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# The Clark Fork Project FERC Project No. 2058

2022 Annual Report



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#### 1.1 Document Background and Purpose

Avista owns and operates the Noxon Rapids and Cabinet Gorge hydroelectric developments (HEDs), known collectively as the Clark Fork Project. Operation of the Clark Fork Project is conditioned by the Clark Fork Settlement Agreement (CFSA), signed in 1999 and the Federal Energy Regulatory Commission (FERC) License No. 2058 (License), effective March 1, 2001.

Article 402 of the License requires that Avista file an Annual Report on or before April 15, including a summary of the protection, mitigation, and enhancement (PM&E) measures implemented, funds expended, and resource benefits gained during the previous calendar year, as well as the annual implementation plans for PM&E measures proposed for the current calendar year. In the event the Management Committee (MC) identifies any unresolved issue with regard to the implementation of the CFSA, the Annual Report will include an explanation of such issues. In 2002, FERC granted Avista's request to submit the proposed annual implementation plans for PM&E measures in a separate document on or before April 15.

In addition, the following License articles require annual reporting that are included as sections of Avista's Annual Report. The original submittal dates for annual reporting of these articles were modified after License issuance.

Article Number	Description	<b>Revision Document</b>
412	Water Quality Protection and Monitoring Plan	FERC Order No. P-2058-025
432	Threatened and Endangered Species Plan	Letter from USFWS (August 8, 2002)
433	Fishway Plan and Annual Report	Letter from USFWS (August 8, 2002)
442	Use and Occupancy of Project Lands and Waters	FERC Order No. P-2058-026, -031, & -032

#### 1.2 Summary

The 2022 Annual Report documents the twenty-fourth consecutive year of implementation of the CFSA and twenty-second year of the License. In 2022, Avista implemented the terms and conditions of the CFSA in consultation with, and full approval of, the MC and the terms and conditions of the License. The MC is comprised of State and Federal agencies, non-governmental organizations, and five Native American Tribes (see Section 2). Avista, in consultation with members of the MC, continued to implement the current PM&E measures identified in the CFSA and the License. The MC, Terrestrial Resources Technical Advisory Committee (TRTAC), Water Resources Technical Advisory Committee (WRTAC), and Cultural Resources Management Group (CRMG) continued to meet in 2022.

The MC members agreed to utilize a virtual platform for the annual March meeting to approve the 2021 CFSA Budget Report and 2022 Annual Implementation Plans (AIPs) with associated funding for all active PM&E measures identified in the CFSA and the FERC License. All items were approved by consensus.

The annual September meeting was the first in-person MC meeting since 2019. The 2022 AIP updates were provided and the MC reviewed the management of two of the properties owned by

Avista under CFSA Appendix J (Wildlife, Botanical and Wetland Management Plan). The MC approved by consensus maintaining the status quo of the South Fork Bull River and Frog Pond Day-Use Area ownership and management for a minimum of five years, recognizing that any future actions will require MC review and approval.

In July 2022 FERC conducted an Environmental Inspection of the Clark Fork Project. An inspector was onsite for two days touring various PM&E measure project sites, reviewing files, and discussing License implementation. The FERC sent a letter to Avista in late July, communicating that Avista was in compliance with the License requirements related to fish and wildlife, recreation, cultural resources, and public safety.

Among the 22 PM&E measures, more than 100 projects and programs to benefit aquatic, terrestrial, historical, and cultural resources were implemented. The following paragraphs provide select highlights from the 2022 efforts.

Avista, through CFSA Appendix R, continued to work with Idaho and Montana State Historic Preservation offices, the U.S. Forest Service (USFS), and representatives from five Native American Indian tribes (Confederated Salish and Kootenai, Coeur d'Alene, Kootenai, and Kalispel), collectively referred to as the CRMG, to preserve and protect cultural and historic resources associated with the Clark Fork Project. In 2022, the Avista Cultural Resource Specialist and/or the CRMG reviewed 56 CFSA-related projects with proposed ground disturbance and/or projects related to the Noxon Rapids and Cabinet Gorge HEDs.

Kiosk installation and replacement at heavily used recreation sites has been an ongoing project since 2019. The purpose of this project was to replace aging infrastructure, install kiosks at high use recreation sites, and update recreation maps with FERC-required information. The final kiosks



New kiosk installed at Thompson Falls State Park Trailhead.

were installed in 2022, bringing the newly installed total to 24. The new kiosk design provides additional space for required signage such as restricted areas, maps, fire restrictions, and fish identification. With the recent increases in recreational use and site visits (increases observed 2020-2022), updating facilities and signage remains a priority to enhance visitor experience.



