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To: [Bitterman, Deborah;](#)
Subject: FW: Draft Aquatic Invasive Species Monitoring and Control Report
Date: Thursday, February 23, 2012 10:38:14 AM
Attachments: [Draft Report 2-22-2012.docx](#)

Please post to web.

From: Frantz, Waikele M.
Sent: Wednesday, February 22, 2012 4:24 PM
To: 'Bob Huber (bob.huber@alcoa.com)'; 'Bob Rose (brose@yakama.com)'; 'Jerry Marco (jerry.marco@colvilletribes.com)'; 'Keith Vradenburg (kvradenburg.city@entiat.org)'; Pat Irle; Osborn, Jeff; 'Reed Glesne (Reed_Glesne@nps.gov)'; 'Steve Lewis (Stephen_Lewis@fws.gov)'; Chad Jackson
Subject: Draft Aquatic Invasive Species Monitoring and Control Report

PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY
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To: Bob Huber, ALCOA
Bob Rose, Confederated Tribes and Bands of the Yakama Indian Nation
Chad Jackson, Washington Department of Fish and Wildlife
Jerry Marco, Confederated Tribe of the Colville Reservation
Keith Vradenburg, City of Entiat
Pat Irle, Washington Department of Ecology
Reed Glesne, National Park Service
Steve Lewis, US Fish and Wildlife Service
Jeff Osborn, Chelan County PUD

From: Waikele Frantz, Environmental Permit Coordinator
Public Utility District No. 1 of Chelan County (Chelan PUD)

Re: Rocky Reach Hydroelectric Project No. 2145
License Article 401 - Draft 2011 Aquatic Invasive Species Monitoring and Control Report

Rocky Reach Fish Forum Representatives:

In accordance with Article 401 of the Rocky Reach Hydroelectric Project License and the 401 Water Quality Certification, Chelan PUD invites comments on the attached Draft Aquatic Invasive Species Monitoring and Control Report (AIS Report).

Please submit your comment letters on or before 5:00 p.m., March 24, 2012 to me via email at waikele.frantz@chelanpud.org.

Pursuant to the FERC Order Approving and Modifying Aquatic Invasive Species Monitoring and Control Plan, Chelan PUD will file the Final AIS Report with FERC by March 1, 2012.

All received comment letters will be appended to the final AIS Report.

If you have any questions, please do not hesitate to contact me.

Thank you,
Waikele Frantz (formerly Hampton)
509-661-4627

2011 AQUATIC INVASIVE SPECIES MONITORING AND CONTROL REPORT

DRAFT

**ROCKY REACH HYDROELECTRIC PROJECT
FERC Project No. 2145**

February 22, 2012



**Public Utility District No. 1 of Chelan County
Wenatchee, Washington**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
SECTION 1: INTRODUCTION	2
SECTION 2: 2011 implementation results	3
2.1 Educational Outreach	3
2.2 AIS Plant Monitoring	3
2.3 AIS Control/Management Activities	3
2.4 AIS Animal Monitoring	4
SECTION 3: 2012 action Plan	5
3.1 Educational Outreach	5
3.2 AIS Plant Monitoring	5
3.3 Boat Launch Monitoring	6
SECTION 4: RESPONSE AND COORDINATION	8
LITERATURE CITED	9
APPENDIX A: AIS Monitoring and Control Plan	
APPENDIX B: Consultation Record	

LIST OF TABLES

Table 3-1. Implementation Schedule	5
Table 4-1. Contact List for AIS Response	8

EXECUTIVE SUMMARY

The Public Utility District No. 1 of Chelan County (Chelan PUD) owns and operates the Rocky Reach Hydroelectric Project (Project) on the Columbia River. The Project is operated under the terms and conditions of Federal Energy Regulatory Commission (FERC) Hydroelectric Project License No. 2145.

Chelan PUD currently operates the Project through the coordinated operation of the seven-dam system and other Columbia Basin entities with current operational agreements with the fishery agencies, tribes and other operators to provide protection and enhancement for a range of fisheries within, and downstream of the Project. These agreements include the Hanford Reach Fall Chinook Protection Plan, the Hourly Coordination Agreement, and the Rocky Reach Habitat Conservation Plan (HCP) (and associated Anadromous Fish Agreement). The Project is also subject to the provisions of its FERC License (License), which includes several provisions of the 2006 Rocky Reach Comprehensive Settlement Agreement, and related laws and regulations. Additionally, the Project is subject to the requirements (incorporated by reference in the License) of the Biological Opinion for the Project issued by National Marine Fisheries Service (NMFS) for its effects on anadromous salmon, the Clean Water Act Section 401 Water Quality Certification issued by the Washington Department of Ecology (WDOE), and the Biological Opinion issued by the U.S. Fish and Wildlife Service regarding the effects of the Project on bull trout.

