=4294973990>

Exempt Actions

- **Exemption for Personal Use of Oak Woodland Resources.** ORMP, page 7: *“When a native oak tree, other than a Heritage Tree, is cut down on the owner’s property for the owner’s personal use.”* This provision for “personal use” is problematic.
 - **Explain what deters a property owner from “pre-clearing” oaks under the guise of “private use.”**
 - Include a discussion—and some options for defining “personal use”—that may include **restricting personal use to certain zoning classifications** (i.e., residential parcels of 10 acres or less, for example) and eliminating from “personal use” land zoned for commercial, industrial, and other properties subject to planned development, area specific plans, etc.
 - Include a discussion that evaluates incorporating measures that **restrict for a period of time—say 10 years—the rezoning of land that has been pre-cleared, even if oak woodland was removed while the land was under a zoning district that allows oak tree removal for personal use** (parcels of 10 acres or less, for example).

This discussion is necessary (as is the provision of a measure designed to prevent such behavior) because it is well known—and documented—that sites within the County have been cleared of oak trees immediately prior to development proposal. (Documentation provided upon request.)

- **Exemption for Non-Commercial Agricultural “Operations.”** ORMP, page 7: *“Agricultural cultivation/operations, whether for personal or commercial purposes (excluding commercial firewood operations).”*
 - Include in the dEIR why this measure is necessary, and how much oak woodland is potentially impacted by this measure. The El Dorado Irrigation District (EID) is already on the threshold of eliminating a reduction in water rates for such operations, thus threatening their viability. Thus, while EID policies undercut such activity, the ORMP allows for the removal of oak resources minus mitigation. A reasoned outcome is that oaks are removed for a “hobby” agricultural operation that has little chance of being maintained.

Commercial Wood-Cutting Operations

There are too few restrictions placed on commercial firewood cutting operations. This lack of restrictions places oak woodland—especially blue oak woodland—in jeopardy.

The following is an excerpt from page 11 of the ORMP:

Commercial firewood cutting operations shall also require a tree removal permit if not approved under an oak woodland removal permit. In reviewing a tree removal permit application for commercial firewood cutting operations, the County shall consider the following:

- Whether the removal of the tree(s) would have a significant negative environmental impact;
- Whether the tree proposed for removal is a Heritage Tree;
- Whether replanting would be necessary to ensure adequate regeneration;
- Whether the removal would create the potential for soil erosion; and
- Whether any other limitations or conditions should be imposed in accordance with sound tree management practices.

- Please include in the dEIR the **specific criteria (thresholds)** used to determine the following:
 - “significant negative environmental impact”;
 - “adequate regeneration”;
 - “potential for soil erosion”; and
 - “sound tree management practices.”
- Include in the dEIR a discussion of specific criteria/thresholds/restrictions applied to **restrict removal activity** to a level that precludes impact to a level of “significant environmental impact,” and that supports adequate regeneration, avoids soil erosion, and institutes sound management practices.
- While **commercial firewood cutting operations** would be required to obtain a permit under the proposed plan, **there is no mention of minimum retention standards**. Shasta and Tehama counties adopted resolutions calling for **30 percent crown cover retention**.



Photo Source: Standiford, et al., 1996. *Impact of Firewood Harvesting on Hardwood Rangelands Varies with Region*. California Agriculture, March-April, 1996.



**Blue oak firewood
en route to
Bay Area markets.**

Photo Source: Cobb, J. 2015. California Oaks, letter to the California Board of Forestry and Fire Protection and the California Air Resources Board dated June 29, 2015 ([Attachment 1](#)).

In-Lieu Fee Use

- **Define in the dEIR exactly what the in-lieu fee will be used for.** Include a discussion of the benefit of a clause that addresses unexpended funds in the following manner: change existing language from *“revenues shall be allocated for some other purpose”* to *“revenues shall be dedicated to land conservation or natural lands stewardship.”* This suggested language **provides some flexibility while keeping the use of the funds focused** if the County has difficulty expending all the funds specifically for oak woodlands within the five year time frame.

Willing Sellers in Community Regions/Rural Centers

- Discuss how allowing **willing sellers** in Community Regions and Rural Centers to “sell” their property into **conservation easement** status would impact County conservation efforts. Discuss the reasoning behind *not* allowing willing sellers in these designations to sell, and discuss whether or not this restriction is based upon habitat evaluation (study).

Site Concurrence

- Include an evaluation of the viability/impact of **site concurrence by the California Department of Fish and Wildlife (CDFW)** in the process of establishing **conservation easements**. At least one county (Tuolumne) recommends dedication of such lands to a land conservation group **approved by the county with concurrence** by CDFW.ⁱⁱ Such concurrence would ensure easements provide the maximum benefit to wildlife.
- Discuss how this site concurrence by CDFW may assist developers with identification of appropriate conservation zones.

Advisory Body

- Evaluate in the dEIR the establishment of an **advisory body** (like PAWTAC) to review mitigation plans, mitigation implementation, and efficacy. (Ideally this advisory body would make recommendations to appropriate governing bodies, work with land conservation groups, and be responsible for homeowner education (protection of oaks in the landscape).

Initial Study

Following is a discussion of the Initial Study. The dEIR will evaluate environmental impacts in the following areas:

4.0 PROBABLE ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR for the proposed project will focus on the resource areas/issues germane to this particular project. The EIR will evaluate the potentially significant environmental impacts of the proposed project and will evaluate whether there are feasible mitigation measures that may lessen or avoid such impacts. As the proposed project would amend the County's General Plan and influence development activities throughout the County and does not include any specific construction or development, the impact analysis will be programmatic and cumulative in nature. The EIR will also identify and evaluate alternatives to the proposed project. The EIR will evaluate potentially significant environmental effects related to the following environmental issues:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Greenhouse Gas Emissions
- Land Use and Planning

The following issues are not to be covered (although Greenhouse Gas Emissions [GHG] are listed in both areas—to be covered, and not to be covered, I assume from additional discussion in the Initial Study that GHGs will be covered, but would like this clarified).

As evaluated in the Initial Study, it is not anticipated that impacts would occur within the following environmental topic areas, and therefore these specific environmental issues will not be evaluated further in the EIR.

- Air Quality
- Cultural Resources
- Geology/Soils

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Mineral Resources
- Noise
- Population/Housing
- Public Services/Utilities
- Transportation

Air Quality/Greenhouse Gas Emissions

While GHGs are listed on both the “to do” and “not to do” lists, the Initial Study acknowledges **GHG emissions** from the removal of oak woodlands **“could contribute to adverse climate change and could impair the ability of a region...to achieve GHG reductions required under state law.”**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

El Dorado County Biological Resource Policy Update and Oak Resources Management Plan Project

a, b) The project proposes amendments to biological resources policies contained in the County’s General Plan and adoption of an ORMP. While, the project does not include new construction or land uses that would generate greenhouse gas (GHG) emissions, development that proceeds under the proposed General Plan amendments and ORMP could alter and/or remove vegetation communities, including oak woodlands, and/or oak trees. Conversion of woodlands and other natural vegetation communities to developed uses could generate GHG emissions during the construction process. Further, oak woodlands and other natural vegetation communities **serve as a carbon sink**, in that they remove GHGs from the atmosphere and store carbon. Therefore, removal of woodlands and other natural vegetation communities could release GHGs into the atmosphere and reduce the natural absorption of GHG emissions. **These effects could contribute to adverse climate change effects and could impair the ability of the region and the state to achieve GHG reductions required under state law.** These effects will be evaluated in the EIR.

And yet, the following notation in the Initial Study stands in contradiction:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a discussion of this contradiction.
- Discuss the impact on air quality caused by the increase in development—residential, commercial, industrial, etc.—and the associated increase in emissions from increased vehicular traffic, construction activities, etc. **(Developers are now constrained under Option A restrictions, in combination with the lack of an in-lieu fee option; now that numerous mitigation options will be available, growth/development will inevitably occur.)**
- Include in the dEIR a complete evaluation of Air Quality issues, including GHGs, and other emissions from commercial woodcutting operations, and the large-scale removal of oaks for planned development projects, specific area plans, agricultural operations, etc.
- Include in the dEIR a complete evaluation as required under AB 32, as described below.

Assembly Bill (AB) 32 (See also Attachments 1 & 2).

The goal of AB 32—the California Global Warming Solutions Act—is to **reduce** carbon dioxide (CO₂) emissions by 2020 to 1990 levels, with a further 80 percent CO₂ reduction by 2050. The bill emphasizes the evaluation of CO₂ associated with the conversion of forests to other uses. **Oak woodland CO₂ emission effects must be considered for projects that convert native forests to non-forest use.** Both direct CO₂ emission impacts from dead tree disposal and cumulative impacts due to the loss of future increases in live tree carbon sequestration represent a biological emission subject to CEQA analysis and mitigation. Live tree biomass (including roots), standing dead tree biomass, and wood lying on the ground are to be evaluated to measure oak woodland biological emissions under CEQA.

CEQA CO₂ questions to be answered include:

- how much potential CO₂ sequestration over the next 100 years will be lost due to impacts to live native trees three (3) inches or greater diameter at breast height (dbh); and
- how much sequestered CO₂ will be released if the live trees, standing dead trees or woody debris are burned?

The County must analyze and mitigate CO₂ biological emissions associated with the land use changes that result in the loss of oak woodland sequestration capacity (the conversion of oak woodlands to non-forest use) and CO₂ release from burning oak debris/wood. If such an analysis is not done, the County disregards not only CEQA, but the Office of Planning and Research (OPR) guidelines, California Attorney General opinions and Court decisions. (See Center for Biological Diversity, et al. v. City of Desert Hot Springs, et al. (2008) Riverside County Superior Court - Case No. RIC 464585 and Berkeley Keep Jets Over the Bay Committee vs. Board of Port Commissioners (2001) 91 Ca.App.4th 1344, 1370-71.)

Because California has designated CO₂ emissions a grave human health risk, local jurisdictions cannot invoke ministerial or overriding considerations in determining proportional mitigation for carbon biological emissions due to oak woodlands conversion to non-forest use. It is considered an abuse of discretion to declare an inadequately mitigated oak woodland conversion a **public benefit** when in fact woodland conversion represents a demonstrable **public health hazard**.


- Provide a complete analysis as required under AB 32.

Cultural Resources

Disregarding oaks and oak woodlands as important cultural resources is an error. Many cultural resources are closely associated with oaks and oak woodlands, and this important aspect needs to be evaluated in the dEIR.

A. CULTURAL/HISTORICAL

Artifacts of the Native American people who historically lived in Napa County tend to be co-located with oak woodlands, which provided them with the acorns they relied upon for food. According to local historian Lin Weber, shamans of the Wappo people would offer prayers for the health of the oak trees, and the Wappo named months of the year after the seasonal phases of oaks. Present day oak stands or individual trees may have historical significance due to past events or structures that were associated with them. Many historical accounts mention the trees and the use of specific trees as landmarks or as boundary markers. The earliest European settlers found refuge from the hot valley sun for themselves and their livestock under oaks and benefited economically from the use of oaks for building material and firewood. Oak woodlands also created venues for recreation and public events. Napa County's remaining oak woodlands continue to serve as a reminder of our cultural and historical heritage.



Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 8.

- Discuss in the dEIR the cultural significance of oaks. Identify specific oaks/oak woodlands/woodland areas that have historical significance in El Dorado County, and describe the basis for their significance.

Geology and Soils

While the Initial Study cites no impact to geology and soils from the anticipated removal of oaks and oak woodland, it is nonetheless known that numerous significant impacts can occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS – Would the project:				
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Removal of oaks—especially on sloped land—can cause serious soil erosion, and can cause slope instability (landslides). The presence of oak trees can also facilitate the uptake of moisture from septic systems and improve their performance (VI)(e).

In fact, the ORMP, page 8, cites the potential for erosion during woodcutting operations, and cites (page 4) the following benefits from the preservation of oaks and oak woodlands:

1.4 Economic Activity, Land, and Ecosystem Values of Oak Resources

Agriculture and recreation-based tourism are important economic generators in El Dorado County. Oak resources provide value for these activities, including forage value for ranching, soil retention and watershed function benefits that contribute to agricultural activities, and aesthetic value for agri-tourism. Oak resources contribute to soil retention and provide watershed benefits, which have benefits to the agricultural community. Deer and other game species are dependent on oak woodland habitat and provide recreational hunting opportunities, which can generate revenues for ranching land owners through hunting leases. Oak resources contribute to a high-quality visit for recreation tourists, whose activities may include camping, fishing, hiking, bird-watching, and equestrian trail riding.

Studies have also concluded that the presence of oak resources enhances property value by providing shade, wind breaks, sound absorption, land use buffers, erosion control, and aesthetic beauty. Oak resources also contribute to healthy lands and watersheds. They do this by providing habitat for animals, maintaining water quality, and improving soil characteristics. Oak resources have also been identified as a valuable component in greenhouse gas reduction, trapping and storing atmospheric carbon dioxide.

Other sources also identify oaks and oak woodlands as providing erosion control and soil stability.

C. EROSION CONTROL

Oaks help control soil erosion in several ways. Oak woodland canopy intercepts raindrops and dissipates rainfall energy, reducing potential surface erosion. Oak leaf-fall and twigs that accumulate on the soil surface under oak woodland canopy also provide further protection against the erosive action of rainfall. In addition, tree roots and their associated symbiotic soil fungi promote the formation and stability of fine and course soil aggregates which help to promote soil cohesion and stability, reducing the risk of landslides and gully/ rill erosion. Oak woodland located on soils and slopes prone to erosion can also help prevent degradation in water quality and uphold soil/ land productivity. The planting of oaks in areas historically known to support oak woodland that currently exhibit accelerated erosion from lack of tree cover can help to stabilize and prevent further erosion in these areas.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 9.

- Provide in the dEIR a complete description of the potential impacts of oak tree/oak woodland removal, including the impact on soil stability, erosion, septic tank performance, etc.

Hazards/Hazardous Materials

In El Dorado County, the removal of oaks and oak woodland can disturb layers of soil and rock **containing asbestos**.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a discussion of oak woodlands that are located in areas known to be asbestos bearing. Describe and map those areas, and include the land use designations in those areas.

Hydrology/Water Quality

The removal of oaks/oak woodlands will have broad impact on hydrology/water quality; the dEIR needs to discuss/disclose these impacts. In fact, the ORMP, page 4 describes the benefit of oak tree/oak woodland retention on hydrology:

1.4 Economic Activity, Land, and Ecosystem Values of Oak Resources

Agriculture and recreation-based tourism are important economic generators in El Dorado County. Oak resources provide value for these activities, including forage value for ranching, soil retention and watershed function benefits that contribute to agricultural activities, and aesthetic value for agri-tourism. Oak resources contribute to soil retention and provide watershed benefits, which have benefits to the agricultural community. Deer and other game species are dependent on oak woodland habitat and provide recreational hunting opportunities, which can generate revenues for ranching land owners through hunting leases. Oak resources contribute to a high-quality visit for recreation tourists, whose activities may include camping, fishing, hiking, bird-watching, and equestrian trail riding.

Studies have also concluded that the presence of oak resources enhances property value by providing shade, wind breaks, sound absorption, land use buffers, erosion control, and aesthetic beauty. Oak resources also contribute to healthy lands and watersheds. They do this by providing habitat for animals, maintaining water quality, and improving soil characteristics. Oak resources have also been identified as a valuable component in greenhouse gas reduction, trapping and storing atmospheric carbon dioxide.

And yet, the Initial Study does not acknowledge this benefit, nor the impact the removal of oaks/oak woodland will have on hydrology—and, by association—water quality.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Include in the dEIR a complete discussion of the impacts of oak/oak woodland removal on hydrology/water quality.
- Discuss the impact on oaks/oak woodland that will occur as a result of new development that is groundwater dependent, and the impact on County residents that rely on groundwater resources.

Below is a discussion of some issues related to oak/oak woodland removal and hydrology/water quality from other sources.

B. FLOOD PROTECTION

The Napa River is historically prone to flooding, causing damage to homes and vineyards within its floodplains. Oak woodlands play a part in minimizing the strength and effect of the river's floodwaters. Oaks slow the eroding energy of rainfall with their canopies by temporarily hold rainwater on their leaf and stem surfaces during a rainstorm, increasing the amount of time rain takes to reach the ground and contribute to runoff. Oak woodland canopies capture 20-30% more rainfall than do grasslands, and their contribution to organic matter in the soil improves its water holding capacity.⁴ As a result, they have a high capacity for detaining peak flows from rainfall events that

would otherwise run in larger volumes and at higher velocities into streams, contributing to flooding, erosion, and sediment and nutrient concentrations that can harm water quality. The greatest flood protection/attenuation benefits related to tree canopy cover are in watersheds that quickly concentrate flows and pose a risk of flash flooding and in areas where runoff conveyance is already near capacity. Oak trees also capture and transpire moisture from the soil during the growing season. Compared to annual vegetation, oaks can extract water from the soil profile to a greater depth. Consequently, soils under oak woodland canopy are able to absorb and hold greater amounts of rainfall than equivalent soils with only annual grassland cover. This extra storage capacity further reduces the potential for flooding during the rainy season and promotes groundwater recharge.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 8 - 9.

D. WATER QUALITY PROTECTION

Oak woodlands, whether located on the hillsides or on level lands near streams, play an important role in protecting water quality. By minimizing soil erosion as noted above, oak woodlands can help reduce sediment transport and washing of fine sediments into local waterways. High levels of sediment in waterways can negatively impact the aquatic food supply by reducing habitat available for fish, aquatic invertebrates and other organisms



important to the diets of fish and birds. The Napa River is currently listed as impaired for sediment and a Sediment Total Maximum Daily Load (TMDL) is in the process of being adopted by the State.

The contribution of oaks and other vegetation to erosion prevention near waterways is especially important if soils contain excessive nutrients, pathogens or high levels of toxic material (natural or human concentrated), such as chemical contaminants, mercury or other heavy metals. Putah Creek, for example, has elevated levels of mercury in the soils of the bed and banks of its tributaries and is the focus of State regulatory efforts (TMDL)

to reduce mercury levels. Oaks and other vegetation also help reduce soil contamination by absorbing heavy metals, fertilizer nutrients, and pesticides from the soil and intercepting sediments containing these pollutants, thereby preventing these materials from reaching surface waters. Oaks and associated permanent vegetation along waterways can also reduce potential waterway contamination from airborne pesticide or herbicide drift, since oak foliage can intercept airborne pesticides/ herbicides.

Source: Napa County. 2010. *Napa County Voluntary Oak Woodlands Management Plan*. October 26, 2010. Page 9 - 10.

Noise

The large-scale removal of oaks for some projects—commercial woodcutting operations, planned development projects, specific area plan implementation, agricultural operations, etc., will have an impact on noise levels in the County.

- Please include in the dEIR a discussion of noise from the activities described above, and describe the mitigation measures that may be employed to reduce the impact (e.g., limitations on the hours of operation of chain saws, dozers, or other tree removal equipment).

Population/Housing

There will inevitably be an increase in the amount of housing (and therefore population) as a result of the adoption of the ORMP. As stated under Air Quality, **developers are now constrained under Option A restrictions, in combination with the lack of an in-lieu fee option. Now that numerous mitigation options will be available, growth/development will inevitably occur.**

- Discuss the impact of the increase in population on County services, etc., that will result from ORMP adoption.

Public Services/Utilities

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The removal of oak trees/oak woodland can have a significant impact on the need to construct storm water drainage facilities (see discussion under Hydrology/Water Quality).

- Include in the dEIR a discussion of the impact of oak/oak woodland removal on hydrologic patterns, and how that may result in the need to construct new storm water drainage facilities, etc.

Project Alternatives

I respectfully request that the following project alternatives/alternative elements be evaluated:

Project Alternative 1. Retention of the Option A oak retention schedule. Oak retention should be *the* priority. Other alternatives/mitigations should be utilized **only after it has been determined the project cannot meet the Option A retention schedule through any reasonable means.** A discussion of the necessity of Option A retention follows.

The Standiford Study¹⁰ (NOTE: This study was relied upon for development of the County's IIG.) According to Standiford, the results of this study (cited in the footnote below) call into question whether planted stands adequately mitigate the loss of mature stands. The mitigated blue oak stand wildlife species list (specific to the Sierra Nevada foothills) was compared to a natural blue oak stand, averaging 10 inches dbh, with a 30 percent canopy cover. The natural stand was assumed to have small and medium size downed wood, snags, acorns and trees with cavities and was projected to have 102 vertebrate wildlife species. The number of vertebrate species projected to occur in a mitigated stand—after 50 years—was 73 species (1 amphibian, 40 bird, 19 mammal, and 13 reptile species). The results of this study underscore the fact that blue oak woodlands develop habitat conditions slowly, and that it may take in excess of 50 years to replace mature habitat that is lost in a particular project.

The results suggest it is important to evaluate if tree planting is a viable method of mitigation, especially because many important habitat elements such as cavities, acorns, snags, and woody debris may not be mitigated—at least in the 50-year interval evaluated in the study. **Thus, it is important to conserve oak woodland in a natural state, whenever possible.**

At the June 22, 2015 Biological Resources meeting, the Board of Supervisors agreed it was important to evaluate the addition of oak retention standards to the ORMP process.

A motion was made by Supervisor Ranalli, seconded by Supervisor Veerkamp to Approve this matter, Adopt Resolution's 108-2015 and 109-2015 and direct staff to:
Consider project alternatives as part of the environmental review process including:
1) Adding oak resource retention standards;
2) Options for Individual Oak Tree (IOT) replacement mitigation (e.g. acorn to 15 gallon potted tree) and associated analysis of the implications for the In-lieu Fee Nexus study based on these options, and
3) Oak resource mitigation requirements related to discretionary and ministerial projects.

Mitigation options should only be entertained for those projects that **absolutely cannot come to fruition without some deviation from Option A retention standards.** **Incentivizing** oak woodland retention rather than **requiring** retention is not an acceptable option, **nor is establishing a policy that allows 100 percent removal of oaks.**

For reasons cited in the Sandiford study (previously described), the following project alternatives should be considered as well.

