From:	Steinmetz, Marcie
To:	"McKinney, Charlie (ECY)"; "Coffin, Chris (ECY)"
Cc:	Sokolowski, Rosana; Bitterman, Deborah; Smith, Michelle; Osborn, Jeff
Subject:	Final 2014 AIS Report
Date:	Tuesday, March 03, 2015 12:01:28 PM
Attachments:	44139 FINAL 2014 AIS Report.pdf

PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY
P.O. Box 1231, Wenatchee, WA 98807-1231 • 327 N. Wenatchee Ave., Wenatchee, WA 98801
(509) 663-8121 • Toll free 1-888-663-8121 • www.chelanpud.org
March 3, 2015

To: Charlie McKinney, Washington State Department of Ecology
Chris Coffin, Washington State Department of Ecology

From: Marcie Steinmetz, Water Resources Specialist
Public Utility District No. 1 of Chelan County (Chelan PUD)

Re: Final 2014 Aquatic Invasive Species Monitoring and Control Report for Rocky Reach Hydroelectric Project
License Article 401 and Ordering Paragraph D, Appendix A, Section 5.6(2)(c)

Mr. McKinney and Mr. Coffin:

Attached please find the FINAL 2014 Aquatic Invasive Species Monitoring and Control Report for Rocky Reach Hydroelectric Project.

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

Thank you,

Marcie Steinmetz | **Water Resource Specialist**
Chelan Public Utility District | 327 N. Wenatchee Ave. | Wenatchee, WA 98801
509.661.4186 (w) | 509.280.1955 (c)| marcie.steinmetz@chelanpud.org

2014 AQUATIC INVASIVE SPECIES MONITORING AND CONTROL REPORT

FINAL

ROCKY REACH HYDROELECTRIC PROJECT
FERC Project No. 2145

MARCH 2015

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

TABLE OF CONTENTS

LIST OF TABLES

SECTION 1: INTRODUCTION

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 or Commission) Hydroelectric Project License No. 2145. The Project boundary, which extends approximately 43 miles along the Columbia River, begins at the Project tailrace at river mile 474) and extends upriver to the Wells Dam tailrace at river mile 516.

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 recreation and hatchery facilities.

Chelan PUD currently operates the Project through the coordinated operation of the seven-dam system (collectively call the "mid-Columbia dams") 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 many provisions of its FERC License (License), 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 (401 Certification) issued by the Washington Department of Ecology (Ecology), and the Biological Opinion issued by the U.S. Fish and Wildlife Service regarding the effects of the Project on bull trout.

On April 4, 2006, Ecology issued a Final 401 Certification for the operation of the Rocky Reach Project. On February 19, 2009 the FERC issued its Order on Offer of Settlement and Issuing New License (License) for the Rocky Reach Project. Article 401 of the License Order and the 401 Certification required Chelan PUD to develop and implement an Aquatic Invasive Species (AIS) Monitoring and Control Plan in consultation with Ecology and the Rocky Reach Fish Forum (RRFF) within one year of the effective date of the new License. Chelan PUD submitted the Monitoring Plan to FERC on February 19, 2010. 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 401 Certification Condition 5.6(2).

In accordance with the Monitoring Plan (Appendix A), Chelan PUD is to monitor for the presence of new invasive species at or near Project facilities. The Plan is coordinated with the Washington Department of Ecology's Freshwater Aquatic Weed Control Program. The Monitoring Plan includes the following components:

a) 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 water body);
b) Methodology and schedule of prevention, monitoring and control measures regarding the presence and movement of AIS at or near Project facilities; and

c) Submittal of an annual report of monitoring and educational activities conducted each year.

FERC's 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 Ecology and the RRFF; and 3) documentation of consultation or comments received from Ecology and the RRFF on the annual report and documentation of their agreement with the proposed monitoring and control measures for the following year.

This report contains a summary of monitoring, control, and educational activities conducted under the Monitoring Plan in 2014 and proposed actions to be implemented in 2015.

SECTION 2: 2014 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 2014 this included distribution of educational materials at Rocky Reach boat launches consistent with Section 5.6(2)(a) of the 401Water 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 2014 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 through October 30). Boat launch sites where educational material was distributed included Lincoln Rock and Daroga State Parks, Orondo River Park, Beebe Bridge Park, and Chelan Falls Park (see Appendix B for maps showing launch locations). Educational materials placed at each site consisted of free pamphlets and signs (Appendix C). 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. Currently Entiat Park is going through a complete renovation (September 9, 2013 through May 20, 2015) and the boat launches were closed for a period of time, with kiosks removed. Upon completion, educational materials will be replaced at Entiat Park.

