AVISTA CORPORATION

COEUR D'ALENE LAKE AQUATIC WEED MANAGEMENT PLAN FOR NON-TRIBAL WATERS

2016 SUMMARY REPORT

SPOKANE RIVER LICENSE ARTICLE 410

SPOKANE RIVER HYDROELECTRIC PROJECT FERC PROJECT NO. 2545

Prepared By: Avista Corporation

February 17, 2017

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Figure 2. Coeur d'Alene Lake Survey Rotation

Figure 3. 2011 - 2016 Surveyed Milfoil Populations in Coeur d'Alene Lake

Figure 4. 2016 Mica Bay Herbicide Treatment Locations

APPENDICES

Appendix A. Consultation Record

1.0 INTRODUCTION

The purpose of the Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters (Plan) is to control and reduce the distribution of aquatic noxious weeds within Coeur d'Alene Lake. To achieve this, Avista cooperates with and supports a multitude of agencies that have existing aquatic weed management programs on Coeur d'Alene Lake. This report summarizes the measures completed by Avista, as well as those by the Idaho Department of Environmental Quality (IDEQ), Kootenai County Noxious Weed Control Board (KCNWCB), Idaho State Department of Agriculture (ISDA), and the Coeur d'Alene Tribe (Tribe), together known as the Cooperating Parties.

1.1 Background

On June 18, 2009, the Federal Energy Regulatory Commission (FERC) issued a License for Avista's Spokane River Hydroelectric Project (Project) for a 50-year term. The License became effective on June 1, 2009 and includes operation of five Hydroelectric Developments (HEDs) on the Spokane River; one in Idaho (Post Falls HED) and four in the state of Washington (Upper Falls, Monroe Street, Nine Mile, and Long Lake HEDs). Article 410 of the License required the development of the Plan, which FERC approved on January 19, 2011 (FERC Order 2545-129). The Plan is specific to Avista's Post Falls HED, which is located on the Spokane River approximately nine miles downstream from the outlet of Coeur d'Alene Lake.

1.2 Coeur d'Alene Lake Aquatic Weed Management Plan

Article 410 of the License required Avista to develop the Plan in consultation with the Idaho Department of Fish and Game and the United States Fish and Wildlife Service. This Plan provides for the management of aquatic noxious weeds within the Post Falls HED Project boundary, excluding the Coeur d'Alene Indian Reservation (Reservation) (Figure 1), and includes the following elements:

- Provisions to establish or expand aquatic noxious weed educational programs;
- A framework for annual monitoring to determine the distribution of aquatic noxious weeds; and
- Management strategies for the control of aquatic noxious weeds.

The Plan also identifies the Cooperating Parties that are currently involved in managing aquatic noxious weeds within the Project boundary and a schedule within which Avista will implement the various measures. Avista cooperates with and supports the Cooperating Parties in implementing relevant aquatic weed management programs.

The littoral habitat within the Project boundary has been surveyed for aquatic noxious weeds since 2006, with most areas susceptible to weed infestation having been surveyed more than once. During the surveys three types of milfoil were identified. These included native northern watermilfoil (*Myriophyllum sibiricum*), non-native Eurasian watermilfoil (*M. spicatum*) and a hybrid of the two. Non-native Eurasian watermilfoil and the hybrid Eurasian watermilfoil,

hereafter collectively referred to as milfoil, are the only two aquatic noxious weeds that have been identified in the area and that are addressed by the Plan.

Historically, infestations of these species have been found in Harrison Slough, along the shoreline near Harrison, within Heyburn State Park, and within the chain lakes (Cave, Medicine, Blue, Thompson, Anderson, Killarney and Black Lakes) associated with the Coeur d'Alene River (CDAT 2006, 2007, 2008, 2009, 2010; Avista 2011, 2013). In addition, Avista and the Tribe (2008-2016) have identified infestations of milfoil within the Reservation Boundary and the St. Joe and St. Maries rivers upstream of the Reservation boundary which are managed under the Coeur d'Alene Reservation Aquatic Weed Management Plan.

2.0 COORDINATION

Avista cooperates and supports the entities identified in Section 1.0 that have existing aquatic weed management programs on Coeur d'Alene Lake. Avista met with the Cooperating Parties on February 26, 2016 to coordinate activities and develop the following 2016 task list:

- Coordinate aquatic weed monitoring, education and outreach, and treatment efforts with the Cooperating Parties;
- Partner with IDEQ to survey and monitor for milfoil;
- If necessary, complete milfoil hand pulling using a diver suction dredge in Mica Bay or other locations as needed;
- Complete herbicide treatment of milfoil as needed;
- Coordinate milfoil management with the Tribe within Tribal waters; and
- Partner with Kootenai County to provide educational funding for a 2016 activities.