Project Alternative 2. Redefinition of “Oak Woodland” to include other associated tree and shrub species (understory) to maintain wildlife habitat value; require mitigation to replace these elements as well.

Project Alternative 3. Redefinition of a Heritage Tree as 24” dbh—**if not for all oaks, for blue oaks** (*Quercus douglassi*). (A discussion follows that identifies why this change is essential.)

The Standiford Study¹¹ (NOTE: This study was relied upon for development of the County's IIG.)

¹⁰ Standiford, R., et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

¹¹ Standiford, R., et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

This study modeled development of blue oak (*Quercus douglasii*) stand structure over 50 years after planting. The growth model was based on actual blue oak stand age and structure data (Standiford 1997). For this study, data was collected from 55 sample blue oak trees in a ten-year old blue oak plantation at the Sierra Foothill Research and Extension Center in Yuba County, California.

In this study, two different management regimes were utilized, a **high management** intensity scenario that assumed these stands would **average 2 inches dbh** after **10 years**, and there would be a 90 percent seedling survival. A **moderate management** scenario assumed that the stands would **average 1.5 inches dbh**, with an 85 percent seedling survival. **These assumptions are based on actual plantation growth** (McCreary 1990, 1995a, 1995b; McCreary and Lippit 1996; McCreary and Tecklin 1993) **and observations of operational restoration projects.**

For a planting density of **200 trees per acre 10 years** after planting (under a high management intensity), it was anticipated trees would average 2 inches dbh with 90 percent survival; under moderate intensity management, trees were anticipated to average 1.5 inches dbh with 85 percent survival, and **20 years** after planting: 2.5, 2.0, respectively.

Canopy cover after 50 years was projected to range from 7 to 33 percent, with an average dbh after 50 years ranging from 3.4 to 4.1 inches. Even under fairly aggressive restoration efforts the largest mean diameter of the stand was quite small, only 3.9 inches, with a canopy cover of 33 percent.

The following photographs serve to illustrate the growth rates for blue oak.
The blue oaks depicted below are **10-16 years old**.¹²



- Large blue oaks are likely **153 to 390 years old** (White, 1966).
- Growth is extremely slow **or even ceases** after trees reach **26 inches dbh** (McDonald, 1985).¹³ (**dbh**=diameter at breast height: 4 feet 6 inches from ground.) Thus, many blue oaks—although extremely old—**will never reach Heritage Tree status.**

¹² Phillips, R. L., et al. 1996. Blue Oak Seedlings May be Older than they Look. California Agriculture, May-June 1996. Available at: <http://ucanr.edu/repositoryfiles/ca5003p17-69761.pdf>

¹³ Ritter, L.V. Undated. *Blue Oak Woodland*. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group.



The blue oaks on this page illustrate a point. Although one has achieved Heritage Oak status, one can see the tremendous size required to arrive at Heritage Oak status.

This blue oak **IS NOT** a Heritage Oak, it is **32.5" dbh**.



This blue oak **IS** a Heritage oak **by one inch—37" dbh**.

Because blue oaks are slow growers, **Tuolumne County** has worked to establish a separate standard for blue oaks under their *old growth oaks* or “**specimen oaks**” category.¹⁴ Given this acknowledgement that blue oaks—given their slow growth rates—warrant separate consideration, it seems reasonable that **El Dorado County establish a separate size requirement for blue oak for Heritage Oak designation.**

In addition, it is known **blue oak regeneration** is a problem in many areas of the State. In fact, **“Few areas can be found in California where successful recruitment of blue oaks has occurred since the turn of the century” (Holland, 1976).**¹⁵

For these reasons—**slow growth, poor regeneration rates**, and the fact that **blue oak growth often ceases after trees reach 26” dbh**—it is necessary to establish a threshold for Heritage Oak designation for blue oak that is less than the 36” dbh threshold now proposed. It is only reasonable (and necessary) to protect this resource with a separate Heritage Oak threshold designation.

Growth Estimates for Black and Live Oak

The growth rates discussed previously for blue oak demonstrate what can be expected in terms of replant growth rates in the Western portion of El Dorado County. **But other oak species exhibit slow growth rates as well.** According to McDonald,¹⁶ black oak (*Quercus kelloggii*) growth rates (from acorns) are estimated to be 3.4 inches dbh at 20 years and 9 inches dbh at 50 years. Interior live oak (*Quercus wislizeni*) is also reported as slow-growing.¹⁷ These oaks, too—all oaks—would benefit from a redefinition of “Heritage Oak” to 24” dbh.

Project Alternative 4. Require **sapling/specimen tree replacement** for oak mitigation; **eliminate the option for acorn planting.**

Project Alternative 5. Establish a **minimum retention standard** for commercial firewood cutting operations, and define standards for site protection.

Project Alternative 6. **Application of a more robust mitigation ratio.** A revision of the mitigation ratios to a 2:1 mitigation ratio (at a minimum), and up to 5:1 in the case of environmentally sensitive areas, would motivate the developer to look more seriously at oak woodland retention, and would ensure the preservation of more oak woodland.

¹⁴ Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 38. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

¹⁵ Ritter, L.V. Undated. Blue Oak Woodland. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67340>

¹⁶ McDonald, P.M. Undated. *California black oak (Quercus kelloggii)*. Available at: http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/quercus/kelloggii.htm.

¹⁷ Fryer, Janet L. 2012. *Quercus wislizeni*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2015, February 6].

Requests for Clarification

- Provide in the dEIR a **detailed map** of the Important Biological Corridors (IBCs) and Priority Conservation Areas (PCAs). This is necessary to provide the public with the information necessary to determine which parcels are included—or excluded—from the IBCs and PCAs.
- **BRPU Decision Point 3: “Determine whether to require undercrossings for future four- and six-lane roadway projects to provide for wildlife movement, and if so, determine specific standards for undercrossings (i.e., size, location).”**

It is crucial to provide wildlife undercrossings (or overcrossings) particularly (although not exclusively) where roadways cross streams, creeks, seasonal creeks, other drainages, and riparian areas. Wildlife are most likely to frequent, and most likely to attempt roadway crossings at these sites. Providing wildlife undercrossings/overcrossings supports both wildlife preservation and motorist safety. However, some clarification is necessary in this instance.

A motion was made by Supervisor Ranalli, seconded by Supervisor Frentzen to require, when necessary, undercrossings for future four (4)-, six (6)- and eight (8) - lane roadway projects to provide for wildlife movement.

Yes: 5 - Mikulaco, Veerkamp, Frentzen, Ranalli and Novasel

- Please specify in the dEIR the criteria that would meet the standard **“when necessary,”** established by the Board of Supervisors.

Oak Planting, Conservation, etc.

Some issues need to be resolved to ensure appropriate mitigation planning. For instance, the following measures need to be overseen by a PAWTAC committee, and/or by the concurrence of CDFW, or a land conservation organization, or—in the case of the first item—through examination by a qualified arborist.

- ORMP, page 14: States that on-site planting is to be done *“to the satisfaction of the Planning Services Director.”*
- ORMP, page 14: Off-site planting: *“The applicant may be permitted to procure an off-site planting area for replacement planting.”*
- ORMP, page 16: *“Off-site mitigation may be accomplished through private agreements between the applicant and a private party.”*
- ORMP, page 21: The acquisition of parcels that constitute *“opportunities for active land management to be used to enhance or restore natural ecosystem processes.”*
- ORMP, page 21: *“Parcels that achieve multiple agency and community benefits.”*
- ORMP, page 24: the in-lieu fee payment **may be phased** to reflect timing of the oak resources removal/impact.”

Assembly Bill 1600

It is important *not* to limit the in-lieu fee evaluation to the criteria included in AB 1600. It is vital to remember that other funding “tools” that lack the narrow findings required under AB 1600 can be enacted to acquire the necessary amount of mitigation funds: Propositions 62 and 218, for instance, can provide for a special tax (but require voter approval). And, while a fee study provides the quantified basis for imposition of fees, **the County is free to determine that the level of service it would like to provide cannot be met simply through the imposition of the impact fee.**

AB 1600 impact fees are often based on staff's *professional judgment* or *opinion* regarding potential impact—and on a County's growth projection—the basis for all conclusions must be supported by *substantial evidence*. Because El Dorado County's water supply is arguably "uncertain" at this time, it will be difficult to project potential growth realistically.

After all is said and done, it is important to remember that—while some individuals have requested that the in-lieu fees be kept as low as possible—this provision is intended to provide *viable mitigation*, and as such must be adequate to mitigate loss. **Affordability is not a criterion under which the effectiveness of mitigation can legitimately be degraded.**

California Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460
board.public.comments@fire.ca.gov

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
dmallory@arb.ca.gov

June 29, 2015

Re: Oak Woodland Greenhouse Gas Emissions

California Board of Forestry and Fire Protection and California Air Resources Board Members:

California Oaks would like to raise the incongruity of the accompanying photo relative to the Board of Forestry and Air Resources Board joint policy regarding meeting AB32 Scoping Plan forest targets. Although the state's forest greenhouse gas (GHG) focus may be on "timberland," in fact California's GHG policies and laws apply equally to all native "forest land."

The 2008 AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: *"This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources."* The Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.



Blue oak firewood en route to Bay Area markets.

California Oaks would appreciate a cogent explanation of how the pictured blue oak firewood is consistent with the state's natural and working lands sector targets, given that unregulated/unmitigated oak tree cutting for "commercial purposes" results in: (1) the loss of carbon sequestration capacity; (2) produces carbon dioxide, methane and nitrous oxide emissions from burning the firewood.

Sincerely,



Janet Cobb, Executive Officer

Oaks

California Oaks

Preserving and perpetuating California's oak woodlands and wildlife habitats

July 6, 2015

Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667
shawna.purvines@edcgov.us

Re: Biological Policy Update Project

Shawna Purvines, Principal Planner:

California Oaks appreciates the opportunity to comment on the Biological Policy Update Project. Review of the project finds that it fails to consider California Environmental Quality Act (CEQA) greenhouse gas (GHG) emission requirements concerning the conversion of native forest resources to another land use. Specifically, the DEIR provides no analysis regarding potential forest conversion carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emission effects or proportional mitigation measures. This DEIR omission is contrary to California forest GHG policy and law.

The 2008 California Air Resources Board's AB32 Scoping Plan recognized the significant contribution that terrestrial greenhouse gas storage will make in meeting the state's GHG emissions reduction goals: "*This plan also acknowledges the important role of terrestrial sequestration in our forests, rangelands, wetlands, and other land resources.*"¹ Gov. Brown reiterated this point in his January 2015 inaugural address: "*And we must manage farm and rangelands, forests and wetlands so they can store carbon.*" Further, the CEQA Guidelines specifically address biogenic GHG emissions due to the conversion of forest land to non-forest use.² Biogenic GHG emissions are those derived from living plant cells. Fossil fuel GHG emissions are derived from living plant cells but are categorized differently.

The following 2009 Natural Resources Agency CEQA GHG Amendments response to comments quotation supports the contention that direct and indirect biogenic GHG emissions effects occur when native forest resources are converted. The response use of the word "and" clearly indicates that there are two potentially significant GHG emission effects to be analyzed regarding forest conversion to another land use. CEQA recognizes these secondary biogenic GHG emissions in the indirect effects language of Guidelines § 15358(2), "*... are later in time or farther removed in distance, but are still reasonably foreseeable.*"

¹ The AB32 Scoping Plan set a "no net loss" goal for forest land carbon sequestration and "stretch targets" of increasing forest land CO₂ storage by 2 million metric tonnes by 2020 and 5 MMT by 2050.
http://www.climatechange.ca.gov/forestry/documents/AB32_BOF_Report_1.5.pdf

² Oak woodlands are defined as "forest land" by Public Resources Code Section 12220(g)(l). This section is referenced in CEQA Appendix G, forest resources checklist.

Natural Resources Agency Response 66-7

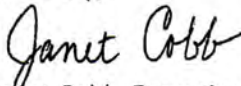
"As explained in the Initial Statement of Reasons, conversion of forest lands to non-forest uses may result in greenhouse gas emissions and reduce sequestration potential. (Initial Statement of Reasons, at pp. 63-64.)" See Exhibit A for a detailed CEQA discussion of forest conversion biogenic GHG emission effects.

When a native tree species is felled biomass carbon sequestration ceases. This immediate loss of biomass carbon sequestration capacity represents the direct forest conversion biogenic GHG emission effect. Upon disposal of the biomass carbon, the decomposition of biomass does in all cases result in indirect CO₂ and CH₄ emissions³ and the combustion of biomass does in all cases result in indirect CO₂, CH₄ and N₂O emissions.⁴ Thus, a CEQA oak woodlands GHG emission effects analysis requires carbon dioxide equivalent⁵ estimations for both the direct effect from loss of carbon sequestration and the indirect effect due to biogenic emissions associated with oak forest biomass disposal. Notably, burning biomass emits GHG instantaneously, while biomass decomposition takes years and even decades. See Exhibits B, C and D for biomass decomposition and combustion biogenic GHG emission citations.

Summary

Substantial evidence has been presented that project biogenic GHG emissions due to forest land conversion will result in potentially significant environmental effects that have not been sufficiently analyzed or feasibly mitigated. The project has not made "a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (CEQA Guidelines § 15064.4(a)). Therefore the Biological Policy Update Project is deficient as an informational document, in that it fails to apprise decision-makers/public of the full range and intensity of the adverse GHG emission effects on the environment that may reasonably be expected if the project is approved.

Sincerely,



Janet Cobb, Executive Officer
attachments (4)

³ "Anaerobic digestion, chemical process in which organic matter is broken down by microorganisms in the absence of oxygen, which results in the generation of carbon dioxide (CO₂) and methane (CH₄) ... Sugars, starches, and cellulose produce approximately equal amounts of methane and carbon dioxide." Encyclopædia Britannica (2013). <http://www.britannica.com/EBchecked/topic/22310/anaerobic-digestion>

⁴ "... the combustion of biomass does in all cases result in net additions of CH₄ and N₂O to the atmosphere, and therefore emissions of these two greenhouse gases as a result of biomass combustion should be accounted for in emission inventories under Scope 1" (at p. 11). World Resources Institute/World Business Council for Sustainable Development (2005). http://www.ghgprotocol.org/files/ghgp/tools/Stationary_Combustion_Guidance_final.pdf

⁵ AB32 defines "Carbon dioxide equivalent" to mean ... "the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change." The IPCC's best available science lists methane as having 34 times more global warming impact than carbon dioxide over a 100-year time horizon and nitrous oxide as having 298 times more global warming impact than carbon dioxide over the same period. Myhre, G., D. et al., 2013: *Anthropogenic and Natural Radiative Forcing*. In: *Climate Change 2013: The Physical Science Basis* (at pp. 713, 714).

Letter 97

Kari Fisher
Associate Counsel
California Farm Bureau Federation

Tim Schmelzer
Legislative and Regulatory Representative
Wine Institute

November 10, 2009

Comment 97-1

Comment is introductory in nature and expresses the organizations' concerns on the guidance for analysis and mitigation for GHG emissions in the proposed amendments. The Natural Resources Agency should reevaluate and revise Appendix G, Section II: Agriculture prior to adopting the proposed amendments.

Response 97-1

The comments object generally to the inclusion of forestry resources among the questions in Appendix G related to agricultural resources. The Initial Statement of Reasons explained the necessity of the added questions:

The proposed amendments would add several questions addressing forest resources in the section on Agricultural Resources. Forestry questions are appropriately addressed in the Appendix G checklist for several reasons. First, forests and forest resources are directly linked to both GHG emissions and efforts to reduce those emissions. For example, conversion of forests to non-forest uses may result in direct emissions of GHG emissions. (L. Wayburn et al., A Programmatic Approach to the Forest Sector in AB32, Pacific Forest Trust (May 2008); see also California Energy Commission Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (March, 2004) at p. 19.) Such conversion would also remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere). (Scoping Plan, Appendix C, at p. C-168.) Thus, such conversions are an indication of potential GHG emissions. Changes in forest land or timberland zoning may also ultimately lead to conversions, which could result in GHG emissions, aesthetic impacts, impacts to biological resources and water quality impacts, among others. Thus, these additions are reasonably necessary to ensure that lead agencies consider the full range of potential impacts in their initial studies. In the same

way that an EIR must address conversion of prime agricultural land or wetlands as part of a project (addressing the whole of the action requires analyzing land clearance in advance of project development), so should it analyze forest removal. [¶] During OPR's public involvement process, some commenters suggested that conversion of forest or timber lands to agricultural uses should not be addressed in the Initial Study checklist. (Letter from California Farm Bureau Federation to OPR, February 2, 2009; Letter from County of Napa, Conservation, Development and Planning Department, to OPR, January 26, 2009.) As explained above, the purpose of the Proposed Amendments is to implement the Legislative directive to develop Guidelines on the analysis and mitigation of GHG emissions. Although some agricultural uses also provide carbon sequestration values, most agricultural uses do not provide as much sequestration as forest resources. (Climate Action Team, Carbon Sequestration (2009), Chapter 3.3.8 at p. 3.21; California Energy Commission, Baseline GHG Emissions for Forest, Range, and Agricultural Lands in California (2004), at p. 2.) Therefore, such a project could result in a net increase in GHG emissions, among other potential impacts. Thus, such potential impacts are appropriately addressed in the Initial Study checklist.

(Initial Statement of Reasons, at pp. 63-64.) Specific objections to the questions related to forestry are addressed below.

Comment 97-2

Amendments to Appendix G, Section II: Agriculture, adding forest resources, distort the section from its original intent of protecting agriculture resources and will subject projects to extensive and unnecessary analysis beyond what is already legally required. Amendments to Section VII: Greenhouse Gas Emissions will adequately address any significant impact a project may have on greenhouse gas emissions.

Response 97-2

The comment's assertion that the addition of questions related to forestry "specifically target[s] the establishment of [agricultural] resources for extensive and unnecessary analysis above and beyond what is already legally required," is incorrect in several respects. First, the addition of questions related to forestry does not target the establishment of agricultural operations. The only mention in the Initial Statement of Reasons of agricultural operations in relation to those questions was in response to comments that the Office of Planning and Research received indicating that only conversions of forests to non-agricultural purposes should be analyzed. Moreover, the text of the questions themselves demonstrate that the concern is *any* conversion of forests, not just conversions to other agricultural operations.

Second, analysis of impacts to forestry resources is already required. For example, the Legislature has declared that "forest resources and timberlands of the state are among the most valuable of the natural resources of the state" and that such resources "furnish high-quality timber, recreational opportunities,

and aesthetic enjoyment while providing watershed protection and maintaining fisheries and wildlife.” (Public Resources Code, § 4512(a)-(b).) Because CEQA defines “environment” to include “land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance” (Public Resources Code, section 21060.5), and because forest resources have been declared to be “the most valuable of the natural resources of the state,” projects affecting such resources would have to be analyzed, whether or not specific questions relating to forestry resources were included in Appendix G. (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (“in preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect”).) If effect, by suggesting that the Appendix G questions be limited to conversions to “non-agricultural uses,” the comment asks the Natural Resources Agency to adopt changes that are inconsistent with CEQA, which it cannot do.

The comment’s suggestion that the questions related to greenhouse gas emissions are sufficient to address impacts related to greenhouse gas emissions does not justify deletion of the questions related to forestry resources. As explained in the Initial Statement of Reasons, not only do forest conversions result in greenhouse gas emissions, but may also “remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere).” Further, conversions may lead to “aesthetic impacts, impacts to biological resources and water quality impacts, among others.” The questions related to greenhouse gas emissions would not address such impacts. Thus, the addition of forestry questions to Appendix G is appropriate both pursuant to SB97 and the Natural Resources Agency’s general authority to update the CEQA Guidelines pursuant to Public Resources Code section 21083(f). The Natural Resources Agency, therefore, rejects the suggestion to removal all forestry questions from Appendix G.

Comment 97-3

The amendment adding forest resources to Appendix G: Section II loses sight of the intent and purpose of the Legislature’s directive in SB 97. The amendments do not further the directive or intent of SB 97 and unfairly attack and burden all types of agriculture, both crop lands and forest lands.

Response 97-3

SB97 called for guidance on the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. (Public Resources Code, § 21083.05.) As explained in the Initial Statement of Reasons, forest conversions may result in direct greenhouse gas emissions. Further, such conversions remove existing forest stock and the potential for further carbon sequestration. (Initial Statement of Reasons, at p. 63.) Sequestration is recognized as a key mitigation strategy in the Air Resources Board’s Scoping Plan. (Scoping Plan, Appendix C, at p. C-168.) Thus, the Natural Resources Agency disagrees with the comment, and finds that questions in Appendix G related to forestry are reasonably necessary to effectuate the purpose of SB97. Notably, such questions are also supported by the Natural Resources

Agency's more general authority to update the CEQA Guidelines every two years. (Public Resources Code, § 21083(f).)

The Natural Resources Agency also disagrees that the questions related to forestry "unfairly attack and burden all types of agriculture." Nothing in the text of the proposed amendments or the Initial Statement of Reasons demonstrate any effort to attack, or otherwise disadvantage, any agricultural use. Questions related to forestry impacts are addressed to any forest conversions, not just those resulting from agricultural operations. Further, the questions do not unfairly burden agriculture. To the extent an agricultural use requires a discretionary approval, analysis of any potentially significant impacts to forestry resources would already be required, as explained in Response 97-2, above.

Comment 97-4

The amendments adding forest resources to Appendix G: Section II go beyond the scope of mandate by SB 97 and will adversely affect California's agricultural industry. The only alternative is to recognize the loss of forest land or conversion of forest is only significant when it results in a non-agricultural use.

Response 97-4

The Natural Resources Agency finds that the addition of questions related to forest impacts are reasonably necessary to carry out the directive both in SB97 and the general obligation to update the CEQA Guidelines, as described in both the Initial Statement of Reasons and Responses 97-2 and 97-3, above.

