

4.1.19 Whitewater Boating Study

4.1.19.1 Existing Information and Need for Additional Information

This study plan focuses on evaluating and characterizing the whitewater boating resource downstream from Pyramid dam on Pyramid reach. The primary purpose of the proposed study is to identify the characteristics of the whitewater boating resource, particularly with regard to access in the upper reaches and understand what ranges of flow conditions are suitable and preferable for whitewater boaters. Study requests and comments received from USFS, American Whitewater, and NPS centered on a whitewater boating study for Pyramid reach below Pyramid Lake. This proposed study plan considers those requests and comments.

4.1.19.2 Study Goals and Objectives

The main objective of the *Whitewater Boating Study* is to gather additional information on river-based recreational activities and opportunities in Pyramid reach. This will include information about the hydrology of upper Piru Creek, Pyramid Lake releases, how project operations might affect existing and potential whitewater boating opportunities, and how and where boaters access and typically use Pyramid reach. Analysis of information gathered about the whitewater opportunities on Pyramid reach will help determine the relationship between Project operations and the whitewater boating resource on Pyramid reach.

This *Whitewater Boating Study* will comprise the following elements:

- Hydrology assessment
- Conduct structured interviews
- Field reconnaissance and site visit (if deemed necessary after Level 1 Assessment)
- Recommend findings and analysis

4.1.19.3 Study Methods

Study Area

The *Whitewater Boating Study* area includes Pyramid reach from Pyramid Dam to the NMWSE of Lake Piru. Figure 4.1-27 shows the *Whitewater Boating Study* area. American Whitewater has documented Pyramid reach as a navigable 18.5-mile stretch of Class IV waterway. Of this 18.5 mile stretch 4.3 miles are designated Wild and Scenic and 3.0 miles are designated Recreational. This 7.3 miles includes the portion of Pyramid reach starting 0.5 miles downstream of Pyramid Dam to the boundary between Los Angeles and Ventura counties.

General Concepts and Procedures

- Personal safety is the most important consideration of each fieldwork team. Fieldwork will only occur in safely accessible areas and under conditions deemed safe by the field crews. Locations within the study area that cannot be accessed in a safe manner (e.g., locations containing dense vegetation or unsafe slopes) and areas inundated when the surveys are performed, will not be surveyed; these areas will be identified in the data summary and an explanation for survey exclusion will be provided.
- The *Whitewater Boating Study* will begin after FERC issues its Study Plan Determination.
- The *Whitewater Boating Study* does not include the development of requirements for the new license, which will be addressed outside the *Whitewater Boating Study*.
- The *Whitewater Boating Study* focuses specifically on river-based recreational activities and opportunities within Pyramid reach, but the study area is specific to locations that can support that resource.
- If required for the performance of the *Whitewater Boating Study*, the Licensees will make a good faith effort to obtain permission to access private property well in advance of initiating the *Whitewater Boating Study*. The Licensees will only enter private property if permission has been provided by the landowner.
- The Licensees will acquire all necessary agency permits and approvals prior to beginning fieldwork for the *Whitewater Boating Study*.
- Field crews may make variances to the *Whitewater Boating Study* in the field to accommodate actual field conditions and unforeseen problems. Any variances in the *Whitewater Boating Study* will be noted in the data resulting from the *Whitewater Boating Study*.
- To prevent the introduction and transmittal of amphibian chytrid fungus and invasive aquatic species (e.g., quagga mussels, zebra mussel, and Asian clams), field crews will be trained on, provided with, and use materials (e.g., Quat) for decontaminating their boots, waders, and other equipment when leaving or traveling between water-based study sites. Field crews will follow DWR's Quagga and Zebra Mussel Rapid Response Plan and CDFW's Aquatic Invasive Species Decontamination Protocol which can be found at the following link: (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=43333>). All boats used during the study will follow cleaning protocols, including inspections before and after use. All decontamination requirements in place at Project reservoirs including those of DWR's *Quagga and Zebra Mussel Rapid Response Plan* for the SWP will be strictly followed (DWR 2010).