3.0 SURVEYS

Avista and IDEQ mapped suitable milfoil habitat using high, moderate, and low survey priority categories based on susceptibility to infestation for milfoil within Coeur d'Alene Lake (Avista, 2011). In accordance with the Plan, surveys occur annually per the following schedule: high priority suitable habitats are surveyed a minimum of once per three-year period; moderate priority suitable habitats are surveyed a minimum of once per four-year period; and low priority suitable habitats and shoreline segments are surveyed a minimum of once per five-year period (Figure 2). Between 2010-2016, milfoil surveys were completed at the following locations:

 Upper Spokane River Mica Bay Sun-Up Bay Windy Bay 	 Carlin Bay Half Round Bay Turner Bay Everwell Bay 	 Bennett Bay Wolf Lodge Bay Harrison Slough Anderson Lake
 Sixteen to One Bay Cougar Bay Cave Bay Aberdeen Lodge Bay 	 Swede Bay Gotham Bay Kidd Island Bay Bell Bay 	 Anderson Lake Black Lake Blue Lake Cave Lake Killarney Lake

 Powderhorn Bay 	• Blue Creek Bay
• Echo Bay	• Beauty Bay
o Loffs Bay	 Thompson Lake

Additionally in 2014, the shoreline segments identified on Figure 2 (not including the high and low priority areas) were traversed by boat and visually surveyed for the presence of milfoil.

Swan LakeMedicine Lake

In 2016, Avista completed visual surveys on Kidd Island Bay, Windy Bay, Mica Bay, Harrison Slough, Black Lake, Cave Lake, Medicine Lake and the Spokane River. KCNWCB completed a rake throw survey in Wolf Lodge Bay. Additionally, IDEQ completed point intercept surveys on Bell, Hungry Hollow, Black, Martin, Grand, Driftwood, Crescent, Happy Cove, Delcardo, and Casco bays on August 2 and 4. The point intercept survey is designed to cover numerous points within a shallow water area to identify the aquatic plants that are present. Genus and species groups were identified referencing three field manuals for aquatic plants of North America and Washington State (Borman et al., 1997; DiTomaso and Healy, 2003; Washington State Department of Ecology, 2001).

In 2016, milfoil was observed in Mica Bay (30 acres of moderate milfoil), Windy Bay (4-5 plants), Wolf Lodge Bay (1-2 acres of sparse milfoil), Bell Bay (2-3 plants) and Harrison Slough (20-25 acres of sparse milfoil), as well as Black Lake, Cave Lake and Medicine Lake (an estimated 500-600 acres in all three lakes).

Between 2011 and 2016, Avista and the Cooperating Parties surveyed potential milfoil habitat in Coeur d'Alene Lake and the chain lakes associated with the Coeur d'Alene River and have identified an estimated 90-100 plus acres of milfoil in bays located within the non-tribal waters of Coeur d'Alene Lake including Mica Bay, Windy Bay, Sixteen to One Bay, Beauty Bay, Wolf Lodge Bay and Harrison Slough. Additionally, an excess of 600-700 acres of milfoil has been identified in the chain lakes, including Anderson, Black, Blue, Cave, Killarney, Medicine and Thompson Lakes. These acreage totals are estimates, with varying densities. They may also vary based on seasonal conditions and management activities (discussed in Section 4.0). A map of the 2011-2016 survey results in non-tribal waters, was combined with known locations of milfoil in Tribal waters (managed under the Coeur d'Alene Reservation Aquatic Weed Management Plan) to provide a general overview of the surveyed populations of milfoil in Coeur d'Alene Lake (Figure 3).

4.0 MANAGEMENT / TREATMENTS

The Cooperating Parties identified Mica Bay as a high priority for herbicide treatment in 2016 due to its location within Coeur d'Alene Lake. As such, Avista contracted with Lakeland Restoration Services to complete herbicide treatments on 32 acres of milfoil in Mica Bay (Figure 4). The herbicide application was completed on August 16 utilizing 233 gallons of 2,4-D with a target rate of 2.4 gallons per acre-foot. Visual pre-treatment surveys of the treatment area were completed on July 10, 17 and 20. Milfoil was dominant throughout the treatment areas, with much of the area containing greater than 50% total milfoil cover. Post-treatment surveys will be

completed in July or August of 2017. The 2016 treatment efficacies will be determined based upon the qualitative data obtained during that time.

