

Study 8.2

RECREATION FLOW

November 2010

1.0 Project Nexus

Yuba County Water Agency's (YCWA or Licensee) continued operation and maintenance (O&M) of the existing Yuba River Development Project (Project) has a potential to affect whitewater boating and angling opportunities.

2.0 Resource Management Goals of Agencies with Jurisdiction Over the Resource to be Studied

[Relicensing Participants - This section is a placeholder in the Pre-Application Document (PAD). Section 5.11(d)(2) of 18 CFR states that an applicant for a new license must in its proposed study "Address any known resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied." During 2010 study proposal development meetings, agencies advised Licensee that they would provide a brief written description of their jurisdiction over the resource to be addressed in this study. If provided before Licensee files its Proposed Study Plan and Licensee agrees with the description, Licensee will insert the brief description here stating the description was provided by that agency. If not, prior to issuing the Proposed Study Plan, Licensee will describe to the best of its knowledge and understanding the management goals of agencies that have jurisdiction over the resource addressed in this study. Licensee]

3.0 Existing Information and Need for Additional Information

Section 7.8.3 (Recreation Facilities and Opportunities in the Project-Affected River Reaches) of YCWA's Preliminary Information Package (PIP) (YCWA 2009) provides a summary of the existing whitewater boating information on the river reaches affected by the Project. Specifically, in 2008, YCWA conducted the New Bullards Bar Dam Whitewater Boating Study on November 8 and 9. Results of this study determined the acceptable flow range for whitewater boating, primarily for hardshell kayaks, on: 1) the 2.3-mile portion of the North Yuba River below New Bullards Bar Dam downstream to the confluence with the Middle Yuba River; and 2) on the 7.5-mile portion of the MYR from the confluence with the NYR downstream to USACE's Englebright Reservoir (non-project). The key findings of this study are in Section 7.8.3.1 of YCWA's PIP, which includes the types of craft that may potentially boat the reach, the minimum and maximum optimal flow ranges, and the put-in and take-out locations for this reach. A complete description of the study methods and results are also found in Attachment 7.8B of the PIP.

In addition, the 7.5-mile MYR reach (studied in 2008) also comprises the lower two-thirds of the larger, 12-mile whitewater boating reach that begins at the Highway 49 bridge crossing and continues downstream to USACE's Englebright Reservoir (non-project). This larger Middle Yuba River whitewater reach must include the 7.5-mile portion studied in 2008 since the reach does not have a take out in the vicinity of the confluence with the NYR. As a result, boaters who run the reach from Highway 49 must continue beyond the North Yuba River confluence on the 7.5-mile MYR whitewater reach studied by YCWA in 2008. Thus, Licensee believes the information from the 2008 New Bullards Bar Dam Whitewater Boating Study is adequate to characterize the acceptable flow ranges for whitewater boating on the entire 12-mile portion of the MYR from Highway 49 downstream to USACE's Englebright Reservoir (non-project).

There is also some information regarding whitewater boating opportunities in the Project Vicinity,¹ not including flow levels, currently available at American Whitewater's (AW) website, as well as some other boating websites and forums.

Additional information collected within this study will be used to close the gaps in the existing information on whitewater boating opportunities and what the acceptable range of flow levels is for the river reaches affected by the Project.

4.0 Study Goals and Objectives

The primary goals of the study are to determine if Project operations can: 1) provide acceptable whitewater boating opportunities consistent with demand on river reaches potentially affected by the Project; 2) determine Angler's preferences (flow, location, type of fishing) on the Project study reaches; and 3) be consistent with the needs of the area, the primary purposes or ability of the Project, and other resource management plans (e.g. USFS 1988, 1990).

The study objectives include:

- Utilize flow releases to determine the acceptable flow range for whitewater boating on the Study Reach (see Section 5.1 - Study Area).
- Determine the number of flow days by month in the acceptable flow range for whitewater boating opportunities (e.g. rafting and kayaking) under current Project operations and under regulated and unimpaired flows.
- On the Project study reaches, determine popular locations where anglers fish, the flows at which they fish, the type of fishing (e.g., wade or bank) and the number useable.

¹ For the purposes of this document, the Project Vicinity is defined as the area surrounding the Project on the order of a United States Geological Survey (USGS) 1:24,000 topographic quadrangle.

5.0 Study Methods and Analysis

5.1 Study Area

For the purpose of the whitewater boating component of the study, the study area includes a 7.5-mile portion of the Middle Yuba River below Our House Diversion Dam (RM 12.0) downstream to Highway 49 (RM 4.5).

For the purpose of the angling component of the study, the study area includes the:

- North Yuba River below New Bullards Bar Dam (RM 2.3) downstream to the confluence with the mainstem Yuba River (RM 0.0);
- Middle Yuba River below Our House Diversion Dam (RM 12.0) downstream to mainstem Yuba River (RM 0.0);
- Mainstem Yuba River (RM 39.6) downstream to Rice's Crossing (RM 32.2); and
- Oregon Creek below Log Cabin Diversion Dam (RM 4.1) downstream to the confluence with the Middle Yuba River (RM 0.0).

