US Army Corps of Engineers®

Portland District
Bonneville Lock and Dam

2020 Guide for Researchers

Updated
05 August 2020

TABLE OF CONTENTS

INTRODUCTION

The purpose of this guide is to summarize some of the Corps of Engineers (COE) requirements for working at Bonneville Dam. There are many activities which must be coordinated at this project including: facilities operation & maintenance, construction, fish related research, and public visitation. Many of the research activities involve personnel who are not familiar with Corps requirements, or with the unique requirements of Bonneville Project. In addition, the requirements themselves change over time, particularly with regard to safety and security. Everyone's cooperation is required to insure the safety and security of all concerned.

TIMELINE

1. Researcher submits required access request documents to Project Biologists and Operations Manager, as appropriate, at least one month prior to the planned work start date.
2. Project Biologists review documents, provide comments, and request changes. The internal review process may take weeks.
3. Once internal review is complete, the Operations Manager will sign an approval letter. Researchers will receive an electronic copy via Project Biologists.
4. Once approval is granted, researchers may move forward with the required safety meeting and satisfying any necessary access needs.

KEY PERSONNEL

Some of the important project phone numbers listed below. The four-digit extensions are for use on the internal Project phone system, available at many locations around the project.

Control Room 541-374-8338
EXT 2221, 2222
EMERGENCY EXT 2223

Bonneville Operations Manager
Mike Adams 541-374-4550

Deputy OPM (Acting)
Mike Decker 541-374-4571

Chief of Maintenance
Alan Warner 541-374-8307

Chief of Operations
Ray Guajardo 541-374-4567

Resource Manager
Greg Webb 541-374-4556

Supervisory Fisheries Biologist
Ben Hausmann 541-374-4598
ben.j.hausmann@usace.army.mil

Fisheries Research Coordinator
Andrew Derugin 541-374-4020
Andrew.g.derugin@usace.army.mil

Ranger on duty EXT 2219, 2220

Security Clerk 541-374-4591

REQUESTING ACCESS

At least one month prior to the anticipated start date, anyone wishing to initiate fish-related activities at Bonneville Dam facilities should initiate an official request for access.

Researchers must first write the Bonneville Dam Operations Manager to request access. Please send a paper copy. This must be done annually for ongoing research programs. The letter should summarize the work planned and should indicate the extent of coordination completed. For example, one might indicate that the work is Corps-funded and that it is on Portland District's programmed list of approved research activities. This paper copy of the request should be sent to:

Operations Project Manager
U. S. Army Corps of Engineers
Bonneville Lock and Dam
P. O. Box 150
Cascade Locks, OR 97014

Please also send electronic copies of the request for access letter to the Columbia River Coordinator and Project Fisheries Research Coordinator(s). These electronic copies should be sent to:

Columbia River Coordinator
Erin Kovalchuk
Erin.h.kovalchuk@usace.army.mil

AND

Bonneville Fisheries Research Coordinator
Andrew Derugin
Andrew.G.Derugin@usace.army.mil
541-374-4020

In addition to the letter, other documents are required to be completed and approved prior to starting work. These documents should be submitted only to the Bonneville Fisheries Research Coordinator (above), who will be the point of contact and field any questions. The documents should include all applicable items from the following list:

1. A project work plan, including a detailed schedule of planned activities.
   An example of a research submittal which includes a project work plan can be found in Appendix B. It is important to coordinate changes in schedules, activities, personnel, etc, as they occur through the season.

2. A project impact statement.
   An example of a research submittal which includes a project impact statement can be found in Appendix B.

3. An activity hazard analysis (AHA).
   The AHA is an important requirement of the Corps' Safety Manual. A new hazard analysis must be provided for review and approval at the beginning of each year of research activity. If the scope or planned activities change through the year, a new AHA may be required. A fillable PDF AHA form is available through the Project Biologists or here.

4. An Accident Prevention Plan (APP).
   An APP is also required for all groups working at Corps facilities. For most research groups an abbreviated APP is sufficient. A checklist for what should be included in an APP is available through the Project Biologists. Note that not all sections of the APP will apply to all research projects. An example of an abbreviated APP can be found in Appendix C.

5. A Chemical Use Request Form and all Safety Data Sheets (SDS), when applicable.
   A Chemical Use Request Form must be submitted for review and approval by the Bonneville Environmental Team. All chemicals that the research unit anticipates using on the Project must be detailed. Safety Data Sheets (SDS) must be provided for all hazardous materials along with the use request form. Copies of these sheets must be made available to anyone working in the area. A copy of the form can be found here.

6. Appropriate ESA documents, when applicable.

7. State collector's permit, when applicable.
   Removing fish or wildlife from the Project requires a State collector's permit, a copy of which must be provided to the Project before research may commence.

   Whether or not a collector's permit is required, dead fish should be immediately reported to the Project Biologists for documentation.

8. Funding arrangements for project support, when applicable.

For work requiring physical project support, funding arrangements must be made before assistance can be provided. If your work requires project support, submit your requests to the Project Biologists. They will facilitate work requests for researchers.

9. Lists of boats, personnel and vehicles.

Each research group must provide lists identifying personnel and equipment. Vehicles must be identified by manufacturer, model, year, color, and license number. This includes government and personally owned vehicles that will be in restricted areas or on the Project outside of standard work hours (0600-1800 M-F). Boats that will be on the Project or in the boat restricted zone (BRZ) must also be listed and described by size and registration number.