Though the comment states "the proposed changes in Section II [of Appendix G] ... are highly onerous to the State's agricultural industry," the comment provides no evidence to support that claim. On the contrary, as explained in Responses 97-2 and 97-3, above, CEQA already requires analysis of forestry impacts, regardless of whether Appendix G specifically suggests such analysis.

The Natural Resources Agency declines to revise the forestry-related Appendix G questions as suggested. As explained in Response 97-2, above, exempting agricultural projects from the requirement to analyze impacts to forest resources is inconsistent with CEQA.

Exhibit B

Forest Land Conversion Biomass Combustion and Decomposition GHG Emissions

California Air Resources Board

"California is committed to reducing emissions of CO₂, which is the most abundant greenhouse gas and drives long-term climate change. However, short-lived climate pollutants [methane, etc.] have been shown to account for 30-40 percent of global warming experienced to date. Immediate and significant reduction of both CO₂ and short-lived climate pollutants is needed to stabilize global warming and avoid catastrophic climate change The atmospheric concentration of methane is growing as a result of human activities in the agricultural, waste treatment, and oil and gas sectors." *Reducing Short-Lived Climate Pollutants in California*, 2014.

UN Framework Convention on Climate, Deforestation Definition

"Those practices or processes that result in the change of forested lands to non-forest uses. This is often cited as one of the major causes of the enhanced greenhouse effect for two reasons: 1) the burning or decomposition of the wood releases carbon dioxide and 2) trees that once removed carbon dioxide from the atmosphere in the process of photosynthesis are no longer present and contributing to carbon storage." http://www.gofc-gold.uni-jena.de/redd/sourcebook/Sourcebook_Version_June_2008_COP13.pdf

Stanford University Engineering

Biomass burning also includes the combustion of agricultural and lumber waste for energy production. Such power generation often is promoted as a "sustainable" alternative to burning fossil fuels. And that's partly true as far as it goes. It is sustainable, in the sense that the fuel can be grown, processed and converted to energy on a cyclic basis. But the thermal and pollution effects of its combustion - in any form - can't be discounted, [Mark] Jacobson said.

"The bottom line is that biomass burning is neither clean nor climate-neutral," he said. "If you're serious about addressing global warming, you have to deal with biomass burning as well."

engineering.stanford.edu/news/stanford-engineers-study-shows-effects-biomass-burning-climate-health

Jacobson, M. Z. (2014). *Effects of biomass burning on climate, accounting for heat and moisture fluxes, black and brown carbon, and cloud absorption effects.*

European Geosciences Union

"Biomass burning is a significant global source of gaseous and particulate matter emissions to the troposphere. Emissions from biomass burning are known to be a source of greenhouse gases such as carbon dioxide, methane and nitrous oxide" (at 10457). *A review of biomass burning emissions, part I: gaseous emissions of carbon monoxide, methane, volatile organic compounds, and nitrogen containing compounds.*

R. Koppmann, K. von Czapiewski and J. S. Reid, 2005.

<http://www.atmos-chem-phys-discuss.net/5/10455/2005/acpd-5-10455-2005-print.pdf>

Phoenix Energy

"As wood starts to decompose it releases roughly equal amounts of methane (CH₄) and carbon dioxide (CO₂)." 2014. <http://www.phoenixenergy.net/powerplan/environment>

Macpherson Energy Corporation

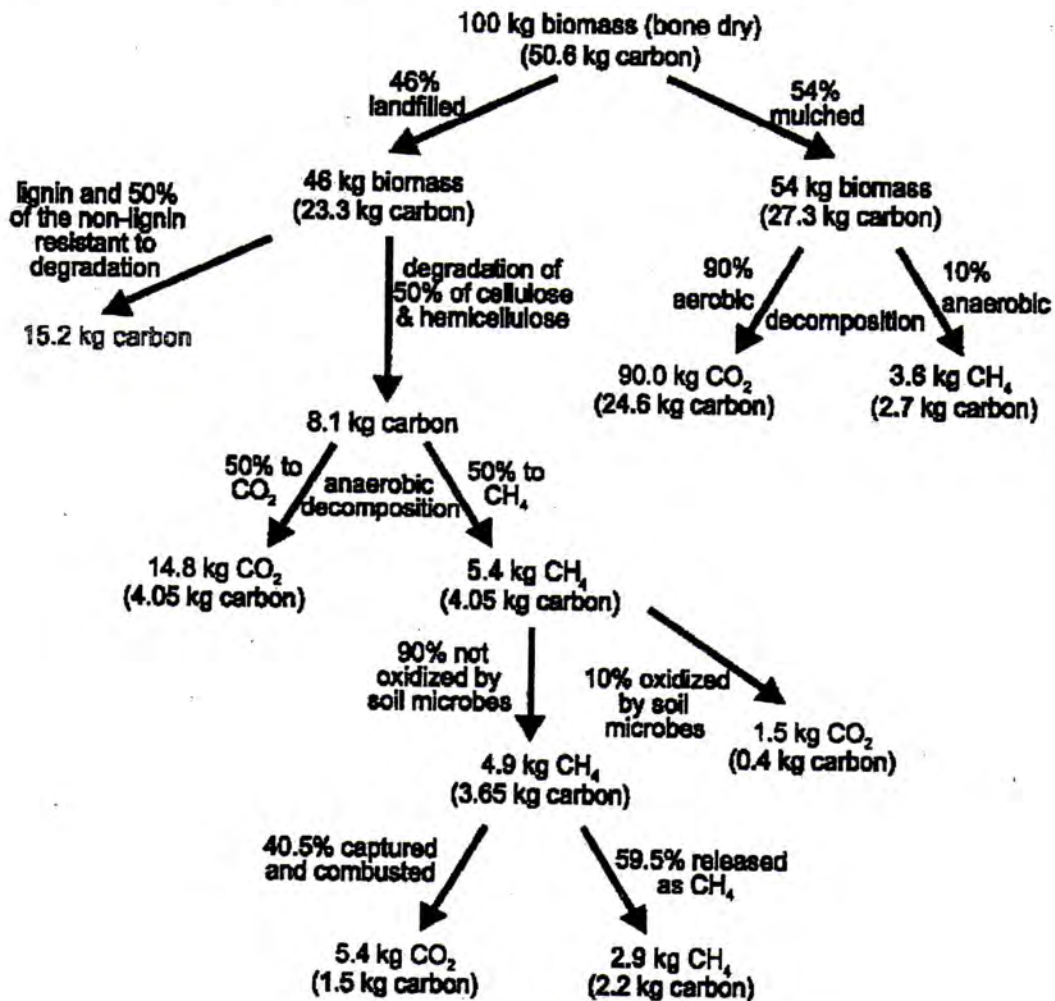
"Rotting produces a mixture of up to 50 percent CH₄, while open burning produces 5 to 10 percent CH₄." 2014. <http://macphersonenergy.com/mt-poso-conversion.html>

Exhibit C

Biomass Decomposition Greenhouse Gas Emissions

Biomass presentation by Alex Hobbs, PhD, PE to the Sierra Club Forum at North Carolina State University (November 24, 2009).

- If 100 kilograms of bone dry biomass were dispersed to a controlled landfill (46%) and mulched (54%) greenhouse gas emissions would be: 111.7 kilograms of CO₂ emissions + 6.5 kilograms of CH₄ emissions = 274.2 kilograms CO₂-equivalent emissions.



Landfill: 46 kg biomass/23.3 kg CO = 21.7 kg CO₂ + 2.9 kg CH₄ = 94.2 kg CO₂-equivalent.

Mulch: 54 kg biomass/27.3 kg CO = 90 kg CO₂ + 3.6 kg CH₄ = 180 kg CO₂-equivalent.

Total: 100 kg biomass/50.6 kg CO = 111.7 kg CO₂ + 6.5 kg CH₄ = 274.2 kg CO₂-equivalent.

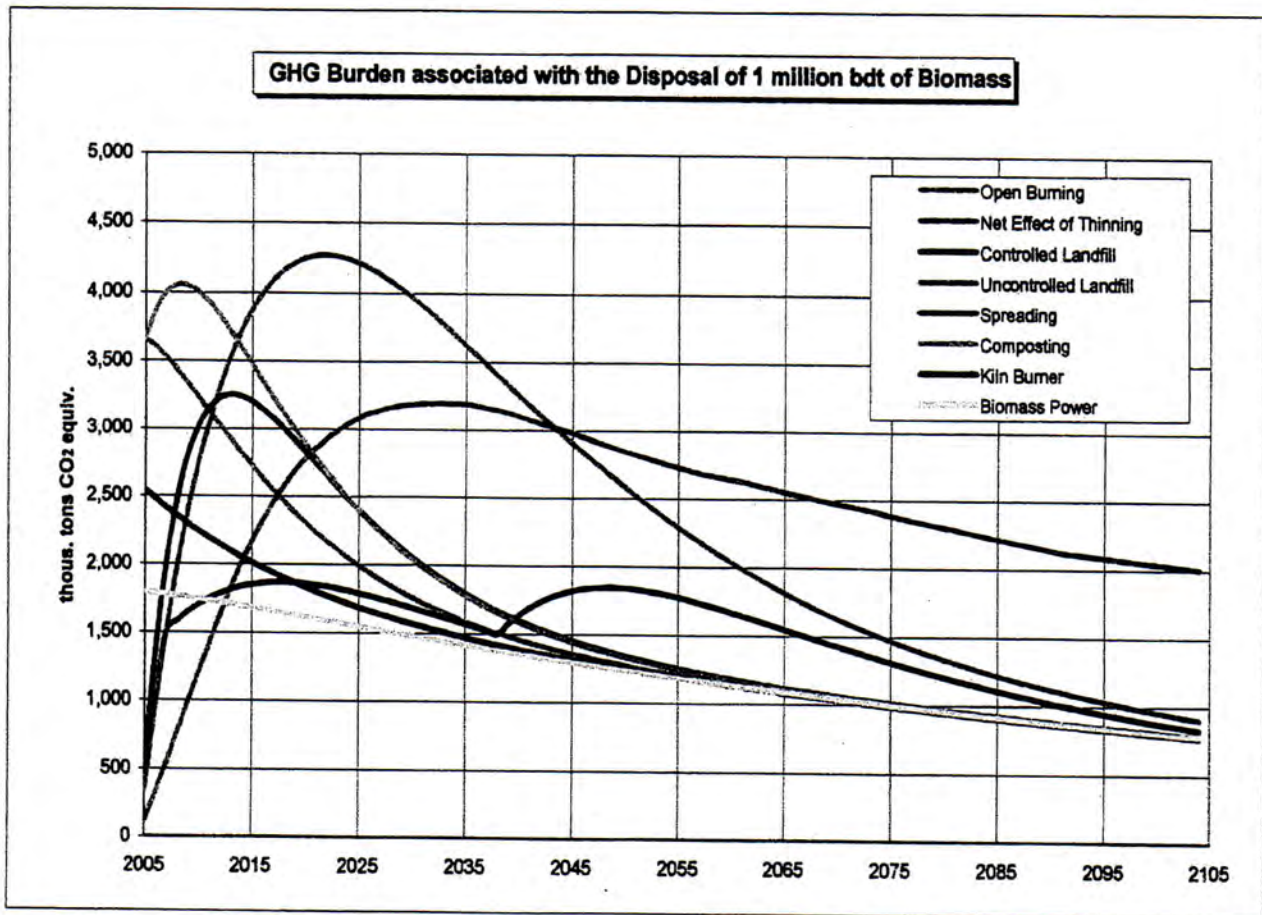
Exhibit D

Biomass Disposal Greenhouse Gas Emissions

The following chart illustrates the relative biogenic GHG emission effects from common methods of vegetation (biomass) disposal.¹ However, for a variety of reasons these chart values are too unrefined to be applied for project site-specific biogenic GHG emissions analysis.

Uncontrolled landfill disposal produces the greatest biomass GHG emissions followed by composting, open burning, mulching, forest thinning, firewood burning, controlled landfills and biomass power. Notably, biomass power emissions do not include methane and nitrous oxide emissions. The chart demonstrates that peak greenhouse gas emissions vary substantially depending on the means of biomass disposal.

Terminology: Net effect of thinning emissions apply to forest thinning emissions; Spreading emissions are equivalent to mulching emissions and Kiln Burner emissions are analogous to fireplace burning emissions.



Graphic: Gregory Morris, PhD. *Bioenergy and Greenhouse Gases*. Published by Pacific Institute (2008).

¹ One bone dry ton (bdt) is a volume of wood chips (or other bulk material) that would weigh one ton (2000 pounds, or 0.9072 metric tons) if all the moisture content was removed.

Cheryl Langley
Shingle Springs Resident

RE: Biological Resources Policies Update & Oak Resources Management Plan

Board Members:

Thank you for the opportunity to comment on the Biological Resources Policy Update (BRPU) and Oak Resources Management Plan (ORMP).

OAK TREE RETENTION STANDARDS

I urge the Board to **retain the Option A retention standards**. Oak retention should be a priority. Woodland removal beyond Option A retention standards should be considered **only after it has been determined the project cannot meet these standards through any reasonable means**. This determination could be made in conjunction with preparation of the *Oak Resources Technical Report*.

OAK TREE REGENERATION

Several studies have shown that **blue oak regeneration is a problem in numerous areas of the State**. Consequently, evaluation of the role natural regeneration may play as mitigation for project impacts (in the EIR impact analysis) is a “non-starter.” **Claims that oak regeneration can somehow mitigate for loss of oak woodland is not supported by scientific study**.

Ritter writes:¹

Most stands of blue oak woodland exist as medium or large tree stages with few or no young blue oaks present (White 1966, Holland 1976, Griffin 1977, Baker et al 1981). **Few areas can be found in California where successful recruitment of blue oaks has occurred since the turn of the century” (Holland, 1976)**.

Teklin writes:²

Natural regeneration of two endemic California oaks, blue oak (*Quercus douglasii*) and valley oak (*Q. lobata*), has been widely recognized to be a problem statewide on many sites (Bolsinger 1988, Griffin 1971, Muick and Bartolome 1987, Swiecki and Bernhardt 1993). Lack of recruitment to the sapling stage has been identified as a widespread occurrence. [REDACTED]

Verner writes of blue oak woodland:³

The age at which they normally begin producing acorn crops is unknown (M. McClaran, pers. Comm.), but it likely takes several decades. Concern has been expressed for the long-term existence of this habitat (Holland 1976), because *‘little regenerations has occurred since the late 1800s, as livestock, deer, birds, insects, and rodents consume nearly the entire*

¹ Ritter, L.V. Undated. Blue Oak Woodland. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67340>

² Teklin, J., Conner, J.M., McCreary, D.D. 1997. Rehabilitation of a Blue Oak Restoration Project. USDA Forest Service General Technical Report, PSW-GTR-160.

³ Verner, J. Undated. Blue Oak-Foothill Pine. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group.

acorn crop each year. Of the few seedlings that become established a large proportion are eaten by deer' (Neal 1980:126). Furthermore, the absence of grazing livestock does not generally result in regeneration (White 1966), because many other animals eat acorns and seedling oaks. Moreover, introduced grasses...may compete directly with seedling oaks for light and nutrients, and may be allelopathic to the oaks.

And, according to *A Planner's Guide for Oak Woodlands*:⁴

There is substantial evidence suggesting that several species, including blue oak, valley oak, and Engelmann oak (*Quercus engelmannii*) are not reproducing at sustainable levels in portions of California. Simply stated, there are not enough young seedlings or saplings to take the place of mature trees that die, raising questions about the future of these species in the state.

Numerous causes have been cited, including increased populations of animals and insects that eat acorns and seedlings, changes in rangeland vegetation, adverse impacts of livestock grazing (direct browsing injury, soil compaction, and reduced organic matter), and fire suppression. Some people also suspect that climate change is a factor...

REGENERATION & ACORN PLANTINGS

This troubling condition—that of poor regeneration—means the viability of acorn plantings, too, will be problematic, making replacement of woodlands via the planting of acorns a fragile, ineffective strategy.

According to *A Planner's Guide for Oak Woodlands*:⁵

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

Thus, while Dudek cites a 1996 study by McCreary as support for acorn plantings, McCreary, too, states that **an effective alternative to directly sowing acorns is growing oak seedling in containers and then planting the saplings out in the field.** McCreary indicates propagating oaks in this manner results in starts that **"...have higher survivorship than directly planted acorns, but they also cost far more."**⁶

The specific study cited by Dudek (17A, page 10) reveals that acorn mortality was the highest of any group (acorns, four-month old starts, one year old saplings), and McCreary concludes that *"acorns did have significantly less overall survival,"* and cautions about their usage *"if large numbers of acorn-eating rodents are present at the planting site..."*⁷ And, note Dudek's numerous qualifiers to acorn use:

⁴ Giusti, G.A. et al (editors). 2005. *A Planner's Guide for Oak Woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

⁵ Giusti, G.A. et al (editors). 2005. *A Planner's Guide for Oak Woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

⁶ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

⁷ McCreary, D.D. 1996. The Effects of Stock Type and Radicle Pruning on Blue Oak Morphology and Field Performance. *Annals des Sciences Forestieres*, 53 (2-3), pp. 641-646.

Acorn and oak seedling (1-gallon and smaller) establishment success has been well-documented in field research, with several studies noting the successful establishment of planted oak seedlings in northern California sites^{3,4,5}. In some cases, acorns and smaller containers can outgrow larger container-sized trees⁶, primarily due to taproot development being more successful as it is not inhibited by excessive time in containers. In the study by McCreary⁷, blue oak acorns and 4-month-old seedlings outgrew 1-year-old seedlings over a 4-year period once planted. The variation in seedling container sizes allows for flexibility in oak tree replacement projects that need to consider soil type, maintenance needs, access, and available irrigation.

Source: 17A, page 10.

The qualifiers include:

- "...several studies noting the successful establishment of planted oak **seedlings**" (not acorns);
- "**In some cases...**" (presumably "cases" in areas of intensive care, such as research plots); and
- "...need to consider **soil type, maintenance needs, access, and available irrigation.**"

All citations listed by Dudek (3,4,5,6, & 7) are from studies by McCreary. However, according to McCreary,⁸ the planting of acorns will be impacted by a whole host of factors such as conditions at the planting site, including the kinds of animals present. **Because acorns are an important food source for a whole host of animals, acorn plantings are difficult to protect.** McCreary also warns that the type of care necessary for survival and growth may not be **logistically feasible** for remote planting sites,⁹ making a difficult prospect even more susceptible to failure.

According to *A Planner's Guide for Oak Woodlands*:¹⁰

[T]he ultimate goal for planting mitigations should be tree establishment and long-term survival. The impact should be compensated for by replacing or providing substitute resources, such as **planting large container-grown trees, rather than seedlings or acorns** to expedite the recovery of the lost habitat component, or off-site mitigation actions, or mitigation banking. **However, off-site measures should be considered sparingly and should not be viewed as a convenient way to achieve mitigation objectives; off-site mitigation proposals should be carefully considered so that the strategy *is not abused*.**

⁸ McCreary, D.D. Undated. *How to Grow California Oaks*. University of California Oak Woodland Management. Available at: http://ucanr.edu/sites/oak_range/Oak_Articles_On_Line/Oak_Regeneration_Restoration/How_to_Grow_California_Oaks/

⁹ McCreary, D.D. Undated. *Living Among the Oaks: A Management Guide for Woodland Owners and Managers*. University of California, Agriculture and Natural Resources, Oak Woodland Conservation Workgroup; publication 21538.

¹⁰ Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

MITIGATION EFFICACY & PERFORMANCE STANDARDS

It is essential that whatever mitigation option is chosen, **it must meet performance standards**. For instance, in the Interim Interpretive Guidelines (IIG) (7)(b), page 10, and IIG (7)(c), page 11, replacement plantings are “designed” to achieve oak woodland canopy coverage equal to the canopy removed **no more than 15 years from the date of planting**.

What is the performance standard for the mitigations described in the ORMP?

Performance standards are important. The following photos were taken of **mitigation plantings** by Serrano Village D2 in “tree shelters.” (This village was built around 2001-2003.) Photos taken **June, 2015**.



This is a photo of a “tree shelter” around a blue oak; it was probably planted around the time of adjacent village construction (2001-2003).

Photo taken June, 2015.



Note the low success rate of blue oak plantings, even with tree shelters



The tree shelters in this area (as seen in foreground) are mostly devoid of trees (approximately 12-14 years after planting).

This effort at oak woodland mitigation is dismal. And unfortunately, **past performance is the best predictor of future performance**. What assurances do County residents have that mitigation efforts will be successful?

Woodland replacement is crucial—especially in terms of habitat value to wildlife. According to *A Planner's Guide for Oak Woodlands*:¹¹

...ecologists now recognize that **replacing a century old tree with 1, 3, or 10 one-year-old seedlings does not adequately replace the lost habitat value of large trees. It has become evident that simply focusing on mitigation plantings based on a tree to seedling ratio is not a sufficient strategy to ensure the viability of oak woodlands.** [R]eplacement seedlings as a mitigation measure for removal of older stands of trees cannot meet the immediate **habitat needs** of forest-dependent animal species.

It is apparent that **preservation of oak woodland on-site is the preferred “mitigation.”** Short of on-site preservation, **the purchase of oak woodlands that will remain undeveloped in perpetuity** is to be preferred over on-site (or off-site) planting of saplings. Revegetation on- or off-site is a poor substitute for mature woodland, especially when value as **wildlife habitat** is part of the equation. **It is likely that the loss of oak woodlands cannot be adequately mitigated under the proposals in the ORMP, especially in the absence of Option A retention requirements.**

TREE REPLACEMENT QUESTION

Dudek presents the following:

8. Replacement Tree Sizes:

During its June 22, 2015 hearing, the Board requested further clarification and discussion on the potential for allowing different sized container trees to be planted for mitigation. **Currently, the draft ORMP requires individual native oak trees to be replaced with 15-gallon sized trees** and allows replacement planting for oak woodland mitigation to utilize a variety of smaller sized containers (1-gallon (or equivalent)) or acorns (with a 3:1

Source: 17A, page 9.