5.2 General Concepts and Procedures

The following general concepts and practices apply to the study:

- Personal safety is the most important consideration of each fieldwork team.
- Licensee will make a good faith effort to obtain permission to access private property where needed well in advance of entering the property.
- Field crews may make minor variances to the FERC-approved study in the field to accommodate actual field conditions and unforeseen problems. When minor variances are made, Licensee's field crew will follow the protocols in the FERC-approved study.
- When Licensee becomes aware of major variances to the FERC-approved study, Licensee will issue an e-mail to the Relicensing Contact List describing the variance and reason for the variance. Licensee will contact by phone the Forest Service (if the variance is on National Forest System land), USFWS, SWRCB and CDFG to provide an opportunity for input regarding how to address the variance. Licensee will issue an e-mail to the Relicensing Contact List advising them of the resolution of the variance. Licensee will summarize in the final study report all variances and resolutions.
- Licensee's performance of the study does not presume that Licensee is responsible in whole or in part for measures that may arise from the study.
- Global Positioning System (GPS) data will be collected using either a Map Grade Trimble GPS (sub-meter data collection accuracy under ideal conditions), a Recreation Grade Garmin GPS unit (3 meter data collection accuracy under ideal conditions), or similar units. GPS data will be post-processed and exported from the GPS unit into Geographic Information

System (GIS) compatible file format in an appropriate coordinate system using desktop software. The resulting GIS file will then be reviewed by both field staff and Licensee's relicensing GIS analyst. Metadata will be developed for deliverable GIS data sets.

- Licensee's field crews will record incidental observations of aquatic and wildlife species observed during the performance of this study. All incidental observations will be reported in the appropriate Licensee report (e.g., incidental observations of special-status fish recorded during fieldwork for the Special-Status Turtles – Western Pond Turtle Study will be reported in Licensee's Stream Fish Populations Study report). The purpose of this effort is not to conduct a focus study (i.e., no effort in addition the specific field tasks identified for the specific study) or to make all field crews experts in identifying all species, but only to opportunistically gather data during the performance of the study.
- Field crews will be trained on and provided with materials (e.g. Quat) for decontaminating their boots, waders, and other equipment between study sites. Major concerns are amphibian chytrid fungus, and invasive invertebrates (e.g. zebra mussel, *Dreissena polymorpha*). This is of primary importance when moving: 1) between tributaries and mainstem reaches; 2) between basins (e.g. Middle Yuba River, Yuba River, and North Yuba River); and 3) between isolated wetlands or ponds and river or stream environments.

5.3 Study Methods

This study is divided into two components – a whitewater boating and angling component. The whitewater boating component of the study focuses specifically on whitewater boating opportunities on the Middle Yuba River below Our House Diversion Dam downstream to the Highway 49 bridge crossing. The angling component of the study focuses on angling opportunities on each of the Project-affected river reaches.

5.3.1 Whitewater Boating Component

The study methods for the whitewater boating component consist of three steps (Steps 1A through 1C). These include: 1) conducting controlled flow releases on the Middle Yuba River Study Reach; 2) comparing the regulated and unimpaired whitewater boating opportunity for the Study Reach; and 3) describing the existing or potential whitewater boating opportunities on the Study Reach. Each of these steps is detailed below.

5.3.1.1 Step 1A - Conduct Controlled Flow Release on the Middle Yuba River Study Reach Below Our House Diversion Dam (RM 12.0) Downstream to the Highway 49 Bridge Crossing (RM 4.5)

In Step 1, Licensee will release at least two but no more than three controlled flow releases on the Middle Yuba River Study Reach below Our House Diversion Dam (RM 12.0) to the Highway 49 bridge crossing (RM 4.5). The exact number of controlled flow releases will depend on the results of the first and second releases. Furthermore, Licensee will provide the controlled flow releases during late winter/early spring high natural flows to avoid any impacts to Foothill Yellow-Legged Frog breeding habitat.

For the controlled flow releases, Licensee will utilize a team of boaters with commensurate skill levels, each comprised of hardshell kayaks, inflatable kayaks and rafts. The team of boaters will paddle the Study Reach with the likelihood of two times in succession, while the independent variable, flow, is changed. Licensee, in consultation with Relicensing Participants, will identify the team of boaters to run the controlled flow releases at a specified time on the Middle Yuba River Study Reach.

The objective is to record how changes in flow alter the quality of the experience for individual participants and the group. The team of boaters paddles each pre-selected flow then individually completes a single flow boater evaluation form/questionnaire querying them on a number of whitewater characteristics specific to that flow (refer to Attachment 8.2A for the boater evaluation form/questionnaire). Upon completion of all the test flows (at least 2, but potentially 3 flows) participants complete the comparative boater evaluation form/questionnaire enabling them to evaluate one flow over another for specific characteristics (Attachment 8.2A). Focus group discussions structured with specific questions concerning the boating experience are conducted at the conclusion of each test flow and upon completion of the comparative evaluations. Each boater will sign a waiver of liability prior to participating in this step of the study (Attachment 8.2B).

The primary data for this study will consist of the boaters' responses to questionnaires completed at the conclusion of each controlled flow release (or boating run). The questionnaire will include a section to gather data for a comparative flow evaluation for each run. Data to be collected will likely include: 1) boatability; 2) quality of the reach; 3) suitability of the run for different crafts and boater skill levels; 3) quality of the put-in/take-out locations; 4) boater's opinion of the class of difficulty of the run; 5) comparison of each run at its different flows; 6) quality and length of the shuttle; 7) any safety concerns or hazards; 8) scenic quality; 9) number and difficulty of portages; 10) availability of play areas; and 11) boater's opinion of the flows that would represent the general paddling public preference, which is achieved through focus groups and boater surveys.

