



COUNTY OF EL DORADO

CAO, Parks Division

River Management Program

330 Fair Lane, Bldg. A

Placerville, Ca 95667

El Dorado County River Management Plan 2018 Annual Report



Prepared by Noah R. Triplett, River Recreation Supervisor

El Dorado County River Management Plan 2018 Annual Report

Table of Contents

	Page
Introduction.....	1
Flow Outlook.....	2
Annual River Use.....	4
Carrying Capacity Monitoring and Implementation	8
River Section Use Preferences.....	9
County Parks River Patrol Activities	10
El Dorado County Sherriff's Activities and River Use Permit Compliance	21
Transportation and Traffic	22
Water Quality Monitoring	22
Other RMP Observations and Comments.....	23
Budget	24

List of Tables

Table 1.	SMUD UARP Flow Schedule below Chili Bar Dam by Water Year Type.....	4
Table 2.	River Counts between Coloma and Hwy 49 Bridge.....	4
Table 3.	River Trust Fund balance and fiscal year 2018-2019 budget summary.....	25

List of Figures

Figure 1.	California Snow Water Content Comparison Panel.....	2
Figure 2.	South Fork of the American Flow Chart 2014-2018 at Chili Bar Dam.....	3
Figure 3.	Henningsen Lotus Park High Water Photo February 10, 2017.....	3
Figure 4.	River Use Totals with Water Year Type 2006-2018.....	5
Figure 5.	Boat Density Gorge run in 2012-2018.....	9
Figure 6.	Preference of Runs Memorial Day to Labor Day Weekend 2017-2018.....	10
Figure 7.	2017/2018 River Program Budget.....	25

List of Photos

Photo 1.	Inner Tubers putting in near Coloma.....	12
Photo 2.	Stranded rafter and wrapped raft in Meat Grinder Rapid.....	13
Photo 3.	River Patrol Assisting Stranded Rafters in Meat Grinder Rapid	14
Photo 4.	Loading trash after the Chili Bar River Clean Up	15
Photo 5.	People enjoying the river by the newly completed Hwy 49 Bridge.....	16
Photo 6.	Boat Ramp at Salmon Falls take-out.....	17
Photo 7.	Boat Ramp at Skunk Hollow take-out.....	18
Photo 8.	Surfers at Barking Dog wave	19
Photo 9.	South Fork of Silver Creek below Ice house Reservoir.....	20
Photo 10.	Breaking up log jam on the Rubicon River.....	21

Appendices

Appendix A	Water Quality Monitoring Program and Testing Results.....	26
Appendix B	Sheriff's Department Boating and Safety Unit Summary.....	34

El Dorado County River Management Plan 2018 Annual Report

INTRODUCTION

The El Dorado County River Management Plan (RMP) 2018 Annual Report provides information on the 2018 river season and RMP implementation.

The 2018 Annual Report is presented to the Parks and Recreation Commission at a public session.

In 2018, the County completed a comprehensive update to the 2001 County River Management Plan (RMP). The plan was adopted by the Board of Supervisors (BOS) on February 13, 2018. One notable change with the adoption of the updated RMP, is the definition of “Institutional” was changed, requiring that the most of the Institutional Groups be issued River Use Permits. At their September 26, 2017 meeting the BOS gave a deadline of three years to accomplish this goal and stated that “if an issue arises that is insurmountable and could cause a non-profit to cease river trips, staff will revisit the issue and bring forward any necessary recommended changes to the Board”.

Upon adoption of the updated RMP, the BOS directed staff to revisit Resolution 065-2002 regarding the River Management Advisory Committee (RMAC). The RMAC has held public committee meetings in addition to regularly scheduled meetings in order to prepare a recommended update to the resolution. The BOS will be considering their resolution to the update sometime in the beginning of 2019.

RIVER VALLEY

The 21-mile section of the South Fork of the American River from Chili Bar Dam to Folsom Reservoir continues to be one of the most rafted and kayaked rivers in the State of California with annual use averaging well over 100,000 people. This river flows through the seven mile long Coloma Lotus Valley, also well known as a historical and national recreational destination. There are four large public campgrounds in addition to the Marshall Gold Discovery State Historic Park, Henningsen Lotus County Park, and a number of Bureau of Land Management (BLM) parcels that are located along the river. Public trails provide access to the river and, in some areas, run adjacent to the river at either end of the valley. Public access to the river is available at the State Highway 49 Bridge, as well as nine private properties with Special Use Permits. Residential homes and vacation rentals are adjacent to the river throughout the valley. The number and diversity of recreational facilities and privately owned properties along the river combined with the annually scheduled recreational water release flows, make the South Fork of the American River a globally recognized destination for class II-III boating as well as other forms of river recreation.

WATER FLOWS

The precipitation for 2018 ended up being below average for the water year. The snowpack water content on May 1, 2018 was about 25 percent of average to date as compared to 180 percent on May 1, 2017. The precipitation range for the state was as high as 90 percent of average in the northern part of the state and as low as 30% in the southern part of the state. Overall state percent of average precipitation was 75 percent. Reservoir storage statewide was also 75 percent of average overall which was down from 110 percent in 2017. The complete CA Department of Water Resources Bulletin 120 (May 1, 2018) report can be found at <http://cdec.water.ca.gov/snow/bulletin120/>.