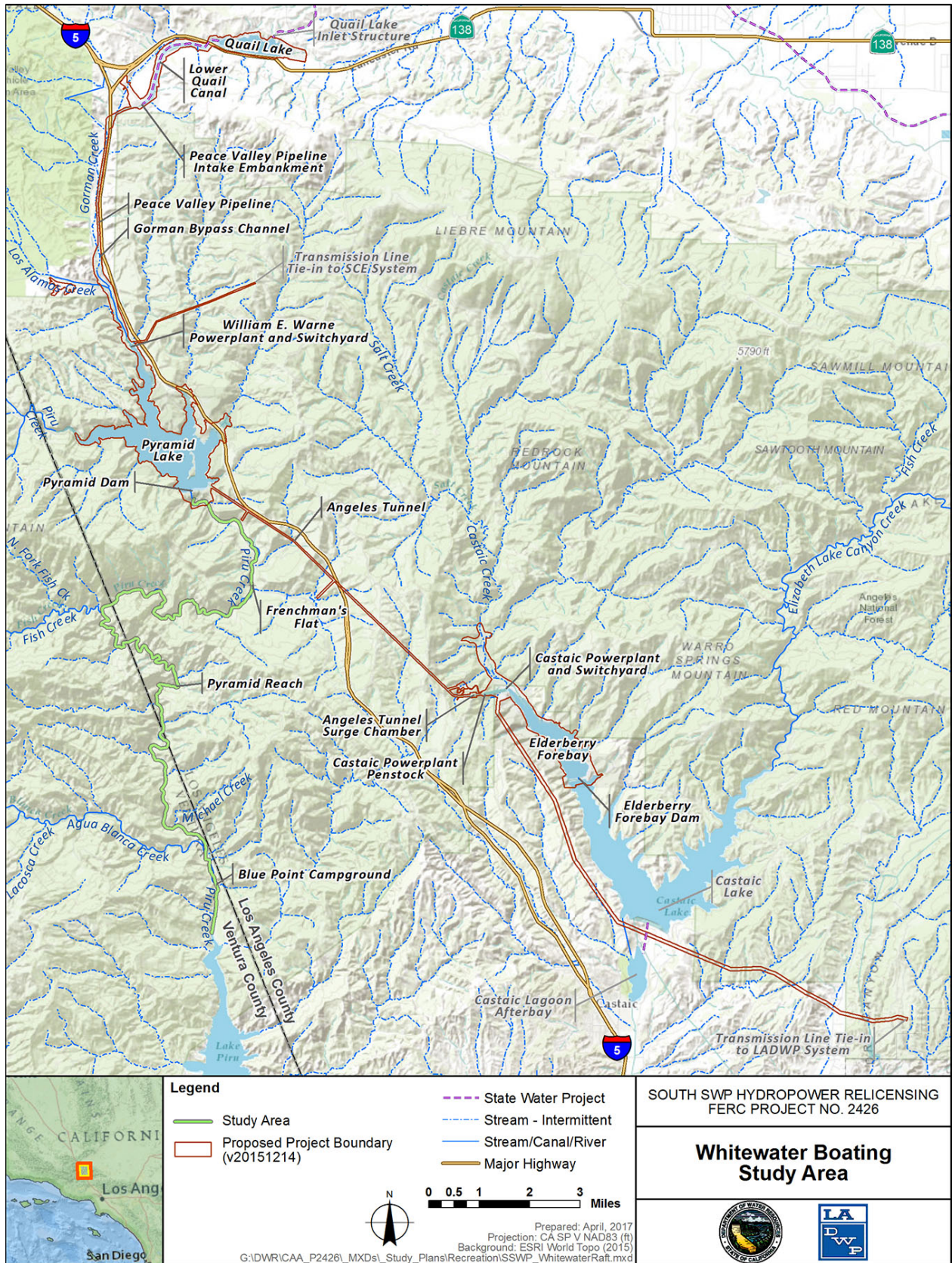


Figure 4.1-27. Whitewater Boating Study Area

Methods

The *Whitewater Boating Study* will consist of the following steps: (1) literature search and mapping; (2) hydrology assessment; (3) conduct structured interviews and; (4) field reconnaissance and site visit. These steps closely follow Level 1 and Level 2 assessments based on American Whitewater's recommended methodology outlined in the 2005 report by Whittaker, Shelby and Gamgemi: *Flows and Recreation, A Guide to Studies for River Professionals*. Steps 1 through 3 fall under the Level 1 Assessment and Step 4 falls under the Level 2 Assessment based on the methodology outlined in the 2005 report.