I believe this is incorrect. The ORMP does not require “...*individual native oak trees to be replaced with 15-gallon sized trees...*”; on page 13 of the ORMP it states under “*Individual Native Oak Tree and Heritage Tree Impacts*”:

Replacement tree sizes may vary and may include acorn plantings, based on documentation of inch-for-inch replacement consistency included in an oak resources technical report. If acorns are used, they shall be planted at a 3:1 ratio (3 acorns for every 1-inch of trunk diameter removed)

Source: ORMP, page 13.

So my question is, what is actually being proposed here? Apparently, Dudek sees the formula working in this manner:

¹¹ Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

Under the tree-for-inch standard, tree planting would not replace the number of diameter inches removed. However, it would require planting of the same number of trees that would have been planted under an inch-for-inch standard that requires use of 15-gallon trees. To compare the two replacement standards, mitigation for removal of one 12-inch tree under the current draft ORMP would require a project applicant to plant 12 15-gallon oak trees; under the tree-for-inch mitigation standard mitigation for the same impact would require planting of 12 trees of any container size, or 36 acorns.

Source: 17A, page 13.

But once again, **efficacy** (and **performance standards**) should dictate oak tree/woodland mitigation, not an arbitrary formula. As previously quoted in this document (Gusti 2005), **“focusing on mitigation plantings based on a tree to seedling ratio is not a sufficient strategy to ensure the viability of oak woodlands.”**

DEFINITION OF OAK WOODLANDS

It would be most appropriate to expand the definition of **“Oak Woodland”** to include not only standing living oaks, *“...but also trees of other species, damaged or senescent (aging) trees, a shrubby and herbaceous layer beneath the oak canopy, standing snags, granary trees, and downed woody debris in conjunction with [oaks].”*¹² Evaluate existing oak woodlands under these criteria and, *if on-site retention is not possible, **mitigate for the loss of all woodland components*** through either conservation easement or fee title acquisition in perpetuity to ensure replacement of viable woodland/wildlife habitat. (Napa County, for instance, employs a 60/40 retention in *sensitive water drainages*: 60% tree cover; 40% shrubby/herbaceous cover.)¹³

DEAD, DYING & DISEASED OAKS

The loss/removal of dead, dying and diseased oaks should be mitigated and not exempt from mitigation requirements. Trees in these states of decline are not “useless,” they are an important element of an oak woodland. They provide nesting sites for cavity nesting birds (as is the case with dead trees or dead tree limbs [snags]), and food storage sites for others (e.g., acorn woodpeckers). These trees should not be excluded from the calculation of oak woodland—or from mitigation requirements—and should be left standing in on-site retained woodland as long as they do not present public safety issues.

In fact, this issue of retention of declining oaks raises important questions:

- **What is important to save? Oak trees alone, or oak trees and their attendant habitat?**
- **Where does value lie? In what people believe is useful/aesthetically pleasing, or in what wildlife finds useful/habitable?**

Answering these questions can help focus the ORMP.

¹² Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 32. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

¹³ Napa County. 2010. Napa County Voluntary Oak Woodlands Management Plan. October 26, 2010; page 20. Available at: <http://www.countyofnapa.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=4294973990>

REDUCTION OF HERITAGE TREE SIZE REQUIREMENT

I ask that Heritage Oak size be defined as 24" diameter at breast height (dbh), if not for all oak species, for blue oak. Why the necessity? Blue oak are slow growers. For instance, the blue oaks depicted in the following two photographs are **10-16 years old**.¹⁴



The oak seedling at left is 8 to 10 inches tall and **12 to 16** years old. Below is a 6 to 8 inch tall seedling estimated to be **10 to 15** years old.



This cross section was derived from a blue oak that was 4.5 inches dbh. This oak was estimated to be 95 years old.

Photo Source: Don & Ellen Van Dyke

¹⁴ Phillips, R. L., et al. 1996. Blue Oak Seedlings May be Older than they Look. California Agriculture, May-June 1996. Available at: <http://ucanr.edu/repositoryfiles/ca5003p17-69761.pdf>

Large blue oaks are likely **153 to 390 years old** (White, 1966). And, growth is extremely slow *or even ceases* after trees reach **26 inches dbh** (McDonald, 1985).¹⁵ Creating a separate category for blue oaks is not unprecedented; **Tuolumne County** has worked to establish a separate standard for blue oaks under their *old growth oaks* or “**specimen oaks**” category.¹⁶

COMMERCIAL FIREWOOD HARVEST

While **commercial firewood cutting operations** would be required to obtain a permit under the proposed plan, **there is no mention of minimum retention standards**. Shasta and Tehama counties adopted resolutions calling for **30% crown cover retention** following firewood harvest.¹⁷

EXEMPTIONS FOR PERSONAL USE & NON-COMMERCIAL AGRICULTURAL OPERATIONS

“**Personal use**” of oak resources on an owner’s property must be **better defined**, otherwise, “pre-clearing” of a site under the guise of personal use is actually encouraged. Also, the **exemption for non-commercial agricultural “operations” is excessive and likely to result in the needless loss of oak woodland**.

ADVISORY BODY

Establishment of an **advisory body** to review mitigation plans, implementation, and efficacy would be valuable. (Ideally this advisory body would make recommendations to appropriate governing bodies, work with land conservation groups, and be responsible for homeowner education (protection of oaks in the landscape).

In closing, I ask:

- **Please retain the Option A retention schedule**. Short of reinstatement, I ask that an **equal-weight analysis of this alternative be performed and included in the draft EIR**.
- Do not allow replacement of oak woodland with **acorn plantings**.
- Establish a **performance standard** for oak mitigations.
- **Define “Oak Woodland”** to include other associated tree and shrub species (understory) to maintain wildlife habitat value; require mitigation to replace these elements as well.
- Revise the **Heritage Oak size requirement**, if not for all oaks, for **blue oaks**.
- Establish a minimum retention standard for commercial firewood cutting operations.
- Define exemptions for personal use and for non-commercial agricultural operations.
- Establish an Advisory Body to review mitigation plans, mitigation implementation, and efficacy (similar to PAWTAC).

¹⁵ Ritter, L.V. Blue Oak Woodland. California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67340>

¹⁶ Michael Brandman Associates. 2012. Tuolumne County Biological Resources Review Guide. December 4, 2012; page 38. Available at: <http://www.tuolumnecounty.ca.gov/DocumentCenter/View/204>

¹⁷ Standiford, et al., 1996. Impact of Firewood Harvesting on Hardwood Rangelands Varies with Region. California Agriculture, March-April, 1996. Available at: <http://ucce.ucdavis.edu/files/repositoryfiles/ca5002p7-69759.pdf>



Shawna Purvines <shawna.purvines@edcgov.us>

Revised NOP, Biological Resources Policy Update, public comment

1 message

Ellen Van Dyke <vandyke.5@sbcglobal.net>

Wed, Dec 23, 2015 at 1:53 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>, Jim Mitrisin <edc.cob@edcgov.us>

Cc: Ellen Van Dyke <vandyke.5@sbcglobal.net>

Please include the attached comments with the administrative public record for the Biological Resources Policy Update.

Thank you. -Ellen



Public comment 12.23.15_revised NOP.pdf

735K

Ellen Van Dyke - Public Comment for Biological Resources Revised NOP - 12/23/15

This NOP was revised and released the week of Thanksgiving, with comments due 2 days before Christmas, supposedly by direction of the Board according to the notice. My comments are as follows:

1. The Board did NOT direct this action, and that was misrepresented in the public notice. If CEQA did not require this, and the Board did not direct it, please confirm there are no additional policy changes that the public is not aware of.

From the public notice for the revised NOP:



El Dorado County Long Range Planning News and Updates Update
El Dorado County (eldoradocounty@service.govdelivery.com) Add contact
To: vandyke.5@sbcglobal.net; 11/23/2015 3:34 PM

County of El Dorado
California

You are subscribed to Long Range Planning News and Updates for El Dorado County. This information has recently been updated.

On November 23, 2015, the County released a revised Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the General Plan Biological Resources Policy Update and Oak Resources Management Plan (ORMP).

The revised NOP and revised ORMP are posted on the [project webpage](#).

The revised NOP comment period is 30 days. Written comments must be submitted no later than 5:00 p.m. on Wednesday, December 23, 2015.

The original NOP was released on July 17, 2015. On September 29, 2015, following consideration of comments on the original NOP released on July 17, 2015 and proposed project, the Board of Supervisors approved revisions to the ORMP and directed staff to release a revised NOP and revised draft ORMP.

2. The County website makes it clear that the only changes to this NOP are those that were made in the Sept 29th Board hearing, and that this recirculation is for clarity and to allow public comment. Because this release has been made over the holidays simultaneously with numerous other large EIR's (the TGPA/ZOU Dec. 2nd, Dixon Ranch Dec. 10th, and Central EDH Specific Plan Jan. 19th) it's unlikely much public review has occurred. If actual feedback was the goal, County staff would have given an overwhelmed public a January release date.

CEQA requires the project description to be 'stable'. This revised NOP does not relieve the County of its responsibility to notice the public should any changes be proposed outside the scope of those previously reviewed in the Board hearing Sept 29th. Also, if any true public input is wanted, please extend this review period into January.

3. It is important that comments submitted on the original NOP will be considered in the DEIR, and will be part of the administrative record, as stated the County website and confirmed in email from the Board Clerk.

From the County website:

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Planning (LRP)

[Home](#) > [Government](#) > [Community Development](#) > [Long Range Planning](#)

General Plan Biological Resources Policy Update

The County is updating the biological resources policies and implementation measures in the General Plan and the Oak Resources Management Plan (ORMP). The project requires the completion of an Environmental Impact Report (EIR).

On **November 23, 2015**, the County released a revised Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for a 30-day public review period. **Since the Board approved several revisions to the proposed project and draft ORMP, the County chose to release this revised NOP to allow for additional public comment. Although not required by CEQA, it was done to be as open and transparent as possible. All comments received on the first NOP will still be considered and will be part of the administrative record. No additional Board workshops are planned prior to the release of the Draft EIR. The original NOP was released on July 17, 2015.**



The revised NOP and revised draft ORMP are posted below. Written comments must be submitted no later than **5:00 p.m. on Wednesday, December 23, 2015.**

Notice of Preparation (NOP) Released November 23, 2015

- [Revised Notice of Preparation \(posted 11-23-2015\)](#)
- [Draft ORMP Revised November 2015 – clean version \(posted 11-23-2015\)](#)
- [Draft ORMP Revised November 2015 – changes tracked \(posted 11-23-2015\)](#)

4. The Option A oak retention standards were eliminated as an alternative at the last minute. It was completely unclear as to why that would be, when the retention of oak habitat is the only effective means of retaining wildlife corridors and connectivity. Please provide a thorough assessment of both sapling and acorn planted mitigation areas, and how long it takes each to establish comparable habitat to the oak woodland removed. Also provide examples of some of these habitats along with their ages/date of planting.

Please thoroughly address the impacts of keeping retention standards versus eliminating them. The proposed Dixon Ranch project is a good example of how incentivizing oak retention will result in significant tree removal. Current retention standards would allow only 15% removal, but the Dixon proposal is planned for phased development in order to take advantage of future incentivizing policy, allow them to remove 44% of the healthy oak trees.

5. Please provide updated maps, clearly legible, with parcel level detail, of the current oak woodland habitat showing connectivity, as well as deer migration trails. Please include areas that have been planted as project mitigations as well. Policy 7.4.2.8 identifies 5 specific habitats to be mapped every three years in order to identify impacts & changes due to new development. Please explain how eliminating this policy, as proposed, will allow the County to provide protection - what will replace this 2004 General Plan mitigation?

Thank you for this opportunity to comment.

Ellen Van Dyke, Rescue resident



Shawna Purvines <shawna.purvines@edcgov.us>

Comments on long range planning - Biological Resources Policy Update

1 message

Karen Mulvany <kmulvany@gmail.com>

Wed, Dec 23, 2015 at 2:59 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Hello Shawna,

Attached please find comments on the Biological Resources Policy Update.

Best wishes to you for the Holidays,

Karen Mulvany

 **2015 1223 Biological Resources Comment Mulvany.pdf**
365K

PO Box 768
Lotus, CA 95651
December 23, 2015

Shawna Purvines
Principal Planner
El Dorado County Community Development Agency
Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

The following are comments pertaining to the Biological Resources Policy Update.

I am writing to express my appreciation for the revised Fire Safe Activities Exemption proposed for section 2.1.2 of the ORMP. These changes broadened the exemption to include fuel modification outside of defensible space areas as noted *in italics* below:

“2.1.2 Fire Safe Activities Exemption

Actions taken pursuant to an approved Fire Safe Plan for existing structures or in accordance with defensible space maintenance requirements for existing structures in state responsibility areas (SRA) as identified in California Public Resources Code (PRC) Section 4291 (actions associated with Fire Safe Plans are exempted from the mitigation requirements included in this ORMP. Oak resources impacts for initial defensible space areas establishment for new or proposed development are not exempt); from the mitigation requirements included in this ORMP. After establishment of defensible space for new development, maintenance of that defensible space thereafter is exempt from the mitigation requirements included in this ORMP.

In addition, fuel modification activities outside of defensible space areas that are associated with fuel breaks, corridors, or easements intended to slow or stop wildfire spread, ensure the safety of emergency fire equipment and personnel, allow evacuation of civilians, provide a point of attack or defense for firefighters during a wildland fire, and/or prevent the movement of a wildfire from a structure to the vegetated landscape, where no grading permit or building permit is applicable, are exempted from the mitigation requirements included in this ORMP.”

In particular, these very important exemptions ensure that county residents can continue to reduce fire fuels along driveways for safe evacuation of residents and access by emergency fire equipment and personnel.

However, the same exemptions are missing in the exemptions for IBC parcels, and must be included there as well. Policy 7.4.2.9, as currently revised, does not reasonably allow homeowners to clear around existing driveways, because it does not include the same exemptions that are now proposed for the ORMP. The existing inadequate Fire Safety IBC exemption is noted in the italicized language below:

“Policy 7.4.2.9 The Important Biological Corridor (-IBC) overlay shall apply to lands identified as having high wildlife habitat values because of extent, habitat function, connectivity, and other factors. Lands located within the overlay district shall be subject to the following provisions except that where the overlay is applied to lands that are also subject to the Agricultural District (-A) overlay or that are within the

Agricultural Lands (AL) designation, the land use restrictions associated with the -IBC policies will not apply to the extent that the agricultural practices do not interfere with the purposes of the -IBC overlay. :

- In order to evaluate project-specific compatibility with the -IBC overlay, Applicants for discretionary projects (and applicants for ministerial projects within the Weber Creek canyon IBC) shall be required to provide to the County a biological resources technical report (meeting the requirements identified in Section A of Policy 7.4.2.8 above). The site-specific biological resources technical report will determine the presence of special-status species or habitat for such species (as defined in Section B of Policy 7.4.2.8 above) that may be affected by a proposed project as well as the presence of wildlife corridors particularly those used by large mammals such as mountain lion, bobcat, mule deer, American black bear, and coyote. Properties within the -IBC overlay that are found to support wildlife movement shall provide mitigation to ensure there is no net loss of wildlife movement function and value for special-status species, as well as large mammals such as mountain lion, bobcat, mule deer, American black bear, and coyote. Mitigation measures may include land use siting and design tools.

Wildland Fire Safe measures (actions conducted in accordance with an approved Fire Safe Plan for existing structures or defensible space maintenance for existing structures consistent with California Public Resources Code Section 4291) are exempt from this policy, except that Fire Safe measures will be designed insofar as possible to be consistent with the objectives of the Important Biological Corridor. Wildland Fire Safe measures for proposed projects are not exempt from this policy.”

Note that **State Fire Safe defensible space measures do not address clearing around driveways**. In every Fire Safe Council that I have attended where fire safety personnel delivered presentations, we were consistently told that **emergency fire personnel will not consider entering a property unless the driveway is appropriately cleared**. The right to clear around driveways is an especially important consideration for IBC property owners with disabled residents, as is the case with our family. We need to be able to assure safe passage for our family and for emergency fire personnel.

I would have raised this earlier, but the revised ORMP exemption language was only made available 30 days ago. Please modify the IBC exemption above to include the same exemptions proposed for the ORMP.

Thank you,

Karen Mulvany



Shawna Purvines <shawna.purvines@edcgov.us>

Error Correction for December 23, 2015 Comments on Revised NOP for Bio Resources/ORMP

1 message

Cheryl <Cheryl.FMR@comcast.net>

Sun, Dec 27, 2015 at 4:32 PM

To: Shawna Purvines <shawna.purvines@edcgov.us>

Hi Shawna--

I reviewed my comment paper for the **revised NOP** for the **Biological Resources Policy Update/Oak Resources Management Plan** (dated December 23, 2015) and found an error on **page 6**.

I've attached:

- the corrected page (**first file**);
- the **full comment paper with the correction inserted along with the original text (second file)**; and
- the **full comment paper with the correction in place of the original text (third file)**.

Please include this correction with my submitted documents. (Your choice which file is used, obviously—whatever is appropriate.) If you require something other than these files to appropriately register a correction, please let me know.

Please confirm receipt of this corrected page/document.

Thank you—
Cheryl Langley

3 attachments

**Corrected Page.pdf**

214K

**Revised_NOP_Comments.Dec 23, 2015.Error_Correction.pdf**

993K

**Revised_NOP_Comments.Dec 23, 2015.Error_Correction_Clean.pdf**

993K

Report findings are as follows:

For **blue oak woodland** (all owners):

- 509 acres with small, moderate, large woodland decrease (1.55% decrease)
 - 194 acres with small, moderate, large woodland increase (0.59% increase)
- 32,878 acres total
Net decrease of 315 acres or 0.96%

For **blue oak/foothill pine woodland** (all owners):

- 119 acres with small, moderate, large woodland decrease (0.66% decrease)
 - 95 acres with small, moderate, large woodland increase (0.53% increase)
 - 17,995 acres total
- Net decrease of 24 acres or 0.13%**

0.67% decrease

TOTAL for blue oak and blue oak/foothill pine woodlands combined: 1.09% decrease

Table C-14 Acres of Classified Change in El Dorado County by Hardwood Cover Type and Owner Class

	National Forest		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Blue Oak Woodland								
LDVC	0	0	0	0	17	0	17	0
MDVC	0	0	4	0	82	0	86	0
SDVC	5	6	11	1	390	1	406	1
NCH	71	93	1,576	97	30,386	97	32,033	97
SIVC	0	1	15	1	155	0	170	1
MIVC	0	0	0	0	22	0	22	0
LIVC	0	0	0	0	2	0	2	0
NVG	0	0	23	1	119	0	142	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	77	100	1,628	100	31,173	100	32,878	100
Blue Oak / Foothill Pine								
LDVC	0	0	0	0	3	0	3	0
MDVC	0	0	1	0	23	0	24	0
SDVC	0	4	3	0	89	1	92	1
NCH	4	82	1,097	99	16,637	99	17,738	99
SIVC	1	14	4	0	76	0	81	0
MIVC	0	0	0	0	14	0	14	0
LIVC	0	0	0	0	0	0	0	0
NVG	0	0	9	1	34	0	43	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	5	100	1,113	100	16,877	100	17,995	100

LDVC – large decrease in vegetation cover; MDVC – moderate decrease in vegetation cover; SDVC – small decrease in vegetation cover; NCH – little to no change in vegetation cover; SIVC – small increase in vegetation cover; MIVC – moderate increase in vegetation cover; LIVC – large increase in vegetation cover; NVG – non-vegetation change; CLD/SHA – cloud or shadow
Refer to Appendix D for WHR type descriptions.

Source: USDA Forest Service & California Department of Forestry and Fire Protection, *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program.*

Cheryl Langley
5010 Mother Lode Drive
Shingle Springs, CA 95682

Ms. Shawna Purvines, Principal Planner
EDC Development Agency, Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

December 23, 2015

RE: Revised Notice of Preparation for the Biological Resources Policies Update & Oak Resources Management Plan

Ms. Purvines:

Thank you for the opportunity to comment on the revised Biological Resources Policy Update (**BRPU**) and Oak Resources Management Plan (**ORMP**).

In addition to comments submitted for this revised NOP, I have included comments submitted for the initial NOP (resubmitted here), and comments provided to the Board of Supervisors (BOS) at the September 29, 2015 meeting. (Specifically, I include the latter set of comments to support/add to discussion within this document.)

Based on these previously submitted comments, and other materials, I have the following requests for information to be included in the draft Environmental Impact Report (dEIR) for the BRPU/ORMP.

Retention of Option A

After reviewing the revisions to 2004 General Plan policies, the proposed ORMP, the BRPU, and Dudek memorandum (17A), it is clear that these policy revisions emphasize making oak mitigation the least onerous possible. This is good news for project applicants, but mitigation measures *must be effective*. The elimination of the Integrated Natural Resources Management Plan (INRMP), the disbanding of the Plant and Wildlife Technical Advisory Committee (PAWTAC), the elimination of Option A (oak retention standards), the reduction of tree sizes for mitigation plantings (from 15-gallon to acorns), the expansion of the number and kind of projects exempt from oak mitigation (including County road improvement projects) all signal a desire to make mitigation for the loss of oak woodland as “simple” and as affordable as possible, both for the County (which has struggled with oak mitigation projects), and for developers.

But this asset—oak woodland—*is* worth protecting. And, retention of ***Option A requirements in no way impedes development***—but it *does* serve to make certain a project has been assessed to determine if there is a way ***the developer can meet project objectives while at the same time retain the maximum number of oaks possible on-site***. If it is *demonstrated* a project cannot meet fruition *and* Option A oak retention standards, Option B “kicks in,” and other on- or off-site options for oak mitigation become available. **Why is this process—project evaluation as it relates to oak retention—deemed obstructive or impractical?** Aren’t our oak resources worth a serious project evaluation?