Once all documents are received, the Bonneville Fisheries Research Coordinator will review the submission and may request modifications. Once all documents are received and have been accepted, the Research Coordinator will contact the applicant and provide them with a letter stating that their access request has been approved.

Work may not start until the Corps provides a written affirmative response.

PRE-WORK ORIENTATION

Once in receipt of the approval letter from the Corps of Engineers, activity study leaders and the Project Biologists will discuss all the items in the attached Fish Activities checklist as well as any other relevant matters.

Following the coordination discussion described above, and before the activity begins, the study leaders and Project Biologists will conduct a pre-work orientation meeting for all personnel involved. **This is an annual requirement for all activities whether on-going or new starts, and should be held well before the activity begins**. At the pre-work orientation meeting, be prepared to discuss work plans, communication, general and activity-specific safety considerations, and in particular the Project's Hazardous Energy Control Procedures (HECP).

Keys, ID badges, and parking permits will be issued at this meeting as well. Please request and fill out a Badge Request Form for all employees prior to arriving for your Pre-work meeting. Forms can be obtained from Project Biologists and may be e-mailed to the Project. All non-government vehicles will be issued a Project-issued parking pass, which must be hung from the rearview mirror.

PLEASE NOTE: Any and all fish-related activities at Bonneville Project must be coordinated with the Project Biologists. They will ensure compliance with all Corps requirements and identify any special situations that might be unique to the individual activities. Project Biologists will be the point of contact for any questions or concerns, and will coordinate any Project needs.

SECURITY REQUIREMENTS

All researchers wanting access to Bonneville must be US citizens with proof of citizenship. Foreign nationals must apply for clearance from USACE Headquarters. Be advised that it can take several weeks to approve access requests. Project Biologists will facilitate foreign national access requests.

Personnel must confine travels around the Project to their pre-determined work areas. Arrangements must be made with the Project Biologists to visit other areas of interest.

Keys:
Keys will be checked out to individuals to accomplish their approved work.

Badges:
Badges will be dispensed according to the activity, access needs, and duration.

- Persons accessing secure (non-public) areas for one day only, or on an intermittent basis, must obtain a Visitors Badge prior to entering the secure area. These must be returned each evening.
- Persons accessing secure areas for more than one day, but less than two consecutive weeks, will receive a temporary badge. These must be returned at the end of the temporary period.
- Persons who will be on project two weeks or more will receive a photo ID badge. These must be returned at the end of the activity period at Bonneville Dam. If a worker will be at Bonneville Dam for multiple summers, they must return all keys, badges, etc. at the end of each summer. They may not retain them until the following season.

All badges and keys MUST be returned to the Project Office at the end of the research activity. Failure to comply may impede future badge requests.

Visitors
Researchers must not bring any visitors on project without making prior arrangements with Project Biologists. This includes family members and guests. All visitors must be escorted by Bonneville Project personnel or attend an HECP talk. Please allow several weeks' advanced notice if bringing foreign nationals to the Project. Project Biologists will facilitate all visitor requests.

Before bringing any media representatives on-site, please call our Public Affairs Office at 503-808-4510. PAO personnel will discuss guidelines and check-in procedures. Failure to contact PAO, or provide two days advance notice, may result in a denial of access to the Project.

ADDITIONAL SAFETY REQUIREMENTS

The Corps' Safety Manual (EM 385-1-1) requires that:

1. Each research group must conduct weekly safety meetings.
2. Two people on each crew must be currently certified in first aid and CPR. Provide a list of all personnel's First Aid and CPR certification expiration dates to the Project Biologists.
3. Report all accidents to the control room immediately.

Depending on the specific activities being performed at Bonneville Project, specialized training may be mandated.

HECP: Bonneville Project uses OSHA-mandated Hazardous Energy Control Procedures (HECP) to reduce the hazards of working around high energy sources including electricity; pressurized air, oil, and water systems. Any researchers requesting permission to enter areas secured under the lockout/tagout HECP protocols must coordinate this request with the Bonneville Project Research Coordinator. An online training will be required. This training costs $55.00 and is available at http://contractor.vividlms.com/. Certifications from the course should be submitted to the Research Coordinator.

AFF Bridge Crane Operation: Individuals will have OSHA approved training for operating the bridge crane in the Adult Fish Facility (AFF). Researchers are responsible for organizing and funding this training. An on-site training location can be arranged by the Project Biologists.

Fall Protection Training: Any activity with a fall risk requires fall protection equipment and fall protection training. Any such activity must be coordinated with the Research Coordinator and must have an approved Fall Protection Plan. Researchers are responsible for their own training and must provide proof to the Research Coordinator.

Additionally:

Each research group is responsible for supplying their own general first aid supplies. Additional first aid supplies specified on Safety Data Sheets must also be supplied.

Research groups must properly store and dispose of chemicals and hazardous wastes. If a research group spills a chemical or hazardous material, they are responsible for cleaning up the spill. All spills are to be reported to the control room immediately.

Each research unit is responsible for providing their employees with appropriate safety equipment and training on the use of that equipment. If you have questions about what safety equipment will be required for your research, contact the Project Biologists.

