

An Incentive to Invest: Understanding the Economic Value of the Upper American and Cosumnes River Watersheds

El Dorado Water Agency (EDWA) convened the Headwaters Connect watershed group to establish a cohesive and shared vision for sustainably managing the headwaters region of the American and Cosumnes Rivers watersheds for long-term resiliency and community prosperity. Consistent with the group's recognition of the need to properly value this working landscape, EDWA performed an initial economic valuation of these watersheds. The watersheds area is approximately 1.5 million acres spanning from the divide of Sierra Nevada to Folsom Reservoir. This area encompasses diverse ecosystems ranging from expansive forests to freshwater bodies to fertile agricultural lands. These ecosystems are working landscapes that produce goods, like food and clean water, and services, such as recreation and flood protection. These ecosystem goods and services provide a myriad of valuable benefits for local communities as well as throughout the state, nation, and even globally.

THE HEADWATERS REGION OF THE AMERICAN AND COSUMNES RIVERS WATERSHEDS IS A NATURAL CAPITAL ASSET WORTH \$1.6 TRILLION OVER 100 YEAR PERIOD BASED OFF A \$14.9 BILLION ANNUAL VALUE

WHY OUR HEADWATERS ARE IMPORTANT



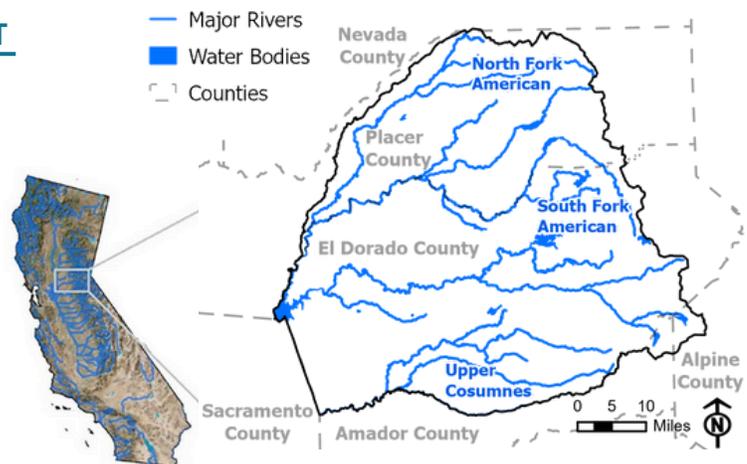
They provide a multitude of benefits that transverse watersheds - locally, statewide, and beyond.



Working landscapes are the foundation of rural economies.



Integrating nature-based features are critical to building resilient communities.



WHY PUT A MONETARY VALUE TO NATURE?

Understanding the watersheds' economic value gives us an incentive to invest.

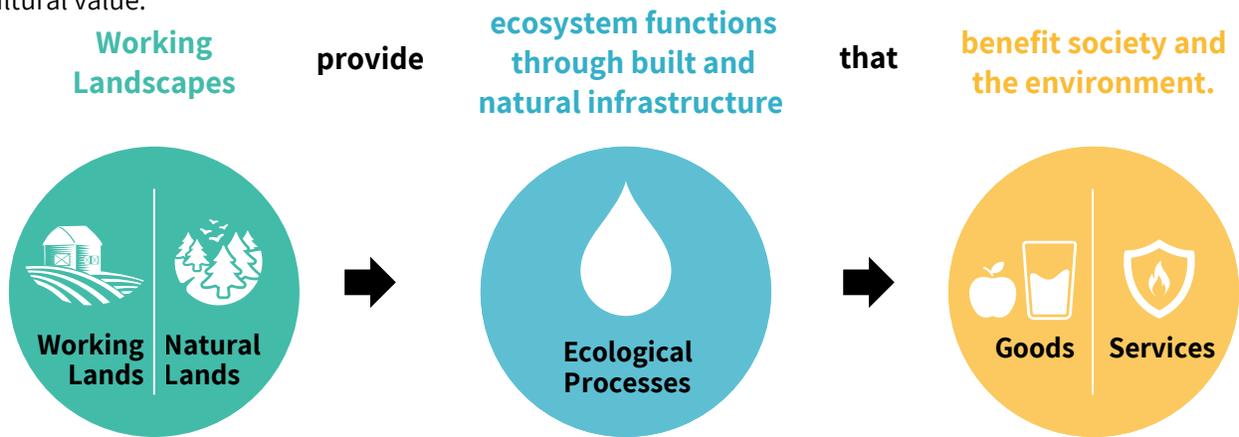
- Enables informed investments of both natural and built capital.
- Justifies a multi-agency, holistic, and multi-beneficial approach to sustainable watershed management.
- Expands understanding of these watersheds' value to promote innovative management and financial strategies to facilitate landscape-scale improvements.