The WDOE issued a Final 401 Water Quality Certification (401 Certification) on April 4, 2006, for the operation of the Project. Under the 401 Certification, Section 5.6(2), Chelan PUD is required, in consultation with the Rocky Reach Fish Forum (RRFF), to develop and implement an Aquatic Invasive Species (AIS) Monitoring and Control Plan (Monitoring Plan) within one year of effective date of the new License. The Monitoring Plan shall also be coordinated with WDOE's Freshwater Aquatic Weed Control Program. The plan is also required under License Article 401(a) and must be approved both by WDOE and by FERC prior to implementation. The Monitoring Plan was approved by FERC on January 14, 2011. In addition, Section 5.6(2) of the 401 Certification requires the submittal of an annual report of monitoring and educational activities conducted each year, while the FERC Order approving the Monitoring Plan requires the submittal of the same report by April 1 of each year.

The following report contains a summary of monitoring and educational activities conducted in 2011 and proposed actions to be implemented in 2012.

SECTION 1: INTRODUCTION

Public Utility District No. 1 of Chelan County, Washington (Chelan PUD) owns and operates the Rocky Rocky Hydroelectric Project (Project), located on the Columbia River (Figure 1). The Project boundary, which extends for about 43 miles along the Columbia River, begins at the Project tailrace (River Mile [RM] 474) and extends upriver to the Wells Dam tailrace at RM 516 (Figure 1).

The Project consists primarily of an 8,235-acre reservoir; a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the river, including a powerhouse and spillway; a juvenile fish bypass system, and hatchery facilities.

The WDOE issued a Final 401 Water Quality Certification (401 Certification) on April 4, 2006, for the operation of the Project. Under the 401 Certification, Section 5.6(2), Chelan PUD is required to develop and implement an Aquatic Invasive Species (AIS) Monitoring and Control Plan (Monitoring Plan) (Appendix A) within one year of effective date of the new License. This same section also requires Chelan PUD to submit to WDOE an annual report of Aquatic Invasive Species monitoring and education activities conducted each year.

On February 19, 2009 the Federal Energy Regulatory Commission (FERC) issued its Order On Offer of Settlement and Issuing New License (License) for the Rocky Reach Hydroelectric Project for a term of 43 years to Chelan PUD (License term ends February 1, 2052). Article 401 of the License Order, like the 401 Certification, requires Chelan PUD to develop and implement an Aquatic Invasive Species Monitoring and Control Plan within one year of the effective date of the new License. On January 14, 2011 the Federal Energy Regulatory Commission (FERC) issued its Order Modifying and Approving Aquatic Invasive Species Monitoring and Control Plan Pursuant to Article 401 and Condition 5.6(2). The Order requires Chelan PUD to file annual monitoring reports with the Commission by April 1 of each year. The report shall include: 1) the previous year's monitoring and control activities; 2) any proposed and needed changes to the monitoring plan to be implemented the following year, based on the previous year's results, any new scientific information, or its coordination with Washington Department of Ecology (WDOE) and the Rocky Reach Fish Forum; and 3) documentation of consultation or comments received from WDOE and the Rocky Reach Fish Forum on the annual report and documentation of their agreement with the proposed monitoring and control measures for the following year.

SECTION 2: 2011 IMPLEMENTATION RESULTS

2.1 Educational Outreach

One component of Chelan PUD's Monitoring Plan is to provide educational opportunities for the public about the risks involved with AIS. In 2011 this included distribution of educational materials at Rocky Reach boat launches consistent with Section 5.6(2)(a) of the 401 Water Quality Certification issued by Ecology on April 4, 2006, which requires the following:

“Signage at boat launches and distribution of educational materials and boater questionnaires to voluntary participants at Rocky Reach Reservoir boat launch sites during the peak boating season (May 1 – October 30 each year) to increase boater awareness of dangers of spreading AIS, including the methods one can take to decrease the spread of AIS (e.g. clean the weeds off the boat and drain the live well before going to a new waterbody).”

In 2011 Chelan PUD utilized existing kiosks and signage at boat launches within the Project to distribute educational material during the peak of the boating season (May 1–October 30). Boat launch sites where educational material was distributed included Lincoln Rock and Daroga State Parks, Beebe Bridge Park, Entiat Park, and Orondo River Park. Educational materials placed at each site consisted of free pamphlets and signs. The goal of these educational materials is to increase public awareness of the dangers of spreading AIS, as well as how its spread can be reduced and/or prevented.