Personnel must meet minimum dress requirements (long pants, short sleeved shirts, hard hat, safety shoes) while at Bonneville. The dress code applies in all non-visitor areas. The dress code is in effect all hours, even night shift. Failure to meet the minimum dress requirement may be grounds for dismissal from the project. Additional identifying dress (uniforms) may be required in some situations, such as when angling from dams in public view.

Smoking indoors is not permitted anywhere on the Project. Smoking shelters are provided at strategic locations for personnel protection from weather while smoking outside.

Bonneville Project has emergency warning sirens at each powerhouse. The signal warning system is described below. Be advised warning sirens may not be audible from all project locations. In the event of an apparent emergency, all personnel should evacuate the area and muster in the nearest upstream parking lot.

Bonneville Lock and Dam Emergency Siren Alarm

1. The emergency warning system for Bonneville Dam Project follows:

    a. In the event of a FIRE EMERGENCY the siren will sound continuously for 60 seconds.

    b. In the event of a MEDICAL EMERGENCY the siren will wail sound 1.0 second on and off 3 seconds for 60 seconds (15 complete cycles).

    c. Any other EMERGENCY (BOMB THREAT, FLOOD CONDITION, ETC.) the siren will wail sound 5 seconds on and off 10 seconds for 60 seconds (4 complete cycles).

2. It will be followed by the code call ringing for location as follows.

    a. 5-5-5 Navigation Lock and South Shore Area.
    b. 6-6-6 Robins Island and PH-1.
    c. 7-7-7 Bradford Island to the North end of the Spillway.
    d. 8-8-8 All areas North of the Spillway.
    e. 9-9-9 Recall, Emergency Over

BOAT REQUIREMENTS

Boat-related work in the Bonneville forebay or tailrace is a specialized activity with particular safety considerations. Bonneville Project has established a Boat Restricted Zone (BRZ) around the major structures of the project (Figure 1). These areas of the river are very dangerous and are designated by signs. No boats may enter the BRZ without prior approval and a BRZ entry permit.

The BRZ entry permit must be requested through a Project Biologist. Please allow several weeks to gain approval. The Chief of Operations will issue the permit and may require specific restrictions on operations or boat access dependant on the situation. Researchers granted a BRZ permit must follow specific protocols which are defined in the Bonneville Lock & Dam Boat Restricted Zone Policy. This document will be provided by a Project Biologist and is available upon request.

Since boat work in the BRZ requires equipment that contacts river water, the submitted activity hazard analysis must include a section which details measures to prevent the accidental spread of invasive species. Acceptable measures, online training, and certification are detailed at the following websites:
http://protectyourwater.net/prevention/prevention_generic.php;
http://www.100thmeridian.org/certificate.asp.

After the BRZ permit is issued, all personnel conducting work under the BRZ permit are required to attend a pre-work BRZ meeting with a Project Biologist before any corresponding work may commence. This BRZ meeting is NOT the same as the pre-work orientation and will be specific to the boat-related activity.

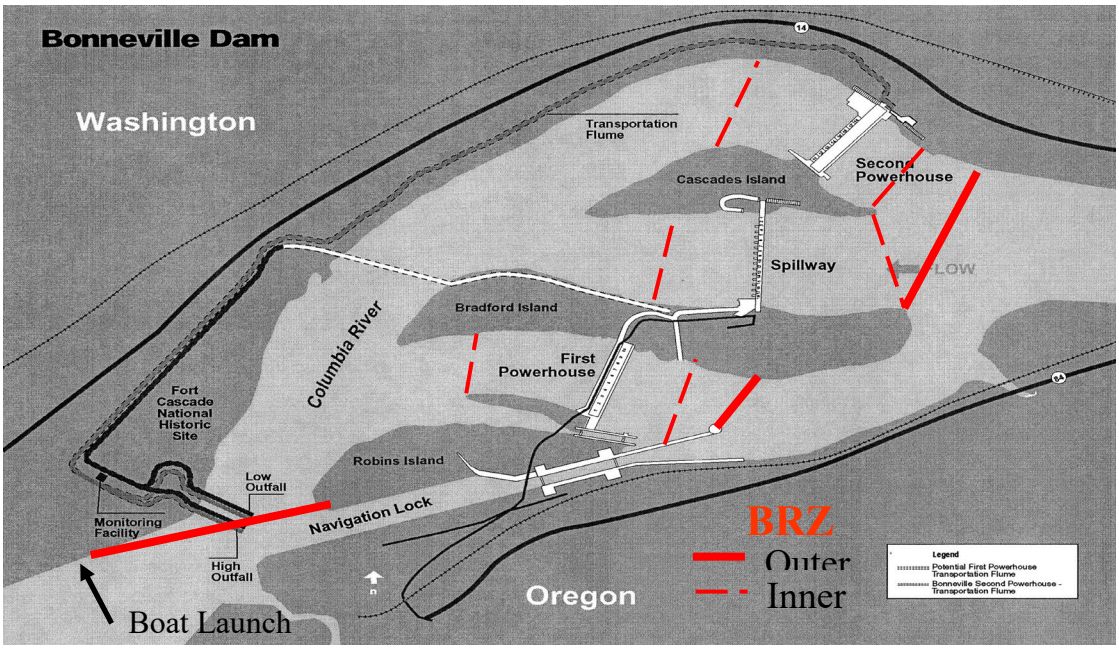

Figure 1. **Bonneville Boat Restricted Zones**

OTHER CONSIDERATIONS

Construction and cranes

All plans for fish related construction on Project, including minor modification of structures (such as wall mounts, handrails, etc.), must be coordinated through the Project Fish Biologists and if necessary the Bonneville Construction office. Construction may not begin until the proposal is approved.