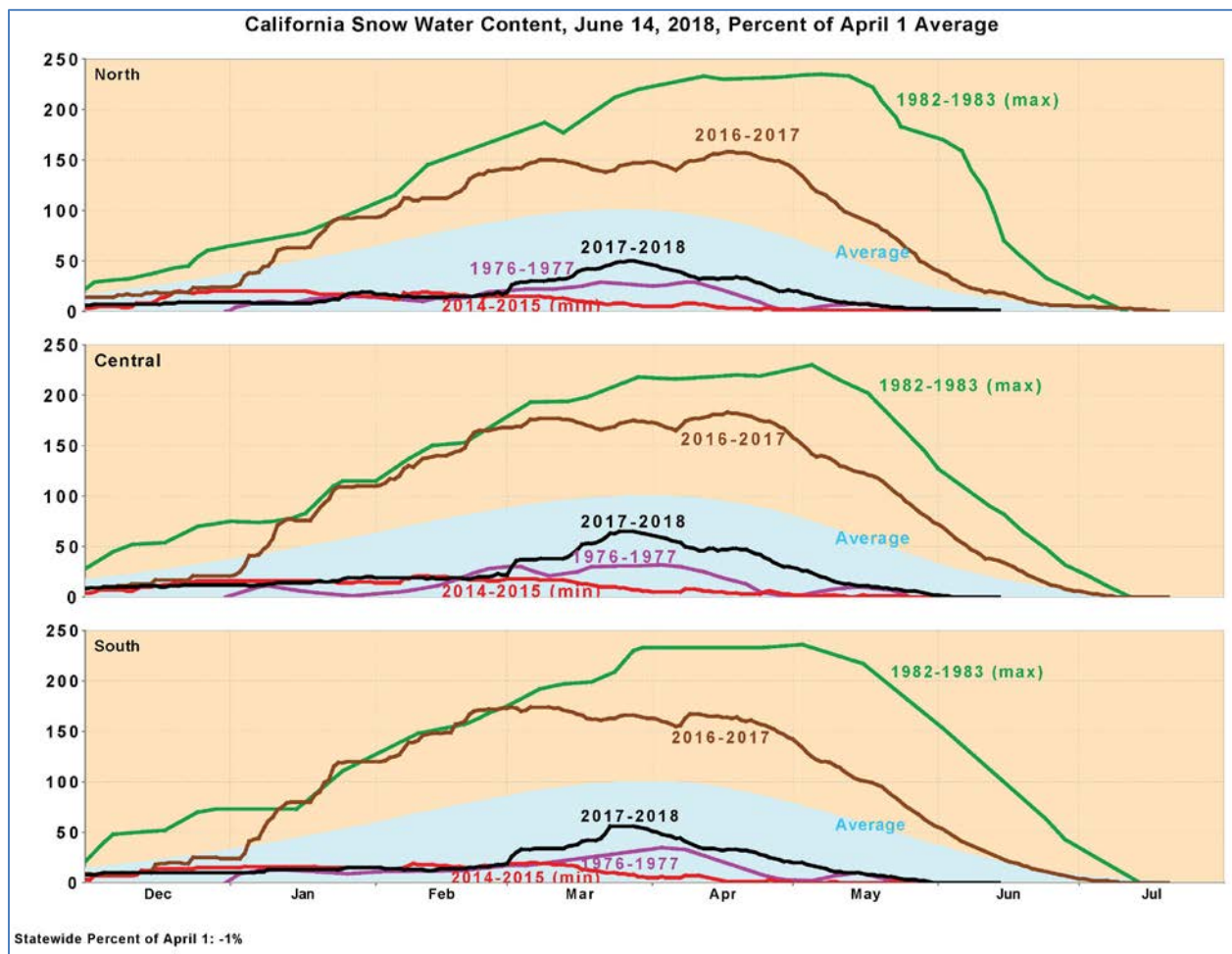


Figure 1. California Snow Water Content Comparison Panel

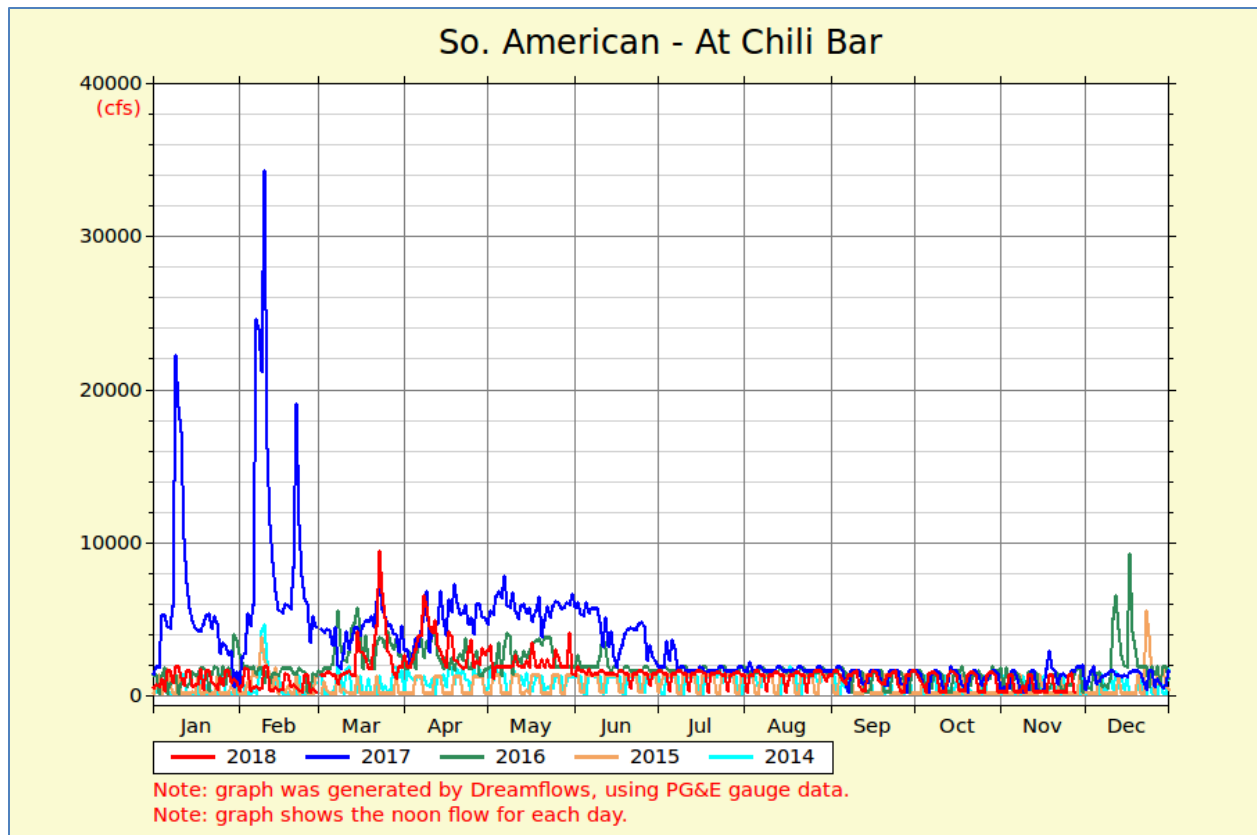


Figure 2. South Fork of the American River Flow as recorded at Chili Bar Dam 2014-2018

The water year type in 2018 was designated as a “Below Normal” year; last year was designated “Wet”. The water year type assigns the release schedule out of Chili Bar Reservoir for river recreation. These recreational releases are required as part of Sacramento Municipal Utility District’s (SMUD) and Pacific Gas and Electric’s (PG&E) Federal Energy Regulatory Commission (FERC) license for dams on the South Fork of the American River. In a below normal year there are daily recreational releases every day except Wednesdays between Memorial Day weekend and Labor Day weekend. The release volume was between 1,300 and 1,500 cubic feet per second (CFS), which provided quality whitewater during releases. The change in water year type from last year resulted in one less day of water (Wednesday) and shorter releases. The number of releases after Labor Day weekend was the same as a Wet year. Water Year Type designations with corresponding flow schedules out of Chili Bar Dam can be seen in table 1 below.

South Fork American River Below Chili Bar Reservoir Dam Minimum Recreational Flow by Water Year (cfs)								
WATER YEAR								
TYPE	PERIOD	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Super Dry	April - Memorial Day	3 Hrs @ 1300					3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day - Labor Day	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1300	5 Hrs @ 1300
	Labor Day - September						3 Hrs @ 1300	3 Hrs @ 1300
	October - March						3 Hrs @ 1300	
Critically Dry	March - Memorial Day	3 Hrs @ 1300					3 Hrs @ 1300	3 Hrs @ 1300
	Memorial Day - Labor Day	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Labor Day - September					3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October - February						3 Hrs @ 1300	
Dry	March - Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300			3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day - Labor Day	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	5 Hrs @ 1500	5 Hrs @ 1500
	Labor Day - September					3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300
	October - February						3 Hrs @ 1300	3 Hrs @ 1300
Below Normal	March - Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	Memorial Day - Labor Day	3 Hrs @ 1300	3 Hrs @ 1300		3 Hrs @ 1300	3 Hrs @ 1300	6 Hrs @ 1500	6 Hrs @ 1500
	Labor Day - September				3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1300	3 Hrs @ 1300
Above Normal	March - Memorial Day	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	3 Hrs @ 1300	4 Hrs @ 1750	4 Hrs @ 1750
	Memorial Day - Labor Day	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Labor Day - September				3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1500	3 Hrs @ 1500
Wet	March - Memorial Day	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Memorial Day - Labor Day	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	4 Hrs @ 1500	6 Hrs @ 1750	6 Hrs @ 1750
	Labor Day - September				3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500	3 Hrs @ 1500
	October	3 Hrs @ 1300				3 Hrs @ 1300	3 Hrs @ 1500	3 Hrs @ 1500
	November - February						3 Hrs @ 1500	3 Hrs @ 1500

Table 1. Chili Bar Dam Release Schedule by Water year Type (2018 was Below Normal)

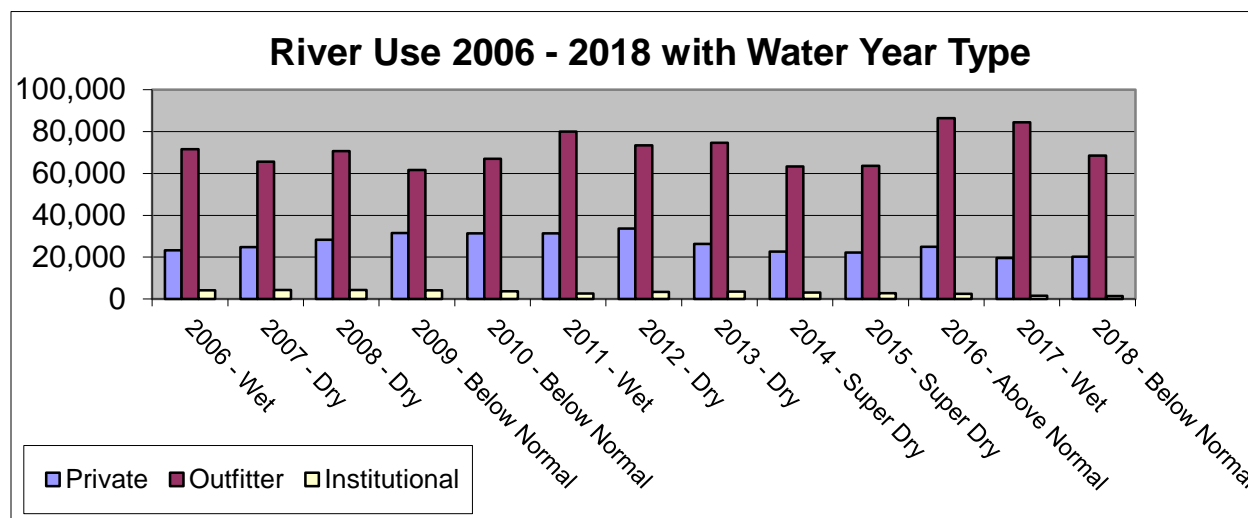
RIVER USE

Use in 2018 decreased in comparison to the two previous years with over 90,277 total boaters (not including outfitter guides) counted. This was a decline of just under 15% of use from 2017, which was the second highest river use year in the previous 10 years with just over 105,641 boaters recorded. A lack of scheduled water release on Wednesdays can be attributed for some of the reduction in use in 2018. However, there was a slight increase in the use by private boaters and a slight decrease by institutional groups in 2018.

According to the US Energy Information Administration (EIA), 2018 had higher average higher summertime gas prices than 2016 and 2017. Summertime gas prices in 2017 were on average the lowest since 2005. The US Bureau of Labor Statistics reported a summer time low unemployment rate of more than 3.9% in 2018 which was lower than last year's summer time

low unemployment rate of 4.3%. However, both were the lowest summer time low rates in the last 10 years. The US Bureau of Labor Statistics also reflects that the Consumer Price Index (CPI) continued to increase around 2%. Overall, there were a number of economic indicators that showed a 2018 has continued a trend of good US economic health. It is hard to pinpoint how many economic factors influenced people's decisions to go rafting. The fact that the snow pack was low may have influenced perception that rafting was not as good as in years with a higher snow pack not understanding that river recreation quality is not diminished on the South Fork since the good quality flows are dictated by dam releases.

Spring runoff (snow melt) is contained behind dams which control the river level on the South Fork usually beginning in May. The availability of whitewater on the river is consistent year to year from the scheduled recreational water releases. *Figure 1* below shows the river use totals for commercial outfitters (68,509 guests), private boaters (20,273 people) and institutional groups (1,495 people) from 2006 to 2018 as well as the corresponding water year type. SMUD began providing releases based on the water year type in 2006. The river use numbers only reflect the use on the class III sections of river for private boaters from the days that photos were taken.



*Commercial Use Number do not include guides and guide trainees

Figure 4. River Use Totals 2006-2018

The majority of river use and days of scheduled releases occur between Memorial Day weekend and Labor Day weekend. Eighty-five percent of commercial outfitter and eighty-seven percent of private use occurred between Memorial Day weekend and Labor Day weekend. In 2017, the percentage was the same for outfitters but slightly lower for private boaters at Eighty-three percent. Eighty-nine percent of the Institutional use occurred between Memorial Day weekend and Labor Day weekend in 2018 as well.

The peak day of total river use was August 4, 2018 with a total of 2,754 people. This was lower than last year's peak total of 2,919 people and 2016's peak of 3,011 people. If there were exceedances of daily use on the river or an exceedance to the boat density threshold on the South Fork, mitigation measures would need to be implemented.

The peak use on the lower (Gorge) section for 2018 proved to be less than the peak in 2017, recorded at 1,807 people on Saturday, July 7, 2018. Peak use on the upper (Chili Bar) section was recorded at 1,079 people on Sunday, September 2, 2018, which matched the 2017 peak use.

The 5-mile middle section of river from Coloma to Greenwood Creek in the Coloma/Lotus valley continues to be a popular class II section of river. Boaters, campground visitors, residents and tourists enjoy floating on inner tubes or in small rafts on this section. There is a continued concern that alcohol bans on other regional rivers during holiday weekends would attract the drinking inner tube parties to the South Fork of the American River. This has yet to be seen and there has not been an increase in citations issued by the Sheriff's Department. A glass ban on the river, implemented in 2017 with additional signage, appears to have reduced glass containers being brought on the river. In 2018, significantly less people were inner tubing on the river during the first part of the summer.

The seasonal use on the middle section has been difficult to quantify due to the many put-in and take-out locations along this section of river. Use during non-scheduled release days and use at minimum flows along with the ability for users to run multiple trips in a day, adds to the complexity of capturing the use numbers for the middle section. There are approximately 30 weekend days annually between Memorial Day weekend and Labor Day weekend. Based on prior year counts, a conservative estimate of use for this section could easily be 9,000 people based on an average of 300 people per weekend day. These past counts include class II boaters, inner tubers and other casual floaters who are not usually counted on the class 3 sections of river.

