

ANG-1: ENJOYABLE ANGLING FLOWS TECHNICAL MEMORANDUM

**KERN RIVER NO. 3 HYDROELECTRIC PROJECT
*FERC PROJECT No. 2290***

PREPARED FOR:



July 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---------|--|
| ANG-1 | Enjoyable Angling Flows Study |
| CDFW | California Department of Fish and Wildlife |
| cfs | cubic feet per second |
| FERC | Federal Energy Regulatory Commission |
| KR3 | Kern River No. 3 |
| NFKR | North Fork Kern River |
| Project | Kern River No. 3 Hydroelectric Project (FERC Project No. 2290) |
| SCE | Southern California Edison |
| SPD | Study Plan Determination |
| SQF | Sequoia National Forest |
| USGS | U.S. Geological Survey |

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1.0 INTRODUCTION

An Enjoyable Angling Flows Study (ANG-1) was developed in response to the Federal Energy Regulatory Commission's (FERC) October 12, 2022, Study Plan Determination (FERC, 2022) in support of Southern California Edison's (SCE) Kern River No. 3 (KR3) Hydroelectric Project (FERC Project No. 2290; Project) relicensing. This Technical Memorandum includes the detailed methodology and the findings and results of the ANG-1 Study. Applicable results from this study are also incorporated and detailed in SCE's Application for New License.

2.0 STUDY GOALS AND OBJECTIVES

The ANG-1 Study will inform discussions regarding suitable flows for angling opportunities in the Fairview Dam Bypass Reach¹ and support FERC in assessing the potential impacts of the Project on angling activities, including flow preferences, accessibility, and overall enjoyment.

Angling studies at licensed hydroelectric projects typically follow a tiered approach to information and data collection (Whittaker et al., 2005). This approach starts with a Level 1 desktop assessment and based on any additional data gaps then progresses to a Level 2 (limited reconnaissance) and a Level 3 (intensive studies) analysis, as needed.

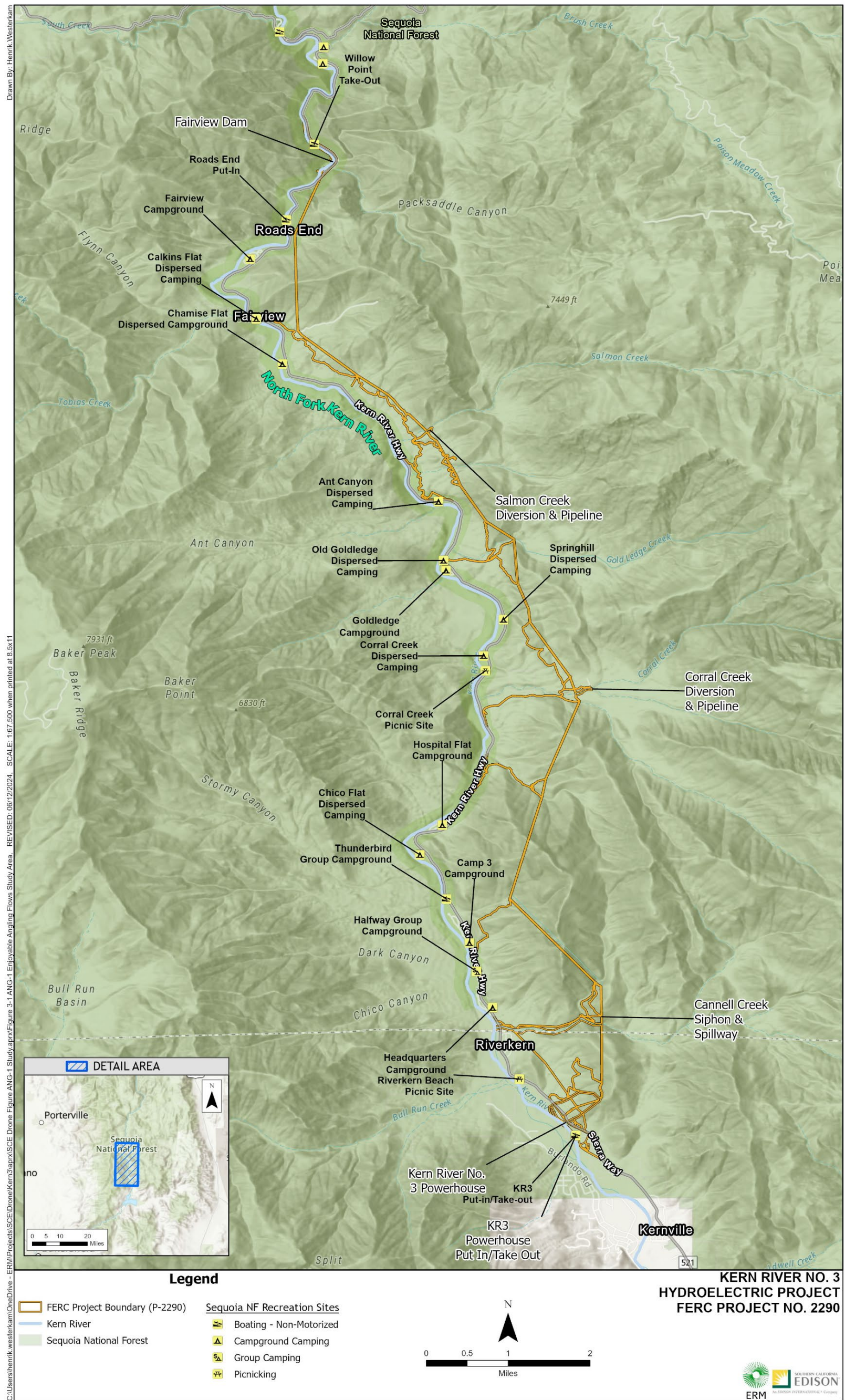
The goals and objectives of this ANG-1 Study Level 1 assessment included (1) documenting the types of angling use and patterns of use in the Fairview Dam Bypass Reach under current flow conditions, (2) collecting information on anglers' perceptions of suitable flows in the Fairview Dam Bypass Reach for spin fishing, bait fishing, and fly fishing, and (3) describing angler preferences, perceptions, and satisfaction with angling within the Fairview Dam Bypass Reach using pertinent results from the *REC-2 Recreation Facility Use Assessment* Final Visitor Intercept Survey Questionnaire.

3.0 STUDY AREA AND STUDY SITES

The study area includes the approximately 16-mile Fairview Dam Bypass Reach from Fairview Dam to the KR3 Powerhouse tailrace (Figure 3-1).

¹ The Fairview Dam Bypass Reach is defined as the approximately 16-mile reach of the North Fork Kern River (NFKR) between the Fairview Dam and the KR3 Powerhouse tailrace.

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FERC = Federal Energy Regulatory Commission; KR3 = Kern River No. 3; NF = National Forest

Figure 3-1. ANG-1 Enjoyable Angling Flows Study Area.

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4.0 METHODS

The ANG-1 Study generally follows the recommended methods and best practices described in *Flows and Recreation: A Guide to Studies for River Professionals* (Whittaker et al., 2005), which includes a sequential framework to investigate flows for angling using recommended tools and best practices across three progressive levels of study. The approach outlines three levels of study that increases data resolution as investigations progress from one level to the next. Advancing to the next level of study is, in part, contingent on the need for additional information. The ANG-1 Study followed the recommended approaches of a Level 1 angling assessment, which included a desktop review of existing information, structured interviews with anglers with local knowledge and experience with fishing conditions in the Fairview Dam Bypass Reach, and angling-related questions in the REC-2 visitor questionnaire. The angling-related visitor questions are not a typical component of a Level 1 angling assessment but were included in the methodology to augment the desktop analysis, structure interviews, and other public comments and input received during the relicensing process.

The results of this Level 1 angling assessment are presented in Section 5.0, *Data Summary*, and were also used to inform the Application for a New License. Section 7.0, *Outstanding Study Plan Elements*, addresses the adequacy of the results of the Level 1 effort and the need for any subsequent data collection (i.e., justification for whether proceeding to a Level 2 angling analysis is warranted).

Refer to *REC-2 Recreation Facility Use Assessment Technical Memorandum* (included in Appendix E.2 of the License Application) regarding variances to the visitor questionnaire and survey timing.

4.1. LEVEL 1 DESKTOP ANALYSIS

The Level 1 desktop analysis included a desktop review of existing information, including:

- Angling literature, fishing regulations, hydrology, and stream habitat
- Structured interviews with anglers familiar with fishing in the Fairview Dam Bypass Reach
- A summary of pertinent results from the REC-2 visitor questionnaire.

Using information collected as part of the Level 1 desktop analysis outlined above, including other public comments and input received during the relicensing process, Section 5.0, *Data Summary*, describes the angling flow preferences and use patterns in the study area per the stated study goals and objectives of the ANG-1 Study. Section 7.0, *Outstanding Study Plan Elements*, addresses the potential need for proceeding to a Level 2 Angling Study if additional assessments are warranted based on the results of the desktop analysis.

4.1.1. LITERATURE REVIEW OF ANGLING OPPORTUNITIES IN THE FAIRVIEW DAM BYPASS REACH

The literature review compiled a description of the angling opportunities along the Fairview Dam Bypass Reach of the NFKR between Fairview Dam and the KR3 Powerhouse using existing information (e.g., state fishing regulations, guidebooks, retail stores, commercial guides, visitor information brochures, magazines, online publications). The level of effort was documented through a catalog of online searches, tourism brochures, fishing guidebooks reviewed, and informal conversations with proprietors at local retail stores selling fishing tackle, as well as angling outfitters. Additionally, the Sequoia National Forest (SQF) and California Department of Fish and Wildlife (CDFW) regulations, goals, and objectives pertinent to angling on the NFKR (with a focus on the Fairview Dam Bypass Reach) were reviewed and summarized.

While the desktop review focused on angling-related information, other aspects of the angling experience were also addressed through several of the Project's other resource studies. In particular, the *REC-2 Study Recreation Facility Use Assessment*, *WR-2 Hydrology*, *BIO-6 Stream Habitat Typing*, and the *AES-1 Aesthetic Flow Studies* assessed current recreation, hydrology, stream habitat, and aesthetics of the bypass reach, respectively. Pertinent results from each of these studies are provided in their respective Technical Memorandums (Appendix E.2 of the License Application).

4.1.2. STRUCTURED INTERVIEWS

Structured interviews with eight people knowledgeable about angling along the Fairview Dam Bypass Reach were conducted in June and July 2023 as part of the Level 1 study effort.

The eight individuals selected for structured interviews were identified from the Project Stakeholder contact list that expressed an interest in angling. In addition, retail shop proprietors in Kernville and Bakersfield, California, specializing in angling equipment provided contact information for individuals with direct experience with angling in the bypass reach. Other individuals were nominated by Stakeholders or other interviewees. The interviewees encompassed bait, spin, and fly fishers; fishing guides and non-guides; and Kernville residents in addition to anglers from Bakersfield to San Diego.

Interview questions were developed to understand angling opportunities and to identify flow-dependent attributes and followed previous FERC fishability studies (Whittaker and Shelby, 2001, 2003; Whittaker et al., 2005). Interview questions were grouped according to angling recreation use patterns, angling location, flow information, flow preferences, and bank versus wading preferences. The set of questions used in the structured interviews is provided in Attachment A.

4.1.3. REC-2 RECREATION FACILITY USE ASSESSMENT - VISITOR SURVEY

Per the FERC Study Plan Determination (FERC, 2022), SCE updated the REC-2 visitor questionnaire to include questions designed to query visitors about their angling flow preferences and use patterns in the Fairview Dam Bypass Reach (*REC-2 Recreation*

Facility Use Assessment Technical Memorandum [Appendix E.2]). The angling-related questions that were added to the REC-2 Final Visitor Intercept Survey are provided in Attachment B to this Technical Memorandum. Participant responses and a summary of the angler-related questions are provided in Section 5.0, *Data Summary*; the *REC-2 Technical Memorandum* included in Appendix E.2 includes the complete summary and analysis of the visitor survey, including the angling-related questions.

5.0 DATA SUMMARY

This section includes a summary of information collected as part of the Level 1 desktop analysis.