All crane operation must be approved by the Chief of Maintenance. Cranes must meet all Corps safety requirements and must be tested under the direction of the Chief of Maintenance. Likewise, crane operators must be approved by the Chief of Maintenance.

Adult fish facility

The adult fish facility (AFF) has an additional set of guidelines and rules set forth in Appendix G of the Fish Passage Plan, which can be found online. Researchers working in the AFF will need to be familiar with these rules, how to operate the facility, and must coordinate their work with Project Biologists. Failure to follow the rules can result in mis-operation of the facility with serious impacts to migrating fish such as passage delay, injury, and an associated increase in pre-spawn mortality.

Due to these serious repercussions, two major errors in AFF operation by a researcher will be cause to have that researcher's access to Bonneville Project revoked.

Working in hazardous areas

Many areas of the dam are extremely hazardous and require special considerations and coordination for the safety of all workers. This includes but is not limited to: gantry crane bus lines that run along the parapet walls, any construction areas, any work on the water side of handrails or on riprap, around avian wires when boating, and any long-line fishing areas.

We encourage all researchers to remember that the dam is a working industrial site, and as such most areas of the dam have the potential for harm for individuals not familiar with the facility or with the current work schedule at BON, which changes daily. Please coordinate all your work, including changes as they occur, with the Project Biologists.

SENSITIVE AREAS

Fishways. Activities that might impact fish passage are not allowed near fishways without prior coordination and approval. Activities that can potentially cause material or pollutants to fall into fishways, or generate noise that can cause fish to delay in passing must be coordinated through the Project Biologists. In addition, parking vehicles on grating over fishways (e.g. PH1 tailrace deck) is prohibited in order to prevent contaminants from dripping into the fishway. If long-term parking on the grating is necessary it must be approved by the Project Biologists and will require special measures such as drip pans.

Bird protection areas. Certain areas are restricted to prevent interference with Canada Geese. These areas are shown Figure 2 and Figure 3. Goose nesting areas should not be disturbed between 1 March and 30 June. In addition, swallows and their nests are protected under the Migratory Bird Treaty Act.

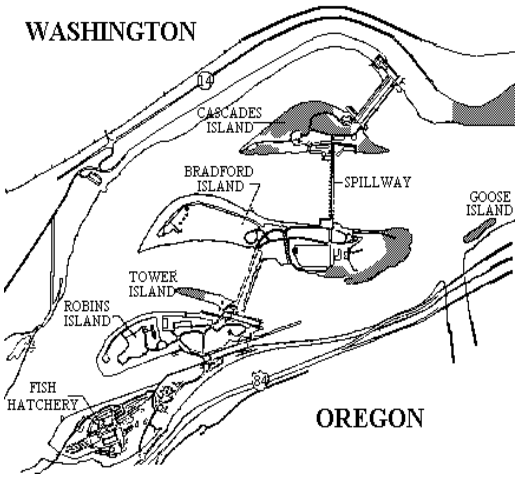

Figure 2. Bonneville Dam wildlife protection areas.

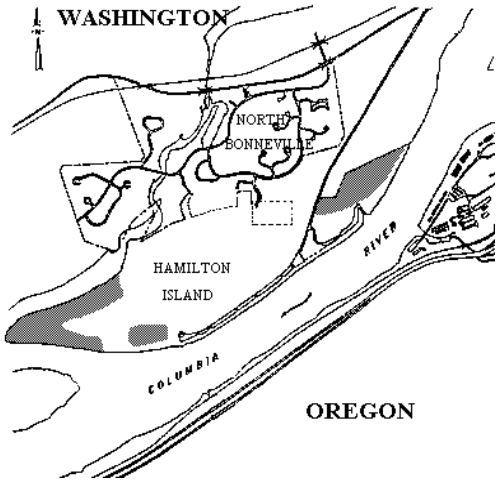

Figure 3. Hamilton Island wildlife protection areas.

The shaded areas in the figures above designate where activity is discouraged, especially during March through June. This is the goose nesting and rearing season. Wildlife areas continue to be used at least intermittently by various animals, including geese, through the rest of the year. Researchers should be cautious in these areas to not cause unnecessary disturbance.

REFERENCES

For more information, please refer to the following documents. One of the purposes of this Guide for Researchers is to summarize requirements defined in more detail in the following documents. Where discrepancies occur it should be understood that the Guide carries less authority than the references.

- OSHA safety requirements can be found in 29 CFR 1910, 1926 and 1960.
- Corps of Engineers safety requirements are provided in the Corps' Safety Manual #EM 385-1-1 dated 30 November 2014. It can be accessed online.
- The Project has supplements to the safety manual describing control of hazardous energy and confined space entry. Researchers must understand that these procedures are to ensure safety and that failure to comply could cause fatalities and destruction of equipment.
- All researchers must comply with Title 36, CFR. (Corps pamphlet EP 1165-2-316 dated May 2000)
- Memorandum subject: Bonneville Lock and Dam, Security Plan, dated 30 October 2014.
- Bonneville Project document: Bonneville Lock & Dam Boat Restricted Zone Policy revised January 2007.