Counts were done twice on the Coloma to Greenwood section for 2018. Counts below Marshall Gold Discovery State Historic Park in the past have shown as many as 400 inner tubers floating this section on holiday weekends. The two counts from this this past season are reflected in the table below.

Date	People*	Rafts	Kayaks	Inflatable Kayaks	Inner Tubes	Other Craft	Alcohol Observed	No Lifejackets
8/11/2018	1415	162	103	53	305	4	0	14
9/2/2018	1628	190	66	39	295	14	5	13

*This does not include outfitter guides

Table 2. River Counts between Coloma and Hwy 49 Bridge

There averages less than one boating related death on the South Fork per year on the section of river between Chili Bar Dam and Folsom Reservoir. In 2018, there were no boating related deaths.

OUTFITTER USE

Commercial outfitters are the primary source for public rafting excursions down the South Fork. There were 24 permitted outfitters in 2018; which was three fewer than 2017. There are two river use permits that are not issued by the County.

The consolidation of outfitters on the South Fork and rivers nationwide has been an ongoing trend over the last 15 years. This has resulted in more companies having multiple trips on the water or larger trips more frequently, impacting other river users when these companies' trips overlap. Overlapping typically occurs at lunch rest spots and at various locations on the river when one trip slows down for photos, groups join up for takeout, or when a full river trip catches up to a trip doing just the lower section. In 2018, there was a reduction of this activity due to better management by the companies and possibly in part due to the decrease in use. There was also a change in the RMP about boat spacing which should have helped with this issue. One of the 24 outfitters has been given the power of attorney to operate another company which creates a unique situation but there were no negative effects observed in 2018 due to this situation.

The 2001 RMP requirement for keeping trips, defined as 7 rafts, of the same company separate so "sufficient distance between groups should be maintained so that, if needed, other individual boats may fit in" was changed with the adoption of the 2018 RMP. This change requires that trips of the same group be out of sight of each other when on the river and when launching trips they are initially spaced out by five minutes time. An exception to this change is to allow for the regrouping of trips below Hospital Bar Rapid for trip consolidation of shuttles and improved efficiency at take-out (Salmon Falls).

Another change in the 2018 RMP is the requirement stipulating how far apart rafts in the same trip can be.. This is to encourage safety and any negative river experiences associated by other river users from having trips spread out over long distances. The change states that "Rafts in a group shall remain in reasonably close proximity between Chili Bar and Trouble Maker Rapids and between Fowler's Rock and Hospital Bar Rapids (class III sections) to give assistance, whenever needed, without unnecessary delay".

There have also been a number of complaints in addition to observations in past years by County Parks River Patrol of rafts passing other rafts in class III rapids along with entire trips being integrated into other trips running through class III rapids. This brought up a number of safety concerns in addition to etiquette concerns. Trips should not be integrating in Class III rapids and this practice is prohibited in the RMP update as well. A trip's lead raft should be communicating with the other trip's sweep boat about passing. The use of hand signals and proper boat spacing by both trips should negate the need to pass other trips in the middle of class III rapids. The 2018 RMP adopted the regulations that trips shall not purposely integrate into another's group trip in Class III whitewater.

INSTITUTIONAL GROUP USE

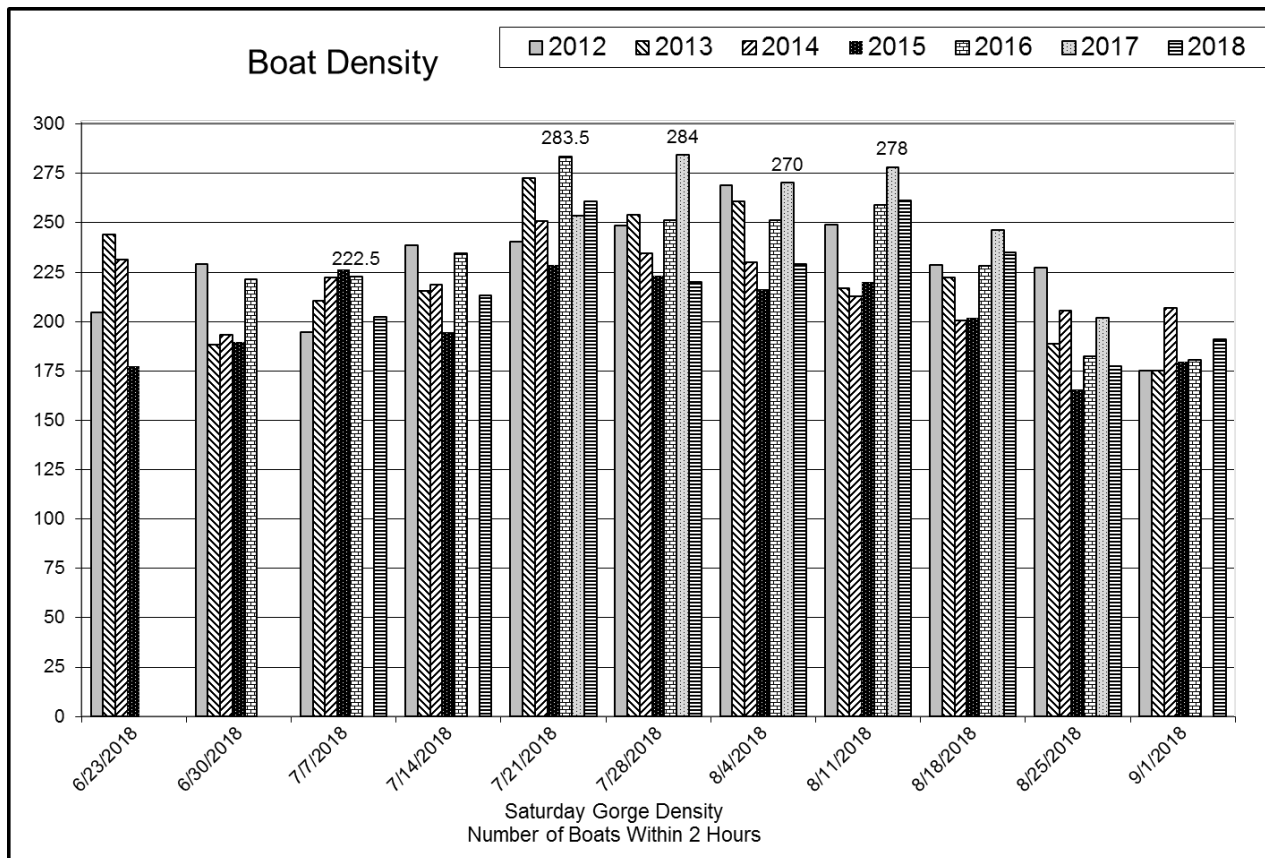
There were five Institutional Groups registered in 2018 which ran season long rafting programs in addition to Lake Tahoe Community College which taught a whitewater rafting course. As mentioned above, the County Institutional Group registration category of user group was changed with the 2018 update to the RMP. Only organizations teaching accredited educational courses will be able to continue to register as an Institutional User Groups as proposed in the updated RMP. The County is committed to working with the current Institutional User Groups who are not teaching accredited educational courses over the next three years to transition them into the Outfitter River Use Permit system so that there is better parity between regulating agencies, better understanding by user groups and better management of river users.

BOAT DENSITY

The boat density safety measure, designed to prevent boating safety hazards from occurring due to boat congestion on weekends, were also within allowable levels. Boat density is the total number of boats passing a prescribed point on the river in a two-hour period. This level is 300 boats, and if river use exceeds this threshold at designated rapids more than twice in one season, a set of incremental management actions will be implemented with the objective of regaining those thresholds.

For counts Rafts are counted as one boat, while kayaks, inflatable kayaks, and inner tubes are counted as $\frac{1}{2}$ a boat. Rafts are larger and take up more space on river which is why smaller crafts like kayaks are counted as $\frac{1}{2}$ a boat. Typically only one raft can run a rapid at a time and there are possible limits on the river of how much room there is to properly set up safety below rapids or keep a safe spacing distance between boats.

Counts were done on Saturdays at Fowlers Rapid and Trouble Maker rapids in 2018. Counts were started in the beginning of July. The highest count within a two-hour period was on August 11, 2018 with 261 boats counted which was the lowest boat density counted since 2015. Counts on the upper have not been recorded since 2015 as the counts showed that boat density was not nearing its limits. Counts on the upper in 2018 confirmed that boat densities were still substantially lower than the identified exceedance thresholds with the peak counted at 115.5 boats counted on September 2, 2018. The peak count on the upper section in 2015 was 121 boats on August 2. *Figure 2* on the next page reflects the peak density counts on the gorge section for the last seven years. Please note that counts are not done every Saturday during the river season. Based on past trends, the County has found that counting on the six weekends starting the second weekend in July and through the third weekend in August makes the most sense regarding capturing peak boating densities.



*Two Kayaks or Single Person Crafts are equal to one boat

Figure 5. Gorge 2 Hour Boat Density 2012-2018

No mitigation measures to restrict boating use will be required in 2019 by the County due to no exceedance in boat density or in overall use on either section of river in 2018. Sources of data for estimating river use were outfitters monthly operating reports, County Parks on-river observations and Hotshot Imaging Photo data of noncommercial river use on the Chili Bar and Gorge Runs from April 13, 2018 through October 7, 2018.

RIVER USER PREFERENCES

Preference between the two sections of river is exhibited by outfitters for Saturday Gorge trips and by noncommercial boaters over the Chili Bar Run since the 1990's. In 2018, there was a slight decrease in this preference by noncommercial boaters which has been a continuation of a trend starting in 2015. Outfitter trip preference is gathered from monthly operating reports. Private boat preference is done by looking at photos but not to the detail that identifies whole river trips from an upper or lower river trip. Commercial outfitter whole-river trips have historically been a reflection of the higher flows and continuous flows generated by the increased runoff from snow pack. Years with better snow pack and a longer runoff reflect this trend. In 2016, there was slight increase in whole-river trips and in 2017, there was an even more significant increase in whole river trips. Both 2016 and 2017 had higher releases scheduled and a longer snowmelt runoff period. In 2018, there was a reduction in the whole river trips from the

last two years which supports the theory about higher flows and continuous flows impacting the decision to run whole river trips. The pie charts below, shown in *Figure 6*, compare 2017 to 2018 preferences in runs by commercial and noncommercial users.