Typical Kiosk with signage.

The pamphlets and boat launch signs used to educate the public were obtained from the Washington State Department of Fish and Wildlife (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).

2.2 Volunteer Self Survey

Boater surveys modeled after the survey forms created by the 100th Meridian Initiative were provided at Lincoln Rock and Daroga State Parks, Beebe Bridge Park, Chelan Falls Park, and Enitat Park.

The purpose of the survey is explained on the form and the boaters are 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.

In 2014, no self surveys were returned to Chelan PUD.

2.3 AIS Plant Monitoring at Project Facilities (Boat Launches)

The following boat launches on the Rocky Reach Reservoir were monitored for the presence of AIS plant species on August 27 and September 10 and 25; Lincoln Rock and Daroga State Parks, Beebe Bridge Park, Chelan Falls Park, and Entiat Park. Boat launch monitoring was conducted by traveling slowly through the weed beds at each launch until visual contact with the macrophytes was lost. This allowed Chelan PUD staff to monitor for the presence of new AIS that may have entered the Project via various vectors (recreational activities, boats, airplanes, water diversions, fishing equipment, construction equipment, etc.). When weeds could not be identified from the surface, a rake was used to pull the weeds in question into the boat for identification.

No new AIS species were observed during 2014 monitoring.

2.4 AIS Control/Management Activities

In 2014, Chelan PUD continued to distribute educational brochures at high use swimming and boating areas and provide signs at public boat launches (also described in Section 2.1 above). Additionally, Chelan PUD performed regular maintenance to control Eurasian watermilfoil growth at high-use swimming areas and public boat launches through mechanical harvesting in front of Chelan PUD owned parks and swim beaches.

The harvesting machine (harvester) is a specialized underwater mowing machine specifically designed to cut and collect aquatic plants. Cut plants are immediately removed from the water via a conveyer belt. The cut plants are stored on the machine until they can be off-loaded at an upland site, desiccated, and disposed of properly. Milfoil is harvested while traveling upstream to capture most of the fragments. If a clump breaks away, the operator of the harvester will circle around and capture it. Since milfoil eradication is not an option, as milfoil is well established within the Columbia River, regular harvesting at public areas by trained operators is used by Chelan PUD as a maintenance measure.

Currently, the only known AIS plants established within the Project area are Eurasian water milfoil and curly-leaf pondweed. 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, noxious weed control program, wildlife surveys, and real estate surveys).

2.5 AIS Animal Monitoring

2.5.1 Fish

Chelan PUD did not conduct specific resident fish monitoring in 2014. However, staff conducting fish sampling at the Rocky Reach Juvenile Fish Bypass Sampling Facility were able to monitor for AIS species. Fish species that were observed in 2014 were:

- Chiselmouth (*Acrocheilus alutaceus*)
- Juvenile Coho (*Oncorhynchus kisutch*)
- Juvenile Sockeye (*Oncorhynchus nerka*)
- Juvenile Steelhead (*Oncorhynchus mykiss*)
- Juvenile Walleye (*Sander vitreus*)
- Juvenile yearling/subyearling Chinook (*Oncorhynchus, tshawytscha)*
- Juvenile/adult Lamprey (*Entosphenus tridentatus*)
- Northern pikeminnow (*Ptychocheilus oregonensis*)
- Peamouth (*Mylocheilus caurinus*)
- Smallmouth Bass (*Micropterus dolomieu*)
- Three-spine stickleback (*Gasterosteus aculeatus*)
- Whitefish (*Prosopium williamsoni*)

No AIS fish species were observed in 2014.

2.5.2 Zebra and Quagga Mussels

Horizontal and Vertical Zooplankton Tow Net Sampling

The Monitoring Plan states that horizontal and vertical tow samples will be collected at three locations throughout the Project: Lincoln Rock State Park, Daroga State Park, and Chelan Falls Park. During 2014, Chelan PUD collected samples consistent with the methods detailed in the Monitoring Plan at these three locations on 3 days (August 27 and September 10 and 25). Only three tow samples were collected during 2014, as staff and boat availability were limited.