The pamphlets and boat launch signs used to educate the public were obtained from WDFW and the U.S. Fish and Wildlife Service (USFWS) to keep the signage used in the Project consistent with the other AIS signs used throughout Washington State. The educational material clearly presents ways to avoid the spread of AIS (e.g., by removing and disposing of the weeds off the boats and trailers, and draining the live wells prior to moving to another water body).

Prepared self-surveys were not distributed in 2011, as Chelan PUD continued to modify and update the form created by the 100th Meridian Initiative. The self-surveys will be distributed in 2012 (see Section 3: 2012 Action Plan).

2.2 AIS Plant Monitoring

Because monitoring of both present and new AIS flora is an important component to AIS management, the approved Monitoring Plan includes monitoring the entire Columbia River corridor portion of the Project to the ordinary high water mark (OHWM) on the shoreline every other year and all Project boat launches annually for AIS plants. One of the desired outcomes of this monitoring is to establish a baseline map of where macrophyte beds currently occur. These monitoring efforts were scheduled to begin the first year following WDOE and FERC approval of this Monitoring Plan, which would have been 2011; however, this monitoring was not conducted as planned due to sustained high water levels that retarded the development of aquatic weed beds and made their observation very difficult. Because these conditions were not conducive to establishing a baseline of existing aquatic weed bed conditions in the Project, Chelan PUD made the decision to delay implementation of monitoring for one year. Conditions allowing, Chelan PUD will implement the monitoring of AIS Plants in 2012 (see Section 3.2).

2.3 AIS Control/Management Activities

Currently, the only known AIS plants established within the Project area are Eurasian water milfoil and curly-leaf pondweed. Note that terrestrial, wetland, and/or riparian zone AIS plants are currently monitored, managed, and controlled as part of other ongoing Chelan PUD efforts (e.g., parks maintenance, wildlife surveys, real estate surveys).

In 2011 Chelan PUD focused its control/management of Eurasian water milfoil on the use of education/public awareness activities, as well as mechanical harvesting, in an attempt to manage and limit the spread of Eurasian water milfoil throughout the Project.

2.4 AIS Animal Monitoring

Monitoring for AIS animals is another component of the approved Monitoring Plan. As per the approved Monitoring Plan, Chelan PUD planned to begin monitoring, to include zooplankton tow net sampling, adult substrate sampling, and substrate monitoring at Rocky Reach Dam, for zebra mussels, quagga mussels, New Zealand mudsnail, and other AIS animals in 2011. However, the animal monitoring effort described in the Monitoring Plan was not initiated in 2011 due to sustained high river flows that made it challenging to conduct tow net sampling and place adult substrates.

SECTION 3: 2012 ACTION PLAN

Table 3-1 provides the proposed implementation schedule related to tasks to be completed under the monitoring and management of AIS in the Project in 2012.

Table 3-1. Implementation Schedule

Task	Action	Schedule
Place signage, educational materials, and self-surveys at Project boat launches. (See Section 3.1 Educational Outreach)	Maintain signs at boat launches, update pamphlets, and replenish surveys as needed.	Prior to May 1
Monitor for new/spreading aquatic invasive plants and animals. (See Section 3.2 AIS Plant Monitoring)	Monitor Project boat launches annually and entire shoreline biennially.	Boat launches: between July and September. Shorelines: biennially
Monitor for zebra and quagga mussels. (See Section 3.4.2 AIS Animal Monitoring)	Monitor for the presence of veligers June – September.	June-Sept
Stay current on rapid response methods and technology.	Monitor developing response methods and technologies.	As available
Report to WDOE and RRF on AIS program.	Summarize monitoring efforts	February 19
Participate in regional forums.	Attend in person or via conference-call meetings of regional forums addressing AIS.	TBD

3.1 Educational Outreach

Chelan PUD will continue the distribution of educational materials begun in 2011, using the same sites and same material.

Boater surveys modeled after the survey forms created by the 100th Meridian Initiative (Appendix B) will be stocked at those sites where educational pamphlets are distributed. The purpose of the survey will be explained on the form and the boaters will be asked to complete the form and place it in a return box located on site or return it via mail to Chelan PUD. This boater self-survey requests information from the boater including home residence; number of times the boat was launched last year; other lakes/river where the boat has been recently launched; the destination of the boat; if the boater cleans the boat, bait well, and fishing gear between each launch; storage methods for the boat, and if the boater is aware of the threat of AIS.