5.3.1.2 Step 1B - Comparison of Regulated and Unimpaired Whitewater Boating Opportunity for the Study Reach

In Step 1B, Licensee will estimate the annual number of usable days that occur based on regulated and unimpaired flows for the Study Reach. For the purpose of this study, a usable day is defined as a day when a recreationist would have reasonable access to the river and the mean daily flow in the Study Reach is within the acceptable flow range as determined through boater evaluations/focus groups (Step 1A) and using the hydrology data (once approved by Licensee and Relicensing Participants). In addition, Licensee will also make this comparison for the North Yuba River reach below New Bullards Bar Dam, which Licensee conducted a whitewater boating study on in 2008 (refer to the Pre-Application Document for the results of this study.)

5.3.1.3 Step 1C – Description of the Whitewater Boating Opportunities on the Study Reach

In Step 1C, Licensee will summarize the whitewater boating opportunities on the Study reach. This summary will document for the Study Reach the: 1) put-in and take-out access; 2) demand for whitewater boating; 3) constraints; 4) conflicts or complementary opportunities with other recreational opportunities; 5) whitewater classification; 6) the types of craft suitable for boating the reach; 7) acceptable flows for the class of boating and type of boating that would likely occur; and 8) the annual number of usable (boatable) days that occur based on regulated and unimpaired flows.

5.3.2 Angling Component

The study methods for the angling component consist of three steps (Steps 2A through 2C). These include: 1) conducting an angling focus group; 2) comparing the regulated and unimpaired angling opportunity for the Study Reaches; and 3) describing the existing angling opportunities on the Study Reach. Each of these steps is detailed below.

5.3.2.1 Step 2A-Focus Group Interviews

In Step 2A, anglers will be selected through consultation with the Relicensing Participants. Subjects for angling questions will likely include: 1) access considerations, 2) target species, 3) types of fishing (wade/boat-based/shore-based; spin/bait/fly), 4) flow ranges for each type of opportunity by Study Reach, and, 5) angling quality relative to regional opportunities.

5.3.2.2 Step 2B-Comparison of Regulated and Unimpaired Angler Flows for the Study Reach

In Step 2B, Licensee will estimate the annual number of angling usable days that occur based on regulated and unimpaired flows for the Study Reach. For the purpose of this study, a usable day is defined as a day when a recreationist would have reasonable access to the river and the mean daily flow in the Study Reach is within the acceptable flow range as determined through angler focus groups (Step 1) and using the hydrology data (once approved by Licensee and Relicensing Participants).

Focus Group Process

Focus groups and interviews will be semi-structured, with specific topic areas and questions developed for anglers. Initial questions will focus on how people use the river. The goal is to describe the character of angling recreation opportunities and identify flow-dependent attributes. A second series of questions will focus on the effects of flows on those attributes and whether interviewees can identify specific flows that affect the quality of angling opportunities.

Focus groups will ideally range in size from four to seven study participants, and one or two facilitators. The researcher/discussion-leader will pose open-ended questions to guide discussion, but will draw out participants with follow-up questions as needed. The focus groups would

ideally be scheduled after researchers have conducted fieldwork to increase opportunities for shared understanding about the places and issues under discussion.

As with any research methodology, interviews/focus groups have strengths and weaknesses. They are most useful for describing consensus opinion of homogenous groups, and they allow participants to “brainstorm” collectively to improve the number or accuracy of ideas. However, generalizing from small groups is more challenging, particularly if there is diversity within a group. The extent of agreement within groups is one input into decisions about whether additional flow evaluation studies would prove useful. Licensee anticipates a maximum of 3 focus group meetings with anglers.

Licensee will develop an initial list of participants for the focus groups with Relicensing Participants. Researchers will make a good faith effort to reach identified individuals to conduct interviews.

5.3.2.3 Step 2C – Description of the Existing Angling Opportunities on Study Reaches

In Step 1C, Licensee will document the angling opportunities on each Study reach, including: 1) popular angling locations; 2) access considerations; 3) types of angling (shore, wade, etc.); 4) range of useable flows for angling on each Study Reach; and 5) the annual number of usable days that occur based on regulated and unimpaired flows.

5.3.3 Step 3 - Data Analysis and Study Report Preparation

In Step 3, Licensee will synthesize the data collected/analyzed into a study report at the conclusion of the study, and will include summary data in tables, attachments and/or appendices. Specifically, the report will include the following sections: 1) Study Goals and Objectives; 2) Methods; 3) Results; 4) Discussion; and 5) Description of Variances from the FERC-approved study proposal, if any.

6.0 Study-Specific Consultation

Licensee will engage in the following study specific consultation:

- Licensee, in consultation with Relicensing Participants, will identify the team of boaters to run the controlled flow releases at a specified time on the Middle Yuba River Study Reach.
- Licensee, in consultation with Relicensing Participants, will identify anglers to participate in focus groups.