Previous herbicide treatments include 44 acres of moderate milfoil in Windy bay (2015) and 37 acres of dense milfoil in Thompson Lake (2014). Avista completed a 52-week post treatment survey of Windy Bay. The treatment that was completed in 2015 appeared to be very successful as only 4-5 milfoil plants were observed in 2016 in the treatment area.

In addition to the herbicide application completed by Avista, ISDA funded four days of milfoil hand pulling using a diver suction dredge in Wolf Lodge Bay (removed 50 lbs) and Bell Bay (removed 500 lbs). The total milfoil weight removed is a wet weight and may include other species incidentally removed along with the milfoil. These areas will be surveyed in 2017 to determine if further management action is required.

5.0 MILFOIL MANAGEMENT IN COEUR D'ALENE LAKE TRIBAL WATERS

In addition to working with the various entities to monitor and control aquatic weeds on Coeur d'Alene Lake in non-tribal waters, Avista also funded significant aquatic weed control efforts in Tribal waters in 2016, which are the most vulnerable to milfoil infestations in the lake. The areas that were treated and the methods used to control aquatic weeds are listed below. The final efficacy rates will be included in the 2016 Annual Implementation Report prepared by Avista and the Tribe for the U.S. Department of Interior and FERC.

Bottom Barriers

The Tribe placed bottom barriers on approximately 4,000 square feet of milfoil and problematic aquatic weeds in Cottonwood Bay (Camp Larson swim area). The 10 ft x10 ft barrier panels were placed over dense patches of aquatic weeds and were left in place for an eight-week period.

Herbicide Treatments

Avista and the Tribe hired Clean Lakes to complete herbicide treatments on approximately 97 acres of milfoil in the south end of Coeur d'Alene Lake using a combination of 2,4-D and endothall, which was applied using a sub-surface distribution method.

6.0 2016 EDUCATION / OUTREACH

In 2016, Avista partnered with Kootenai County by providing \$2,000 towards educational and outreach materials to distribute at the Kootenai County Boat and RV Show as well as at the North Idaho Fair.

7.0 FUNDING

Avista made the following funding available for aquatic weed management under this Plan:

 Table 1. 2016 Aquatic Weed Funding

Windy Bay Herbicide Treatments	\$12,306.00
Kootenai County Noxious Weed Control Board	\$ 2,000.00
TOTAL	\$14,306.00