5.1. LEVEL 1 DESKTOP ANALYSIS

5.1.1. LITERATURE REVIEW OF ANGLING OPPORTUNITIES IN THE FAIRVIEW DAM BYPASS REACH

The headwaters of the Kern River begin at the base of Mount Whitney, flowing south into the Golden Trout Wilderness through the SQF downstream and spanning Kern and Tulare Counties. The river flows in its north/south orientation through an unparalleled range of relatively unaltered habitats (National Wild and Scenic Rivers System, 2023).

The NFKR upstream of Johnsondale Bridge is designated wilderness and is a catch-and-release wild trout fishery managed under special angling regulations. Deep pools and fast runs characterize this section of the river, along with pocket water, short runs, long riffles, and deep pools. No bait is allowed in the wilderness area; artificial lures and/or flies with barbless hooks are allowed. The NFKR contains rainbow (*Oncorhynchus mykiss*) and brown (*Salmo trutta*) trout species near Johnsondale Bridge. No roads exist along this section of the NFKR; the only access is by hiking trail (Walters, 2022).

The section of river from Johnsondale Bridge downstream to Isabella Lake, including its tributaries, offers year-round fishing opportunities and includes the approximate 16-mile Fairview Dam Bypass Reach. Angling opportunities along this section of the NFKR include bait, spin, and fly fishing for rainbow trout and brown trout. Fishing regulations also allow for use of spears and bows in the bypass reach. The section of NFKR from Johnsondale Bridge to Kernville is stocked annually with hatchery rainbow trout by CDFW (CDFW, 2023a).

The Fairview Dam Bypass Reach is easily accessible along Mountain Highway 99. Opportunities for angling can be accessed using both developed recreation sites and dispersed river access locations (see the *REC-2 Recreation Facilities Use Assessment Technical Memorandum* for more information about each recreation site [Appendix E.2]). In addition to developed access routes, much of the river along the bypass reach has road shoulder pull-outs and social trails to the river.

Angling use on the NFKR is generally patterned around the spring snowmelt run-off hydrograph and less predictable precipitation events. When spring run-off begins—typically in May—the combination of high gradient, high flows, and turbidity make conditions challenging for anglers and unsafe for wading (Shaffer, 2006). April has

historically been categorized as one of the best months to fish because there tends to be many sunny days, more daylight, and warmer temperatures; however, winter storms can still occur in April, and it should be generally anticipated that the potential for increased flow rates and turbulent water are high from April through June due to snowpack run-off.

River features and structure are additional factors that influence the timing and location for angling. During higher flow conditions, anglers typically focus on shore structure and slack water behind rocks (Smith, 2023). Fishability of the Kern River is excellent the remainder of the year; according to a Kern River *Weekly Fishing Report* from the week of March 3, 2023 (Cope's Tackle and Rod Shop, 2023), trout action had been consistent all winter, with CDFW planting going in almost weekly. Cope's website recommended trying a section downstream of the Fairview Dam Bypass, between Riverside Park and the KR3 Powerhouse, noting successful fishing in that section (Cope's Tackle and Rod Shop, 2023). The website noted that spin anglers were finding success with salmon eggs, mini jigs, and spinners in winter/early spring 2023, as well as fly anglers with nymphs and streamers.

Colder water temperatures in the winter months also affect fish distribution (CDFW, 2023b); trout migrate to slower moving water (long and slow runs, deep holes, and shallow flats) to conserve energy. In more moderate temperatures, trout are more mobile and more likely to respond to moving baits like spinners and spoons (Shaffer, 2006). In addition to seasonal fish distribution patterns associated with water temperature, time of day also affects angling preferences. Smith (2023) suggests that the best times to fish are early mornings or late evenings when the light is low because insects will be most active at the water's surface, which will increase trout activity. Tables 5.1-1 and 5.1-2 categorize popular bait, lure, or fly patterns that anglers have success with along the Kern River (The Ecological Angler, 2006; Schalla, 2021; Shaffer, 2006; Smith 2023; Walters, 2023).

The Fairview Dam Bypass Reach contains cold water and transitional-zone fish assemblages. The NFKR, including the Fairview Dam impoundment and the reach between Fairview Dam and Isabella Lake, contains a combination of rainbow trout (*Oncorhynchus mykiss*) and assemblages of pikeminnow (*Ptychocheilus oregonensis*), hardhead (*Mylopharodon conocephalus*), and sucker fish (*Castostomus occidentalis*). Brown trout are also present in low numbers downstream of Fairview Dam, and warm water species, such as common carp (*Cyprinus carpio*) and green sunfish (*Lepomis cyanellus*), occasionally travel up into the lower reaches of the NFKR from Isabella Lake (SCE, 2021). Refer to periodic fish population monitoring reports conducted as part of FERC License Article 411 for more information about fish species in the Fairview Dam Bypass Reach. The most recent fish population monitoring study was completed in 2023 and filed with FERC on February 29, 2024; this study is included in Appendix E.2 of the License Application.

Table 5.1-1. Spin Fishing Bait/Lures Best Suited for Upper Kern

| Bait | Lure |
|-----------------|---------------------------|
| Salmon Eggs | Spooners |
| Crickets | Panther Martins (Spinner) |
| Pink Mice Tails | Blue Fox (Spinner) |
| Worms | Rooster Tails (Spinner) |
| | Mini Jigs |
| | Rapala-type Minnow |

Source: The Ecological Angler, 2006; Schalla, 2021; Shaffer, 2006; Smith, 2023; Walters, 2023

Table 5.1-2. Fly Fishing Patterns Best Suited for Upper Kern

| Pattern Name | Pattern Type |
|--------------------------------|---------------------|
| Matuka | Streamer |
| Copper John | Nymph |
| Hart's Bead Head Dark Lord | Nymph |
| Flash Back Hare's Ear | Nymph |
| Hare's Ear | Nymph |
| Gold Ribbed Hare's Ear | Nymph |
| Bird's Nest | Nymph |
| Zug Bug | Nymph |
| Zonker | Streamer |
| Grey Ghost | Streamer |
| Kern Emerger | Nymph |
| Pheasant Tail | Nymph |
| Beaded Prince | Nymph |
| Wooly Bugger | Streamer |
| Muddler Minnow | Streamer |
| Black Rubberlegs | Stonefly Nymph |
| Bird's Stonefly | Stonefly Nymph |
| Kaufmann Stone (Gold or Black) | Stonefly Nymph |
| Poxyback Stonefly | Stonefly Nymph |
| Elk Hair Caddis | Dry Fly |
| X-Caddis "Cripple Caddis" | Dry Fly |

| Pattern Name | Pattern Type |
|--------------------|--------------|
| Parachute Adams | Dry Fly |
| PMD Biot Parachute | Dry Fly |
| Royal Wulff | Dry Fly |
| Madam X | Dry Fly |
| Stimulator | Dry Fly |

Source: The Ecological Angler, 2006; Schalla, 2021; Shaffer, 2006; Smith, 2023; Walters, 2023

5.1.1.1. Resource Agency Regulations, Goals, and Objectives

Agencies with authority to manage recreational angling and access to the NFKR, specifically in the Fairview Dam Bypass Reach, include the SQF and CDFW.

SEQUOIA NATIONAL FOREST

The SQF encompasses 1.1 million acres, spanning the counties of Tulare (62 percent), Kern (26 percent), and Fresno (12 percent), with about 46,000 acres of private, state, county, and other land ownerships embedded within its boundaries (Forest Service, 2023). The Fairview Dam Bypass Reach and access to the river is located on lands managed by SQF. The SQF recently issued a revised *Land Management Plan for the Sequoia National Forest* (Forest Service, 2023), replacing the 1988 version.

The SQF offers a diversity of natural and recreation opportunities for people to enjoy including scenery viewing, driving, hiking, angling, horseback riding, mountain biking, paddling, climbing, skiing, snowshoeing, over-snow vehicle use, and off-highway vehicle use. According to the Land Management Plan (Forest Service, 2023), “habitat for nonnative fish and game species is managed in ways that do not pose substantial risk to native species, while still contributing to economies of local communities.”

The segment of the NFKR from Johnsondale Bridge to the Kern County and Tulare County line in the Fairview Dam Bypass Reach is classified as recreation under the 1968 Wild and Scenic River Act. SQF is required to protect the outstanding remarkable values of this recreational river segment identified at the time of designation in 1987. The outstanding remarkable values identified in the recreational river segment encompassing the bypass reach is a species of slender salamander (Forest Service, 1982). The 1994 *Final Impact Statement North and South Forks of the Kern Wild and Scenic River* (Forest Service, 1994a) and the *Record of Decision for the Inyo National Forest Plan Amendment #4 and Sequoia National Forest Plan Amendment* (Forest Service, 1994b) add recreation and scenic resources as outstandingly remarkable values within the Wild and Scenic River NFKR reach that includes Fairview Dam Bypass Reach.

A Comprehensive Management Plan for management of the Wild and Scenic portion of the NFKR (Forest Service, 1988) was developed by the SQF. For the recreation river segment starting at the Tulare County line to Johnsondale Bridge, the SQF identified the

following action: encourage fishing and other shore-based activities or opportunities by providing enhanced access for individuals with disabilities.

The SQF manages commercial activities on the NFKR through special use permits. SQF issued one special use permit for commercial angling guides on the NFKR for 2023 (personal communication, Bob Frenes, Assistant Recreation Officer, U.S. Forest Service Kern River Ranger District, June 20, 2023; personal communication, [Marie] Angie Attencio, Special Uses Permit Administrator, U.S. Forest Service Kern River Ranger District, June 20, 2023). Angie stated that “the permits are issued for more than one year and there have been two issued for multiple years. Over the past few years, we have issued two outfitter/guide permits for fly fishing.”

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW manages fish and wildlife on the NFKR, including establishing the angling regulations. The NFKR from Isabella Lake upstream to Johnsondale bridge is open to angling all year. The daily bag/possession limit for trout is five. Fishing regulations upstream of the Johnsondale Bridge are more restrictive, limiting anglers to artificial lures only and a daily bag/possession limit of two trout (CDFW, 2021). For a detailed list of California Freshwater Sports Fishing Regulations specific to the Kern River, see Attachment C of this memorandum.

CDFW stocks the NFKR above and below Fairview Dam with trout annually, generally between the months of March and July to support recreational fishing. Fish are planted upstream and downstream of Fairview Dam weekly during the summer and on alternate weeks during the winter. Between 2001 and 2023, an average of 27,100 nonnative rainbow trout were planted in the NFKR annually between Fairview Dam and the KR3 Powerhouse, and 11,600 were planted annually just upstream of Fairview Dam (CDFW, 2021; Personal Communication, Willian Branch, Senior Hatchery Supervisor, California Department of Fish and Wildlife San Joaquin River Hatchery, January 2024) Historically, an additional 3,500 pounds were stocked in roadside sections of western tributary streams upstream of Fairview Dam.

In 2023 (during the study implementation period), trout stocking occurred at the beginning of the year but was halted in March due to storm conditions causing substantial increases in flow. Circumstances for fish planting remained unsuitable for much of the spring and did not resume until the week of June 30. Individual fish stocking events typically consist of 200 to 500 pounds of trout, depending on fish size, water quality, staff availability, and production goals. The trout have historically come from the Kern River Hatchery, but the hatchery has been closed for repairs since 2020. Trout for the Kern River are currently being imported from hatcheries in the surrounding area. The 2023 stocking events in segment 5 (stocked section inside the Fairview Dam Bypass Reach) of the NFKR through August 2023 are as follows (CDFW, 2024):

- February 19 to February 25
- February 26 to March 4

- March 5 to March 11
- July 30 to August 5
- August 20 to August 26

There are no commercial permits or commercial anglers approved for any section of the NFKR above Kernville (personal communication, Brian Beal, Senior Environmental Scientist Supervisor, CDFW [Central Region—Fisheries], June 20, 2023). In addition, CDFW does not issue any permits for commercial take of fish species on the NFKR.

UPPER KERN BASIN FISHERY MANAGEMENT PLAN

The *Upper Kern Basin Fishery Management Plan* (Stephens et al., 1995) was developed through the partnership of CDFW, SQF, and Sequoia National Park. The fisheries goals provided in the management plan include protecting and enhancing native fish populations and their habitats; restoring, protecting, and enhancing the native Kern River rainbow trout populations (specifically the golden trout [*Oncorhynchus aguabonita*] subspecies complex) to avoid the need for listing the species as threatened or endangered; and providing for recreational fishing.