7.0 Schedule

Licensee anticipates the schedule to complete the study proposal is as follows assuming the PAD is filed on November 1, 2010, and FERC issues its Study Determination by October 4, 2011:

Whitewater Boating Component

Controlled Flow Study (Step 1A)	February–April 2012
Boating Comparison of Regulated/Unimpaired Hydrology (Step 1B).....	May-July 2012
Description of Whitewater Boating Opportunity (Step 1C)	July-August 2012

Angling Component

Angler Focus Groups (Step 2A)	July-September 2012
Angling Comparison of Regulated and Unimpaired Hydrology (Step 2B).....	May-July 2012
Description of Angling Opportunity (Step 2C)	July-August 2012

Data Analysis and Report

Data Analysis and Report Preparation (Step 3)	September 2012 - October 2012
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8.0 Consistency of Methodology with Generally Accepted Scientific Practices

This study proposal is consistent with generally accepted relicensing studies (e.g., Yuba-Bear, Drum-Spaulding, South Feather River, DeSabra-Centerville, and Beardsley/Donnells), and is consistent with FERC study requirements under the newly developed Integrated Licensing Process (FERC 2003). Focus groups following each controlled flow release will be conducted by researchers with social science training and will follow standard qualitative research protocols (Patton 1990). In addition, researchers have experience with focus group efforts from previous studies (e.g., Yuba-Bear, Drum-Spaulding, South Feather River, DeSabra-Centerville, and Beardsley/Donnells) using questions tested and refined from those efforts. Field work will be conducted following recommendations provided in Whittaker *et al.* (1993), and studies completed on West Rosebud Creek by PPL Montana. Documentation may include still photos and notes.

9.0 Level of Effort and Cost

[Relicensing Participants – Licensee will include a cost range estimate for this study in its Proposed Study Plan. Licensee]

10.0 References Cited

FERC. 2003. Federal Energy Regulatory Commission, 18 CFR, Part 5. Washington, DC.
Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Sage Publications:
Newbury Park, California.

PPL Montana (2004-05). West Rosebud Creek Whitewater Flow Study Report 2004-05.

United States Department of Agriculture, Forest Service (USFS). 1988. Plumas National Forest Land and Resource Management Plan, USDA Forest Service, Pacific Southwest Region, San Francisco, CA.

_____. 1990. Tahoe National Forest Land and Resource Management Plan. USDA Forest Service, Pacific Southwest Region, San Francisco, CA.

Whittaker, D., B. Shelby, W. Jackson, and R. Beschta. 1993. *Instream flows for recreation: a handbook on concepts and research methods*. U.S. Department of the Interior, National Park Service, Anchorage, AK.

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ATTACHMENT 8.2A

Controlled Flow Release

Boater Evaluation Form

CONTROLLED FLOW RELEASE
Boater Evaluation Form

This questionnaire is organized in three sections:

Section 1—Contact information and characterization of your boating skills/experience. (You will need to complete this section only once during the study.)

Section 2a, 2b and 2c—Questions regarding your experience on each day's run. (You will need to complete Section 2a after the first day's run, Section 2b after the second day's run, and Section 2c after the third day's run (if needed). Each of the sections are identical, except they are completed for a different target flow.

Section 3—A comparative evaluation of different flows. (You will need to complete this after all test flow events on this reach).

SECTION 1--BOATER BACKGROUND INFORMATION--(COMPLETE THIS SECTION ONLY ONCE)

1. Name _____
2. Affiliation _____
3. Home Address _____
4. Telephone _____
5. E-Mail Address _____
6. Preferred Craft _____
7. What is your age? _____ **years**
8. Gender (*circle one*): Male Female
9. Please indicate your current boating skill level below. (*circle one*)
 - a) Novice
 - b) Intermediate
 - c) Advanced
 - d) Expert
 - e) Elite
10. How many years have you been boating at this level? _____ **years**
11. In the past 3 years, how many days a month do you boat? _____/**month**
12. Have you ever participated in a hydro relicensing whitewater boating study before? (*yes or no*) _____
If yes, how many, when and for which hydro projects? _____
13. How many times have you boated this run before today? _____/**year**
If you have boated this run before (*Leave blank if you have not boated the run before today.*):
 - a) What were the flows? _____ **cfs**
 - b) What type of craft(s) did you use? _____
14. How long does it take you to get to this reach from your home? _____

15. Please respond to each of the following statements about your river-running preferences. (*circle one response in each row*)

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
I prefer running rivers with difficult rapids (Class IV and V).	1	2	3	4	5
Running challenging whitewater is the most important part of my boating trips.	1	2	3	4	5
I often boat short river segments (under 4 miles) to take advantage of whitewater play areas.	1	2	3	4	5
I often boat short river segments to experience a unique and interesting place.	1	2	3	4	5
I often boat short river segments to run challenging rapids.	1	2	3	4	5
Good whitewater play areas are more important than challenging rapids.	1	2	3	4	5
I am willing to tolerate difficult put-ins and portages in order to run interesting reaches of whitewater.	1	2	3	4	5
I prefer boating rivers that feature large waves and powerful hydraulics.	1	2	3	4	5
I prefer boating steep, technical rivers.	1	2	3	4	5
I enjoy boating both technical and big water rivers.	1	2	3	4	5

16. Please list some of the whitewater runs in California you typically boat each year. Also, indicate how often you boat these runs.