Triangle Pond Day-Use Area is stocked by Montana Fish, Wildlife and Parks (MFWP) for 'put-and-take' fishing and offers public access for canoeing, kayaking, and swimming. In conjunction with the USFS, an extensive project to update and redesign aspects of the site saw substantial advancement over the course of 2022. Road grading, parking lot expansion, barrier rock placement, and pavilion reconstruction were completed over the course of the spring and summer. These improvements universally will provide accessible amenities, eliminate offroad driving and degradation of vegetation, increase vehicle accessibility, and alleviate roadway ponding. In the coming year, two picnic

areas on the western side of the pond will be expanded to include picnic tables and fire rings, and a bear-resistance trash receptacle will be installed near the pavilion.

Easing COVID-19 guidelines allowed for increased in-person Bull Trout awareness events and activities in 2022. The Idaho Department of Fish and Game (IDFG) enforcement and public education officer participated in numerous field days and educational events such as Pend Oreille Waterfest, Farragut Fish Day, and Hayden Elementary School Science Day. The CFSA-funded Native Fisheries Education Trailer was utilized in Idaho and upgraded with interpretive panels in 2022. Both the trailer and the underwater camera were specifically requested by teachers as they allow students to see spawning activity firsthand.



An IDFG Officer using the Native Fisheries Education Trailer at the Pend Oreille Waterfest in May 2022.



Avista personnel performing monitoring in 2018 as part of the 14-year EFBR non-native fish suppression project.

From 2007 through 2020 Avista conducted non-native fish suppression efforts in the East Fork Bull River (EFBR). These efforts included removal of non-native fish by stream electrofishing, barring upstream passage of non-native trout at fish traps, and excavation of Brown Trout redds. In 2022, a report summarizing this fourteenyear project was finalized and concluded that the suppression efforts were successful in significantly reducing the abundance of non-native species. However, a lasting response of increased juvenile Bull Trout abundance was not evident, likely due to lower Bull Trout redd counts. With the anticipated increase in upstream transport of adult Bull Trout to the EFBR, keeping non-native species populations low will

continue to be important. Additionally in 2022, Avista, MFWP, and U.S. Fish and Wildlife Service (USFWS) finalized a report that summarized existing fisheries data and listed potential management actions to reduce non-native threats for the three adfluvial Bull Trout tributaries in the Montana Project Area. This cooperatively developed report evaluated stream-specific actions that may be instituted in the future to benefit native trout for the EFBR, Vermilion River, and Graves Creek.

Substantial progress was made on a habitat project in Rattle Creek, a tributary to Lightning Creek in Idaho. The goal of the overall project is to restore habitat for Bull Trout and Westslope Cutthroat Trout by replacing large woody debris that was washed out during major flood events in 2006 and 2015. Habitat conditions in the creek have steadily worsened with significant loss of pools and gravels as well as increased erosion. Project partners including Avista, IDFG, USFS, and USFWS, convened a working group and conducted LiDAR surveys in September 2022 develop 30% designs to for restoration work in the next few years.



The Rattle Creek current streambed condition is dominated by cobbles and boulders, with little to no smaller sediment or gravel.



Creel survey flights cover a geographic area from the Clark Fork River delta near Clark Fork, Idaho down to the Pend Oreille River near Dover, Idaho.

In March of 2022, Avista and IDFG began a jointly funded creel survey on Lake Pend Oreille (LPO) and the Pend Oreille River that continued throughout the year. The last comprehensive creel survey of this nature was performed in 2014; however, it did not include the Pend Oreille River. There have been 170 flights and 3,000 interviews to collect angling effort information and provide details on the use of these fisheries. The creel survey will be completed mid-March 2023. Preliminary estimates show most fishing effort is expended by anglers targeting Rainbow Trout, kokanee, and bass at various times of the year. These data, along with other fishery information such as estimates of catch and harvest rates, total harvest, and fish size will be used to determine how well these fisheries are

performing relative to 2014.