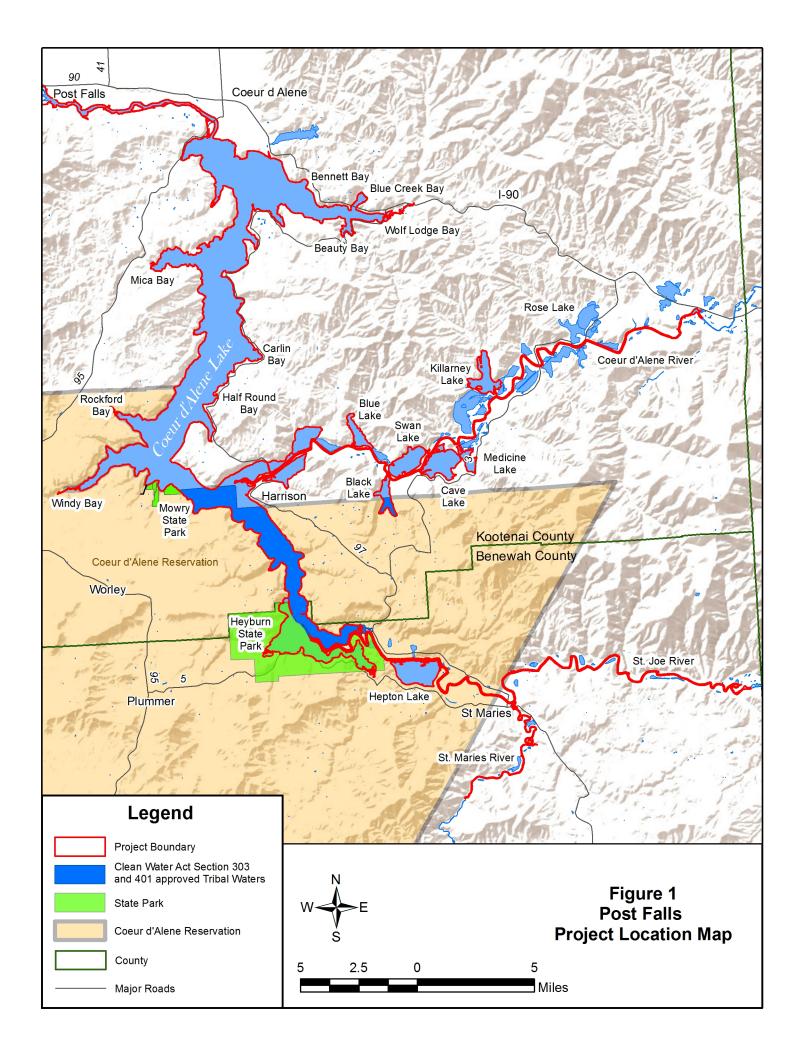
8.0 PLANNED ACTIVITES FOR 2017

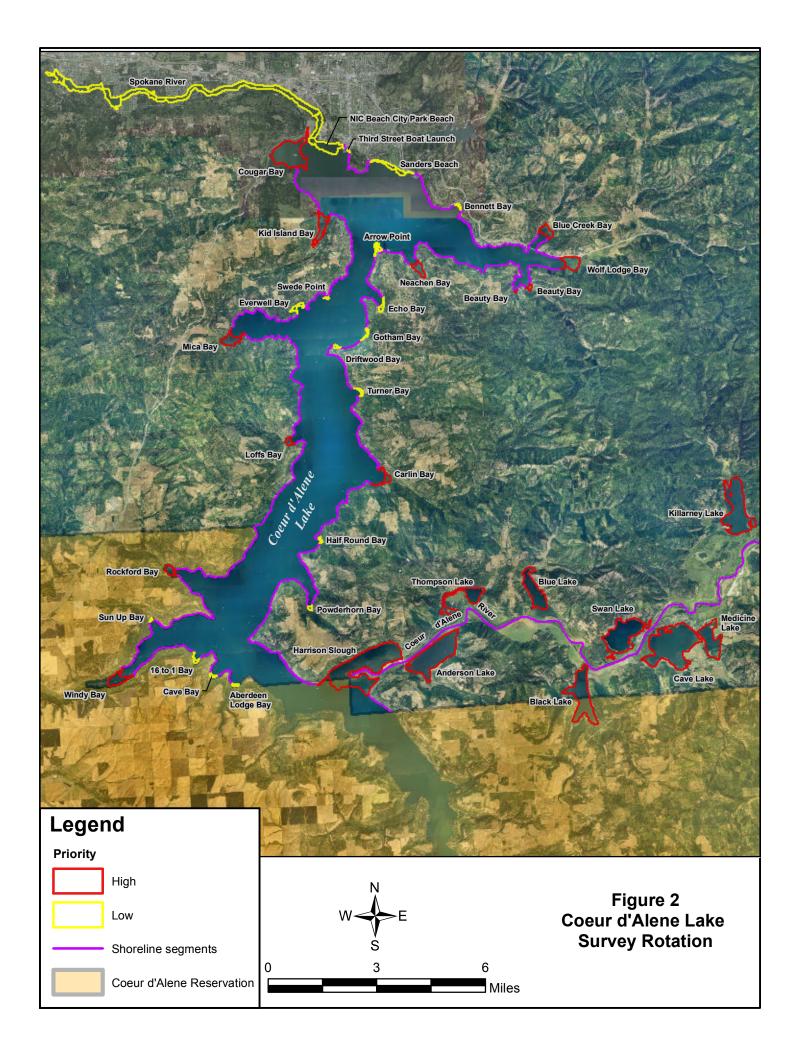
As outlined in the Plan, Avista annually identifies areas for upcoming surveys, reviews available funding, and schedules an annual meeting with the Cooperating Parties to develop and coordinate activities. A final program task list is completed prior to May 1, on an annual basis. Avista is currently in the process of preparing for and scheduling the annual coordination meeting for 2017. Avista will continue public outreach, educational and notification activities in 2017.