3.2 AIS Plant Monitoring

In 2012 Chelan PUD will monitor for all aquatic invasive plants as per the Monitoring Plan. The goal of the AIS plant monitoring component will be to identify newly introduced AIS plants, as well as to map and track the movement of newly found and/or existing AIS plants. Monitoring will also allow for determination of success of control/eradication efforts. Any newly identified AIS plants found during the monitoring efforts will be discussed with WDOE and WDFW, and potential control, management, and/or eradication efforts for that given species will be determined as necessary.

Although the Monitoring Plan focuses on aquatic invasive plant species, as part of the plant monitoring effort Chelan PUD will also monitor and map for existing and new terrestrial, wetland, and/or riparian zone plants that can be identified from the shoreline/boat launch monitoring efforts, as described below. Potential additional monitoring and/or control efforts will be coordinated through Chelan PUD's Wildlife and Parks departments.

3.2.1 Shoreline Monitoring

Shoreline monitoring efforts will consist of visually identifying plants and inspecting for AIS from a boat while traveling slowly along each shoreline. In areas where macrophytes cannot be seen, a sampling rake will be used to pull up macrophytes for visual identification. Macrophytes will also be examined for animals (e.g. the New Zealand Mudsnail) that may be attached. Digital photographs will be taken and sent to WDFW and/or WDOE AIS personnel for identification assistance, as necessary. A map showing locations of all areas sampled and plants identified will be created using GPS data collected from the locations where macrophytes were sampled. Once a baseline map and GPS database is established, the same sites will be re-visited every two years between the months of July and September during the peak macrophyte density. This will also allow for determination of newly introduced AIS plant or animals that were not present during the previous sampling event and/or will allow for tracking the increase/decrease of existing plants.

3.2.2 Boat Launch Monitoring

Monitoring for AIS plant species will also be done via visual surveys at each boat launch. The surveys will be conducted by boat by traveling approximately 50 meters waterward from the launch, or until visual contact with the macrophytes is lost. Additionally, similar surveys will be conducted approximately 30 meters upstream and downstream of the launch to detect the presence of new AIS that may not have settled immediately at the launch. These macrophyte surveys will be done between the months of July and September when the annual macrophyte density is at its peak. Through these visual surveys, Chelan PUD will be able to monitor for new AIS that might have entered the Project through recreational boater use.

3.3 AIS Management/Control Activities

Chelan PUD will continue to focus its control/management of Eurasian water milfoil on the use of education/public awareness activities, as well as mechanical harvesting, in an attempt to manage and limit the spread of Eurasian water milfoil throughout the Project.

If public feedback indicates a need for more aggressive control of milfoil beds is needed at Project boat launches, through adaptive management Chelan PUD will consider additional alternatives for control at the boat launches. These additional alternatives will be discussed within the annual report and with WDOE. Current possible alternatives includes the use of herbicides, but those (and any other new technologies), will need to be further evaluated based on monitoring results, potential impacts to other aquatic species, habitat, recreation, etc.

3.4 AIS Animal Monitoring

3.4.1 Fish

The Project is currently residence to 12 introduced species of fish (Table 2). Chelan PUD will be able to monitor the abundance and spread of these 12 species through a separate Resident Fish Monitoring Program (RFMP) that will consist of a Project-wide evaluation of resident fish species. The RFMP will be conducted as detailed in Chapter 6 of the Comprehensive Plan, Attachment B to the Settlement Agreement, dated February 3, 2006 (included in the License). Implementation of the RFMP is scheduled to begin in June or

July of 2012 and continue through fall. Any AIS fish species encountered during the monitoring program will be documented and reported as necessary.

In an effort to provide WDFW with information regarding possible new AIS fish introductions within the Columbia River Basin, Chelan PUD will coordinate its RFMP, as well as its other fish management/monitoring programs, so that suspected identification of new AIS fish can be reported to WDFW AIS personnel. For example, any bycatch of new AIS fish species during Chelan PUD's northern Pike minnow removal program, fish salvage efforts (e.g. during fish-ladder outages), etc. will be reported to WDFW as soon as Chelan PUD's AIS coordinator is notified by Chelan PUD biologists.

3.4.2 Zebra and Quagga Mussels

Chelan PUD will monitor for the presence of Zebra and Quagga mussels using the two methods described below.