Researchers should be aware that guidance concerning project operations for fish is provided in the Fish Passage Plan (FPP). Fish related activities must not conflict with requirements listed in the FPP without special coordination.

Appendices

BONNEVILLE PRE-WORK CHECKLIST

Research group _____Research activity _____

BRZ permit # _____

Point of contact _____ /phone: _____

BON point of contact _____ /phone: _____

Anticipated start date _____Anticipated end date _____

Activity area _____

- ☐ Letter to Chief of Operations
- ☐ Response from Chief of Operations
- ☐ Work plan
- ☐ Detailed schedule of activities
- ☐ Statement of impacts to the project, project support needs, storage, parking
- ☐ Funding arrangements for project support
- ☐ Activity hazard analysis
- ☐ Accident Prevention Plan
- ☐ Safety Data Sheets (if applicable)
- ☐ Appropriate ESA documents (if applicable)
- ☐ State collector's permit (if applicable)
- ☐ Complete list of personnel, vehicles, and boats
- ☐ First aid/CPR certification (expiration dates?)
- ☐ Attended hazardous energy safety training (annual requirement) _____
- ☐ Pre-work orientation meeting _____
- ☐ Gate/Door keys issued _____
- ☐ Photo ID badge
- ☐ Parking permit

Appendix B: Example researcher access request

SAMPLE RESEARCH PACKET/PROJECT IMPACTS DOCUMENT

PROJECT IMPACTS OF THE PRELIMINARY EVALUATION OF FISH BEHAVIOR PASSING THROUGH SUBMERGED ORIFICES WITH AND WITHOUT PIT TAG DETECTORS INSTALLED

Fisheries Field Unit

U.S. Army Corps of Engineers, Portland District
Bonneville Lock and Dam
Cascade Locks, OR 97014
(541) 374-8801

PRELIMINARY EVALUATION OF FISH BEHAVIOR PASSING THROUGH SUBMERGED ORIFICES WITH AND WITHOUT PIT TAG DETECTORS INSTALLED

Background

Installation of adult Passive Integrated Transponders (PIT) tag detectors at Columbia River dams is required by the Supplemental Biological Opinion Incidental Take Statement 3.e. (1998). The impact of adult PIT tag interrogation systems on adult fish passage needs to be evaluated before full scale PIT tag detectors can be installed. In addition, the accuracy of the detectors needs to be tested.

Lamprey passage, in addition to salmonid passage, has become an issue with the adult fish passage evaluation program for the lower Columbia River dams. About 70% of the tagged lamprey that enter the fishways at Bonneville dam do not pass (Steve Ley, personal comm.). Additional information is needed on the problems encountered by lamprey attempting to pass ladders designed for salmonids. Many researches have requested video of lamprey passage through submerged orifices, overflow weirs, and other portions of adult fishways. This study can supply that information as a secondary benefit of this work.

This is expected to be a long-term study that is anticipated to last through December 2003. The FFU conducted the preliminary work on this study in 1999 and 2000. Prior to that, the FFU did an underwater evaluation of fish passage in 1993 and 1994.

OBJECTIVES

Establish historic, baseline data concerning passage routes of fish through a literature review regarding proportions of fish passing through submerged orifices vs. overflow section of weirs.
Determine if the behavior and proportions of fish passing through submerged orifices and overflow sections is different in a normal weir than they are in a weir in which one of the orifices has a PIT tag detector installed. Behaviors to be examined includes proportions of fish passing through north or south orifices or overflow sections, fallback rates, hesitations, and approach and exit orientation through the orifice. (H_o) There is no significant difference in passage between orifices and overflow sections of weirs, whether with or without PIT tag detectors.
Determine the efficacy of adult PIT-tag detectors in tag enumeration of sample fish using visual verification, by means of video technology, of PIT-tagged fish passing the detectors.

METHODS

For Objective 1. For 2001, underwater and overhead cameras will be need to be installed to observe submerged orifices and overflow sections. Overhead cameras will be used to observe overflow weir passage simultaneously with underwater videos to determine the proportion of fish using the overflow weir. Sites for the video cameras will be 37, 51, 52, 53, and 56 in the Washington shore ladder, weirs 50 and 51 in the A branch, and weirs 50 and 51 in the B branch. We will be recording the spring and fall runs to determine the proportions of fish passing through the orifices and the overflow sections of the weirs. Recording will take place for approximately two weeks during the peak of each run, for a total of about four weeks of recording during the fish passage season. We will be recording all species of salmonids, shad, and lamprey. Four cameras for each weir, two underwater cameras and two overhead cameras, will be used at one time. To improve visibility and aid in identifying fish, we will paint the floor of the ladder and the top of the weirs white. The information we obtain from observing the behavior of fish used to determine usable locations for PIT tag detectors.

Objective 2. The PIT tags and the housing for them will be installed by the National Marine Fisheries Service. Video taping will be done for approximately two weeks with an equal number of hours recorded of weirs with and without PIT tag detectors. The video tapes will be viewed to determine if there is any difference in numbers or behavior of fish in passage at the weirs with PIT tags and numbers or behavior in passage at weirs without PIT tag detectors. Behaviors that will be looked for include any differences between the weirs with or without PIT tag detectors (or just the housing) in avoidance or reluctance to pass, percent passing over the overflow section compared with going through the orifice, and jumping rather than swimming over the weirs.