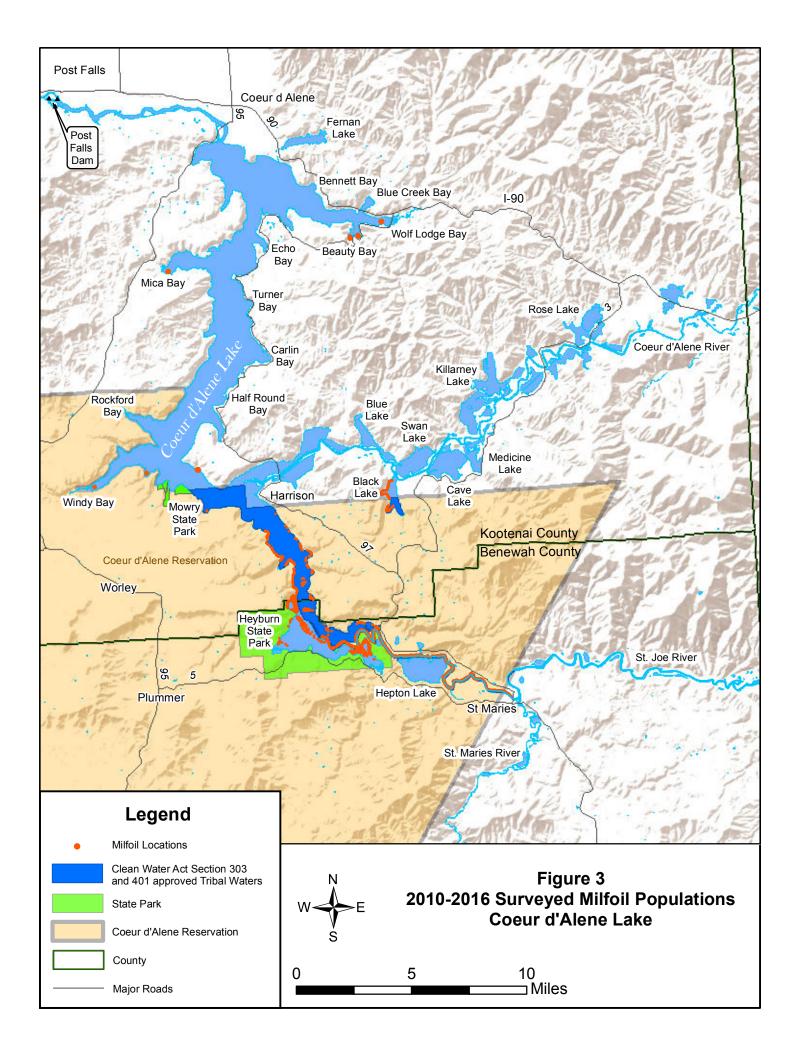
9.0 **REFERENCES**

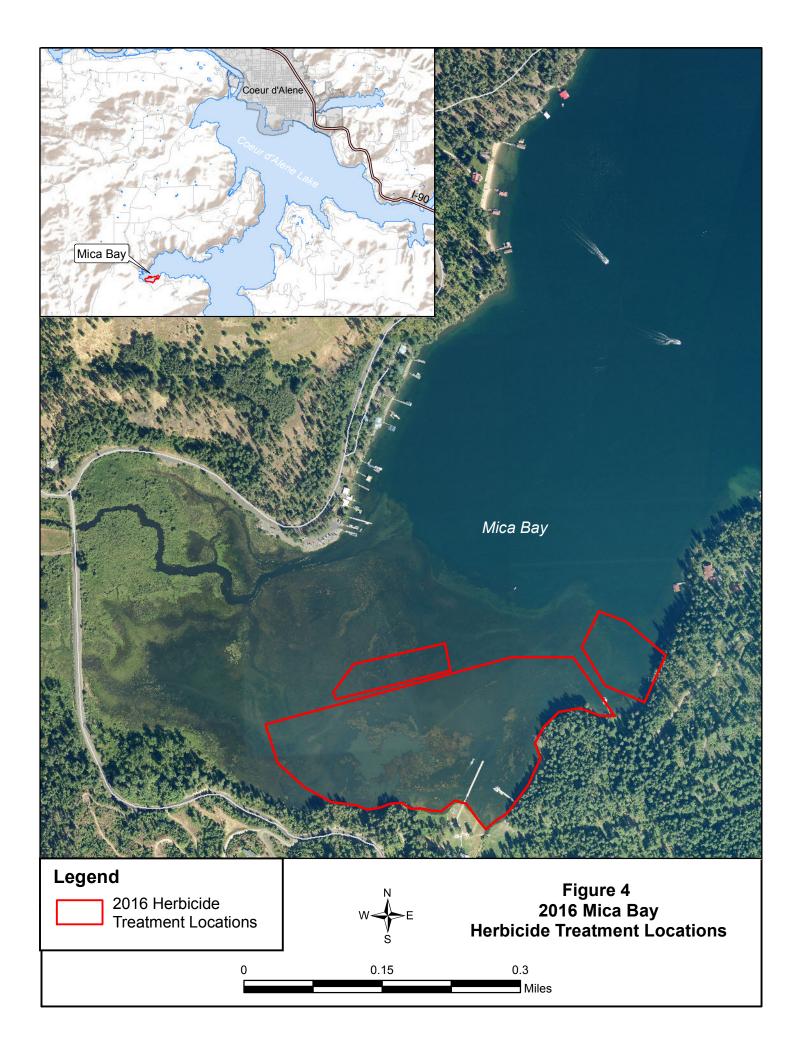
- Avista. 2011. Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters 2011 Summary Report.
- Avista. 2013. Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters 2013 Summary Report.
- Borman, S., Korth, R., and J. Temte. 1997. <u>Through the Looking Glass: A Field Guide to</u> <u>Aquatic Plants</u>. University of Wisconsin Press, Madison, WI. 256 pp.
- Coeur d'Alene Tribe Lake Management Department. 2006. 2006 Coeur d'Alene Tribe Eurasian Watermilfoil Control Program Project Completion Report. Coeur d'Alene Tribe Lake Management Department, Plummer, ID.
- Coeur d'Alene Tribe Lake Management Department. 2007 Coeur d'Alene Tribe Eurasian Watermilfoil Control Program Project Completion Report. Coeur d'Alene Tribe Lake Management Department, Plummer, ID.
- Coeur d'Alene Tribe Lake Management Department. 2008 Coeur d'Alene Tribe Eurasian Watermilfoil Control Program Project Completion Report. Coeur d'Alene Tribe Lake Management Department, Plummer, ID.
- Coeur d'Alene Tribe Lake Management Department. 2009 Coeur d'Alene Tribe Eurasian Watermilfoil Control Program Project Completion Report. Coeur d'Alene Tribe Lake Management Department, Plummer, ID.
- Coeur d'Alene Tribe Lake Management Department. 2010 Coeur d'Alene Tribe Eurasian Watermilfoil Control Program Project Completion Report. Coeur d'Alene Tribe Lake Management Department, Plummer, ID.
- DiTomaso, J.M., and E.A. Healy. 2003. <u>Aquatic and Riparian Weeds of the West</u>. Publication 3421. University of California Agriculture and Natural Resources, Oakland, CA. 442 pp.
- Washington State Department of Ecology. 2001. <u>An Aquatic Plant Identification Manual</u>. Publication 01-10-032. 195 pp.