The Level 1 Assessment aims to characterize the Pyramid reach as a whitewater recreation resource and to assess the whitewater boating conditions and opportunities based on a hydrology assessment and structured interviews. The results of the two study components will be summarized in a report that describes the hydrology, optimum recreation boating flows, and Project effects on recreation flows.

Step 1 – Literature Search and Mapping. A literature and internet review will be undertaken to document existing and past recreation activities and opportunities in Pyramid reach. Information about recreation opportunities that make the reach attractive for whitewater boaters (frequency of boating opportunities are available, in what season, etc.), any information on current use of the reach for whitewater boating as well as potential physical inhibitors to whitewater boating on the reach will be identified and documented. Included in the literature review will be guidebooks, blogs, historical information on recreation boating on Pyramid reach, and a review of USFS land management plans. Wild and Scenic management goals will be evaluated to determine Project effects on Pyramid reach. GIS maps using existing data sets will be prepared to help identify and characterize the river reaches and land management allocations as well as known access points and trails.

Step 2 – Hydrology Assessment. The *Whitewater Boating Study* will utilize information from the *IHA Study* to analyze flows out of Pyramid Lake into Pyramid reach. The hydrology record will be developed from USGS gage 11109525 (Piru Creek below Pyramid Lake, near Gorman, CA), which is located in the Pyramid reach immediately downstream of Pyramid Dam as well as California Data Exchange Center (CDEC) gauges above and below Pyramid Lake as well as Project records on inflow and outflow. The current hydrologic record includes sub-daily flow information that will be used with USGS average daily flow information for analysis in this study. Boaters and other river users currently can also access hourly flow data from CDEC gauges, in Piru Creek just above Pyramid Lake and at the Pyramid Dam. The licensee's sub-daily flow data and data from the USGS gauges as part of the Licensees' *IHA Study* will be used to characterize the recreation opportunities throughout the year for whitewater boating in Pyramid reach. This summary of information may also include interviews with people knowledgeable about Pyramid reach, boating opportunities in the reach, and the gauges on the reach.

Project outflow into Pyramid reach is generally equal to natural inflow into Pyramid Lake. It is understood that current flows into Pyramid reach are consistent with Article 52 of the existing Project license to avoid adverse effects on the federally endangered arroyo toad (*Anaxyrus californicus*) as described in the Licensees' PAD and the PSP for South SWP Hydropower. The study results of the Licensees' *IHA Study* will describe the relationship between Project inflow into Pyramid Lake and Project outflow into Pyramid reach. This *Whitewater Boating Study* will evaluate the information from the *IHA Study* to determine whitewater boating opportunities in Pyramid reach.

Step 3 – Conduct Structured Interviews. Information will be sought from whitewater boating enthusiasts and stakeholders to obtain local knowledge of Pyramid reach regarding current recreation opportunities (including popular put-in and take-out areas), user preferences, and any known flow effects on whitewater boating for Pyramid reach. This information will be used to identify existing recreational use and demand in the study area and estimate future demand for whitewater boating activity on Pyramid reach.

Interview candidates from the whitewater boating community will include guides, user groups and others to determine the types and locations of whitewater boating activity occurring within Pyramid reach and a range of conditions (including flows) generally acceptable to whitewater boaters at various skill levels. The survey will include interviews with whitewater boaters and experts familiar with whitewater resources in the Project area. The interview methods will be consistent with *Flows and Recreation: A Guide to Studies for River Professionals*, by Whittaker, Shelby, and Gangemi (2005).