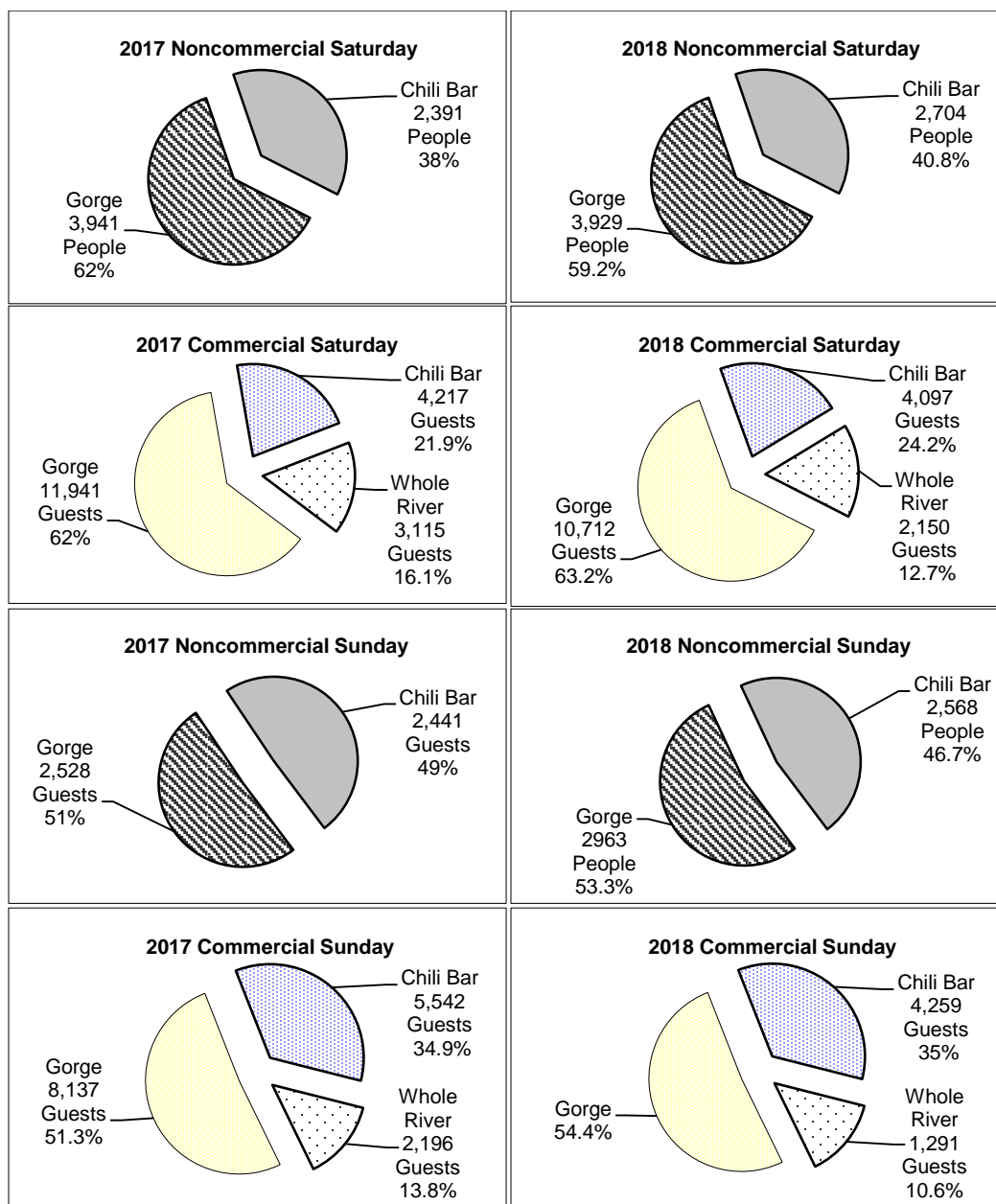


Figure 6. Preferences in Runs Memorial Day to Labor Day Weekend 2017 and 2018

COUNTY STAFF ACTIVITIES

The County Parks River Program was staffed by five people in 2018, including the River Recreation Supervisor and four seasonal river patrollers (River Instructors). This staff was responsible for implementation of the RMP. This was the highest number of river instructors

ever hired and allowed for an increased presence in the Coloma to Greenwood section of river, an increased presence during weekdays, and a reduction in solo boat patrols. The County Parks Division provided administrative support. Additionally, the County utilized volunteers periodically during the season.

The river patrol's daily activities primarily included boater education on river and at river access points, river safety patrol, quiet zone patrol, and river use monitoring. The emphasis among these four activities varied throughout the season, day of the week, and the river section a patroller was working. On weekdays two patrollers worked on one of the two Class III sections. On weekends, two patrollers worked on the Gorge Run, combining aspects from each of these activities during the work day. Two patrol staff monitored river use at Chili Bar put-in and performed a patrol on the Chili Bar Run. Patrollers working on the Chili Bar section typically would do a second or third patrol from Coloma to Henningsen Lotus Park (HLP) unless they were going down to Greenwood Cr. or Salmon Falls. Most of the Class II use occurs in the Coloma to HLP section. Having the additional staff also allowed for better staggering of presence at put-ins and better overall coverage than in the past when staff needed to take time off. Staff also helped to maintain the three BLM composting toilets during the season.

An overview of the river patrol activities in 2018 are outlined below:

Provide River and Boater Education for Private Boaters onshore Recreationists:

- Made contact with approximately 6,691 river users during the 2018 river season.
- Provided boating safety, boater responsibilities, private property education, river etiquette, leave no trace education, and river flow information at river accesses and on river.
- Implemented private boater tag registration system.
- Implemented large group registration system.
- The County River Program interprets the California State life jacket laws that a life jacket (PFD) must be worn in class II or higher whitewater. It is the River Programs opinion that in whitewater you do not have time to put on a life jacket when there is an accident and it is easy to become separated from your boat and equipment in moving water. Stocked kiosks with free waterproof river maps with the locations for restrooms, put-ins and take-out locations, quiet zone locations, names of rapids with GPS coordinates, public and private land designations, agency and campground phone numbers along with a boating safety checklist.

River Safety Patrol:

- Completed approximately 169 river patrols covering 1,633 miles.
- Aided boaters (i.e. wrapped boats and swimmers) at key rapids in addition to monitoring river use. On a daily basis, patrol staff helps get people back to their boats and their gear back together. Additionally, staff assists people get to their take-out point safely which included floating them to their take-out location when needed.
- Provided a safety/sweep function by running the Class III sections late in the day.
- Placed a backboard, c-collar, and head stabilizers below Meat Grinder, Satan's Cesspool and Fowlers Rock rapids for the regular (May-October) boating season.

- Remove hazardous trees that created obvious hard-to-avoid strainers. There were also number of ropes and other smaller hazards that were removed during the season.
- There were a number of pieces of construction materials from the Hwy 49 Bridge project which were removed from the river during its construction over the last two seasons.
- Assist in body recovery and missing person searches as needed. This was not needed in 2018.
- Assist and coordinate with BLM, State Parks, El Dorado Co. Sheriff and CHP Helicopter unit.
- Instructed river users on how to navigate safely on the river along with how to use the water craft they were using on the river.



Photo 1. Inner Tubers putting in at a campground in Coloma



Photo 2. Stranded Rafter and wrapped raft in Meat Grinder Rapid



Photo 3. County Parks River Patrol Assisting Stranded Rafters in Meat Grinder Rapid

Quiet Zone Patrol:

- On-river Patrol provides both river safety education and enforcement through the Coloma to Greenwood section.
- Emphasis on controlling quiet zone noise, use of public lands, litter education and use of life jackets by all boaters and inner-tubers.
- Provide safety information and aid to people floating/boating on the class II section.

River Use Monitoring:

- Conducted monitoring on weekends for the carrying capacity system.
- Audited commercial outfitter river use.
- Tracked noncommercial/private river use levels

Education and Outreach

- Coordinated and held a beginning of the season meeting with State Parks and BLM for outfitter guides and managers. In addition to covering pertinent rules and regulations, there were presentations by the CHP Air Operations Helicopter Unit, Garden Valley Fire Department, CalFire, Friends of the River, American Whitewater, Marshall Gold Discovery State Historic Park Interpretive program and a member of the U.S. Gold Panning Team.

- Staffed the El Dorado County Parks booth at the International Sportsman's Expo youth fair at CalExpo providing education on river boating safety and proper life jackets for river recreation.
- Provided navigation education, additional river access information and additional signage to the public regarding the construction of the new Hwy 49 Bridge.
- Executed a river cleanup on each section of the river (upper, lower and Coloma to Greenwood) that had close to 150 volunteers in total which was twice as many as in 2017. Each river cleanup yielded a truck load of trash or more.



Photo 4. Loading trash after the Chili Bar River Clean Up



Photo 5. People enjoying the river by the newly completed Hwy 49 Replacement Bridge



Photo 6. Boat Ramp at Salmon Falls take-out



Photo 7. Boat Ramp at Skunk Hollow take-out



Photo 8. Boogie Boarding and Surfing Barking Dog

Other Activities

In 2018 the Parks River Program assisted in some activities that were not on the South Fork of the American River. Staff assisted Eldorado National Forest on a recreation assessment and river trip on the South Fork of Silver Creek for their input into their management plan which is being created as part of the implementation of the newly adopted Federal Energy Regulatory Commission (FERC) relicense for the Upper American River Project (UARP). Staff also assisted in the breaking up of a log jam on the Rubicon River which was threatening the stability of the bridge on the Rubicon Trail. Both projects utilized the specialization and skills of the program and its staff.



Photo 9. South Fork of Silver Creek below Ice House Reservoir



Photo 10. Breaking up the log jam on the Rubicon River along the Rubicon Trail

Enforcement Activities

Parks River Patrol enforcement powers are limited and staff cannot:

- Issue citations for State, Federal or County laws
- Issue violations to private boaters or other private river users
- Write parking tickets
- Issue violations for Special Use Permits (Code Enforcement)

In 2018, the Sheriff's Boating Unit occasionally ran the whole river on Saturdays and Sundays in June, July, and August. The Sheriff's Boating Unit also ran some Inflatable Kayak patrols from Marshall Gold State Historic Park to Henningsen Lotus Park. Currently, there are no trailer accessible boat ramps for the Sheriff's Boating Unit to put-in or take-out their rafts in Coloma which makes emergency response less efficient. They also have a similar challenge for put-ins or take-outs in the Greenwood Creek area. The County Sheriff has the authority to issue citations for both State and County life jacket violations along with other related County Ordinances, such as private boater violations of the quiet zone. A summary of the Sheriff's Boating Unit activities from 2018 can be found in Appendix B.

OUTFITTER VIOLATIONS

The list of outfitter river use permit violations was updated in the 2018 RMP to cover all permit requirements and the County Ordinance Code. The list of violations can be found in Element 6.2.10 in the 2018 RMP.