FIGURES









APPENDIX A CONSULTATION RECORD

Avista's Letter to the Coeur d'Alene Tribe

VISTA 1411 East Mission Avenue O Box 3727 pokane, WA 99220-3727 December 28, 2016 Ben Scofield Coeur d'Alene Tribe P.O. Box 408 / 850 A Street Plummer, ID 83851 Subject: Spokane River Project License, FERC Project No. 2545, Article 410, Submittal of the 2016 Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters Summary Report Dear Mr. Scofield: In accordance with the Federal Energy Regulatory Commission's (FERC) June 18, 2009 Spokane River Hydroelectric Project (No. 2545) License Article 410, Avista developed and submitted a Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters (Plan) for FERC's approval. FERC approved the Plan on January 19, 2011 allowing Avista to begin implementation. The Plan requires Avista to submit an annual report that summarizes the activities that it implemented during 2016 to monitor and control aquatic weeds on Coeur d'Alene Lake Non-Tribal Waters to the Idaho Department of Environmental Quality (IDEQ), Idaho State Department of Agriculture (ISDA), Kootenai County Noxious Weed Control Board (KCNWCB), and the Coeur d'Alene Tribe for a 30-day review prior to submitting it to FERC for approval. With this, please review the attached 2016 Coeur d'Alene Lake Aquatic Weed Management for Non-Tribal Waters Summary Report and provide any comments or recommendations that you may have prior to February 1, 2017. If you have any questions regarding the annual report, please feel free to contact me at (509) 495-2796. Sincerely, David Armes Terrestrial Resource Specialist Enclosure Jamie Brunner, IDEQ cc: Tom Woolf, ISDA Bill Hargrave, KCNWCB Speed Fitzhugh, Avista

Coeur d'Alene Tribe's Comments and Avista's Response

Coeur d'Alene Tribe's Comment #1:

I wouldn't call *M. sibiricum* a noxious weed. Maybe try this wording for the highlighted part, "Non-native Eurasian watermilfoil (*Myriophyllum spicatum*) and hybrid watermilfoil (*M. spicatum x M. sibiricum*), referred to collectively as milfoil,"

Page 1 Section 1.0 INTRODUCTION (1.2) Coeur d'Alene Lake Aquatic Weed Management Plan:

"Non-native Eurasian watermilfoil (*Myriophyllum spicatum*) and the hybrid of Eurasian watermilfoil and the navtive northern watermilfoil (*M. sibiricum*), are referred to collectively as milfoil..."