Objective 3. In 2001, fish collected at the Adult Fish Collection and Monitoring Facility will be tagged with PIT tags by NMFS personnel. In addition, visual detachable streamer tags and other visual cues will be applied to the fish prior to their release and exit from the facility. The four underwater and four overhead cameras that are installed at weirs in the Washington shore ladder will film these fish and the video tape will be viewed to verify the accuracy of the PIT tag units to detect the presence of PIT tagged fish.

Justification of the Proposed Study Area

Bonneville Dam will be used because it is the first dam upstream on the Columbia River and slated to be the first dam outfitted with adult PIT tag detectors. In addition, Bonneville Dam has an adult fish collection facility where fish may be easily collected and tagged. Radio-telemetry work, which is already being done at Bonneville, would also help answer any concerns about the underwater cameras effecting fish passage. In the Washington shore ladder, weirs 52 and 53 will still be used because it is near ac power and not far down to the water's surface. Weir 37 will be used for the verification

portion of the study as it is near the adult collection facility and we will be able to observe the behavior of fish shortly after they have been released from the lab. We can then compare fallback behavior of fish released from the lab with fish that have not been trapped. In addition, the selected weirs in the Washington will be where the PIT tag detectors will be installed. The A branch and B branch were selected in order to obtain base line data on fish behavior at the weirs. These particular weirs were chosen because they are not far from an available power source, which we will need for our trailer.

SCHEDULE

During the winter of 2000/2001, we will mount the camera guides and paint the floors of the ladder around the orifices and the top of the overflow sections at the Bonneville Dam Washington shore ladder and in the A and B branches of the Bradford Island fish ladder. In the Washington shore ladders, we will install camera mounts on weirs 37, 51, 52, 53, and 56. To install camera mounts and, later, cameras on weir 37, we will need crane time six to ten times during the season. In addition, we will also need to remove the mounts we used last year from the Cascades Island fish ladder. The transformer at the Cascades Island site will, however, remain.

During the peak of the spring run, probably in May, we will video-tape the overflow sections and orifices for approximately two weeks at each test weir. The same will follow for the peaks of the fall run. We will also video-tape fish passing over weir 37 whenever NMFS personnel release fish tagged with PIT, Peterson, and streamer tags. Tapes will be read as they become available. In addition, various cameras, camera angles, deployments, and times of day will continue to be tested throughout the year for efficiency of viewing and identification of fish. When the video taping in September is completed, the camera and mounts will be removed.

FACILITIES AND EQUIPMENT REQUIREMENTS

A transformer and electric hookup, as well as space, for the FFU trailer near the junction pool on the B branch site on Bradford Island. The transformer will be in addition to the one left at the Cascades Island site.
Access to the Cascades Island, Washington shore, and A and B branch fishways during the winter maintenance season.
Permission to use the office in the adult lab to store our equipment and for office work. The FFU will furnish the desks and any other office supplies.

PROJECT IMPACTS

Project Services

During the maintenance season, we will need access to the Washington shore and the A and B branches fish ladders in order to paint the floor and weir tops of the fish ladder and to install the camera mounts. We will also need access to the Cascades Island fishladder in order to remove the camera mounts that we used last year.
We will need crane service six to ten times during the season to install cameras at weir 37 in the Washington shore ladder.
We will need the FFU trailer moved from Cascades Island to the B branch site, near the junction pool.

Security

Project security issues involve access to the study areas by FFU personnel and vehicles. Primary work areas will be the Washington shore ladder and the A and B branches of the Bradford Island fishway. The viewing of the video tapes will be done either at the FFU office or the FFU storeroom located in the second powerhouse. Any video-tape viewing by contract personnel will be done off the project. As the workers on this project will be Corps employees, all personnel will be familiar with project regulations concerning security. Should it become necessary for one of us to change the video tape during none business hours, the control room will be notified.

Because one of the camera sites will be accessible to tourists, there is a potential security problem from the public. This site is the by the A branch, on the downstream side. During the hours the project is open to the public, measures will need to taken to protect the camera equipment.

Safety

All personnel will read the Corps of Engineers General Safety Requirements Manual #385-1-1. In addition, monthly safety meetings will be held and the list of topics covered will be provided to the Project Fish Activity Coordinator. More frequent safety meetings specific to this study should not be necessary as we plan to collect data for only one week out of each month. The list of personnel and the expiration dates of their First Aid and CPR expiration dates is attached.

The Activity Hazard Analysis is attached.

EXAMPLES OF LISTS FOR BOATS, PERSONNEL AND VEHICLES

REG.	NAME	LENGTH	AGENCY	ACTIVITY	POC
OR 111AB	TULE	16	NMFS	PH1 FGE	BROWN, BOB
OR 222BC	TYEE	26	NMFS	PH1 FGE	TROUTMAN, SUE

Figure 4. Suggested Format for Boat List.

			EXPIRATION	
NAME	AGENCY	ACTIVITY	1ST AID	CPR
BROWN, BOB	NOAA-F	PH1 FGE	6/30/04	6/30/04
GILL, MARCUS	NOAA-F	PH1 FGE	6/15/04	6/30/04
SALMON, SAM	NOAA-F	PH1 FGE	6/15/04	6/30/04
TROUTMAN, SUE	NOAA-F	PH1 FGE	6/15/04	6/30/04

Figure 5. Suggested Format for Personnel List.