The Upper Kern Basin is defined as the Kern River watershed in Kern and Tulare Counties from Isabella Reservoir upstream to its headwaters in Sequoia National Park. The management plan divides the Upper Kern Basin into four segments based on differences in proposed management and provides goals, objectives, and monitoring recommendations for each segment (Stephens et al., 1995). The management plan also provides an action plan for realizing proposed goals and objectives within each designated segment. The segment from Isabella Reservoir to Johnsondale Bridge includes the Fairview Dam Bypass Reach. The management plan lists several factors that currently threaten the survival and proliferation of golden trout subspecies found in the NFKR, including the introduction of nonnative trout, habitat damage, land management practices, and heavy recreation use (Stephens et al., 1995). Goals, objectives, and action plans for the segment from Isabella Reservoir to Johnsondale Bridge focus on the following:

- Protecting and enhancing native fish populations and their habitats
- Providing satisfactory fishing opportunities and continuing to stock catchable-sized nonnative rainbow trout in the Kern River
- Improving comprehension of ecological relationships between organisms in the ecosystem through continued study
- Maintaining angling regulations that promote satisfactory fishing opportunities

5.1.2. STRUCTURED INTERVIEWS

Structured interviews were conducted in June through August 2023 as part of the Level 1 study effort. A total of 14 anglers were contacted for structured interviews. Of the 14 anglers contacted, 1 declined to be interviewed and 5 did not respond to multiple requests for a structured interview. Structured interviews were completed with eight anglers. The interviewees encompassed bait, spin, and fly fishers; fishing guides and non-guides; and Kernville residents and anglers from the San Diego area to Bakersfield (Table 5.1-3).

Table 5.1-3: Composition of Individuals Participating in the Angling Structured Interviews

| Interviewee | Location (California) | Organization(s) | Angling Preference | Gender | Age | Years | No. of times per year | Guide (Y/N) | Subsistence or Sport? |
|-------------|-----------------------|---|--------------------|--------|-----|---------------------------------|---|-------------|-----------------------|
| 1 | Kernville | Kern River Fly Shop | Fly | M | 58 | 5 years as guide, 25 personally | 150 guide trips, 50 personal trips | Y | Sport |
| 2 | Bakersfield | Kern River Fly Fishers | Fly | M | 81 | 16 years | 6–12 trips | N | Sport |
| 3 | Poway | San Diego Fly Fishers, Golden State Flycasters, Southern Sierra Fly Fishers, SoCal Women on the Fly | Fly | F | 72 | 26 years | 25–50 trips | N | Sport |
| 4 | Gardena | N/A | Spin (bait) | M | 70 | 60 years | 12 trips | N | Subsistence |
| 5 | Kernville | Kern River Fly Shop | Fly | M | 54 | 20 years | 70 guide trips, 30 personal trips | Y | Sport |
| 6 | Bakersfield | Kern River Fly Fishers | Fly | M | 64 | 20–25 years | 30 trips | N | Sport |
| 7 | Bakersfield | Kern Valley Search and Rescue | Fly | M | 36 | 17 years | Once or twice per month (about 25–30 trips) | N | Sport |
| 8 | Inglewood | N/A | Spin (bait, lure) | M | 46 | 7 years | 24–25 trips | N | Both |

N = No; N/A = data not available; Y = Yes

This broad cross-section of anglers for the structured interviews provided additional detailed information on angling use patterns and preferences in the Fairview Dam Bypass Reach. This information is summarized below. The structured interview questions and summary of responses can be found in Attachment A.

5.1.2.1. Angling Recreation Use Patterns

A mix of spin and fly fishing occurs in the Fairview Dam Bypass Reach. Interviews were conducted with spin and fly anglers. Individuals included non-commercial (personal) and commercial (guides) anglers. Personal trips to the bypass reach ranged from 6 to 50 times per year; guided trips to the area ranged from 70 to 200 times per year. According to interviewees, the Fairview Dam Bypass Reach is most visited by fly anglers generally fall through spring, and the summer tends to attract more spin fishers, which is often correlated with camping and other recreational opportunities provided during the summer months. Several respondents, however, commented that summers on average get too hot and the water flows are at their lowest and/or the water is too warm for trout. Respondents stated they try to avoid weekends and holidays due to crowds (Figure 5.1-1). However, guides will take clients during the week and weekends depending on clients' availability. Work also served as a hinderance for people's ability to fish during the week rather than the weekend. Clients looking for a less crowded experience tend to go in the middle of the week. Preference for time of day to fish had a consensus of mornings to about noon, and again in the evenings. In winter, this changed to late morning-afternoon fishing once the water temperature warms enough for trout to be active.

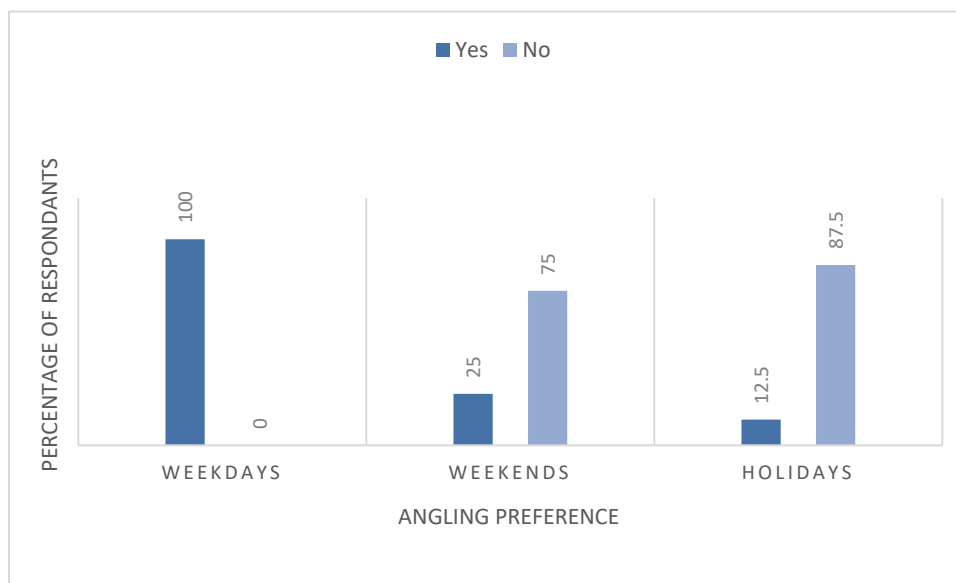


Figure 5.1-1. Preferred Angling Times for Interviewees.

The type of angling and bait/lures/flyes that an individual preferred did not appear to change seasonally. Many fly fishers noted that the type of flies used varied with insect availability and activity rather than seasonality. Spin fishers noted they have preferred bait and lures they use year-round.

5.1.2.2. Angling Location Preferences

Generally, anglers seem to denote sections they fish in the NFKR and Fairview Dam Bypass Reach by points of interest. Johnsondale Bridge (above Fairview Dam), Road’s End, McNally’s, Rodeo Grounds (downstream of KR3 Powerhouse), Riverside Park (downstream of KR3 Powerhouse), developed campgrounds and day-use areas, and dispersed stretches between these developed locations are often used as references.

Based on interviewee comments, many anglers prefer both developed access points and undeveloped/dispersed sites for fishing. For guides, it depends on the physical ability of the client. Developed points have easier access for older or physically disadvantaged clients. Clients with better physical ability prefer undeveloped and/or more challenging access points. The more challenging areas are available throughout the Fairview Dam Bypass Reach between developed access points. Generally, anglers will try to avoid crowded areas. Some anglers will scout areas to fish once they arrive at the river. Preference is given to locations, developed or dispersed, where no one is camping or recreating. Rafting access points (put-in, take-out) are sometimes also preferred if there are not many boaters in the area. A few preferred sections include Chamise Flat up to Fairview Dam, Hospital Flat, and between Goldledge Campground and Old Goldledge Campground. Interviewees also identified specific locations such as Road’s End, McNally’s, and locations above and below Ant Canyon dispersed area. Additional dispersed locations include sections within a few miles of either side of Headquarters Campground and Fairview Campground and around the Salmon Falls. Anglers typically use parking adjacent to campgrounds and pull-off points where there is space to park.

Factors that influence the decision to choose one area over another to fish are primarily driven by discharge and water temperature (Figure 5.1-2).

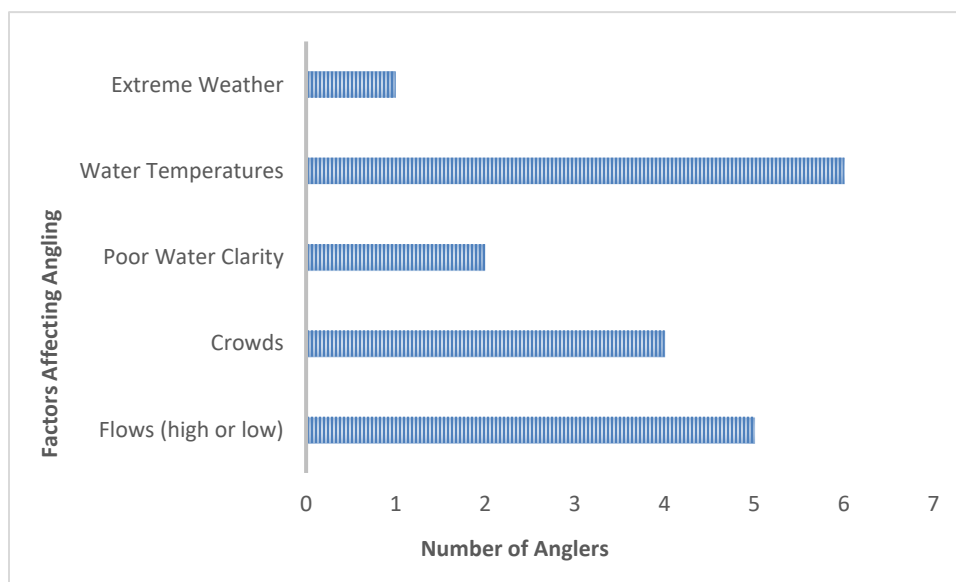


Figure 5.1-2. Factors Affecting Angling Choices in the Fairview Dam Bypass Reach.

Trout are most active in a temperature range between 50 and 70 degrees Fahrenheit. Trout are more sluggish when water temperatures exceed 75 degrees Fahrenheit. Notably, sections in the Fairview Dam Bypass Reach with narrower wetted perimeter contain deeper water habitat and seem to maintain more favorable water temperatures even during periods of low flows.

Factors that contribute to the creation of optimal trout habitat include boulders, stream flow, and the amount/type of insects. Boulders create eddies and places for trout to hide. Riffles, pools, runs, and pocket water are all used by anglers, and many of these characteristics are flow-dependent. These river features change with flows, and flows will determine where to fish.

For fly fishing, nymphs are preferred because there are not many hatches along the Kern River. A few respondents commented that river characteristics like boulders and areas with higher gradient can influence the type of fly being used. Fishing with an indicator (float) with a nymph below the surface is preferred for a bit faster water. If there is a good flow but not raging, a dry fly is preferable. One bait angler noted that they only use salmon eggs for all river features.

5.1.2.3. Flow Information and Flow Range Estimates

Most respondents check the flows before arriving at the river. A common source for finding this information is the Dream Flows website (<http://www.dreamflows.com>). A few individuals also call friends to check the flows, and a single bait fisher stated that they do not check flows at all before arriving to fish.

Flow preferences for fishing varied across interviewees depending on physical abilities, tackle, and angling experience. The preferred flows for fishing between Fairview Dam and Riverside Park ranged from 150 to 1,000 cubic feet per second (cfs), with the higher flow identified by more advanced anglers, like fishing guides. Interviewees identified 100 to 200 cfs as the minimum angling flow but noted that stream temperatures were also a consideration at lower flows, and the upper threshold for angling flows was 700 to 800 cfs. Guides deemed anything over 2,000 to 4,000 cfs as unfishable for most anglers due to safety. Several respondents commented that fish are active and anglers can access all areas of the river safely (i.e., wading) between 200 and 800 cfs. However, some individuals thought 400 to 500 cfs was too fast to wade and preferred 200 cfs.