Avista's Response

The sentence referenced was revised. M. sibiricum is not considered a noxious weed.

Coeur d'Alene Tribe's Comment #2:

Change two to three in the following sentence.

Page 3 Section 3.0 SURVEYS:

"Genus and species groups were identified referencing two field manuals for aquatic plants of North America and Washington State..."

Avista's Response

Two was changed to three to address the comment.

Coeur d'Alene Tribe's Comment #3:

Can you show a map for each survey area? I'd like to see: 1) the estimated milfoil acreage polygons 2) points for single plants encountered, and 3) a gps trail documenting the visual survey course and survey date.

Page 3 Section 3.0 SURVEYS:

"In 2016, milfoil was observed in Mica Bay (30 acres of moderate milfoil), Windy Bay (4-5 plants), Wolf Lodge Bay (1-2 acres of sparse milfoil), Bell Bay (2-3 plants) and Harrison Slough (20-25 acres of sparse milfoil), as well as Black Lake, Cave Lake and Medicine Lake (an estimated 500-600 acres in all three lakes)."

Avista's Response

Maps with polygons and estimated acreages of the 2016 treatment area are included in the Summary Report. The Cooperating Parties that participate in surveying milfoil, per the Plan, do not provide the level of specificity requested, as it is not necessary to achieve the Plan's Purpose and Objectives. The existing survey and mapping process has been effective in implementing the Plan since 2011.

Coeur d'Alene Tribe's Comment #4:

See previous comment, but mainly, I'd like to see more detail for survey work in the maps. Perhaps you could show each bay and lake separately with the survey tracks, milfoil polygons, and milfoil points.

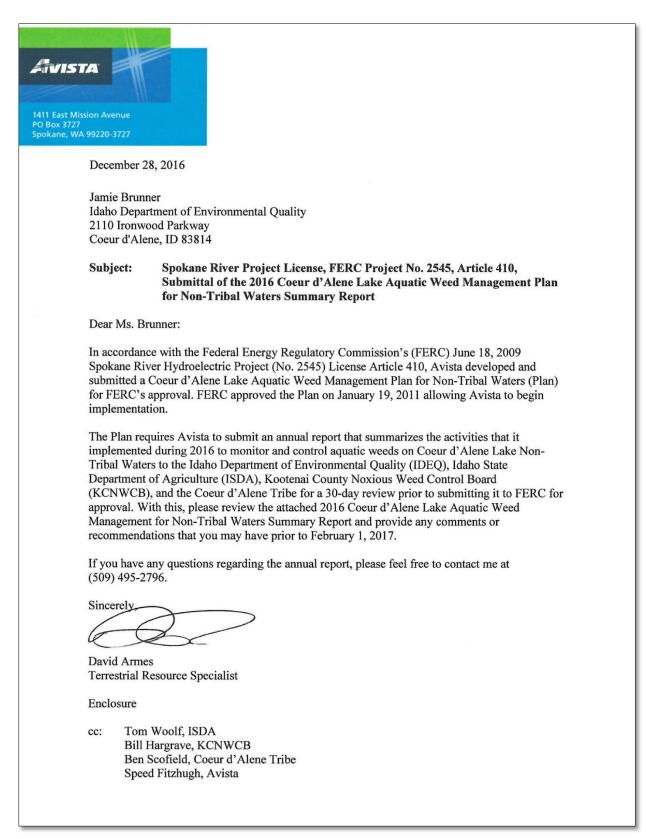
Page 3 Section 3.0 SURVEYS:

"A map of the 2011-2016 survey results in non-tribal waters, was combined with known locations of milfoil in Tribal waters (managed under the Coeur d'Alene Reservation Aquatic Weed Management Plan) to provide a comprehensive representation of the surveyed populations of milfoil in Coeur d'Alene Lake (Figure 3)."

Avista's Response

This level of detail was not recorded for the surveyed areas, as indicated in the previous response. Figure 3 provides a general overview of surveyed milfoil locations within the lake, both on and off the Reservation, as reflected by the modified text on page 3. A map of Mica Bay, the area surveyed and treated by Avista in 2016, is included as Figure 4.

Avista's Letter to the Idaho Department of Environmental Quality



Idaho Department of Environmental Quality's Comment and Avista's Response

The Idaho Department of Environmental Quality did not provide comments on the Report.

