REC 3 – WHITEWATER BOATING TECHNICAL MEMORANDUM

KERN RIVER NO. 1 HYDROELECTRIC PROJECT
FERC PROJECT NO. 1930

PREPARED FOR:

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LIST OF ACRONYMS

ac-ft	acre-feet
avg	average
AQ 1 TM	AQ 1 – Hydrology Technical Memorandum
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
Forest Service	United States Forest Service
ISR	Initial Study Report
KR1	Kern River No. 1
MW	megawatt
PAD	Pre-Application Document
Project	Kern River No. 1 Hydroelectric Project Relicensing, FERC Project No. 1930
Questionnaire	Structured Interview Questionnaire
REC 3 TSP	REC 3 – Whitewater Boating Technical Study Plan
SCE	Southern California Edison
SR-178	State Route 178
TWG	Technical Working Group
USGS	United States Geological Survey

1.0 INTRODUCTION

This REC 3 – Whitewater Boating Interim Technical Memorandum provides the methods and findings of implementing the REC 3 – Whitewater Boating Technical Study Plan (REC 3 TSP). The REC 3 TSP was implemented in support of Southern California Edison's (SCE's) Kern River No. 1 (KR1) Hydroelectric Project (Project) relicensing, Federal Energy Regulatory Commission (FERC) Project No. 1930. The REC 3 TSP was included in SCE's Revised Study Plan submitted to FERC on February 13, 2024 (SCE 2024). In its March 14, 2024, Study Plan Determination, FERC approved the REC 3 TSP without modifications (FERC 2024).

2.0 STUDY OBJECTIVES

The objectives of the whitewater boating study, as outlined in the REC 3 TSP (SCE 2024), include the following:

- Characterize the whitewater boating run in the KR1 bypass reach, including the length, whitewater difficulty, name of key rapids, and typical access locations for put-in and take-out.
- Identify and characterize access to whitewater boating along the bypass reach.
- Identify the range of flows (minimum acceptable and optimum) that would provide whitewater boating opportunities in the bypass reach for a variety of watercraft, including kayaks, rafts, packrafts, stand-up paddleboards, and body boards.
- Quantify the annual and monthly frequency with which minimum acceptable and optimum whitewater flows occur in the bypass reach under current Project operations and without-Project diversion for each watercraft type.
- Describe existing mechanisms for the dissemination of flow information to the public.
- Document potential conflicts of whitewater boating flows with other recreation uses.

3.0 STUDY AREA AND STUDY SITES

The study area is the Project's bypass reach[1] on the lower Kern River. The bypass reach is an approximately 10.2-mile reach of the lower Kern River from Democrat Dam downstream to the KR1 Powerhouse Tailrace. The bypass reach is characterized by swift-flowing water and difficult rapids.

Within the bypass reach are three recognized whitewater runs. From upstream to downstream, these are: (1) Cadillacs Run, (2) Richbar Run, and (3) Cataracts Run. Refer

[1] A bypass reach is a segment of a river downstream of a diversion facility where project operations result in the diversion of a portion of the water from the river.

to Map 3-1 for the locations of these runs. The bypass reach and thus the three runs are closely aligned with State Route 178 (SR-178), which facilitates access and egress from the river channel. The runs are considered advanced to expert skill-level runs with a whitewater difficulty rating of Class IV to Class V+ (American Whitewater 2009). The Scale of Whitewater Difficulty is presented in Table 3-1.

3.1 CADILLACS RUN

Cadillacs Run, the most upstream of the runs, starts below Democrat Dam and extends approximately 4.5 miles downstream (refer to Map 3-2). The run difficulty is Class V (Expert), and the average gradient is 87.1 feet/mile.

The put-in for this whitewater run is from either the Democrat Raft Take-out Boating Site (non-Project facility), a developed day use area upstream of Democrat Dam accessible via SR-178 (boaters that put-in at this site need to portage around Democrat Dam), or by hiking in downstream of Democrat Dam from SR-178. Other than the Democrat Raft Take-out Boating Site, there are no developed trails or river access improvements along the run. The Cadillacs Run take-out, approximately 4.5 miles downstream of Democrat Dam, is not developed, and an overland hike is needed to access shuttle vehicles parked on SR-178. As an alternative to taking-out at the end of the run, boaters may continue 1 mile downstream to the Upper Richbar Day Use Area, a non-Project developed day use area adjacent to the river that has developed parking and other supporting amenities.

3.2 RICHBAR RUN

In roughly the middle of the bypass reach is the Richbar Run (refer to Map 3-3). This run starts at the end of the Cadillacs Run and extends downstream for 3 miles. The run difficulty is considered a Class IV (Intermediate–Advanced), and the average gradient is 52 feet/mile.

The put-in for this whitewater run is accessible via an overland hike from SR-178. There are no developed trail or river access improvements associated with the put-in. Boaters have several take-out options: the Lower Richbar Day Use Area (non-Project facility), the Live Oak Day Use Area (non-Project facility), or approximately 1 mile downstream of the Live Oak Day Use Area. Both the Lower Richbar Day Use Area and Live Oak Day Use Area provide direct river access, parking, and other amenities. For runs extending beyond the Live Oak Day Use Area, an overland hike is required to reach shuttle vehicles parked along SR-178.

3.3 CATARACTS RUN

Cataracts Run, the farthest downstream of the runs, starts at the end of the Richbar Run and extends for 2.8 miles (refer to Map 3-4). Of the three runs along the bypass reach, the Cataracts Run is considered the most difficult; it is rated a Class V+ (Expert) and has the steepest gradient, of 143.9 feet/mile.

The Lower Richbar Day Use Area (non-Project facility) or Live Oak Day Use Area (non-Project facility) both serve as the put-in for this whitewater run, though the run starts

approximately 1 mile downstream of the Live Oak Day Use Area. The take-out is just upstream of the KR1 Powerhouse and requires an overland hike from the river up to SR-178.

4.0 METHODS

The study was implemented in accordance with the REC 3 TSP (SCE 2024). The REC 3 TSP describes a study methodology aligned with *Flows and Recreation: A Guide to Studies for River Professionals* (Whittaker et al. 2005). The 2005 publication outlines a sequential framework to investigate flow-dependent whitewater boating opportunities using various investigative tools across three progressive levels of study. The three levels of study as described in the REC 3 TSP are:

- Level 1: Desktop Review
- Level 2: Limited Reconnaissance
- Level 3: On-water Whitewater Boating Assessment

The three levels of study increase data resolution as investigations progress from one level to the next. At each study level, the data are assessed to determine the need to progress to the next level of study. If, after completing a level of study, it is determined that additional data are needed to augment or refine the data collected, the next level of study is implemented. Conversely, if it is determined that the data collected are sufficient to address the study objectives, the study process would conclude at that point. This process allows the study team to effectively compile and assess relevant data and ensure applicability to the goals and objectives of the study. This approach also allows the sharing of data/findings across resource disciplines and with stakeholders as the study progresses.

The Level 1 Desktop Review consists of the following elements:

- Literature review to augment information included in Pre-Application Document (PAD) Section 11, Recreation Resources (SCE 2023).
- Hydrology assessment.
- Project facility capabilities description.
- Structured interviews.

The Level 2 Limited Reconnaissance, if conducted, would include a limited reconnaissance site visit with study participants consisting of agency staff and boaters to collect additional information, with the objective of increasing the precision of estimated boating flow ranges for the various watercraft types and knowledge of recreation use patterns.

The Level 3 On-water Whitewater Boating Assessment would only be conducted if results from the Level 1 Desktop Review and Level 2 Limited Reconnaissance were insufficient to characterize flow preferences over a variety of watercraft types. If necessary, the Level 3 On-water Whitewater Boating Assessment would collect flow preference information directly from whitewater boaters for a variety of watercraft for the bypass reach using a single flow study.

The current level of assessment is Level 1 Desktop Review. Before proceeding to Level 2 Limited Reconnaissance, the information compiled as part of the Level 1 Desktop Review will be evaluated, and a decision on the need to proceed to Level 2 will be made.

4.1 STUDY PLAN VARIANCES

There are no variances from the REC 3 TSP approved in FERC's Study Plan Determination (FERC 2024).

5.0 LEVEL 1 DESKTOP REVIEW DATA SUMMARY

5.1 LITERATURE REVIEW

A literature review was conducted to verify and augment the information presented in SCE's PAD (SCE 2023). The literature review included reviewing existing studies/publications, whitewater guidebooks, magazine publications, and online river information sites, including:

- Sequoia National Forest Land and Resource Management Plan, Forest Plan (United States Forest Service [Forest Service] 1988).
- Application for New License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930 (SCE 1994).
- Kern River Whitewater Boating Study Kern River No. 1 Project: FERC No. 1930 (Lower Kern River 1996 Boating Study; WRC-Environmental 1996).
- Final Environmental Assessment for Hydropower License, Kern River No. 1 Hydroelectric Project, FERC Project No. 1930-014 (FERC 1998a).
- FERC Order Issuing New License (Major Project), FERC Project No. 1930-014 (FERC 1998b).
- Report on Five-Year Recreation Use Monitoring Study, Kern River No. 1 Hydroelectric Project – FERC No. 1930 (2005 Recreation Use Monitoring Study; TCW Economics 2005).
- Land Management Plan for the Sequoia National Forest, Pre-Objection Version (Forest Service 2023).
- The Best Whitewater in California (Holbeck and Stanley 1998).

- California Whitewater, A Guide to the Rivers (Cassady and Calhoun 1995).
- Various state and federal agency websites.

5.1.1 Whitewater Opportunities in the Kern River Basin

There are a total of 22 whitewater runs ranging from Class I/II to Class V+ in difficulty in the Kern River Basin. Table 5-1 lists each of these whitewater runs (roughly from upstream to downstream) and identifies the name of the whitewater run, river name, put-in and take-out locations, run length, run gradient (feet/mile), and difficulty classification. The runs vary in length from 0.5 mile—a short run below Fairview Dam—to 39.9 miles for the longest run—the Headwaters of the Kern.[2] As with the variance in run length, there is a large difference in the gradients of the runs, with the highest gradient being 360 feet/mile and the lowest 14 feet/mile. Some of the short whitewater runs below Fairview Dam would most likely be combined to extend the length of the run.

5.1.2 Characterization of Whitewater Boating Use in the Bypass Reach

The bypass reach is a 10.2-mile section of the lower Kern River characterized by swift-flowing water and difficult rapids. The bypass reach is divided into three distinct runs: Cadillacs (Class V), Richbar (Class IV), and Cataracts (Class V+).

There are no developed put-in sites below Democrat Dam; however, the Richbar and Live Oak day use areas are used by boaters as put-in and/or take-out sites. SR-178 runs close to the river along this section. Locations along the road are used to access put-in and take-out locations along the river. The lowest take-out is at the KR1 Powerhouse.

The lower Kern River 1996 Boating Study (WRC-Environmental 1996) identifies the optimal flows for boating in the bypass reach as between 950 cubic feet per second (cfs) and 1,750 cfs, with a minimum flow requirement of 700 cfs to 2,350 cfs.[3] The whitewater boating web guide *California Creeks* (California Creeks 2024) reflects a relatively consistent recommendation for suggested boating flows for the reach: 600 cfs to 2,500 cfs.

Private boaters who boat the Kern River below Democrat Dam (the bypass reach) are not currently required to obtain a permit. There is no commercial whitewater boating in the bypass reach. Private boaters who use the lower Kern River above Democrat Dam are required to obtain annual permits from the Forest Service.

The 2005 Recreation Use Monitoring Study (TCW Economics 2005)[4] referenced data collected by Forest Service manifest forms to determine the number of boaters that run the bypass reach. The manifest forms are voluntary forms obtained at Forest Service

[2] This 39.9-mile run represents a multi-day expedition with numerous portages and is not typically boated.

[3] 2,350 cfs appears to represent the “high flow” threshold in the lower Kern River 1996 Boating Study.

[4] Following release of the 2005 Recreation Use Monitoring Study, FERC determined that no additional monitoring or modifications to the Project’s existing operations were warranted or recommended, and therefore recreation monitoring was discontinued; the 2005 Recreation Use Monitoring Study is the most recent recreation monitoring study applicable to the Project (FERC 2006).

offices or at designated popular put-ins and take-outs that boaters are encouraged to fill out prior to running the river. The manifest forms ask boaters to identify what part of the Kern River they will boat, the date of their run, and the number of people in their party. The current manifest form separates the lower Kern River into four distinct runs: the Jungle Run, the Miracle Run, the Big 5 Run, and the Cataracts Run. The Cataracts Run identified in the manifest forms is the Project bypass reach and comprises the Cadillacs Run, Richbar Run, and Cataracts Run.

Based on the data collected by the manifest forms and documented in the 2005 Recreation Use Monitoring Study, between three and seven boaters ran the Cataracts Run each year between 2001 and 2005. Boating use in the other runs along the Kern River during the same span of years ranged from several hundred boaters per year to more than 2,000 boaters per year.

The 2005 Recreation Use Monitoring Study suggested that the low boating use in the Project bypass reach compared to the other runs along the Kern River is due to the extreme difficulty of the rapids in the reach. However, because permits are not required to boat the bypass reach, and because no use data are collected for this section of the river, an accurate estimate of current use is not available. SCE assumes that boating use in the bypass reach has increased since 2005 due to an overall increase in whitewater boating activity and due to more advanced equipment and increased skill levels.

5.2 HYDROLOGY ASSESSMENT

The summation of hydrology in the bypass reach is presented in the AQ 1 – Hydrology Technical Memorandum (AQ 1 TM). The AQ 1 TM includes a summary of the frequency, timing, duration, and magnitude of flows, and the data are reported using mean, median, interquartile range, and exceedance metrics where applicable.

5.3 PROJECT FACILITY CAPABILITIES DESCRIPTION

The Project, completed in 1906, is operated in a run-of-river mode and has no water storage. Water captured at the Democrat Dam diversion structure is transported through a connecting flowline and penstock to the powerhouse and then returned to the river through the powerhouse tailrace 10.2 miles downstream.

The Project has diversion rights of 412 cfs, which is the maximum capacity of the diversion. The Project license requires a minimum instream flow of 50 cfs to be released to the bypass reach from June 1 to September 30 and 15 cfs released between October 1 and May 31, or inflow if lower than the seasonal flow requirement. The amount and timing of flow diverted is a function of releases from Lake Isabella, flowline and powerhouse capacities, and minimum instream flow requirements.

Water is diverted from the Kern River at Democrat Dam and directed through a concrete sandbox, where sediment settles out of the water before the water enters the Project's conveyance system, which comprises approximately 8.5 miles of tunnels, flumes, and conduits that run along the eastern side of the Kern River. Water within the conveyance

system is directed to a small concrete forebay through a buried penstock and into the Project powerhouse. Water exiting the powerhouse enters a short tailrace and is returned to the Kern River upstream of the Kern Canyon Project (FERC Project No. 178), owned by Kern and Tule Hydro LLC. The total installed capacity of the powerhouse is 26.3 megawatts (MW).

Democrat Dam is located on the Kern River approximately 10.2 miles upstream of the powerhouse. The dam is a 58-foot-high cyclopean-concrete overflow gravity dam. The crest of the dam is at an elevation of 1,913 feet, and approximately 29 feet is exposed above the stream bed. The crest of the dam also serves as a spillway and is designed to spill river flows that are not diverted for power production. The Democrat Dam Impoundment (also referred to as the “pond”) covers approximately 27 acres and has a gross storage capacity of 247 acre-feet (ac-ft) at an elevation of 1,913 feet. However, there is no usable storage at the diversion dam. Since Democrat Dam is a run-of-river dam and its whole crest is a spillway, the dam regularly spills, and the impoundment and tailwater levels are governed by natural flows in the Kern River. A 329-foot-long drainage tunnel with a 72-inch electric motor-operated sluice gate is located at the base of the dam.

The water conveyance system is designed to carry a maximum of 412 cfs under optimum conditions. Two intake gates to the water conveyance system are hydraulically operated and are automatically controlled by impoundment and flume water controllers. The diverted water flows under gravity from an elevation of approximately 1,913 feet at the diversion dam to the top of the penstock at an elevation of approximately 1,830 feet.

The Project forebay is a 45-foot-long, 33-foot-wide, and 11-foot-deep concrete gravity structure that impounds water (less than 1 ac-ft) to regulate flow to the powerhouse. Water enters the forebay via Tunnel No. 19 and flows into the primary of two reinforced-concrete bays. From the forebay, an approximately 1,693-foot-long buried steel penstock carries water to the powerhouse. To increase velocity and pressure, the inside diameter of the penstock decreases over the length of the pipe, with a diameter of approximately 108 inches at the forebay tapering down to approximately 71 inches at the powerhouse. The penstock conveys water to the turbines through a manifold system.

The powerhouse is an approximately 71-foot by 170-foot concrete structure located on the left bank of the Kern River. The powerhouse is normally unattended. Start-up and shutdown of the turbine/generator equipment is manually performed by the operators based at the Kern River No. 3 Powerhouse (FERC Project No. 2290). Water to the powerhouse is supplied from the forebay through a single penstock. Water exiting the powerhouse enters a tailrace before being returned to the river. The powerhouse contains four Allis-Chalmers turbines (double overhung, single-jet, impulse type) rated at a total of 43,000 horsepower. The four main generators are horizontal shaft General Electric units with a total installed capacity of 26,280 kilowatts or 26.3 MW.

5.4 STRUCTURED INTERVIEWS

Structured interviews were conducted with individuals from the whitewater boating community with direct experience boating the bypass reach. A Structured Interview Questionnaire (Questionnaire) was developed to support the structured interview process.

Individuals interviewed represented a range of skill levels and knowledge of the whitewater boating runs in the bypass reach. Interviews focused on gathering information about boaters' range of preferred flows (minimum acceptable and optimum whitewater flows) for respective watercraft; boaters' flow information needs; and boaters' whitewater use patterns. The structured interviews took place via a two-phased process: (1) online survey and (2) follow-up interviews with boaters.

The Questionnaire consisted of four sections.

- Section 1 requested boater demographic information and general information about skill level, types of watercraft used to run whitewater, use patterns, and flow information dissemination.

- Sections 2, 3, and 4 were questions pertaining to each of the whitewater runs in the bypass reach—Cadillacs Run, Richbar Run, and Cataracts Run, respectively. Questions were designed to collect information from boaters about use patterns, transit time, difficulty classification, changes to whitewater factors as a result of higher or lower flow, estimates of minimum acceptable and optimum flow, and access information.

The questions included in the Questionnaire are included in Appendix A.

5.4.1 Online Survey

The Questionnaire was made available as an online survey instrument for a 60-day period from September 20 to November 19, 2024. The KR1 Recreation Technical Working Group (Recreation TWG)—which includes individuals affiliated with American Whitewater and the Kern River Boaters—was notified that SCE was developing a Questionnaire in August 2024. When the Questionnaire became available on September 20, 2024, the Recreation TWG was notified and provided links to the Questionnaire. A follow-up notice was distributed to the Recreation TWG on October 29, 2024, as a reminder that the Questionnaire was available for completing online and to solicit their assistance in sharing the Questionnaire with individuals who may have direct whitewater experience boating the bypass reach. A total of five unique respondents completed the Questionnaire online during the 60-day online survey period.

5.4.2 Follow-up Interviews

Follow-up interviews with boaters were conducted in January of 2025. As specified in the REC 3 TSP, SCE notified the Recreation TWG that follow-up interviews were planned and requested the Recreation TWG provide names and contact information for boaters who have direct whitewater experience boating the bypass reach to include in the structured interview process.

Based on the nominations from the whitewater boating community, SCE developed a list of 26 boaters to be contacted as part of the structured interview process. SCE circulated this list to the Recreation TWG on December 18, 2024, for review and approval. There were no objections to this initial list of boaters, but some stakeholders did suggest additional individuals to add to the list. The final list of boaters that SCE indicated it would make an effort to contact for a structured interview was circulated to the Recreation TWG on January 2, 2025. There were no objections or additions to this final list of 35 unique boaters.[5] This list is presented in Appendix C.

Full contact information, including both email and phone number, was not available for all names on the list. Of the 35 names submitted, both email and phone information were available for 10, only a phone number was available for 8, only an email address was available for 13, and no information was available for 4. Five of the 35 boaters on the list were the individuals who had already completed the Questionnaire online during the 60-day online survey period.

Follow-up interviews began on January 11, 2025. All individuals with an email contact were sent an individualized email requesting confirmation that the person was interested in participating in the follow-up interview process, requesting their preferred phone number, and requesting a preferred date/time to conduct the interview. If only a phone contact was provided, a call was made requesting the same information. If an email response was not received or a phone call was not returned, at least one additional follow-up email was sent and/or a phone call was made to try to contact potential interviewees. In summary, all individuals were contacted at least twice, and all individuals for whom a phone number was provided were called at least once. The record of contact activity is presented in Appendix D (personal phone numbers and email addresses have been redacted for privacy).

Of the 35 names submitted, 9 people were successfully interviewed. In addition, two of the five boaters who had already completed the Questionnaire online during the 60-day survey period were successfully contacted for follow-up conversations. The Questionnaire was used to guide the interviews. Conversations with the two individuals who had already completed the survey online focused on revisiting and confirming their original responses.

[5] The list circulated to the Recreation TWG included 36 boaters; however, one of the boaters identified is an SCE employee; SCE made the determination to exclude SCE employees from the structured interview process due to potential conflicts of interest. Therefore, the final list of potential boaters to interview consisted of 35 unique boaters.

5.4.3 Structured Interview Results

In total, 14 unique respondents completed the structured interview process either by self-submitting their interview responses during the online survey period (5 respondents) or via follow-up interviews (9 respondents). All boaters who completed the structured interview process were kayakers, though one person also had experience boating the reach in a closed-deck canoe. Eleven of the 14 interview respondents indicated they boat the Cataracts Run, and 3 respondents said they boat the Richbar Run only. No respondent indicated that they typically boat the Cadillacs Run as a “stand-alone” run, though six of the boaters who completed the structured interview process indicated they have also boated the Cadillacs Run. Several respondents boating the Cataracts Run mentioned that they began their journey on the Cadillacs Run, approximately 2.5 miles downstream from Democrat Dam. They then proceeded through the Richbar Run, which some boaters referred to as the "warm-ups," before continuing to the Cataracts Run.

Completed Questionnaire responses are presented in Appendix B (personal contact information has been redacted for privacy).

5.4.3.1 Richbar Run

Eight boaters provided input about their experience boating the Richbar Run. The boaters interviewed identified as advanced to expedition-level boaters with a large variance in experience. One respondent said he had boated the Richbar Run once; another said he had boated the run 100+ times. All respondents indicated that the unique character of the whitewater was one of the reasons they chose to boat the run. One boater said he experiences a “big-water feel” on long non-technical rapids. One boater reported the run could be suitable for rafting. Two boaters indicated that they typically boat on weekends, while other boaters said they were not constrained with respect to when they could boat the run.

All boaters said they put-in upstream of the Upper Richbar Day Use Area and take-out at or near the Live Oak Day Use Area or downstream of the Live Oak Day Use Area near “nude beach.” Access to the put-in was off SR-178, and take-out was accessed off SR-178 or from the Live Oak Day Use Area. Boaters indicated that there were no access constraints but said that parking space for the put-in and take-out along SR-178 is limited, and there are safety considerations associated with proximity to roadside traffic.

Boaters said they checked the flows on the Dreamflows[6] website and/or the US Army Corps of Engineers’ website prior to boating the run. In general, boaters said they were

[6] Dreamflows is a fully automated system that polls the internet for stream and reservoir data and stores it in a database. It also estimates/computes the flows at some virtual gauge sites, based on the flows at other actual gauge sites. Around 5:00 p.m. it correlates all this flow data and uses it to create a daily report. Available online at: https://www.dreamflows.com.

satisfied with the availability of flow data; however, one boater indicated that having flow data forecasts would improve the dissemination of flow data.

Boaters rated the difficulty of the Richbar Run as a Class III/IV+. As would be expected, the perceived difficulty of the run increases with higher flow. A factor in this consideration is safety. At higher flows, there is less recovery time, and the potential consequences of a swim are increased. There was a wide range in the time taken to boat the section. Some boaters reported being able to complete the run in less than an hour, while others indicated requiring 3 to 4 hours to complete the run. This variance is likely associated with flows (e.g., 800 cfs vs. 3,000 cfs) as well as the boaters' objectives. For example, a boater passing through the Richbar Run on the way to the Cataracts Run may move through the reach quickly. Conversely, a boater may choose to extend their time on the run by playing, exploring route options, and/or guiding "new" boaters through the run.

Richbar Run Flow Preferences

The minimum acceptable flow[7] preferences of the eight boaters who provided input about their experience boating the Richbar Run ranged between 700 cfs and 1,600 cfs. The optimum flow preferences of these same boaters ranged between 1,000 cfs and 3,500 cfs. Flow preferences at the high end (3,000+ cfs) represent the flow preferences of one expedition-level boater who recognized his preferences are unlikely to represent those of other boaters, including other expedition-level boaters.

In large part, optimum flow considerations are heavily weighted to personal preferences. Some boaters seek out high-water with powerful hydraulics, and others prefer a more "technical" challenge. The considerations for minimum acceptable flow tend to be more concise, with an emphasis on "boatability," route availability, and low-water safety considerations such as pinning or the presence of "sieves[8]."

Figure 5-1 reflects the flow preferences for each of the eight boaters who responded to questions about flow preferences for the Richbar Run.

5.4.3.2 Cadillacs and Cataracts Runs

Boaters running these sections of river are expert to expedition-level boaters and are proficient at running Class V whitewater. The Cadillacs Run was not mentioned as a primary focus for boaters, and the boating considerations for this run are typically associated with the Cataracts Run. There was a wide range in experience of those boating these runs, with one respondent reporting having boated the Cataracts Run twice and another respondent reporting having boated the Cataracts Run more than 200 times. In general, most boaters are targeting the Cataracts Run and boat a section of the Cadillacs Run as part of the "warm-up." While at least one boater described putting in just below Democrat Dam, none of the boaters interviewed said that they set intentions to run

[7] The Questionnaire defined minimum acceptable flow as the flow a boater would return to boat the run.
[8] A sieve is a narrow, empty space through which water flows between two obstructions, usually rocks.

the Cadillacs Run only. That is, boaters putting in within the Cadillacs Run intended to run the river through Richbar and into the Cataracts Run.

For both runs, boaters interviewed indicated that the unique character and difficulty of the whitewater are the primary reasons to boat this section of the river. A unique aspect of the runs is the proximity of Class V/V+ whitewater to easy road access, which is not typically the case with Class V whitewater runs. In addition to the provision of relatively easy access to the run, the proximity of the road provides options should a boater need to terminate the run due to rescue/injury needs, changes in flow conditions, or, if they are having a "bad day." Most boaters indicated they are not constrained with respect to when they can boat the run and take advantage of boating opportunities when boatable flows are present.

Typically, boaters said they put-in upstream of the Upper Richbar Day Use Area, run the "warm-ups," and take-out above Triple-drop rapid. A few boaters reported that they proceed past Triple-drop rapid and take-out at the KR1 Powerhouse location. Access to the put-in and take-out was from SR-178. Boaters indicated that there were no access constraints, but as noted above, parking off SR-178 was limited. Additionally, there are safety considerations associated with proximity to roadside traffic, and there have been break-ins of vehicles parked for shuttling.

Boaters said they checked the flows on either the Dreamflows website, the US Army Corps of Engineers website, and/or contacted local boaters prior to boating the run. In general, they were satisfied with the availability of flow data; however, one boater reported that they perceived flow fluctuations while on-water. Similar to the Richbar Run, there was a wide range in time taken to boat the Cataracts and Cadillacs reaches of the river. Some boaters reported being able to complete a run in less than an hour, while others indicated requiring 3 to 4 hours to complete the run.

Boaters rated the difficulty of this run as a Class V/V+. As would be expected, the perceived difficulty of the run increases with higher flow. A factor in this consideration is safety. At higher flows, there is less recovery time, hydraulics are more powerful, and the consequences of a swim are increased. It should be noted that under any flow condition, a swim in Class V/V+ water is life-threatening and considered a serious situation. Too low a flow also presents a significant safety consideration with the potential of pinning or being "sieved" when there is not enough water to "fill-in" the channel.

Cataracts and Cadillacs Run Flow Preferences

In general, the minimum acceptable flow[9] for the Cadillacs Run is higher than the minimum acceptable flow for the Cataracts Run. The minimum acceptable flow preferences of the six boaters who provided input about their experiences boating the Cadillacs Run ranged between 1,000 cfs and 3,000 cfs. For the Cataracts Run, minimum acceptable flow preferences of the 11 boaters who provided input ranged between 500 cfs and 2,800 cfs. The optimum flow ranges for both runs were similar: for the Cadillacs Run, optimum flow preferences ranged between 1,500 cfs and 3,800 cfs, and

[9] The Questionnaire defined minimum acceptable flow as the flow a boater would return to boat the run.

for the Cataracts Run, optimum flow preferences ranged between 900 cfs and 2,800 cfs. For the Cataracts Run, of the 11 estimates for minimum acceptable flow, the preferences of eight boaters were between 600 cfs and 1,500 cfs (high and low flow estimates eliminated). The high-end minimum acceptable flow preference (2,800 cfs) represents the flow preference of one expedition-level boater who recognized his preferences are unlikely to represent those of other boaters, including other expedition-level boaters.

The considerations for minimum acceptable and optimum flow are determined by personal preferences and can differ considerably between boaters, especially with respect to estimates of optimum flow. As with most any run, the considerations for minimum acceptable flow tend to be more focused on "boatability," route availability, and low-water safety considerations such as pinning or the presence of "sieves." A factor contributing to the variance among flow preferences is the "evolution" of whitewater boating. Equipment and boater skill levels have expanded the "limits" of whitewater boating. What was once considered un-runnable due to difficulty and/or flow is now within the threshold of "expedition-level" boaters. This trend is evident on the lower Kern River as the "new" generation of boaters has pushed the limits on flows and routes.

Figure 5-2 reflects the flow preferences for each of the six boaters who responded to questions about flow preferences for the Cadillacs Run.

Figure 5-3 reflects the flow preferences for each of the 11 boaters who responded to questions about flow preferences for the Cataracts Run.

5.5 BOATABLE FLOW OPPORTUNITIES

The availability of boatable flows was calculated using the flow preference information collected from boater consultation (refer to Section 5.4, above), measured hourly flow data, and modeled hourly flow data.[10] Boatable flows were identified for each run using the flow preference thresholds specific to that run. Boating-day calculations were made for "with-project" hydrology using measured flow data, and "without-project" hydrology using modeled hydrology that "returned" project diversions back into the bypass reach (a maximum diversion of 412 cfs).

The hydrology data period of record (measured and modeled) was 11 water years, extending from 2014 to 2024. During this time period, there was a large variance of Kern River inflow to Lake Isabella, which has a direct influence on flows released from Lake Isabella into the bypass reach. During the period between 2014 and 2024, the California Department of Water Resources Bulletin 120 April 1 Forecast of Kern River inflow to Lake Isabella ranged from a low of 19% of average in 2015, to a high of 371% of average in 2023. Figure 5-4 presents the California Department of Water Resources Bulletin 120 April 1 Forecast of Kern River inflow to Lake Isabella

[10] Daily hydrology data is published by the United States Geological Survey (USGS) as USGS #11192000 - Kern River No 1 Conduit NR Democrat Springs CA and USGS #11192500 – Kern River NR Democrat Springs (River Only) CA. Hourly hydrology data is based on two SCE's gages (SCE is a USGS cooperator). Records are provided to USGS by SCE under the general supervision of the USGS in connection with FERC Project No. 2290.

Using the data identified above, a boating day was identified if there was flow in the bypass reach within the minimum boatable flow threshold and optimal boating flow threshold (specific for each run), for a minimum of four hours between 10:00 a.m. and 4:00 p.m.

The following sections present an overview of the boatable days, by run, for “with-project” and “without-project” hydrology between 2014 and 2024. This overview information includes, for each run, (1) a hydrograph for the complete period of record, and (2) a summary table presenting the annual number of boating days for the 11-year period of record for “with-project” and “without-project” hydrology.

A key finding resulting from boater consultation was that there is a large variance in boater preference for “minimum acceptable” and “optimal” flow thresholds. In the more pronounced cases, there was an overlap of one boater’s “optimal” with another boater’s “minimum.” To address flow suitability for different boater preferences and to examine how project operations affect these opportunities, Appendix E includes an examination of the number of days (by month and year) the river flowed within a more detailed set of intermediate flow ranges, providing a finer-grained view of flow conditions for each run. The figures and tables in Appendix E include separate hydrograph and summary tables for each year that illustrate the number of days with "boatable" flows, broken down by month and year, for each specific river run.