Samples were analyzed by the Center for Lakes and Reservoirs at Portland State University for the presence of zebra and quagga mussels. Neither zebra nor quagga mussel larvae, veligers, were detected in these samples. Bivalve larvae were detected for two mussels, *Corbicula fluminea* (Asian clam) and *Gonidea angulata* (western ridged mussel). Ostracods (seed shrimp) were also present in the samples.

Artificial Substrate Monitoring

Artificial substrates were deployed year round the boat launch docks at Lincoln Rock and Daroga State Parks, Beebe Park, Chelan Falls Park, and Enitat Park. Substrates were deployed at least one meter above the bottom of the river bed at locations determined to be secure, but yet accessible by Chelan PUD staff. The substrates were checked when the horizontal zooplankton tow net sampling was completed.

No zebra or quagga mussels or New Zealand mud snails were observed.

SECTION 3: 2015 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 2015.

Table 3-1. 2015 Planned Actions

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 Facilities (boat launches) annually	Between July and September
Monitor for zebra and quagga mussels. (See Section 4.2 AIS Animal Monitoring)	Monitor for the presence of veligers for a total of four days, two in August and two in September.	August-Sept
Stay current on rapid response methods and technology.	Coordination with WDFW, and the Columbia River Basin Team, 100th Meridian Initiative, USACE and USGS)	Ongoing
Report to Ecology and RRFF 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 (WDFW, Columbia River Basin Team-100th Meridian Initiative, USACE and USGS).	Ongoing

3.1 Educational Outreach

Chelan PUD will continue the distribution of educational materials and boater self surveys, using the same sites and materials as were used in 2014 (see Section 2.1 and Appendix C).

3.2 AIS Plant Monitoring at Project Facilities (Boat Launches)

Monitoring for AIS plant species will be conducted between July and September at the same locations as those monitored in 2014 (see Section 2.3).

3.3 AIS Management/Control Activities

As required by the Rocky Reach Project License and Department of Ecology's 401 Water Quality Certification, during 2015 Chelan PUD will continue to focus its control/management of Eurasian watermilfoil at or near project facilities through monitoring, education and public awareness. Additionally, Chelan PUD will perform regular maintenance to control Eurasian watermilfoil growth at high-use swimming areas and public boat launches through mechanical harvesting in front of Chelan PUD owned parks and swim beaches.

Chelan PUD has been working with Chelan County Noxious Weed Control Board regarding their pilot project for milfoil treatment in the Entiat Park area, and will continue this coordination.

3.4 AIS Animal Monitoring

3.4.1 Fish

Chelan PUD is not planning to conduct resident fish monitoring in 2015. Future resident fish surveys as required by the License will be directed by the Rocky Reach Fish Forum. However, any new AIS fish species encountered during other Chelan PUD activities will be documented and reported as necessary.

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 and Vertical Zooplankton Tow Net Sampling

Chelan PUD will conduct horizontal and vertical zooplankton tow net samples at three locations within the Project (Lincoln Rock and Daroga State Parks and Chelan Falls Park). The samples will be collected a total of four days, two in August and two in September. Sampling will be conducted consistent with the approved Monitoring Plan.

Chelan PUD will request data sheets for this sampling from WDFW and will scan and email completed data sheets to WDFW within one week of completion in order for WDFW to keep a nearly real time monitoring data base.

Artificial Substrate Monitoring

During 2015, Chelan PUD plans to deploy artificial substrates at the locations used in 2014 (see Section 2.5.2). Chelan PUD will continue to follow the artificial substrate monitoring protocols as provided by WDFW. One substrate will be deployed at each site and will be kept at least one meter above the bottom. Substrates will be examined monthly, to the extent feasible, 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 continue 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.

3.4.3 New Zealand Mudsnail

As per the Monitoring Plan, Chelan PUD will monitor for New Zealand mudsnails while conducting the boat launch 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. Per the 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 Ecology (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 Ecology and/or WDFW for assistance in identification. 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 4-1 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 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
Ecology	Nathan Lubliner or Lizbeth Seebacher	360-407-6563 360-407-6938	nlub461@ecy.wa.gov lsee461@ecy.wa.gov
	Jenifer Parsons	509-457-7136	jenp461@ecy.wa.gov
	Chris Coffin	509-575-2821	ccof461@ecy.wa.gov
WDFW	Allen Pleus	360-902-2724	allen.pleaus@dfw.wa.gov
	Jesse Schultz	360-902-2184	jesse.schultz@dfw.wa.gov
	Sgt. Carl Klein	360-902-2426	carl.klein@dfw.wa.gov
Invasive Species Council	Raquel Crosier	360-902-3026	raquel.crosier@rco.wa.gov
Douglas PUD	Andrew Gingerich	509-881-2323	andrewg@dcpud.org
Grant PUD	Carson Keeler	509-754-5088 ext 2687	ckeeler@gcpud.org

LITERATURE CITED

Duke Engineering & Services, Inc. 2001. Aquatic Habitat Mapping Study Report. June, 2001. Prepared for Public Utility District No. 1 of Chelan County.