Horizontal Zooplankton Tow Net Sampling

Horizontal zooplankton tow net samples will be collected at three locations throughout the Project (Lincoln Rock and Daroga State Parks and Chelan Falls Park). The samples will be taken two to four times between June and September when conditions are suitable for mussel spawning and larval development.

Sampling will be conducted consistent with the approved Monitoring Plan.

Artificial Substrate Monitoring

In an effort to monitor for zebra and quagga mussels near areas with high boat traffic, Chelan PUD will deploy artificial substrates at Project boat launch docks and or/buoys. Boat launches anticipated for monitoring include Lincoln Rock and Daroga State Parks, Beebe Bridge Park, Chelan Falls Park, and Entiat Park. Substrate placement at each site will be dependent upon a secure location on which to mount the substrate; therefore it is possible that not all proposed sites will be used for substrate monitoring. Chelan PUD will follow the artificial substrate monitoring protocols as provided by WDFW. One substrate will be deployed at each site from a boat dock or buoy. The substrates will be kept at least one meter above the bottom and will be examined monthly from June through September. Chelan PUD will implement response actions as described in Section 4 if zebra or quagga mussels are detected or suspected.

Substrate Monitoring at Rocky Reach Dam

As per the Monitoring Plan, Chelan PUD will begin monitoring for presence of adult zebra and quagga mussels that may have become attached on fishways, intake screens, cooling units, and other equipment at Rocky Reach Dam. Equipment that is regularly taken out of operation for maintenance will be inspected by Chelan PUD staff. Chelan PUD will implement response actions as described in Section 4 if zebra or quagga mussels are detected or suspected.

Results of this effort, including type of equipment inspected, frequency, and species found will be included in the next annual AIS report.

3.4.3 New Zealand Mudsnaill

As per the Monitoring Plan, Chelan PUD will monitor for New Zealand mudsnails while conducting the boat launch and shoreline macrophyte monitoring studies. Additionally, the artificial substrates to be installed for zebra and quagga mussel monitoring may also serve as colonization samplers for New Zealand mudsnails.

SECTION 4: RESPONSE AND COORDINATION

Early detection and rapid response to an infestation of AIS is essential to the control and potential containment of AIS. Through this Monitoring Plan, Chelan PUD will implement monitoring programs that will help detect new AIS infestations as soon as possible. In the event of positive identification of new AIS within the Project area, Chelan PUD will conduct the following response activities:

- Immediate notification to WDOE (for plants) or WDFW (for animals) of positive or suspected AIS species identified during monitoring and/or boat inspections. Digital photographs will be taken and sent to WDOE or WDFW for assistance in identification, as needed. Table 4-1 provides contact information for AIS personal to be contracted in event of new AIS identification.
- If the AIS is a zebra or quagga mussel, Chelan PUD will also notify upstream and downstream dam operators (Douglas PUD and Grant PUD) and the Columbia River Basin Team. Chelan PUD will then assist the Columbia River Basin Team in rapid response implementation as applicable to the Project. Table 3 provides contact information for AIS personnel to be contacted in the event of new AIS identifications.
- Chelan PUD will assist in the coordination of agency site visits as necessary to assist in confirming the presence and extent of AIS infestation and determination of immediate or long-term control/eradication needs.

Table 4-1. Contact List for AIS Response.

Contact	Name	Phone Number	E-Mail Address
WDOE	Kathy Hamel	360-407-6562	kahm461@ecy.wa.gov
	Jenifer Parsons	509-457-7136	jenp461@ecy.wa.gov
	Pat Irle	509-454-7864	pir1461@ecy.wa.gov
WDFW	Allen Pleus	360-902-2724	allen.pleaus@dfw.wa.gov
	Pam Meacham	360-902-2741	pamala.meacham@dfw.wa.gov
	Sgt. Eric Anderson	360-640-0492	eric.anderson@dfw.wa.gov
Douglas PUD	Andrew Gingerich	509-881-2323	andrewg@dcpud.org
Grant PUD	Ross Hendrick	509-754-5088 ext 2468	rhendr1@gcpud.org

LITERATURE CITED

Federal Energy Regulatory Commission, Order on Offer of Settlement and Issuing New License for Public Utility District No. 1 of Chelan County, Docket Number 2145-060 (February 19, 2009).

APPENDIX A: AIS MONITORING AND CONTROL PLAN

The AIS Monitoring and Control Plan can be found at:

http://www.chelanpud.org/departments/licensingCompliance/rr_implementation/ResourceDocuments/33938.pdf

APPENDIX B: CONSULTATION RECORD

To be completed for submittal to FERC