5.5.1 Cadillacs Run

The flow preferences of the boaters who provided input about their experiences boating the Cadillacs Run ranged between 1,000 cfs and 3,000 cfs for the minimum acceptable flow threshold, and between 1,500 and 3,800 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating day for the Cadillacs Run was 1,000 cfs to 3,800 cfs.

Figure 5-5 illustrates the hydrograph for the complete period of record, illustrating both “with-project” and “without-project” flows, and when the flow met the criteria for a Cadillacs Run boating day.

The annual number of Cadillacs Run boating days, by month, from 2014 to 2024 under current project operations, is presented in Table 5-2. For this period, the total number of boating days is 488, and the annual number of boating days ranged from 0 in multiple years (WY 2014, 2015, 2016, 2020, 2021, 2022), to a high of 143 in 2019 when inflow into Lake Isabella was 155% of average.

Table 5-3 presents the annual number of boating days by month from 2014 to 2024 using modeled “without-project” hydrology. For this period, the total number of boating days is 698, and the annual number of boating days ranged from 0 in multiple years to a modeled high of 179 in 2024 when inflow into Lake Isabella was 110% of average.

A decrease of 210 boating days was calculated when comparing “with-project” hydrology to “without-project” hydrology between water years 2014 and 2024. That is, there were 210 less boating days on the Cadillacs Run under the “with-project” hydrology scenario

than over the same period under the modeled "without-project" hydrology scenario. Table 5-4 presents the difference in the annual number of boating days, by month, from 2014 to 2024 when comparing "with-project" hydrology to "without-project" hydrology.

Refer to Appendix E for an analysis and illustration of the number of days—broken down by month and year—the Cadillacs Run experienced flows within three specific intermediate ranges (1,000–1,900 cfs, 1,900–2,800 cfs, and 2,800–3,800 cfs), under both "with-project" and "without-project" scenarios.

5.5.2 Richbar Run

The flow preferences of the boaters who provided input about their experiences boating the Richbar Run ranged between 700 cfs and 1,600 cfs for the minimum acceptable flow threshold, and between 1,000 and 3,500 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating day for the Richbar Run was 700 cfs to 3,500 cfs.

Figure 5-6 illustrates the hydrograph for the complete period of record, illustrating both "with-project" and "without-project" flows, and when the flow met the criteria for a Richbar Run boating day.

The annual number of Richbar Run boating days, by month, from 2014 to 2024 under current project operations is presented in Table 5-5. For this period, the total number of boating days is 649, and the annual number of boating days ranged from 0 in multiple years (WY 2014, 2015, 2016, 2021, 2022), to a high of 156 in 2019 when inflow into Lake Isabella was 155% of average.

Table 5-6 presents the annual number of boating days by month from 2014 to 2024 using modeled "without-project" hydrology. For this period, the total number of boating days is 912, and the annual number of boating days ranged from 0 in multiple years to a high of 157 in 2018 when inflow into Lake Isabella was 60% of average.

A decrease of 263 boating days was calculated when comparing "with-project" hydrology to "without-project" hydrology between water years 2014 and 2024. That is, there were 263 fewer boating days on the Richbar Run under the "with-project" hydrology scenario than over the same period under the modeled "without-project" hydrology scenario. Table 5-7 presents the difference in the annual number of boating days, by month, from 2014 to 2024 when comparing "with-project" hydrology to "without-project" hydrology.

Refer to Appendix E for an analysis and illustration of the number of days—broken down by month and year—the Richbar Run experienced flows within three specific intermediate ranges (700–1,600 cfs, 1,600–2,500 cfs, and 2,500–3,500 cfs), under both "with-project" and "without-project" scenarios.

5.5.3 Cataracts Run

The flow preferences of the boaters who provided input about their experiences boating the Cataracts Run ranged between 500 cfs and 2,800 cfs for the minimum acceptable

flow threshold, and between 900 and 3,800 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating day for the Cataracts Run was 500 cfs to 3,800 cfs.

Figure 5-7 illustrates the hydrograph for the complete period of record, illustrating both "with-project" and "without-project" flows, and when the flow met the criteria for a Cataracts Run boating day.

The annual number of Cataracts Run boating days, by month, from 2014 to 2024 under current project operations, is presented in Table 5-8. For this period, the total number of boating days is 844, and the annual number of boating days ranged from 0 in multiple years (WY 2014, 2015, 2021) to a high of 211 in 2024 when inflow into Lake Isabella was 110% of average.

Table 5-9 presents the annual number of boating days by month from 2014 to 2024 using modeled "without-project" hydrology. For this period, the total number of boating days is 1,152, and the annual number of boating days ranged from 0 in two years (WY 2014, 2015), to a modeled high of 292 in 2024 when inflow into Lake Isabella was 110% of average.

A decrease of 308 boating days was calculated when comparing "with-project" hydrology to "without-project" hydrology between water years 2014 and 2024. That is, there were 308 fewer boating days on the Cataracts Run under the "with-project" hydrology scenario than over the same period under the modeled "without-project" hydrology scenario. Table 5-10 presents the difference in the annual number of boating days, by month, from 2014 to 2024 when comparing "with-project" hydrology to "without-project" hydrology.

Refer to Appendix E for an analysis and illustration of the number of days—broken down by month and year—the Cataracts Run experienced flows within three specific intermediate ranges (500–1,600 cfs, 1,600–2,700 cfs, and 2,700–3,800 cfs), under both "with-project" and "without-project" scenarios.

6.0 CONFLICTS OF WHITEWATER BOATING FLOWS WITH OTHER RECREATION USES

Over the course of this study process, from literature research through boater consultation, no incidence or documentation of conflicts with whitewater boating flows or whitewater boaters was documented. In addition, the REC 2, Recreation Facility Use Assessment study included recreation user in-person intercept surveys conducted several times per month from May 2024 through April 2025 along the bypass reach. During this time period, survey technicians collected or received 374 survey forms representing 1,251 individual day users along the bypass reach. No survey respondents indicated they were whitewater boating the bypass reach. Further, of respondents who identified a water-related activity as their primary recreation activity that day, less than 1% indicated they were "dissatisfied" with flows in the river, compared to 22% who indicated they were "very satisfied" and 74% who indicated they were "satisfied". An

additional 4% indicated they were “neutral” in their perception of river flow as it related to their recreation activity.

A stakeholder raised a concern during the KR1 Initial Study Report meeting on March 19, 2025, about potential impacts to cultural resources from boaters accessing the river channel overland from SR-178. However, as the collected data indicates, whitewater boating in the bypass reach is infrequent and typically limited to a small group of expedition-level boaters during periods of boatable flows. Given this limited use, it is unlikely that boater access is contributing materially to ground disturbance affecting cultural resources. Further, typically, whitewater boaters are focused on accessing the river channel and getting “on-water” as quickly as possible. As such, little time is spent in the field, or on the riverbank, and there are minimal ground disturbing activities associated with access to the river channel and boating put-in and take-out activities.

7.0 STUDY-SPECIFIC CONSULTATION

The following study-specific consultation was conducted:

- **Nomination of whitewater boaters to interview:** Pursuant to the REC 3 TSP, SCE solicited the Recreation TWG (which includes members of the Kern River whitewater boating community) and other stakeholders to identify individuals to contact as part of the structured interview process. The resulting list of 35 names was inclusive—it included the names of all individuals suggested. The list also included the names of those individuals who had completed the Questionnaire online during the 60-day online survey period.

- **Follow-up interviews**: Boaters identified by the Recreation TWG were contacted, and follow-up interviews were conducted. The record of outreach is presented in Appendix D.

- **Distribution of Interim Technical Memo:** The REC 3 – Whitewater Boating Interim Technical Memo was electronically distributed to KR1 stakeholders (all stakeholders on the distribution list) for a 90-day review and comment period on February 28, 2025. The comment period concluded on May 29, 2025. During this period, SCE hosted the Initial Study Report (ISR) meeting on March 19, 2025, to discuss the progress of implementing FERC-approved studies, including the REC 3 – Whitewater Boating Study. During the meeting, results of the REC 3 study were presented and questions solicited. No stakeholder submitted any formal comments on the REC 3 study during or after the 90-day review period.

8.0 OUTSTANDING STUDY PLAN ELEMENTS

There are no outstanding study elements. All data needed to address the study plan objectives were collected during the Level 1 Desktop Assessment. Therefore, based on the study approach detailed in the approved REC 3 TSP, no further assessment is necessary to comprehensively address study objectives. The REC 3 – Whitewater Boating Study is complete.

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TABLES

Table 3-1. Scale of Whitewater Difficulty

Class Rating	Skill Level	Description
I		Fast-moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.
II	**Novice**	Straightforward rapids with wide, clear channels that are evident without scouting. Occasional maneuvering may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured, and group assistance, while helpful, is seldom needed. Rapids that are at the upper end of this difficulty range are designated “Class II+”.
III	**Intermediate**	Rapids with moderate, irregular waves that may be difficult to avoid and that can swamp an open canoe. Complex maneuvers in fast current and good boat control in tight passages or around ledges are often required; large waves or strainers may be present, but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-volume rivers. Scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy, but group assistance may be required to avoid long swims. Rapids that are at the lower or upper end of this difficulty range are designated “Class III-” or “Class III+,” respectively.
IV	**Advanced**	Intense, powerful, but predictable rapids require precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast maneuvers under pressure. A fast, reliable eddy turn may be needed to initiate maneuvers, scout rapids, or rest. Rapids may require “must” moves above dangerous hazards. Scouting may be necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong eskimo roll is highly recommended. Rapids that are at the lower or upper end of this difficulty range are designated “Class IV-” or “Class IV+,” respectively.
V	**Expert**	Extremely long, obstructed, or very violent rapids that expose a paddler to added risk. Drops may contain** large, unavoidable waves and holes or steep, congested chutes with complex, demanding routes. Rapids may continue for long distances between pools, demanding a high level of fitness. What eddies exist may be small, turbulent, or difficult to reach. At the high end of the scale, several of these factors may be combined. Scouting is recommended but may be difficult. Swims are dangerous, and rescue is often difficult even for experts. A very reliable eskimo roll, proper equipment, extensive experience, and practiced rescue skills are essential. Because of the large range of difficulty that exists beyond Class IV, Class V is an open-ended, multiple-level scale designated by Class V.0, V.1, V.2, etc. Each of these levels is an order of magnitude more difficult than the last. Example: increasing difficulty from Class V.0 to Class V.1 is a similar order of magnitude as increasing from Class IV to Class C.0.
VI	**Extreme and Exploratory Rapids**	These runs have almost never been attempted and often exemplify the extremes of difficulty, unpredictability, and danger. The consequences of errors are very severe, and rescue may be impossible. For teams of experts only, at favorable water levels, after close personal inspection and taking all precautions. After a Class VI rapid has been run many times, its rating may be changed to an appropriate Class V.x rating.

Source: American Whitewater 2024

Table 5-1. Whitewater Boating Opportunities in the Kern River Basin

Whitewater Run	River	Put-in	Take-out	Length of Run (miles)	Gradient (feet/mile)	Class Rating
Monache Meadows to Kennedy Meadows	South Fork Kern	4WD road into Monache Meadows	Kennedy Meadows	17	10–250	V
Kennedy Meadows to Long Valley	South Fork Kern	Kennedy Meadows	Long Valley trail about 2 miles to a Bureau of Land Management campground	22	250–200	V/V+
Headwaters of the Kern	Kern	23-mile hike to Junction Meadows	Forks of the Kern put-in trail	39.9	90 (avg)	V
Forks of the Kern	Kern	3.75-mile hike down Forks of the Kern Trail	Johnsondale Bridge	14.6	65 (avg)	V
Johnsondale Bridge	Kern	Johnsondale Bridge	Above Fairview Dam	2.4	52 (avg)	IV–V
Sidewinder / Bombs Away	Kern	Below Fairview Dam	Roads End/ Calkins Put-in	0.5	80 (avg)	IV–V
Fairview	Kern	Roads End / Calkins	Calkins Flat	2.3	33 (avg)	III
Chamise Gorge	Kern	Calkins Flat	Above Upper Salmon Rapid	2.5	68 (avg)	IV–V
Salmon Falls	Kern	Below Lower Salmon Rapid	Ant Canyon	0.9	89 (avg)	VI
Gold Ledge	Kern	Ant Canyon	Corral Creek	3.1	66 (avg)	IV–V
Thunder Run	Kern	Corral Creek	Thunderbird Access or Camp 3	3.5	60 (avg)	V
Cable / Camp 3	Kern	Camp 3	Riverkern Beach	1.8	52 (avg)	IV
Riverkern Beach	Kern	Riverkern Beach	KR3 Powerhouse Put-in/Take-out	1	38 (avg)	II
Powerhouse / “Lickety Split”	Kern	KR3 Powerhouse Put-in/Take-out	Riverside Park, Kernville	1.8	31 (avg)	II+–III

Whitewater Run	River	Put-in	Take-out	Length of Run (miles)	Gradient (feet/mile)	Class Rating
Rincon Camp to Kern River	Brush Creek	Sherman Pass Road about 1.5 miles to a large area designated as a helicopter landing pad	Confluence of Brush Creek with the Kern River	1.4	360 (avg)	IV–V
Jungle Run	Kern	Hwy-155 Bridge below Lake Isabella	Borel Powerhouse or Miracle Hot Springs	6–7	N/A	III
Miracle Run	Kern	Miracle Hot Springs area	Democrat Raft Take-out Boating Site (upstream of Democrat Dam)	11.2	30 (avg)	IV
Cadillacs	Kern	Overland hike from SR-178 downstream of Democrat Dam	Upper Richbar Day Use Area	4.5 +/-	87 (avg)	V
Richbar	Kern	Overland hike from SR-178	Lower Richbar Day Use Area, Live Oak Day Use Area, or 1 mile downstream of Live Oak Day Use Area	3 +/-	52 (avg)	IV
Cataracts	Kern	Lower Richbar Day Area or Live Oak Day Use Area	SR-178 upstream of Powerhouse No. 1	2.8 +/-	1,434 (avg)	V+
Rio Bravo / Boy Scout	Kern	Large parking area on the side of SR-178 across from the Pacific Gas and Electric Company power plant at the mouth of the canyon	River access parking area on the southwest side of Rancheria Road bridge	1.2	51 (avg)	IV

Whitewater Run	River	Put-in	Take-out	Length of Run (miles)	Gradient (feet/mile)	Class Rating
Hart Park	Kern	River access parking area on the southwest side of Rancheria Road bridge	A number of options for take-out at either Kern River State Park (Lake Ming) or at the Kern River County Park	7.3	14 (avg)	II

Note: Run lengths and gradients were obtained from published information or calculated from Google Earth imagery and are presented for comparative purposes only. Run lengths and elevational profiles were not topographically surveyed and, as such, should be considered approximate estimates of length and overall gradient.
Key: avg = average

Table 5-2. Cadillacs Run Boating Day "With-Project" Hydrology

With-Project Whitewater Boating Days (1,000-3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	10	18	0	6	0	0	18	25	1	78
2018	0	0	0	0	0	0	0	0	15	19	0	0	34
2019	0	0	0	0	0	1	30	29	11	31	30	11	143
2020	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	11	1	0	0	19	31	30	92
2024	31	15	0	0	0	0	0	14	28	31	22	0	141
Total													**488**

Table 5-3. Cadillacs Run Boating Day "Without-Project" Hydrology

Without-Project Whitewater Boating Days (1,000–3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	10	18	0	2	0	0	15	31	16	92
2018	24	0	0	0	0	0	0	18	30	31	27	0	130
2019	0	0	0	0	0	2	30	26	3	31	31	28	151
2020	0	0	0	0	0	0	0	6	22	27	1	0	56
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	10	1	0	1	18	31	29	90
2024	31	15	2	0	0	0	10	28	30	31	31	1	179
Total													**698**

Table 5-4. Cadillacs Run Boating Day Difference: "With-Project" to "Without-Project" Hydrology

Difference With-Project - Without-Project Whitewater Boating Days (500–3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	4	0	0	3	-6	-15	-14
2018	-24	0	0	0	0	0	0	-18	-15	-12	-27	0	-96
2019	0	0	0	0	0	-1	0	3	8	0	-1	-17	-8
2020	0	0	0	0	0	0	0	-6	-22	-27	-1	0	-56
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	1	0	0	-1	1	0	1	2
2024	0	0	-2	0	0	0	-10	-14	-2	0	-9	-1	-38
Total													**-210**

Table 5-5. Richbar Run Boating Day "With-Project" Hydrology

With-Project Whitewater Boating Days (700–3,500 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	15	21	0	3	0	0	15	31	9	94
2018	10	0	0	0	0	0	0	12	29	31	21	0	103
2019	0	0	0	0	0	2	30	27	8	31	31	27	156
2020	2	0	0	0	0	0	0	2	13	19	0	0	36
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	10	1	0	1	18	31	29	90
2024	31	15	3	0	0	0	3	26	30	31	31	0	170
Total													**649**

Table 5-6. Richbar Run Boating Day "Without-Project" Hydrology

Without-Project Whitewater Boating Days (700–3,500 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	12	12	0	0	24
2017	0	0	0	15	21	0	0	0	0	12	31	30	109
2018	31	4	0	0	0	0	0	26	30	31	31	4	157
2019	0	0	0	0	0	6	30	21	1	27	31	30	146
2020	24	0	0	0	0	0	8	31	30	31	11	0	135
2021	0	0	0	0	0	0	0	0	3	0	0	0	3
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	10	1	0	1	17	29	25	83
2024	31	30	10	0	0	11	30	31	30	31	31	20	255
Total													**912**

Table 5-7. Richbar Run Boating Day Difference: "With-Project" to "Without-Project" Hydrology

Difference With-Project - Without-Project Whitewater Boating Days (700–3,500 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	-12	-12	0	0	-24
2017	0	0	0	0	0	0	3	0	0	3	0	-21	-15
2018	-21	-4	0	0	0	0	0	-14	-1	0	-10	-4	-54
2019	0	0	0	0	0	-4	0	6	7	4	0	-3	10
2020	-22	0	0	0	0	0	-8	-29	-17	-12	-11	0	-99
2021	0	0	0	0	0	0	0	0	-3	0	0	0	-3
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0	0	1	2	4	7
2024	0	-15	-7	0	0	-11	-27	-5	0	0	0	-20	-85
Total													**-263**

Table 5-8. Cataracts Run Boating Day "With-Project" Hydrology

With-Project Whitewater Boating Days (500–3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	3	2	0	0	5
2017	0	0	0	23	22	0	6	0	0	18	31	26	126
2018	31	1	0	1	0	0	0	23	30	31	31	3	151
2019	0	0	0	0	0	2	30	29	11	31	31	30	164
2020	14	0	0	0	0	0	0	15	28	31	5	0	93
2021	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	12	1	0	1	19	31	30	94
2024	31	24	8	0	0	0	20	30	30	31	31	6	211
Total													**844**

Table 5-9. Cataracts Run Boating Day "Without-Project" Hydrology

Without-Project Whitewater Boating Days (500–3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	30	31	22	0	83
2017	0	0	0	23	22	0	2	0	0	15	31	30	123
2018	31	4	0	1	0	0	2	31	30	31	31	12	173
2019	0	0	0	0	0	11	30	26	3	31	31	30	162
2020	30	0	24	3	0	0	16	31	30	31	22	0	187
2021	0	0	0	0	0	0	0	0	16	0	0	0	16
2022	0	0	0	0	0	0	0	1	9	7	0	0	17
2023	0	0	0	7	0	12	1	0	1	18	31	29	99
2024	31	30	20	10	0	18	30	31	30	31	31	30	292
Total													**1,152**

Table 5-10. Cataracts Run Boating Day Difference: "With-Project" to "Without-Project" Hydrology

Difference With-Project - Without-Project Whitewater Boating Days (500–3,800 cfs)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	-27	-29	-22	0	-78
2017	0	0	0	0	0	0	4	0	0	3	0	-4	3
2018	0	-3	0	0	0	0	-2	-8	0	0	0	-9	-22
2019	0	0	0	0	0	-9	0	3	8	0	0	0	2
2020	-16	0	-24	-3	0	0	-16	-16	-2	0	-17	0	-94
2021	0	0	0	0	0	0	0	0	-16	0	0	0	-16
2022	0	0	0	0	0	0	0	-1	-9	-7	0	0	-17
2023	0	0	0	-7	0	0	0	0	0	1	0	1	-5
2024	0	-6	-12	-10	0	-18	-10	-1	0	0	0	-24	-81
Total													**-308**

FIGURES

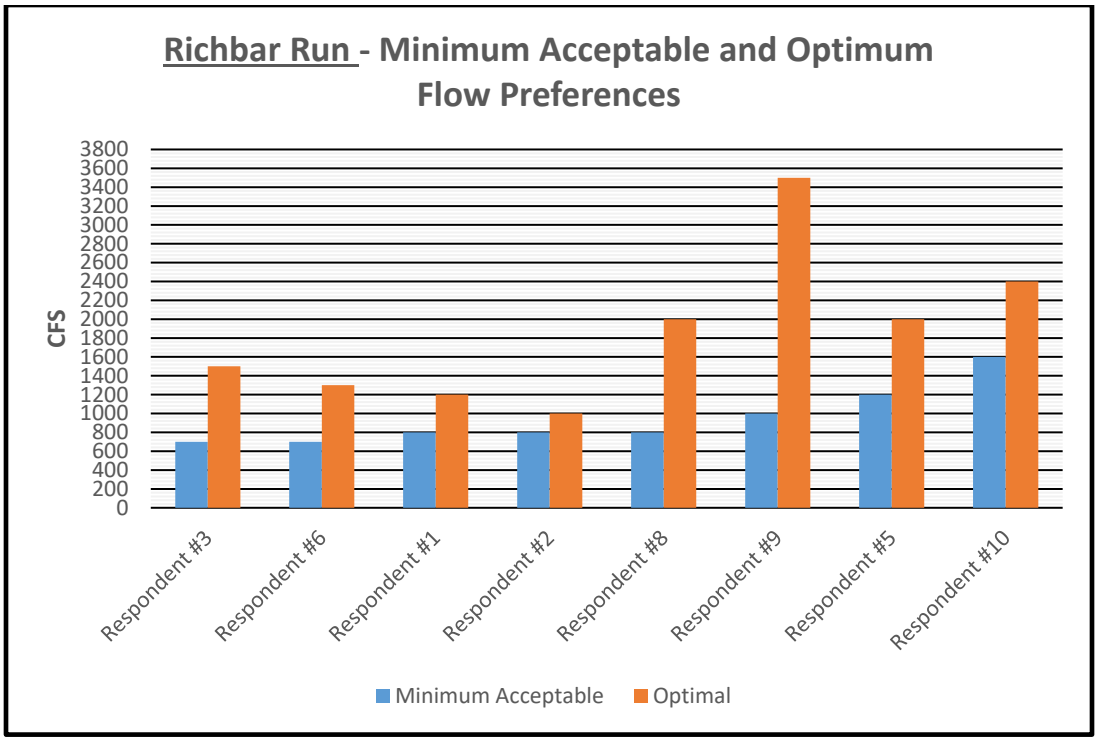


Figure 5-1. Richbar Run—Minimum Acceptable and Optimum Flow Preferences[11]

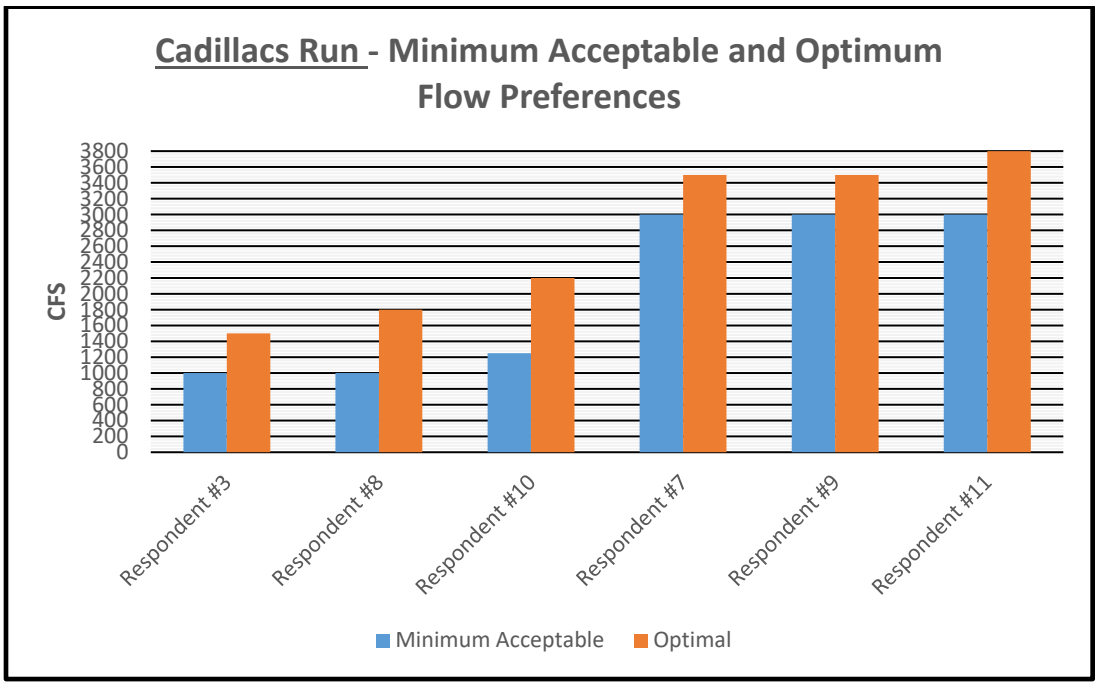


Figure 5-2. Cadillacs Run—Minimum Acceptable and Optimum Flow Preferences[12]

[11] The flow preference data presented is based on boater responses to structured interview questions.
[12] The flow preference data presented is based on boater responses to structured interview questions.

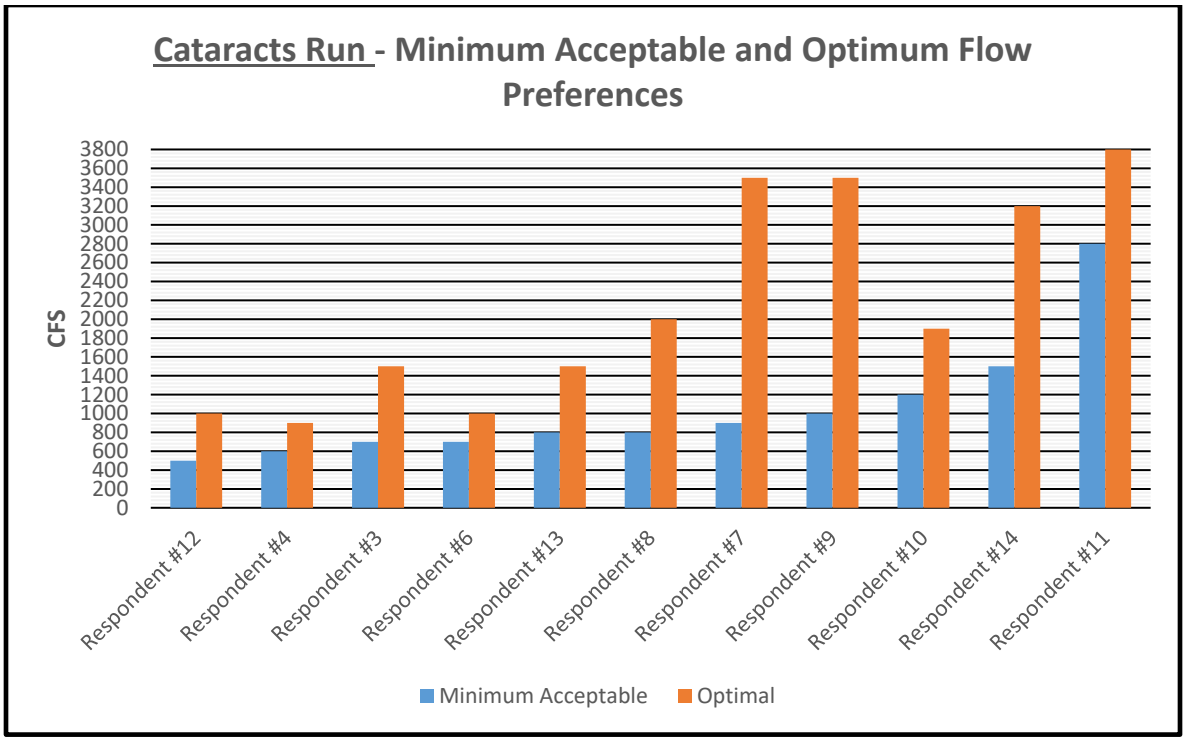


Figure 5-3. Cataracts Run—Minimum Acceptable and Optimum Flow Preferences[13]

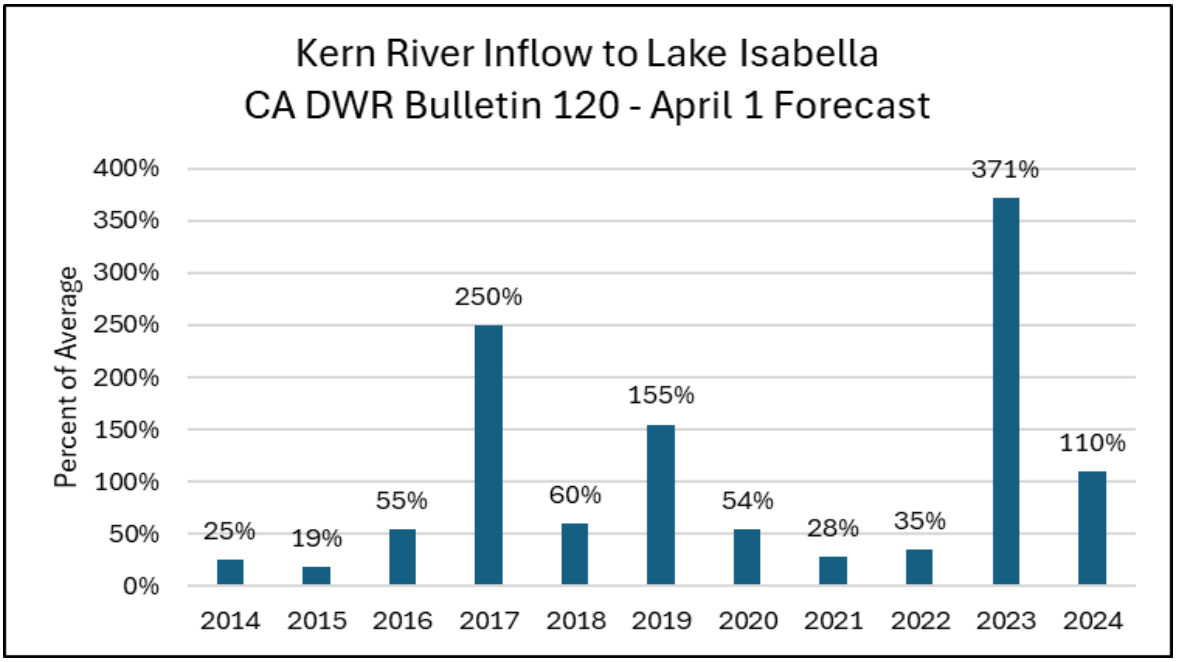


Figure 5-4. Kern River Inflow to Lake Isabella – Percent of Average by Year (2014–2024)

[13] The flow preference data presented is based on boater responses to structured interview questions.