Interviewees expressed concern with the warmer water temperature associated with the low flow conditions (below 100 cfs). Once flows reach 50 cfs, they noted that flows begin to affect fish activity and fishability. Some fly fishers mentioned that higher fish mortality seemed to be associated with angling under high temperature conditions. Of the two spin anglers interviewed, both stated that they did not follow flow and instead gained insight on where to fish once on-site by observing what different sections of the river look like that day. If flows are too low in the Fairview Dam Bypass Reach, several respondents reported going above Fairview Dam or below the KR3 Powerhouse.

At lower flows (down to 100 cfs), narrower channel sections of the river are targeted for fishing because water depths are deeper. When flows are high (700 to 1,000 cfs), broader channel sections as well as locations with slower velocities are sought out for fishing. Lower flows tend to be optimal times to fish pools; however, higher flow conditions also have good fishing in pools.

In general, flow did not influence the type of tackle being used for any fishing type. Fly fishing is mostly dependent on insect activity. Some anglers noted they will not fish if the flows are too high or too low. A bait fisher noted that tackle type does not change with flow. Some anglers suspected that higher flows would require heavier bait for spin anglers. Others mentioned for fly fishing that higher flows would need heavier weighted flies (streamers or nymphs) and lower flows could use a dry fly or dry dropper. River features (pools, pocket water, runs, riffles) do change with discharge. Lower flows were generally thought to be better for most river features as more locations are accessible by wading. With increased flows, anglers seem to be more selective. Features targeted during higher flows include pools; curves in faster flowing water where the water slows down; pocket water; and wider, flatter sections of river.

5.1.2.4. Bank Versus Wading Preferences

The fly fishers interviewed stated that they typically wade to some degree because they believe better trout habitat is more accessible via wading. Other fly fishers and a bait fisher preferred a combination of wading and shore fishing. Angling preference and section of river did not influence the type of angling an individual pursued. Many respondents mentioned that flows are the most important factor to determine whether they will wade and/or fish in general.

More advanced anglers stated that the entire section was classified as safe as long as flows are under 1,000 cfs, with most locations still being safely wadable but may not be able to access the entirety of the river. Others stated that when flows are below 400 cfs, the whole bypass reach is wadable while another noted that none of the river is safely wadable at any flow. Sections with difficult access, rapids, and slippery boulders and rocks were documented to be unsafe for wading by many anglers interviewed. One fly fisher thought flows between 80 and 150 cfs were wadable and allowed access to areas with better runs for angling.

Flows between 100 and 200 cfs were generally deemed as safely wadable depending on the location. Suitable locations for wading tended to be on the inside of river bends and areas where the channel widens. Ant Canyon is narrower and access is more difficult. Camp 3 in the bypass reach offers easy access in the fall when the flows are lower.

5.1.3. REC-2 RECREATION FACILITY USE ASSESSMENT SURVEY, ANGLING

Implementation of the REC-2 Study included the administration of a recreational user questionnaire to include questions designed to query visitors on their angling experience in the Fairview Dam Bypass Reach. These angling-specific questions are provided in Attachment B to this Technical Memorandum. A summary of the question responses

specific to the Fairview Dam Bypass Reach are provided here, but also includes the approximate 1.9 mile reach above the dam to Johnsondale Bridge. Upon review of the data, there was no substantial difference in responses above and below the dam, however results are reported separately in this Technical Memorandum. The full questionnaire and summary results are provided in the (see *REC-2 Recreation Facility Use Assessment* [Appendix E.2 of the License Application]).

In total, about 25 percent of visitors who responded to the REC-2 visitor questionnaire (approximately 400 surveys) indicated that they had fished either along the Fairview Dam Bypass Reach or within the 1.9 miles above the dam. Note, not all angling visitors answered every question, so the number of responses may vary for each question. On average, angling visitors generally reported taking more trips per season to fish the Fairview Dam Bypass Reach in the summer (5.5 trips) and spring (3.6 trips) than the fall (2.8 trips) and winter (2.0 trips). A similar pattern is evident in trips per season by visitors above the Fairview Dam; that is, visitors contacted who fish above the dam reported taking a greater number of angling trips in the summer (3.8 trips) and spring (3.1 trips) than the fall (2.5 trips) and winter (2.1 trips).

Angling visitors reported that they primarily fished for fun in the Fairview Dam Bypass Reach. About 87 percent of angling visitors fished for fun, while approximately 14 percent fished for subsistence (note: approximate percentages total to more than 100 percent due to rounding). For angling visitors in the Fairview Dam Bypass Reach, about 47 percent spin fish with bait, approximately 41 percent spin fish with lures, and about 11 percent fly fish. These fishing type and tackle percentages are similar in respondents above the Fairview Dam.

The primary reasons angling visitors selected the Fairview Dam Bypass Reach for fishing include “for the fishing” (50.8 percent), solitude/peaceful/scenery (14.4 percent), and river access (7.8 percent), among others.

When angling visitors surveyed below Fairview Dam were asked if river flows affected their fishing experience, 76 percent responded “no” and 14 percent responded “yes” (the remaining 9 percent declined to answer). A similar percentage breakdown was observed for angling visitors above the dam (68 percent answered “no” and 13 percent answered “yes”) when asked if flows affected their angling experience. Of the angling visitors that responded “yes,” the majority stated that flows were “too high” (61 percent below and 80 percent above Fairview Dam). The majority of responses stating that flows were “too high” could be in response to the higher-than-average summer flows that naturally occurred in 2023. During this time, the NFKR watershed experienced a high water year and many of the questionnaire responses occurred in June and July when flows were above 4,000 cfs. Conversely, 39 percent of angling visitors below (19 angling visitor responses) and 20 percent above (two angling visitor responses) Fairview Dam stated that flows in the winter months were “too low.” Flows in the Fairview Dam Bypass Reach were near the minimum instream flow release requirement during this time (December 2023), ranging from approximately 40 cfs to 70 cfs.

Overall, nearly 62 percent and 30 percent of angling visitors rated their most recent fishing experience in the Fairview Dam Bypass Reach as “very good” or “good,” respectively. Only about 3 percent of angling visitors gave their most recent angling experience a negative rating (combination of “poor” and “very poor” responses). The reason these visitors gave for their low rating included that the river flows were too low (5 responses) or too high/fast (3 responses), among other responses. These responses are not specifically indicative of angling flow preferences, although they do point to the influence of flow levels on angling and visitor satisfaction with the overall recreational experience. In general, the results are representative of a visitor population that highly rates the angling experience in the Fairview Dam Bypass Reach.

6.0 STUDY-SPECIFIC CONSULTATION

Other than the Stakeholder-focused structured interviews described above, there was no additional study-specific consultation for the ANG-1 Study.

7.0 OUTSTANDING STUDY PLAN ELEMENTS

All planned components of the ANG-1 Level 1 Study have been completed to date.

8.0 RECOMMENDATION AND NEED FOR CONTINUED STUDY

The purpose of the ANG-1 Study was to collect data on anglers’ perceptions to provide FERC with additional information to analyze potential Project effects on angling opportunities within the bypassed reach (FERC 2022). The information within this Technical Memorandum presents findings on flow preferences that support enjoyable fishing opportunities and experiences in the Fairview Dam Bypass Reach.

As outlined in Whittaker et al. (2005), the process to determine if Level 1 information is sufficient or, if progressing to another level of study is necessary, rests on answers to these four questions:

1. Are there flow-dependent recreation opportunities on the river segments?
 - Yes, river-based recreation opportunities along the Fairview Dam Bypass Reach include angling and whitewater boating, among others. This study focused on enjoyable angling flows; refer to the *Addendum to REC-1 Whitewater Boating Interim Technical Memorandum: Level 3 Single Slow Survey Results* in Appendix E.2 of this License Application for information on whitewater boating flows.
2. Are flow-dependent opportunities affected by project operations?
 - Seasonally yes, Project operations can divert up to approximately 600 cfs for Project generation, once the minimum instream flow is met (ranging from 40 cfs up to 130 cfs, depending upon the month). However, as the Project is run-of-river and has no storage, there are numerous periods of time (days, weeks, or months) where the inflows above Fairview Dam far exceed the diversion capacity and flows

spill over the dam. This typically occurs during spring run-off and storm events. The *WR-2 Hydrology Interim Technical Memorandum* (Appendix E.2 of the License Application) summarizes historical flows along the Fairview Dam Bypass Reach.

3. Are flow-dependent recreation opportunities “important” relative to other resources or foregone power generation? If certain recreation opportunities will not be considered when determining project operation decisions (e.g., if agencies and stakeholders agree that flow releases will be primarily driven by biological needs for an endangered species), more detailed information about flows may be unnecessary, and Level 1 information may be sufficient (assuming it documents stakeholder and agency agreement about this evaluation).
 - Yes, the Fairview Dam Bypass Reach is known for its whitewater boating opportunities in addition to being a popular and easily accessible river reach for various other shoreline-based recreation activities (see the *REC-2 Recreation Facilities Use Assessment Final Technical Memorandum* in Appendix E.2 of the License Application for additional information about visitor uses and activity preferences in the area). A discussion of flows pertaining to aquatic resources is provided in Section 7.4, *Fish and Aquatic Resources*, of Exhibit E in the License Application.
4. Does Level 1 information precisely define flow ranges and potential project effects for each flow-dependent opportunity? For example, flow ranges for a commonly boated whitewater reach may be sufficiently well-known and agreed upon, and there may be no need for additional study.
 - Yes, based on focused interviews and visitor feedback from the REC-2 Visitor Intercept Survey Questionnaire, preferred angling flows range from a low of approximately 100 to 200 cfs up to 700 to 800 cfs. Sufficient historical hydrology data is available to evaluate potential Project effects within these flow ranges and is discussed in SCE’s Application for New License.

Per Whittaker et al. (2005), if none of these questions are answered affirmatively, Level 1 information is probably not sufficient and more intensive study (Level 2 or 3) may be necessary.

Given that all of the above questions could be answered affirmatively regarding angling flows, additional angling studies or assessments (progressing to a Level 2 or Level 3 assessment) are not warranted and would not further enhance the level of understanding needed for licensing purposes. Coupled with the analysis of potential Project effects detailed in Section 7.7, *Recreation Resources*, of Exhibit E in the License Application, this information also sufficiently meets FERC’s objectives for this study and provides an appropriate level of detail to guide the development of protection, mitigation, or enhancement measures in support of a new license.

The Fairview Dam Bypass Reach is generally easily accessible to anglers with Mountain Highway 99 providing vehicular access to multiple developed and dispersed recreation sites and access points along the river. CDFW stocks the bypass reach annually with hatchery-raised rainbow trout helping to ensure a quality sport fishery. Given the ease of access and quality of the fishery, the Fairview Dam Bypass Reach offers a variety of fishing opportunities for different types of angling (generally spin and fly fishing) and anglers with different experience levels throughout the year and under different flow conditions.

Per the structured angler interviews that were conducted as a component of the ANG-1 Study and the angler-specific survey results from the REC-2 visitor questionnaire, most anglers have a high degree of satisfaction with their current fishing experiences in the Fairview Dam Bypass Reach. Specifically, about 92 percent of respondents to the angling-specific questions on the REC-2 visitor questionnaire provided a positive rating (combination of “very good” and “good” response categories) for their most recent fishing experience in the bypass reach. This is not to say that all anglers describe all of their experiences in the bypass reach as enjoyable. During the structured interviews and through other public input opportunities during the licensing process (e.g., project scoping meetings, public workshops), some members of the angling public voiced their concerns with the quality of fishing opportunities and conditions in the bypass reach. However, the visitor survey results and the structured interviews point to a broader angling population that is generally satisfied with the range of fishing opportunities in the Fairview Dam Bypass Reach.

As noted in Section 5.0, Data Summary, angling use on the Fairview Dam Bypass Reach tends to broadly follow seasonal and daily use patterns, and preferred angling flows tend to vary according to several factors, including angling experience, safety, and fishing type. Anglers in the bypass reach tend to either spin and/or fly fish with seasonality influencing the fishing method (fly fishing tends to be more popular in the spring and fall, while spin fishing tends to be more popular in the summer). In addition to fishing method, use patterns in general tend to follow seasonal patterns.