- a) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- b) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- c) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- d) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- e) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- f) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- g) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+
- h) _____; Trips per year on this reach (*circle one*) 0-3 4-8 9-15 15+

SECTION 2A - BOATER POST-RUN EVALUATION FORM (COMPLETE AFTER THE **1ST** DAY'S Run)

Name _____ Date of Run: _____

Reach (circle one): a) Our House Diversion Dam to Highway 49 b) Highway 49 to Englebright Reservoir

1. What was the target flow on this run? _____ cfs, as measured at _____ .
2. What type of craft did you use for this run (circle one)?

a. Hard shell kayak	e. Cataract (please indicate length: _____)
b. Inflatable kayak	f. Raft (please indicate length: _____)
c. Closed deck canoe	g. No craft: I road/trail-scouted this run
d. Open canoe with floatation	h. Other: (please explain) _____
3. Please identify the put-in and take-out locations you used and estimate the time you put-in and took out on this run.

a) Put-in location: _____	Time: _____
b) Take-out location: _____	Time: _____
4. About how many times did you stop and get out of your boat for breaks, or for scouting and portaging?

a) About _____ times for breaks.
b) About _____ times for scouting or portaging.
5. Please estimate the total amount of time you spent out of your boat for breaks, or for scouting and portaging.

a) About _____ minutes for breaks.
b) About _____ minutes for scouting or portaging.
6. In general, how would you rate the whitewater difficulty on this reach at this flow? _____ (Use the International Whitewater Scale that ranges from Class I to Class VI).
7. Are you likely to return for future boating if today's flow were to be provided? (circle one)

a) Definitely No	b) Possibly	c) Probably	d) Definitely Yes
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8. Relative to today's flow, would you prefer a flow that was higher or lower or was this optimum flow?

a) Much Lower	b) Lower	c) Higher	d) Much Higher	e) Optimum
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9. Please respond to each of the following statements about the characteristics of this run at today's flow.

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
This reach is boatable at these flows.	1	2	3	4	5
This reach offers challenging and technical boating.	1	2	3	4	5
This reach has nice water features such as waves and holes.	1	2	3	4	5
This reach has good play spots.	1	2	3	4	5
This run offers good overall whitewater challenge	1	2	3	4	5
This is a safe run.	1	2	3	4	5
This is an aesthetically pleasing run	1	2	3	4	5
This run is a good length	1	2	3	4	5
The portages on this run are not a problem	1	2	3	4	5
There are enough places to take a break or have lunch on this run.	1	2	3	4	5

10. If you feel qualified to offer an opinion of the boatability of this run at today's flow using different types of crafts, please respond to the following statements. Leave blank if you do not have experience with a particular type of craft. (Circle one number for each type of craft)

This run at this flow would work well for:	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
Kayaks	1	2	3	4	5
Rafts	1	2	3	4	5
Catarafts	1	2	3	4	5
Open Canoes	1	2	3	4	5
Inflatable Kayaks	1	2	3	4	5

11. Please estimate the number of **hits**, **stops**, **boat drags**, and **portages** you had on this run.

- a) I **hit** rocks or other obstacles (but did not stop) about ____ times.
- b) I was **stopped** after hitting rocks or other obstacles about ____ times (but did not have to get out of my boat to continue downstream).
- c) I had to get out to **drag or pull my boat** off rocks or other obstacles about ____ times.
- d) I had to **portage** around unrunnable rapids, log jams, or other sections about ____ times.

12. Please identify particularly challenging rapids or sections and rate their difficulty at this flow (using the International Whitewater Scale). Also note if you portaged any of these rapids.

Location (Name or site)	Rating (Whitewater Scale of Difficulty)	Portage? (Yes or No)

13. If you portaged any portion of the run, please identify rapids or sections you chose to portage and rate the difficulty of those portages (using your type of craft at this flow level).

Location	Easy	Slightly Difficult	Moderately Difficult	Extremely Difficult
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4

14. Did you observe or experience any significant safety issues on your run today (swims, pins, wrapped boats, man-made or natural river features etc.? Please explain.

15. Please provide any comments about your boating experience today on the river reach.

SECTION 2B - BOATER POST-RUN EVALUATION FORM (COMPLETE AFTER THE 2ND DAY'S RUN)

Name _____ Date of Run: _____

Reach (circle one): a) Our House Diversion Dam to Highway 49 b) Highway 49 to Englebright Reservoir

1. What was the target flow on this run? _____ cfs, as measured at _____.
2. What type of craft did you use for this run (circle one)?

a. Hard shell kayak	e. Cataract (please indicate length: _____)
b. Inflatable kayak	f. Raft (please indicate length: _____)
c. Closed deck canoe	g. No craft: I road/trail-scouted this run
d. Open canoe with floatation	h. Other: (please explain) _____
3. Please identify the put-in and take-out locations you used and estimate the time you put-in and took out on this run.

a) Put-in location: _____	Time: _____
b) Take-out location: _____	Time: _____
4. About how many times did you stop and get out of your boat for breaks, or for scouting and portaging?

a) About _____ times for breaks.	b) About _____ times for scouting or portaging.
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5. Please estimate the total amount of time you spent out of your boat for breaks, or for scouting and portaging.

a) About _____ minutes for breaks.	b) About _____ minutes for scouting or portaging.
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6. In general, how would you rate the whitewater difficulty on this reach at this flow? _____ (Use the International Whitewater Scale that ranges from Class I to Class VI).
7. Are you likely to return for future boating if today's flow were to be provided? (circle one)

a) Definitely No	b) Possibly	c) Probably	d) Definitely Yes
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8. Relative to today's flow, would you prefer a flow that was higher or lower or was this optimum flow?

a) Much Lower	b) Lower	c) Higher	d) Much Higher	e) Optimum
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9. Please respond to each of the following statements about the characteristics of this run at today's flow.