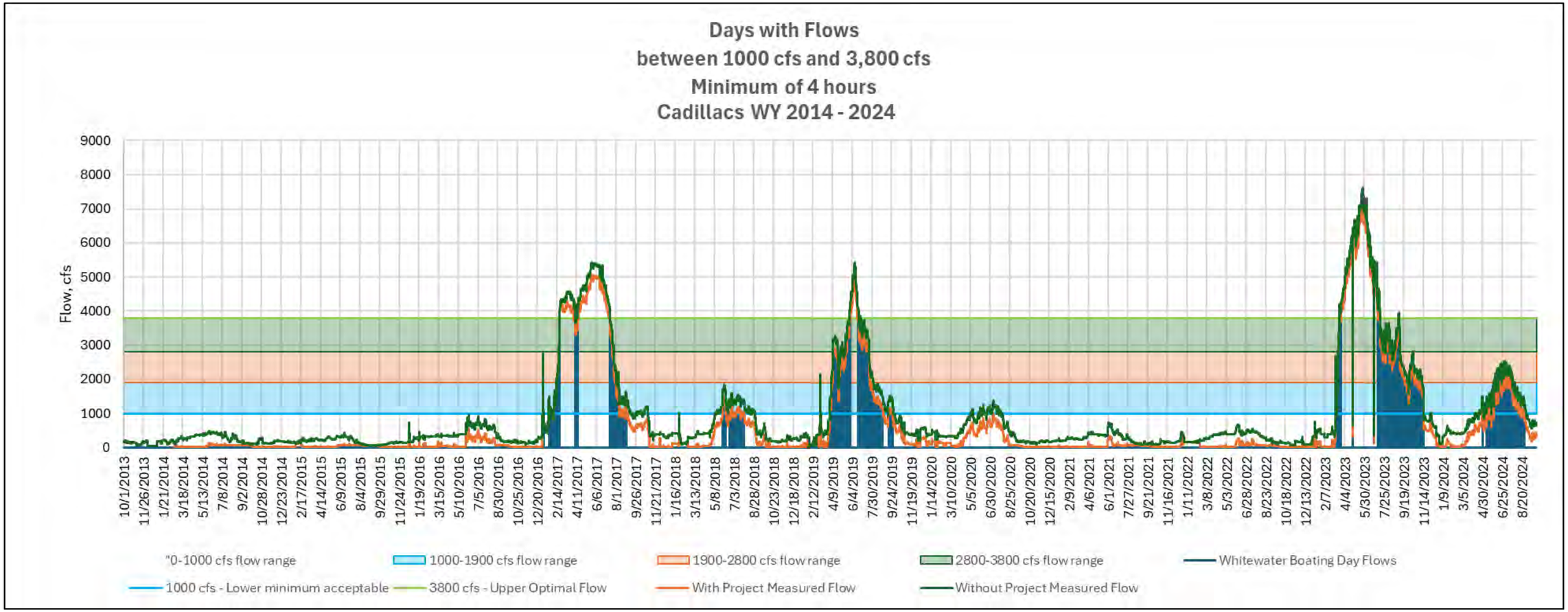


Figure 5-5. Cadillacs Run: Water Years 2014–2024

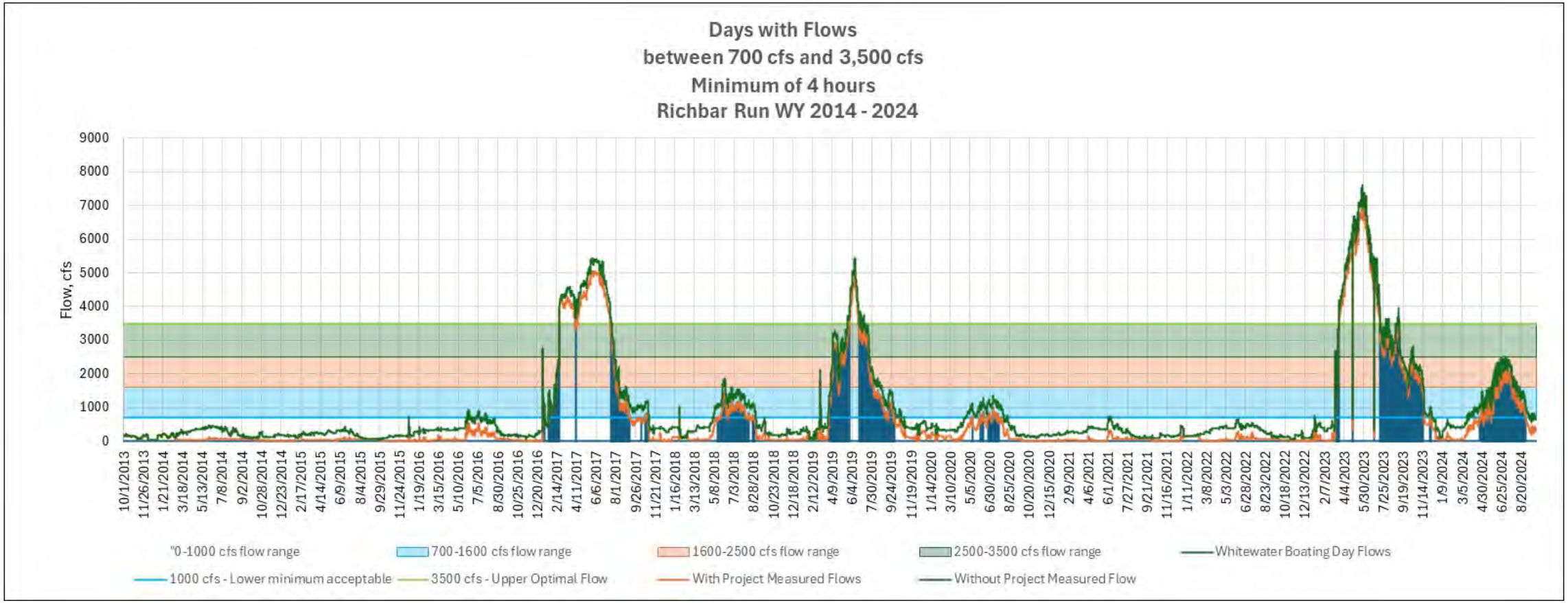


Figure 5-6. Richbar Run: Water Years 2014–2024

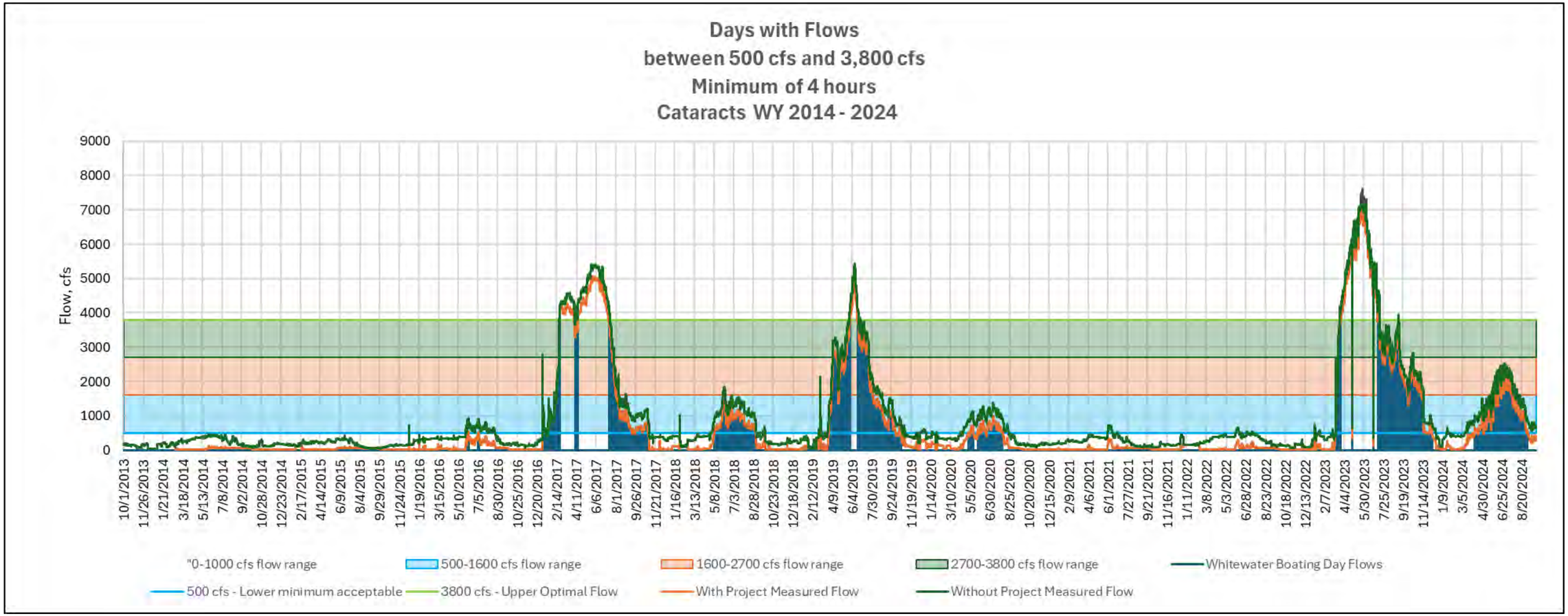
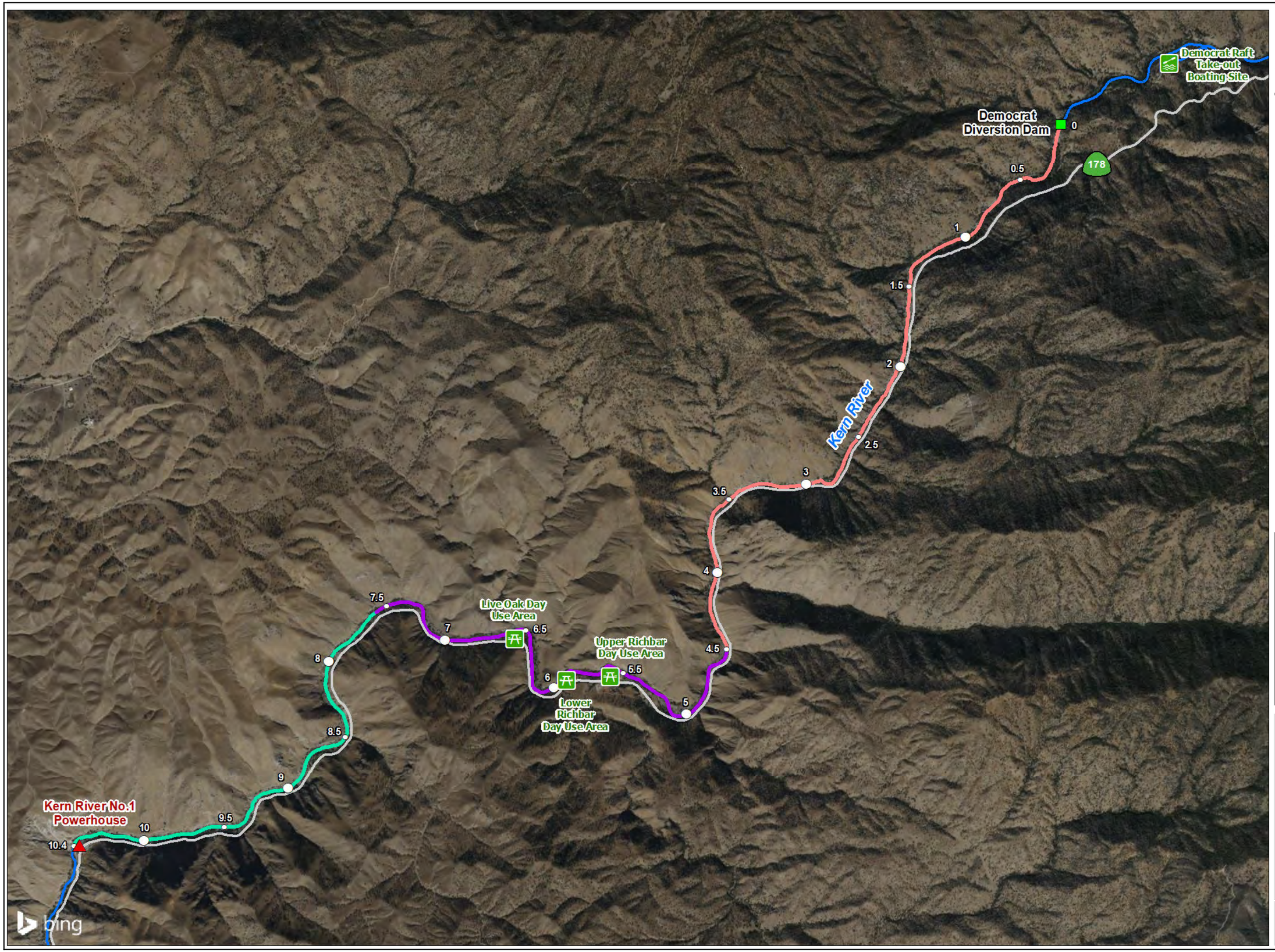


Figure 5-7. Cataracts Run: Water Years 2014–2024

MAPS



Facilities

- Dam
- Powerhouse

Transportation

- Major Road

Hydrology

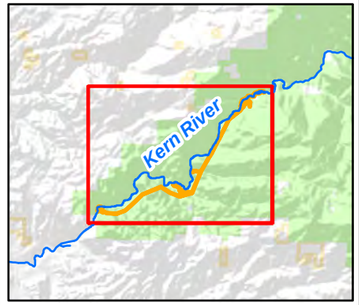
- Watercourse

Forest Service Recreation Sites

- Raft Takeout
- Day Use Area

White Water Runs

- Mile marker
- Half-mile Marker
- Cadillacs Run
- Richbar Run
- Cataracts Run



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map 3-1

Whitewater Run Overview

0 1,500 3,000
Feet

Date: 1/4/2025

Projection: UTM Zone 11
Datum: NAD 83

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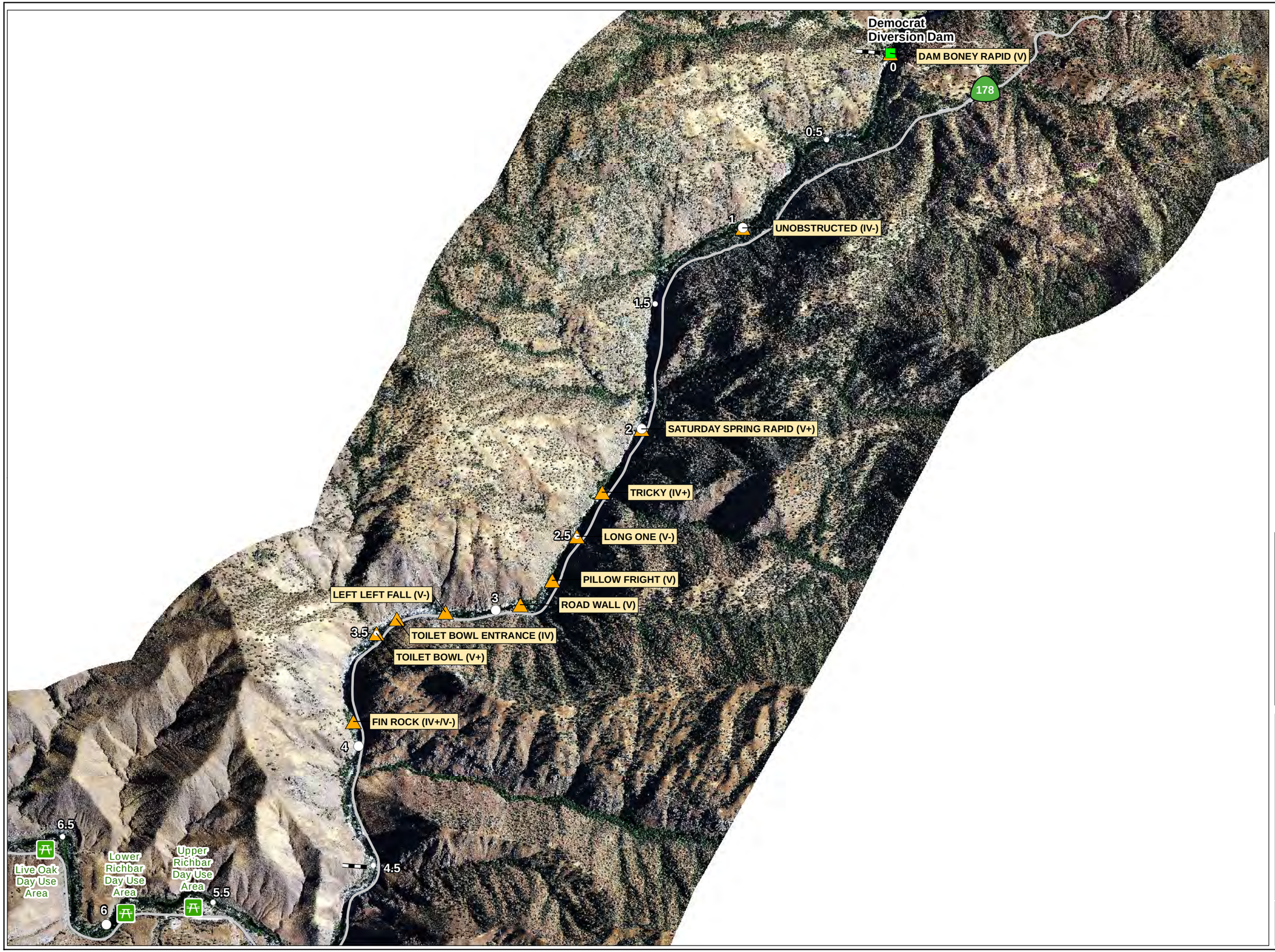


Facilities

- Dam

Forest Service Recreation Sites

- Day Use Area

Transportation

- Other Road

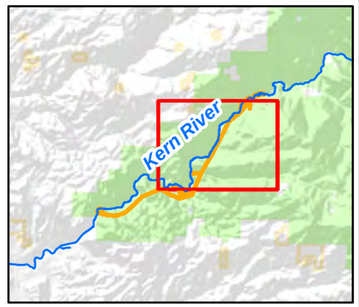
Other

- Rapid Location
- Extents of Run

Aerial Image: Eagle Imagery, 2020

Source: Rapid location and classification difficulty rating: California Creeks https://cacreeks.com/kern-xxx.htm

Notes: The rapid locations and classification difficulty ratings are based on publicly available information and subject to change. This information is presented to provide a general description of the whitewater run and SCE does not warrant the accuracy of the rapid locations and/or the classification difficulty



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map 3-2

Cadillacs Whitewater Run

0 1,000 2,000
Feet

Date: 1/4/2025

Projection: UTM Zone 11
Datum: NAD 83

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Forest Service Recreation Sites

Day Use Area

Transportation

Other Road

Other

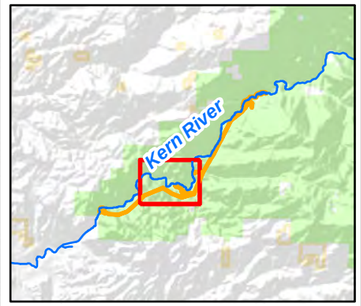
Rapid Location

Extents of Run

Aerial Imagery: Eagle Imagery, 2020

Source: Rapid location and classification difficulty rating: California Creeks https://cacreeks.com/kern-xxx.htm

Notes: The rapid locations and classification difficulty ratings are based on publicly available information and subject to change. This information is presented to provide a general description of the whitewater run and SCE does not warrant the accuracy of the rapid locations and/or the classification difficulty



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

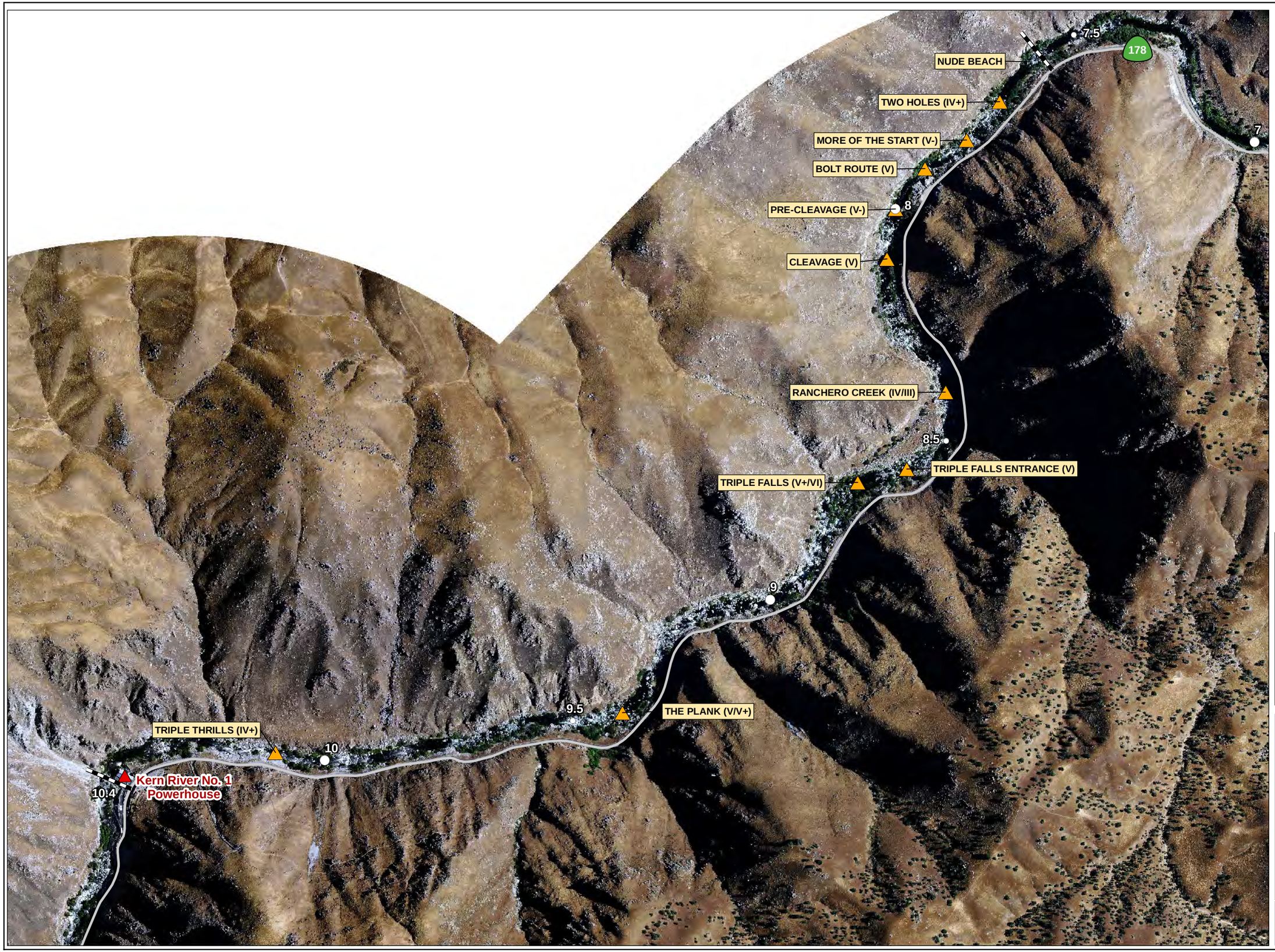
Map 3-3

Richbar Whitewater Run

0 500 1,000
Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 1/4/2025



Facilities

- Powerhouse

Transportation

- Other Road

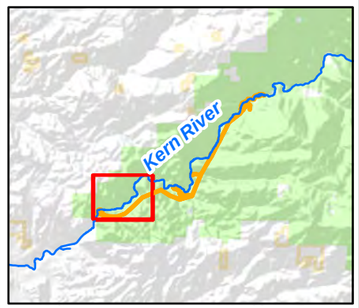
Other

- Rapid Location
- Extents of Run

Aerial Imagery: Eagle Imagery, 2020

Source: Rapid location and classification difficulty rating: California Creeks https://cacreeks.com/kern-xxx.htm

Notes: The rapid locations and classification difficulty ratings are based on publicly available information and subject to change. This information is presented to provide a general description of the whitewater run and SCE does not warrant the accuracy of the rapid locations and/or the classification difficulty



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Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map 3-4

Cataracts Whitewater Run

0 500 1,000
Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 1/4/2025

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APPENDIX A

Questionnaire

Whitewater Boating Survey

SOUTHERN CALIFORNIA EDISON®

Energy for What's Ahead℠

About this Survey

Southern California Edison (SCE) is the owner and operator of the Kern River No. 1 Hydroelectric (KR1) Project, Federal Energy Regulatory Commission (FERC) No. P-1930, which is currently undergoing a relicensing proceeding with FERC to renew its long-term operating license. This Structured Interview Questionnaire (Questionnaire) is part of the Level 1 Desktop Analysis identified in the REC 3 – Whitewater Boating Technical Study Plan (TSP) being conducted to support the relicensing process. The objective of this Questionnaire is to gather information to estimate the range of preferred flows (minimum acceptable and optimum whitewater flows) for respective watercraft; identify constraints, if any, for estimating range of preferred flows; flow information needs; and whitewater use patterns from individuals that have boated the Kern River between Democrat Diversion Dam and the Project Powerhouse. A map delineating the location of this section of the Kern River is provided at this link:

Project Location Map

This information will be used to determine, in consultation with resource agencies and the whitewater boating community, whether initiating the Level 2 Limited Reconnaissance is necessary to achieve the TSP objectives.

This Questionnaire should be completed only by those who have whitewater boating experience on sections of the Kern River between Democrat Diversion Dam and the KR1 Powerhouse.

If you have boated this section of the Kern River, please complete the Questionnaire to document your whitewater boating experience. The Questionnaire asks you to specify which whitewater segments you typically boat, what type of watercraft you use, when you typically boat, river access, and flow preferences. The Questionnaire is divided into four sections, with the first section requesting boater information, and the following sections addressing the different

whitewater runs within this stretch of river: 1) Cadillacs Run, 2) Richbar Run, and 3) Cataracts Run. The map provided at this link shows the locations of each whitewater run. Please complete the Questionnaire only for whitewater runs you have boated; leave blank the section(s) on which you do not have boating experience. The Questionnaire will take 20 to 30 minutes to complete. Your thoughtful responses will provide important information about whitewater boating on this stretch of river, your feedback is important. You only need to complete the structured interview Questionnaire one time. Thank you for participating in the structured interview Questionnaire. If you know of other boaters that have experience on this section of the Kern River between Democrat Diversion Dam and the KR1 Powerhouse, please encourage them to complete this structured interview Questionnaire.

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

What is your age? (choose one)

Under 18

18 – 19

20 – 29

30 – 39

40 – 49

50 – 59

60 or older

What is your gender? (choose one)

Female

Male

Non-binary

Choose not to answer

What would you rate your overall whitewater skill level? (choose one)

Intermediate (comfortable boating Class II-III)

Advanced (comfortable boating Class IV)

Expert (comfortable boating Class V)

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? (check all that apply)

Whitewater kayak (K1 or K2)

Closed-deck canoe (C1 or C2)

Open canoe (OC1 or OC2)

Inflatable kayak (IK)

Paddle raft

Oar frame raft

Cataraft

Shredder

Other

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? (choose one)

Whitewater kayak (K1 or K2)

Closed-deck canoe (C1 or C2)

Open canoe (OC1 or OC2)

Inflatable kayak (IK)

Paddle raft

Oar frame raft

Cataraft

Shredder

Other

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse? (choose one)

1 time

2 to 4 times

5 to 10 times

10 to 20 times

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? (choose one)

0 times annually

1 to 2 times annually

3 to 5 times annually

5 to 10 times annually

more than 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? (check all that apply)

Weekdays between 8 AM and 5 PM

Weekdays after 5 PM

Weekends

Holiday Weekends (not including holiday)

Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map (choose one)

Cadillacs Run only

Richbar Run only

Cataracts Run only

Cadillacs and Richbar Runs

Richbar and Cataracts Runs

Cadillacs and Cataracts Runs

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

No

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable? (check all that apply)

American Whitewater website

Dreamflows website

SCE flow phone

US Army Corps webpage

Wait until I arrive at the river for direct observation

I do not check flow levels

Other source

Does the available flow information meet your needs?

Yes

No

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

The following sections gather information on the specific whitewater runs between Democrat Diversion Dam and the KR1 Powerhouse: Cadillacs Run, Richbar Run, and Cataracts Run.

Link to Project Location Map

Select the run for which you would like to provide information.

Please complete Questionnaire sections only on the runs you have boated. If you have not boated a run, skip to the next applicable section.

Section 1: CADILLACS RUN

Complete this section only if you have boated the Cadillacs Run

Link to Map of Run

What type of watercraft do you have experience using on this run? (check all that apply)

Whitewater kayak (K1 or K2)

Closed-deck canoe (C1 or C2)

Open canoe (OC1 or OC2)

Inflatable kayak (IK)

Paddle raft

Oar frame raft

Cataraft

Shredder

Other

Why do you choose to boat this run? (check all that apply)

Unique character of the whitewater

Whitewater difficulty

River access

Landscape and scenery

Closest boating to where I live

Other

How many times have you boated this section of the Kern River?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run? (choose one)

1 - 2 hours

3 - 4 hours

5 - 6 hours

> 6 hours

How would you rate the overall whitewater difficulty for this run? (choose one)

Class III

Class IV

Class IV+

Class V

Class V+

Not Sure

On a typical run, how many times do you portage? (choose one)

0 times

1-2 times

3-4 times

5+ times

How would the overall difficulty of the run change at a higher flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a higher flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☐	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

How would the overall difficulty of the run change at a lower flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a lower flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☐	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

The next two questions ask you to identify your flow preferences for your watercraft type. Please base your response on your experience and preferences.

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

Cannot make this determination

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

Cannot make this determination

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in? (choose one)

Developed river access site upstream of Democrat Diversion Dam

Trail downstream of Democrat Diversion Dam

Undeveloped access from Highway 178

Where do you TYPICALLY access the river for take-out? (choose one)

Undeveloped access from Highway 178

Richbar Picnic Area

Live Oak Day Use Area

Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

Yes

No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

Complete this section only if you have boated the Richbar Run

Link to Map of Run

What type of watercraft do you have experience using on this run? (check all that apply)

Whitewater kayak (K1 or K2)

Closed-deck canoe (C1 or C2)

Open canoe (OC1 or OC2)

Inflatable kayak (IK)

Paddle raft

Oar frame raft

Cataraft

Shredder

Other

Why do you choose to boat this run? (check all that apply)

Unique character of the whitewater

Whitewater difficulty

River access

Landscape and scenery

Closest boating to where I live

Other

How many times have you boated this section of the Kern River?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run? (choose one)

1 - 2 hours

3 - 4 hours

5 - 6 hours

> 6 hours

How would you rate the overall whitewater difficulty for this run? (choose one)

Class III

Class IV

Class IV+

Class V

Class V+

Not Sure

On a typical run, how many times do you portage? (choose one)

0 times

1-2 times

3-4 times

5+ times

How would the overall difficulty of the run change at a higher flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a higher flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☒	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

How would the overall difficulty of the run change at a lower flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a lower flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☐	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

The next two questions ask you to identify your flow preferences for your watercraft type. Please base your response on your experience and preferences.

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

Cannot make this determination

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

Cannot make this determination

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in? (choose one)

Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Upper Richbar day-use area

Undeveloped access downstream of Upper Richbar day-use area

Live Oak Day Use Area

Undeveloped access downstream of Live Oak Day-use area

Where do you TYPICALLY access the river for take-out? (choose one)

Undeveloped access from Highway 178

Upper Richbar Picnic Area

Live Oak Day Use Area

Undeveloped access downstream of Live Oak Day-use area

Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

Yes

No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

Complete this section only if you have boated the Cataracts Run

Link to Map of Run

What type of watercraft do you have experience using on this run? (check all that apply)

Whitewater kayak (K1 or K2)

Closed-deck canoe (C1 or C2)

Open canoe (OC1 or OC2)

Inflatable kayak (IK)

Paddle raft

Oar frame raft

Cataraft

Shredder

Other

Why do you choose to boat this run? (check all that apply)

Unique character of the whitewater

Whitewater difficultyRiver access

Landscape and scenery

Closest boating to where I live

Other

How many times have you boated this section of the Kern River? (enter # of times)

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run? (choose one)

1 - 2 hours

3 - 4 hours

5 - 6 hours

> 6 hours

How would you rate the overall whitewater difficulty for this run? (choose one)

Class III

Class IV

Class IV+

Class V

Class V+

Not Sure

On a typical run, how many times do you portage? (choose one)

0 times

1-2 times

3-4 times

5+ times

How would the overall difficulty of the run change at a higher flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a higher flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☐	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

How would the overall difficulty of the run change at a lower flow? (choose one)

No change

Less difficult

More difficult

Do not know

How would the following factors change at a lower flow? (check corresponding box)

Factor	Decline Considerably	Slightly Decline	No Change	Slightly Improve	Improve Considerably
Overall "boatability" of the run	☐	☐	☐	☐	☐
Challenging hydraulics	☐	☐	☐	☐	☐
Challenging technical boating	☐	☐	☐	☐	☐
Play opportunities	☐	☐	☐	☐	☐
Route options through rapids	☐	☐	☐	☐	☐
Ability to stop for scouting and portaging	☐	☐	☐	☐	☐
Number of scouts	☐	☐	☐	☐	☐
Difficulty to scout	☐	☐	☐	☐	☐
Number of portages	☐	☐	☐	☐	☐
Difficulty to portage	☐	☐	☐	☐	☐
Safety concerns	☐	☐	☐	☐	☐
Pace of travel	☐	☐	☐	☐	☐
Overall whitewater challenge	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐
Other: Click or tap here to enter text.	☐	☐	☐	☐	☐

The next two questions ask you to identify your flow preferences for your watercraft type. Please base your response on your experience and preferences.