Downstream of Cabinet Gorge Dam Avista operated a temporary, shore-based total dissolved gas (TDG) monitoring station to capture TDG data during the spill season. A significant benefit of the shore-based TDG monitoring station is that there is less likelihood of losing equipment and data compared to when the equipment was deployed from a boat anchored in the lower Clark Fork

River. Avista also established the ability to feed data directly into the Cabinet Gorge Dam operations database. allowing operators to view TDG data in real-time and ensure that TDG production is minimized. In addition, the MC approved the Final 2022 Phase III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project. The Phase III document was developed in collaboration with the Gas Supersaturation Subcommittee and outlines the calculation method and spending of CFSA Appendix F5 funds for the remainder of the License. This document is the culmination of CFSA stakeholders collaboratively establishing a process to reduce TDG production at Cabinet Gorge Dam and mitigating for potentially harmful effects of elevated TDG in the lower Clark Fork River and LPO.



The shore-based TDG monitoring station records TDG and temperature data every 15 minutes downstream of Cabinet Gorge Dam, from about mid-March to October each year.



The Cabinet Gorge Fish Passage Facility construction was completed in 2022.

During 2022, Avista and the project team completed construction of the Cabinet Gorge Fish Passage Facility (CGFPF) located below Cabinet Gorge Dam and began the commissioning process. It took an extensive coordination effort among individuals from many departments within Avista along with stakeholder support to complete construction of this project. The CGFPF was operated intermittently between mid-July and mid-October as the project team worked to identify and resolve mechanical and fish harm issues as they arose. A total of 704 fish were captured and transported to the Cabinet Gorge Fish Handling Facility to be processed including five Westslope Cutthroat Trout and two

Bull Trout.

The history of the first Bull Trout captured in the CGFPF highlights the enormous amount of effort and commitment that has been undertaken through implementation of the CFSA programs. This Bull Trout was first captured as a juvenile in Graves Creek, a tributary to Noxon Reservoir, in Montana in 2019 under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. It was 167 mm long when it was captured moving downstream in the Graves Creek

Permanent Weir Trap and was transported and released downstream of Cabinet Gorge Dam in Idaho. This fish moved downstream into LPO before returning to the base of Cabinet Gorge Dam where it was captured on September 18, 2022, in the CGFPF. It had grown to 602 mm in length and was transported back upstream to Graves Creek.



The first Bull Trout captured at CGFPF, later transported to her genetic stream of origin Graves Creek.

# **1.3** Acronyms and Abbreviations

AIP	Annual Implementation Plan
CFS	cubic feet per second
CFSA	Clark Fork Settlement Agreement
CGDF or CGFPF	Cabinet Gorge Fish Passage Facility
CPUE	Catch per unit effort
CRMG	Cultural Resources Management Group
EWM	Eurasian watermilfoil
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GMCD	Green Mountain Conservation District
GSCP	Gas Supersaturation Control Program
HED	hydroelectric development
IDFG	Idaho Department of Fish and Game
KNRD	Kalispel Tribe Natural Resources Department
LCFWG	Lower Clark Fork Watershed Group
LPO	Lake Pend Oreille
LUMP	Land Use Management Plan
MC	Management Committee
M&E	Monitoring and Evaluation
MFWP	Montana Fish, Wildlife and Parks
NP	Northern Pike
NSRP	Native Salmonid Restoration Plan
PIT	passive integrated transponder
PM&E	protection, mitigation, and enhancement
RPMs	Reasonable and Prudent Measures
RRMP	Recreation Resource Management Plan
TDG	total dissolved gas
TRTAC	Terrestrial Resources Technical Advisory Committee
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WRTAC	Water Resources Technical Advisory Committee

### Section 2: Management Committee

#### 2.1 Purpose

Paragraph 26 of the CFSA established a MC composed of representatives from each of the CFSA signatories. The MC oversees all PM&E measures. The MC shall have the authority, subject to such FERC approvals as may be necessary in appropriate cases, to:

- Approve plans developed by Avista and the appropriate technical committee for the implementation of PM&E measures, including the related funding;
- Approve modifications of PM&E measures;
- Oversee the implementation of all PM&E measures by Avista and the appropriate committees;
- Establish such committees as it deems necessary for the purpose of implementing the CFSA and PM&E measures, and determine, as appropriate, the size, membership, and procedures of such committees;
- Establish appropriate procedures for conducting its activities, including procedures for proxy voting and teleconferencing methods;
- Permit additional entities to execute the CFSA and thereby become parties to the CFSA (Parties) and, as appropriate, permit the addition of such new Parties on terms different from those of the original signatories to the CFSA;
- Resolve all disputes regarding implementation of approved PM&E measures and all disputes brought to it for resolution by any of the Parties or committees;
- Amend the CFSA including the PM&E measures, in accordance with the voting provisions set forth in the CFSA.