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
This reach is boatable at these flows.	1	2	3	4	5
This reach offers challenging and technical boating.	1	2	3	4	5
This reach has nice water features such as waves and holes.	1	2	3	4	5
This reach has good play spots.	1	2	3	4	5
This run offers good overall whitewater challenge	1	2	3	4	5
This is a safe run.	1	2	3	4	5
This is an aesthetically pleasing run	1	2	3	4	5
This run is a good length	1	2	3	4	5
The portages on this run are not a problem	1	2	3	4	5
There are enough places to take a break or have lunch on this run.	1	2	3	4	5

10. If you feel qualified to offer an opinion of the boatability of this run at today's flow using different types of crafts, please respond to the following statements. Leave blank if you do not have experience with a particular type of craft. (Circle one number for each type of craft)

This run at this flow would work well for:	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
Kayaks	1	2	3	4	5
Rafts	1	2	3	4	5
Cataracts	1	2	3	4	5
Open Canoes	1	2	3	4	5
Inflatable Kayaks	1	2	3	4	5

13. Please estimate the number of **hits**, **stops**, **boat drags**, and **portages** you had on this run.

- a) I **hit** rocks or other obstacles (but did not stop) about ____ times.
- b) I was **stopped** after hitting rocks or other obstacles about ____ times (but did not have to get out of my boat to continue downstream).
- c) I had to get out to **drag or pull my boat** off rocks or other obstacles about ____ times.
- d) I had to **portage** around unrunnable rapids, log jams, or other sections about ____ times.

14. Please identify particularly challenging rapids or sections and rate their difficulty at this flow (using the International Whitewater Scale). Also note if you portaged any of these rapids.

Location (Name or site)	Rating (Whitewater Scale of Difficulty)	Portage? (Yes or No)

13. If you portaged any portion of the run, please identify rapids or sections you chose to portage and rate the difficulty of those portages (using your type of craft at this flow level).

Location	Easy	Slightly Difficult	Moderately Difficult	Extremely Difficult
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4

14. Did you observe or experience any significant safety issues on your run today (swims, pins, wrapped boats, man-made or natural river features etc.?) Please explain.

15. Please provide any comments about your boating experience today on the river reach.

SECTION 2C - BOATER POST-RUN EVALUATION FORM (COMPLETE AFTER THE 3RD DAY'S RUN)

Name _____ Date of Run: _____

Reach (circle one): a) Our House Diversion Dam to Highway 49 b) Highway 49 to Englebright Reservoir

1. What was the target flow on this run? _____ cfs, as measured at _____
2. What type of craft did you use for this run (circle one)?
 - a. Hard shell kayak
 - b. Inflatable kayak
 - c. Closed deck canoe
 - d. Open canoe with floatation
 - e. Cataract (please indicate length: _____)
 - f. Raft (please indicate length: _____)
 - g. No craft: I road/trail-scouted this run
 - h. Other: (please explain) _____
3. Please identify the put-in and take-out locations you used and estimate the time you put-in and took out on this run.
 - a) Put-in location: _____ Time: _____
 - b) Take-out location: _____ Time: _____
4. About how many times did you stop and get out of your boat for breaks, or for scouting and portaging?
 - a) About _____ times for breaks.
 - b) About _____ times for scouting or portaging.
5. Please estimate the total amount of time you spent out of your boat for breaks, or for scouting and portaging.
 - a) About _____ minutes for breaks.
 - b) About _____ minutes for scouting or portaging.
6. In general, how would you rate the whitewater difficulty on this reach at this flow? (Use the International Whitewater Scale that ranges from Class I to Class VI). _____
7. Are you likely to return for future boating if today's flow were to be provided? (circle one)
 - a) Definitely No b) Possibly c) Probably d) Definitely Yes
8. Relative to today's flow, would you prefer a flow that was higher or lower or was this optimum flow?
 - a) Much Lower b) Lower c) Higher d) Much Higher e) Optimum

9. Please respond to each of the following statements about the characteristics of this run at today's flow.

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
This reach is boatable at these flows.	1	2	3	4	5
This reach offers challenging and technical boating.	1	2	3	4	5
This reach has nice water features such as waves and holes.	1	2	3	4	5
This reach has good play spots.	1	2	3	4	5
This run offers good overall whitewater challenge	1	2	3	4	5
This is a safe run.	1	2	3	4	5
This is an aesthetically pleasing run	1	2	3	4	5
This run is a good length	1	2	3	4	5
The portages on this run are not a problem	1	2	3	4	5
There are enough places to take a break or have lunch on this run.	1	2	3	4	5

10. If you feel qualified to offer an opinion of the boatability of this run at today's flow using different types of crafts, please respond to the following statements. Leave blank if you do not have experience with a particular type of craft. (Circle one number for each type of craft)

This run at this flow would work well for:	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
Kayaks	1	2	3	4	5
Rafts	1	2	3	4	5
Cataracts	1	2	3	4	5
Open Canoes	1	2	3	4	5
Inflatable Kayaks	1	2	3	4	5

15. Please estimate the number of **hits**, **stops**, **boat drags**, and **portages** you had on this run.

- a) I **hit** rocks or other obstacles (but did not stop) about ____ times.
- b) I was **stopped** after hitting rocks or other obstacles about ____ times (but did not have to get out of my boat to continue downstream).
- c) I had to get out to **drag or pull my boat** off rocks or other obstacles about ____ times.
- d) I had to **portage** around unrunnable rapids, log jams, or other sections about ____ times.