Avista's Letter to Kootenai County Noxious Weed Control Board

AVISTA PO Box 3727 Spokane, WA 99220-3727 December 28, 2016 **Bill Hargrave** Kootenai County Noxious Weed Control 10905 N. Ramsey Rd. Hayden, ID 83835 Subject: Spokane River Project License, FERC Project No. 2545, Article 410, Submittal of the 2016 Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters Summary Report Dear Mr. Hargrave: In accordance with the Federal Energy Regulatory Commission's (FERC) June 18, 2009 Spokane River Hydroelectric Project (No. 2545) License Article 410, Avista developed and submitted a Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters (Plan) for FERC's approval. FERC approved the Plan on January 19, 2011 allowing Avista to begin implementation. The Plan requires Avista to submit an annual report that summarizes the activities that it implemented during 2016 to monitor and control aquatic weeds on Coeur d'Alene Lake Non-Tribal Waters to the Idaho Department of Environmental Quality (IDEQ), Idaho State Department of Agriculture (ISDA), Kootenai County Noxious Weed Control Board (KCNWCB), and the Coeur d'Alene Tribe for a 30-day review prior to submitting it to FERC for approval. With this, please review the attached 2016 Coeur d'Alene Lake Aquatic Weed Management for Non-Tribal Waters Summary Report and provide any comments or recommendations that you may have prior to February 1, 2017. If you have any questions regarding the annual report, please feel free to contact me at (509) 495-2796. Sincerely. David Armes Terrestrial Resource Specialist Enclosure cc: Jamie Brunner, IDEQ Tom Woolf, ISDA Ben Scofield, Coeur d'Alene Tribe Speed Fitzhugh, Avista

Kootenai County Noxious Weed Control Board's Response E-Mail

From: To: Subject: Date: Attachments:	Bill Hargrave <u>Armes, David</u> [External] RE: Coeur d"Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters 2016 Summary Report Thursday, January 05, 2017 9:35:47 AM <u>image001.png</u> <u>image002.png</u> <u>image003.png</u>	
David,		
Thanks for all ye	ou do.	
At this time Koo	otenai wishes to not comment on this summary.	
Thanks for all th	ne hard work.	
Looking forward	Looking forward to our next meeting.	
Bill Hargrave Weed Superintendent Kootenai County Noxious Weed Control Chair IECWMA Region 1 IAWCS Exe,Board Rep. 10905 N.Ramsey Rd. Hayden, ID 83835 Office: 208.446.1290 Desk: 208.446.1291 Fax: 208.446.1282 Email- bhargrave@kcgov.us		

Avista appreciates the Kootenai County Noxious Weed Control's response.

Avista's Letter to Idaho State Department of Agriculture

AVISTA PO Box 3727 Spokane, WA 99220-3727 December 28, 2016 Tom Woolf Idaho State Department of Agriculture P.O. Box 790 2270 Old Penitentiary Road Boise, ID 83701 Subject: Spokane River Project License, FERC Project No. 2545, Article 410, Submittal of the 2016 Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters Summary Report Dear Mr. Woolf: In accordance with the Federal Energy Regulatory Commission's (FERC) June 18, 2009 Spokane River Hydroelectric Project (No. 2545) License Article 410, Avista developed and submitted a Coeur d'Alene Lake Aquatic Weed Management Plan for Non-Tribal Waters (Plan) for FERC's approval. FERC approved the Plan on January 19, 2011 allowing Avista to begin implementation. The Plan requires Avista to submit an annual report that summarizes the activities that it implemented during 2016 to monitor and control aquatic weeds on Coeur d'Alene Lake Non-Tribal Waters to the Idaho Department of Environmental Quality (IDEO), Idaho State Department of Agriculture (ISDA), Kootenai County Noxious Weed Control Board (KCNWCB), and the Coeur d'Alene Tribe for a 30-day review prior to submitting it to FERC for approval. With this, please review the attached 2016 Coeur d'Alene Lake Aquatic Weed Management for Non-Tribal Waters Summary Report and provide any comments or recommendations that you may have prior to February 1, 2017. If you have any questions regarding the annual report, please feel free to contact me at (509) 495-2796. Sincerely David Armes Terrestrial Resource Specialist Enclosure Jamie Brunner, IDEQ cc: Bill Hargrave, KCNWCB Ben Scofield, Coeur d'Alene Tribe Speed Fitzhugh, Avista

Idaho State Department of Agriculture's Comment and Avista's Response

The Idaho State Department of Agriculture did not provide comments on the Report.