#### 2.2 List of Representatives

In 2022, the MC consisted of representatives from 27 Parties of the CFSA. Representatives are verified bi-annually through the sign-in sheet distributed at each MC meeting. The 2022 MC representatives are listed below:

Avista	Nate Hall
Bull River Watershed Council	Tom McDowell
Cabinet Resource Group	Jim Nash
Coeur d'Alene Tribe	Phillip Cernera/Caj Matheson
Confederated Salish and Kootenai Tribes	Les Evarts
Green Mountain Conservation District	Terry Hightower/Sarah Busmire
Idaho Department of Environmental Quality	Bob Steed
Idaho Department of Fish and Game	Chip Corsi/Carson Watkins
Idaho Rivers United	Kevin Lewis
Kalispel Tribe	Joe Maroney
Kootenai Tribe of Idaho	Shawn Young
Lake Pend Oreille Idaho Club	Ryan Roslak/David Gillespie
Montana Bass Federation	Bob Beberg
Montana Department of Environmental Quality	Keenan Storrar
Montana Department of Natural Resources and Conservation	Valerie Kurth
Montana Fish, Wildlife and Parks	Jim Williams/Lee Anderson

Montana State Historic Preservation Office Noxon-Cabinet Shoreline Coalition Panhandle Chapter Trout Unlimited Rock Creek Alliance Sanders County, Montana U.S. Fish and Wildlife Service U.S. Forest Service Jessica Bush Rick Robinson Loren Albright/Bill Love Diane Williams/Mary Costello Tony Cox Ben Conard Michael Fieger

Management Committee representatives not designated in 2022:

Alliance for the Wild Rockies Elk Creek Watershed Council Idaho Department of Parks and Recreation Idaho State Historic Preservation Office

#### 2.3 Meeting and Activity Summary

Due to COVID-19 concerns and precautions in 2022, the MC again conducted business utilizing an alternative process, both virtual and in-person meetings, to meet the requirements of Paragraph 28 of the CFSA. These represented the 56<sup>th</sup> and 57<sup>th</sup> meetings of this group since the signing of the CFSA. The first meeting of 2022 consisted of sending all members copies of the 2022 AIPs and holding a virtual meeting on March 15, 2022. Through this process all 2022 AIPs were approved as presented by consensus. The MC approved the document titled "Final 2022 Phase III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project". This document is a follow-up to the document titled "Final 2009 Addendum Final Gas Supersaturation Control Program for the Clark Fork Project" and describes how mitigation funding for Appendix F5 will be calculated and used for the remainder of the CFSA license term (i.e., 2022–2045). Also, the MC reviewed the 2021 Annual Report and approved the budget sheet. The second meeting of the 2022 AIPs. The MC reviewed and approved by consensus maintaining the ownership status quo of the South Fork Bull River and Frog Pond parcels for the next five years.

All meetings were open to the public, meeting information was placed on Avista's Clark Fork Project website, and notices were placed in the local newspaper. Annual Implementation Plans and project updates were provided to the MC and anyone that requested them.

#### 2.3.1 2022 Consent Mails

Throughout 2022, the MC reviewed and approved four Consent Mails received through the request process established by the Clark Fork Management Committee Procedures. Consent Mail requests are a business process utilized for decision making between MC meetings. Proposals that are approved move forward, while those that are not approved are discussed at the next regularly scheduled MC meeting. The following proposals were received by Consent Mail, and approved:

• January 24, 2022 request for approval for the Lake Pend Oreille and Pend Oreille River Creel Survey project plan (CFSA Appendix F5; approved on February 10, 2022).

- April 21, 2022 request for approval for facilities fund budget allocation for Pilgrim Creek Park (CFSA Appendix H; approved on May 6, 2022).
- May 3, 2022 request for approval for Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade (CFSA Appendix T; approved on May 18, 2022).
- October 5, 2022 request for facilities fund budget allocation for Cabinet Gorge Dam viewpoint road replacement (CFSA Appendix H; approved on October 25, 2022).