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

Cannot make this determination

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

Cannot make this determination

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in? (choose one)

Developed river access site upstream of Democrat Diversion Dam

Trail downstream of Democrat Diversion Dam

Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Upper Richbar day-use area

Undeveloped access downstream of Upper Richbar day-use area

Live Oak Day Use Area

Undeveloped access downstream of Live Oak Day-use area

Where do you TYPICALLY access the river for take-out? (choose one)

Undeveloped access from Highway 178

KR1 Powerhouse

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

Yes

No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

APPENDIX B

Questionnaire Responses

Whitewater Boating Survey

Submitted By: Anonymous user

Submitted Time: November 1, 2024 8:57 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,301

What is your age?

30 - 39

What is your gender?

Male

What would you rate your overal whitewater skill level?

Advanced (comfortable boating Class IV)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

5 to 10 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

5 to 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM, Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar Run only

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
No

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?
forecasted future flows

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?

2

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:
August 25, 2024

Estimated flow:
800

Date:
June 2, 2024

Estimated flow:
800

How long is a TYPICAL boating trip for you on this run?
3 - 4 hours

How would you rate the overall whitewater difficulty for this run?
Class IV

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
No change

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

improve_considerably

Challenging hydraulics

no_change

Challenging technical boating

no_change

Play opportunities

slightly_improve

Route options through rapids

improve_considerably

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns
decline_considerably

Pace of travel
slightly_improve

Overall whitewater challenge
slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
More difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
no_change

Challenging technical boating
improve_considerably

Play opportunities
decline_considerably

Route options through rapids
decline_considerably

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
improve_considerably

Pace of travel
decline_considerably

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,200

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?

Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

The rapids become very rocky at flows below 800 and so any boating days where KR1 is taking the Richbar run below 800 it is reducing boatable days. This had a considerable impact in 2024 by reducing boatable days by probably 6 weeks

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: Anonymous user

Submitted Time: November 3, 2024 7:30 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,307

What is your age?

60 or older

What is your gender?

Male

What would you rate your overal whitewater skill level?

Advanced (comfortable boating Class IV)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar Run only

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?

25

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
1,000

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class IV+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
decline_considerably

Challenging technical boating
decline_considerably

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
slightly_decline

Overall whitewater challenge
slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
decline_considerably

Challenging technical boating
decline_considerably

Play opportunities
decline_considerably

Route options through rapids
decline_considerably

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

decline_considerably

Overall whitewater challenge

decline_considerably

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,000

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: Anonymous user

Submitted Time: November 15, 2024 9:36 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93238

What is your age?

50 - 59

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

3 to 5 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?
5

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
1,500

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_decline

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
slightly_decline

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_improve

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
slightly_improve

Overall whitewater challenge
slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
slightly_decline

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
slightly_improve

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_decline

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
slightly_decline

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,500

Where do you TYPICALLY access the river for put-in?
Trail downstream of Democrat Diversion Dam

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

There are several extremely rocky rapids on the Cadillacs that are unrunnable at low water

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

River access

Please specify

How many times have you boated this section of the Kern River?

30

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
1,500

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class IV

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities
slightly_improve

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_improve

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_decline

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_decline

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
700

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

I typically put in below toilet bowl rapid and continue through the Cataracts. There are a few class IV+ and provides a good warmup for the Cataracts

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?

30

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
1,500

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
slightly_decline

Challenging technical boating
no_change

Play opportunities
slightly_decline

Route options through rapids
decline_considerably

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_decline

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
no_change

Overall whitewater challenge
slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
700

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

There are rapids that become unrunnable at low water due to sieves. I have a very hard cutoff on the low side due to several rapids that become dangerous/unpassable at low flows. That cutoff above triple drop is 700 CFS. You can run from triple drop down at somewhat lower flows, maybe down to 600 cfs

Whitewater Boating Survey

Submitted By: Anonymous user

Submitted Time: November 20, 2024 6:25 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,238

What is your age?

50 - 59

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expert (comfortable boating Class V)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

5 to 10 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

1 to 2 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?

6

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

1,000

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class V

On a typical run, how many times do you portage?

1-2 times

How would the overall difficulty of the run change at higher flows?

More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

decline_considerably

Challenging hydraulics

no_change

Challenging technical boating

decline_considerably

Play opportunities

no_change

Route options through rapids

decline_considerably

Ability to stop for scouting and portaging

decline_considerably

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

decline_considerably

Pace of travel

slightly_improve

Overall whitewater challenge

slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_improve

Pace of travel

no_change

Overall whitewater challenge

slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
600

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
900

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
KR1 Powerhouse

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: Anonymous user

Submitted Time: November 21, 2024 11:12 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,312

What is your age?

60 or older

What is your gender?

Male

What would you rate your overal whitewater skill level?

Advanced (comfortable boating Class IV)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

5 to 10 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

1 to 2 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar Run only

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?

1

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
800

How long is a TYPICAL boating trip for you on this run?
3 - 4 hours

How would you rate the overall whitewater difficulty for this run?
Class IV

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
improve_considerably

Challenging hydraulics
slightly_improve

Challenging technical boating
slightly_improve

Play opportunities
improve_considerably

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
improve_considerably

Pace of travel

Overall whitewater challenge
slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
More difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
decline_considerably

Challenging technical boating
decline_considerably

Play opportunities
decline_considerably

Route options through rapids
decline_considerably

Ability to stop for scouting and portaging
no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_decline

Pace of travel

slightly_decline

Overall whitewater challenge

slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,200

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
2,000

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 13, 2025 11:34 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,240

What is your age?

40 - 49

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expert (comfortable boating Class V)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

more than 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar Run only

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website, Wait until I arrive at the river for direct observation

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater

Please specify

How many times have you boated this section of the Kern River?

50

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class IV

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
No change

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
slightly_decline

Play opportunities

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

slightly_decline

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_decline

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_improve

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
slightly_improve

Number of scouts
slightly_improve

Difficulty to scout
slightly_improve

Number of portages
slightly_improve

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
700

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,300

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Vehicle security - If there is water it is great. Lot of bang for your buck. My run when upper section are not flowing. Provides a 4+ 5- option for stronger boaters. Allot more rapids in the section.

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?

2

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

Date:

Estimated flow:
700

How long is a TYPICAL boating trip for you on this run?
3 - 4 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
3-4 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids

no_change

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
no_change

Ability to stop for scouting and portaging
no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
700

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,000

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
KR1 Powerhouse

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 22, 2025 3:24 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,238

What is your age?

20 - 29

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

more than 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM, Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website, US Army Corps webpage

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
100

What time frame have you boated this run?
2009 -2025

What is the estimated range of flows?
900 - 6000

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
slightly_improve

Challenging technical boating

Play opportunities
slightly_decline

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

decline_considerably

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
slightly_decline

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_decline

Difficulty to portage
slightly_decline

Safety concerns
slightly_improve

Pace of travel
no_change

Overall whitewater challenge
slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
3,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?
Put-in is marginal. Small turn-out, no trail. Typically run from Toilet Bowl rapid in the Cadillacs section to Triple Drop (do not run) in the Cataract section. The take-out has the best access.

This reach includes the Richbar Section, but instream consideration in Richbar section do not influence decisions to run, difficulty of run, or satisfaction with boating experience.

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
200

What time frame have you boated this run?
2008 - 2025

What is the estimated range of flows?
900 - 6000

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities
slightly_decline

Route options through rapids
no_change

Ability to stop for scouting and portaging
decline_considerably

Number of scouts
no_change

Difficulty to scout
decline_considerably

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
decline_considerably

Pace of travel
no_change

Overall whitewater challenge
slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_improve

Play opportunities
no_change

Route options through rapids

no_change

Ability to stop for scouting and portaging

slightly_improve

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

improve_considerably

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
900

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

highway 178 - can be scariest part of the run due to limited parking and close to the road. One of the most unique class V rivers for boatable flows 900 - 6000. "On the map", top 5 hardest runs in the world at high flows +3500 cfs. Most "new" Class V boaters think of boating this at flows around 3000 cfs

Whitewater Boating Survey

Submitted By: Patricia.Sussman@stantec.com_stantec

Submitted Time: January 23, 2025 10:47 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,240

What is your age?

40 - 49

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

10 to 20 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

3 to 5 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website, US Army Corps webpage, Other source

Please specify

Primarily uses Army Corps webpage

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?
Generally, meets it, but would be interested in understanding in real time what the diversion is (day by day).

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty, River access, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?
2

What time frame have you boated this run?
year 2003 both times

What is the estimated range of flows?
400 cfs first time; 1,000 cfs second time

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
3 - 4 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
3-4 times

How would the overall difficulty of the run change at higher flows?
Less difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_improve

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
slightly_improve

Number of scouts
slightly_improve

Difficulty to scout
no_change

Number of portages
slightly_improve

Difficulty to portage
slightly_improve

Safety concerns
slightly_improve

Pace of travel
slightly_improve

Overall whitewater challenge

Other 1
no_change

Other 2
no_change

List other 1 factor

His reference point of 400 cfs, was a difficult flow to boat. Hard in different ways at lower flow; hard in different ways at higher flows; different safety concerns at higher flows than lower flows - both safety concerns. E

List other 2 factor

Easier to be naive and paddle something that you can't see at higher flows.

How would the overall difficulty of the run change at lower flows?

Do not know

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

slightly_decline

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

no_change

Other 2

List other 1 factor

water goes under rocks instead of over them at lower flows. Optimum flows 1,400-2,800 above 3,000 no go.

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,800

Where do you TYPICALLY access the river for put-in?
Developed river access site upstream of Democrat Diversion Dam

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
Takeout yes; put in no. that is - the mile of flatwater to the dam and then having to portage the dam is not idea.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Closest boating to where I live, Other

Please specify

something different

How many times have you boated this section of the Kern River?

12

What time frame have you boated this run?

Generally summer through early fall, but have boated in in the winter (anything from 1999 through now)

What is the estimated range of flows?

range between 600 and 2800 cfs

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class IV

On a typical run, how many times do you portage?

1-2 times

How would the overall difficulty of the run change at higher flows?

No change

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

no_change

Challenging hydraulics

slightly_improve

Challenging technical boating

slightly_improve

Play opportunities

slightly_improve

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

Overall whitewater challenge

slightly_improve

Other 1

no_change

Other 2

List other 1 factor

hydraulics get bigger at higher flows; lower water scraping over rocks but not as sievy as Cadillacs; Lucas creek falls portage

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1
no_change

Other 2

List other 1 factor
see above. optimum flow 2000-2500

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
2,000

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
Generally meet his needs - take out around the Nude Beach area could be improved. Describes it as dangerous - blind corner along SR-178, narrow road section, especially when you're hauling raft. Have to cross the street because the turnout is on the mountain side of the road.

Often boats into Cataracts - doesn't take out at Nude Beach.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?
Sometimes the danger of lots of ropes in the water from day users. Day users string ropes across the river to cross the river.

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access, Landscape and scenery, Other

Please specify

It's worth it.

How many times have you boated this section of the Kern River?

20

What time frame have you boated this run?

1999- present; mid-summer through fall

What is the estimated range of flows?

750cfs - 2800

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class V+

On a typical run, how many times do you portage?

1-2 times

How would the overall difficulty of the run change at higher flows?

Do not know

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

slightly_improve

Challenging hydraulics

slightly_improve

Challenging technical boating

no_change

Play opportunities

slightly_improve

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_decline

Pace of travel

Overall whitewater challenge

Other 1

no_change

Other 2

List other 1 factor

power gets bigger; hydraulics are bigger; 1500 and above is great. Above 3000 he wouldn't' run it.

List other 2 factor

How would the overall difficulty of the run change at lower flows?

More difficult

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

slightly_decline

Challenging hydraulics

slightly_decline

Challenging technical boating

slightly_improve

Play opportunities

no_change

Route options through rapids

slightly_decline

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

slightly_decline

Difficulty to portage

Safety concerns

slightly_decline

Pace of travel

Overall whitewater challenge

Other 1

no_change

Other 2

List other 1 factor

Creeky, fun and technical at lower flows.; but you have to portage one of the rapids. Everything is creeky and technical and undercuts. Anything below 1000 is as dangerous as running it at 5000 because of your ability to stuff yourself into a sieve.

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
2,000

Where do you TYPICALLY access the river for put-in?
Undeveloped access downstream of Live Oak Day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?
Generally, put in at Nude Beach. Take out: Sometimes portages triple drop (the first one with the hole and undercut), sometimes paddles through it. Also a good place to take out (at the Triple Falls Entrance Rapid entrance rapid). He often takes out here - maybe 2 miles of water to run from put in to take out. Still worth it. Take out and put in around Nude Beach could be improved - e.g. signage could help. Hasn't put in at Live Oak much - notes the gate is often locked.

Whitewater Boating Survey

Submitted By: Patricia.Sussman@stantec.com_stantec

Submitted Time: January 23, 2025 12:02 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

95,630

What is your age?

20 - 29

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

3 to 5 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
3,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,500

Where do you TYPICALLY access the river for put-in?
Trail downstream of Democrat Diversion Dam

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
100

What time frame have you boated this run?
earliest Feb latest September - he's only done this section as part of the Cataracts

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class III

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?
He has only run Richbar when he has run Cataracts. There is a portion of Richar Run that Johnny says he portages when the water is low. He doesn't portage Lucas Creek Falls. He runs that. He is an expedition/intense boater and recognizes most boaters prefer the lower kern at flows less than his preferred optimum flow.

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
100

What time frame have you boated this run?

2011 was when he first started running it. Still boats it. Seasonally earliest he's run it is Feb; latest he's run it is September

What is the estimated range of flows?

Lowest he's run it is around 1000 cfs. The highest he's run it is 5600 cfs

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class V+

On a typical run, how many times do you portage?

0 times

How would the overall difficulty of the run change at higher flows?

More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

slightly_decline

Challenging hydraulics

improve_considerably

Challenging technical boating

improve_considerably

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
slightly_improve

Overall whitewater challenge
improve_considerably

Other 1

no_change

Other 2

no_change

List other 1 factor

His reference point is veryhigh flows 3300+; bigger, more challenging hydraulics at higher flows; a lot more technical at higher flows; dramatically harder at higher flows, less options at the higher flows; triple drop unrunnable at very high flows

List other 2 factor

safety concerns.. overall higher flows are more dangerous.

How would the overall difficulty of the run change at lower flows?

Less difficult

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

slightly_improve

Challenging hydraulics

Challenging technical boating

slightly_decline

Play opportunities

no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
slightly_decline

Overall whitewater challenge
slightly_decline

Other 1
no_change

Other 2

List other 1 factor

less challenging hydraulics below 3300. As an overall whitewater run, not as challenging compared to flows at 3000+

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

1,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

3,500

Where do you TYPICALLY access the river for put-in?

Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?

Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Put it at Toilet bowl (above Richbar Run) and take out at Triple Drop/Triple Falls - sometimes he runs Triple Falls and sometimes takes out before (same as Mike Spradlin).

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 23, 2025 2:01 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

95,667

What is your age?

20 - 29

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

5 to 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM, Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website, US Army Corps webpage

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?
seen flow fluctuation ... especially noticible in Catracts section

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
1

What time frame have you boated this run?
2024

What is the estimated range of flows?
2400

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V

On a typical run, how many times do you portage?
3-4 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
improve_considerably

Challenging hydraulics
improve_considerably

Challenging technical boating
decline_considerably

Play opportunities
no_change

Route options through rapids
improve_considerably

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
slightly_improve

Difficulty to portage
no_change

Safety concerns
slightly_decline

Pace of travel
no_change

Overall whitewater challenge
improve_considerably

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
decline_considerably

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_improve

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

decline_considerably

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,250

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
2,200

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178

Where do you TYPICALLY access the river for take-out?
Live Oak Day Use Area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
Put-in .... parking access is dangerous. Needs improved parking and trial. Take for "warm-ups" ok. Trails would be good.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

This section includes the "Warm-ups" from Toilet Bowl to Lucus Creek Falls. Class V Boaters typically put-in here to run the Cataracts section or meet up with class IV boaters to run Richbar. Run has a "big-water" feel. At 1500 cfs would rate a -V

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, Other

Please specify

rafting suitiable

How many times have you boated this section of the Kern River?

30

What time frame have you boated this run?

2023 - 2024

What is the estimated range of flows?

1600 - 3500

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class IV

On a typical run, how many times do you portage?

0 times

How would the overall difficulty of the run change at higher flows?

More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

no_change

Challenging hydraulics

no_change

Challenging technical boating

no_change

Play opportunities

slightly_improve

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

improve_considerably

Pace of travel

improve_considerably

Overall whitewater challenge

slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
decline_considerably

Route options through rapids
no_change

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_decline

Pace of travel

slightly_decline

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,600

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
2,400

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access downstream of Live Oak Day-use area

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
Put in issues same as warm ups/Cadillacs

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?
One of the most important runs.... class 3+/4. flow 1600+. Great to bring class 4 boaters. Big-water feel, long non-technical rapids. Could be suitable for rafting. Two portages can lower class rating to III+, one at beginning and one at the end. Low flow safety concerns associated with in channel "road-blast", sharp rocks, pins

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?

40

What time frame have you boated this run?

2024

What is the estimated range of flows?

1400 -2500

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

1 - 2 hours

How would you rate the overall whitewater difficulty for this run?

Class V

On a typical run, how many times do you portage?

1-2 times

How would the overall difficulty of the run change at higher flows?

More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

no_change

Challenging hydraulics

improve_considerably

Challenging technical boating

no_change

Play opportunities

improve_considerably

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_decline

Pace of travel

no_change

Overall whitewater challenge

slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

Less difficult

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

slightly_decline

Challenging hydraulics

slightly_decline

Challenging technical boating

no_change

Play opportunities

slightly_decline

Route options through rapids

slightly_decline

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

slightly_decline

Difficulty to portage

no_change

Safety concerns
slightly_improve

Pace of travel
no_change

Overall whitewater challenge
slightly_decline

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,200

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,900

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
KR1 powerhouse - you end up in a pond above the dam, access out steep and loose. No parking at KR1, need to walk on 178 - dangerous, and minimal parking

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?
Section below Triple drop has two 5+ and rest is 5 - gets harder. Need more water in this section. Portages are hard. Same characteristics as upstream section. Take-out conditions at Triple Drop are much better than KR1.

1400 -1900 cfs -V
1900 - 2400 cfs V
+2500 cfs V+

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 24, 2025 9:45 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

83,702

What is your age?

40 - 49

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2), Closed-deck canoe (C1 or C2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

more than 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM, Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website, Other source

Please specify

Local boaters

Does the available flow information meet your needs?

Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2), Closed-deck canoe (C1 or C2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?

30

What time frame have you boated this run?

2017 - 2024

What is the estimated range of flows?
3200 - 7200

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids

slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

decline_considerably

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

No change

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

no_change

Challenging hydraulics

no_change

Challenging technical boating

no_change

Play opportunities

no_change

Route options through rapids

slightly_decline

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_improve

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
3,000

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,800

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178

Where do you TYPICALLY access the river for take-out?
Continue boating through the Richbar Run section to the Cataracts Run

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.
Parking is limited - roadside proximity is dangerous. Break-ins, more official parking would dissuade break-ins

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?
Whitewater kayak (K1 or K2), Closed-deck canoe (C1 or C2)

Please specify

Why do you choose to boat this run?
Unique character of the whitewater, Whitewater difficulty

Please specify

How many times have you boated this section of the Kern River?
30

What time frame have you boated this run?
2017 - 2024

What is the estimated range of flows?
3200 -7200

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
decline_considerably

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
No change

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
no_change

Challenging hydraulics
no_change

Challenging technical boating
no_change

Play opportunities
no_change

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

slightly_improve

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
2,800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,800

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?
KR1 Powerhouse

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
Yes

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 24, 2025 11:04 AM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

92,117

What is your age?

50 - 59

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

10 to 20 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

1 to 2 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, Closest boating to where I live

Please specify

How many times have you boated this section of the Kern River?
12

What time frame have you boated this run?
1994 - 2002

What is the estimated range of flows?
500 - 2500

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
3 - 4 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_decline

Challenging technical boating
slightly_decline

Play opportunities
no_change

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging
slightly_decline

Number of scouts
slightly_decline

Difficulty to scout
slightly_decline

Number of portages
slightly_decline

Difficulty to portage
slightly_decline

Safety concerns
slightly_decline

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
slightly_improve

Challenging technical boating
slightly_improve

Play opportunities
no_change

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
slightly_improve

Number of scouts
slightly_improve

Difficulty to scout
slightly_improve

Number of portages
slightly_improve

Difficulty to portage
slightly_improve

Safety concerns
slightly_improve

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
500

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,000

Where do you TYPICALLY access the river for put-in?
Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Limited roadside parking and roadside proximity safety issues

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 27, 2025 12:10 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

93,063

What is your age?

30 - 39

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expert (comfortable boating Class V)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

10 to 20 times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

3 to 5 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekdays between 8 AM and 5 PM, Weekdays after 5 PM, Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Richbar and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater

Please specify

How many times have you boated this section of the Kern River?
10

What time frame have you boated this run?
2008 - 2021

What is the estimated range of flows?
900 - 2000

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
1-2 times

How would the overall difficulty of the run change at higher flows?
More difficult

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities
slightly_decline

Route options through rapids
slightly_decline

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
slightly_decline

Challenging technical boating
no_change

Play opportunities
slightly_improve

Route options through rapids
slightly_improve

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

no_change

Overall whitewater challenge

slightly_improve

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
800

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
1,500

Where do you TYPICALLY access the river for put-in?
Undeveloped access downstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Parking limited - safety concern associated with roadside proximity. Almost need a shuttle driver.

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

Super fun and challenging run. Can be boated when the Upper sections are no longer runnable.

Whitewater Boating Survey

Submitted By: david.martinez@stantec.com_stantec

Submitted Time: January 27, 2025 1:08 PM

About this Survey

Boater Information

First and Last Name

Email Address

Phone Number

Please provide the five-digit zip code for your primary address

83,702

What is your age?

20 - 29

What is your gender?

Male

What would you rate your overal whitewater skill level?

Expedition (can boat Class V+/ first descents)

What type of watercraft do you have experience using on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

What type of watercraft do you use the most to boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Whitewater kayak (K1 or K2)

Please specify

How many times have you run the section of Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

20+ times

How many boating trips per year do you typically make to the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

more than 10 times annually

When do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse?

Weekends, Holiday Weekends (not including holiday), Holidays (not including associated weekend)

Which whitewater segments do you typically boat on the Kern River between Democrat Diversion Dam and the KR1 Powerhouse? Link to Project Location Map

Cadillacs, Richbar, and Cataracts Runs

Do you check flow levels in advance to determine if flows are suitable before choosing to boat the river between Democrat Diversion Dam and the KR1 Powerhouse?

Yes

Where do you obtain flow information for the Kern River between Democrat Diversion Dam and the KR1 Powerhouse to determine if flows are suitable?

Dreamflows website

Please specify

Does the available flow information meet your needs?
Yes

If the available flow information does not meet your needs, what improvements could be made to keep you better informed of flow levels on the river segments between Democrat Diversion Dam and the KR1 Powerhouse?

Section 1: CADILLACS RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Cadillacs whitewater run?

Section 2: RICHBAR RUN

What type of watercraft do you have experience using on this run?

Please specify

Why do you choose to boat this run?

Please specify

How many times have you boated this section of the Kern River?

What time frame have you boated this run?

What is the estimated range of flows?

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?

How would you rate the overall whitewater difficulty for this run?

On a typical run, how many times do you portage?

How would the overall difficulty of the run change at higher flows?

How would the following factors change at higher flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?

How would the following factors change at lower flows? (check corresponding box)

Overall "boatability" of the run

Challenging hydraulics

Challenging technical boating

Play opportunities

Route options through rapids

Ability to stop for scouting and portaging

Number of scouts

Difficulty to scout

Number of portages

Difficulty to portage

Safety concerns

Pace of travel

Overall whitewater challenge

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)

Where do you TYPICALLY access the river for put-in?

Where do you TYPICALLY access the river for take-out?

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

Do you have any other comments or information regarding your whitewater boating experience on the Richbar whitewater run?

Section 3: CATARACTS RUN

What type of watercraft do you have experience using on this run?

Whitewater kayak (K1 or K2)

Please specify

Why do you choose to boat this run?

Unique character of the whitewater, Whitewater difficulty, River access

Please specify

How many times have you boated this section of the Kern River?
30

What time frame have you boated this run?
2023 - 2024

What is the estimated range of flows?
2000 -4600

If possible, please provide the dates of your boating run and estimate of flow.

How long is a TYPICAL boating trip for you on this run?
1 - 2 hours

How would you rate the overall whitewater difficulty for this run?
Class V+

On a typical run, how many times do you portage?
0 times

How would the overall difficulty of the run change at higher flows?
No change

How would the following factors change at higher flows? (check corresponding box)
Overall "boatability" of the run
slightly_improve

Challenging hydraulics
slightly_improve

Challenging technical boating
no_change

Play opportunities

Route options through rapids
no_change

Ability to stop for scouting and portaging
no_change

Number of scouts
no_change

Difficulty to scout
no_change

Number of portages
no_change

Difficulty to portage
no_change

Safety concerns
no_change

Pace of travel
no_change

Overall whitewater challenge
no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

How would the overall difficulty of the run change at lower flows?
Less difficult

How would the following factors change at lower flows? (check corresponding box)
Overall "boatability" of the run
slightly_decline

Challenging hydraulics
slightly_decline

Challenging technical boating

Play opportunities

Route options through rapids
no_change

Ability to stop for scouting and portaging

no_change

Number of scouts

no_change

Difficulty to scout

no_change

Number of portages

no_change

Difficulty to portage

no_change

Safety concerns

no_change

Pace of travel

no_change

Overall whitewater challenge

no_change

Other 1

Other 2

List other 1 factor

List other 2 factor

Please estimate the minimum acceptable flow for this run. The minimum acceptable flow is defined as the flow you would return to boat this run.

cubic feet per second (cfs)
1,500

Please estimate your optimum flow for this run. The optimum flow is defined as your preferred flow for your watercraft.

cubic feet per second (cfs)
3,200

Where do you TYPICALLY access the river for put-in?
Undeveloped access from Highway 178 upstream of Upper Richbar day-use area

Where do you TYPICALLY access the river for take-out?
Undeveloped access from Highway 178

Do the river access locations you typically use meet your needs to access the respective river segments for whitewater boating?
No

If you indicated the river access locations you typically access do not meet your needs currently, please describe what river access needs are not being met by the existing developed and dispersed sites. In your response, try to describe the location and river access need.

limited parking, safety concerns road proximity, break-ins

Do you have any other comments or information regarding your whitewater boating experience on the Cataracts whitewater run?

One of top 3 in CA, maybe the best. Big water feel, technical, access. Ability to exit the river for rescue or "bad-day", etc.

APPENDIX C

List of Boaters SCE Attempted to Contact

List of Boaters SCE Attempted to Contact for Follow-up Interviews as Part of the Structured Interview Process[1]

1. Alex Chong
2. Alex Morris
3. Amin Nikravan
4. Beth Jens
5. Brett Duxbury
6. Brett Valle
7. Brian Mauer
8. David Waner
9. Dean Bernsten
10. Dennis Rushing
11. Dominic Aguilera
12. Elizabeth Duxbury
13. Eric Giddens
14. Erik Almakov
15. Evan Moore
16. Gabe Elder
17. Geno Hacker
18. Gilbert Siegel
19. JD Batove
20. Jim Schrodt
21. Johnny Chase
22. Jonathan Yates
23. Kevin Smith
24. Kyle Rushing
25. Lynn Siodmak
26. Marc Vernon
27. Mike Spradlin
28. Paul Armes
29. Rebecca Giddens
30. Rocky Contos
31. Ryoichi Nakagawa
32. Spencer Josif
33. Tad Dennis
34. Taylor Blakeslee
35. Zach Bushling

[1] Derrick Tito was identified as a boater with direct experience boating the bypass reach; however, as an SCE employee, Mr. Tito was excluded from participating in the structured interview process based on SCE's interest in avoiding a potential conflict of interest. Robert Gomez Jr., Chairperson of the Tubatulabals Tribe, is not a boater but expressed interest in providing input. Follow-up with Mr. Gomez was pursued outside of the Structured Interview Survey process.

APPENDIX D

Record of Boater Outreach

Table D-1. Record of Boater Outreach

No.	Name	Phone	Email	First Attempt		Second Attempt		Third Attempt (if made)		Questionnaire Completed? Yes/No
				Date	Description of Contact	Date	Description of Contact	Date	Description of Contact	
1	Alex Chong	No contact information	No contact information							No
2	Alex Morris			1/11/2025	Emailed	1/23/2025	Emailed			No
3	Amin Nikravan			1/11/2025	Emailed	1/23/2025	Emailed			No
4	Beth Jens			1/11/2025	Emailed	1/23/2025	Emailed			No
5	Brett Duxbury			1/14/2025	Emailed	1/22/2025	Called on 1/22/25—left voicemail	1/24/2025	Emailed	No
6	Brett Valle	No contact information	No contact information							No
7	Brian Mauer			1/11/2025	Emailed	1/23/2025	Emailed			No
8	David Waner			1/11/2025	Emailed	1/23/2025	Emailed			No
9	Dean Bernsten			1/14/2025	Emailed	1/23/2025	Emailed			No
10	Dennis Rushing			November 2024	Completed questionnaire already	1/24/2025	Called and left voicemail with request to call back at his convenience before 1/31/2025			Yes
11	Dominic Aguilera			1/14/2025	Responded to voicemail, follow-up interview planned	1/23/2025	Called on 1/23—completed survey			Yes
12	Elizabeth Duxbury			1/11/2025	Emailed	1/23/2025	Emailed			No
13	Eric Giddens			November 2024	Completed questionnaire already	1/24/2025	Interview complete			Yes
14	Erik Almakov			1/14/2025	Emailed	1/23/2025	Emailed	1/27/2025	Called and left voicemail with request to call back at his convenience before 1/31/2025	No
15	Evan Moore			1/22/2025	Called on 1/22—completed survey					Yes
16	Gabe Elder			1/27/2025	Called on 1/27—left voicemail	7/27/2025	Interview complete 1/27/25			Yes
17	Eugene Hacker (Gene)			1/11/2025	Responded to email; interviewed Eugene on 1/13/2025 @ 10:45					Yes
18	Gilbert Siegel			1/11/2025	Emailed	1/23/2025	Emailed			No
19	JD Batove	No Contact information	No Contact information							No
20	Jim Schrodt			November 2024	Completed questionnaire already	1/23/2025	Interview complete 1/23/2025			Yes

No.	Name	Phone	Email	First Attempt		Second Attempt		Third Attempt (if made)		Questionnaire Completed? Yes/No
				Date	Description of Contact	Date	Description of Contact	Date	Description of Contact	
21	Johnny Chase			1/23/2025	Interview complete 1/23/2025					Yes
22	Jonathan Yates			November 2024	Completed questionnaire already	1/24/2025	Called and left voicemail with request to call back at his convenience before 1/31/2025			Yes
23	Kevin Smith			1/14/2025	Emailed	1/23/2025	Emailed			No
24	Kyle Rushing			1/14/2025	Emailed	1/23/2025	Emailed			No
25	Lynn Siodmak			1/14/2025	Emailed	1/23/2025	Emailed			No
26	Marc Vernon			November 2024	Completed questionnaire already	1/24/2025	Called and left voicemail with request to call back at his convenience before 1/31/2025			Yes
27	Mike Spradlin			1/23/2025	Interview complete 1/23/2025					Yes
28	Paul Armes	No Contact information	No Contact information							No
29	Rebecca Giddens			1/23/2025	Left voicemail 1/23/2025 (voicemail included request and call back number)		Left voicemail that included a reminder of the request and the callback number			No
30	Rocky Contos			1/14/2025	Responded 1/15; Dave will follow up on 1/24	1/24/2025	Called on 1/24—completed survey			Yes
31	Ryoichi Nakagawa			1/11/2025	Emailed	1/23/2025	Emailed			No
32	Spencer Josif					27-Jan	Called on 1/27—completed survey			Yes
33	Tad Dennis					1/24/2025	Called on 1/24—completed survey			Yes
34	Taylor Blakeslee			1/14/2025	Emailed	1/23/2025	Left voicemail with interview request and a callback number			No
35	Zach Bushling			1/23/2025	Left voicemail with interview request and callback number	1/28/2025	Left voicemail with interview request and callback number			No

APPENDIX E

Annual and Monthly Frequency of Minimum Acceptable and Optimum Whitewater Flows Water Year 2014–2024 Under Current Project Operations and Without Project Diversion

Appendix E provides information illustrating the flow of the lower Kern River by run (Cadillacs, Richbar, and Cataracts), water year (October 1 through September 30), and month from 2014 to 2024 under both current project operations and without project diversion.