Based on Licensees' interviews with whitewater boating enthusiasts, a range of flows that are acceptable or optimal for whitewater boating in the *Whitewater Boating Study* area will be identified. The level of challenge these flows offer based on the International Scale of River Difficulty (Class 1 - Class VI) will also be evaluated to determine consistency with generally accepted conditions (or perceptions of difficulty) within Pyramid reach. American Whitewater's Safety Code may also be reviewed for information applicable to this *Whitewater Boating Study*.

Interviews and meetings with stakeholders will include questions about (1) how people use the river, with the goal to describe the character of recreation opportunities and identify flow-dependent attributes; (2) the effects of flows on those attributes and whether participants can identify specific flows that affect the quality of opportunities; and (3) how to prioritize opportunities and identify recreation users' need for improved access and flow information. Attempts will be made to conduct the interviews around the same time as a site visit to the upper and lower reaches of Pyramid reach will be undertaken.

To the extent practical, current and future use that might be expected for Pyramid reach, during the whitewater boating season, will be estimated. Other whitewater boating use in nearby waterways will be identified and described to evaluate overall whitewater boating needs in the southern California area.

Step 4 – Field Reconnaissance and Site Visit. As an extension of the Level 1 evaluations, a group of whitewater boaters participating in the interviews will be invited concurrently to a site visit to evaluate the upper and lower Pyramid reach corridor for recreation facilities and opportunities affecting whitewater boating. Experienced whitewater boaters will participate in the site visit to assist with examination of the quality and characteristics of access, the boating opportunities, possibly estimate potential flow ranges, and identify obvious hazards. The site visit will be important for gathering GPS location data of likely put-in and take-out areas, parking, and general access to Pyramid reach.

Prior to the site visit, a desktop GIS constraints analysis will be performed to evaluate Pyramid reach and identify, map, and describe any existing and potential sites for access (put-in and takeout sites) along the study area. This will be done by analyzing topography, local roads, vegetation cover, existing trails, land ownership, etc. In addition, the U.S. Fish and Wildlife Service would be contacted prior to performing the field reconnaissance and site visit to identify any measures or precautions that might be necessary to ensure protection of FE, FT, FC or other protected species.

Quality Assurance and Quality Control

Field data gathered during this *Whitewater Boating Study* will be collected in a manner that promotes high quality results, and will be subject to appropriate QA/QC for sample collection equipment, procedures, and cross-checking of data. As part of the QA/QC procedures, extreme care will be taken to ensure the data collected is accurate and maintained in a safe environment.

Analysis

The results of the *Whitewater Boating Study* will be considered in relation to Project operations. The analysis will include an assessment of the study participant's evaluations of the potential quality and characteristics of the boating opportunities, access opportunities and constraints and summarize what is known or estimated about difficulty, type of run, and the type of craft suitable for the run. The analysis will also describe potential flow ranges, and obvious hazards that were observed during the site visit.

Reporting

Whitewater Boating Study results will be included, to the extent completed and ready for inclusion, in the Licensees' ISR, USR, DLA, and FLA. Prior to submittal of the ISR co-licensees will evaluate the need for a Level 3 study. If at that time the co-licensees believe that a Level 3 study is not necessary to meet the objectives of the *Whitewater Boating Study*, the co-licensees will provide in the ISR detailed reasons for this conclusion.

Consistency of Methodology with Generally Accepted Scientific Practices

The inventory and assessment of whitewater boating opportunities is following procedures outlined by Whittaker, Shelby, and Gangemi (2005) are generally accepted procedures for many relicensing efforts.

4.1.19.4 Schedule

The *Whitewater Boating Study* will begin after FERC issues its Study Plan Determination. The Licensees anticipate the schedule below will be followed to complete the *Whitewater Boating Study*.

Fieldwork Preparation	August 2017 – February 2018
Fieldwork	February 2018 – December 2018
Data QA/QC Review	March 2018 – February 2019
Data Analysis and Reporting	February 2018 – June 2019

4.1.19.5 Level of Effort and Cost

Based on the work effort described above, the Licensees estimate the current cost to complete this *Whitewater Boating Study* will range between \$125,000 and \$200,000.

4.1.19.6 References

Whittaker, D., Shelby, B., & Gangemi, J. (2005). *Flows and Recreation: A Guide to Studies for River Professionals*.