#### 2.4 Key 2022 References

- Avista. 2022. Consent Mail approval of Appendix F5 Lake Pend Oreille and Pend Oreille River Creel Survey (February 10, 2022). Avista document identification number 2022-0018.
- Avista. 2022. Consent Mail approval of Appendix H Facilities Fund Budget Allocation for Pilgrim Creek Park (May 6, 2022). Avista document identification number 2022-0088.
- Avista. 2022. Consent Mail approval of Appendix T Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade (May 18, 2022). Avista document identification number 2022-0089.
- Avista. 2022. Consent Mail approval of Appendix H Facilities Fund Budget Allocation for Cabinet Gorge Dam Viewpoint Road Replacement (October 25, 2022). Avista document identification number 2022-0167.
- Avista. 2022. Final 2022 Phase III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project. Avista document identification number 2022-0053.
- Avista. 2022. Public webpage for the Clark Fork Project. <u>https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing</u> (December 2022).
- Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Minutes from March 15, 2022. Avista document identification number 2022-0065.
- Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Record from September 21, 2022. Avista document identification number 2022-0194.
- Sanders County Ledger. 2022. Public meeting notice for the March MC Meeting (March 15, 2022). Avista document identification number 2022-0068.
- Sanders County Ledger. 2022. Public meeting notice for the September MC Meeting (September 21, 2022). Avista document identification number 2022-0193.

## Section 3: Water Resources Technical Advisory Committee

### 3.1 Purpose

The WRTAC is one of two technical advisory committees designated by Paragraph 32 of the CFSA. The WRTAC provides technical review of water-related PM&E measures (Section 3.2), including those dealing with fishery resources, water quality, and water quantity. The WRTAC is consulted in the development of appropriate implementation plans for water resources PM&E measures and related funding recommendations.

#### 3.2 Water Related PM&E Measures

PM&E Measure	CFSA Appendix	Clark Fork License Article
Idaho Tributary Habitat Acquisition and Fishery Enhancement Program	А	404
Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program	В	405
Fish Passage/Native Salmonid Restoration Plan	С	406
Bull Trout Protection and Public Education Project	D	407
Watershed Councils Program	Е	408
Clark Fork River Water Quality Monitoring Program	F1	409
Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals	F2	410
Aquatic Organism Tissue Analysis	F3	411
Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities	F4	412
Dissolved Gas Supersaturation Control, Mitigation, and Monitoring	F5	413
Project Operations Package	Т	429/430/431

#### **3.3** List of Representatives

The WRTAC consists of representatives appointed by MC members. The 2022 representatives are listed below:

Avista	Eric Oldenburg
Bull River Watershed Council	Tom McDowell
Cabinet Resource Group	Jim Nash
Coeur d'Alene Tribe	Caj Matheson
Confederated Salish and Kootenai Tribes	Craig Barfoot
Green Mountain Conservation District	Terry Hightower/Sarah Busmire
Idaho Department of Environmental Quality	Kristin Lowell/Chantilly Higbee
Idaho Department of Fish and Game	Ken Bouwens
Kalispel Tribe	Ken Merrill
Kootenai Tribe of Idaho	Shawn Young
Lake Pend Oreille Idaho Club	David Gillespie

Montana Bass Federation	Bob Beberg
Montana Department of Environmental Quality	Keenan Storrar
Montana Department of Fish, Wildlife and Parks	Jason Blakney
Montana Department of Natural Resources and Conservation	Valerie Kurth
Montana State Historic Preservation Office	Jessica Bush
Noxon-Cabinet Shoreline Coalition	Rick Robinson
Panhandle Chapter Trout Unlimited	Bill Love
Rock Creek Alliance	Diane Williams
U.S. Fish and Wildlife Service	Kevin Aceituno
U.S. Forest Service	Chris Rossel

The following parties to the CFSA did not designate WRTAC representatives in 2022:

Alliance for the Wild Rockies Elk Creek Watershed Council Idaho Department of Parks and Recreation Idaho Rivers United Idaho State Historic Preservation Office Sanders County, Montana

#### **3.4** Meeting and Activity Summary

The WRTAC met twice in 2022, on January 19 and August 30. The January meeting was conducted virtually due to the COVID-19 pandemic restrictions. The August meeting was conducted in-person with virtual attendance offered. Notices of the meetings were placed in the local newspaper and posted on Avista's Clark Fork Project website. In addition, the Aquatic Implementation Team scored all the ranked projects and provided the recommended scores to the WRTAC, which were subsequently ratified during the January 19 meeting.