Members of the public have *continually* requested Option A retention standards be retained, and requested an equal-weight (co-equal) project alternatives analysis. Such an analysis would provide the BOS with the information necessary to make an informed decision and possibly approve a project alternative that could effectively reduce or avoid significant impact to oak resources. Without such an analysis, it is doubtful this project alternative will be evaluated to the extent necessary to make such a

determination. And, importantly, the BOS—in their July 22, 2015 meeting—*agreed* it was important to evaluate oak retention standards. But without an equal-weight analysis, a meaningful project alternative will not be prepared. Thus—by default—retention of Option A has been roundly rejected before a complete analysis has been conducted. In effect, **it has been predetermined that the County is “not going there.” This is contrary to the purpose and spirit of California Environmental Quality Act (CEQA) analysis.** And it sends message to the public that *“your participation in the process is not welcome here.”*

This is disturbing, and perhaps more so because the resource at stake cannot be easily replaced. And, while BOS members are charged with making decisions that will impact this resource, at least some are not conversant in biological principles, and Dudek does not correct misconceptions when BOS members make statements that lay bare their lack of understanding. While it may at times prove uncomfortable to correct a BOS member during public discussions, the consultant is there to provide expertise. When they do not, this is a failure of their responsibility to the BOS, and to the public, and serves to undermine their own credibility. And most importantly, it is a disservice to the resource being impacted.

The result? BOS members vote—make important decisions with long-term implications—without understanding basic biological or legal principles, or the seriousness and longevity of their decisions. And, while it is not the responsibility of the *public* to educate the BOS, that is where the task has come to rest—in the three minutes granted to any given individual—during meeting opportunities that County staff has purposefully limited to meetings during the workweek days/hours that fundamentally **limit public participation** in this **expedited** process:

NOTE: *“In recognition of the Board’s desire to expedite completion of this process, this approach would potentially limit public input to focused Planning Commission and Board meetings. The TGPA/ZOU process has used this approach to receive public comment rather than the public outreach program currently identified for input on revisions to the policies.”*

(Source: Document 7B under Meeting Details, PROCESS APPROACHES FOR THE OAK WOODLAND MANAGEMENT PLAN.)

This expedited process—based on a request by development interests for an “**interim policy**”—was no more than suggested than taken up by Long Range Planning’s Ms. Purvine who said—at the same meeting at which the request was launched—*“I’d actually like to look into that a little bit further and bring back a discussion on that.”*¹ That initiated a cascade of activity that evolved into an *expedited* BRPU and ORMP. But repeated requests by members of the public to evaluate the retention of Option A have fallen on deaf ears.

Retention of Option A was vilified by suggesting it would impose constraints on economic development, and may even constitute “property taking” by rendering some properties undevelopable.² But no such results could come to pass with implementation of Option B, whose development is clearly one of the primary thrusts of this ORMP. In this instance, Option A would simply provide a “first screening” of projects; it would not be the “last word” on project development or on a project’s ultimate impact on oak woodlands. But retention of Option A *could* serve to protect woodlands when a project *could* meet fruition while accommodating resident oaks.

¹ **Source of Quote:** Planning Commission meeting of Aug 15, 2014; TGPA/ZOU meeting RE: Biological Resources.

² Dudek. 2015. Memorandum from Kathy Spence-Wells to Shawna Purvines, September 18, 2015; 17A, page 8.

Request for Information

- I request a co-equal analysis of a project alternative based on retaining Option A (oak retention standards).
- In the past, Option A was considered restrictive to development interests largely because Option B *was not available*. With the availability of Option B (contingent upon approval of this ORMP), explain why Option A is not being evaluated in a co-equal analysis, especially in light of CEQA guidelines that state EIRs must describe alternatives “...which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project...”(14 CCR 1526.6[a]). (In fact, there is probably no other alternative—other than the **No Project** alternative—that could reduce the project’s significant impacts more than this alternative; it is a viable project alternative that deserves co-equal analysis.)

Oak Regeneration as a Mitigation Element

Because this notion of oak regeneration as a viable/plausible mitigation element seems to be persisting, it is necessary to expand on this topic.

First of all—this is not mitigation. Saying something will simply replace itself post-loss contradicts the meaning/purpose of mitigation. To identify *non-action* in this instance as mitigation defies logic, and it also defies scientific study on the topic. It is simply not credible. Even if this approach were *legally* defensible, **it is not supported by fact**.

I have cited numerous studies that discuss blue oak (*Quercus douglasii*) regeneration as inadequate to support the long-term survival of this woodland species in numerous areas of California (see discussion/citations in comments on the initial NOP, and in the September 29, 2015 comments to the BOS; reference materials are included for both documents [on disk] with this submitted material). These documents contain citations that describe the problems with blue oak regeneration (the species that will be most impacted [and replanted] as a result of development projects in EDC).

I add to this discussion on oak regeneration here. In a study by Swiecki, et al.,³ an in-depth evaluation was undertaken to assess the status of blue oak regeneration and determine how environmental and management factors influence blue oak sapling recruitment. This study was conducted in the counties listed in the table below on study sites of at least 150 acres in size dominated by blue oak

County	Regeneration Adequate to Maintain Blue Oak Woodland?		Comments
	Yes	No	
Napa		X	This study site had the highest number of blue oak saplings but there were fewer plots with an increase in blue oak density than a decrease in density; there were few small seedlings.
Glenn		X	No blue oak saplings were present anywhere in the entire study site

³ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

San Benito	X		The blue oak stand at this site appears to be viable; regeneration appears to be moderate—more plots showed an increase in blue oak density than a decrease
Yuba	X		More plots showed an increase in blue oak density than a decrease; about a quarter of the saplings originated as stump sprouts in an area where blue oaks were cut in 1989; 7 % of the sprout-oriented saplings were dead; mortality was higher among seedling-origin saplings (mesic site)
Mendocino		X	No blue oak saplings were present anywhere in the entire study area; a few seedlings were observed
Tulare		X	Recruitment was sparse; current levels of recruitment are insufficient to support offset mortality
Tehama		X	Blue oak saplings were uncommon, as were seedlings; sapling recruitment was inadequate to maintain current stand densities
Amador		X	Blue oak saplings and seedlings were uncommon; very little regeneration has occurred since the Gold Rush; current recruitment is insufficient to maintain stand; conversion to grassland appears inevitable
San Luis Obispo		X	Recruitment is insufficient to offset mortality
Monterey		X	Recruitment is insufficient to offset mortality
Madera		X	No blue oak saplings were seen in the study area; a few small seedlings were seen; there was no regeneration of woody species in the study area
Santa Clara		X	No blue oak saplings were seen in the study area but some seedlings were seen; this stand had the highest mortality of those studied
Contra Costa		X	Recruitment lags far behind mortality at this study site
Tulare		X	Mortality was far in excess of sapling recruitment

Tuolumne	Variable, but ultimately described as a site with more plots with “net loss” than “net gain”	Stump sprout-origin saplings outnumbered those of seedling origin (sprouts from previous tree removal) at this site (75% of saplings were of sprout origin); virtually the entire stand appeared to be second growth; a few seedlings were seen, particularly along creeks; although regeneration had apparently been successful in some portions of the site, blue oak had been eliminated from some large areas and no recolonization of these large clearings has occurred
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Swiecki study conclusions include:

- *“...it appears that most locations are losing blue oak density at the stand level due to unreplaced mortality.”*
- *“These observations support the assertion that current recruitment is inadequate to maintain existing tree populations in at least some areas.”*
- *“...the conversion of blue oak woodland to grassland is not likely to be easily reversed.”*
- *“...the extent of blue oak woodlands will continue to decrease due to unreplaced mortality...”*
- *“Because our study locations are distributed throughout the range of blue oak, we are confident that the trends we observed can be generalized over much of the range of blue oak.”*
- *“In many stands, sapling blue oaks are absent or rare.”*
- *“In most stands, the percentage of the stand area which is likely to show a decrease in blue oak density and canopy cover is greater than the percentage that may show an increase in density and canopy cover.”*

Blue Oak Regeneration in EDC

During the various meetings and workshops on the BRPU/ORMP, some individuals have brought up the issue of oak regeneration—presumably in “defense” of oak removal—and have stated—anecdotally—that there are more trees in EDC now than in the past. There have also been figures brought up (undocumented) to “substantiate” gains in EDC oak woodland.

The most current study I was able to find to quantify blue oak woodlands in EDC was presented in the report *“Monitoring Land Cover Changes in California.”*⁴ (NOTE: The northeastern California project area covers Amador, Butte, **El Dorado**, Lassen, Modoc, Nevada, Placer, Plumas, Sierra, Sutter, Yolo and Yuba counties.)

⁴ USDA Forest Service & California Department of Forestry and Fire Protection Fire and Resource Assessment Program. 2002. *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program. Northeastern California Project Area, January, 2002.*

Report findings are as follows:

For **blue oak woodland** (all owners):

- 509 acres with small, moderate, large woodland decrease (1.55% decrease)
 - 194 acres with small, moderate, large woodland increase (0.59% increase)
- 32,878 acres total
Net decrease of 315 acres or 0.96%

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0.67% decrease

TOTAL for blue oak and blue oak/foothill pine woodlands combined: 1.09% decrease

Table C-14 Acres of Classified Change in El Dorado County by Hardwood Cover Type and Owner Class

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CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	77	100	1,628	100	31,173	100	32,878	100
Blue Oak / Foothill Pine								
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MDVC	0	0	1	0	23	0	24	0
SDVC	0	4	3	0	89	1	92	1
NCH	4	82	1,097	99	16,637	99	17,738	99
SIVC	1	14	4	0	76	0	81	0
MIVC	0	0	0	0	14	0	14	0
LIVC	0	0	0	0	0	0	0	0
NVG	0	0	9	1	34	0	43	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	5	100	1,113	100	16,877	100	17,995	100

LDVC – large decrease in vegetation cover; MDVC – moderate decrease in vegetation cover; SDVC – small decrease in vegetation cover; NCH – little to no change in vegetation cover; SIVC – small increase in vegetation cover; MIVC – moderate increase in vegetation cover; LIVC – large increase in vegetation cover; NVG – non-vegetation change; CLD/SHA – cloud or shadow
Refer to Appendix D for WHR type descriptions.

Source: USDA Forest Service & California Department of Forestry and Fire Protection, *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program.*

McCreary⁵ also weights in on this topic of regeneration.

For nearly a century, there has been concern that several of California's 20 native oak species are not regenerating adequately (Jepson 1910). Such concern was partially responsible for the establishment of the Integrated Hardwood Range Management Program (IHRMP) in 1986, a cooperative effort between the University of California, the California Department of Forestry and Fire Protection, and the California Department of Fish and Game to promote oak woodland conservation (Standiford and Bartolome 1997). Evidence indicating that there is an "oak regeneration problem" in California has been based largely on observations of a paucity of young seedlings and saplings in the understories of existing oak stands. Describing the foothill woodland in the Carmel Valley, White (1966) stated that "A prevailing characteristic . . . is the lack of reproduction . . . with very few seedlings." Bartolome and others (1987) also concluded that "current establishment appears insufficient to maintain current stand structure for some sites." And Swiecki and Bernhardt (1998) reported that of 15 blue oak locations evaluated throughout the State, 13 were losing stand density at the stand level due to unreplaced mortality.

The species that are having the most difficulty regenerating are all members of the white oak sub-genera of *Quercus*, and include blue oak (*Quercus douglasii*), valley oak (*Q. lobata*), and Engelmann oak (*Q. engelmannii*) (Muick and Bartolome 1987; Bolsinger 1988). Blue and valley oak are endemic to the State, while Engelmann oak, which actually has a far narrower distribution range than the other 2 species, does extend into Baja California (Griffin and Critchfield 1972). Concern about poor

Request for Information:

- Please include in the NOP a discussion of why oak regeneration is being evaluated as a possible "mitigation" element. Discuss what is to be accomplished by this approach—if accepted—and who will benefit. Discuss the impact on oak woodland mitigation if this approach is implemented.
- Describe the science that *supports* the notion that relying on oak regeneration is a plausible approach to impact mitigation. Also provide scientific studies that *refute* this approach to impact mitigation.
- Identify other California counties that have used—or entertained the idea of using—oak regeneration to "*offset development impacts to oak woodlands.*" If other counties have used this approach, identify those counties and present their rationale for using this approach, and if this approach was actually pursued, the outcome of that decision (impact on oak resources).
- Describe what makes this approach viable under CEQA mitigation guidelines.
- Keeping in mind that blue oak is the species that will be most impacted by development projects—and that it is the species that will make up the bulk of mitigation efforts—discuss how its declining ability to regenerate can possibly be used as a mitigation element.
- From a workshop PowerPoint presentation (Document 5D), mitigation is identified as "*strategies to reduce impacts.*" "Reducing impacts" implies an active process. How does relying on a *natural process* (especially one in decline), meet this criterion?

Use of Acorns for Oak Woodland Replacement

The poor natural regeneration of blue oak woodlands means the viability of acorn plantings, too, will be problematic, making replacement of woodlands via the planting of acorns a fragile, ineffective strategy. According to A Planner's Guide to Oak Woodlands:⁶

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

⁵ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

⁶ Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

Thus, while it may be tempting to think planting acorns will provide a low-cost alternative to container-planting, acorns are prone to failure and could ultimately cost project developers *more* than container-planting. The excessive replacement of dying seedlings, the necessity for irrigation, weed and rodent control, and tree shelter or fencing placement (and replacement) means in-field acorn propagation will be costly and burdensome.

Studies have shown that mortality from direct seeding of acorns is high. According to Young,⁷ “Approximately 40% of the field-planted acorns disappeared in the first two months after planting, probably taken by ground squirrels or other seed predators.” And, according to Swiecke:⁸

A blue oak seedling observation plot was established just outside the study area in 1988 (Swiecki et al 1990), but was destroyed by ground squirrels before permanent markers could be installed. A second seedling plot located about 3 km south of the study area was resurveyed in July 1993, at which time only 6.5% of the seedlings tagged five years earlier were still surviving.

Not only is acorn planting fraught with difficulties and failure, the results—even under the best of circumstances—will be dismal. Blue oaks are slow growers. Harvey⁹ showed that many of the blue oak saplings less than four feet tall were between 40 and 100 years old. (**NOTE:** Both sets of comments submitted previously [August 17, 2015; September 29, 2015] include a discussion of blue oak growth rates and additional studies/citations, which see.)

Request for Information

- If acorn planting is to be pursued as a mitigation element under this ORMP, provide specific details/requirements for planting that include specific site treatment, monitoring, replacement schedules, equipment, and measures that will be employed to ensure success.
- Describe (and establish) a **performance standard** for acorn *and* sapling (container) plantings. That is, commit to a canopy coverage standard to be attained within X number of years (say 5 years, for example).

⁷ Young, T.P. and R.Y. Evans. 2002. *Initial Mortality and Root and Shoot Growth of Oak Seedlings Planted as Seeds and as Container Stock Under Different Irrigation Regimes*. Department of Environmental Horticulture, University of California, Davis; Final Report.

⁸ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

⁹ L.E Harvey. 1989. *Spatial and Temporal Dynamics of a Blue Oak Woodland*. Ph.D. Thesis, University of California, Santa Barbara.

Cattle Grazing on Conservation Easements

From the draft revised ORMP, November, 2015; Page 24:

4.2 Management of PCAs

Existing oak woodlands within the PCAs identified as mitigation for project impacts, whether on or off a project site, will be protected from further development through a conservation easement granted to the County or a land conservation group approved by the County or by acquisition in fee title by a land conservation group. Management activities would be conducted by land conservation organizations and may include, but are not limited to, one or more of the following activities, as determined appropriate and/or necessary through monitoring of the sites: inspections, biological surveys, fuels treatment to reduce risk of wildfire and to improve habitat, weed control, database management, and mapping. Agricultural use (i.e., grazing) shall be allowed in conserved oak woodlands as long as the activity occurred prior to the establishment of the conservation easement, the spatial extent of the agricultural use is not expanded on conserved lands, and the agricultural use does not involve active tree harvest or removal (e.g., fuelwood operations, land clearing for crop planting, etc.).

Livestock grazing can have serious implications for oak woodlands and wildlife. For instance, research conducted by Swiecki¹⁰ shows:

- Oak saplings are unlikely to be found in areas with high chronic levels of livestock browsing.
- In areas subject to at least moderate browsing, the majority of oaks are shorter than the browse line and show evidence of chronic browsing damage.
- Seedlings and saplings were more common in ungrazed natural areas than in grazed pastures.

To this end, Swiecki suggests:

- Alternative grazing regimes that reduce the duration and intensity of browsing pressure may help to reduce the negative impact of browsing on oak resources.
- In any gap-creating event (such as oak harvest or wildfire), livestock use should be minimized until oaks have grown taller than the browse line.

And McCreary¹¹ weighs in on this issue, too:

¹⁰ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

¹¹ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

Timing of Grazing Study

In 1989, a UC Davis graduate student named Lillian Hall initiated an experiment at the SFREC to evaluate how planted oak seedlings fare in pastures where cattle have access (Hall and others 1992). She planted 1-year-old blue oak seedlings in pastures grazed by cattle at different stock intensities, and included a control where cattle were excluded. She found that damage to seedlings was significantly less in the winter and fall when the deciduous oaks did not have foliage and were apparently less appetizing to the cattle. Cattle did not seem to seek out or prefer young oaks. However, in the spring green-forage season, they appeared drawn to clover patches near seedlings and browsed the oaks in the process. Heavy damage to seedlings in the summer at all cattle densities probably resulted from the fact that the young oaks were often the only green vegetation in the grazed pastures, and were therefore more palatable than the dry annual grasses. Within each season, total damage also increased with increasing stock density.

While some researchers suggest livestock management techniques can *lessen* the impact of grazing in oak woodlands, it is clear that **the best approach is to not graze these areas** unless absolutely necessary. For instance—speaking in terms of “real world” observation—while only spring grazing is done on the property north of Highway 50 by the Scott Road exit (in Sacramento County), it is clear that the blue oak woodland on these pastures is in decline; oak regeneration is largely absent.

Conservation easements should be managed for wildlife and woodlands—that is the purpose of a conservation easement. But if grazing is allowed on conservation easements, management (protection) of young oak trees must be actively performed. These protective practices may make cattle grazing on protected lands impractical/costly.

Request for Information

- Describe the grazing regime (management practices) that will/will not be allowed on conservation lands. For instance, will grazing be restricted to certain times of the year?
- Discuss/disclose the following: If the livestock owner is also the land owner, will this person receive a property tax reduction for the land being established as a conservation easement? Or, will they be charged a fee for use of a conservation easement for grazing purposes? And, if a fee is charged, will it go into a fund to be utilized for conservation easement acquisition?
- Similarly, discuss the situation described in the bullet above in the case where the livestock owner is *not* the landowner. Will “land rental fees” be levied, and if so how much, and how will the fees be used?

Discuss the following:

- How might the presence of grazing livestock on conservation easements impact wildlife and wildlife habitat?
- How might the presence of grazing livestock impact the oak woodland (specifically survival of young oaks)?
- How might the presence of grazing livestock impact water features, and the wildlife/ecology of those water features (e.g., vernal pools, seasonal creeks, drainages, ponds, etc.)

- If grazing is to be allowed on conservation easements, provide examples of EDC properties where grazing has occurred and oak regeneration is “active” (successful). Identify the amount of time grazing has occurred on the property (both in terms of years grazed and duration of grazing per season), the size and makeup of grazing herds (cattle, sheep, other), and the age classes and species of the oaks present.

Impact to Riparian Zones / Riparian Setbacks

While Long Range Planning staff touted the establishment of *permanent* riparian setback under the Targeted General Plan Amendment/Zoning Ordinance Update (TGPA/ZOU), it was not made clear that these setbacks were being *reduced* under the TGPA/ZOU. The BRPU had established the following interim guidelines:

From the BRPU, page 13D, page 10:

Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue.

The TGPA/ZOU reduced these interim guidelines to the following:

Title 130, Zoning Ordinance; Article 3, page 11:

Ministerial development, including single family dwellings and accessory structures, shall be set back a distance of 25 feet from any intermittent stream, wetland or sensitive riparian habitat, or a distance of 50 feet from any perennial lake, river or stream. This standardized setback may be reduced, or grading within the setback may be allowed, if a biological resource evaluation is prepared which indicates that a reduced setback would be sufficient to protect the resources.

All discretionary development which has the potential to impact wetlands or sensitive riparian habitat shall require a biological resource evaluation to establish the area of avoidance and any buffers or setbacks required to reduce the impacts to a less than significant level. Where all impacts are not reasonably avoided, the biological resource evaluation shall identify mitigation measures that may be employed to reduce the significant effects. These mitigation measures may include the requirement for compliance with the mitigation requirements of a state or federal permit, if required for the proposed development activity.

Any setback or buffer required by this subsection shall be measured from the ordinary high water mark of a river, perennial or intermittent stream, and the ordinary high water mark or spillway elevation of a lake or reservoir.

Because mitigation elements related to biological resources are the topic of this BRPU update, it is only reasonable that riparian setbacks should be evaluated, discussed, and developed under this BRPU process, not under the TGPA/ZOU process alone.

From the BRPU, 13C, page 35:

MEASURE CO-O

Prepare and adopt a riparian setback ordinance. The ordinance, which shall be incorporated into the Zoning Code, should address mitigation standards, including permanent protection mechanisms for protected areas, and exceptions to the setback requirements. The ordinance shall be applied to riparian areas associated with any surface water feature (i.e., rivers, streams, lakes, ponds, and wetlands) and should be prepared in coordination with Measure CO-B. [Policy 7.4.2.5]

When riparian setbacks were established under the TGPA/ZOU, it was clear that there was no scientific basis for setback size, and therefore no valid analysis of the impact of the reduction. This change in riparian setback distances needs to be evaluated within this dEIR (along with other numerous impacts to biological resources that are the result of TGPA/ZOU-based revisions.) Importantly—based on the importance of riparian systems—and the significant impact of the setback revision—setback revisions and/or additional mitigation measures are in order, and could be develop under this BRPU process.