16. Please identify particularly challenging rapids or sections and rate their difficulty at this flow (using the International Whitewater Scale). Also note if you portaged any of these rapids.

Location (Name or site)	Rating (Whitewater Scale of Difficulty)	Portage? (Yes or No)

13. If you portaged any portion of the run, please identify rapids or sections you chose to portage and rate the difficulty of those portages (using your type of craft at this flow level).

Location	Easy	Slightly Difficult	Moderately Difficult	Extremely Difficult
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4
	1	2	3	4

14. Did you observe or experience any significant safety issues on your run today (swims, pins, wrapped boats, man-made or natural river features etc.? Please explain.

15. Please provide any comments about your boating experience today on the river reach.

SECTION 3—COMPARATIVE EVALUATION FORM (COMPLETE AFTER LAST TEST FLOW EVENT)

Name _____ Date of Run: _____

Reach (circle one): a) Our House Diversion Dam to Highway 49 b) Highway 49 to Englebright Reservoir

1. Please evaluate the following flows for your craft and skill level. In making your evaluations, please consider all the flow-dependent characteristics that contribute to a high quality trip (e.g., boatability, whitewater challenge, safety, availability of surfing or other play areas, aesthetics, and rate of travel). In the first row, place a check in each box to indicate a flow level for which you do not feel comfortable making this evaluation.

River Reach	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	750 cfs	1,000 cfs
Cannot Estimate At This Flow	<input type="checkbox"/>									
Totally Acceptable	5	5	5	5	5	5	5	5	5	5
Acceptable	4	4	4	4	4	4	4	4	4	4
Marginal	3	3	3	3	3	3	3	3	3	3
Unacceptable	2	2	2	2	2	2	2	2	2	2
Totally Unacceptable	1	1	1	1	1	1	1	1	1	1

2. Based on your boating trips on this reach, please answer the following questions. (Note: you can specify flows that you have not seen, but which you would predict based on your experience.)

Controlled Flow Release Reach	Flow in cfs
a) What is the lowest flow you need to simply get down the river in your craft?	
b) What is the lowest flow that provides a quality technical boating experience for this reach?	
c) What is the optimal range of flows that provides the best whitewater characteristics for this run?	to
d) What do you feel the highest safe flow for your craft and skill level?	

3. Based on your boating trips on this reach and if the flows in your optimum range (Question 2, row c) were provided, how often you would return to this run. (Circle one)

- a) Never b) Once every year c) Multiple times every year d) Once every few years e) As often as I could

4. Based on your boating trips on this reach and at the flows in your optimum boating range (Question 2, row c), to which established boating runs in California do you feel the Controlled Flow Release Reach is most similar? *(Please insert name of run, river, when it is commonly run, and what you believe is the optimum flow range for boating that run.)*

- a) Run/river: _____ Season: _____ Optimal Flow: _____
- b) Run/river: _____ Season: _____ Optimal Flow: _____
- c) Run/river: _____ Season: _____ Optimal Flow: _____
- d) Run/river: _____ Season: _____ Optimal Flow: _____

5. Compared to the runs you listed above, how would you rate boating opportunities on the Controlled Flow Release Reach at the flows in your optimum boating range (Question 2, row c). *(circle one number for each; if you are unsure about a comparison, leave that item blank).*

Other Reach:	Compared to the reach at left, the Controlled Flow Release Reach is...				
	...Much Worse	...Worse	...About the Same	...Better	...Much Better
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

6. Based on your boating trips on this reach and if the flows were provided in your **optimum range** (Question 2, row c), which run(s) that you normally make now **WOULD YOU NOT DO** in favor of running the Controlled Flow Release Reach and **why?** *(circle one and if you select "b", then please fill-in the other runs and why)*

- a) I Wouldn't Favor This Run Over Other Runs I Make Now
- b) I Would Make This Run Instead of the Following Runs I Do Now:
 - i. Other Run: _____ Why? _____
 - ii. Other Run: _____ Why? _____
 - iii. Other Run: _____ Why? _____
 - iv. Other Run: _____ Why? _____

7. Please respond to the following statements about the non-whitewater characteristics of the Controlled Flow Release Reach at the flows in your optimum boating range (Question 2, row c).