LICENSE	ST	DESCRIPTION	COLOR	AGENCY	OWNER	POC/CREW BOSS
101-AAA	OR	VOLKSWAGON	RED	NOAA-F	BROWN, BOB	BROWN, BOB
202-ABB	WA	FORD BRONCO	WHITE	NOAA-F	SALMON, SAM	BROWN, BOB
303-ACC	GOV	SUBURBAN	SILVER	NOAA-F	US GOV'T	BROWN, BOB

Figure 6. Suggested Format for Vehicle List**.**

Appendix C: Example Abbreviated Accident Prevention Plan

Accident Prevention Plan
Bonneville Dam – 2014

Agency
Study/Activity

DATE

Prepared by: **NAME**
TITLE
AGENCY
PHONE

Signature of preparer

Approved: **NAME**
TITLE
AGENCY
PHONE

Signature of approver

Accident Prevention Plan
Bonneville Dam - 2014

AGENCY
ACTIVITY

I. Preparer: NAME
TITLE
AGENCY
GROUP
PHONE

II. Project: STUDY TITLE

BACKGROUND INFORMATION should be provided here. It should include:

1. Agency name
2. Brief project descriptor
3. Location of the project (map if appropriate)

The following should also be addressed:

4. Means of evaluating the work and associated hazards
5. Address the identified hazards and the control measures to be taken.

EXAMPLE:
Safety concerns at the AFF include:

- Use of overhead crane to move fish transport tank in and out of the AFF building could result in serious injury to personnel if tank hits or falls on someone.
    - OUR AGENCY personnel that will be operating the crane have received training in crane operation and safety and have been certified in its use.
    - All AGENCY personnel working in the AFF will wear hard hats, long pants, and steel-toed boots and will be trained in the protocol for safe movement of the transport tank in and out of the building (e.g. vacating the area where the tank will be traveling, etc.).
- Trip/fall hazards on stairs and walkways.
    - All AGENCY personnel will receive orientation/training in AFF operations from Corps staff and be familiar with OUR AGENCY's Fall Protection Plan.
    - Use handrails and do not go on unprotected walkways.
    - OUR AGENCY personnel operating the crane during fish transport tank movement in/out of the building will wear a safety harness and retractable life line to protect against fall hazard on bay door walkway when guard rail is removed

and gate is opened. Proper donning and use of the safety harness and life line was covered during Fall Protection Training.

- Improper operation of weir gate winches can lead to uncontrolled spinning of the winch handle which can strike a person.
    - All AGENCY personnel will receive training in AFF procedures (including start up/shut down procedures) from Corps staff, including proper operation of the winches.
- Tagging fish with sharp needles that can penetrate skin.
    - All AGENCY personnel will be trained in proper tagging procedures and used needles will be disposed of in biohazard containers.
- Backing a vehicle with a trailer mounted fish tank can result in injury to personnel if struck by the trailer.
    - A spotter will be used to safely guide the trailer and warn the driver of any hazardous situations.