ECONOMIES NEED NATURE

Watershed goods and services are essential for a prosperous economy and high quality of life. The lands within these watersheds provide critical economic, environmental, and community benefits. The watersheds' **working landscapes** include agricultural lands, forests, and rangelands and natural lands such as conservation lands, shrublands, wetlands, greenspace, open water, rivers, and lakes. These working landscapes are **natural capital assets** that produce valuable ecosystem goods and services including food, water, clean air, hydroelectric power, beauty, drought and fire risk reduction, habitat, recreation, and more.

Ecosystem goods are the tangible products such as food, timber, and water provided by the working landscapes and **ecosystem services** are intangible benefits such as flood protection, recreation, and cultural value.



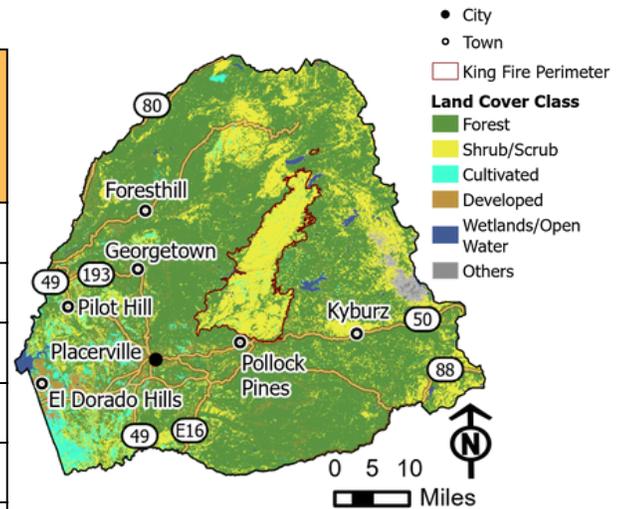
We analyzed four broad categories that reflect specific benefits to society, the economy, and the environment.



- **Provisioning services** provide physical materials; for example forests in the watersheds provide clean drinking water to local residents as well as downstream communities.
- **Cultural services** provide people with meaningful interactions with nature. These can include scientific and educational opportunities, recreation, and cultural value.
- **Supporting services** include biodiversity, habitat, refuge for plants and animals as well as nutrient cycling.
- **Regulating services** help maintain water quality, temperature, and flow and its timing; for example wetland and forest soils can slow and cool water flows and filter waste and contaminants.

OUR WATERSHEDS ARE VERY VALUABLE

Land Cover	Annual Value (\$/Acre/Year)	Acres in the Watersheds	Estimated Annual Value in the Watersheds (\$/Year)
Forest	\$12,958	1,078,366	\$13,973,000,000
Shrubland	\$1,762	272,237	\$480,000,000
Grassland	\$1,161	60,798	\$71,000,000
Agriculture	\$9,416	5,994	\$56,000,000
Wetland	\$5,772	2,498	\$14,000,000
Open Water	\$11,020	17,013	\$187,000,000
Developed, Open Space	\$2,074	47,468	\$98,000,000
Total	n/a	1,484,374	\$14,879,000,000