The Fairview Dam Bypass Reach provides fishing opportunities throughout the year, but there are challenging angling conditions during specific seasons. High flows during spring run-off and lower flows in late fall and winter create challenging fishing conditions, although opportunities for angling remain good depending on skill level and other angler preferences. Throughout the rest of the year, the river conditions are less challenging and provide good opportunities for spin and fly fishing. The reported trips per season per the REC-2 visitor questionnaire follows this seasonal pattern with the highest number of reported angling trips in summer (5.5 trips) and spring (3.6 trips) and a lower number of trips in fall (2.8 trips) and winter (2.0 trips). The number of reported trips per season in the Fairview Dam Bypass Reach is similar to those reported above the Fairview Dam (see Section 5.0).

River flows are one of several factors that influence angling choices within the Fairview Dam Bypass Reach. Other important factors include water temperature (related to flows) and crowding (related to overall use patterns in the bypass reach), among others. Flow levels affect fishing conditions, specifically the river's features and structures (e.g., riffles, pools, runs), and thus influence the timing and location of specific angling opportunities (beyond the seasonality discussed above). Anglers (based on the structured interviews and survey results) generally have a wide preference for fishable flows and varying river conditions.

Flow preferences for fishing varied across the interviewees depending on physical abilities, tackle, and angling experience. In general, flows between 150 and 800 cfs are preferred as they provide a range of opportunities to anglers with different experience levels and different methods of fishing. In this range, the upper threshold for angling flows was 700 to 800 cfs, which tended to be preferred by more advanced anglers, like fishing guides. Higher flows are still fishable, though more challenging; however, once flows reach 2,000 cfs and above the river generally becomes unfishable due to safety. At the low end of the range, interviewees identified 100 to 200 cfs or less for the minimum angling flow. While angling is possible at flows in the 40 to 50 cfs range, flows below 40 cfs are unfishable given the shallower water depths and higher water temperatures that are not conducive to fish activity.

The current flow regime influences but does not limit or adversely impact the range of fishing opportunities and experiences available in the Fairview Dam Bypass Reach except at very low (under 40 cfs) and very high flows (over 2,000 cfs). Both during the study and in other public commenting opportunities during the relicensing process, several anglers noted that fishing quality and/or access (safety) is problematic at low and high flows, respectively. While the bypass reach experiences these low and high flows (see the WR-2 Hydrology Technical Memorandum [Appendix E.2 of SCE's License Application]), there are ample opportunities throughout the year when more acceptable flows (between 150 and 800 cfs) are available to anglers.

Furthermore, and as noted in Section 5.0, the majority of anglers in the bypass reach (76 percent) indicated that flows did not affect their fishing experience. Only about 14 percent of anglers indicated that flows did affect their fishing experience (a similar percentage of anglers above the Fairview Dam indicated that flows affected their fishing experience). Of these anglers below Fairview Dam, about 61 percent indicated that flows were "too high," while the remaining 39 percent stated that flows were "too low." The majority of responses noting that flows were too high could be in response to the higher-than-average summer flows (above 4,000 cfs in June and July) that naturally occurred in 2023. Similarly, the anglers who noted that flows were too low primarily participated in the REC-2 visitor questionnaire during the winter months when flows in the bypass reach were near the minimum instream flow requirements (ranging from approximately 40 cfs to 70 cfs).

As noted in Flows and Recreation, anglers typically assess “fishing conditions over multiple visits that vary where they fish or the tackle and techniques they use, as well as larger factors such as weather, season, time of day, and availability of a hatch” (Whittaker, Shelby, and Gangemi 2005). Other considerations include fish habitat, target fish species, the quality of the fishery, and flows. While some of these factors are social and related to the experiential characteristics of a fishing excursion, others are biophysical conditions that affect fish populations. Ultimately, fishery management requires an integration of fish habitat (biophysical conditions) and angler habitat (social, experiential characteristics that influence angler preferences and decision-making) considerations. The results of the ANG-1 Study, as well as other pertinent licensing studies (BIO-6, REC-2, WR-2), provide a considerable amount of information that will be used to balance the tradeoffs of multiple resource values under the new license. That is, there is a sufficient level of detail across multiple resource areas related to fishing and the fishery in the Fairview Dam Bypass Reach that will be considered and integrated into a comprehensive set of protection, mitigation, and enhancement measures in the new license.

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APPENDIX A
ANGLER STRUCTURED INTERVIEW QUESTIONNAIRE AND RESPONSES

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Structured Interview Questions

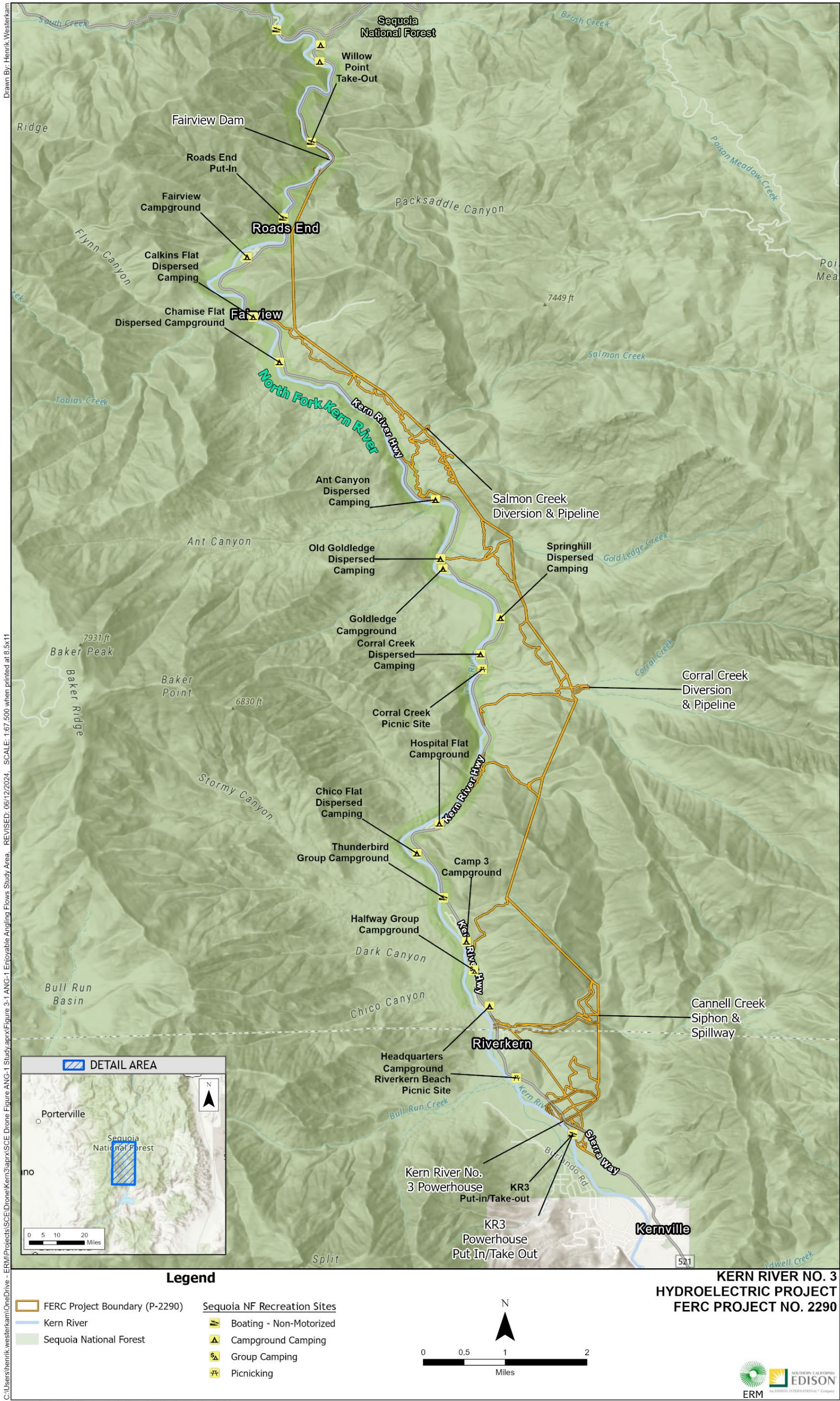
ANG-1 Enjoyable Angling Flows Study

Welcome and thank you for your interest in SCE's *ANG-1 Enjoyable Angling Flows* Study. This study is being done as part of Southern California Edison's relicensing process for the Kern River No. 3 Hydroelectric Project. Your participation in the structured interview questionnaire will provide helpful information on your use patterns and preferred flows for angling in the bypass reach on the North Fork Kern River (NFKR) between Fairview Dam and the KR3 Powerhouse (see figure 1 below).

The structured interview questionnaire will take approximately 40 minutes to complete. I will document your responses as we conduct the interview. I will share my screen so you can view my summary of your response. I will also record the interview so I can compare my notes with the recorded interview.

Are you ready to begin?

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Drawn By: Henrik Westerkam
 C:\Users\henrik.westerkam\OneDrive - ERM\Projects\SCE\Drone\Kern3\approx\Study Area - Revised: 06/12/2024 - SCALE: 1:67,500 when printed at 8.5x11
 Source: Esri - World Topographic Map: GCS North American 1983

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Structured Interview Questions

1. Full name:
2. Phone number:
3. Email address:
4. Zip code for primary residence:
5. Age:
6. What is your gender (circle one)?

Male

Female

Non-binary

Choose not to answer

Angling Recreation Use Patterns

7. How many fishing trips per year do you typically make to the North Fork Kern bypass?
 1. Section 5 is what they call KR3 to Fairview Dam. Most heavily used areas. 150 trips per year guiding. 50 personal trips per year.
 2. Typical year: 6-12 times per year.
 3. Up there year-round. 25-50 fishing days (most likely the low end).
 4. Once or twice per month. 25-30 trips per year.
 5. Fished the area all his life, only fish from Kernville to Johnsondale Bridge and Keysville. 8-10 days out of 30 per month once moved SoCal. Before 1979, for 27 years went 5 days/week when in Bakersfield.
 6. Probably at least 30 times a year, try to go out once per week. At least half the year.
 7. 70 guide trips, 30 personal trips.
 8. 7 years has been fishing on the Kern. Periodically, whenever has time, twice per month (24-25 times per year in the Kern). In Lake Isabella every other week.
8. What time of year do you prefer to fish in the North Fork Kern bypass?
 1. Fall through Spring. Summer gets too hot and usually when the water is the lowest and/or too warm. And most heavily used by the public from July 4th through Labor Day. Clients want a wilderness experience so better when less recreated.
 2. Right after run-off (typically the beginning of July, every year is a little different (variable)) and in the Fall. Summer is tough because the water is so low.

3. In the Fall (late Sept-Nov). Weather dependent.
 4. Fall and Winter. Summertime flow is too low and water temp is too high and it affects the fish.
 5. Year round in the area.
 6. Pretty much between March through early December.
 7. Fall through Spring.
 8. October through December. Less crowds, better odds at catching fish.
9. Do you prefer to fish during the week or on weekends?
1. Middle of the week for guiding trips, lots of weekend trips as well since that's when people have days off. All week long.
 2. During the week to avoid weekend crowds (camping, other recreation).
 3. During the week.
 4. Weekends 80% of the time, due to work.
 5. Weekdays preferable but will fish weekends as well.
 6. On weekdays because there are fewer people.
 7. During the week for guide trips and personal.
 8. During the week, Tuesday or Wednesday because the least amount of people. Wants to be there alone.
10. Is fishing during holidays preferable? Why?
1. Lots of business during holidays but not for personal use.
 2. Try to avoid the crowds (camping, other recreation), so will not fish on the holidays.
 3. Try to avoid it. They have a place in Kernville, so it is easy to avoid the crowds.
 4. Try to avoid because of crowds. Usually with the Sheriff's office for Search and Rescue.
 5. Yes, from the area so fishing during the holidays brings back lots of memories (ie: will spend Christmas up there and will go fishing).
 6. Pretty much avoid holidays, also because of crowds.
 7. Generally, no because it is too crowd/tourist oriented. Typically fishing won't change, more about access.
 8. No, too many crowds.
11. Are there certain times of day that you prefer to fish?
1. Times from 8-1600 because most people want to go out during that time. Normally the middle of the day. 0600 start in the summer to beat the heat.
 2. Early morning till about 1400-1500. Year round.