For instance, it has been established that development and encroachment setbacks should include the entire *active floodplain*¹² of a creek or river to adequately preserve stream banks and associated riparian vegetation. And, while there is no single, abrupt, well-documented threshold setback width that would provide maximum benefits for all riparian functions (because riparian functions have different mechanistic bases and are affected by different site attributes), it is well known that most riparian functions would be affected if setbacks included a buffer of less than **66 feet beyond the active floodplain**.¹³ Consequently, narrower widths are not adequate for long-term conservation of riparian functions. (This conclusion is based on a review of the scientific literature.) A recent study of riparian buffers states that for first and second order stream segments¹⁴ **a minimum riparian setback that includes the entire active floodplain plus a buffer of 98 feet of adjacent land (on each side of the active floodplain)** is required; along higher order stream segments (i.e., third order and greater), and along those in or adjacent to conservation lands, **a setback of at least 328 feet—and preferably 656 feet from the active floodplain** is necessary to conserve stream and riparian ecosystem functions, including most wildlife habitat functions. Although these setbacks may seem large, even these setback distances would not be sufficient for the conservation of many wildlife species with large area requirements. (For instance, some species that live in riparian areas must move to other areas to reproduce, as is the case with pond turtles.)

¹² *Active floodplain* means the geomorphic surface adjacent to the stream channel that is typically inundated on a regular basis (i.e., a recurrence interval of about 2–10 years or less). It is the most extensive low depositional surface, typically covered with fine over-bank deposits, although gravel bar deposits may occur along some streams.

¹³ Jones & Stokes. *Setback recommendations to conserve riparian areas and streams in western Placer County*. 2005. February, 2005.

¹⁴ *First order* stream segments are upstream segments that have no tributaries, and *second order* segments are formed by the junction of first order segments.

The problem is simple: land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁵ Conversion of large portions of a watershed to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems (Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).¹⁶

What Some Relevant Science “Says” About Stream/Riparian Setbacks

The following information was taken from Jones & Stokes, 2005.¹⁷

- Development and encroachment setbacks should include the entire *active floodplain* of a creek or river to adequately preserve stream banks and associated riparian vegetation. Because active floodplain boundaries are more stable and measurable than stream banks or the boundaries of riparian vegetation (that are dynamic and change with time), the boundary of the active floodplain—which can be readily delineated—is a preferable basis for determining setback widths rather than edges of stream banks, stream centerlines (or thalwegs), or any boundaries based exclusively on channel widths or vegetation.
- There is no single, abrupt, well-documented threshold width setback that would provide maximum benefits for all riparian functions. Rather, because riparian functions have different mechanistic bases, they are affected by different site attributes, and the relationship between setback widths and reduction of human effects differs among riparian functions. Nevertheless, several defensible arguments can be constructed regarding the appropriate width for a buffer to include within riparian setbacks. First, most riparian functions would be affected if setbacks included a buffer of less than 20 m (66 feet) beyond the active floodplain; consequently, narrower widths are not adequate for long-term conservation of riparian functions. This conclusion is based largely on a review of the scientific literature. In addition, stream incision and a discontinuous cover of woody plants reduces the benefits of narrow buffers. This variability in vegetation extent and structure reduces the effectiveness of narrow setbacks.

Recommendations for riparian setbacks are presented below:

- Apply to first and second order stream segments a minimum riparian setback that includes the entire active floodplain plus a buffer of 30 m (98 feet) of adjacent land (on each side of the active floodplain), or the distance to the nearest ridgeline or watershed boundary, whichever is less. (First order stream segments are upstream segments that have no tributaries, and second order segments are formed by the junction of first order segments.) Though the purpose of this setback would be to conserve stream and riparian functions; it would not be sufficient for the conservation of many wildlife species with large area requirements.
- Along higher order stream segments (i.e., third order and greater), and along lower order segments at selected sites (e.g., those in or adjacent to conservation lands), apply a setback of at least 100 m (328 ft), and preferably 150 m (656 ft), from the active floodplain for the purpose of conserving and enhancing stream and riparian ecosystem functions including most wildlife habitat functions. Along these larger stream segments, floodplains and riparian areas are more extensive, continuous, and structurally diverse than for lower order stream segments (e.g., first

¹⁵ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

and second order). These areas constitute corridors connecting a watershed's lower order stream segments, and, at a watershed scale, the riparian areas of these higher order segments contain particularly important habitats for most riparian-associated species.

- The conservation of wildlife habitat functions within these areas may be necessary for the persistence of their populations. For this reason, a wider setback, sufficient for the retention of wildlife habitat functions, is recommended along stream segments. Recommendations would result in a total setback width ranging from slightly more than 30 m (98 feet) on most first- and second order stream segments to over 150-200 m (492-656 feet) on higher-order streams.
- By basing these recommendations, in part, on the width of active floodplains, a variable, site-specific setback width that accounts for stream size is created. The width of the active floodplain provides a clear, functional basis for a variable width criterion that accomplishes the same purpose more directly than criteria based on stream order, slope, and other attributes of streams and their settings.

Riparian woodland restoration and enhancement measures should include:

- Where feasible, contiguous areas larger than 5 ha (12 ac) should be maintained, enhanced and linked to provide habitat refuge areas for sensitive species. These areas should be connected by riparian corridors more than 30 m (98 feet) wide on both sides of the channel wherever possible, in order to provide movement and dispersal corridors for wildlife.
- The preservation, restoration and linkage of large parcels of undeveloped and uncultivated lands adjacent to riparian areas will provide significant benefits to riparian species. Thus, large contiguous areas of riparian vegetation surrounded by "natural" uplands should be conserved to the greatest extent possible.
- Potential effects of adjacent land uses on riparian areas should be thoroughly evaluated during regional land use planning, and during the environmental review and permitting processes for specific projects, and these effects should be avoided to the maximum extent practicable.
- Re-creation of regular disturbance events (e.g., high water) on the floodplain will enhance vegetation and breeding bird populations in most systems (Riparian Habitat Joint Venture 2004).
- Within setbacks, most developed land uses would be incompatible with the conservation of stream and riparian functions. Developed land uses should be restricted to unavoidable crossings by roads and other infrastructure, because any structures or alterations of topography, vegetation or the soil surface are likely to affect both stream and riparian functions, and could result in substantial effects both on-site and downstream.
- For the purpose of long-term conservation of plant habitat functions, riparian setbacks should include the entire active floodplain, regardless of the current extent of riparian vegetation on that surface. The distribution of riparian vegetation is not static within the active floodplain, and the diversity of vegetative structure and species composition is strongly related to the hydrologic and geomorphic processes within the active floodplain. Therefore, conversion of any portion of the active floodplain to developed or agricultural land-cover types would affect hydrologic and geomorphic functions and affect plant habitat functions.
- Riparian-associated wildlife species differ in the specific habitat attributes they require in riparian systems. Consequently, structurally diverse vegetation, as well as the full range of naturally occurring physical conditions and disturbance regimes, are necessary to provide suitable riparian habitat for the entire community of associated wildlife species. Many riparian-

associated wildlife species use, and often require, both riparian and adjacent upland habitats for reproduction, cover, and/or foraging.

Recommendations for riparian setbacks by agricultural operations are presented below:

- Along first- and perhaps second-order streams, mitigation for adjacent agricultural uses would include filter strips and riparian buffers managed according to standards established by the National Resources Conservation Service. Such practices would improve the buffers' effectiveness for conserving some functions. Along first- and perhaps second-order streams, compatible developed land uses could include open space and low-density residential development, provided no impervious surfaces, infrastructure, or irrigation are placed within the setback.

Request for Information

- Please provide the scientific basis upon which riparian/stream setbacks were developed (such as peer-reviewed research documents, studies from universities, reports from State agencies with expertise in riparian/stream protection).
- Discuss why the riparian setback for a ministerial project is different from a discretionary project, given a hypothetically equivalent environment in each case.
- Discuss the criteria used to determine both the impacts/mitigations for discretionary development projects and the setback size(s) for discretionary projects.
- Include in the dEIR a discussion detailing whether the individual performing the Biological Resource Assessment will be required to consult with agencies with expertise in the field of riparian/stream protection, wildlife protection, etc., and include information from such consultations in the report.
- Discuss who will conduct the monitoring and reporting requirements for ministerial and discretionary projects. (If they will be conducted, who will conduct them, and the qualifications of individuals conducting the monitoring.)
- Describe any penalties or corrective actions that will be required for violations to prescriptive mitigations, and the criteria upon which these actions will be based.
- Identify actions that will be taken to revise ordinances and policies if mitigation measures established in the zoning ordinance are found not to be effective.
- Discuss the impact of livestock on riparian areas and identify the mitigation measures designed to reduce these impacts. If Best Management Practices (BMP) are employed, identify where those BMPs are documented, and discuss their efficacy in terms of mitigating impacts.
- It has been stated that developed land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁸ Discuss why this is/ or is not the case.
- It is also widely believed that conversion of large portions of a watershed or region to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems.¹⁹ Discuss why this is/ is not the case.

¹⁸ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁹ Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).

- Discuss whether the existing riparian setbacks will result in unbuildable parcels in EDC. Quantify how many would become unbuildable if riparian setbacks were increased to protective levels (as discussed in the Jones & Stokes report).
- Discuss whether EDC has developed a database of important surface water features, and if not, when this will be developed. Discuss whether it is possible/legal for EDC to approve development projects that will impact these resources prior to the development of this database.

BRPU, 13D, page 10:

Policy 7.3.3.3 The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.

Agricultural Operations and Evaluation Under AB 32

Agricultural operations may be exempt from Public Resources Code 21083.4 (Kuehl) provisions under the TGPA/ZOU, but agriculture *is not* exempt from CEQA oak woodland biogenic greenhouse gas emissions (GHG) analysis. (There are no GHG exceptions or exemptions for any oak woodland conversion project.)

Request for Information

- Because the TGPA/ZOU adds 17,000 acres of agricultural land—some of which is currently designated Open Space—impact to oak woodlands is likely significant. While agricultural operations are exempt from oak mitigation (tree replacement measures), they are not exempt from the evaluation of impacts under AB 32. Therefore, this conversion of land from other zoning designations to agricultural land designations must be evaluated as an impact to oak woodlands under this dEIR.
- Discuss the following: Does the project fully account for direct and indirect oak woodland conversion biogenic soil/vegetation GHG emission effects, including carbon dioxide, methane, nitrous oxide and black carbon emission associated with biomass disposal (including from agricultural operations).

Valley Oak Replacement / Request for Information

- Include a discussion regarding valley oak (*Quercus lobata*). Specifically, given the designation of this species as a species of “special concern,” why is there no recognition of this fact in terms of enhanced mitigation to protect/replace this species?
- Discuss what mitigation elements will be included to protect this species of special concern.
- If specific mitigation elements are not to be included for this species, discuss why this is the case.
- Quantify the estimated decline of this species if special protections are not provided.

Tree Replacement Scenarios

There seems to be some confusion regarding the tree replacement

Replacement Tree Sizes:

During its June 22, 2015 hearing, the Board requested further clarification and discussion on the potential for allowing different sized container trees to be planted for mitigation. Currently, the draft ORMP requires individual native oak trees to be replaced with 15-gallon sized trees and allows replacement planting for oak woodland mitigation to utilize a variety of smaller sized containers (1-gallon (or equivalent)) or acorns (with a 3:1 replacement ratio).

Source: Dudek Memorandum, September 18, 2015; 17A, page 9.

I believe this is incorrect. The ORMP does not require “...*individual native oak trees to be replaced with 15-gallon sized trees...*”; on page 13 of the May, 2015 ORMP (identical language/criteria is in the revised November 2915 ORMP) it states under “*Individual Native Oak Tree and Heritage Tree Impacts*”:

Replacement tree sizes may vary and may include acorn plantings, based on documentation of inch-for-inch replacement consistency included in an oak resources technical report. If acorns are used, they shall be planted at a 3:1 ratio (3 acorns for every 1-inch of trunk diameter removed)

Source: ORMP, May 2015; 13F, page 13. (Identical language/criteria as in the revised November 2915 ORMP.)

In any case, the formula will presumably work in this manner:

Under the tree-for-inch standard, tree planting would not replace the number of diameter inches removed. However, it would require planting of the same number of trees that would have been planted under an inch-for-inch standard that requires use of 15-gallon trees. To compare the two replacement standards, mitigation for removal of one 12-inch tree under the current draft ORMP would require a project applicant to plant 12 15-gallon oak trees; under the tree-for-inch mitigation standard mitigation for the same impact would require planting of 12 trees of any container size, or 36 acorns.

Source: Dudek memorandum of September 18, 2015; 17A, page 13.

Request for Information

- Once again, **efficacy** (and **performance standards**) should dictate oak tree/woodland mitigation, not an arbitrary formula. Please identify in the dEIR the efficacy of such an approach, and identify specific performance standards (such as canopy cover over time).
- Efficacy of mitigation needs to be demonstrated. The two studies described in the Dudek memorandum 17A (Hobbs, et al., 2001; Young, et al., 2005) actually *do not* support the supposition that acorn planting is “better” than planting larger stock. McCreary—also cited by Dudek—mentions multiple caveats to acorn planting—as presented in my comments of September 29, 2015. But the difficulties of acorn use have been largely ignored, presumably due to its lower mitigation cost.

Tree-for-Inch Mitigation

The tree-for-inch (as opposed to the inch-for-inch) mitigation represents another approach to lessening the cost of mitigation for the project applicant at the expense of oak woodland replacement. As written, this tree-for-inch standard can include replacement of one inch of tree with three acorns. Thus, a 12 inch oak could be replaced with 36 acorns (which are intended to yield 12 live trees, not 36 trees). Based on the growth rate of blue oaks (the species most likely to be removed and replaced via mitigation plantings) it could take a *very* long time to replace an oak.



The oak seedling at left is 8 to 10 inches tall and **12 to 16** years old. Below is a 6 to 8 inch tall seedling estimated to be **10 to 15** years old.



Source: Phillips, et al., 1996



This cross section was derived from a blue oak that was 4.5 inches dbh. This oak was estimated to be 95 years old.

Photo Source: Don & Ellen Van Dyke

A study by Standiford²⁰ on blue oak growth rates revealed an average diameter at breast height (dbh) after 50 years that ranged from 3.4 to 4.1 inches. Even under fairly aggressive restoration efforts, the largest mean diameter of the stand was only 3.9 inches.

Request for Information

- How much “dilution” of mitigation can occur before “mitigation” is no longer mitigation? The following statement was taken from the Dudek memorandum dated September 18, 2015 (17A):

The tree-for-inch standard would be the lesser burden for applicants.

This is great for the applicant; not so good for oak woodland resources. After all is said and done, it is important to remember that—while some individuals have requested that mitigation costs be kept as low as possible—**mitigation must be adequate to mitigate loss**. Affordability is not a criterion under which the effectiveness of mitigation can legitimately be degraded.

As this BRPU/ORMP process has moved forward, more approaches to cost/effort reduction have been inserted. Interestingly, I have not seen documentation in the record, nor heard public testimony requesting these cost-saving changes. Therefore, please disclose in the dEIR the motivation behind the changes. That is, are these modifications based on discovery of what other counties have instituted, or based on mitigation successfully performed in other counties—or are these approaches simply designed to reduce costs/effort for applicants, in spite of the fact that there appears to be *no evidence* to support this approach to mitigation? (And by mitigation I mean the successful replacement of oak woodland within a reasonable amount of time—say five to seven years.) If other counties have instituted these changes (acorn use, tree-for-inch replacement, relying on natural regeneration as a mitigation element, etc.,) please supply documentation that supports the efficacy of these measures in “real world” applications.

- Because it is looking less likely any of the mitigation proposals put forth will realistically mitigate for the loss of oak woodland in a reasonable amount of time, it is reasonable to assume the most effective “mitigation” will be either on-site retention (avoiding the impact in the first place), or the purchase of conservation easements that already contain viable oak woodlands. Therefore, in the dEIR, please evaluate this latter form of mitigation as the primary mitigation scenario. Identify the areas of EDC in which conservation easements are most likely to be established, and the anticipated acreage that is available for easement purchase. Also, identify the plant/wildlife component of these areas, and whether these conservation easements will adequately retain/protect a variety of plant/animal communities, or whether they are limited in scope in terms of diversity.

Oak Tree Replacement

According to the ORMP, “any trees that do not survive the 7-year monitoring and maintenance period shall be replaced by the responsible party listed on the Oak Tree Removal permit and shall be monitored and maintained for 7 years.”

²⁰ Standiford, R, et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

Request for Information

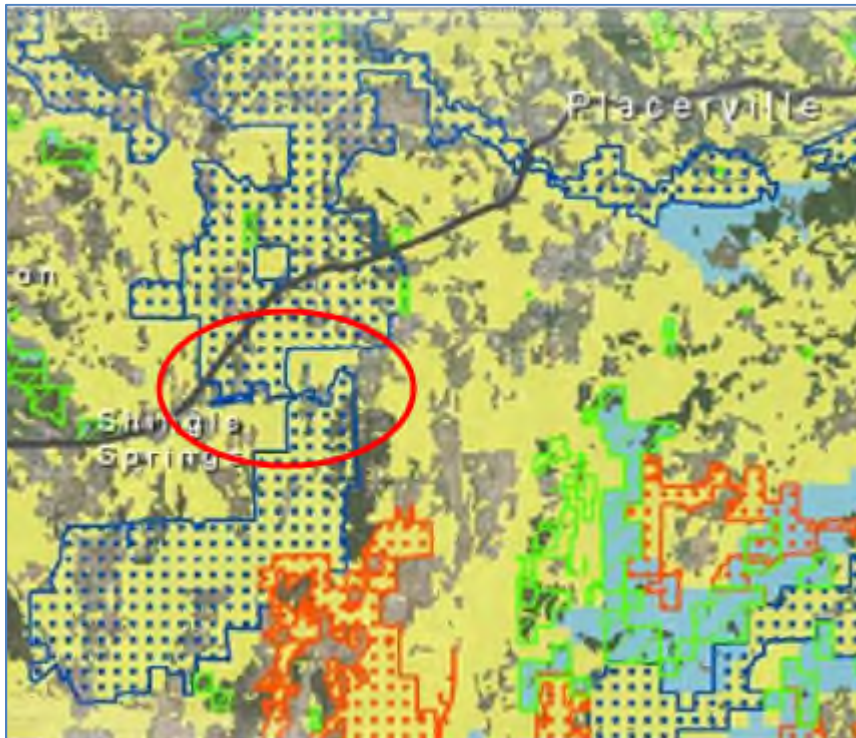
- Please explain in the dEIR how tree replacement is expected to work. That is, are dead trees monitored and replaced annually, or are dead trees only replaced at the end of the 7-year period?

Project Exemptions

- Discuss exemption for County road projects. This is a source of significant impact to oak resources. Bridge projects especially can disproportionately impact valley oak, a species of “special concern.” Discuss—based on scheduled road widening/bridge projects—the anticipated impact to oak resources.

IBC and PCA Maps, etc.

Closer examination of the IBC/PCA maps raises more questions than answers. For instance, in this section of the map, it appears the IBC is greatly constricted in this particular area. Discuss the reason for this constriction—it appears to be artificial.



Request for Information

- Please provide better (more detailed) IBC/PCA maps for each planning area. Identify any outstanding anomalies, and characterize the importance/necessity of each area (what they are designed to protect/serve.)

In Conclusion

In closing I'd like to say the policies proposed in the ORMP represent a significant weakening of environmental protection policies developed under the 2004 General Plan. Therefore, please consider revision to the draft ORMP that strengthen biological resource protections.

Cheryl Langley
5010 Mother Lode Drive
Shingle Springs, CA 95682

Ms. Shawna Purvines, Principal Planner
EDC Development Agency, Long Range Planning Division
2850 Fairlane Court
Placerville, CA 95667

December 23, 2015

RE: Revised Notice of Preparation for the Biological Resources Policies Update & Oak Resources Management Plan

Ms. Purvines:

Thank you for the opportunity to comment on the revised Biological Resources Policy Update (**BRPU**) and Oak Resources Management Plan (**ORMP**).

In addition to comments submitted for this revised NOP, I have included comments submitted for the initial NOP (resubmitted here), and comments provided to the Board of Supervisors (BOS) at the September 29, 2015 meeting. (Specifically, I include the latter set of comments to support/add to discussion within this document.)

Based on these previously submitted comments, and other materials, I have the following requests for information to be included in the draft Environmental Impact Report (dEIR) for the BRPU/ORMP.

Retention of Option A

After reviewing the revisions to 2004 General Plan policies, the proposed ORMP, the BRPU, and Dudek memorandum (17A), it is clear that these policy revisions emphasize making oak mitigation the least onerous possible. This is good news for project applicants, but mitigation measures *must be effective*. The elimination of the Integrated Natural Resources Management Plan (INRMP), the disbanding of the Plant and Wildlife Technical Advisory Committee (PAWTAC), the elimination of Option A (oak retention standards), the reduction of tree sizes for mitigation plantings (from 15-gallon to acorns), the expansion of the number and kind of projects exempt from oak mitigation (including County road improvement projects) all signal a desire to make mitigation for the loss of oak woodland as “simple” and as affordable as possible, both for the County (which has struggled with oak mitigation projects), and for developers.

But this asset—oak woodland—*is* worth protecting. And, retention of ***Option A requirements in no way impedes development***—but it ***does*** serve to make certain a project has been assessed to determine if there is a way ***the developer can meet project objectives while at the same time retain the maximum number of oaks possible on-site***. If it is *demonstrated* a project cannot meet fruition *and* Option A oak retention standards, Option B “kicks in,” and other on- or off-site options for oak mitigation become available. **Why is this process—project evaluation as it relates to oak retention—deemed obstructive or impractical?** Aren’t our oak resources worth a serious project evaluation?