#### 3.5 Key 2022 References

- Avista. 2022. Water Resources Technical Advisory Committee Meeting Packet from January 19, 2022. Avista document identification number 2022-0066.
- Avista. 2022. Water Resources Technical Advisory Committee Meeting Packet from August 30, 2022. Avista document identification number 2022-0196.
- Avista. 2022. Public webpage for the Clark Fork Project. <u>https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing</u> (December 2022).
- Sanders County Ledger. 2022. Public meeting notice for the January TAC Meetings (January 19, 2022). Avista document identification number 2022-0262.
- Sanders County Ledger. 2022. Public meeting notice for the August TAC Meetings (August 30, 2022). Avista document identification number 2022-0263.

# Section 4: Terrestrial Resources Technical Advisory Committee

#### 4.1 Purpose

The TRTAC is one of two technical advisory committees designated by Paragraph 32 of the CFSA. The TRTAC provides technical review of terrestrial-related PM&E measures (Section 4.2), including those dealing with wildlife, botanical resources, wetlands, land use, recreation, and aesthetics. The TRTAC is consulted in the development of appropriate implementation plans for terrestrial resource PM&E measures and related funding recommendations.

#### 4.2 Terrestrial Related PM&E Measures

PM&E Measures	CFSA Appendix	Clark Fork License Article
Implementation of the Land Use Management Plan	G	414
Implementation of the Recreation Resource Management Plan	Н	415
Implementation of the Aesthetics Management Plan I 416		416
Development and Implementation of the Wildlife, Botanical and Wetland Management Plan	J	417
Wildlife Habitat Acquisition, Enhancement and Management Program	K	418
Black Cottonwood Habitat Protection and Enhancement	L	419
Wetlands Protection and Enhancement ProgramM420		420
Forest Habitat Protection and EnhancementP425		425
Reservoir Island Protection	Q	426
Erosion Fund and Shoreline Stabilization Guidelines Program S 423		428

#### 4.3 List of Representatives

The TRTAC consists of representatives appointed by MC members. The 2022 representatives are listed below:

Avista	Arthur Potts
Bull River Watershed Council	Tom McDowell
Cabinet Resource Group	Rob Kjos
Coeur d'Alene Tribe	Caj Matheson
Elk Creek Watershed Council	Judy Hutchins
Green Mountain Conservation District	Terry Hightower
Idaho Department of Environmental Quality	Bob Steed
Idaho Department of Fish and Game	Ken Bouwens
Kalispell Tribe	Ray Entz/Kevin Lyons
Kootenai Tribe of Idaho	Sue Ireland/Shawn Young
Lake Pend Oreille Idaho Club	Will Crook
Montana Bass Federation	Bob Beberg
Montana Department of Environmental Quality	Craig Jones
Montana Fish, Wildlife and Parks	Mike Ebinger/Neil Anderson

Montana State Historic Preservation Office Noxon-Cabinet Shoreline Coalition Rock Creek Alliance Sanders County, Montana U.S. Fish and Wildlife Service U.S. Forest Service Jessica Bush Rick Robinson Mary Costello Tony Cox Wayne Kasworm Les Raynor/Ron Torretta

The following parties to the CFSA did not designate TRTAC representatives in 2022:

Alliance for the Wild Rockies Confederated Salish and Kootenai Tribes Idaho Department of Parks and Recreation Idaho Rivers United Idaho State Historic Preservation Office Montana Department of Natural Resources and Conservation Panhandle Chapter Trout Unlimited

#### 4.4 Meeting and Activity Summary

The TRTAC met twice in 2022, on January 20 and August 31. The January meeting was held by Microsoft Teams conference call due to the COVID-19 pandemic restrictions and the August meeting was hybrid with both in-person and virtual options. Notices of the meetings were placed in the local newspaper and posted on Avista's Clark Fork Project website.

#### 4.5 Key 2022 References

- Avista. 2022. Terrestrial Resources Technical Advisory Committee Meeting Minutes from January 20, 2022. Avista document identification number 2022-0067.
- Avista. 2022. Terrestrial Resources Technical Advisory Committee Meeting Minutes from August 31, 2022. Avista document identification number 2022-0195.
- Avista. 2022. Public webpage for the Clark Fork Project. <u>https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing</u> (December 2022).
- Sanders County Ledger. 2022. Public meeting notice for the January TAC Meetings (January 20, 2022). Avista document identification number 2022-0262.
- Sanders County Ledger. 2022. Public meeting notice for the August TAC Meetings (August 31, 2022). Avista document identification number 2022-0263.