A key finding resulting from boater consultation was that there is a large variance in boater preference for “minimum acceptable” and “optimal” flow thresholds. In the more pronounced cases, there was overlap of one boater’s “optimal” with another boater’s “minimum.” To address flow suitability for different boater preferences, and to examine how project operations affect these opportunities, the analysis for each run includes an examination of the number of days (by month and year) the river flowed within three intermediate flow ranges, providing a finer-grained view of flow conditions for each run.

The appendix is organized by run:

- Cadillacs Run, Water Years 2014–2024
- Richbar Run, Water Years 2014–2024
- Cataracts Run, Water Years 2014–2024

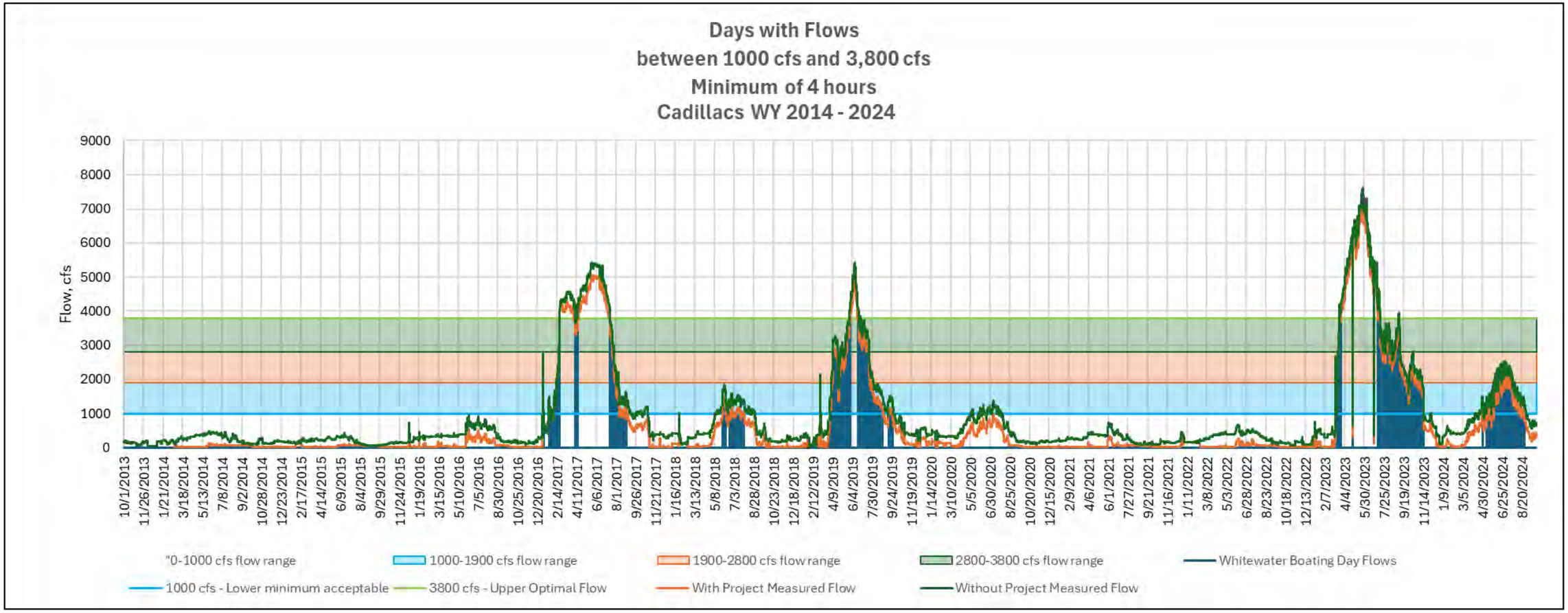
CADILLACS

The flow preferences of the boaters who provided input about their experiences boating the Cadillacs run ranged between 1,000 cubic feet per second (cfs) and 3,000 cfs for the minimum acceptable flow threshold, and between 1,500 and 3,800 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating-day for the Cadillacs run was 1,000 cfs to 3,800 cfs.

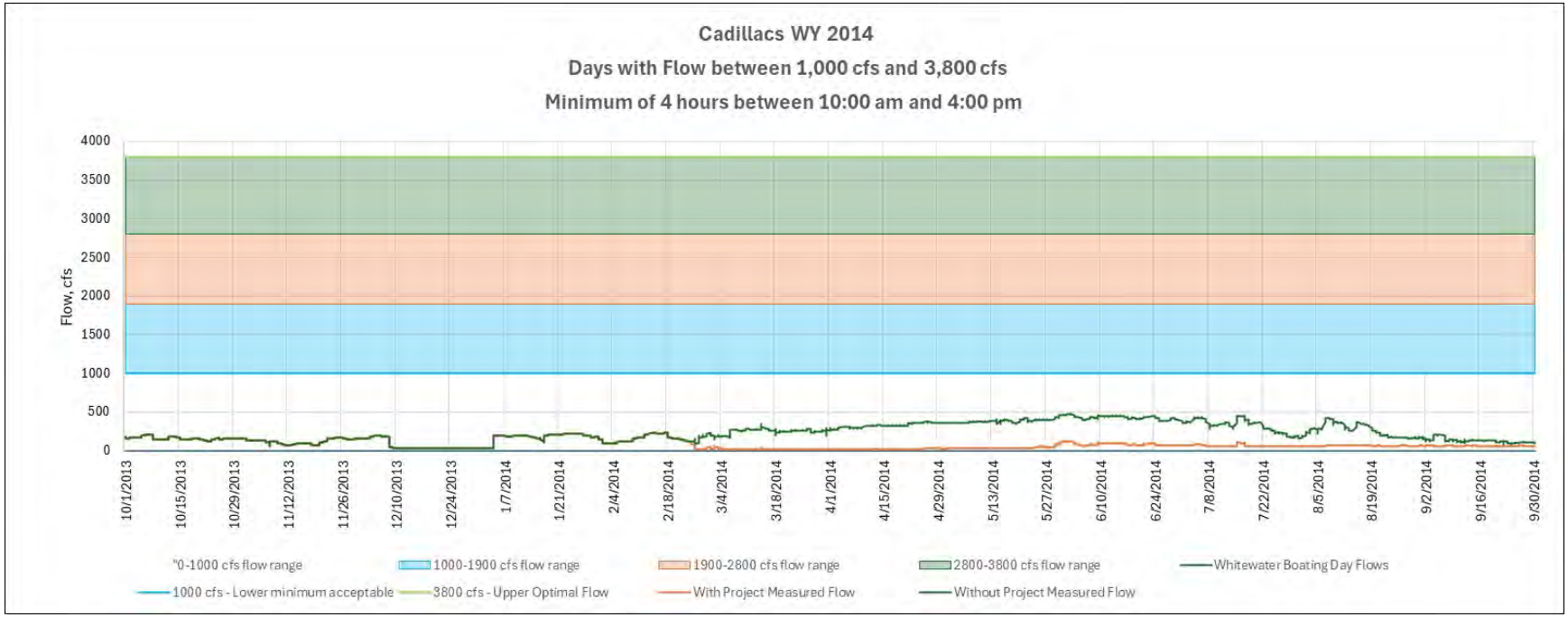
The following figures and tables include an overview that illustrates the hydrograph for the complete period of record (illustrating both “with-project” and “without-project”) and then separate hydrograph and summary tables for each year that illustrate the number of boatable days per year and by month for the Cadillacs Run, and provide additional information about flows within the following three specific intermediate ranges under both “with-project” and “without-project” scenarios:

- 1,000–1,900 cfs
- 1,900–2,800 cfs
- 2,800–3,800 cfs

CADILLACS RUN: WATER YEARS 2014–2024



CADILLACS RUN: WATER YEAR 2014

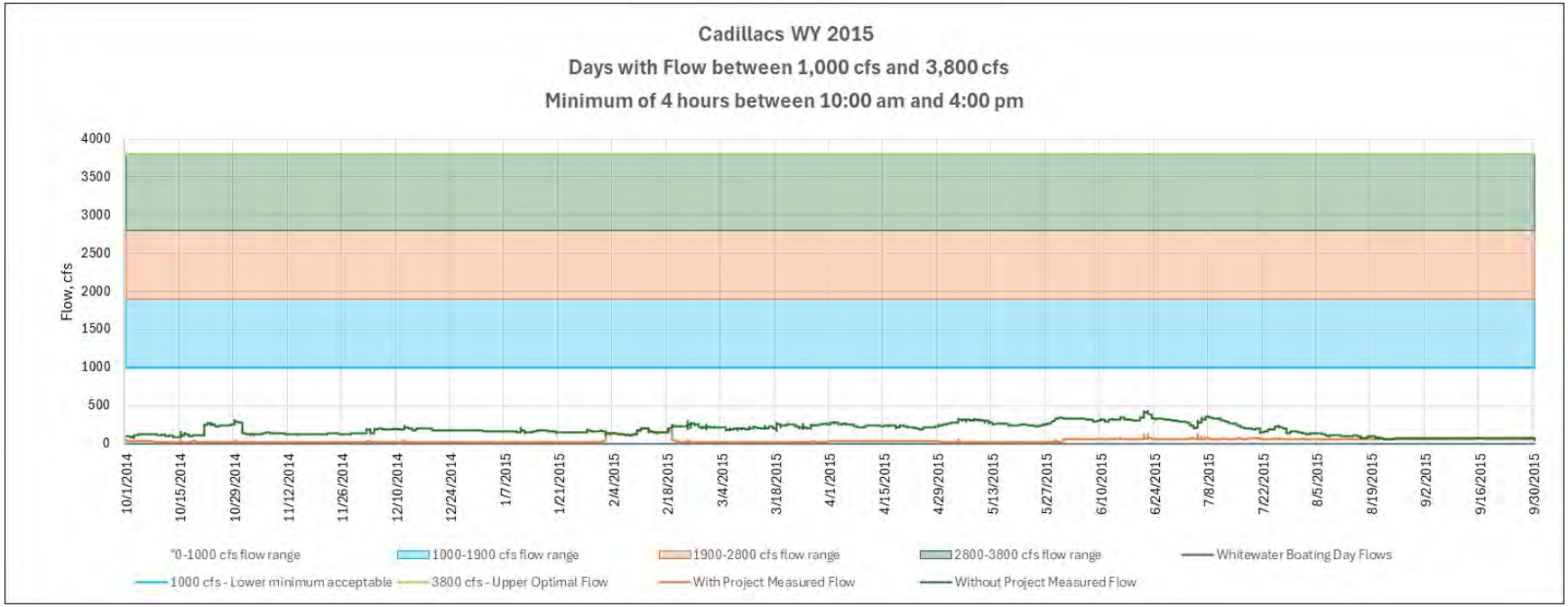


Cadillacs with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadillacs without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2015

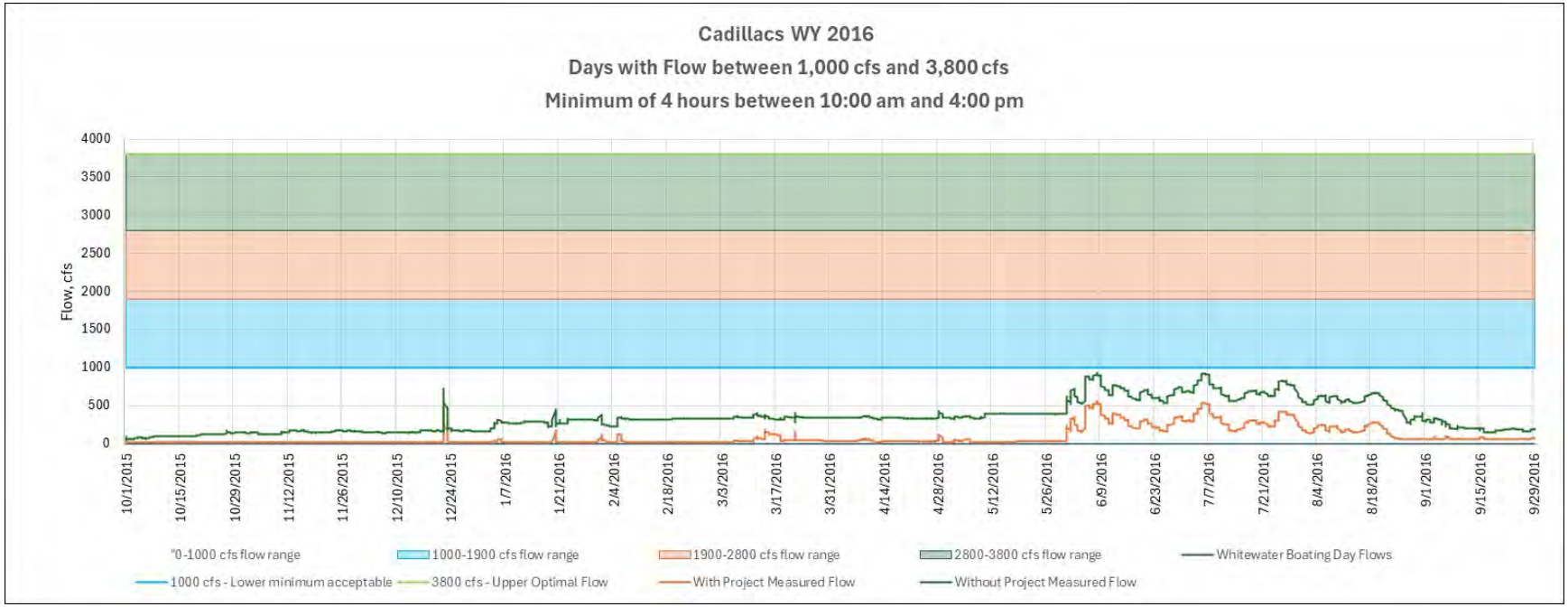


Cadillacs with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadillacs without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2016

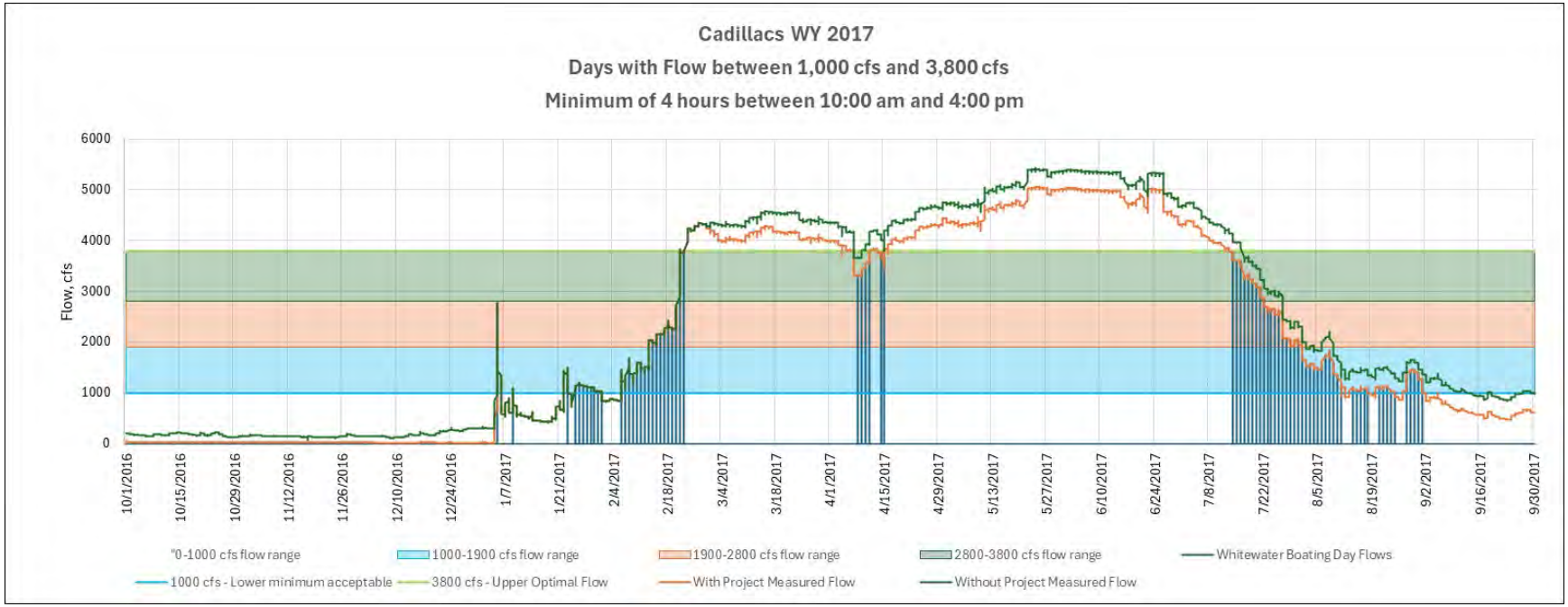


Cadillacs with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadillacs without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2017

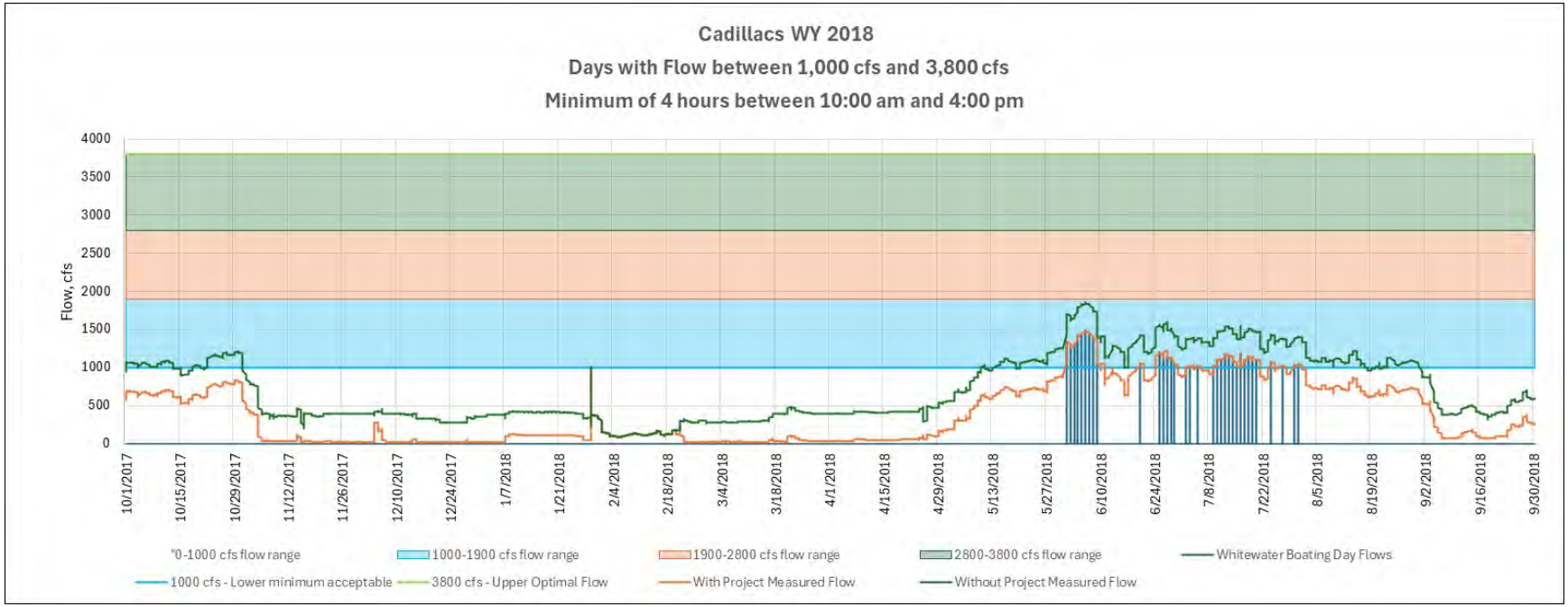


Cadillacs with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	10	18	0	6	0	0	18	25	1	78
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	9	9	0	0	0	0	0	25	1	44
1900-2800 CFS	0	0	0	1	7	0	0	0	0	9	0	0	17
2800-3800 CFS	0	0	0	0	2	0	6	0	0	9	0	0	17

Cadillacs without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	10	18	0	2	0	0	15	31	16	92
Cadillacs without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	9	9	0	0	0	0	0	27	16	61
1900-2800 CFS	0	0	0	1	7	0	0	0	0	5	5	0	18
2800-3800 CFS	0	0	0	0	2	0	2	0	0	10	0	0	14

Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	4	0	0	3	-6	-15	-14
Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	-2	-15	-17
1900-2800 CFS	0	0	0	0	0	0	0	0	0	4	-5	0	-1
2800-3800 CFS	0	0	0	0	0	0	4	0	0	-1	0	0	3

CADILLACS RUN: WATER YEAR 2018

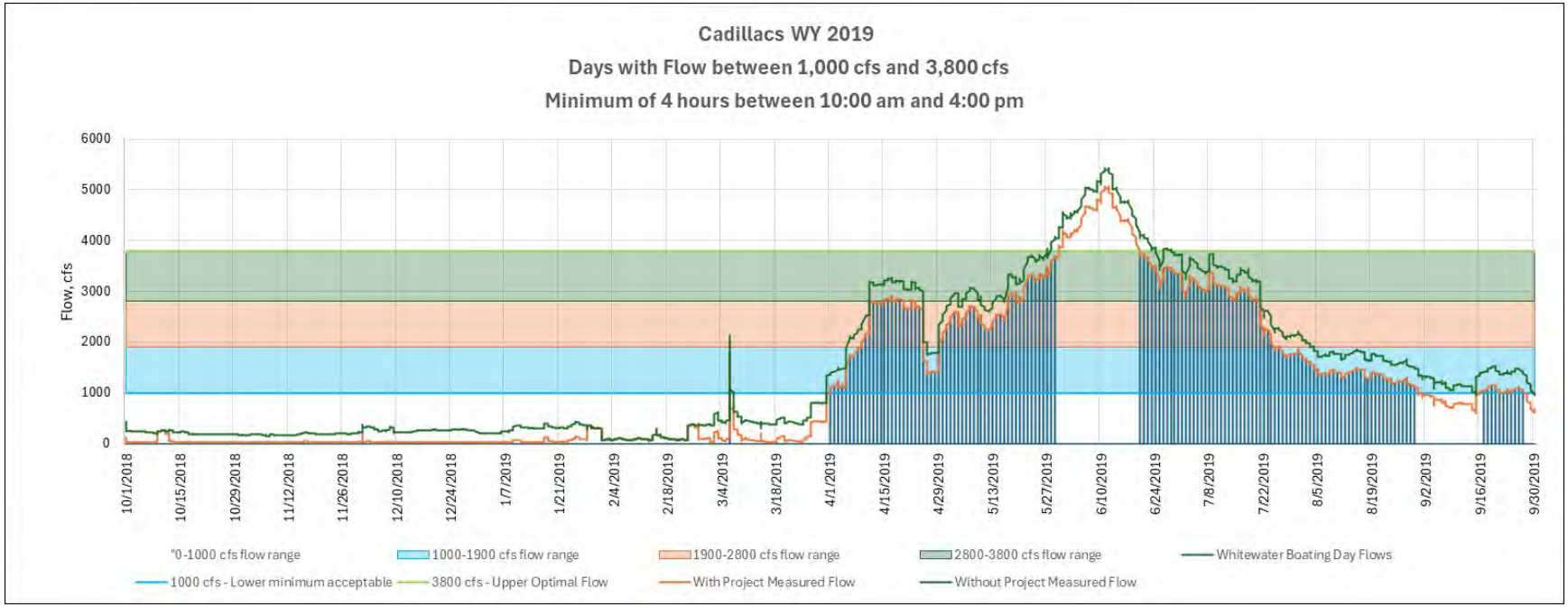


Cadillacs with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	15	19	0	0	34
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	15	19	0	0	34
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	24	0	0	0	0	0	0	18	30	31	27	0	130
Cadillacs without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	24	0	0	0	0	0	0	18	30	31	27	0	130
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	-24	0	0	0	0	0	0	-18	-15	-12	-27	0	-96
Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	-24	0	0	0	0	0	0	-18	-15	-12	-27	0	-96
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2019

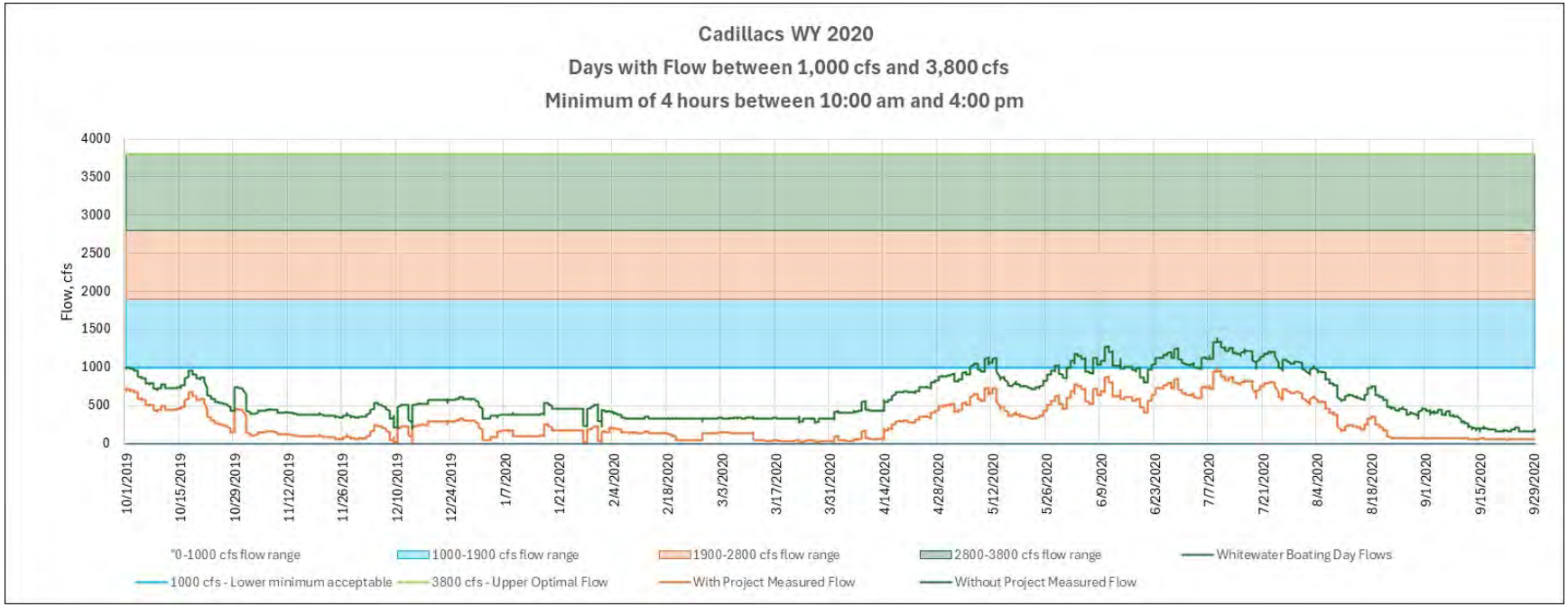


Cadillacs with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	1	30	29	11	31	30	11	143
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	1	12	0	0	6	30	11	60
1900-2800 CFS	0	0	0	0	0	0	12	16	0	5	0	0	33
2800-3800 CFS	0	0	0	0	0	0	7	13	11	20	0	0	51

Cadillacs without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	2	30	26	3	31	31	28	151
Cadillacs without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	2	8	0	0	0	28	28	66
1900-2800 CFS	0	0	0	0	0	1	8	7	0	10	4	0	30
2800-3800 CFS	0	0	0	0	0	0	14	20	3	21	0	0	58

Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	-1	0	3	8	0	-1	-17	-8
Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	-1	4	0	0	6	2	-17	-6
1900-2800 CFS	0	0	0	0	0	-1	4	9	0	-5	-4	0	3
2800-3800 CFS	0	0	0	0	0	0	-7	-7	8	-1	0	0	-7

CADILLACS RUN: WATER YEAR 2020

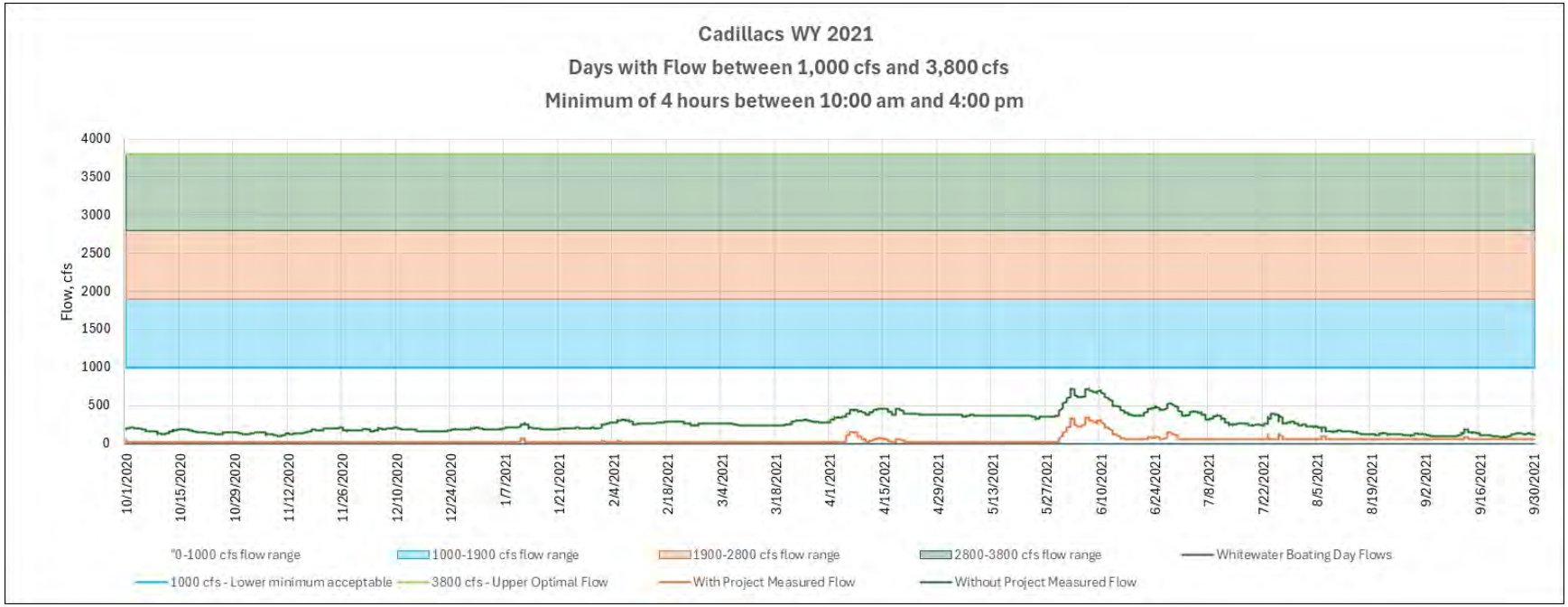


Cadillacs with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	6	22	27	1	0	56
Cadillacs without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	6	22	27	1	0	56
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	-6	-22	-27	-1	0	-56
Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	-6	-22	-27	-1	0	-56
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2021