Members of the public have *continually* requested Option A retention standards be retained, and requested an equal-weight (co-equal) project alternatives analysis. Such an analysis would provide the BOS with the information necessary to make an informed decision and possibly approve a project alternative that could effectively reduce or avoid significant impact to oak resources. Without such an analysis, it is doubtful this project alternative will be evaluated to the extent necessary to make such a

determination. And, importantly, the BOS—in their July 22, 2015 meeting—*agreed* it was important to evaluate oak retention standards. But without an equal-weight analysis, a meaningful project alternative will not be prepared. Thus—by default—retention of Option A has been roundly rejected before a complete analysis has been conducted. In effect, **it has been predetermined that the County is “not going there.” This is contrary to the purpose and spirit of California Environmental Quality Act (CEQA) analysis.** And it sends message to the public that *“your participation in the process is not welcome here.”*

This is disturbing, and perhaps more so because the resource at stake cannot be easily replaced. And, while BOS members are charged with making decisions that will impact this resource, at least some are not conversant in biological principles, and Dudek does not correct misconceptions when BOS members make statements that lay bare their lack of understanding. While it may at times prove uncomfortable to correct a BOS member during public discussions, the consultant is there to provide expertise. When they do not, this is a failure of their responsibility to the BOS, and to the public, and serves to undermine their own credibility. And most importantly, it is a disservice to the resource being impacted.

The result? BOS members vote—make important decisions with long-term implications—without understanding basic biological or legal principles, or the seriousness and longevity of their decisions. And, while it is not the responsibility of the *public* to educate the BOS, that is where the task has come to rest—in the three minutes granted to any given individual—during meeting opportunities that County staff has purposefully limited to meetings during the workweek days/hours that fundamentally **limit public participation** in this **expedited** process:

NOTE: *“In recognition of the Board’s desire to expedite completion of this process, this approach would potentially limit public input to focused Planning Commission and Board meetings. The TGPA/ZOU process has used this approach to receive public comment rather than the public outreach program currently identified for input on revisions to the policies.”*

(Source: Document 7B under Meeting Details, PROCESS APPROACHES FOR THE OAK WOODLAND MANAGEMENT PLAN.)

This expedited process—based on a request by development interests for an “**interim policy**”—was no more than suggested than taken up by Long Range Planning’s Ms. Purvine who said—at the same meeting at which the request was launched—*“I’d actually like to look into that a little bit further and bring back a discussion on that.”*¹ That initiated a cascade of activity that evolved into an *expedited* BRPU and ORMP. But repeated requests by members of the public to evaluate the retention of Option A have fallen on deaf ears.

Retention of Option A was vilified by suggesting it would impose constraints on economic development, and may even constitute “property taking” by rendering some properties undevelopable.² But no such results could come to pass with implementation of Option B, whose development is clearly one of the primary thrusts of this ORMP. In this instance, Option A would simply provide a “first screening” of projects; it would not be the “last word” on project development or on a project’s ultimate impact on oak woodlands. But retention of Option A *could* serve to protect woodlands when a project *could* meet fruition while accommodating resident oaks.

¹ **Source of Quote:** Planning Commission meeting of Aug 15, 2014; TGPA/ZOU meeting RE: Biological Resources.

² Dudek. 2015. Memorandum from Kathy Spence-Wells to Shawna Purvines, September 18, 2015; 17A, page 8.

Request for Information

- I request a co-equal analysis of a project alternative based on retaining Option A (oak retention standards).
- In the past, Option A was considered restrictive to development interests largely because Option B *was not available*. With the availability of Option B (contingent upon approval of this ORMP), explain why Option A is not being evaluated in a co-equal analysis, especially in light of CEQA guidelines that state EIRs must describe alternatives “...which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project...”(14 CCR 1526.6[a]). (In fact, there is probably no other alternative—other than the **No Project** alternative—that could reduce the project’s significant impacts more than this alternative; it is a viable project alternative that deserves co-equal analysis.)

Oak Regeneration as a Mitigation Element

Because this notion of oak regeneration as a viable/plausible mitigation element seems to be persisting, it is necessary to expand on this topic.

First of all—this is not mitigation. Saying something will simply replace itself post-loss contradicts the meaning/purpose of mitigation. To identify *non-action* in this instance as mitigation defies logic, and it also defies scientific study on the topic. It is simply not credible. Even if this approach were *legally* defensible, **it is not supported by fact**.

I have cited numerous studies that discuss blue oak (*Quercus douglasii*) regeneration as inadequate to support the long-term survival of this woodland species in numerous areas of California (see discussion/citations in comments on the initial NOP, and in the September 29, 2015 comments to the BOS; reference materials are included for both documents [on disk] with this submitted material). These documents contain citations that describe the problems with blue oak regeneration (the species that will be most impacted [and replanted] as a result of development projects in EDC).

I add to this discussion on oak regeneration here. In a study by Swiecki, et al.,³ an in-depth evaluation was undertaken to assess the status of blue oak regeneration and determine how environmental and management factors influence blue oak sapling recruitment. This study was conducted in the counties listed in the table below on study sites of at least 150 acres in size dominated by blue oak

County	Regeneration Adequate to Maintain Blue Oak Woodland?		Comments
	Yes	No	
Napa		X	This study site had the highest number of blue oak saplings but there were fewer plots with an increase in blue oak density than a decrease in density; there were few small seedlings.
Glenn		X	No blue oak saplings were present anywhere in the entire study site

³ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

San Benito	X		The blue oak stand at this site appears to be viable; regeneration appears to be moderate—more plots showed an increase in blue oak density than a decrease
Yuba	X		More plots showed an increase in blue oak density than a decrease; about a quarter of the saplings originated as stump sprouts in an area where blue oaks were cut in 1989; 7 % of the sprout-oriented saplings were dead; mortality was higher among seedling-origin saplings (mesic site)
Mendocino		X	No blue oak saplings were present anywhere in the entire study area; a few seedlings were observed
Tulare		X	Recruitment was sparse; current levels of recruitment are insufficient to support offset mortality
Tehama		X	Blue oak saplings were uncommon, as were seedlings; sapling recruitment was inadequate to maintain current stand densities
Amador		X	Blue oak saplings and seedlings were uncommon; very little regeneration has occurred since the Gold Rush; current recruitment is insufficient to maintain stand; conversion to grassland appears inevitable
San Luis Obispo		X	Recruitment is insufficient to offset mortality
Monterey		X	Recruitment is insufficient to offset mortality
Madera		X	No blue oak saplings were seen in the study area; a few small seedlings were seen; there was no regeneration of woody species in the study area
Santa Clara		X	No blue oak saplings were seen in the study area but some seedlings were seen; this stand had the highest mortality of those studied
Contra Costa		X	Recruitment lags far behind mortality at this study site
Tulare		X	Mortality was far in excess of sapling recruitment

Tuolumne	Variable, but ultimately described as a site with more plots with “net loss” than “net gain”	Stump sprout-origin saplings outnumbered those of seedling origin (sprouts from previous tree removal) at this site (75% of saplings were of sprout origin); virtually the entire stand appeared to be second growth; a few seedlings were seen, particularly along creeks; although regeneration had apparently been successful in some portions of the site, blue oak had been eliminated from some large areas and no recolonization of these large clearings has occurred
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Swiecki study conclusions include:

- *“...it appears that most locations are losing blue oak density at the stand level due to unreplaced mortality.”*
- *“These observations support the assertion that current recruitment is inadequate to maintain existing tree populations in at least some areas.”*
- *“...the conversion of blue oak woodland to grassland is not likely to be easily reversed.”*
- *“...the extent of blue oak woodlands will continue to decrease due to unreplaced mortality...”*
- *“Because our study locations are distributed throughout the range of blue oak, we are confident that the trends we observed can be generalized over much of the range of blue oak.”*
- *“In many stands, sapling blue oaks are absent or rare.”*
- *“In most stands, the percentage of the stand area which is likely to show a decrease in blue oak density and canopy cover is greater than the percentage that may show an increase in density and canopy cover.”*

Blue Oak Regeneration in EDC

During the various meetings and workshops on the BRPU/ORMP, some individuals have brought up the issue of oak regeneration—presumably in “defense” of oak removal—and have stated—*anecdotally*—that there are more trees in EDC now than in the past. There have also been figures brought up (undocumented) to “substantiate” gains in EDC oak woodland.

The most current study I was able to find to quantify blue oak woodlands in EDC was presented in the report *“Monitoring Land Cover Changes in California.”*⁴ (NOTE: The northeastern California project area covers Amador, Butte, **El Dorado**, Lassen, Modoc, Nevada, Placer, Plumas, Sierra, Sutter, Yolo and Yuba counties.)

⁴ USDA Forest Service & California Department of Forestry and Fire Protection Fire and Resource Assessment Program. 2002. *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program. Northeastern California Project Area, January, 2002.*

Report findings are as follows:

For **blue oak woodland** (all owners):

- 509 acres with small, moderate, large woodland decrease (1.55% decrease)
 - 194 acres with small, moderate, large woodland increase (0.59% increase)
- 32,878 acres total
Net decrease of 315 acres or 0.96%

For **blue oak/foothill pine woodland** (all owners):

- 119 acres with small, moderate, large woodland decrease (0.66% decrease)
 - 95 acres with small, moderate, large woodland increase (0.53% increase)
- 17,995 acres total
Net decrease of 24 acres or 0.13%

TOTAL for **blue oak** and **blue oak/foothill pine woodlands** combined: **0.67% decrease**

Table C-14 Acres of Classified Change in El Dorado County by Hardwood Cover Type and Owner Class

	National Forest		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Blue Oak Woodland								
LDVC	0	0	0	0	17	0	17	0
MDVC	0	0	4	0	82	0	86	0
SDVC	5	6	11	1	390	1	406	1
NCH	71	93	1,576	97	30,386	97	32,033	97
SIVC	0	1	15	1	155	0	170	1
MIVC	0	0	0	0	22	0	22	0
LIVC	0	0	0	0	2	0	2	0
NVG	0	0	23	1	119	0	142	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	77	100	1,628	100	31,173	100	32,878	100
Blue Oak / Foothill Pine								
LDVC	0	0	0	0	3	0	3	0
MDVC	0	0	1	0	23	0	24	0
SDVC	0	4	3	0	89	1	92	1
NCH	4	82	1,097	99	16,637	99	17,738	99
SIVC	1	14	4	0	76	0	81	0
MIVC	0	0	0	0	14	0	14	0
LIVC	0	0	0	0	0	0	0	0
NVG	0	0	9	1	34	0	43	0
CLD/SHA	0	0	0	0	0	0	0	0
TOTAL	5	100	1,113	100	16,877	100	17,995	100

LDVC – large decrease in vegetation cover; MDVC – moderate decrease in vegetation cover; SDVC – small decrease in vegetation cover; NCH – little to no change in vegetation cover; SIVC – small increase in vegetation cover; MIVC – moderate increase in vegetation cover; LIVC – large increase in vegetation cover; NVG – non-vegetation change; CLD/SHA – cloud or shadow
Refer to Appendix D for WHR type descriptions.

Source: USDA Forest Service & California Department of Forestry and Fire Protection, *Monitoring Land Cover Changes in California; California Land Cover Mapping and Monitoring Program.*

McCreary⁵ also weights in on this topic of regeneration.

For nearly a century, there has been concern that several of California's 20 native oak species are not regenerating adequately (Jepson 1910). Such concern was partially responsible for the establishment of the Integrated Hardwood Range Management Program (IHRMP) in 1986, a cooperative effort between the University of California, the California Department of Forestry and Fire Protection, and the California Department of Fish and Game to promote oak woodland conservation (Standiford and Bartolome 1997). Evidence indicating that there is an "oak regeneration problem" in California has been based largely on observations of a paucity of young seedlings and saplings in the understories of existing oak stands. Describing the foothill woodland in the Carmel Valley, White (1966) stated that "A prevailing characteristic . . . is the lack of reproduction . . . with very few seedlings." Bartolome and others (1987) also concluded that "current establishment appears insufficient to maintain current stand structure for some sites." And Swiecki and Bernhardt (1998) reported that of 15 blue oak locations evaluated throughout the State, 13 were losing stand density at the stand level due to unreplaced mortality.

The species that are having the most difficulty regenerating are all members of the white oak sub-genera of *Quercus*, and include blue oak (*Quercus douglasii*), valley oak (*Q. lobata*), and Engelmann oak (*Q. engelmannii*) (Muick and Bartolome 1987; Bolsinger 1988). Blue and valley oak are endemic to the State, while Engelmann oak, which actually has a far narrower distribution range than the other 2 species, does extend into Baja California (Griffin and Critchfield 1972). Concern about poor

Request for Information:

- Please include in the NOP a discussion of why oak regeneration is being evaluated as a possible "mitigation" element. Discuss what is to be accomplished by this approach—if accepted—and who will benefit. Discuss the impact on oak woodland mitigation if this approach is implemented.
- Describe the science that *supports* the notion that relying on oak regeneration is a plausible approach to impact mitigation. Also provide scientific studies that *refute* this approach to impact mitigation.
- Identify other California counties that have used—or entertained the idea of using—oak regeneration to "*offset development impacts to oak woodlands.*" If other counties have used this approach, identify those counties and present their rationale for using this approach, and if this approach was actually pursued, the outcome of that decision (impact on oak resources).
- Describe what makes this approach viable under CEQA mitigation guidelines.
- Keeping in mind that blue oak is the species that will be most impacted by development projects—and that it is the species that will make up the bulk of mitigation efforts—discuss how its declining ability to regenerate can possibly be used as a mitigation element.
- From a workshop PowerPoint presentation (Document 5D), mitigation is identified as "*strategies to reduce impacts.*" "Reducing impacts" implies an active process. How does relying on a *natural process* (especially one in decline), meet this criterion?

Use of Acorns for Oak Woodland Replacement

The poor natural regeneration of blue oak woodlands means the viability of acorn plantings, too, will be problematic, making replacement of woodlands via the planting of acorns a fragile, ineffective strategy. According to A Planner's Guide to Oak Woodlands:⁶

...the same factors that prevent or limit **natural regeneration** can also take a heavy toll on artificial plantings. **To be successful, relatively intensive site preparation, maintenance, and protection must usually be provided for several years.**

⁵ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

⁶ Giusti, G.A. et al (editors). 2005. *A planner's guide for oak woodlands*. University of California, Agriculture and Natural Resources, Publication 3491, second edition.

Thus, while it may be tempting to think planting acorns will provide a low-cost alternative to container-planting, acorns are prone to failure and could ultimately cost project developers *more* than container-planting. The excessive replacement of dying seedlings, the necessity for irrigation, weed and rodent control, and tree shelter or fencing placement (and replacement) means in-field acorn propagation will be costly and burdensome.

Studies have shown that mortality from direct seeding of acorns is high. According to Young,⁷ “Approximately 40% of the field-planted acorns disappeared in the first two months after planting, probably taken by ground squirrels or other seed predators.” And, according to Swiecke:⁸

A blue oak seedling observation plot was established just outside the study area in 1988 (Swiecki et al 1990), but was destroyed by ground squirrels before permanent markers could be installed. A second seedling plot located about 3 km south of the study area was resurveyed in July 1993, at which time only 6.5% of the seedlings tagged five years earlier were still surviving.

Not only is acorn planting fraught with difficulties and failure, the results—even under the best of circumstances—will be dismal. Blue oaks are slow growers. Harvey⁹ showed that many of the blue oak saplings less than four feet tall were between 40 and 100 years old. (**NOTE:** Both sets of comments submitted previously [August 17, 2015; September 29, 2015] include a discussion of blue oak growth rates and additional studies/citations, which see.)

Request for Information

- If acorn planting is to be pursued as a mitigation element under this ORMP, provide specific details/requirements for planting that include specific site treatment, monitoring, replacement schedules, equipment, and measures that will be employed to ensure success.
- Describe (and establish) a **performance standard** for acorn *and* sapling (container) plantings. That is, commit to a canopy coverage standard to be attained within X number of years (say 5 years, for example).

⁷ Young, T.P. and R.Y. Evans. 2002. *Initial Mortality and Root and Shoot Growth of Oak Seedlings Planted as Seeds and as Container Stock Under Different Irrigation Regimes*. Department of Environmental Horticulture, University of California, Davis; Final Report.

⁸ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

⁹ L.E Harvey. 1989. *Spatial and Temporal Dynamics of a Blue Oak Woodland*. Ph.D. Thesis, University of California, Santa Barbara.

Cattle Grazing on Conservation Easements

From the draft revised ORMP, November, 2015; Page 24:

4.2 Management of PCAs

Existing oak woodlands within the PCAs identified as mitigation for project impacts, whether on or off a project site, will be protected from further development through a conservation easement granted to the County or a land conservation group approved by the County or by acquisition in fee title by a land conservation group. Management activities would be conducted by land conservation organizations and may include, but are not limited to, one or more of the following activities, as determined appropriate and/or necessary through monitoring of the sites: inspections, biological surveys, fuels treatment to reduce risk of wildfire and to improve habitat, weed control, database management, and mapping. Agricultural use (i.e., grazing) shall be allowed in conserved oak woodlands as long as the activity occurred prior to the establishment of the conservation easement, the spatial extent of the agricultural use is not expanded on conserved lands, and the agricultural use does not involve active tree harvest or removal (e.g., fuelwood operations, land clearing for crop planting, etc.).

Livestock grazing can have serious implications for oak woodlands and wildlife. For instance, research conducted by Swiecki¹⁰ shows:

- Oak saplings are unlikely to be found in areas with high chronic levels of livestock browsing.
- In areas subject to at least moderate browsing, the majority of oaks are shorter than the browse line and show evidence of chronic browsing damage.
- Seedlings and saplings were more common in ungrazed natural areas than in grazed pastures.

To this end, Swiecki suggests:

- Alternative grazing regimes that reduce the duration and intensity of browsing pressure may help to reduce the negative impact of browsing on oak resources.
- In any gap-creating event (such as oak harvest or wildfire), livestock use should be minimized until oaks have grown taller than the browse line.

And McCreary¹¹ weighs in on this issue, too:

¹⁰ Swiecki, et al. 1993. *Factors Affecting Blue Oak Sapling Recruitment and Regeneration*. Prepared for: Strategic Planning Program, California Department of Forestry and Fire Protection. Contract 8CA17358, December 1993.

¹¹ McCreary, D. and J. Tecklin. 2005. *Restoring Native California Oaks on Grazed Rangelands*. USDA Forest Service Proceedings RMRS-P-35.

Timing of Grazing Study

In 1989, a UC Davis graduate student named Lillian Hall initiated an experiment at the SFREC to evaluate how planted oak seedlings fare in pastures where cattle have access (Hall and others 1992). She planted 1-year-old blue oak seedlings in pastures grazed by cattle at different stock intensities, and included a control where cattle were excluded. She found that damage to seedlings was significantly less in the winter and fall when the deciduous oaks did not have foliage and were apparently less appetizing to the cattle. Cattle did not seem to seek out or prefer young oaks. However, in the spring green-forage season, they appeared drawn to clover patches near seedlings and browsed the oaks in the process. Heavy damage to seedlings in the summer at all cattle densities probably resulted from the fact that the young oaks were often the only green vegetation in the grazed pastures, and were therefore more palatable than the dry annual grasses. Within each season, total damage also increased with increasing stock density.

While some researchers suggest livestock management techniques can *lessen* the impact of grazing in oak woodlands, it is clear that **the best approach is to not graze these areas** unless absolutely necessary. For instance—speaking in terms of “real world” observation—while only spring grazing is done on the property north of Highway 50 by the Scott Road exit (in Sacramento County), it is clear that the blue oak woodland on these pastures is in decline; oak regeneration is largely absent.

Conservation easements should be managed for wildlife and woodlands—that is the purpose of a conservation easement. But if grazing is allowed on conservation easements, management (protection) of young oak trees must be actively performed. These protective practices may make cattle grazing on protected lands impractical/costly.

Request for Information

- Describe the grazing regime (management practices) that will/will not be allowed on conservation lands. For instance, will grazing be restricted to certain times of the year?
- Discuss/disclose the following: If the livestock owner is also the land owner, will this person receive a property tax reduction for the land being established as a conservation easement? Or, will they be charged a fee for use of a conservation easement for grazing purposes? And, if a fee is charged, will it go into a fund to be utilized for conservation easement acquisition?
- Similarly, discuss the situation described in the bullet above in the case where the livestock owner is *not* the landowner. Will “land rental fees” be levied, and if so how much, and how will the fees be used?

Discuss the following:

- How might the presence of grazing livestock on conservation easements impact wildlife and wildlife habitat?
- How might the presence of grazing livestock impact the oak woodland (specifically survival of young oaks)?
- How might the presence of grazing livestock impact water features, and the wildlife/ecology of those water features (e.g., vernal pools, seasonal creeks, drainages, ponds, etc.)

- If grazing is to be allowed on conservation easements, provide examples of EDC properties where grazing has occurred and oak regeneration is “active” (successful). Identify the amount of time grazing has occurred on the property (both in terms of years grazed and duration of grazing per season), the size and makeup of grazing herds (cattle, sheep, other), and the age classes and species of the oaks present.

Impact to Riparian Zones / Riparian Setbacks

While Long Range Planning staff touted the establishment of *permanent* riparian setback under the Targeted General Plan Amendment/Zoning Ordinance Update (TGPA/ZOU), it was not made clear that these setbacks were being *reduced* under the TGPA/ZOU. The BRPU had established the following interim guidelines:

From the BRPU, page 13D, page 10:

Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue.

The TGPA/ZOU reduced these interim guidelines to the following:

Title 130, Zoning Ordinance; Article 3, page 11:

Ministerial development, including single family dwellings and accessory structures, shall be set back a distance of 25 feet from any intermittent stream, wetland or sensitive riparian habitat, or a distance of 50 feet from any perennial lake, river or stream. This standardized setback may be reduced, or grading within the setback may be allowed, if a biological resource evaluation is prepared which indicates that a reduced setback would be sufficient to protect the resources.