Statement	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Length of Shuttle is not a problem.	1	2	3	4	5
The put-in for this run is good.	1	2	3	4	5
The take-out for this run is good.	1	2	3	4	5
The total shuttle to boating ratio on this run is good.	1	2	3	4	5

8. If you have any suggestions for improving the access or shuttle for this run please describe these improvements below.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____

ATTACHMENT 8.2B

Controlled Flow Release Waiver

CONTROLLED FLOW RELEASE

ASSUMPTION OF RISK AND GENERAL RELEASE OF LIABILITY AGREEMENT

1. I recognize that the whitewater boating reconnaissance for the Our House Diversion Dam Reach (Middle Yuba River) and/or the Oregon Creek and North/Middle Yuba River reaches (Yuba River) of the Whitewater Boating Study in which I am about to participate is a rigorous and hazardous activity that may be physically and mentally stressful and may aggravate existing physical or mental conditions or cause new ones. I recognize that whitewater boating is dangerous and that the dangers may include damage to or destruction of personal property, serious physical injury or even death arising from a variety of hazards including, but not limited to and by way of example only, rocks, trees, powerful waves, waterfalls, hydraulics and various other man-made or natural hazards, and difficulty or improbability of rescue. I will have previously observed the river segments both on United States Geological Survey 1:24,000 topographic maps, and, should I participate in the study, by scouting ahead on foot prior to boating segments of the river that are the subject of this study to determine for myself the nature and extent of the hazards that may exist. I understand that the river segments on which the reconnaissance is taking place may not be suitable for whitewater boating. I acknowledge that, under these circumstances, the usual hazards associated with whitewater boating may be more unknown, uncertain, severe and dangerous. I also understand that during the course of the reconnaissance, there may be significant variations in river flow that may alter the character of the river and the dangers and hazards of participating in this study. I acknowledge that I have read the description of this study that is titled "WHITEWATER BOATING STUDY."
2. I acknowledge that:
 - (a) I am participating in this whitewater boating reconnaissance for my own personal recreational purpose and not at the request of Yuba County Water Agency,
 - (b) I am not a volunteer or agent acting on behalf of the Yuba County Water Agency;
 - (c) none of the other participants will be acting as a professional river guide for me;
 - (d) I am not being compensated by Yuba County Water Agency to engage in this activity;
 - (e) I am personally responsible for determining whether I have the skill and expertise to safely navigate any particular river segment;
 - (f) I am solely responsible for selecting equipment suitable for use during this whitewater boating reconnaissance; and
 - (g) no other person or entity associated with this whitewater boating reconnaissance has any obligation to attempt to rescue me and that any attempted rescue may exacerbate my condition and cause injury or death.
3. **ON BEHALF OF MYSELF, MY HEIRS, REPRESENTATIVES, EXECUTORS, ADMINISTRATORS AND ASSIGNS, I UNDERSTAND AND EXPRESSLY ASSUME ALL THE RISKS AND DANGERS INCIDENT TO THE WHITEWATER BOATING RECONNAISSANCE AND HEREBY KNOWINGLY WAIVE AND RELEASE ALL CLAIMS INCLUDING, BUT NOT LIMITED TO, CLAIMS BASED ON PROPERTY DAMAGE OR DESTRUCTION, PERSONAL INJURY OR DEATH, WHETHER CAUSED BY NEGLIGENCE, BREACH OF CONTRACT OR OTHERWISE, THAT I MAY EVER HAVE AGAINST: (A) THE YUBA COUNTY WATER AGENCY, ITS OFFICERS, DIRECTORS, EMPLOYERS, AGENTS, ASSIGNS OR SUCCESSORS, (B) ANY SUPPLIER OF MATERIALS AND EQUIPMENT EMPLOYED IN CONNECTION WITH THE**

PROPOSED WHITEWATER BOATING STUDY; (C) THE YUBA RIVER DEVELOPMENT PROJECT, AND THE UNITED STATES, AND THEIR AFFILIATES, AGENCIES, EMPLOYEES, OFFICERS, DIRECTORS, AGENTS, ASSIGNS, REPRESENTATIVES AND SUCCESSORS, OR ANY OTHER PERSON OR ENTITY THAT MAY BE INVOLVED IN FACILITATING ANY USE AND ENJOYMENT OF THE RIVER REACHES INVOLVED IN THIS RECONNAISSANCE STUDY; AND (D) EACH AND EVERY OTHER PARTICIPANT IN THIS WHITEWATER BOATING STUDY.

4. I represent that:
- (a) I am 18 years of age or older;
 - (b) I am submitting this release and waiver voluntarily and of my own free will;
 - (c) I have no physical or emotional problems, nor any history of any such problems, that will impair my ability to participate in the activities of the proposed paddling feasibility study.
5. I recognize that neither Yuba County Water Agency, nor their affiliates, representatives, officers, directors, employees, agents, successors or assigns are providing liability, health or other insurance in connection with this whitewater boating study and I agree to assume all financial responsibility for any medical, rescue or other expenses that I may incur, and to defend, hold harmless and indemnify, Yuba County Water Agency, and its affiliates, officers, directors, employees, agents, successors and assigns for any liability, loss or damage, including attorneys' fees, that they may suffer should I pursue an action or claim that is waived or barred by this release and waiver.
6. I assume full responsibility for and agree to defend, hold harmless and indemnify Yuba County Water Agency and its affiliates, officers, directors, employees, agents, successors and assigns against claims, losses or judgments that may arise from any damage or harm that I may do or cause while participating in this whitewater boating reconnaissance.
7. I have carefully read this document and I understand its terms and legal significance. I understand that it is the express intention of this document to relieve the Yuba County Water Agency and its affiliates, officers, directors, employees, agents, successors and assigns from liability and responsibility for property damage, personal injury or death. I am providing this waiver, release and indemnification freely and voluntarily.

This waiver shall be binding upon me, my heirs, executors, representatives and administrators.

(Print Name)

(Date)

(Signature)

(Address and Telephone)