County Parks did not issue any permit violations in 2018. A number of warnings were issued throughout the season. Having the extra patrol staff may have attributed to this.

TRAFFIC USE

Traffic counts are performed by the County Division of Transportation (DOT) and California Department of Transportation (Caltrans) on roads within the project area. The traffic counts for DOT and Caltrans can be found here edcapps.edcgov.us/dot/trafficcounts.asp and here traffic-counts.dot.ca.gov/. When traffic counts are publicized and exceedances are identified per the County General Plan Traffic and Circulation Element, then mitigation measures will be explored for those road segments. The use of the County Travel Demand Model provides further analysis of traffic in the County as well. Reporting of traffic monitoring was removed from the RMP as monitoring and reporting is being done by the County Division of Transportation and Caltrans.

There was a private boater shuttle which operated in 2018 with help from an Air Quality Management District Grant which also provided shuttles for all three of the County's river clean ups in 2018. They provided 464 shuttles, up from 370 shuttles in 2017, for 4,436 boaters which does not include donated shuttles or contracted shuttles and was operational 133 days in 2018.

WATER QUALITY

The water quality monitoring bacterial test results in 2018 had acceptable readings overall for safe body contact on the South Fork. County Parks conducted water testing from the month of June through September 2018. There were no days that had test results above 400/100 ml which would have resulted in a sampling retest per this program's protocols. Bacterial water testing results for 2018 can be found in Appendix A.

Bacteria coliform testing and other water quality measurements are being done by the Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric (PG&E) as prescribed in their new FERC licenses once their implementation plans are approved by the Federal Energy Regulatory Commission. The results of their testing can be found here: <https://www.smud.org/en/Corporate/Environmental-Leadership/Power-Sources/Upper-American-River-Project/Hydro-Relicensing>. The updated RMP continues bacterial coliform testing during the primary boating season only.

The County also has a comprehensive Storm water Program that implements storm water mitigation measures and best management practices (BMPs) as prescribed by the County Storm water Management Plan and the Phase II Municipal National Pollutant Discharge Elimination System (NPDES) Permit.

OTHER RMP OBSERVATIONS AND COMMENTS

There are some goals identified in the updated RMP and in past annual reports that the County will be continuing to evaluate and making efforts to implement. One continuing goal is to update and provide uniform boating and river safety information kiosks at all the public and private river egresses. This would help educate the public on boating safety, life jacket requirements, public river access, private property locations, different recreation permit requirements, sanitation requirements, bathroom locations and lists of approved outfitters.

As mentioned previously, adding two river patrol seasonal staff in 2018 was a positive addition to the program. The 2018 budget also had funding for overtime which allowed for all staff to participate in special projects and working on holidays without taking away from regularly scheduled work days. Having the additional staff allowed for better staff coverage and provided for increased education and presence in the Coloma to Greenwood Creek section of the river which has many beginner river users and campground guests.

In 2015, the County passed a resolution in support of the BLM's request to Caltrans to ban parking from 3000' north of Magnolia Ranch parking area to 3000' south of the Greenwood Creek parking area along Hwy 49 due to safety concerns. This parking ban was not implemented in 2018 by Caltrans.

In future years, some facility and general improvements may be proposed which the County may consider supporting. An additional restroom below African Queen Rapid on the upper would provide a bathroom at a popular lunch and camping location. An additional bathroom somewhere between the Clark Mtn. restroom and the Cronan Ranch restrooms or below them on lower could also help spread out use on the lower. Lands within both of these locations are managed by the BLM.

Another improvement that may also be considered is to improve the take-out ramps at Skunk Hollow and at Salmon Falls on Folsom Reservoir. In most years, the reservoir drops below the end of the ramps at these locations by the middle of the summer. In 2018, the Salmon Falls ramp (gravel) was above the reservoir level by the middle of August. When the reservoir is near full, which was only a week or two in 2018, the narrowness of the top section of the ramp creates a pedestrian concern since there is not a designated pedestrian walkway from the boat docking area to the bus parking lot. This situation is present no matter what the reservoir level is but most apparent when the reservoir is near full. There are some additional issues observed at these locations that arise due to the ramps design and ability for the public to use.

- At Salmon Falls, only permitted outfitters are allowed to drive as close to the water's edge as they feel comfortable. When the Folsom Reservoir is low the river bank is steep and sandy so vehicles occasionally get stuck and customers along with guides struggle to get rafts up to the equipment vehicles. In 2018, temporary traffic cones were put out to assist in identifying where the loose ground began to prevent vehicles from getting stuck. When vehicles stage at different angles and proximities to water's edge which makes for an inefficient and occasionally unsafe environment. Dry vegetation is driven on which

can be a fire hazard. Much of the vegetation may be considered invasive which then could hitchhike on vehicles to another river trip location. In 2018, there was one private vehicle that drove down the ramp and into a gully trying to navigate along the reservoir in addition to private vehicles using the boating ramp to access to the reservoir or river for on shore recreation.

- At the Skunk Hollow take-out, the public is not allowed to drive down the current ramp at this location which is narrow and too short. The reservoir level reached the bottom of the ramp for approximately one week. Once the reservoir drops below the ramp level, which is most of the time, the public creates paths through seasonal vegetation by walking up from the water's edge on paths that are much steeper than a redesigned wider full length ramp could be. Currently there are a number of vehicle accessible boat ramps for motorized boaters on Folsom Reservoir. Vehicle accessible public boat ramps are common on other popular rivers throughout the United States.

Both locations described above have vegetation that the boaters walk through due to minimal take-out facilities. Much of the vegetation is nonnative which could allow for the transfer of seeds to other rivers. Additionally the difficulty of the take-out at Skunk Hollow may discourage people from running trips with elderly, young or disabled individuals due to the uneven surfaces, steepness of the slope and distance needed to carry equipment to vehicles. It may also discourage people rowing rafts with only one or two people from running this section of river as well. Recreational mining and other shoreline recreationists can also add another challenge to having a safe and efficient take-out at these locations. Improvements to both of these boat ramps would benefit the outfitters guests and employees along with the private boaters who used these State Parks facilities. The parking at Skunk Hollow may also not be sufficient for the increasing demand by the trail, river, and reservoir users on most weekends during the summer. This forces people to park on the shoulder of Salmon Falls road which is another facility improvement that may be evaluated further.

Public comments on the season and implementation of the RMP in 2018 were made at the November 5, 2018 River Management Advisory Committee meeting. One comment that was repeated from the meeting was that the smoke from the wildfires deterred people from going rafting in 2018. Minutes and audio recordings of RMAC meetings can be found here:

<https://eldorado.legistar.com/Calendar.aspx>

BUDGET

The budget for the Parks River Program is a non-general fund program and at times has struggled to accomplish objectives with the present level of funding which has varied over time due to costs and funding. The primary source of funding is a \$2.00 per guest user fee paid by permitted outfitters which was established in 1997. A fee analysis will be considered in 2019 on the program needs now that the RMP update process was completed in 2018. Any fee change will be decided by additional action by the board. Funding needs will take into consideration any changes which could increase or decrease the level of funding needed to implement the updated

RMP. *Table 3* and *figure 16* below provide a snapshot of the 2017/2018 Parks River Program budget year, River Trust Fund balances and the 2018/2019 approved budget.

Fiscal Year 2017/2018	
Fund Balance as of July 1, 2017	\$213,087
Revenue (July 1, 2017 through June 30, 2018)	\$191,811
Expenditures (FY 2017/2018 approved budget was \$217,466)	\$197,135
River Trust Fund balance as of June 30, 2018	\$230,142
2018/2019 Approved Budget	\$221,211

Table 3. River Trust Fund Balance and Budget Summary

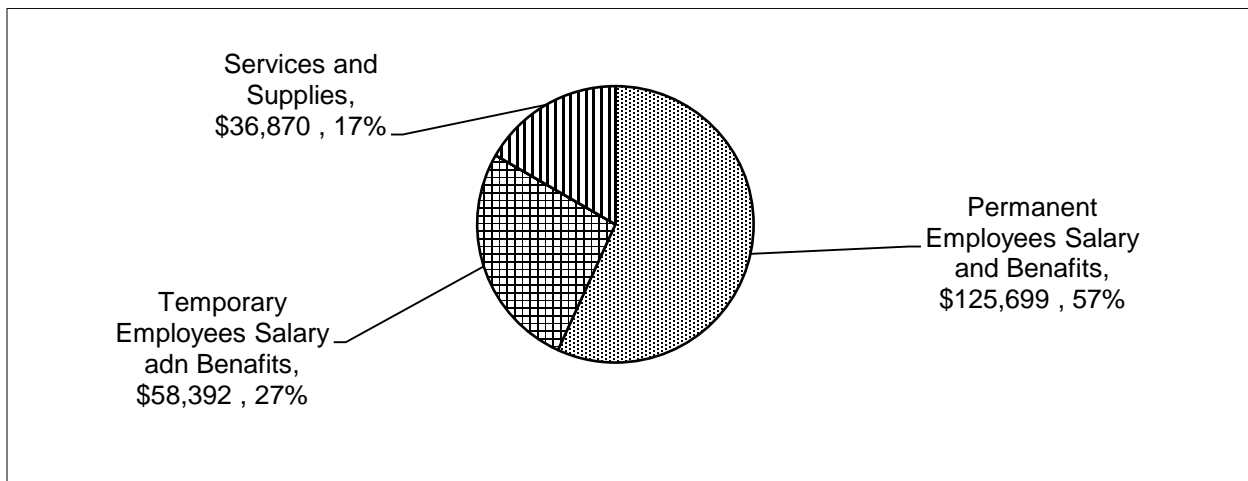


Figure 7. 2018/2019 Approved River Program Budget

CLOSING

Overall, the County Park's River Program in coordination with the BLM, State Parks, and El Dorado County Sheriff's Boating Unit was successful in managing the South Fork American River's whitewater recreation from Chili Bar Dam to Folsom Reservoir. The implementation of the County's River Management Plan in 2018 met most of the goals and objectives laid out in the plan. The action taken by the board to adopt a new RMP will improve the County's ability to continue its role on the management of whitewater recreation on the South Fork of the American River.

APPENDIX A

2018

WATER QUALITY MONITORING RESULTS

WATER QUALITY MONITORING

PROGRAM OVERVIEW

Purpose and Scope of the Document

Element 4.4 of the River Management Plan requires sampling for coliform bacteria during peak months of river recreation use.

The overall goal of the monitoring program is to collect data in order to determine if the river is safe for recreation contact. Bacterial contamination of the river could result from either discharges from faulty septic systems or domestic and resident wildlife.