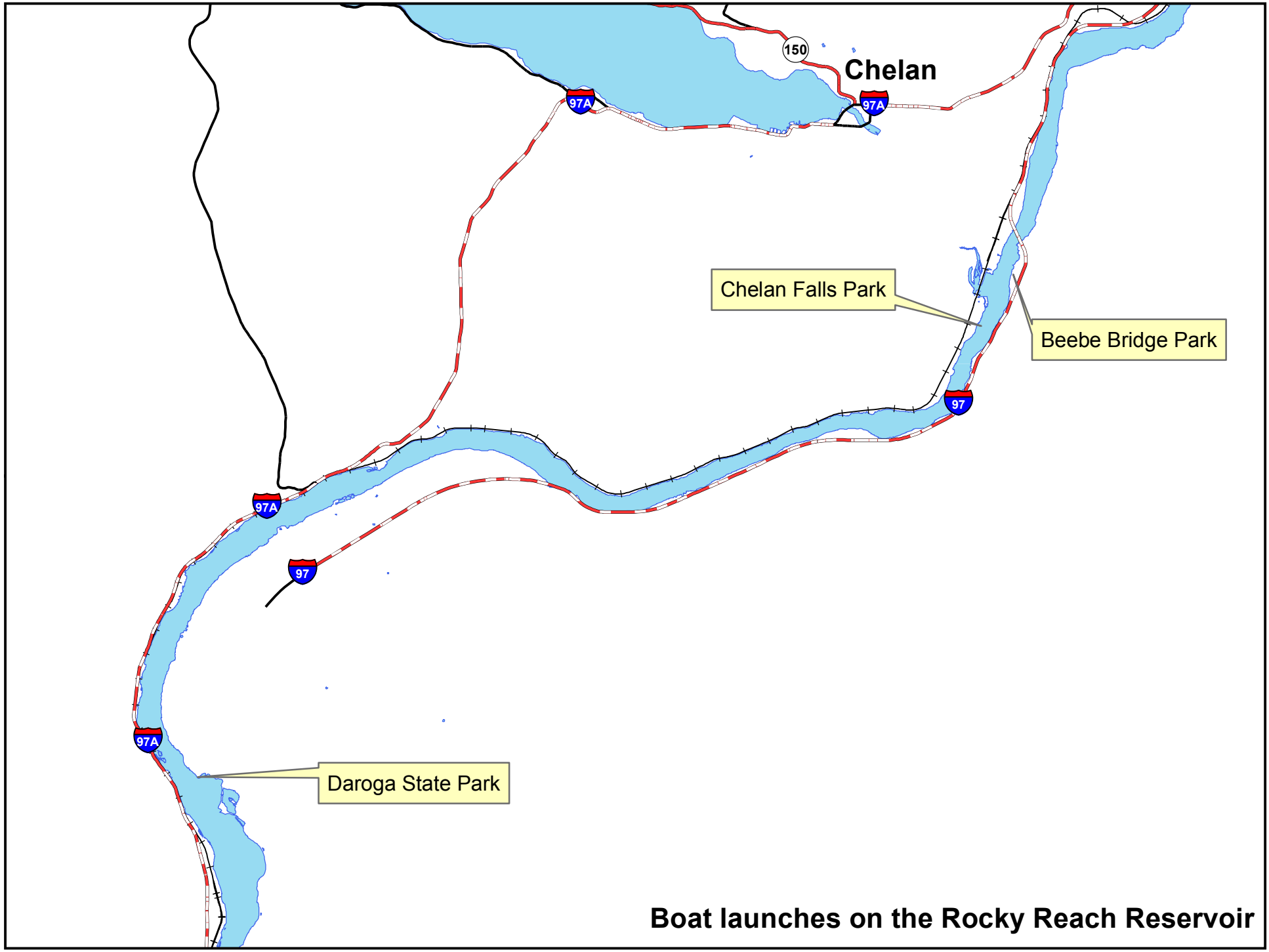
Federal Energy Regulatory Commission, Order on Offer of Settlement and Issuing New License for Public Utility District No. 1 of Chelan County, Docket Number 2145-060 (February 19, 2009).