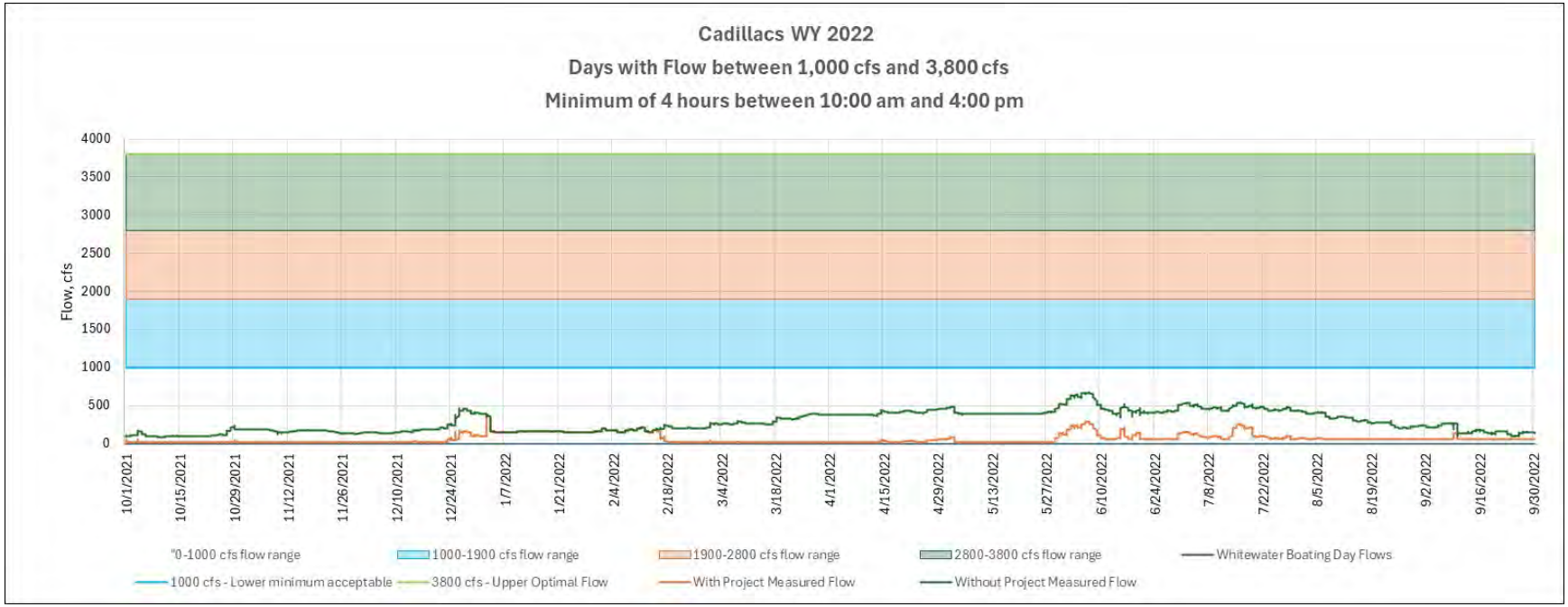


Cadillacs with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadillacs without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2022

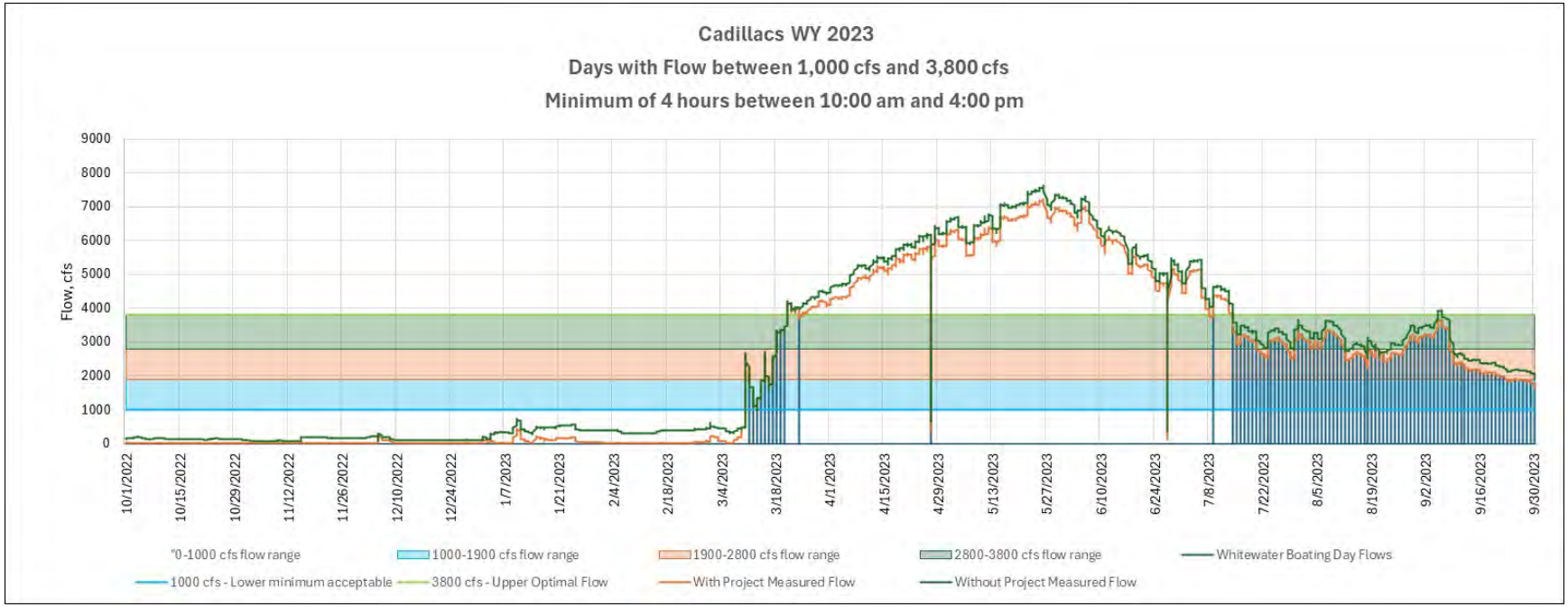


Cadillacs with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cadillacs without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1900-2800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CADILLACS RUN: WATER YEAR 2023

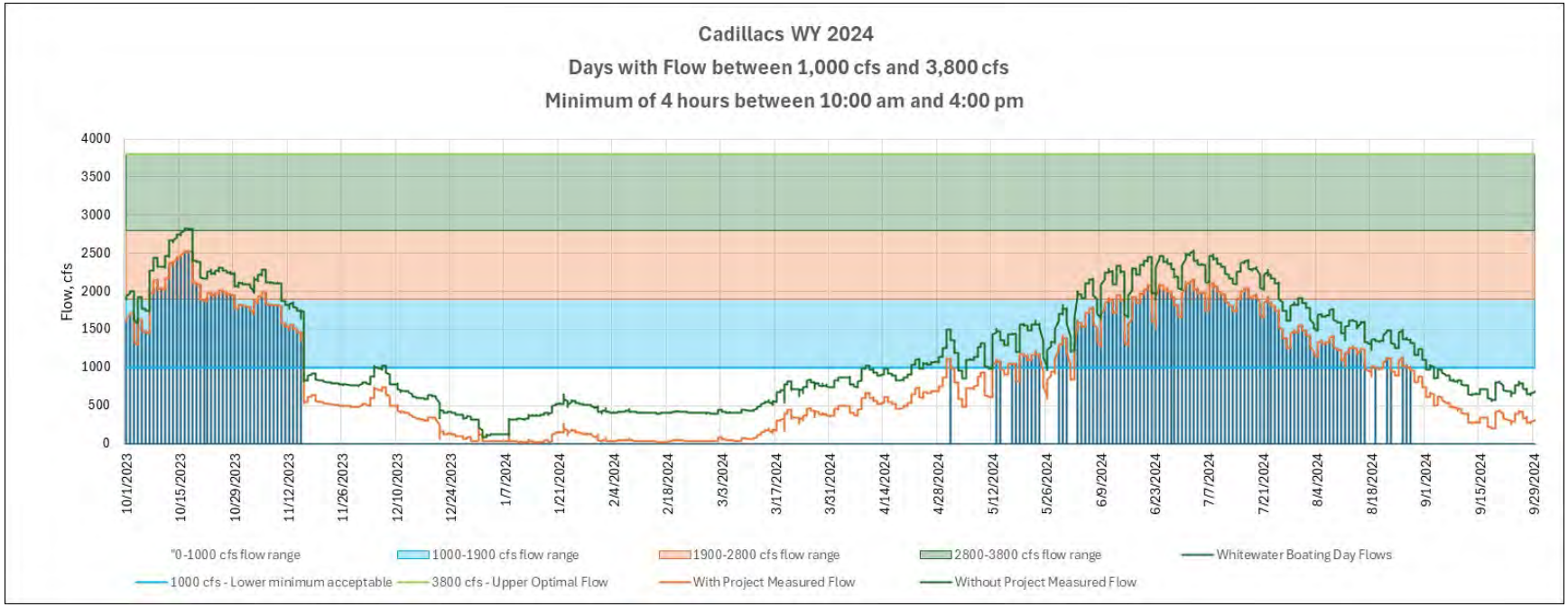


Cadillacs with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	11	1	0	0	19	31	30	92
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	4	1	0	0	0	0	7	12
1900-2800 CFS	0	0	0	0	0	3	1	0	0	5	16	17	42
2800-3800 CFS	0	0	0	0	0	4	0	0	0	14	16	8	42

Cadillacs without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	10	1	0	1	18	31	29	90
Cadillacs without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	4	1	0	1	0	0	0	6
1900-2800 CFS	0	0	0	0	0	3	0	0	1	1	5	21	31
2800-3800 CFS	0	0	0	0	0	3	0	0	0	18	26	8	55

Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	0	0	0	1	0	0	-1	1	0	1	2
Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	0	0	0	0	0	0	0	0	-1	0	0	7	6
1900-2800 CFS	0	0	0	0	0	0	1	0	-1	4	11	-4	11
2800-3800 CFS	0	0	0	0	0	1	0	0	0	-4	-10	0	-13

CADILLACS RUN: WATER YEAR 2024



Cadillacs with Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	31	15	0	0	0	0	0	14	28	31	22	0	141
	2	3	4	5	6	7	8	9	10	11	12	13	
Cadillacs with Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	11	13	0	0	0	0	0	14	20	16	22	0	96
1900-2800 CFS	20	2	0	0	0	0	0	0	9	16	0	0	47
2800-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cadillacs without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	31	15	2	0	0	0	10	28	30	31	31	1	179
Cadillacs without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	3	5	2	0	0	0	10	28	7	6	31	1	93
1900-2800 CFS	26	10	0	0	0	0	0	0	25	26	0	0	87
2800-3800 CFS	3	0	0	0	0	0	0	0	0	0	0	0	3

Difference: with Project - without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (1000-3800 CFS)	0	0	-2	0	0	0	-10	-14	-2	0	-9	-1	-38
Difference: with Project - without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1000-1900 CFS	8	8	-2	0	0	0	-10	-14	13	10	-9	-1	3
1900-2800 CFS	-6	-8	0	0	0	0	0	0	-16	-10	0	0	-40
2800-3800 CFS	-3	0	0	0	0	0	0	0	0	0	0	0	-3

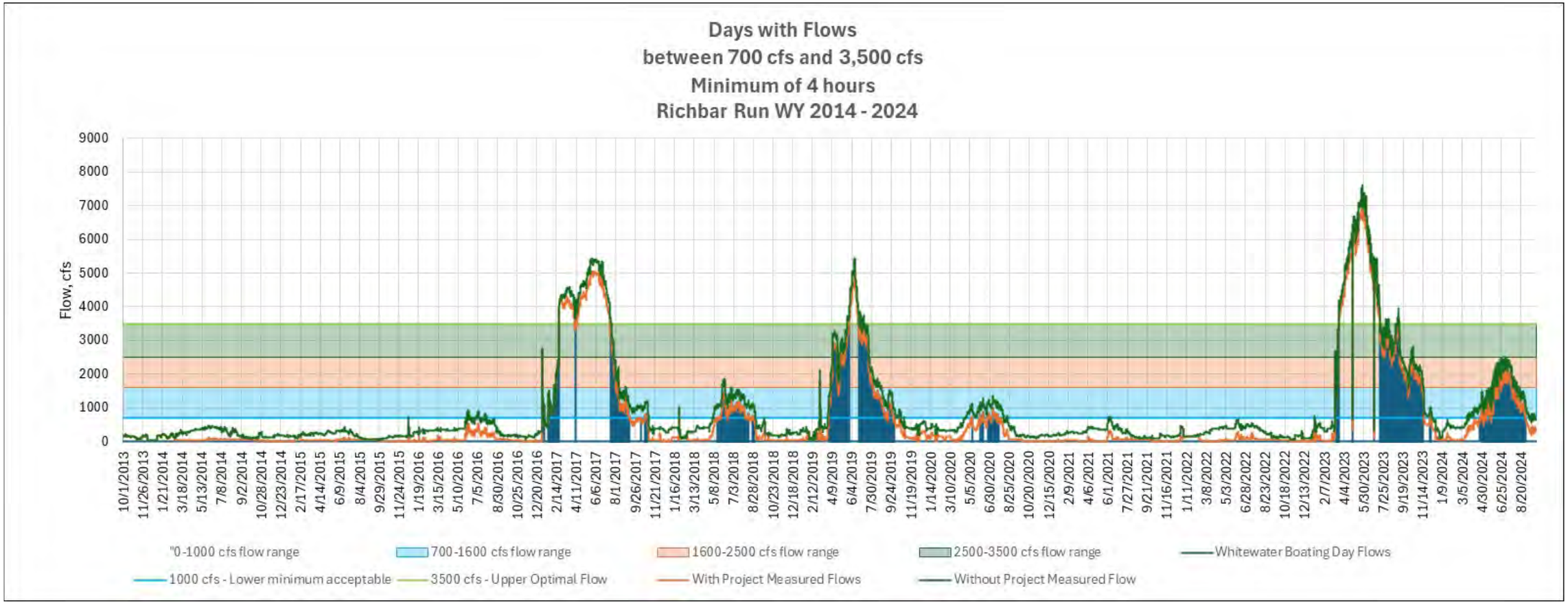
RICHBAR

The flow preferences of the boaters who provided input about their experiences boating the Richbar run ranged between 700 cfs and 1,600 cfs for the minimum acceptable flow threshold, and between 1,000 and 3,500 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating-day for the Richbar run was 700 cfs to 3,500 cfs.

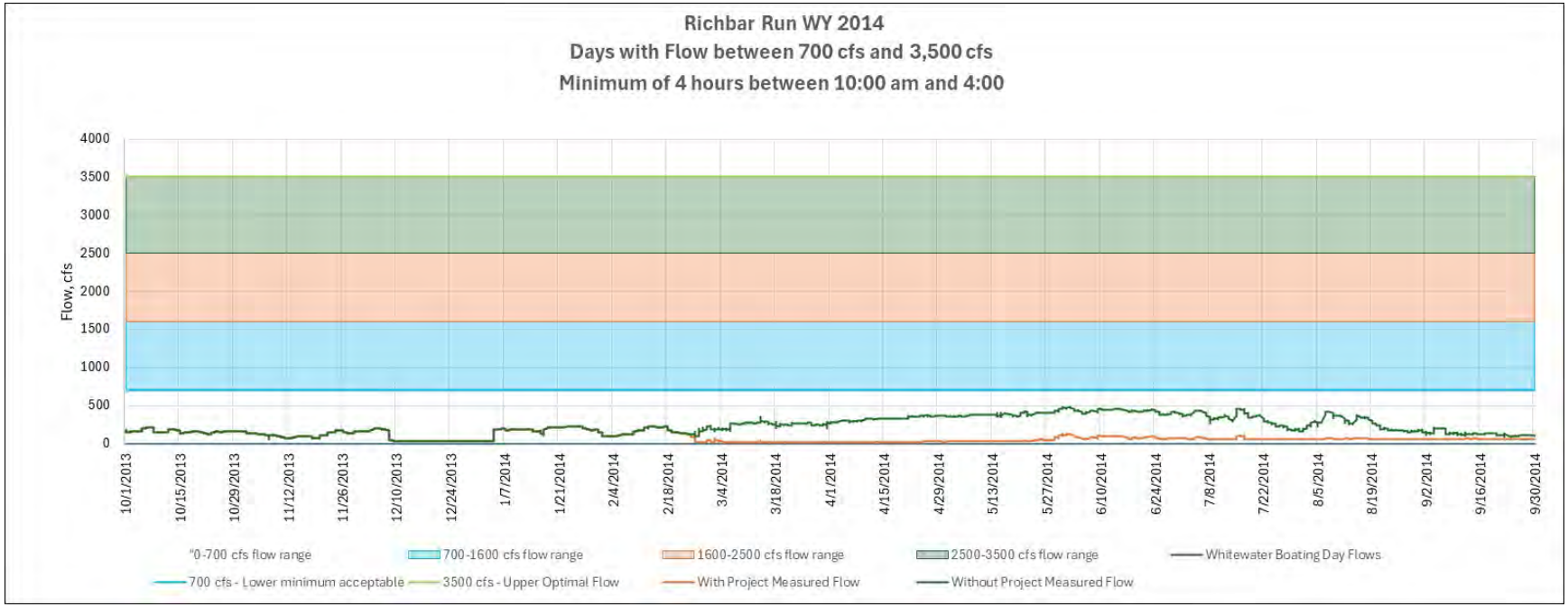
The following figures and tables include an overview that illustrates the hydrograph for the complete period of record (illustrating both “with-project” and “without-project”) and then separate hydrograph and summary tables for each year that illustrate the number of boatable days, per year and by month for the Richbar run, and provide additional information about flows within three specific intermediate ranges under both “with-project” and “without-project” scenarios:

- 700–1,600 cfs
- 1,600–2,500 cfs
- 2,500–3,500 cfs

RICHBAR RUN: WATER YEARS 2014–2024



RICHBAR RUN: WATER YEAR 2014

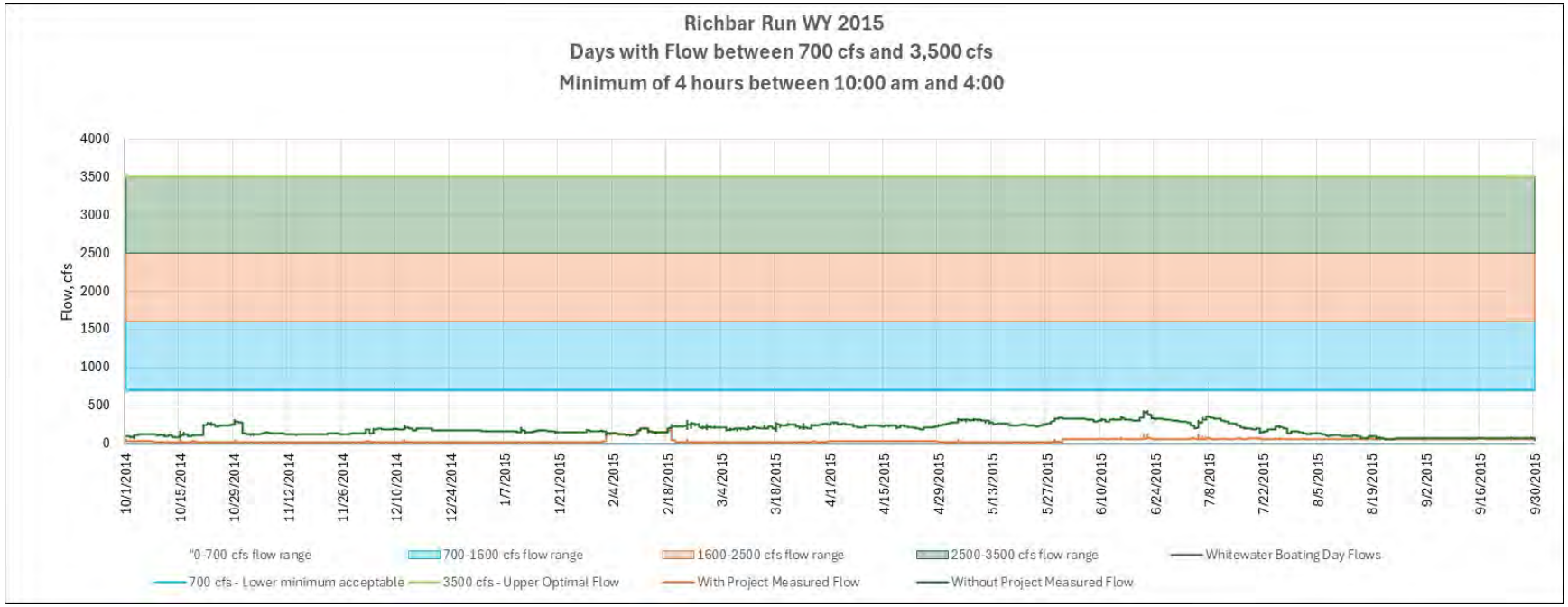


Richbar Run with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Richbar Run without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2015

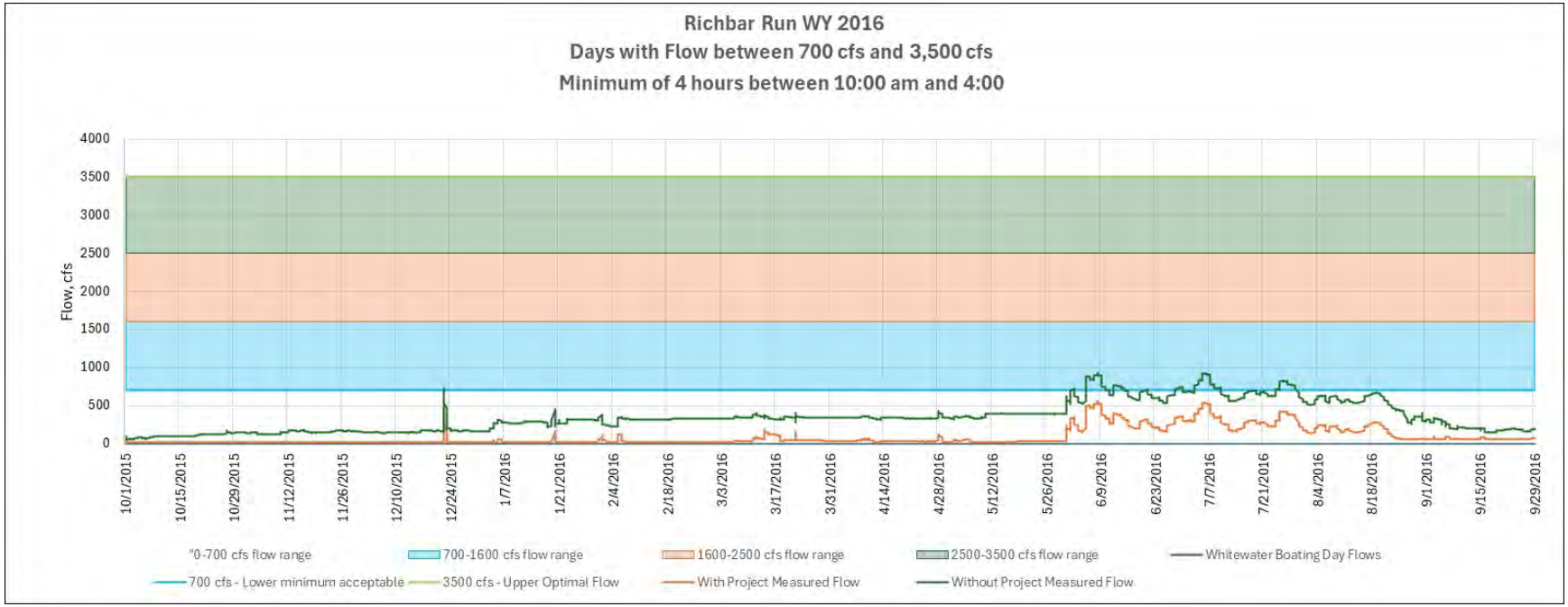


Richbar Run with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Richbar Run without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2016

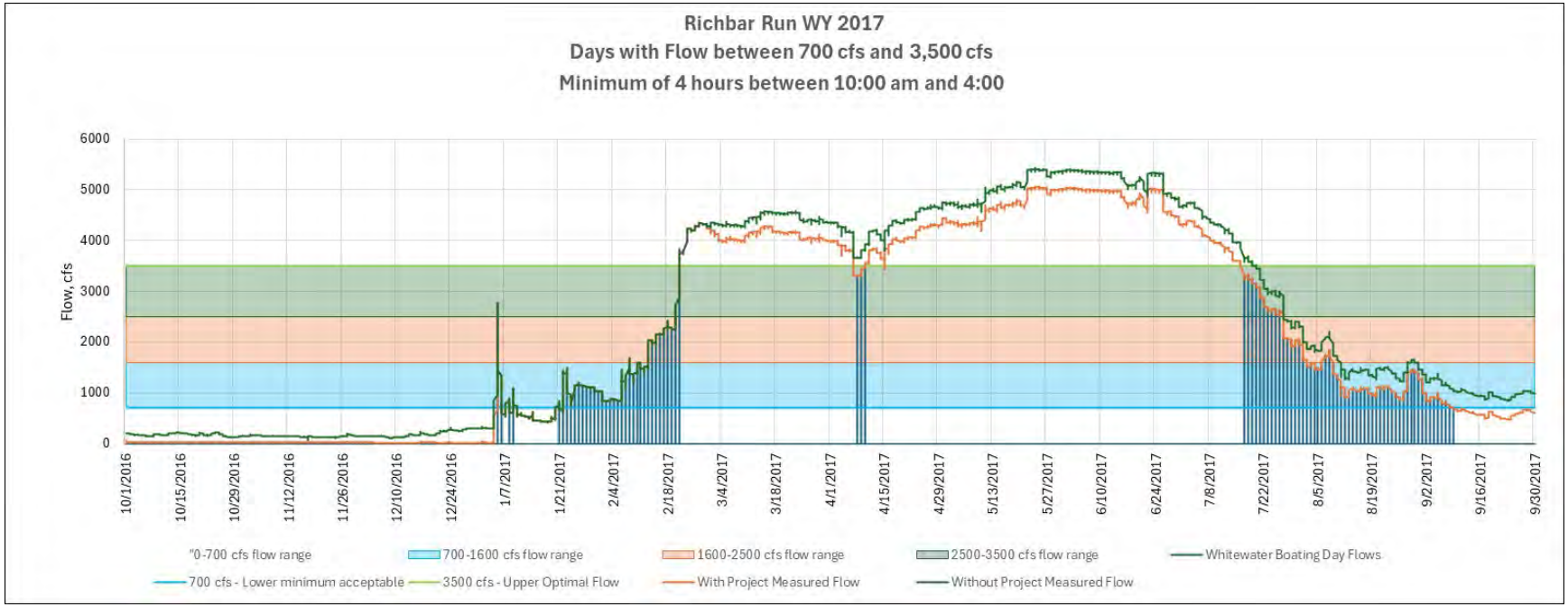


Richbar Run with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	12	12	0	0	24
Richbar Run without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	12	12	0	0	24
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	-12	-12	0	0	-24
Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	-12	-12	0	0	-24
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2017

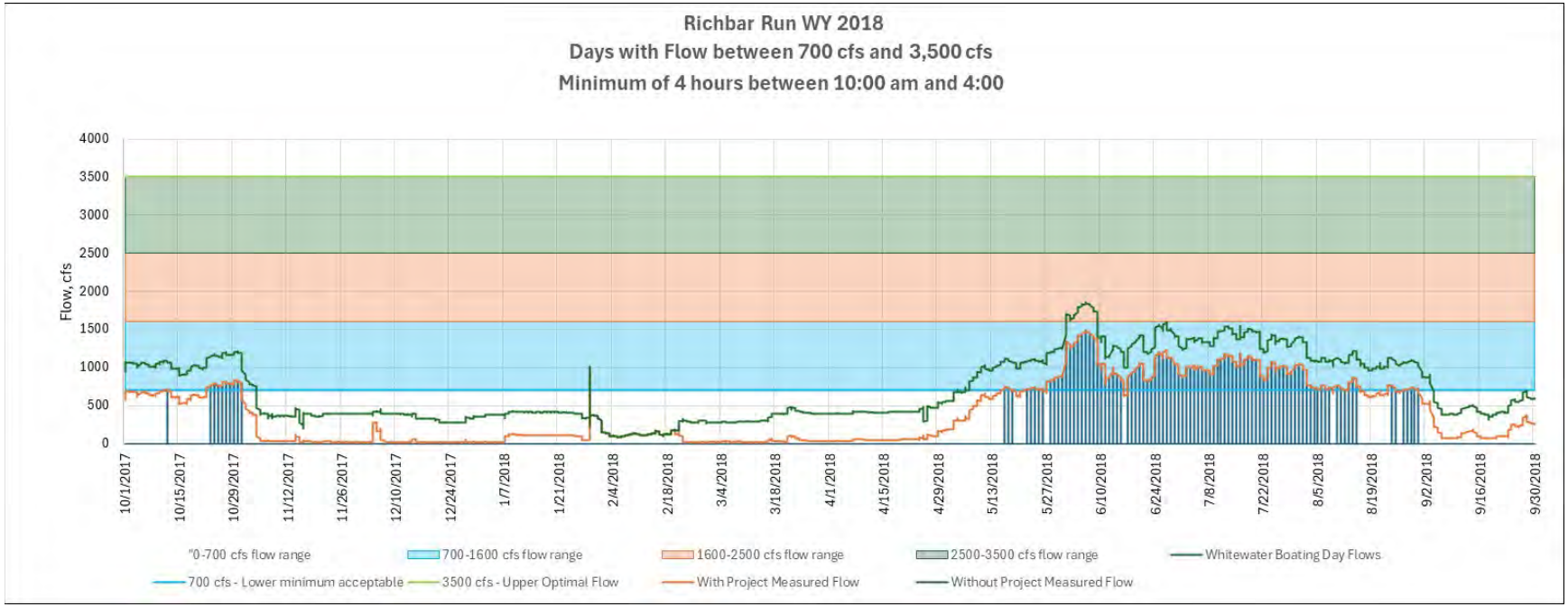


Richbar Run with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	15	21	0	3	0	0	15	31	9	94
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	14	13	0	0	0	0	0	28	9	64
1600-2500 CFS	0	0	0	1	7	0	0	0	0	5	3	0	16
2500-3500 CFS	0	0	0	1	2	0	3	0	0	10	0	0	16

Richbar Run without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	15	21	0	0	0	0	12	31	30	109
Richbar Run without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	14	13	0	0	0	0	0	20	30	77
1600-2500 CFS	0	0	0	0	7	0	0	0	0	5	12	0	24
2500-3500 CFS	0	0	0	1	2	0	0	0	0	7	0	0	10

Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	3	0	0	3	0	-21	-15
Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	8	-21	-13
1600-2500 CFS	0	0	0	1	0	0	0	0	0	0	-9	0	-8
2500-3500 CFS	0	0	0	0	0	0	3	0	0	3	0	0	6

RICHBAR RUN: WATER YEAR 2018

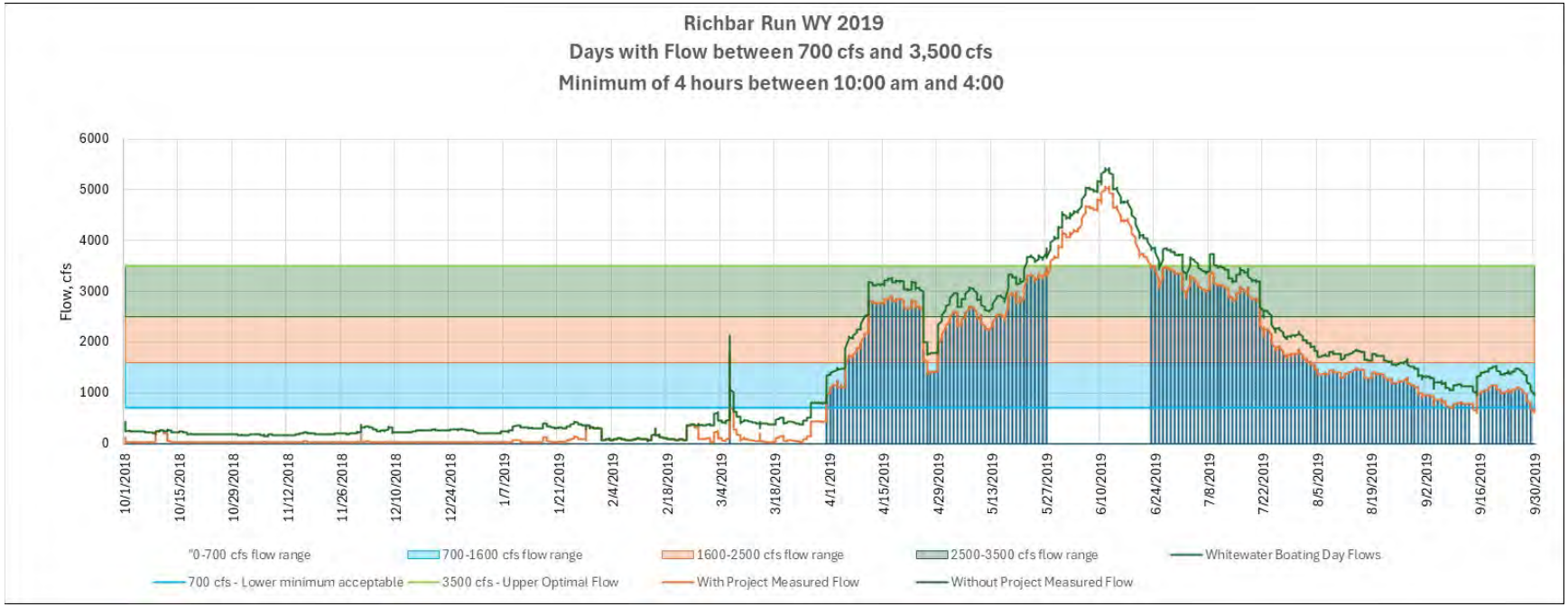


Richbar Run with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	10	0	0	0	0	0	0	12	29	31	21	0	103
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	10	0	0	0	0	0	0	12	29	31	21	0	103
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	31	4	0	0	0	0	0	26	30	31	31	4	157
Richbar Run without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	31	4	0	0	0	0	0	26	22	31	31	4	149
1600-2500 CFS	0	0	0	0	0	0	0	0	8	0	0	0	8
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	-21	-4	0	0	0	0	0	-14	-1	0	-10	-4	-54
Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	-21	-4	0	0	0	0	0	-14	7	0	-10	-4	-46
1600-2500 CFS	0	0	0	0	0	0	0	0	-8	0	0	0	-8
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2019