3. Summer and warm: early morning (before 7 till 12), evening (a few hours before sunset). Winter: 10 or 12 start (water temperature dependent).
 4. Depending on flows, lower flows late in the evening or early morning.
 5. In the morning and late afternoon. Fishing midday is not as good. Note: the planter fish do seem to bite at all times of day. Must be in the river awhile (approx 90 days or so) to adjust to morning/late afternoon schedule- 6/630 to 1000, 1500/1600 to dusk.
 6. Typically, between 900 to 1600.
 7. Changes throughout the year. In the summer, the water is warm so fish morning and evening, in winter fish during day when water warms up. The ideal water temperature is 58F for trout.
 8. At 530 AM to watch the water flow for 20-30 minutes. Tells if there are any fish within a couple of feet of the area. Will stay from 530-1000 or 1030, depending.
12. What would you say is the most common type of fishing in the bypass? Bait, spin or fly fishing?
1. During most of the year, fly fishing. During summer, mostly bait fishing, and the general public.
 2. A mix of bait and fly anglers.
 3. Spin with bait (salmon eggs and worms, powerbait, crickets): Summer/holidays many people from Bakersfield and LA.
 4. Summertime mostly used by campers- spin fishers. Fly fishers typically will fish above the dam.
 5. Trout (rainbows only seen), native trout not seen since 1960s. Note: Water gets too low now for native trout. Good mix of spin and fly fishing. Most people seem to use power bait.
 6. Fly fisher. More than half are bait fishermen, maybe 30% are fly fisherman. Some spinners and what not make up the rest.
 7. Only goes fly fishing. Bait, lure, def influx of fly fisher. Many more fly fishers now compared to 10 years ago.
 8. Fly fishing.
13. What type of angling do you typically do along the Kern River bypass (Bait, spin or fly fish. Bow and arrow or spear fish)?
1. Fly fishing.
 2. Fly fishing.
 3. Nearly 100% fly fishing. If bring grandnieces, they spin fish with crickets.
 4. Fly fishing.

5. Trout (rainbows only seen). He uses Salmon eggs (balls of fire, green label, pautzke). Only bait fishing. The rest of his family fly fishes. Does not fish for sport, only for food.
 6. Fly fishing.
 7. Fly fishing.
 8. Reel and fly fishing. Will determine which to do once on site and can observe the river. Both bait and lure: rooster tails, worms, put a small split-shot and then determine weight needed.
14. Does the type of fishing you do (fly fish, spin fish with bait, or spin fish with lures) vary seasonally?
1. Indicator fishing: indicator up top and a fly below (nymphing) 80%. Dry fly (adult insects) 20%. All year can vary between the two. Depends more on the time of day and bug activity. What are the insects doing will determine what style to use.
 2. Only fly fishing. No, does not vary seasonally.
 3. No, all fly fishing.
 4. Varies according to insects in the area. A difference can be seen even between lower and higher up the river. Lower flows could affect the insects and technique.
 5. Only bait fishing. Bait does not vary seasonally.
 6. No.
 7. No.
 8. Yes, June-July will typically go in with fly fishing or rod and then change depending on what is being caught. Fall is trickier, fish are biting more, usually use floater with rod and a hot worm (artificial worm). Does both year-round.
15. What factors influence your decision to choose one type of fishing tackle over another?
1. Depends more on the time of day and bug activity. What are the insects doing will determine what style to use.
 2. Fly fishing is more challenging. Most bait fishermen use treble hooks. Uses both nymphs and dry flies depending on whether there is a hatch. If flies (adult) on the water, then use a dry fly. Mostly use nymphs.
 3. Fly fishing is better for trout's health. All catch and release. Spin fishing tends to do more harm if using bait. Lures are somewhat better since only caught in the mouth; bait tends to get swallowed.
 4. The flows and the weather do influence this a little.

5. Tried all salmon eggs, family member trial and error for types of bait/lures since 1900s. Seems to work best.
 6. Typically use both. Function of flow and temperature of water and time of day determines what insects are more prevalent.
 7. Seasonal hatches- different bug activity. Terrestrial and aquatic insects available at the time: grasshoppers, ants, stoneflies, mayflies, midges, caddisfly. And several subspecies of insects of each of these. Specific times of year, temperature determines hatches.
 8. No, will go gut feeling. People ask him what/why he is using certain tackle and that is what he tells them.
16. What type of conditions (weather, flow, crowding, etc.) cause you to choose not to fish in the bypass reach?
1. Flow dependent primarily, sometimes clarity of the water. Over 3000 cfs no one will fish. At 3000 cfs if water is clear, Him/his brother will fish (more experienced anglers). 1000 cfs safe for public to get water and wade. Below 100 cfs the water gets too cold or too hot and affects the fishing dramatically. If water gets muddy fishing will also not occur. Weather events typically do not matter (rain/snow). More extreme weather events will affect fishing, weeklong or more of intense heat or cold.
 2. High run-off and low water (and high temperatures (anything at or over 70 degrees F)) conditions will determine whether he wants to fish.
 3. Right now, the flow is far too high, but flow dependent mostly (Generally that section is too low). Some crowding but can go to undeveloped spots to fish.
 4. The biggest one is flow. If diverting water and the river is already low, they would rather go higher above the dam for cooler water and higher flows. Crowds as well during summer season. Fish are stressed in hotter water and mortality rate can increase when being caught and released.
 5. After a rain the river gets muddy and will not fish. Will never fish the day after it rains.
 6. River temps being too hot, crowds. Catch and release fisher, so temps higher than 70 F and the trout cannot handle the stress. Flows can be too high (dangerous), too low (fish get trapped in areas, doesn't allow fish to move and hide- fish hold in water and these areas are far between so need more bush whacking, et cetera).
 7. Water flow, water temp, crowds (in that order).
 8. Crowds are the primary reason, if 3 or more people. People condense and it becomes a hazard and/or people will scare the fish away.

17. Do you currently, or in the past, work in the bypass reach as a fishing guide, or do you fish in a non-commercial angling capacity?
1. Fishing guide as main profession on the Kern for about 5 years. Fishing in the river for 25 years.
 2. No, all personal and with friends (recreation). No guiding.
 3. No.
 4. Not a guide but helps fly shop with education courses (classroom beginner classes and CPR).
 5. Just recreationally.
 6. No.
 7. Yes, currently.
 8. No.

Angling location preferences

18. Do you prefer developed access points or undeveloped/dispersed sites for angling? Why?
1. Clients: depends on physical ability. Developed points trails and access are generally easier. Mostly developed access points due to an older cliental. For clients that have better physical activity try to get around and in areas that are more undeveloped/rugged access. In Section 5, rugged areas are in between developed access points.
 2. Use both developed and undeveloped sites. Does not use some of the camp sites because they are over-developed. Generally, if there are too many will try to avoid. Will scout areas to fish once on the river. Some developed will use it because it is the only access to the river. Day use areas tend to not get as crowded.
 3. Undeveloped, or where people are not camping. The rafting access points (put-in, take-out) in the Fall. Summer there are too many boaters coming in and out. The rafting areas provide good access, once there can walk up or down the river.
 4. Undeveloped and dispersed. Might use developed parking lots but will hike out from there to dispersed sections.
 5. Undeveloped because if it's easy to get to it will be crowded and you won't catch anything.
 6. Undeveloped/dispersed, fewer people to compete with, more solitude.
 7. Both, lots of elderly or less mobile clients so easy access locations are great (campgrounds and day-use). Fishing for native trout in harder to reach areas, some clients can do that. Easy to access areas are often stocked with hatchery rainbow trout.

8. Undeveloped and dispersed sites. The harder it is to get somewhere the less traffic; fish are more calm and more likely to go after whatever is being cast out.
19. Where do you choose to fish between Fairview Dam and Riverside Park? (Please reference with named locations or features)
1. Favorite spots: Chamise Flat up to Fairview Dam. Northern end of Section 5.
 2. Generally, if there are too many people, will try to avoid it. Will scout areas to fish once on the river. Some developed will use it because it is the only access to the river. Day use areas tend to not get as crowded. Bush-whacking down to the river. Below the dam, at McNally's. Use trails at pull-out locations as well.
 3. Ant Canyon dispersed area (fish a little bit above dispersed area) down to Springhill. Closer to town likes to fish W side of river (Rodeo grounds): the stretch near the Rodeo; River nook campground is on the other side of the river (E).
 4. Hospital Flat area (personally). Right below the Dam. Some areas with easy access and lower flows when bringing out people to fish.
 5. Approx 300 yards below the Johnsondale Bridge. The closer to Fairview Dam the less fish there are (have never caught a fish in that area).
 6. Near headquarters campground, within a mile or two of it. Area closer to Fairview campground, mile or two out. Salmon creek Falls area. Will use campground parking or the pull-off points, wherever there is space to park. Uncrowded parking areas. Catching not as good in dispersed areas, more interested in the solitude aspect. Tend to get more wild fish in those areas, they pull harder and are stronger.
 7. Chamise Flat, Above Goldledge campground (between Goldledge and Old Goldledge), Road's End day-use area. Between Goldledge and Old Goldledge): hike in area, more difficult to get to. A little above and below Road's End also has great fishing for native and hatchery trout, more difficult access, need to be physically fit, can cross the river at this section.
 8. All depends. The past couple of weeks the river has been so high has been fishing higher up and off of the streams leading into the Kern. Catching a lot of carp, catfish, rainbow, and brown trout. Note: the carp are getting more aggressive and are taking over the river. There is a huge carp in the river currently. Will go where the powerhouses are at. His kids love catfish and so he will hit those places. Trout and bass are catch and release. Will keep carp if it looks good. Stays completely away from campgrounds because of crowds. Day use areas depend on if people are around.
20. What factors influence your decision to choose one area over another to fish? (Season? type of tackle? Stocking location, Flows? River features? Other?)

1. In general, comes down to water temperatures (50-60 degrees F is where there are active trout). Northern area of Section 5 maintains a good water temperature year-round. Habitat: boulders, stream flow, and amount the insects in the area create optimal trout habitat.
 2. A quieter section river with less rocks. Note: when trout are stocked, they all seem to be dumped into a single area. People will look for the trucks to follow and go fish after being stocked.
 3. Flows and season primarily. River features change with flows. Boulders create eddies and places for trout to hide. Flows will determine where to fish. If flows are too low in the bypass reach will go above Fairview Dam or below KR3.
 4. Crowds, flows.
 5. Determined by water level. If the water level is real low goes to upper Kern (above Kernville, just below Johnsondale Bridge).
 6. 400-200 cfs optimum flow rates, places you can wade, more places for the fish to hide and more challenging fishing. 200-400 cfs is good for the bypass reach in entirety.
 7. Typically stay out of the bypass reach during the summer due to low flows and high-water temps. Will go above Fairview Dam in the summer.
 8. Mostly crowds. Will not go to where stocking is happening because fish are not mature.
21. What river features do you look for when deciding where to fish (for example: riffles, pools, runs, pocket water)?
1. The canyon comes together in the Northern part of Section, in the summer the water is still a little higher since the canyon is narrower. Lots of boulders for good trout habitat.
 2. Try for riffles (faster, needs to be more careful), pools, and runs. By the rocks the water is calmer but not exactly pocket water.
 3. All of these: riffles, pools, runs, pocket water. These characteristics are all flow dependent. When the water is lower, look for pocket water.
 4. Fish fast water with pocket water at the end. Pocket water would be it.
 5. On the Kern, you don't to be in the ripples. Want to be in faster moving water, where you start to see it calm down a bit, cast into the edge of the riffles and let that pull you into the slower moving water. Always there and behind rocks (10-15yds in front of rock and let it lead you behind it).
 6. Easier wading. Good habitat structure: boulders, riffles, brush in the river can provide cover for the fish.
 7. Changes throughout the year. For example, summer trout do not like hot water, going into the oxygenation high flowing white water, coming off a riffle where there is broken water. Stay there during Fall. Winter will move to

deeper pools since bottoms of these are warmer. Move through each day but these are the generalizations.

8. If fly fishing will look for calm areas (still), pools behind boulders (mature trout seem to be found). Reel casting is about where there are deep pools (can find catfish).