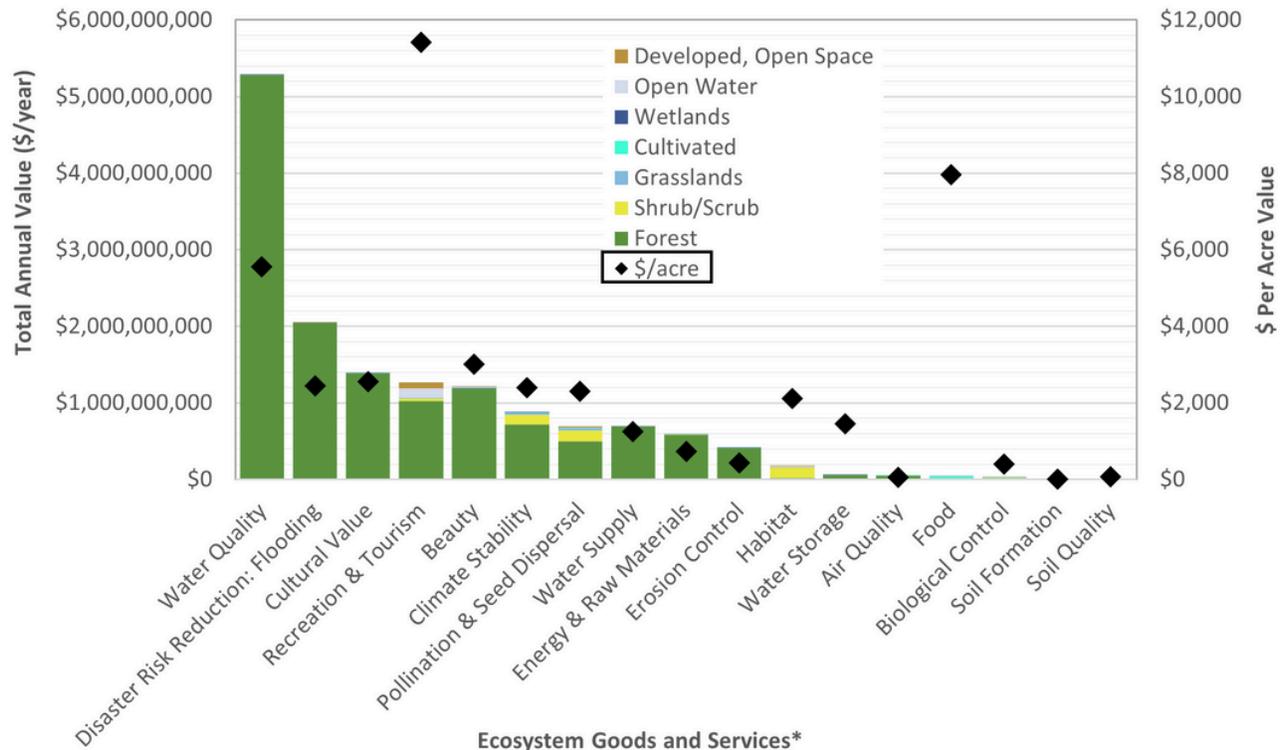
These watersheds provide
\$14.9B/year

in goods and services delivered to people globally.

Note: Estimates are conservative. Only one half of the goods and services provided to these watersheds were valued.

ANNUAL VALUE OF THE VARIOUS LAND COVER TYPES

Each land cover type provides different ecosystem goods and services and plays an important role to society, the economy, and the environment. In these watersheds, forests provide the highest per acre benefit and cover the largest land acreage. Forests are highly susceptible to natural disasters such as wildfires that take decades to recover from.



* Not all ecosystem goods and services fully valued for this analysis. Only those valued are presented; actual value may be higher.

OUR HEADWATERS ARE UNDER THREAT AND INVESTMENTS ARE NEEDED TO PROTECT IT

The greatest obstacle for reaching sustainable and equitable investments in these watersheds is that the watersheds and their health are not properly valued. When healthy, the watersheds' working landscapes are self-maintaining and will produce indefinite value for people.

Our watersheds faces many threats



Drought



Wildfire



Floods



Declining forest health

Investment is required to restore, protect, and enhance the productivity of the watersheds which, is critical for maintaining a strong economy and high quality of life.

UNDERSTANDING THE VALUE OF NATURAL CAPITAL HELPS INFORM WATERSHED MANAGEMENT AND INVESTMENT DECISIONS

Natural systems have not been valued as economic assets and as a result there has been an underinvestment in maintaining the health of working landscapes. Understanding the economic value of the watersheds will help local, state, and federal agencies, Tribes, non-profits, businesses, downstream beneficiaries, and interested parties better coordinate, prioritize and justify investments in watershed projects as well as develop sustainable water management practices while meeting the needs of adjacent communities. Specific benefits include:



Estimating the true return on investment of forest management actions such as hazardous fuel reduction, wetland creation, invasive plant removal, and post-fire replanting.



Integrating natural and built capital investments by combining local, state, and federal funding to enhance ecosystem goods and services production and accessibility to make meaningful landscape-level improvements.



Scaling investments in natural capital to improve rural community resilience and sustainability and reduce built capital expenditures.



Establishing partnerships among various agencies to develop and implement innovative solutions to protect and maintain the watersheds.

NEXT STEPS FOR IMPLEMENTATION

Share with watershed beneficiaries the importance of investing in the watersheds.

Increase coordination of stakeholders within and beyond the watersheds.

Include ecosystem good and services benefits in watershed management plans, strategies, and funding streams.

Use economic value to support increased investment in agriculture, sustainable forestry, conservation, and healthy ecosystems to strengthen the local economy.

Contact

El Dorado Water Agency
edcwa@edcgov.us
(530) 621-6673

For more information visit: edwateragency.org/Pages/UARWatershed.aspx