All discretionary development which has the potential to impact wetlands or sensitive riparian habitat shall require a biological resource evaluation to establish the area of avoidance and any buffers or setbacks required to reduce the impacts to a less than significant level. Where all impacts are not reasonably avoided, the biological resource evaluation shall identify mitigation measures that may be employed to reduce the significant effects. These mitigation measures may include the requirement for compliance with the mitigation requirements of a state or federal permit, if required for the proposed development activity.

Any setback or buffer required by this subsection shall be measured from the ordinary high water mark of a river, perennial or intermittent stream, and the ordinary high water mark or spillway elevation of a lake or reservoir.

Because mitigation elements related to biological resources are the topic of this BRPU update, it is only reasonable that riparian setbacks should be evaluated, discussed, and developed under this BRPU process, not under the TGPA/ZOU process alone.

From the BRPU, 13C, page 35:

MEASURE CO-O

Prepare and adopt a riparian setback ordinance. The ordinance, which shall be incorporated into the Zoning Code, should address mitigation standards, including permanent protection mechanisms for protected areas, and exceptions to the setback requirements. The ordinance shall be applied to riparian areas associated with any surface water feature (i.e., rivers, streams, lakes, ponds, and wetlands) and should be prepared in coordination with Measure CO-B. [Policy 7.4.2.5]

When riparian setbacks were established under the TGPA/ZOU, it was clear that there was no scientific basis for setback size, and therefore no valid analysis of the impact of the reduction. This change in riparian setback distances needs to be evaluated within this dEIR (along with other numerous impacts to biological resources that are the result of TGPA/ZOU-based revisions.) Importantly—based on the importance of riparian systems—and the significant impact of the setback revision—setback revisions and/or additional mitigation measures are in order, and could be develop under this BRPU process.

For instance, it has been established that development and encroachment setbacks should include the entire *active floodplain*¹² of a creek or river to adequately preserve stream banks and associated riparian vegetation. And, while there is no single, abrupt, well-documented threshold setback width that would provide maximum benefits for all riparian functions (because riparian functions have different mechanistic bases and are affected by different site attributes), it is well known that most riparian functions would be affected if setbacks included a buffer of less than **66 feet beyond the active floodplain**.¹³ Consequently, narrower widths are not adequate for long-term conservation of riparian functions. (This conclusion is based on a review of the scientific literature.) A recent study of riparian buffers states that for first and second order stream segments¹⁴ **a minimum riparian setback that includes the entire active floodplain plus a buffer of 98 feet of adjacent land (on each side of the active floodplain)** is required; along higher order stream segments (i.e., third order and greater), and along those in or adjacent to conservation lands, **a setback of at least 328 feet—and preferably 656 feet from the active floodplain** is necessary to conserve stream and riparian ecosystem functions, including most wildlife habitat functions. Although these setbacks may seem large, even these setback distances would not be sufficient for the conservation of many wildlife species with large area requirements. (For instance, some species that live in riparian areas must move to other areas to reproduce, as is the case with pond turtles.)

¹² *Active floodplain* means the geomorphic surface adjacent to the stream channel that is typically inundated on a regular basis (i.e., a recurrence interval of about 2–10 years or less). It is the most extensive low depositional surface, typically covered with fine over-bank deposits, although gravel bar deposits may occur along some streams.

¹³ Jones & Stokes. *Setback recommendations to conserve riparian areas and streams in western Placer County*. 2005. February, 2005.

¹⁴ *First order* stream segments are upstream segments that have no tributaries, and *second order* segments are formed by the junction of first order segments.

The problem is simple: land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁵ Conversion of large portions of a watershed to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems (Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).¹⁶

What Some Relevant Science “Says” About Stream/Riparian Setbacks

The following information was taken from Jones & Stokes, 2005.¹⁷

- Development and encroachment setbacks should include the entire *active floodplain* of a creek or river to adequately preserve stream banks and associated riparian vegetation. Because active floodplain boundaries are more stable and measurable than stream banks or the boundaries of riparian vegetation (that are dynamic and change with time), the boundary of the active floodplain—which can be readily delineated—is a preferable basis for determining setback widths rather than edges of stream banks, stream centerlines (or thalwegs), or any boundaries based exclusively on channel widths or vegetation.
- There is no single, abrupt, well-documented threshold width setback that would provide maximum benefits for all riparian functions. Rather, because riparian functions have different mechanistic bases, they are affected by different site attributes, and the relationship between setback widths and reduction of human effects differs among riparian functions. Nevertheless, several defensible arguments can be constructed regarding the appropriate width for a buffer to include within riparian setbacks. First, most riparian functions would be affected if setbacks included a buffer of less than 20 m (66 feet) beyond the active floodplain; consequently, narrower widths are not adequate for long-term conservation of riparian functions. This conclusion is based largely on a review of the scientific literature. In addition, stream incision and a discontinuous cover of woody plants reduces the benefits of narrow buffers. This variability in vegetation extent and structure reduces the effectiveness of narrow setbacks.

Recommendations for riparian setbacks are presented below:

- Apply to first and second order stream segments a minimum riparian setback that includes the entire active floodplain plus a buffer of 30 m (98 feet) of adjacent land (on each side of the active floodplain), or the distance to the nearest ridgeline or watershed boundary, whichever is less. (First order stream segments are upstream segments that have no tributaries, and second order segments are formed by the junction of first order segments.) Though the purpose of this setback would be to conserve stream and riparian functions; it would not be sufficient for the conservation of many wildlife species with large area requirements.
- Along higher order stream segments (i.e., third order and greater), and along lower order segments at selected sites (e.g., those in or adjacent to conservation lands), apply a setback of at least 100 m (328 ft), and preferably 150 m (656 ft), from the active floodplain for the purpose of conserving and enhancing stream and riparian ecosystem functions including most wildlife habitat functions. Along these larger stream segments, floodplains and riparian areas are more extensive, continuous, and structurally diverse than for lower order stream segments (e.g., first

¹⁵ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

and second order). These areas constitute corridors connecting a watershed's lower order stream segments, and, at a watershed scale, the riparian areas of these higher order segments contain particularly important habitats for most riparian-associated species.

- The conservation of wildlife habitat functions within these areas may be necessary for the persistence of their populations. For this reason, a wider setback, sufficient for the retention of wildlife habitat functions, is recommended along stream segments. Recommendations would result in a total setback width ranging from slightly more than 30 m (98 feet) on most first- and second order stream segments to over 150-200 m (492-656 feet) on higher-order streams.
- By basing these recommendations, in part, on the width of active floodplains, a variable, site-specific setback width that accounts for stream size is created. The width of the active floodplain provides a clear, functional basis for a variable width criterion that accomplishes the same purpose more directly than criteria based on stream order, slope, and other attributes of streams and their settings.

Riparian woodland restoration and enhancement measures should include:

- Where feasible, contiguous areas larger than 5 ha (12 ac) should be maintained, enhanced and linked to provide habitat refuge areas for sensitive species. These areas should be connected by riparian corridors more than 30 m (98 feet) wide on both sides of the channel wherever possible, in order to provide movement and dispersal corridors for wildlife.
- The preservation, restoration and linkage of large parcels of undeveloped and uncultivated lands adjacent to riparian areas will provide significant benefits to riparian species. Thus, large contiguous areas of riparian vegetation surrounded by "natural" uplands should be conserved to the greatest extent possible.
- Potential effects of adjacent land uses on riparian areas should be thoroughly evaluated during regional land use planning, and during the environmental review and permitting processes for specific projects, and these effects should be avoided to the maximum extent practicable.
- Re-creation of regular disturbance events (e.g., high water) on the floodplain will enhance vegetation and breeding bird populations in most systems (Riparian Habitat Joint Venture 2004).
- Within setbacks, most developed land uses would be incompatible with the conservation of stream and riparian functions. Developed land uses should be restricted to unavoidable crossings by roads and other infrastructure, because any structures or alterations of topography, vegetation or the soil surface are likely to affect both stream and riparian functions, and could result in substantial effects both on-site and downstream.
- For the purpose of long-term conservation of plant habitat functions, riparian setbacks should include the entire active floodplain, regardless of the current extent of riparian vegetation on that surface. The distribution of riparian vegetation is not static within the active floodplain, and the diversity of vegetative structure and species composition is strongly related to the hydrologic and geomorphic processes within the active floodplain. Therefore, conversion of any portion of the active floodplain to developed or agricultural land-cover types would affect hydrologic and geomorphic functions and affect plant habitat functions.
- Riparian-associated wildlife species differ in the specific habitat attributes they require in riparian systems. Consequently, structurally diverse vegetation, as well as the full range of naturally occurring physical conditions and disturbance regimes, are necessary to provide suitable riparian habitat for the entire community of associated wildlife species. Many riparian-

associated wildlife species use, and often require, both riparian and adjacent upland habitats for reproduction, cover, and/or foraging.

Recommendations for riparian setbacks by agricultural operations are presented below:

- Along first- and perhaps second-order streams, mitigation for adjacent agricultural uses would include filter strips and riparian buffers managed according to standards established by the National Resources Conservation Service. Such practices would improve the buffers' effectiveness for conserving some functions. Along first- and perhaps second-order streams, compatible developed land uses could include open space and low-density residential development, provided no impervious surfaces, infrastructure, or irrigation are placed within the setback.

Request for Information

- Please provide the scientific basis upon which riparian/stream setbacks were developed (such as peer-reviewed research documents, studies from universities, reports from State agencies with expertise in riparian/stream protection).
- Discuss why the riparian setback for a ministerial project is different from a discretionary project, given a hypothetically equivalent environment in each case.
- Discuss the criteria used to determine both the impacts/mitigations for discretionary development projects and the setback size(s) for discretionary projects.
- Include in the dEIR a discussion detailing whether the individual performing the Biological Resource Assessment will be required to consult with agencies with expertise in the field of riparian/stream protection, wildlife protection, etc., and include information from such consultations in the report.
- Discuss who will conduct the monitoring and reporting requirements for ministerial and discretionary projects. (If they will be conducted, who will conduct them, and the qualifications of individuals conducting the monitoring.)
- Describe any penalties or corrective actions that will be required for violations to prescriptive mitigations, and the criteria upon which these actions will be based.
- Identify actions that will be taken to revise ordinances and policies if mitigation measures established in the zoning ordinance are found not to be effective.
- Discuss the impact of livestock on riparian areas and identify the mitigation measures designed to reduce these impacts. If Best Management Practices (BMP) are employed, identify where those BMPs are documented, and discuss their efficacy in terms of mitigating impacts.
- It has been stated that developed land uses (including agricultural uses) within recommended buffer setbacks preclude the effectiveness of setbacks.¹⁸ Discuss why this is/ or is not the case.
- It is also widely believed that conversion of large portions of a watershed or region to developed and agricultural land uses is associated with broad negative effects on riparian and stream ecosystems.¹⁹ Discuss why this is/ is not the case.

¹⁸ Jones & Stokes. *Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County*. 2005. February, 2005.

¹⁹ Findlay and Houlihan 1996, Roth et al 1996, Booth and Jackson 1997, Magee et al. 1999, Doyle et al. 2000, Paul and Meyer 2001, Allan 2004, Hatt et al. 2004, Pellet et al. 2004, Wissmar et al 2004, and Jones & Stokes 2005).

- Discuss whether the existing riparian setbacks will result in unbuildable parcels in EDC. Quantify how many would become unbuildable if riparian setbacks were increased to protective levels (as discussed in the Jones & Stokes report).
- Discuss whether EDC has developed a database of important surface water features, and if not, when this will be developed. Discuss whether it is possible/legal for EDC to approve development projects that will impact these resources prior to the development of this database.

BRPU, 13D, page 10:

Policy 7.3.3.3 The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.

Agricultural Operations and Evaluation Under AB 32

Agricultural operations may be exempt from Public Resources Code 21083.4 (Kuehl) provisions under the TGPA/ZOU, but agriculture *is not* exempt from CEQA oak woodland biogenic greenhouse gas emissions (GHG) analysis. (There are no GHG exceptions or exemptions for any oak woodland conversion project.)

Request for Information

- Because the TGPA/ZOU adds 17,000 acres of agricultural land—some of which is currently designated Open Space—impact to oak woodlands is likely significant. While agricultural operations are exempt from oak mitigation (tree replacement measures), they are not exempt from the evaluation of impacts under AB 32. Therefore, this conversion of land from other zoning designations to agricultural land designations must be evaluated as an impact to oak woodlands under this dEIR.
- Discuss the following: Does the project fully account for direct and indirect oak woodland conversion biogenic soil/vegetation GHG emission effects, including carbon dioxide, methane, nitrous oxide and black carbon emission associated with biomass disposal (including from agricultural operations).

Valley Oak Replacement / Request for Information

- Include a discussion regarding valley oak (*Quercus lobata*). Specifically, given the designation of this species as a species of “*special concern*,” why is there no recognition of this fact in terms of enhanced mitigation to protect/replace this species?
- Discuss what mitigation elements will be included to protect this species of special concern.
- If specific mitigation elements are not to be included for this species, discuss why this is the case.
- Quantify the estimated decline of this species if special protections are not provided.

Tree Replacement Scenarios

There seems to be some confusion regarding the tree replacement

Replacement Tree Sizes:

During its June 22, 2015 hearing, the Board requested further clarification and discussion on the potential for allowing different sized container trees to be planted for mitigation. Currently, the draft ORMP requires individual native oak trees to be replaced with 15-gallon sized trees and allows replacement planting for oak woodland mitigation to utilize a variety of smaller sized containers (1-gallon (or equivalent)) or acorns (with a 3:1 replacement ratio).

Source: Dudek Memorandum, September 18, 2015; 17A, page 9.

I believe this is incorrect. The ORMP does not require “...*individual native oak trees to be replaced with 15-gallon sized trees...*”; on page 13 of the May, 2015 ORMP (identical language/criteria is in the revised November 2915 ORMP) it states under “*Individual Native Oak Tree and Heritage Tree Impacts*”:

Replacement tree sizes may vary and may include acorn plantings, based on documentation of inch-for-inch replacement consistency included in an oak resources technical report. If acorns are used, they shall be planted at a 3:1 ratio (3 acorns for every 1-inch of trunk diameter removed)

Source: ORMP, May 2015; 13F, page 13. (Identical language/criteria as in the revised November 2915 ORMP.)

In any case, the formula will presumably work in this manner:

Under the tree-for-inch standard, tree planting would not replace the number of diameter inches removed. However, it would require planting of the same number of trees that would have been planted under an inch-for-inch standard that requires use of 15-gallon trees. To compare the two replacement standards, mitigation for removal of one 12-inch tree under the current draft ORMP would require a project applicant to plant 12 15-gallon oak trees; under the tree-for-inch mitigation standard mitigation for the same impact would require planting of 12 trees of any container size, or 36 acorns.

Source: Dudek memorandum of September 18, 2015; 17A, page 13.

Request for Information

- Once again, **efficacy** (and **performance standards**) should dictate oak tree/woodland mitigation, not an arbitrary formula. Please identify in the dEIR the efficacy of such an approach, and identify specific performance standards (such as canopy cover over time).
- Efficacy of mitigation needs to be demonstrated. The two studies described in the Dudek memorandum 17A (Hobbs, et al., 2001; Young, et al., 2005) actually *do not* support the supposition that acorn planting is “better” than planting larger stock. McCreary—also cited by Dudek—mentions multiple caveats to acorn planting—as presented in my comments of September 29, 2015. But the difficulties of acorn use have been largely ignored, presumably due to its lower mitigation cost.

Tree-for-Inch Mitigation

The tree-for-inch (as opposed to the inch-for-inch) mitigation represents another approach to lessening the cost of mitigation for the project applicant at the expense of oak woodland replacement. As written, this tree-for-inch standard can include replacement of one inch of tree with three acorns. Thus, a 12 inch oak could be replaced with 36 acorns (which are intended to yield 12 live trees, not 36 trees). Based on the growth rate of blue oaks (the species most likely to be removed and replaced via mitigation plantings) it could take a *very* long time to replace an oak.



The oak seedling at left is 8 to 10 inches tall and **12 to 16** years old. Below is a 6 to 8 inch tall seedling estimated to be **10 to 15** years old.



Source: Phillips, et al., 1996



This cross section was derived from a blue oak that was 4.5 inches dbh. This oak was estimated to be 95 years old.

Photo Source: Don & Ellen Van Dyke

A study by Standiford²⁰ on blue oak growth rates revealed an average diameter at breast height (dbh) after 50 years that ranged from 3.4 to 4.1 inches. Even under fairly aggressive restoration efforts, the largest mean diameter of the stand was only 3.9 inches.

Request for Information

- How much “dilution” of mitigation can occur before “mitigation” is no longer mitigation? The following statement was taken from the Dudek memorandum dated September 18, 2015 (17A):

The tree-for-inch standard would be the lesser burden for applicants.

This is great for the applicant; not so good for oak woodland resources. After all is said and done, it is important to remember that—while some individuals have requested that mitigation costs be kept as low as possible—**mitigation must be adequate to mitigate loss**. Affordability is not a criterion under which the effectiveness of mitigation can legitimately be degraded.

As this BRPU/ORMP process has moved forward, more approaches to cost/effort reduction have been inserted. Interestingly, I have not seen documentation in the record, nor heard public testimony requesting these cost-saving changes. Therefore, please disclose in the dEIR the motivation behind the changes. That is, are these modifications based on discovery of what other counties have instituted, or based on mitigation successfully performed in other counties—or are these approaches simply designed to reduce costs/effort for applicants, in spite of the fact that there appears to be *no evidence* to support this approach to mitigation? (And by mitigation I mean the successful replacement of oak woodland within a reasonable amount of time—say five to seven years.) If other counties have instituted these changes (acorn use, tree-for-inch replacement, relying on natural regeneration as a mitigation element, etc.,) please supply documentation that supports the efficacy of these measures in “real world” applications.

- Because it is looking less likely any of the mitigation proposals put forth will realistically mitigate for the loss of oak woodland in a reasonable amount of time, it is reasonable to assume the most effective “mitigation” will be either on-site retention (avoiding the impact in the first place), or the purchase of conservation easements that already contain viable oak woodlands. Therefore, in the dEIR, please evaluate this latter form of mitigation as the primary mitigation scenario. Identify the areas of EDC in which conservation easements are most likely to be established, and the anticipated acreage that is available for easement purchase. Also, identify the plant/wildlife component of these areas, and whether these conservation easements will adequately retain/protect a variety of plant/animal communities, or whether they are limited in scope in terms of diversity.

Oak Tree Replacement

According to the ORMP, “any trees that do not survive the 7-year monitoring and maintenance period shall be replaced by the responsible party listed on the Oak Tree Removal permit and shall be monitored and maintained for 7 years.”

²⁰ Standiford, R, et al. 2001. *Modeling the Effectiveness of Tree Planting to Mitigate Habitat Loss in Blue Oak Woodlands*. USDA Forest Service General Technical Report PSW-GTR-184, 2002.

Request for Information

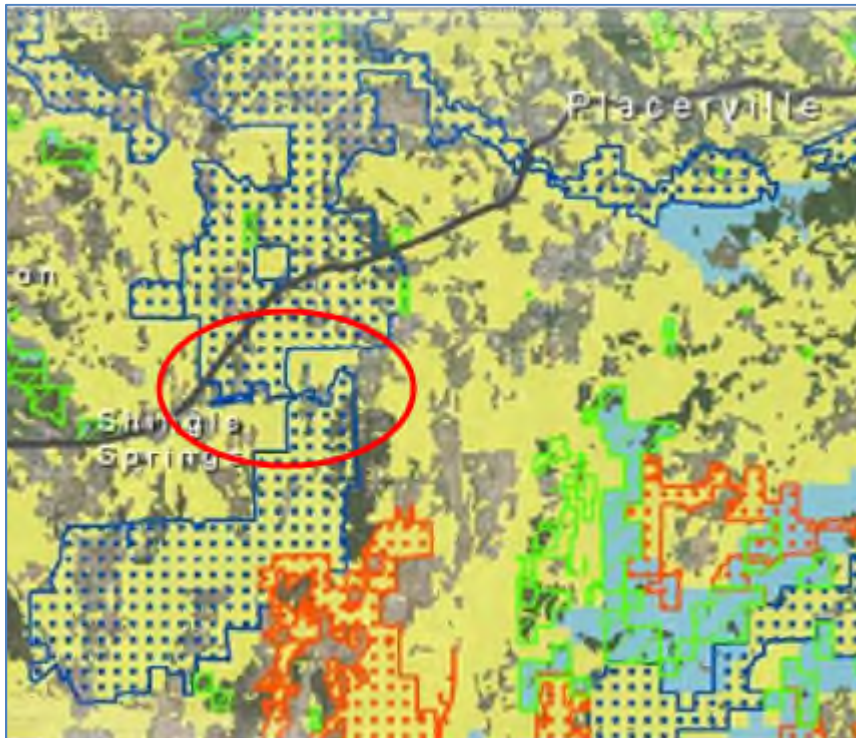
- Please explain in the dEIR how tree replacement is expected to work. That is, are dead trees monitored and replaced annually, or are dead trees only replaced at the end of the 7-year period?

Project Exemptions

- Discuss exemption for County road projects. This is a source of significant impact to oak resources. Bridge projects especially can disproportionately impact valley oak, a species of “special concern.” Discuss—based on scheduled road widening/bridge projects—the anticipated impact to oak resources.

IBC and PCA Maps, etc.

Closer examination of the IBC/PCA maps raises more questions than answers. For instance, in this section of the map, it appears the IBC is greatly constricted in this particular area. Discuss the reason for this constriction—it appears to be artificial.



Request for Information

- Please provide better (more detailed) IBC/PCA maps for each planning area. Identify any outstanding anomalies, and characterize the importance/necessity of each area (what they are designed to protect/serve.)

In Conclusion

In closing I'd like to say the policies proposed in the ORMP represent a significant weakening of environmental protection policies developed under the 2004 General Plan. Therefore, please consider revision to the draft ORMP that strengthen biological resource protections.