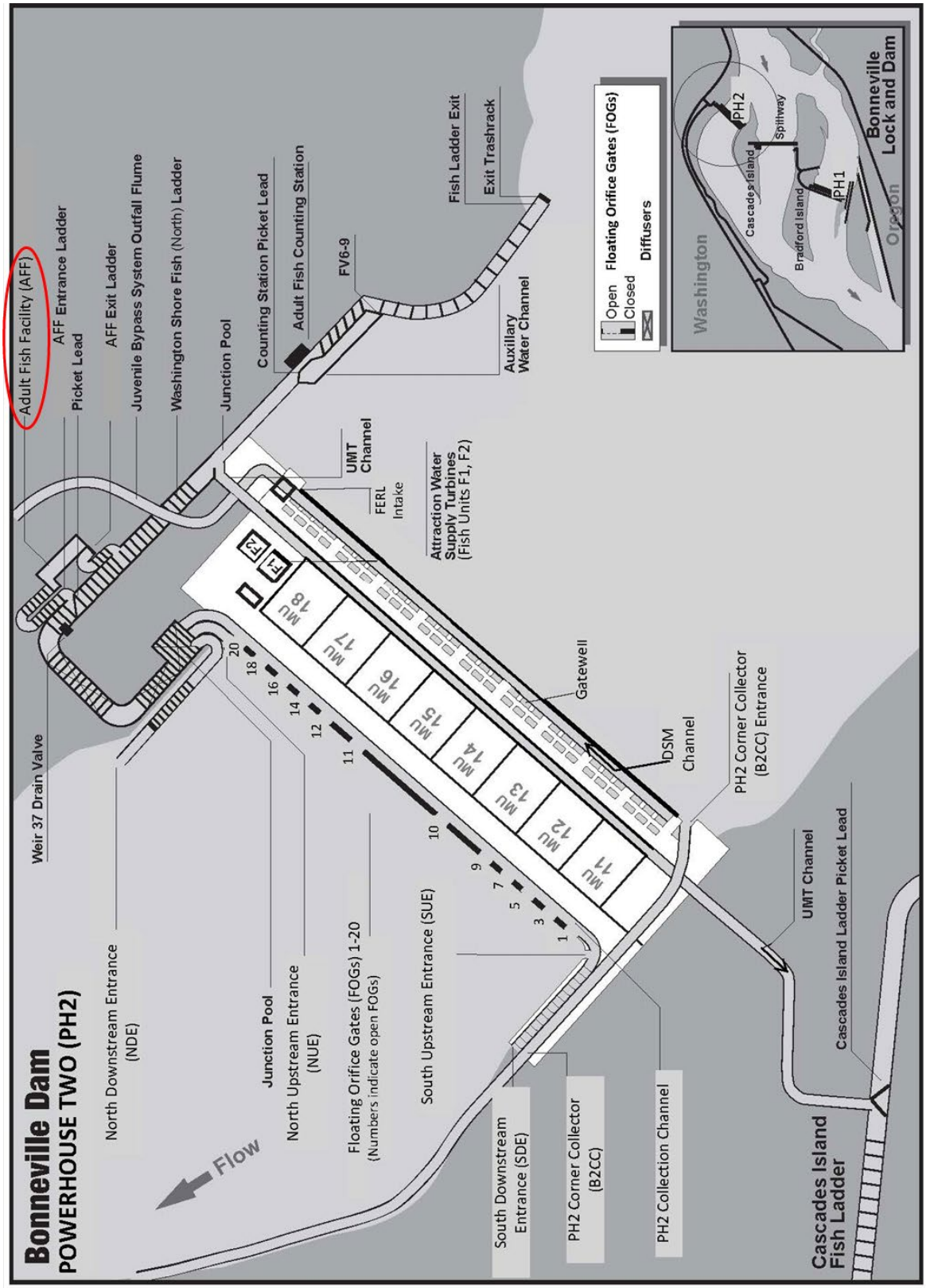

Figure 1. Project location at Bonneville Adult Fish Facility.

III. Safety and Health Policy: STATEMENT OF SAFETY AND HEALTH POLICY

Example: OUR AGENCY actively promotes safety awareness and safe work practices for all its employees. OUR AGENCY safety policies cover a wide range of activities and work situations. All new employees are required to read and familiarize themselves with those policies that apply to their position. OUR AGENCY's safety policies are available on the internal agency website for employee reference. In addition to OUR AGENCY's safety policies, OUR AGENCY employees must also adhere to federal OSHA and OUR STATE's OSHA requirements, as well as to the USACE Safety and Health Requirements (EM 385-1-1).

IV. Responsibilities/Line Authority: The AGENCY Safety Manager, NAME, is responsible for …. The FIELD MANAGER is responsible for…. (once a week safety meetings, etc). Any safety violations are documented and reported to NAME for corrective action. Our work site Administrative Assistant, NAME, keeps track of employee training records. Etc.

V. SOH (Safety and Occupational Health) Training of New Hires and Retraining/Recertification Requirements:

VI. Procedures for Job Site Inspections, Responsibilities and Frequency: The AGENCY crew lead (NAME) will inspect the AGENCY, SITE for…. It is also the responsibility of all personnel to …. Etc.

VII. Procedures for Reporting Work Hours/Reporting and Investigating Accidents: Include responsible parties NAMES and TITLES.

The AGENCY project supervisor will contact USACE project staff within 24 hours if an accident should occur. Any serious accidents requiring emergency medical services will be reported immediately to the Control Room.

VIII. Emergency Planning: In case of (medical, environmental, agency) emergency…. Include plans for employees working alone. EXAMPLE: Crew leaders (NAMES) will use cell phone numbers to keep in contact with distant crew members should a severe weather or emergency evacuation event occur.

IX. Drinking Water Provisions, Toilet, and Washing Facilities: EXAMPLE: Available at the AFF.

X. First Aid and CPR: At least two people (NAMES) on the crew will be first aid/CPR/AED certified. First Aid kit (type, size) locations are….

XI. Personal Protective Equipment: All AGENCY personnel will wear hard hats, long pants, and steel-toed boots when working at the AFF. When operating the overhead crane to move fish

transport tanks into and out of the AFF, personnel will wear a safety harness and retractable life line.
Description of necessary PPE for power tools, hearing protection, visible wear etc. Training of donning and use of PPE….

XII. Machine Guards and Safety Device: N/A

XIII. Hazardous Substances: EXAMPLE: AGENCY personnel will be working with a chemical fish anesthetic (Aqui-S 20E). They will familiarize themselves with the safety data sheet for this chemical and be trained on its proper use and handling. AGENCY personnel will also be using large gauge hypodermic needles to inject tags into fish. They will be trained in proper tagging techniques and used needles will be placed into biohazard containers.

Other hazards and means of mitigation….

XIV. Traffic Control: EXAMPLE: When backing the fish transport tank trailer, a spotter will be used to safely guide the trailer into position.

XV. Control of Hazardous Energy and Lockout/Tagout: All AGENCY personnel will attend a pre-work safety meeting with project staff and abide by lockout/tagout rules. For personnel locking onto a clearance, special considerations….

XVI. Driving and Working with Equipment on Slopes or from a Boat: Considerations and how they will be dealt with. EXAMPLE: There is a moderate slope in the AFF parking area where the fish transport tank will be trailered. A spotter will be used when backing down this slope, and the emergency brake set when the vehicle is parked.