22. Does this change with the type of tackle you are using? Please explain.

1. Using the same flies in all areas (for example: riffles, pools, runs, pocket water) since insect diversity is the same all up and down the river.
2. Must change the type of tackle depending on insect behavior. Changing tackle can change multiple times per day. Preferred: nymph fishing because there are not a lot of hatches.
3. River characteristics, where fishing, the boulders and gradient/drop determine type of fly being used. Faster flowing could use streamers deeper in water. Nymphs are just below the surface. Fishing with an indicator (float) and hanging nymph below the surface: would prefer a little faster water for this. If good flow and not raging (not too high), dry fly is preferable. The hatch, what insects are around. Plays into the health of the river, a healthy river would create more hatches. A greater abundance of bugs, subsurface and on surface.
4. Yes, if slower water may need smaller leader. Faster water/ pockets heavier flies and leaders to sink into the pockets.
5. No, for trout just uses a 4-lb test.
6. No, river features do not determine types of flies being used.
7. Yes, bobber/nymph fish deeper pools (winter), dry flies/dry dropper set up for riffles (generally). Mix of these in Spring through Fall.
8. Yes, will not use rooster tails where there are fallen trees/branches/etc because it will get stuck. Will use single hook and a bobber with a nightcrawler in those areas. Use everything else mentioned previously in pools.

23. Whitewater boaters have names for different river segments between Fairview Dam and Riverside Park based on whitewater boating difficulty. Do anglers name different sections of the river between Fairview Dam and Riverside Park? If yes, what are those names and locations?

1. Usually divide it by campgrounds (sections in between the campgrounds).
2. Thinks some anglers do but he does not. Different groups of anglers seem to have different names for sections of the river. Section off by campgrounds or McNally's, etc.

3. A couple places: the rodeo section. Much solo fishing. Fly fishing shops tend to use names of campgrounds, WW put-in/take-outs, section above the dam, or something like "fish limestone" (the campground). Where to fish could be in between developed access points/campgrounds.
 4. Use campgrounds/ day use areas/ sometimes the raft take-in and put-outs.
 5. Caught below the bridge in Kernville. Johnsondale Bridge, Road's End, McNally's, all campsites used as references. These are the big ones.
 6. Most people use campgrounds and day use areas to name where they are at.
 7. Nothing specific. Many bait anglers from Riverside Park to KR3. Typically, hatchery fish in these areas, if not stocked typically less anglers in the park to KR3.
 8. He does not personally name sections. People use campgrounds and day-use areas, but others use markers (trees, rock formations, etc), and others use parking areas.
24. How do river features change with flow at your preferred angling locations within the bypass? Do these changes affect your preference to fish there? Why?
1. Yes, much of it is because of flows being too low. So, if it is too hot or too cold the trout will go into hibernation, and anything below 100 cfs.
 2. If the flow is low not going to be able to do much fishing. Need a steady flow year-round. If the flows are low, there are more pools than any other areas to fish. Fish go to deeper water. If it is too high, try to avoid the river all together.
 3. In much higher flows no riffles or runs, might just be raging water with no river features. Lower flows get pocket water and easier access to get down to the river. For example: spring run-off and pulling max out (600 cfs) it is just enough to make the Kern fishable, so sometimes there are advantages to water take out; good for when flows are very high.
 4. Yeah, if flows are lower the features may not be there. Wants fast water near pockets. Stagnant water is no good.
 5. Optimum water level in normal years is Dec through May is peak fishing time. Once it is June the water level is too low. In the summer move up closer to Johnsondale and fish the deep pools.
 6. River flows change the character of the river and where the sweet spot is. Trout don't want to expend lots of energy so tend to be where insects are. The speed of the water drops down to maybe a couple miles per hour or less than that- where trout like to hang out. If not moving, trout usually do not like that. Pools can be a good place to fish, fish are harder to find. Runs/Seams more water that is waist deep.
 7. Flows def affect river features. Higher flows tend to not be able to fish riffles and faster water they will stick to slower pools or side water.

8. Yes, the changes do affect fishing and that is why they go early to watch the river for a while to determine where the fish will be and what type of fish there are. These changes do not affect preference to fish. Mostly look for places with low traffic.

Flow Range Estimates Section

25. Do you have a preferred range of flows (in cfs) for fishing between Fairview Dam and Riverside Park?

1. Prefers 1000-500 cfs is ideal. Why: fish active and anglers can access all areas of the river safely (ie: wading).
2. Prefers 200 cfs (preferably year-round). Something that could be amended with the release of water.
3. 250/300-700/800 cfs: good flows (perfect). This depends on the area. Where sections tend to be shallower the higher flow is better (700/800) since it is wadable yet safe. 100/150 cfs is fishable but not optimal.
4. Anything over 800 cfs (800-1000 cfs). If lower will typically go above the dam. Depends on flow above dam and amount being diverted out.
5. Doesn't know what it would be in cfs. Thinks only boaters or people working at the dam would need to know that.
6. 200-400 cfs.
7. 150-300 cfs would be ideal.
8. Not really, no.

26. Do different locations within the bypass have different preferred flows?

1. Consistent the through the bypass reach.
2. No, would like it consistent along the river.
3. Areas with an increased drop in gradient, places with shallower water, places like Salmon Creek Falls are unfishable. Bait fishermen seem to be able use the Salmon Creek area. Dependent on geological composition and river topography. After the large flow event this Spring the river topography has changed.
4. Some areas have class V rapids and water will flow much faster.
5. Different preferred water levels- will drive around the area and will determine where is going to be a good spot to catch fish.
6. No.
7. No.
8. If there are many boulders/rocks/etc can notice the flow of water and where it is going. Will look for high water if looking for trout. Pools when looking for catfish.

27. Does this flow range change with the type of fishing tackle you are using? If yes, please specify each type of angling and explain.

1. Flow does not determine the type of tackle used. Insect activity is what determines tackle used.
2. Too low or too high will not be fishing.
3. Yes, for spin/bait fishing, they must get the bait down to where the fish are; higher flows need heavier bait. If flows too high bait will get swept away. For fly fishing, for higher flows need heavier weighted flies: streamers or anything subsurface (nymphs). If lower flows could go to dry fly or dry dropper (dry fly is top fly and then nymph underneath).
4. Not necessarily. Higher water may need more weight to get it down.
5. No.
6. More about insects that are observed. Does not change based on flow of the water.
7. Yes, when high flows using more subsurface flies/nymphs/streamers. When lower flows use a wide variety of flies.
8. No.

28. Do you target different river features (pools, pocket water, runs, riffles) with changes in flow? Please explain.

1. Yes, the lower the flows (down to 100cfs) looking for skinnier and narrower sections of river. When flows are high (700-1000 cfs) looking for wider sections of river.
2. Yes, as flow gets lower will go to the pools. If steady, will go to any type of river feature to figure out what it might be.
3. If dry fly fishing, 80-150 cfs could wade out (wadable flows) comfortably and get to areas with better runs. This is when you could be able to wade out to all the above-mentioned features.
4. Yes, faster flows like pocket water. More oxygenated water- fish will gravitate to those areas. Lower flows will still look for deeper water. Knowing where the water is deep along that section is helpful.
5. If water levels are high, will cast under the embankment. The trout will sit right along the edge, get behind rocks and will stay there. Will stay closer to Johnsondale Dam if water levels are lower.
6. Yes, the range of 200-400 cfs is good for all the above river features. Can easily wade all points.
7. Yes, higher flows will go to pools and slower side water, lower can access all water.

8. When the river is higher will look for curves where the water slows down, fish like the calmer areas before heading into the higher flows. When the river is lower the fish do not have an advantage, not much of a sport. Likes going in the Fall because the water level is higher and creates more of a challenge.
29. Do you have a maximum flow for angling between Fairview Dam and Riverside Park? If you do multiple forms of angling, what flows are the max for each form?
1. Anything over 3000 cfs and unfishable, mostly due to safety.
 2. Always looked from a minimum point of view. If 400-500 cfs water gets moving to fast to wade. Preferred is 200 cfs.
 3. 700/800 cfs.
 4. Over 3000cfs not safe.
 5. No.
 6. Stay away if above 400 cfs, safety reasons and hard to push through water above this. They don't schedule maintenance changes so could get stuck on the other side of the river. Does not happen a lot but a handful of times per year. This only happens when the flows are higher. The change in flow happens dramatically.
 7. At 4000 cfs right now and could fish but not best, very experienced person could go out but not generally safe. 2000 cfs not ideal but fishable, still safe for clients.
 8. Will not fish during rain because too many unknown factors. Will wait about two days to go out after a rain (fly and reel cast).
30. Conversely, do you have a minimum flow for angling between Fairview Dam and Riverside Park? If you do multiple forms of angling, what flows are the max for each form?
1. 100 cfs is the minimum to fish. Last year the river got to 40 cfs in the summer and it shut down fishing activities.
 2. Would like to keep at 200 cfs, 100 cfs may be okay depending on the temperature of water.
 3. 250/300 cfs.
 4. Depends on air temp, even if 100 cfs and cold may be okay but if 100 cfs and hot out will not fish. If water is over 70F will not fish.
 5. No.
 6. More temp related. Want water temp between 40-70 F and flow rates above 200 cfs.

7. 100 cfs, it's been at 90 cfs and still fishable. Once at 50 cfs it dramatically affects fish activity and fishability. Note: even if only flow is low, and all other conditions are the same, fish will still tend to go into hibernation mode.
8. Does not have a minimum flow (fly and reel cast).

Bank vs wade fishing section

31. Do you typically fish from shore, wade or do a combination of both?
 1. Typically wading. Better trout habitat is more accessible via wading.
 2. Typically wade.
 3. Combination of both.
 4. Will wade, maybe knee deep. Occasionally will fish from the shore. Most of it is walking in.
 5. Yes, will wade in the river in May/early June. The water level is still a little high so will need to wade into about 2-3FT of water to get into the riffles and dead spots.
 6. Principally wades.
 7. Combination. A lot of wading. From shore, will use large boulders that are over pools to fish in.
 8. Combination.

32. Does your preference to fish from shore or wade depend on the type of angling and/or the river section? Please explain.
 1. Not the section but dependent on the flows that are happening.
 2. No, just prefer to wade if it is possible. Not a lot of bank space for fly fishing because you need to move the rod around.
 3. The river sections and her ability to safely wade (flow dependent).
 4. Yes, fishing fast water and pockets so all depends on where you can access pocket water and be safe.
 5. Yes, would wade in upper Kern, not in Kernville, they would also wade in Keyesville. Depends on how wide the river is. Wider section that is faster in center to wade.
 6. Not really prefers to fish from shore, moves around a lot. Only catch and release. Usually not in a spot for more than 10 min.
 7. Not the section but more so the geology and habitat, each pool is different.
 8. Hard to explain. If catfish or crappies, etc will typically stay on shore because the bigger fish are harder to reel in. Fly fishing usually wades.

33. What parts of the bypass do you consider to be safely wadable?

1. The entire section is as long as under 1000 cfs. Most are still safely wadable at 1000 cfs, but maybe not able to access the entirety of the river.
 2. All depends on the flow. They like McNally's or below the Dam (a couple 100 yds below), sometimes down by the powerhouse itself. At the powerhouse it is good if there is less flow.
 3. Road's End, will fish there lot since there is the boat ramp. Road's End to Fairview campground fishes a lot, can cross the river to the other side at certain flows. A little bit above Ant Canyon area. Again, looking for places to safely enter the river.
 4. Doesn't think there is. Variable depending on ability/experience but overall says no.
 5. No, does not think any area of the river is safe. Many people have drowned.
 6. Yeah, when below 400 cfs typically the whole stretch is wadable (95%).
 7. All safely wadable at a certain flow (50cfs). At 4000cfs very limited accessibility. For example, at Corral Creek flows currently (July) come up over side and create a second river and flows are slower.
 8. From McNally's up (north). Camp 3 to Johnsondale Bridge safe to wade. Can find places along the area and can tell by watching the river for a while before entering. Need to be conscientious, find your path, where to step.
34. Are there locations you consider to be unsafe for wading?
1. Right at the spillway/ Dam of Fairview. The area is hard to get around and access (Water coming over the spillway and over the rocks makes access difficult and potentially unsafe for wading).
 2. Yes, but cannot name them. Areas with too many rocks or where the water is rushing to quickly.
 3. Anywhere the river gradient is steep (ex: Salmon Creek Area), anywhere with large drops/falls. Some sections of the river make turns and have large drops, faster moving water (rapids, area where boaters prefer).
 4. Unsafe around class IV and V rapids. Class 1 and 2 if water is low could be okay. Depends on flow and class area.
 5. All areas seem unsafe.
 6. When flows are 1000 cfs most areas are unsafe or potentially unsafe. Sections with rapids would not get near under 400 cfs.
 7. Primarily flow dependent. Heavier rapids at higher flows are less safe in general.
 8. Yes and no. When water is high like now (1400 cfs) is not safe. The powerhouse right before getting into Kernville because there are too many people, people get hurt, etc. Crowds can make it unsafe.