Resources and Constraints

Regulatory

Physical area of the monitoring program is constrained by the project area of the RMP: Chili Bar Dam to Salmon Falls Rd. There are no SWQCB or RWQCB permit requirements for the County's RMP.

Responsible agencies and roles

The RMP places joint-responsibility for the water quality monitoring program with the Division of Parks River Program and the Environmental Management Department. Both have contributed to the preparation of the RMP.

Fiscal

The monitoring program will be funded through the County's River Trust Fund. This Fund is managed by the County River Program to provide a source of long-term funding for the implementation of the RMP. Fiscal Year 2017-2018 River Trust Fund appropriations include funds for health lab analysis of bacterial coliform samples. County River Program staff time is paid by the River Trust Fund.

Document Organization

The RMP monitoring program is to test for bacteria monitoring.

PROGRAM GOALS AND PURPOSE

- *Goals are broadly defined results*
- *Objectives are specific, measurable, or time-bound results*
- *Strategy is the method or process used to reach the goals*
- *Program is the combined set of monitoring plans for bacteria*

- *Plan is the set of actions or methods to monitor bacteria*

The program's goals and purpose are derived from the RWQCB Basin Plan Objectives for bacteria. Therefore, the program's goal is to comply with those testing and thresholds identified for safe recreational body contact.

Study Questions

The main study question developed from past RMP's state a primary concern related to the potential effect to whitewater recreation on the South Fork of the American.

Question 1: Do bacteria levels exist on the South Fork that indicate a potential human health threat to boaters and swimmers?

Objectives

From this question, a set of monitoring plan objectives are proposed:

Objective 1: Bacteria monitoring frequency that provides information on whether Basin Plan standards for bacteria are being attained in the project area. Monitoring will have a primary focus on the May through September boating and swimming season of high recreation contact.

Objective 2: The bacteria monitoring will be adequate to detect a failing septic system or leach field from any whitewater recreation-related campgrounds. This detection would trigger a more detailed sanitary survey by the County's Environmental Management Department.

PROGRAM STRATEGY

Bacteria monitoring:

The strategy to monitor bacteria in this program has been developed to address the Study Question. The sampling plan proposed for bacteria monitoring is a periodic screening during the highest use period of the year. The rationale for the sampling plans is based on existing monitoring data and the Basin Plan standards.

Periodic screening

The County has conducted a periodic screening program to monitor the South Fork for levels of bacteria since 1995. Inferences from data collected from this monitoring appear to reveal some potential variations in water quality. The periodic screening will capture data on bacteria levels in the South Fork under a variety of flow regimes.

Basin Plan standards

The South Fork's state-designated beneficial uses include contact for recreation. The Basin Plan prescribes bacteria standards for contact recreation, and a monitoring protocol (five samples in a 30-day period) to provide data to determine whether the standards are being met.

- Basin Plan monitoring standards for bacterial coliform will be conducted during the peak-use period of June-July-August each year.

ANALYTICAL CONSTITUENTS

The bases for the selection of the analytical constituents for the monitoring program are: the RMP monitoring objectives; the state's Basin Plan objectives; and input from the County Environmental Management.

Bacteria monitoring

Bacterial coliform will be used as the constituent for periodic screening program. Although the current Basin Plan standard for bacteria is based on the constituent fecal coliform, the bacteria *e. coli* has been selected for the screening program for the following reasons:

- EPA's draft *Implementation Guidance for Ambient Water Quality Criteria for Bacteria* (May 2002) recommends the adoptions of *e. coli* criteria to better protect waters designated for recreation.
- The RWQCB advised the County in 10/2002 that the SWRCB Basin Plan is expected to be revised in the future to include this constituent in the definition of water quality objectives for bacteria.

The Basin Plan compliance monitoring will use *e. coli* as the constituent. If any samples during the 30 day period exceed the EPA standard for bacteria, the County will switch to analysis of fecal coliform, and obtain five samples during a 30-day period.

MONITORING SITE SELECTION CRITERIA

Bacteria Monitoring

Sites have been selected for bacteria periodic screening according to the following criteria:

- The **Nugget site** is immediately below Chili Bar dam which is the beginning of the project area. The Nugget functions as a control site for bacteria monitoring. Data from this site provides bacteria values for the water as the river enters the project area. The bacteria values may indicate potential water quality impacts from upstream sources, which will have to be considered in the analysis of the monitoring results from the project area.
- The **Marshall Gold Discovery State Historic Park (Marshall Gold SHP), Henningsen Lotus County Park (County Park), Turtle Pond (at Greenwood Cr. confluence) and Salmon Falls sites** represent the most popular swimming areas (both boating and non-boating

related swimming) in the project area. These sites have been selected in the study design to achieve Objective 1 and provide data on Question 1.

- Sampling locations able to detect potential bacteria discharges from project campgrounds: The Marshall Gold SHP, County Park, and Turtle Pond sites are immediately downstream (within ½ mile) of significant concentrations of campgrounds and/or river access sites. These sampling locations will provide data to allow analysis of Objective 2.
- Site access: Each site is easily accessible year-round to County Parks' staff.
- Personnel safety: County Parks' staff can safely ferry boats across the river channel at each site at a wide range of flows in order to obtain samples.
- Time: County Parks obtain samples at each site within one workday and deliver the samples to the Lab within the maximum holding time. Staff typically samples on Monday or Tuesday so that if there is an exceedance resampling is possible before the weekend.

SAMPLING PLANS

Bacteria Periodic screening:

Frequency:

- Monthly sampling and analysis for bacterial coliform for May at each monitoring site.
- Twice monthly sampling and analysis for bacterial coliform for June, August and September at each monitoring site.
- Five samples taken in the month of July at each monitoring site.

The sampling conducted for the screening effort will adjust the dates of collection to obtain data for several types of flow regimes the river has operated under in recent years:

- River experiencing daily fluctuating flows from fish flow (250) to 4000 cfs (this regime occurs throughout the year).

Methods:

Shore grab samples and transect composite samples listed in Table 2

Sample collection methods

Five river transect composite samples are collected, in addition to near-shore grab samples. Transect composite samples are obtained by drawing five individual samples: one near each bank, and three mid-river samples at the quarter, half and three quarter distance across the channel. The five samples are combined into a single sample that represents the cross-section of the river at that site.

Sample containers used for the individual grab samples are sealed and sterilized 120 ml 500 ml polypropylene bottles that are then used to mix the transect samples.

Grab sample methodology

Caps are removed from sample bottles, avoiding contamination of the inner surface of the cap or bottle. Samples are drawn from about one foot below the surface of the river. The container is filled without rinsing, and the cap is replaced immediately.

For the transect samples, the five individual samples for each transect are combined into the 500 ml polypro bottle. Sufficient air space is left in the large bottle to allow thorough mixing by shaking. 100 ml of the mixed sample is poured back into the bottle that was used to draw the individual samples.

All samples are placed in a cooler and transported to the lab within five hours.

Sample records and chain of custody

Sample bottles are numbered with an indelible marker to record the sampling location. A lab form is used to record information on each sample submitted (date and time collected; sampling point; river flow). Sample information (date and time collected and submitted) is also listed on a log-in sheet.

These methods will also be utilized for the Basin Plan compliance.

Bacteria Basin Plan compliance:

Frequency: 5 samples in 30 days during peak summer season.

Table 2
Summary of monitoring program

Monitoring activity	Monitoring sites	New, revised or ongoing	Constituents analyzed	Sampling frequency
Bacteria screening	<ul style="list-style-type: none"> ▪ Nugget bank ▪ Nugget transect ▪ Marshall Gold park bank ▪ Marshall Gold park transect ▪ County Park bank ▪ County Park transect ▪ Turtle Pond bank ▪ Turtle Pond transect ▪ Salmon Falls bank 	Ongoing	Bacterial coliform	<p>Once monthly in May and twice monthly in June, August, September with sampling conducted to capture the possible following flow regimes:</p> <ul style="list-style-type: none"> ▪ Daily fluctuating flows from fish flow (200 cfs) to 4000 cfs (event possible throughout the year). ▪ Extended periods of fish flow releases (typically during the fall or periods of hydro facility maintenance). ▪ Extended periods of flow of at least 2000 cfs (spring runoff).
Bacteria Basin Plan Compliance	<ul style="list-style-type: none"> ▪ Nugget bank ▪ Nugget transect ▪ Marshall Gold park bank ▪ Marshall Gold park transect ▪ County Park bank ▪ County Park transect ▪ Turtle Pond bank ▪ Turtle Pond transect ▪ Salmon Falls bank 	Ongoing	Bacterial coliform	5 samples in a 30-day period in July.

LABARATORY ANALYTICAL METHODS

The analytical method for the bacteria analysis has been supplied by the Environmental Management Department and describes its procedures for analysis of samples for levels of bacterial coliform.

Quality Assurance

The quality assurance procedures for the bacteria analysis has been supplied by the lab and describes its quality assurance procedures for analysis of samples for levels of bacterial coliform.