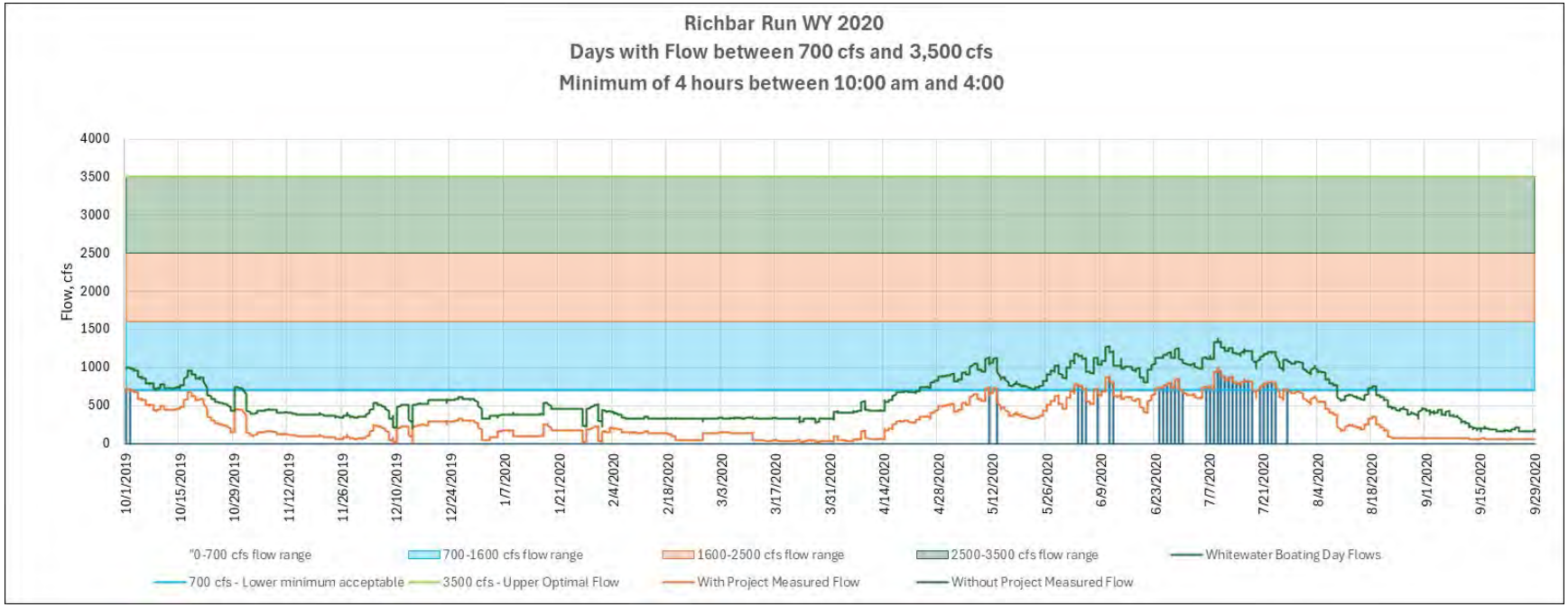


Richbar Run with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	2	30	27	8	31	31	27	156
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	2	8	0	0	0	28	27	65
1600-2500 CFS	0	0	0	0	0	1	8	9	0	10	3	0	31
2500-3500 CFS	0	0	0	0	0	0	14	19	8	21	0	0	62

Richbar Run without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	6	30	21	1	27	31	30	146
Richbar Run without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	5	4	0	0	0	6	30	45
1600-2500 CFS	0	0	0	0	0	1	11	0	0	8	25	0	45
2500-3500 CFS	0	0	0	0	0	0	15	21	1	19	0	0	56

Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	-4	0	6	7	4	0	-3	10
Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	-3	4	0	0	0	22	-3	20
1600-2500 CFS	0	0	0	0	0	0	-3	9	0	2	-22	0	-14
2500-3500 CFS	0	0	0	0	0	0	-1	-2	7	2	0	0	6

RICHBAR RUN: WATER YEAR 2020

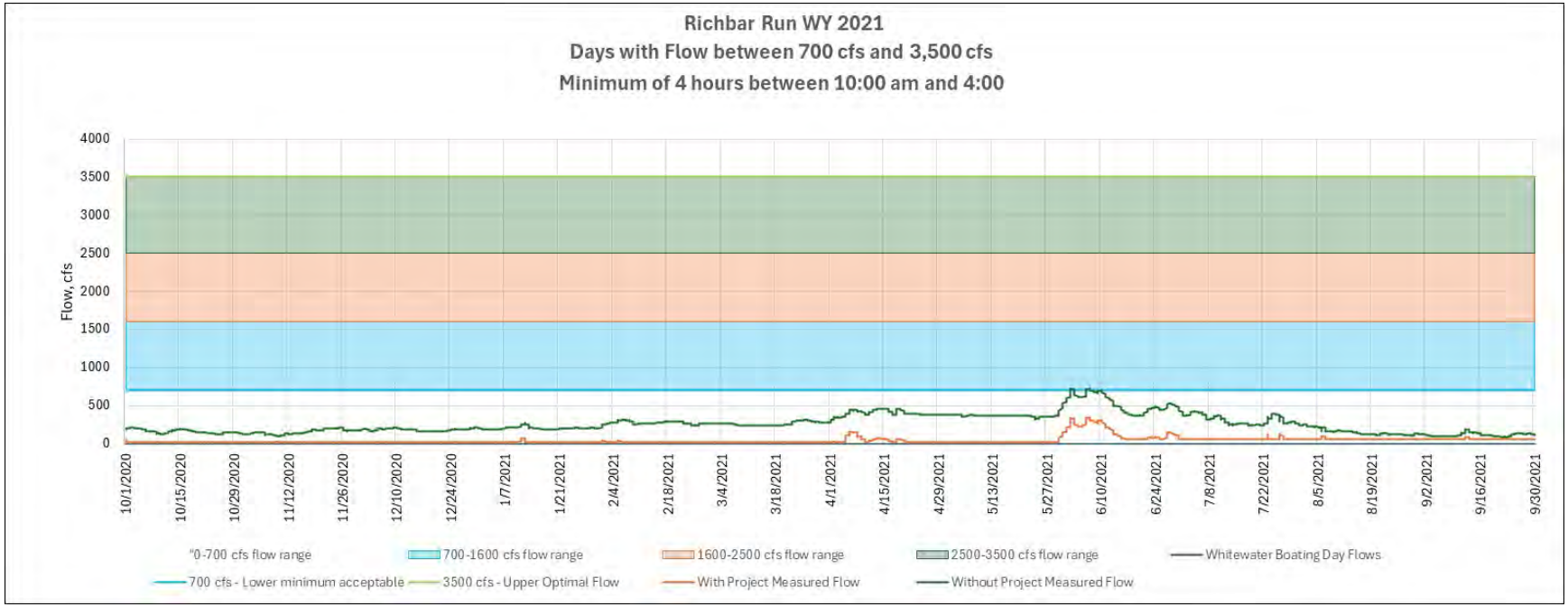


Richbar Run with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	2	0	0	0	0	0	0	2	13	19	0	0	36
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	2	0	0	0	0	0	0	2	13	19	0	0	36
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	24	0	0	0	0	0	8	31	30	31	11	0	135
Richbar Run without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	24	0	0	0	0	0	8	31	30	31	11	0	135
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	-22	0	0	0	0	0	-8	-29	-17	-12	-11	0	-99
Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	-22	0	0	0	0	0	-8	-29	-17	-12	-11	0	-99
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2021

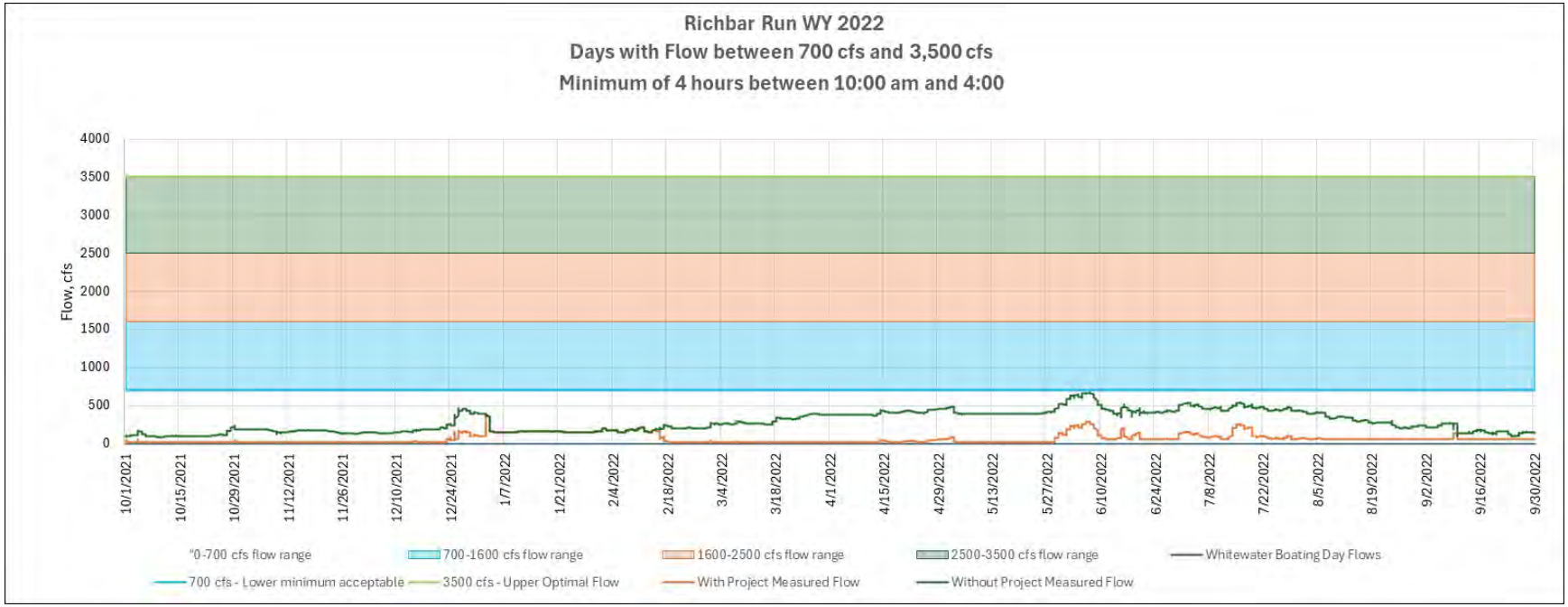


Richbar Run with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	3	0	0	0	3
Richbar Run without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	3	0	0	0	3
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	-3	0	0	0	-3
Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	-3	0	0	0	-3
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2022

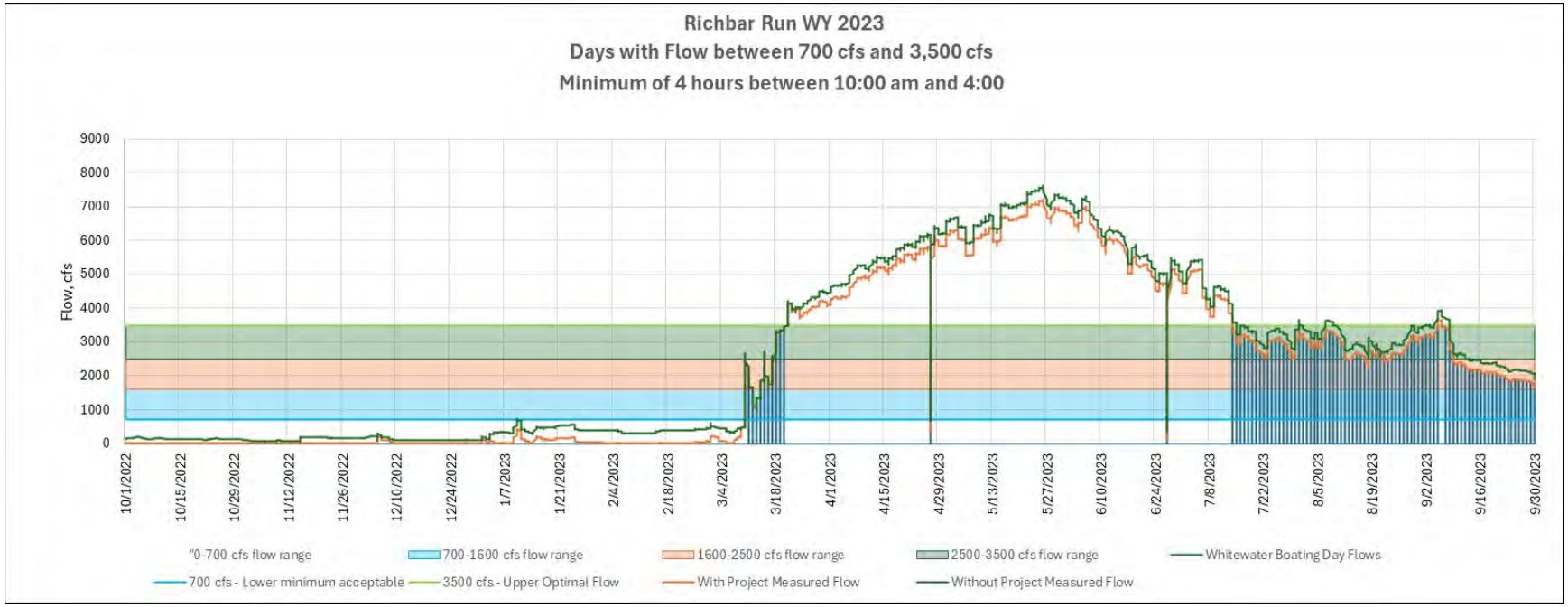


Richbar Run with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Richbar Run without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Richbar Run without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2500-3500 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

RICHBAR RUN: WATER YEAR 2023

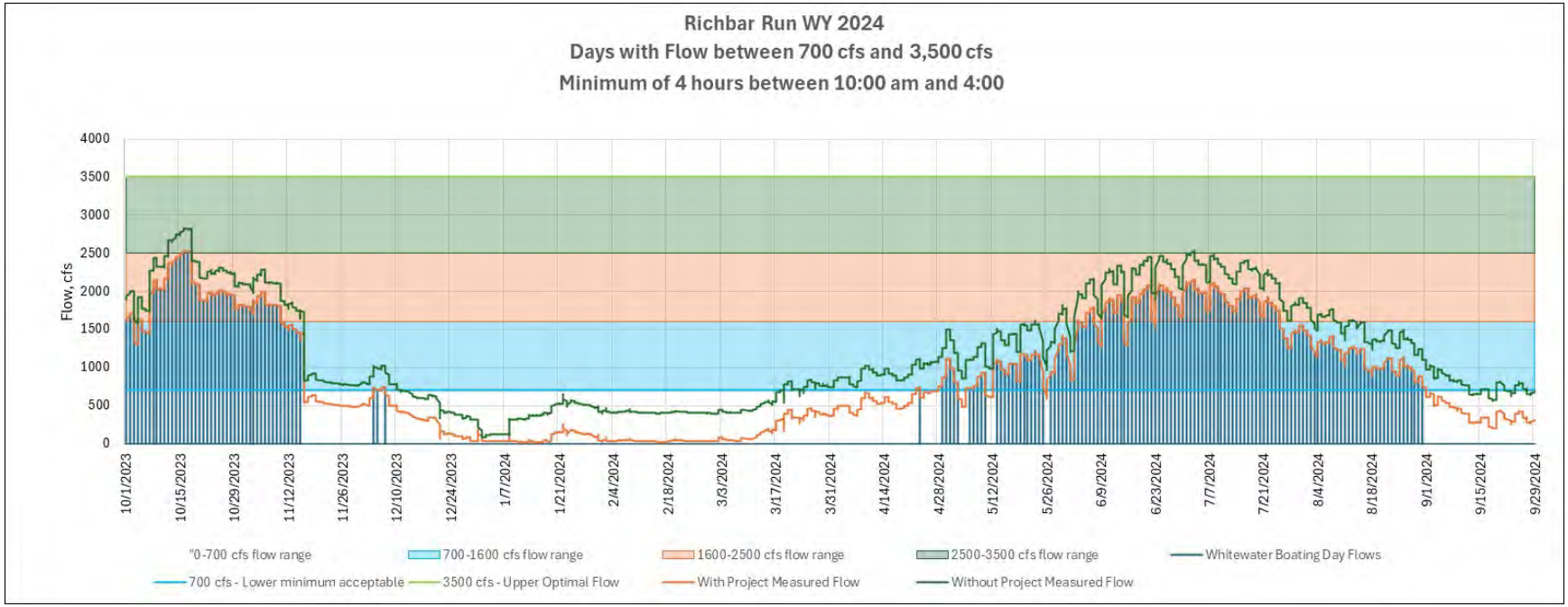


Richbar Run with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	10	1	0	1	18	31	29	90
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	3	1	0	1	0	0	0	5
1600-2500 CFS	0	0	0	0	0	3	0	0	1	1	3	21	29
2500-3500 CFS	0	0	0	0	0	5	0	0	0	18	28	8	59

Richbar Run without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	10	1	0	1	17	29	25	83
Richbar Run without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	3	1	0	1	0	0	0	5
1600-2500 CFS	0	0	0	0	0	3	0	0	0	0	0	18	21
2500-3500 CFS	0	0	0	0	0	5	1	0	0	17	29	8	60

Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (700-3500 CFS)	0	0	0	0	0	0	0	0	0	1	2	4	7
Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
700-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2500 CFS	0	0	0	0	0	0	0	0	1	1	3	3	8
2500-3500 CFS	0	0	0	0	0	0	-1	0	0	1	-1	0	-1

RICHBAR RUN: WATER YEAR 2024



Richbar Run with Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
Whitewater Boating Days (700-3500 CFS)	31	15	3	0	0	0	3	26	30	31	31	0	170
	2	3	4	5	6	7	8	9	10	11	12	13	
Richbar Run with Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
700-1600 CFS	3	5	3	0	0	0	3	26	9	6	31	0	86
1600-2500 CFS	27	10	0	0	0	0	0	0	22	25	0	0	84
2500-3500 CFS	3	0	0	0	0	0	0	0	0	0	0	0	3

Richbar Run without Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
Whitewater Boating Days (700-3500 CFS)	31	30	10	0	0	11	30	31	30	31	31	20	255
Richbar Run without Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
700-1600 CFS	0	15	10	0	0	11	30	28	2	0	24	20	140
1600-2500 CFS	26	15	0	0	0	0	0	4	28	31	8	0	112
2500-3500 CFS	7	0	0	0	0	0	0	0	0	1	0	0	8

Difference: with Project - without Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Total**
Whitewater Boating Days (700-3500 CFS)	0	-15	-7	0	0	-11	-27	-5	0	0	0	-20	-85
Difference: with Project - without Project WY 2024	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	
700-1600 CFS	3	-10	-7	0	0	-11	-27	-2	7	6	7	-20	-54
1600-2500 CFS	1	-5	0	0	0	0	0	-4	-6	-6	-8	0	-28
2500-3500 CFS	-4	0	0	0	0	0	0	0	0	-1	0	0	-5

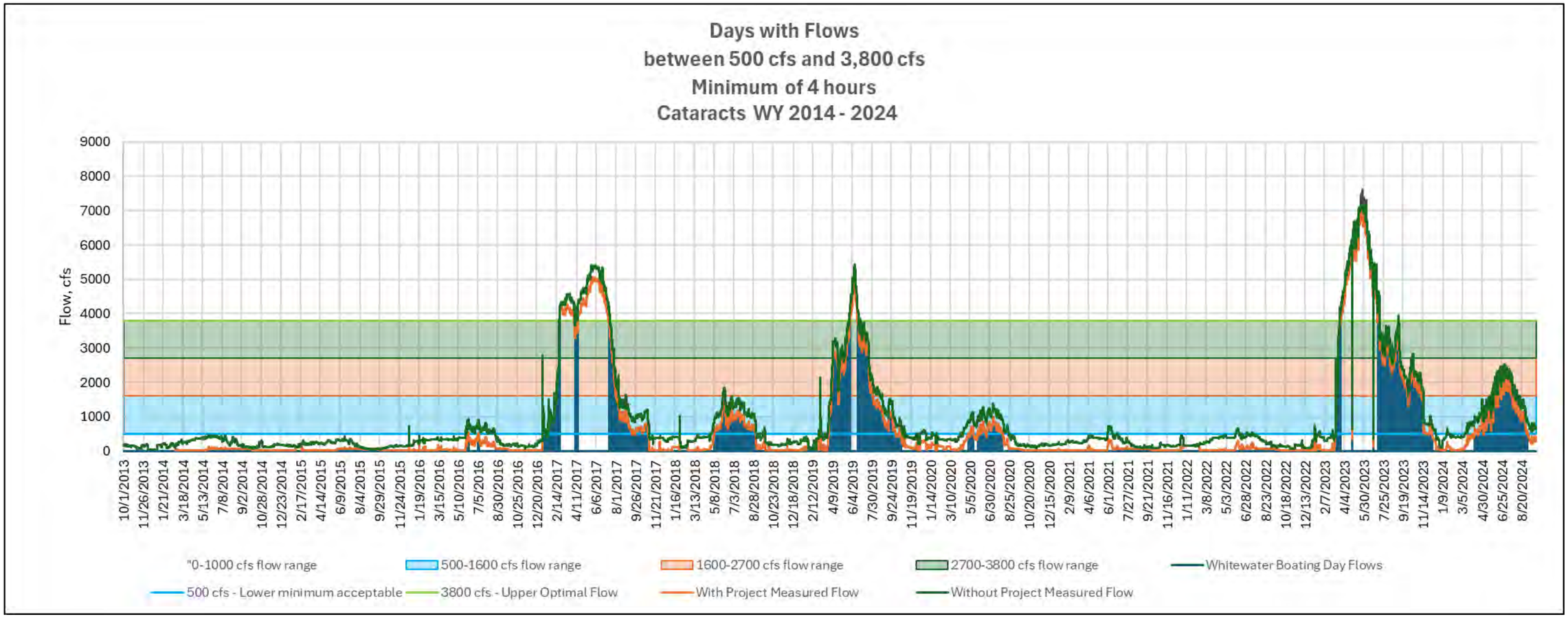
CATARACTS

The flow preferences of the boaters who provided input about their experiences boating the Cataracts run ranged between 500 cfs and 2,800 cfs for the minimum acceptable flow threshold, and between 900 and 3,800 cfs for the optimum flow threshold. Therefore, the boatable flow range used to calculate a boating-day for the Cataracts run was 500 cfs to 3,800 cfs.

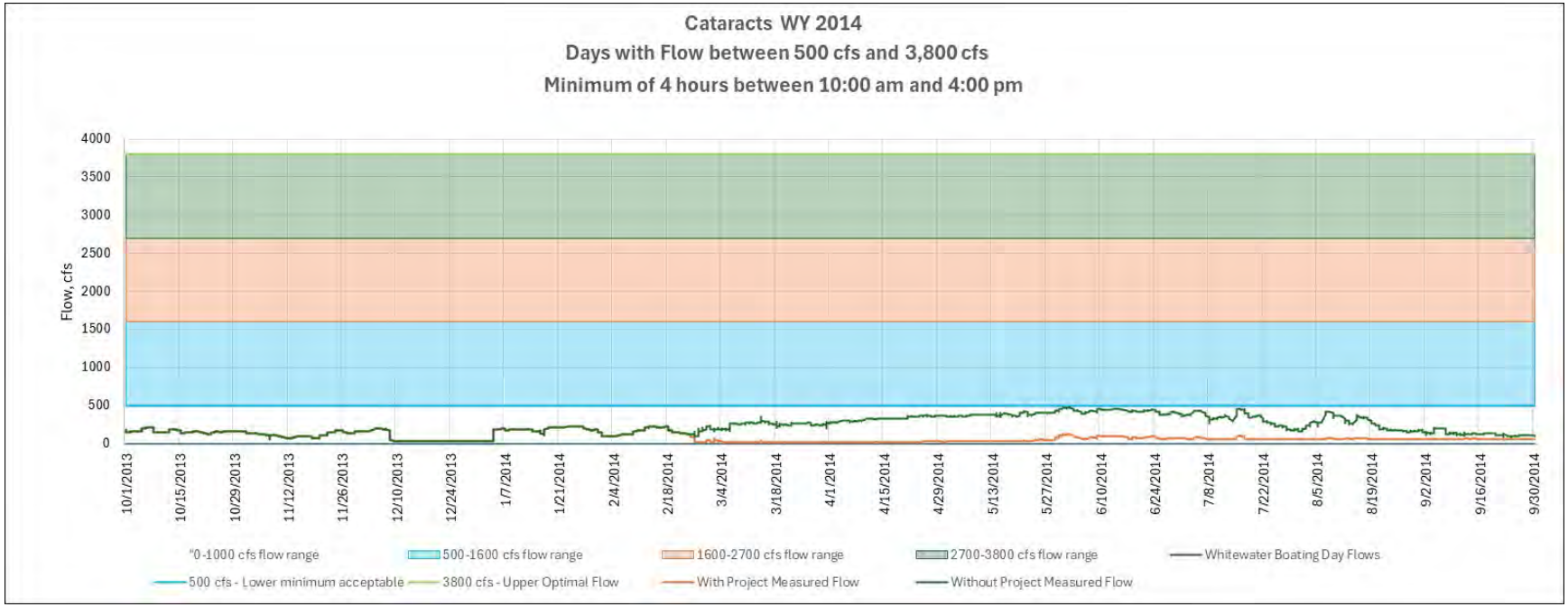
The following figures and tables include an overview that illustrates the hydrograph for the complete period of record (illustrating both “with-project” and “without-project”) and then separate hydrograph and summary tables for each year that illustrate the number of boatable days, per year and by month for the Cataracts fun, and provide additional information about flows within three specific intermediate ranges under both “with-project” and “without-project” scenarios:

- 500–1,600 cfs
- 1,600–2,700 cfs
- 2,700–3,800 cfs

CATARACTS RUN: WATER YEARS 2014–2024



CATARACTS RUN: WATER YEAR 2014

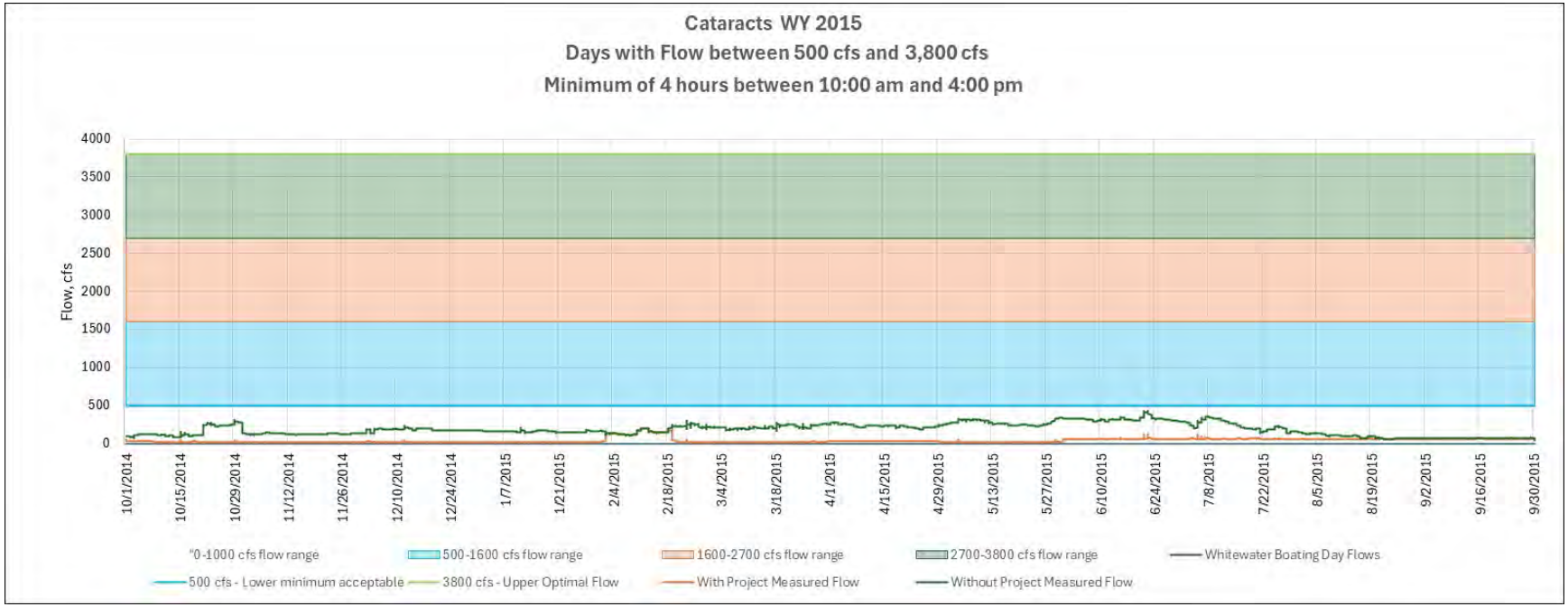


Cataracts with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cataracts without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2014	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2015

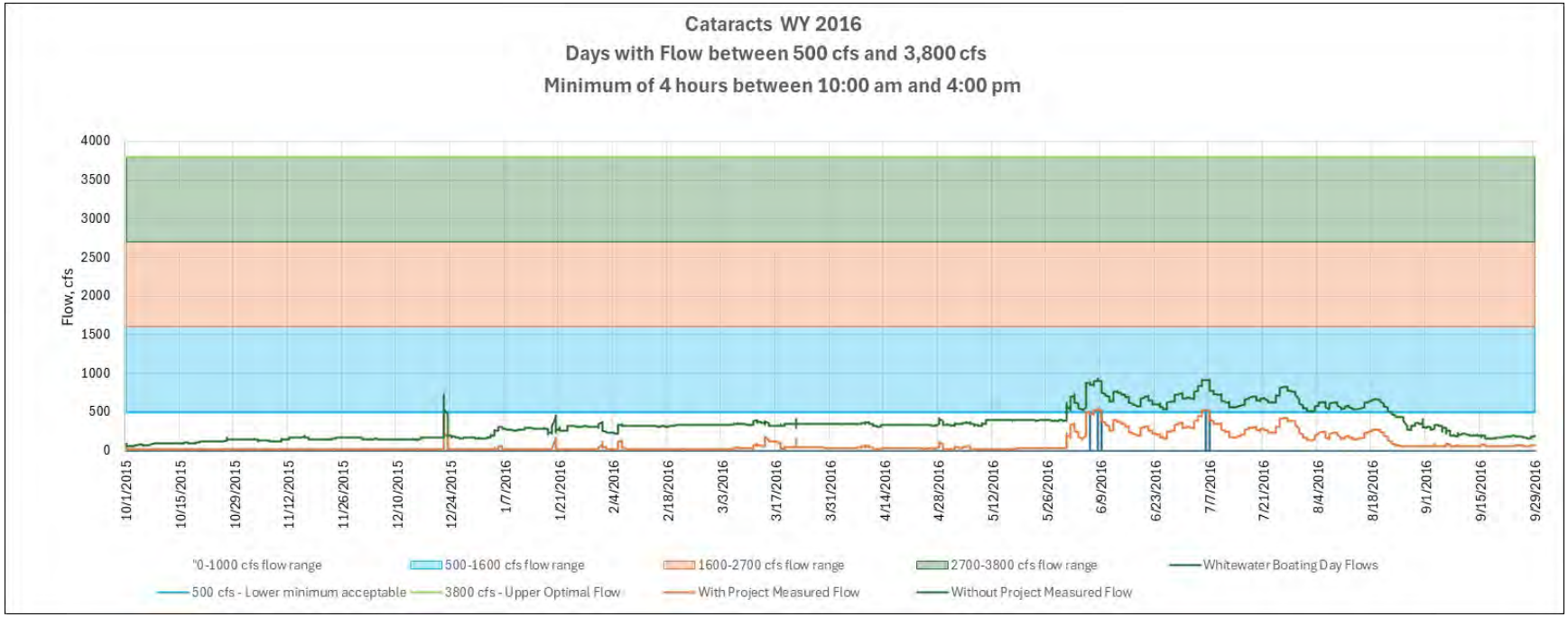


Cataracts with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Cataracts without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
Difference: with Project - without Project WY 2015	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2016