APPENDIX A: AIS MONITOIRNG AND CONTROL PLAN

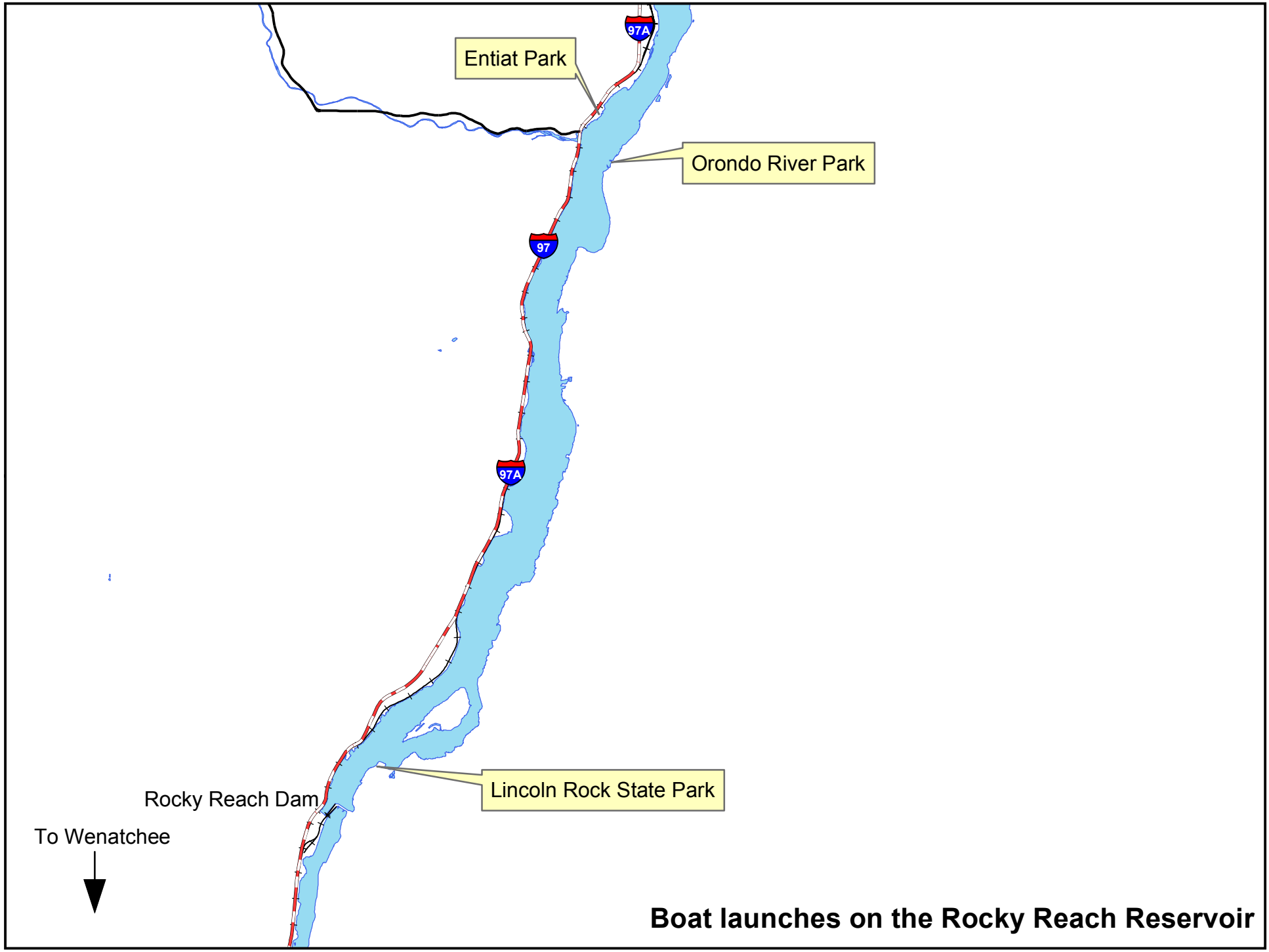
The AIS Monitoring and Control Plan can be found at:

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

APPENDIX B: LOCATION OF BOAT LAUNCHES



Boat launches on the Rocky Reach Reservoir



Boat launches on the Rocky Reach Reservoir

APPENDIX C: EDUCATIONAL MATERIALS

STOP

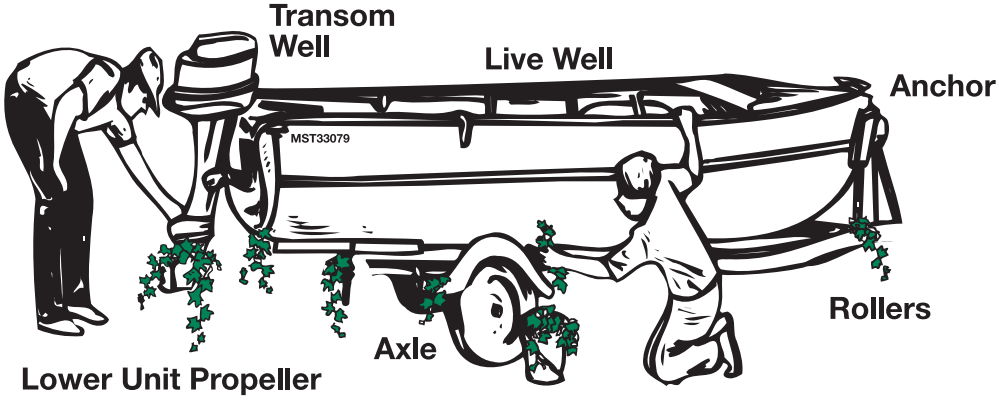
Milfoil

Zebra Mussel

It is *ILLEGAL* to transport or spread Aquatic Invasive Species!

Before Launching & **Before Leaving**

You Must Remove ALL
Plants & Animals from Watercraft, Trailer and Gear.
You Must Drain ALL
Water from Fish/Live Wells, Holds and Bilges.



Unlawful to Transport Aquatic Plants - R.C.W. 77.15.290
Unlawful Use of Prohibited Aquatic Animal Species - R.C.W. 77.15.253
Unlawful Release of Fish, Shellfish or Wildlife - R.C.W. 77.15.250

To obtain information on free boat inspections, Report a sighting or Find out more about Aquatic Invasive Species:
Call 1-888-WDFW-AIS (933-9247) or go to www.WDFW.WA.GOV

Washington Department of FISH and WILDLIFE

STOP AQUATIC HITCHHIKERS!
Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

25128-87870

VOSS SIGNS, LLC. MANLIUS, NY 13104-0553 1-800-473-0698 www.vosssigns.com

STOP AQUATIC HITCHHIKERS!™

www.ProtectYourWaters.net

Follow these simple steps:

☑ Clean

Remove all plants, animals, mud and thoroughly wash everything, especially all crevices and other hidden areas.

☑ Drain

Eliminate all water before leaving the area, including wells, ballast, and engine cooling water.

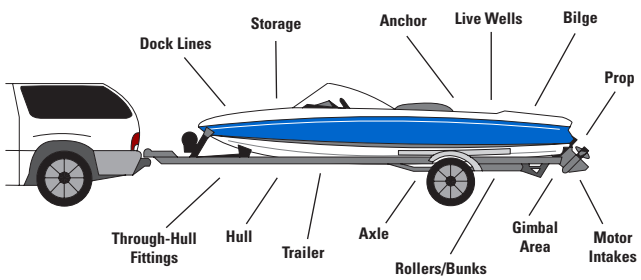
☑ Dry

Allow sufficient time for your boat to completely dry before launching in other waters.

If your boat has been in infested waters for an extended period of time, or if you cannot perform the required steps above, you should have your boat *professionally* cleaned with high-pressure scalding hot water (>140 °F) before transporting to any body of water.

Before launching and before leaving...

Inspect everything!



Quagga mussels encrusting a boat motor

Zebra and quagga mussels are a nuisance for anglers and boaters. They can ruin your equipment, clog motor cooling systems, foul hulls, and jam the centerboard wells under sailboats.