Data Quality Evaluation

- Circulated to Environmental Management for comments

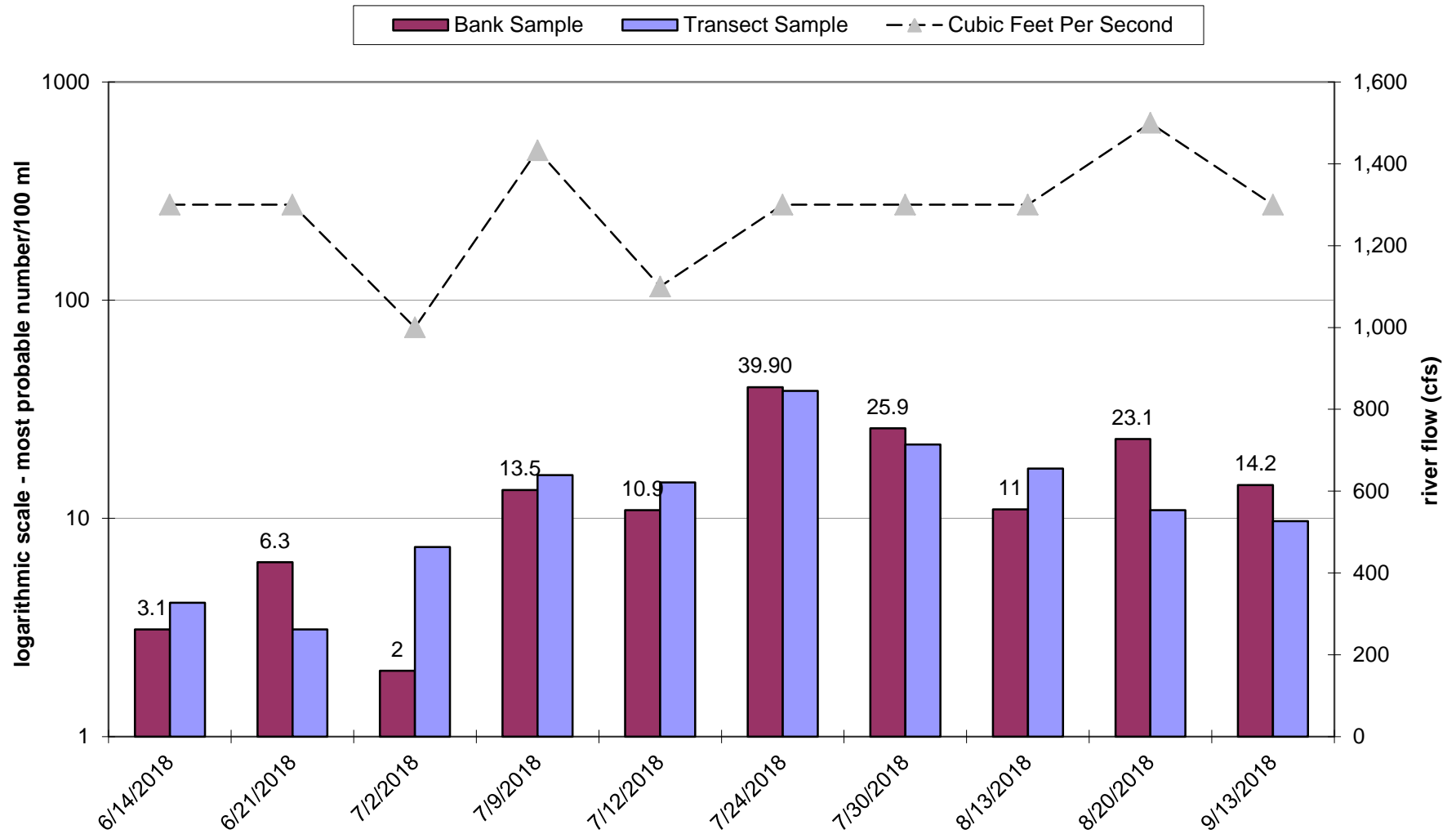
Data Validation and Reporting

- Circulated to Environmental Management for comments

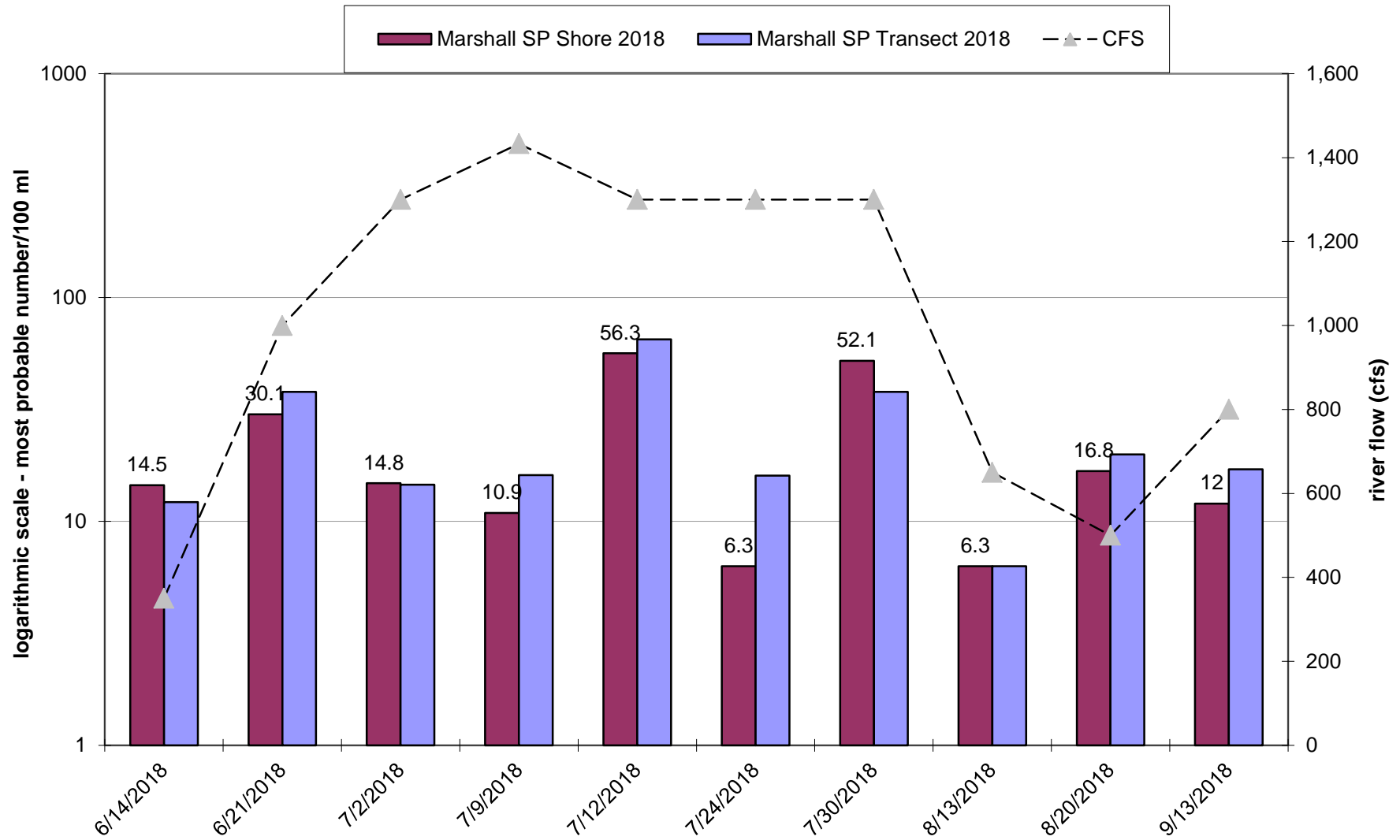
RESULTS

The graphs on the following pages show the results of the water quality testing for bacteria during 2018. The bacteria levels existing on the South Fork of the American River below Chili Bar Dam samples indicated minimal potential human health threat to boaters and swimmers in 2018.

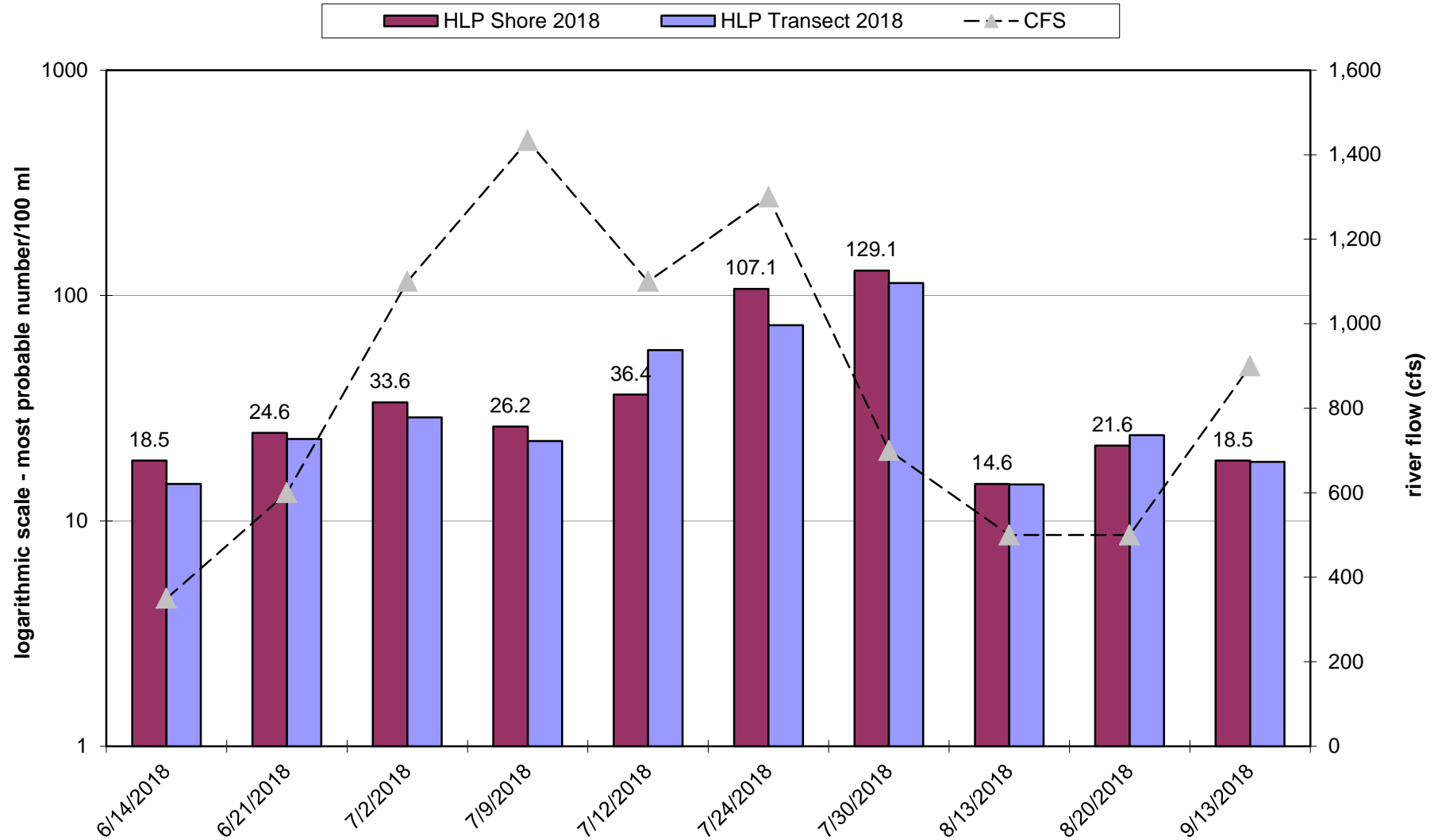
E. Coli levels Below Chili Bar Dam at the Nugget 2018