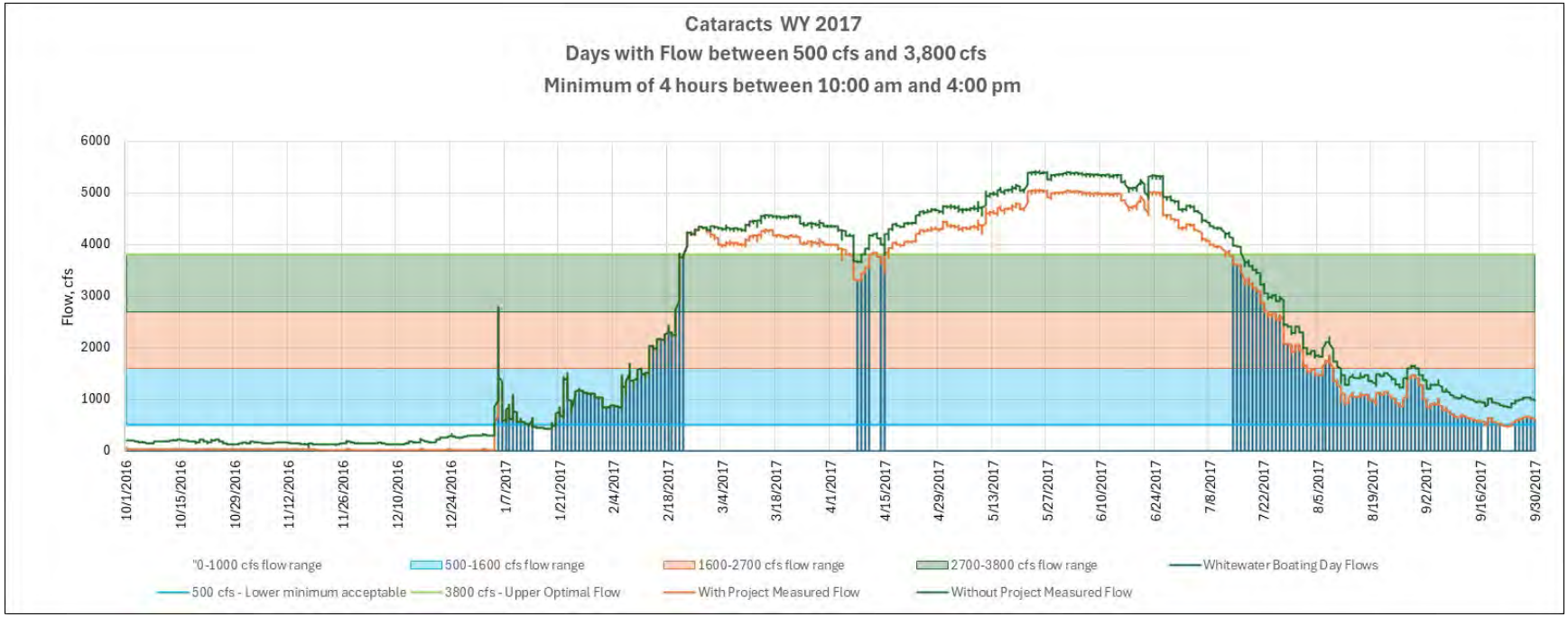


Cataracts with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	3	2	0	0	5
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	3	2	0	0	5
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	30	31	22	0	83
Cataracts without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	30	31	22	0	83
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	-27	-29	-22	0	-78
Difference: with Project - without Project WY 2016	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	-27	-29	-22	0	-78
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2017

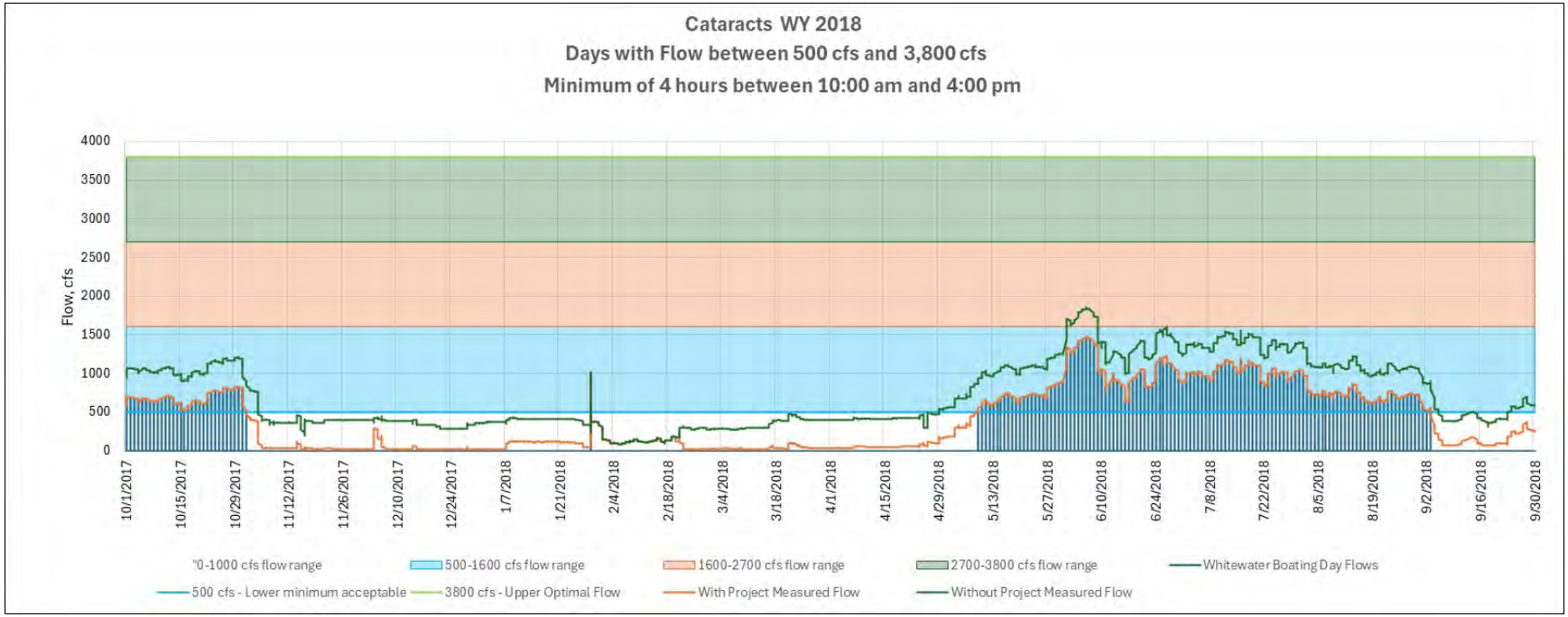


Cataracts with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	23	22	0	6	0	0	18	31	26	126
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	22	13	0	0	0	0	0	28	26	89
1600-2700 CFS	0	0	0	1	7	0	0	0	0	9	3	0	20
2700-3800 CFS	0	0	0	0	2	0	6	0	0	9	0	0	17

Cataracts without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	23	22	0	2	0	0	15	31	30	123
Cataracts without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	22	13	0	0	0	0	0	20	30	85
1600-2700 CFS	0	0	0	1	7	0	0	0	0	5	12	0	25
2700-3800 CFS	0	0	0	1	2	0	2	0	0	10	0	0	15

Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	4	0	0	3	0	-4	3
Difference: with Project - without Project WY 2017	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	8	-4	4
1600-2700 CFS	0	0	0	0	0	0	0	0	0	4	-9	0	-5
2700-3800 CFS	0	0	0	-1	0	0	4	0	0	-1	0	0	2

CATARACTS RUN: WATER YEAR 2018

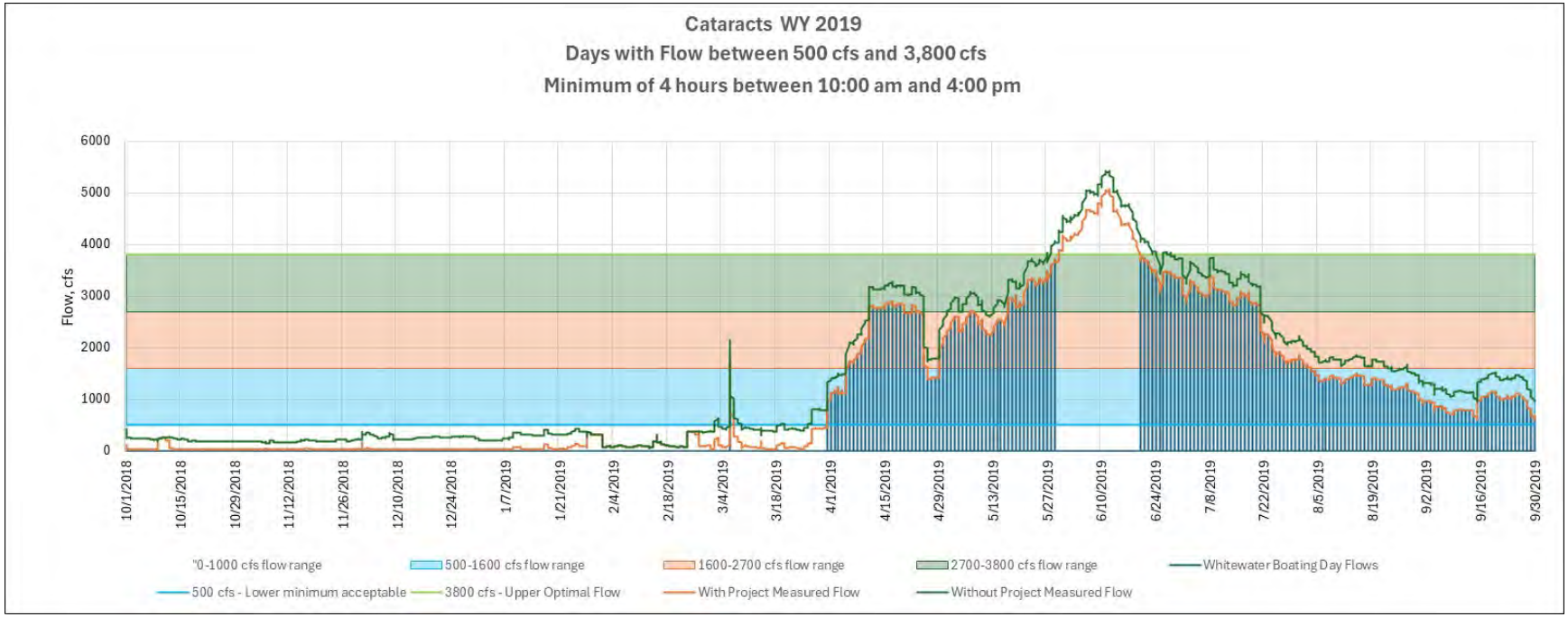


Cataracts with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	31	1	0	1	0	0	0	23	30	31	31	3	151
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	31	1	0	1	0	0	0	23	30	31	31	3	151
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	31	4	0	1	0	0	2	31	30	31	31	12	173
Cataracts without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	31	4	0	1	0	0	2	31	22	31	31	12	165
1600-2700 CFS	0	0	0	0	0	0	0	0	8	0	0	0	8
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	-3	0	0	0	0	-2	-8	0	0	0	-9	-22
Difference: with Project - without Project WY 2018	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	-3	0	0	0	0	-2	-8	8	0	0	-9	-14
1600-2700 CFS	0	0	0	0	0	0	0	0	-8	0	0	0	-8
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2019

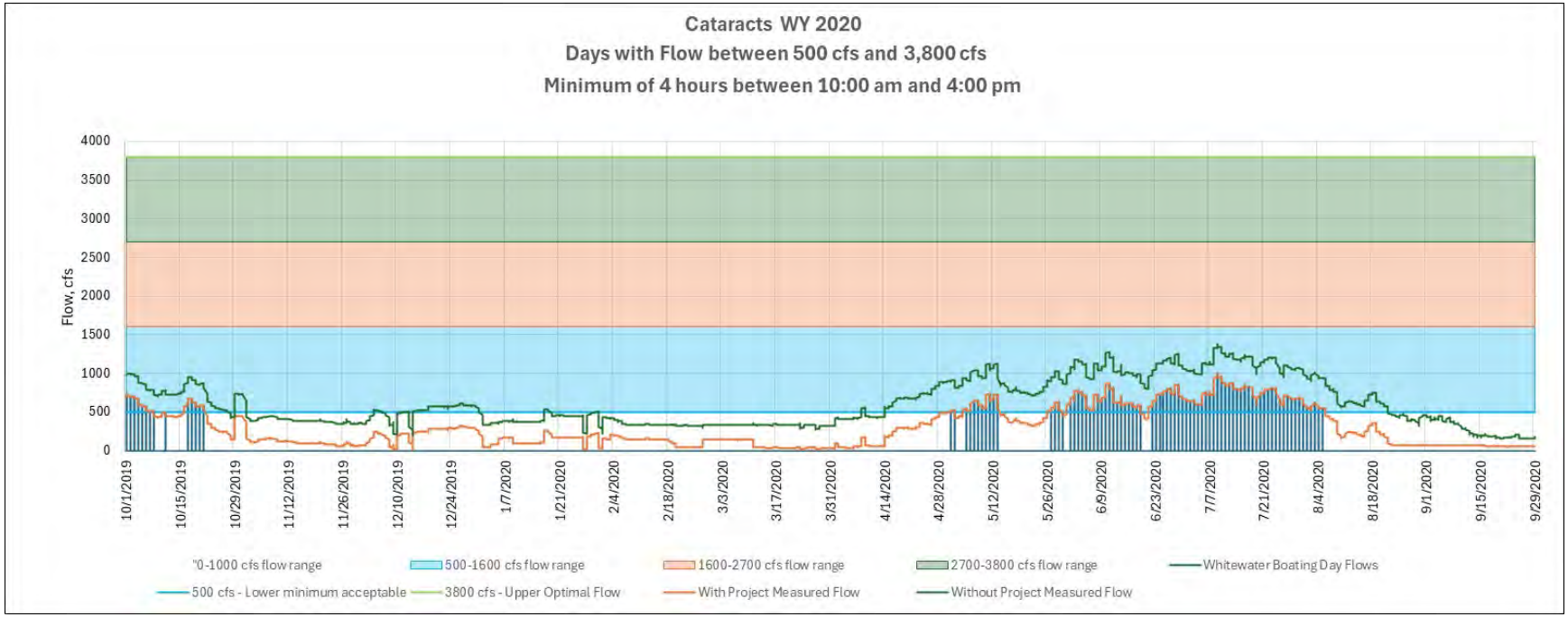


Cataracts with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	2	30	29	11	31	31	30	164
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	2	8	0	0	0	28	30	68
1600-2700 CFS	0	0	0	0	0	1	12	15	0	10	3	0	41
2700-3800 CFS	0	0	0	0	0	0	10	14	11	21	0	0	56

Cataracts without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	11	30	26	3	31	31	30	162
Cataracts without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	10	4	0	0	0	6	30	50
1600-2700 CFS	0	0	0	0	0	1	12	4	0	10	25	0	52
2700-3800 CFS	0	0	0	0	0	0	14	22	3	21	0	0	60

Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	-9	0	3	8	0	0	0	2
Difference: with Project - without Project WY 2019	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	-8	4	0	0	0	22	0	18
1600-2700 CFS	0	0	0	0	0	0	0	11	0	0	-22	0	-11
2700-3800 CFS	0	0	0	0	0	0	-4	-8	8	0	0	0	-4

CATARACTS RUN: WATER YEAR 2020

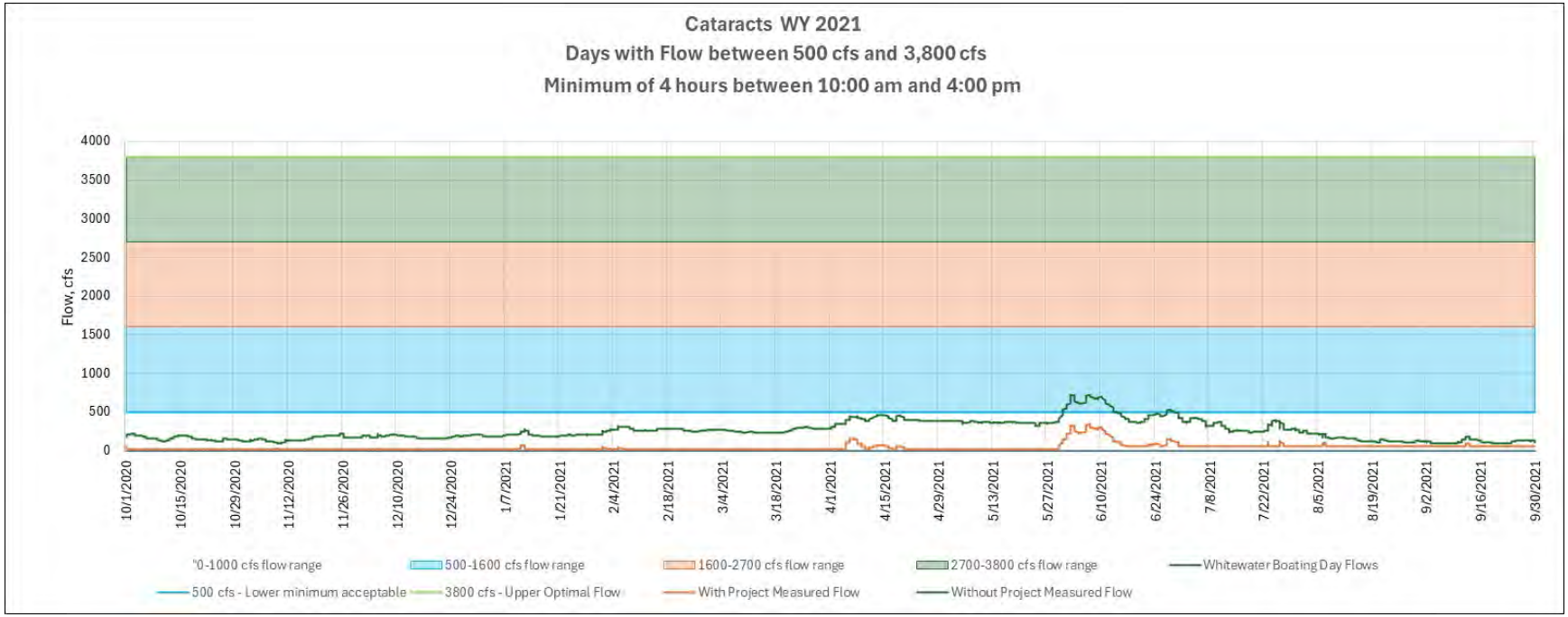


Cataracts with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	14	0	0	0	0	0	0	15	28	31	5	0	93
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	14	0	0	0	0	0	0	15	28	31	5	0	93
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	30	0	24	3	0	0	16	31	30	31	22	0	187
Cataracts without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	30	0	24	3	0	0	16	31	30	31	22	0	187
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	-16	0	-24	-3	0	0	-16	-16	-2	0	-17	0	-94
Difference: with Project - without Project WY 2020	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	-16	0	-24	-3	0	0	-16	-16	-2	0	-17	0	-94
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2021

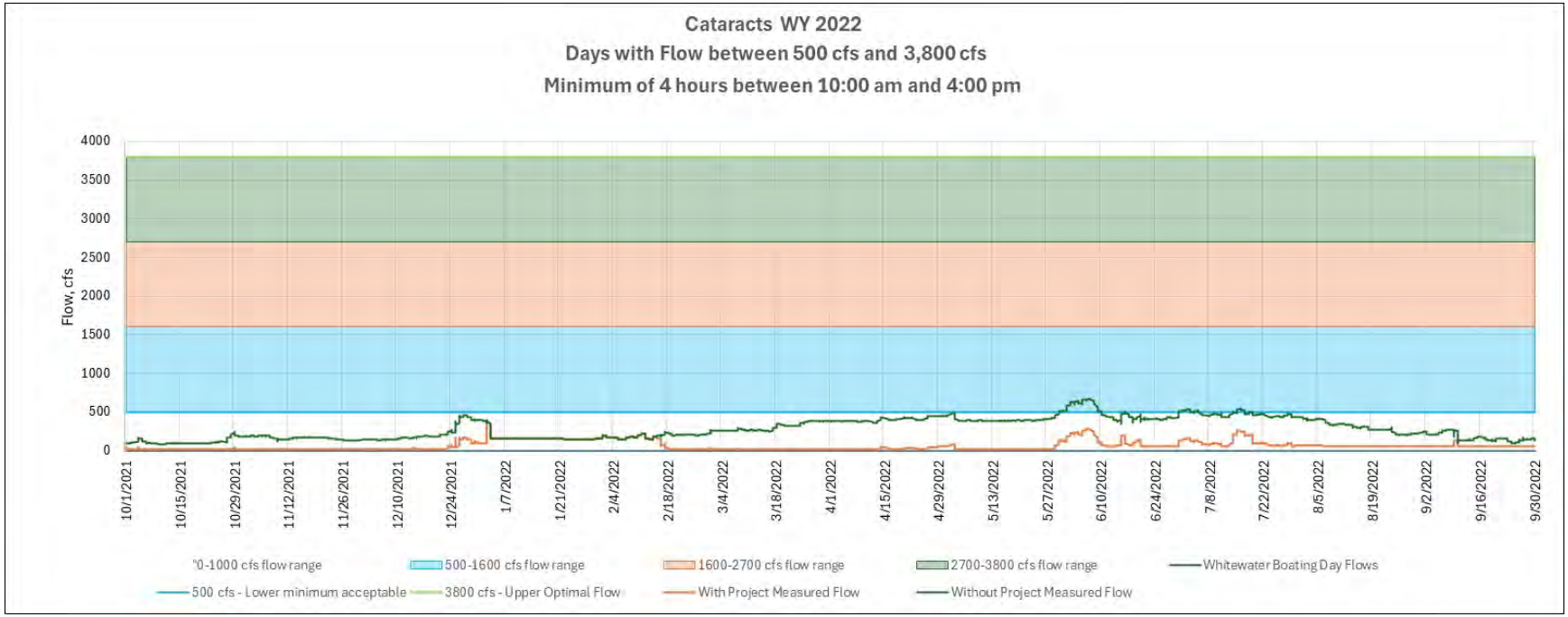


Cataracts with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	16	0	0	0	16
Cataracts without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	16	0	0	0	16
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	-16	0	0	0	-16
Difference: with Project - without Project WY 2021	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	-16	0	0	0	-16
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2022

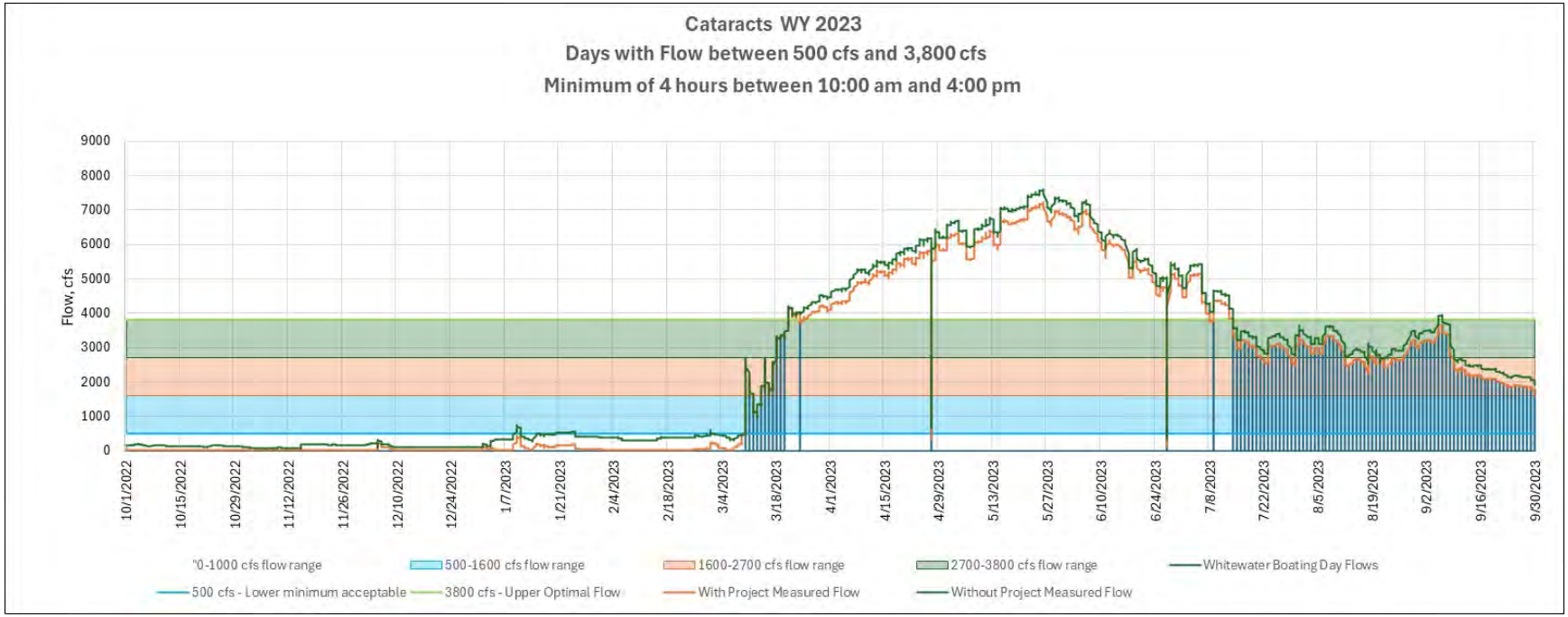


Cataracts with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	1	9	7	0	0	17
Cataracts without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	1	9	7	0	0	17
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	0	0	-1	-9	-7	0	0	-17
Difference: with Project - without Project WY 2022	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	0	0	-1	-9	-7	0	0	-17
1600-2700 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

CATARACTS RUN: WATER YEAR 2023

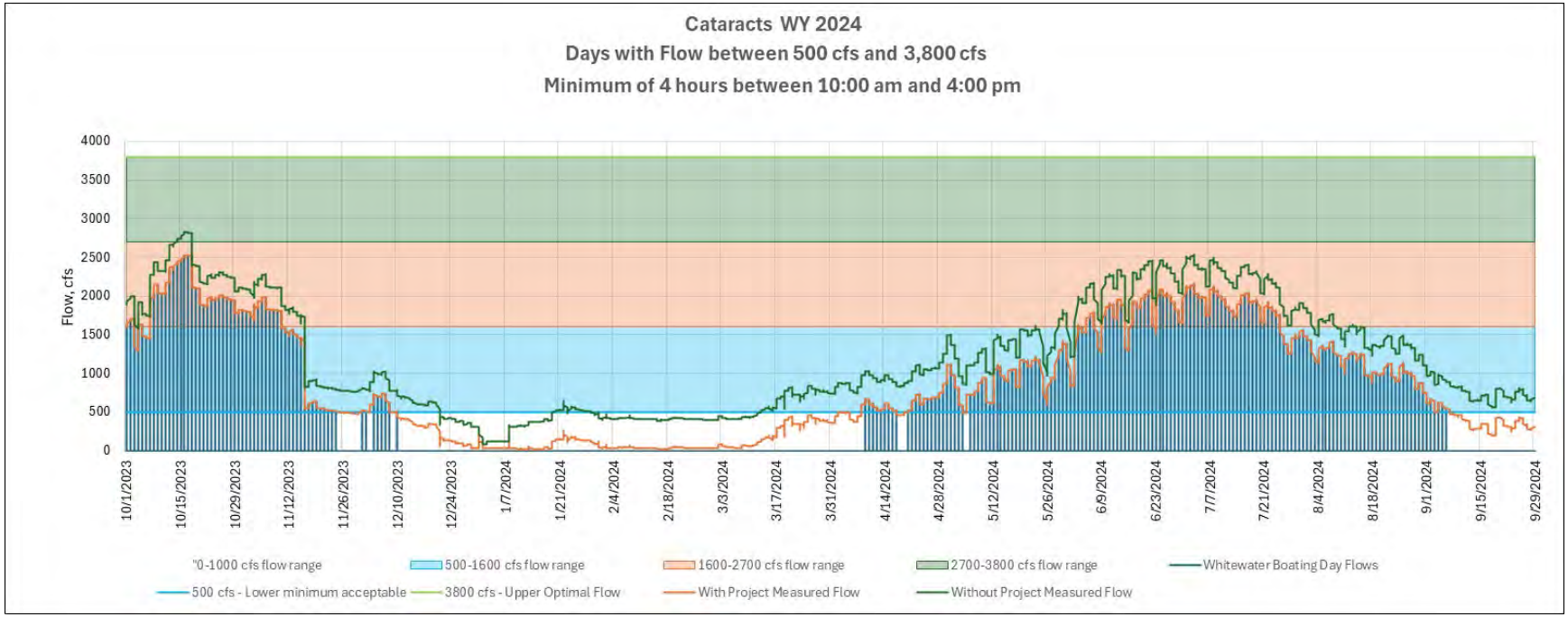


Cataracts with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	0	0	12	1	0	1	19	31	30	94
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	0	0	4	1	0	1	0	0	0	6
1600-2700 CFS	0	0	0	0	0	4	0	0	1	4	14	22	45
2700-3800 CFS	0	0	0	0	0	5	0	0	0	15	18	8	46

Cataracts without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	7	0	12	1	0	1	18	31	29	99
Cataracts without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	7	0	5	1	0	1	0	0	0	14
1600-2700 CFS	0	0	0	0	0	4	1	0	1	0	4	21	31
2700-3800 CFS	0	0	0	0	0	4	0	0	0	18	29	8	59

Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	0	0	-7	0	0	0	0	0	1	0	1	-5
Difference: with Project - without Project WY 2023	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	0	0	-7	0	-1	0	0	0	0	0	0	-8
1600-2700 CFS	0	0	0	0	0	0	-1	0	0	4	10	1	14
2700-3800 CFS	0	0	0	0	0	1	0	0	0	-3	-11	0	-13

CATARACTS RUN: WATER YEAR 2024



Cataracts with Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	31	24	8	0	0	0	20	30	30	31	31	6	211
	2	3	4	5	6	7	8	9	10	11	12	13	
Cataracts with Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	3	14	8	0	0	0	20	30	9	6	31	6	127
1600-2700 CFS	29	10	0	0	0	0	0	0	22	25	0	0	86
2700-3800 CFS	0	0	0	0	0	0	0	0	0	0	0	0	0

Cataracts without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	31	30	20	10	0	18	30	31	30	31	31	30	292
Cataracts without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	0	15	20	10	0	18	30	28	2	0	24	30	177
1600-2700 CFS	27	15	0	0	0	0	0	4	28	31	8	0	113
2700-3800 CFS	5	0	0	0	0	0	0	0	0	0	0	0	5

Difference: with Project - without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Whitewater Boating Days (500-3800 CFS)	0	-6	-12	-10	0	-18	-10	-1	0	0	0	-24	-81
Difference: with Project - without Project WY 2024	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
500-1600 CFS	3	-1	-12	-10	0	-18	-10	2	7	6	7	-24	-50
1600-2700 CFS	2	-5	0	0	0	0	0	-4	-6	-6	-8	0	-27
2700-3800 CFS	-5	0	0	0	0	0	0	0	0	0	0	0	-5