35. What physical river features make a location unsafe for wading?

1. The granite boulders are unsafe for wading, get water-worn and slick.
2. The main hazard is the rocks, they become very slick.
3. Anywhere the river gradient is steep (ex: Salmon Creek Area), anywhere with large drops/falls. Some sections of the river make turns and have large drops, faster moving water (rapids, area where boaters prefer). Even with the possibility to enter the water these locations could cause you to get swept down a fall or pressed against a rock.
4. Rapids. In March had 43K flows changed the features, some areas may now be unsafe, and others may be safe (it is a whole new river).
5. The swiftness of the river and too many rocks and too much of a drop.
6. Slippery rocks and boulders; can get pulled under or swept up.
7. Rapids, sloping granite ledges/rocks – slippery.
8. Anything that looks like it has a beach will draw a crowd. Crowds make it unsafe when fishing- does not want to hurt anyone. All depends on river features, mostly crowds are the largest safety concern.

36. Does wadability change with flows? If yes, what do you consider the safe range of flows for wading in each of these locations?

1. If it does not get too high (over 1000 cfs) in most areas of Section 5, it will still be considered safe.
2. Between 100-200 cfs can safely wade depending on the area.
3. Old Goldledge: 100/150 cfs for safely wading. Note: uses wading staff and maybe go thigh-high. Anywhere the river makes a nice turn, has a campground, and the river widens, it will be very wadable. Ant Canyon is narrower, and access is more difficult. Rodeo grounds, Camp 3 at certain times of year (easy to get to, autumn when no one is camping): 250-800 cfs.
4. For him anything under 3000 cfs, level of experience is different than the average individual.
5. No, believes it is all unsafe. Got picked up off his feet in a few feet of water in May/June before (note-not this year). Will not wade above the knee, ever.
6. 200-400 cfs.
7. Below 2000 cfs can find plenty of safe spots.
8. Yes. When the river is low gets more algae and rocks are slick. When higher, the swiftness of the river makes locations unsafe.

37. Is there a maximum flow threshold for wading?

1. Right at 1000 cfs.
2. 200 cfs or above.

3. Yes, for herself, threshold is probably lower for her than younger/larger men/individuals. 300 cfs might be max.
4. 3000 cfs.
5. No.
6. 400 cfs.
7. Anything above 2000 cfs.
8. Right now (1400 cfs) does not seem safe to wade in. In a normal year this would be a good time to wade, mentioned Johnsondale Bridge area in August 2020 was at a good flow (maybe 600-700 cfs).

Flow Information Section

38. Before choosing to go fishing in the bypass reach, do you check for flow information to determine if conditions are suitable? If so, what type of flow information do you use?
1. Check flows all the time from Dream Flows (most rivers listed around the state).
 2. Yes, maybe USGS or will call a friend in the club (Kern River Fly Fishers). Note: SCE could make the flow knowledge more available to the public.
 3. Yes, every day, use Dream Flows. Can track the flows in the bypass reach by subtracting the 600 the powerhouse takes out.
 4. Yes, for fishing and search and rescue side. Dream Flows, Army Corp of Engineers, WW rafting shops. Meets the needs for determination.
 5. Will drive out and uses the knowledge of everyone he knows to determine if a section is going to be good for fishing that day. Does not check flows or use cfs estimates.
 6. Yes, Dream Flows website, Kern River Flow Data (sutronWIN.com) shows everything. Must check all this before leaving Kernville because of lack of service.
 7. Yes, uses Kern River Sierra.com/Flows.
 8. No, just goes out and looks for spots that are favorable to fish. Will check a spot out for a while, read the river, and will decide if needs to go up or down from the area: how much debris, fallen trees, how the water is flowing, rocks/boulders, sandy. Catfish like sandy and boulder areas. Rainbows love a decent flow rate. Bass fish like debris and tree materials. This will also determine if fly or reel casts.
39. Do you have other comments about angling use patterns and flows in the North Fork Kern River bypass.
1. No, covered a lot of it.
 2. SCE should try for a consistent flow (around 200cfs). In the summer when it gets to 40 cfs the flows are too low, and it affects the health of the fish.

3. The preference for many people would be to see the dam removed (recreation, health of the river). Designated W&S, for aesthetics would not prefer to have the dam there.
4. Fish ladder fish cannot be reached by fish at lower flows.
5. Water levels seem to be good for fishing. Gets too low and is not good for fishing anymore. If water levels are high, they will cast under the embankment. The trout will sit right along the edge, get behind rocks and will stay there.
6. No.
7. No.
8. No.

40. Are there any other anglers you would recommend we contact about angling opportunities on the North Fork Kern River between Fairview Dam and Riverside Park.*

Thank you for participating in the ANG-1 Structured Interview. This interview will be summarized in the ANG-1 study report. All reports will be available to the public when complete, as well as other information about the relicensing process for the KR3 hydroelectric project. You can find information about the KR3 relicensing at www.SCE.com/kr3.

* Answers not shown to protect privacy of anglers recommended.

APPENDIX B
**REC-2 FINAL VISITOR INTERCEPT SURVEY QUESTIONNAIRE—ANGLING-
RELATED QUESTIONS**

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Section 5 – Angling Experiences

27. Have you fished along the Fairview Dam Bypass Reach before?
 YES (please respond to the following 5 questions)
 NO (skip to Section 6)

28. What type of fishing tackle do you typically use to fish in the Fairview Dam Bypass Reach?
 (Select all that apply)

Spin fish with Lures Spin fish with Bait Fly fish

29. Are you fishing for fun or to catch food to eat (circle one)? If you are planning to eat your fish but are mostly fishing for fun, please choose **Fun**. If you enjoy fishing but are mostly fishing to catch food, please choose **Food**.

Food Fun

30. What was your primary reason for selecting this location to fish?

31. How often have you fished the Fairview Dam Bypass Reach in each season over the past 12 months?
 a. Spring (March–May) # _____
 b. Summer (June–August) # _____
 c. Fall (September–November) # _____
 d. Winter (December–February) # _____

32. Have river flows affected your angling experience in the Fairview Dam Bypass Reach? YES
 NO

If yes, please indicate in which season your experience has been affected and provide reason.

a. Spring (March–May) _____ Reason: too low / too high / other: _____
 b. Summer (June–Aug) _____ Reason: too low / too high / other: _____
 c. Fall (Sept–Nov) _____ Reason: too low / too high / other: _____
 d. Winter (Dec–Feb) _____ Reason: too low / too high / other: _____

33. On a scale of 1 to 5, with 1 being very poor and 5 being very good, how would you rate the conditions of your angling experience today or on the day of your most recent angling experience between the Fairview Dam and the Kern River No. 3 Powerhouse.

| Fishing Experience | 1 Very Poor | 2 Poor | 3 Neutral | 4 Good | 5 Very Good |
|--|----------------|-----------|--------------|-----------|----------------|
| Presence of angling features/habitats (pools, runs, riffles, etc.) to fish | | | | | |
| Ability to access angling features/habitats for preferred fishing | | | | | |
| Speed of river flow | | | | | |

If you rated Very Poor (1) or Poor (2) for any above, please explain:

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APPENDIX C
CALIFORNIA FRESHWATER SPORTS FISHING REGULATIONS

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North Fork Kern River fishing regulations (California Freshwater Sport Fishing Regulations, 2021–2022)

| FISHING METHODS—GENERAL | |
|--|--|
| (a) | Except as otherwise authorized, all fish may be taken only by angling with one closely attended rod and line or one hand line with not more than three hooks nor more than three artificial lures (each lure may have three hooks attached) attached thereto. Anglers in possession of a valid two-rod stamp and anglers under 16 years of age may use up to two rods in inland waters which regulations provide for the taking of fish by angling, except those waters in which only artificial lures or barbless hooks may be used. See District Trout, Salmon and Special regulations for exceptions. |
| (b) | (b) Snagging is prohibited. Snagging is defined as impaling or attempting to impale a fish in any part of its body other than inside the mouth by use of a hook, hooks, gaff, or other mechanical implement. This definition does not include activities otherwise authorized under these regulations for the lawful use of a gaff, bow and arrow, or spear. |
| (c) | It is unlawful to kill, or retain in possession any fish which has not voluntarily taken the bait or artificial lure inside its mouth. Any fish not taken pursuant to these regulations, shall be released immediately back into the water. |
| CATFISH AND BULLHEADS | |
| (a) | Open season: All year, except for closures listed under special regulations. |
| (b) | Limit: Bullheads, no limit; all other catfish, no limit. |
| TAKING FISH NEAR DAMS, FISHWAYS, SCREENS AND EGG-TAKING STATIONS. | |
| | No fish may be taken within 250 feet of: |
| (a) | Any fishway or any egg-taking station. |
| (b) | Any dam or any weir or rack which has a fishway or an egg-taking station. |
| (c) | The upstream side of any fish screen. Fish may be taken upstream or downstream from any dam that does not have a fishway or egg-taking station (this supersedes Section 5502 of the Fish and Game Code). |
| SPECIAL REGS for KERN | |
| SPEARFISHING | |
| (a) | The Kern River from the Kern-Tulare county line upstream to the Johnsondale Bridge for carp, goldfish, western sucker, hardhead and Sacramento pikeminnow, from May 1 through September 15. (d) See bullfrogs (Section 5.05). |
| FISHING HOURS | |
| (a) | Day Defined: One hour before sunrise to one hour after sunset. Remaining hours are night. |
| (b) | All fish may be taken day or night. |
| 5.95. OTHER SPECIES | |
| (a) | Other species of fish may be taken in any number and at any time of the year by angling, except for closures and restrictions listed under district special regulations. |
| 2.25. BOW AND ARROW FISHING | |

| | |
|-----|--|
| (a) | Bow and arrow fishing is permitted only for the taking of carp, goldfish, western sucker, Sacramento blackfish, hardhead, Sacramento pikeminnow and lamprey, all year, except in: (1) Designated salmon spawning areas (See Fish and Game Code Section 1505). (2) The Colorado River District where only carp, tilapia, goldfish and mullet may be taken. (3) See bullfrogs (section 5.05). (4) The East Fork of the Walker River between Bridgeport Dam and the Nevada State line where only carp may be taken. |
|-----|--|

2.45. COMPUTER ASSISTED REMOTE FISHING

| | |
|-----|--|
| (a) | It is unlawful to take or assist in the taking of any fish in or from this state, by computer-assisted remote fishing. |
| (b) | It is unlawful to establish or operate a computer assisted remote fishing site for the purpose of taking any fish from or within this state. |
| (c) | For the purposes of this section, “computer assisted remote fishing” means the use of a computer or any other remotely controlled device, equipment, software, or technology, to remotely 2021-2022 Freshwater Sport Fishing Regulations 19 control the aiming or discharge of any weapon, including, but not limited to, any firearm, bow and arrow, spear, harpoon or any other weapon capable of killing or injuring any fish, for the purposes of taking any fish. |
| (d) | For the purposes of this section, “computer assisted remote fishing site” means any computer, internet site or web-based device or system, or other electronically operated site or system used to assist in the remote taking fish. |

ALPHABETICAL LIST OF TROUT WATERS WITH SPECIAL FISHING REGULATIONS

(69) Kern River (Kern and Tulare cos.)

| | |
|-----|---|
| (a) | From Lake Isabella upstream to the Johnsondale bridge. All year. 5 trout. |
| (b) | From Johnsondale bridge upstream to the Sequoia National Park boundary near the Kern Canyon Ranger Station. All year. Only artificial lures may be used. 2 trout. |
| (c) | Downstream of Lake Isabella. All year. 5 trout. |