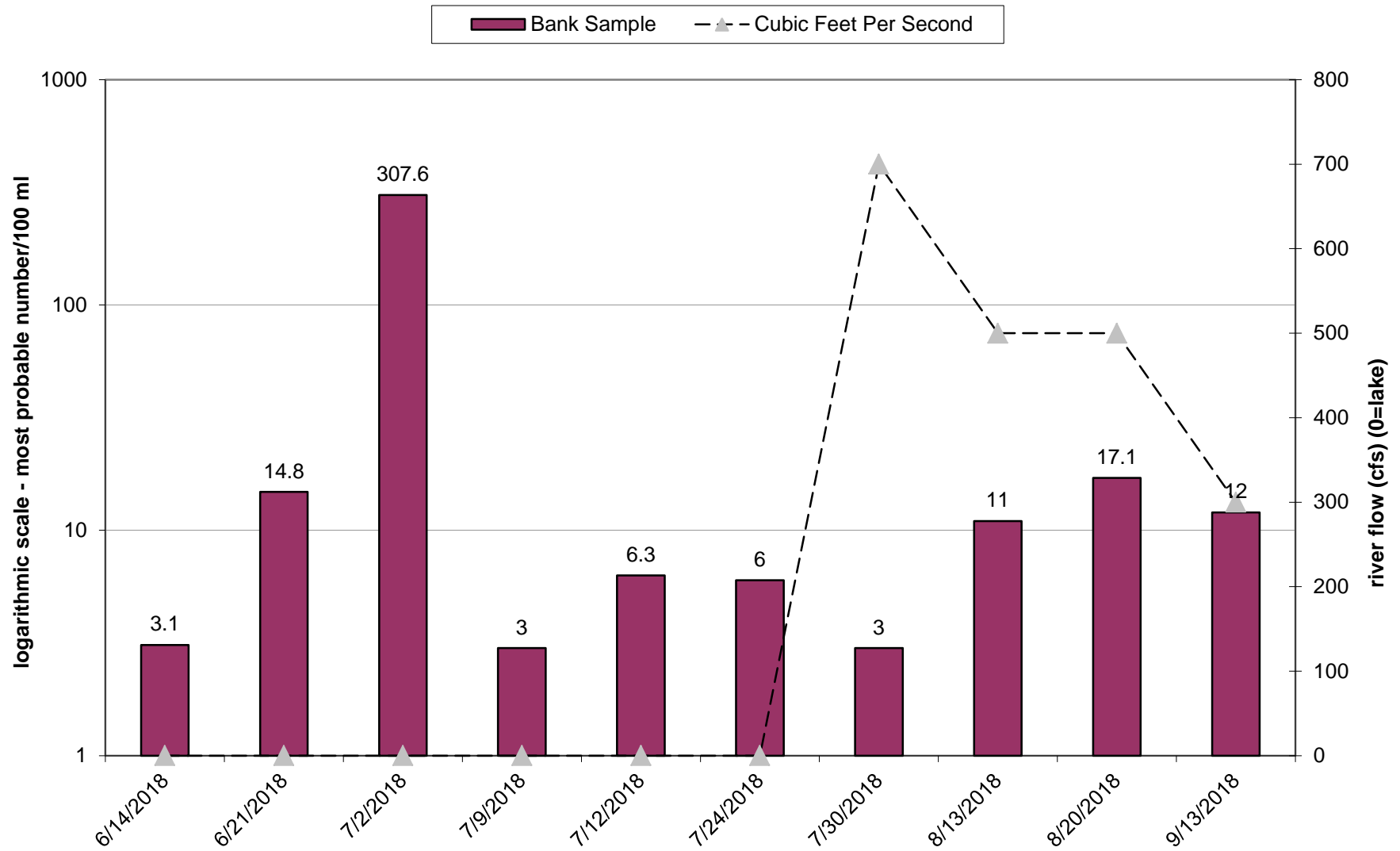
E. Coli levels at Marshal Gold Discovery State Historic Park 2018



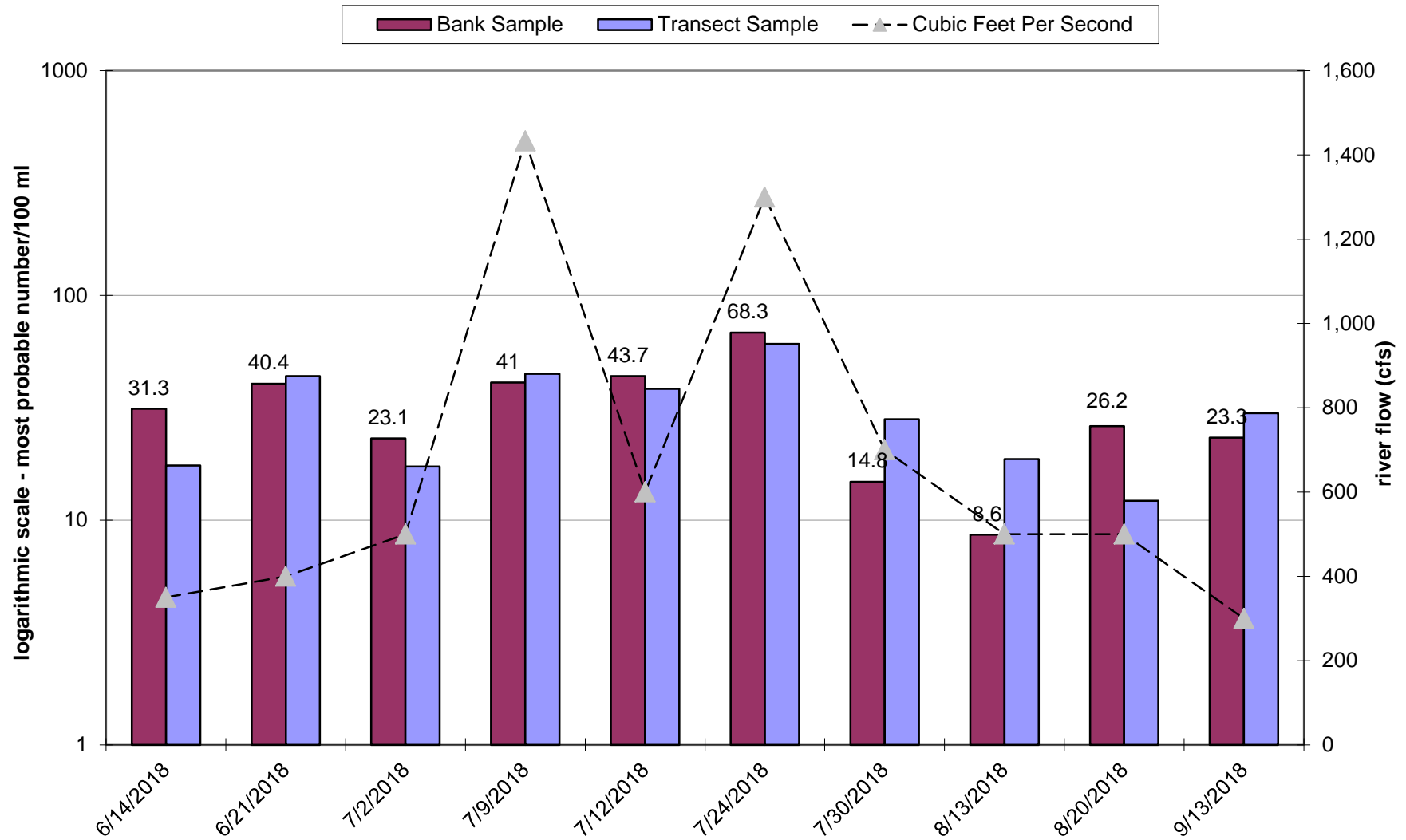
E. Coli levels at Henningsen Lotus Park 2018



E. Coli levels at Salmon Falls 2018



E. Coli levels at Turtle Pond Area 2018



APPENDIX B

2018 EL DORADO COUNTY SHERIFF'S DEPARTMENT BOATING SAFETY UNIT SUMMARY FOR THE SOUTH FORK OF THE AMERICAN RIVER

EL DORADO COUNTY SHERIFF'S OFFICE BOATING SAFETY UNIT 2018 SUMMARY SOUTH FORK OF THE AMERICAN RIVER

The El Dorado County Sheriff's Office Marine Unit provides river patrol for the South Fork of the American River from the Chili Bar Dam area to the Salmon Falls take out in Folsom Lake. This jurisdiction is approximately 22 miles in length and is bordered by private property, state property and federal property. California State Parks and the Bureau of Land Management (BLM) rangers also occasionally patrol this section of the river, but the Sheriff's Office maintains primary patrol and rescue operations on the river. The El Dorado County Park River Patrol greatly assisted the Sheriff's Office with rescues and assisting boater on the river. The Sheriff's Office also deals with boating education and enforcement of various county ordinances on the water and along the river edges.

This section of the river offers numerous river related activities to include; white water rafting by both commercial and private rafters, stand up paddle boarding, commercial and private kayaking, and large groups of people on personal float tubes. The tubing population mainly stays between Gold Beach in the Coloma State Park and the BLM take out near Greenwood Creek, commonly called the "C to G" section.

The start of the 2018 season saw a decrease in the amount of commercial rafting and pro level kayakers on the river mainly due to the decreased water flows as compared to the 2017 season. During the start of the season water flows were averaging just less than 4,000CFS from the Chili Bar reservoir and continued at this rate till mid-June. This amount of flow was still enough flow to keep recreational tubers and kayakers out of the river until late in the summer.

The Sheriff's Office was very proactive on citing people for loitering and jumping from the Salmon Falls bridge.

The Sheriff's Office still dealt with citizen complaints from the 2018 season:

1. Non-permitted persons running for hire commercial rafting trips on the river.
2. Complaints of illegal activities; underage drinking both on the river and parks, trespassing on private property, littering, and bridge jumping.

The Sheriff's Office again patrolled the Coloma to Greenwood section of the river in inflatable kayaks enforcing a glass bottle ban and the PFD ordinances for people on the river. This type of patrol was well received by both private and commercial rafters and provided a great visibility and more effective patrol of the Sheriff's Office on the river. The amount of people tubing on the river without PFDs was significantly down from the 2017 season. Additionally the Sheriff's Office was able to receive training from the County Parks River Patrol in the operation of the inflatable kayaks. This training was extended to members of the El Dorado County Sheriff's Office Dive Team who assists the Marine Unit in recoveries and rescues.

There was one boating accident which was reported to the Sheriff's Office which supposedly occurred on the patrolled section of the South Fork. This incident was investigated by EDSO and determined to be unfounded criteria for a reportable boating accident. There were no reported deaths on the patrolled area of the South Fork of the American River in the 2018 season.

There was one reported death on the South Fork which was in a remote area not normally patrolled by EDSO. The area which the decedent perished is an uncontrolled flow of the river near Kyburz. The EDSO Marine Unit has reviewed this incident for Training purposes.

Due to low staffing levels the patrolled area of the South Fork could not be staffed every weekend. There has been two additional Marine Unit Deputies hired after the 2018 season. These two additional Marine Deputies will allow an increase in patrol activities on the South Fork of the American River.