For more information, please visit...

www.100thMeridian.org
www.ProtectYourWaters.net
nas.er.usgs.gov

U.S. FISH & WILDLIFE SERVICE

P.U.D. CHELAN COUNTY
www.chelanpud.org

100th Meridian Initiative

Image Credits: *Zebra Mussels on a Fishing Lure* by Marc Murrell, Kansas Department of Wildlife and Parks • *Zebra Mussels*, *Zebra Mussels on a Beer Can*, *Zebra Mussels on a Native Mussel*, *Bait Bucket*, *Quagga Mussels*, *Zebra/Quagga Mussel Distribution January 2009* by David Britton, U.S. Fish & Wildlife Service • *Zebra Mussels in a Cut-Away Pipe* by Don Schlosser, Great Lakes Science Center • *Zebra Mussels in a Pipe* by Craig Czarnecki, Michigan Sea Grant • *Quagga Mussels Encrusting a Boat Motor* by Matt Watson, The University of Texas at Arlington • The distribution map is based on data compiled by the U.S. Geological Survey's Nonindigenous Aquatic Species Program (http://nas.er.usgs.gov).

100th Meridian Initiative

ZAP THE ZEBRA

www.100thMeridian.org

Please report any sighting by calling our National Hotline:

1-877-STOP-ANS

1-877-786-7267

Invasive Mussels: Expensive Damage!

When zebra and/or quagga mussels invade our local waters they clog power-plant and public-water intakes and pipes. Routine treatment is necessary and very expensive. This leads to increased utility bills. If you use water and electricity, you do not want these mussels.

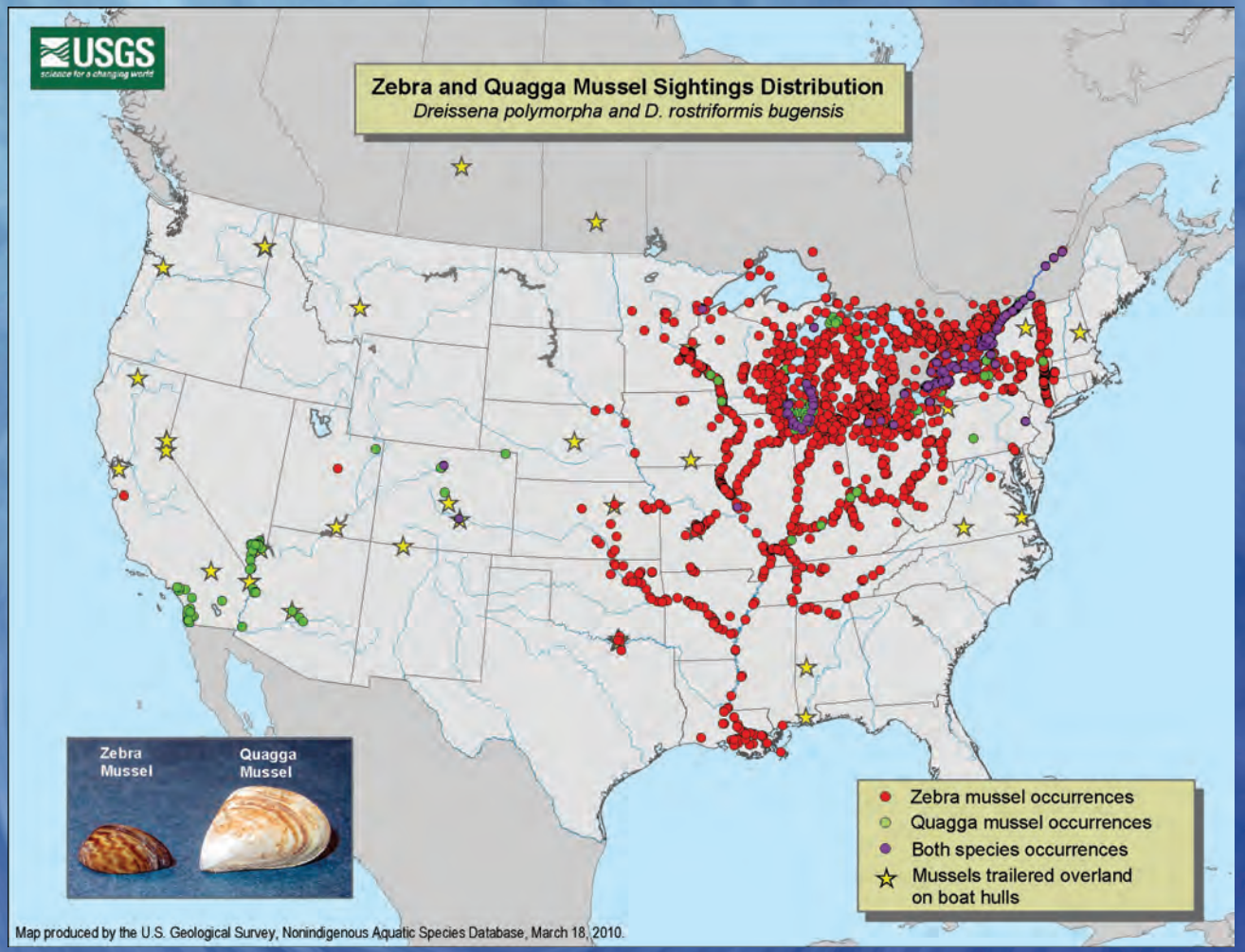
Zebra mussels in a cut-away pipe

Zebra mussels blocking a pipe

Zebra/Quagga Mussels May Use Your Boat to Invade Additional Waters!

Once a boat has been in infested waters, it could carry invasive mussels. These mussels can spread to new habitats on boats trailered by commercial haulers or the public. Zebra and quagga mussels attach to boats and aquatic plants carried by boats. These mussels also commonly attach to bait buckets and other aquatic recreational equipment. An adult female zebra mussel can release up to a million eggs in a year. Please take precautions outlined in this brochure to help reduce the chance that zebra or quagga mussels will spread from your boat or equipment to uninfested areas.

Before zebra mussels | *After zebra mussels*



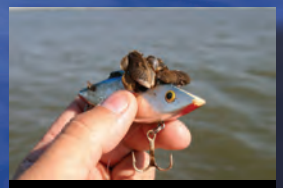
Zebra/Quagga Mussels Harm Native Aquatic Life

Zebra mussels on a crayfish

Zebra mussels on a native mussel

Zebra/Quagga Mussels Encrust Any Hard Surface

Zebra mussels on a beer can



Zebra mussels on a fishing lure

Zebra Mussels / Quagga Mussels

What are they?

Both are closely related, invasive, freshwater bivalve (mollusk) species that encrust hard surfaces.

Where do they come from?

These species came from the Black and Caspian Sea Drainages in Eurasia.

What size are they?

Larvae are microscopic and adults may be up to two inches long. They are usually found in clusters.

Why “Zebra” mussels?

Both species are sometimes referred to as “zebra” mussels because they both have light and dark alternating stripes. Quagga mussels are actually a distinct (but similar) species named after an extinct animal related to zebras.

APPENDIX D: CONSULTATION RECORD

As per FERC's Order Modifying and Approving Aquatic Invasive Species Monitoring and Control Plan Pursuant to Article 401 and Condition 5.6(2) (January 14, 2011) Chelan consulted with Washington State Department of Ecology and the Rocky Reach Fish Forum on the draft AIS Report. The following individuals were sent draft copies for review on December 31, 2014:

NAME	***AGENCY***
Matt Kerac	ALCOA
Bob Rose	Confederated Tribes and Bands of the Yakama Indian Nation
Patrick Verhey	Washington Department of Fish and Wildlife (WDFW)
Keith Vradenburg	City of Entiat
Pat Irle	Washington Department of Ecology (Ecology)
Reed Glesne	National Park Service
Steve Lewis	US Fish and Wildlife Service

Comments received are listed in the following table with Chelan PUD's response to those comments.

	Comment	Chelan PUD Response
	Jesse Shultz, Aquatic Invasive Species Unit, WDFW	
1.	Page 4, Section 2.3, second sentence in reference to “through recreational boater use”: This is an assumption, there are many vectors.	Comment noted and additional vectors were listed.
2.	Page 5, Section 2.5.1 Fish, second paragraph: What fish species were observed?	Comment noted and fish species observed were listed.
3.	Page 5, Section 2.5.2 Zebra and Quagga Mussels: Requested vertical zooplankton tow net sampling in addition to horizontal on their 2012 report. Why is Chelan PUD opposed to conducting both sample methods? There is no added cost for analysis because both samples are combined into one and adds a couple more minutes in the field. As stated before, I can provide the protocol.	Chelan PUD has been performing both vertical and horizontal sampling according to WDFW protocol from the request in 2012. The heading in this section and the language did not reflect that vertical samples were taken. Edits were made to this section to include the word “vertical”.
4.	Page 8, Section 3.4.2 Zebra and Quagga Mussels: Same comment as 3. above	See response to 3. Above.
5.	Page 9, Table 4-1, Raquel Crosier took over for Wendy Brown	Wendy Brown’s contact information has been replaced with Raquel Crosier’s information in the table.