# Section 5: Cultural Resources Management Group (License Article 427 – CFSA Appendix R)

#### 5.1 **Purpose and Resource Benefit**

The CRMG was formed in support of CFSA Appendix R (Clark Fork Heritage Resource Program). Appendix R of the CFSA corresponds to Article 427 in the FERC License for Clark Fork Project No. 2058.

The CRMG consists of representatives from Coeur d'Alene, Kootenai, Confederated Salish and Kootenai, Kalispel Tribes, Idaho and Montana State Historic Preservation offices, USFS, and Avista. Individual representatives of each tribe and agency may vary from meeting to meeting. Due to confidentiality requirements, these meetings are not open to the public. The CRMG reviews all ground-disturbing activities that may impact cultural or historic resources and uses the Clark Fork Heritage Resource Management Plan (Plan) to guide implementation of management efforts.

The purpose of CFSA Appendix R is to provide directives for all eligible properties associated with the Clark Fork Project, including dam sites, homesteading-era properties, pre-historic properties, and sites with traditional cultural significance. The Plan helps to support many of the projects in other CFSA PM&E measures. It also helps to ensure that historic properties are protected and managed. The Plan is intended to extend beyond a mere "treatment plan" and provides the flexibility to be useful to a variety of audiences. The Plan includes public education goals, objectives, and action strategies as important focuses.

#### 5.2 Meeting and Activity Summary

On March 1, 2022, the CRMG held a meeting to discuss the 2022 AIPs for aquatic and terrestrial resources, proposed ground disturbances at recreation sites, various land use permits, and annual monitoring results. The CRMG also reviewed the 2021 meeting minutes and annual work summary prior to finalization. This meeting was held through a conference call due to COVID-19 protocols with attendees representing Confederated Salish and Kootenai Tribes, USFS Kootenai National Forest, Montana State Historic Preservation Office, and Avista.

The fall CRMG meeting was cancelled since all projects and monitoring were going as planned.

#### 5.3 2022 Annual Implementation Plan Project Plan

- Clark Fork Heritage Resource Program
  - Completed per 2022 AIP<sup>1,2</sup>

#### 5.4 Other 2022 Activities

Other projects not specifically tied to aquatic or terrestrial PM&E measures reviewed by the Avista Cultural Resource Specialist and/or the CRMG include:

• Maintenance projects for Noxon Rapids and Cabinet Gorge dams and associated facilities.

### 5.5 Key 2022 References

- <sup>1</sup> Avista. 2021. CRMG Meeting Summary (Public Version) from March 2, 2021. Avista document identification number 2021-0310.
- <sup>2</sup> Avista. *In prep.* CRMG Meeting Summary (Public Version) from March 1, 2022.

#### 6.1 Idaho Tributary Habitat Acquisition and Fishery Enhancement Program (License Article 404 – CFSA Appendix A)

#### 6.1.1 **Purpose and Resource Benefit**

The purpose of this program is to offset the power peaking impacts of the Cabinet Gorge Development to native salmonid species (i.e., Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish). Resource benefits are accomplished through watershed restoration and enhancement, fishery monitoring and management support, and a public education and enforcement initiative focused on Bull Trout in Idaho.

#### 6.1.2 2022 Annual Implementation Plan Project Plans

#### Tributary Habitat Acquisition and Enhancement

- Habitat Restoration Scoping Allocation
   *Completed per 2022 AIP*<sup>1, 2, 3</sup>
- Habitat Restoration and Acquired Property Maintenance and Monitoring Allocation
   *Completed per 2022 AIP*<sup>1,4</sup>
- Priority Native Salmonid Habitat Acquisition and Conservation Allocation
   *Completed per 2022 AIP*<sup>1</sup>
- Idaho Field Station Operation and Maintenance
   *Completed per 2022 AIP*<sup>1</sup>
- Pack River Watershed Management Plan Addendum
   Variance<sup>1,5</sup>; see Section 6.1.3
- Lower Clark Fork River Minimum Flow and Water Temperature Monitoring
   Completed per 2022 AIP<sup>1, 6, 7</sup>
- Trestle Creek Habitat Enhancement Project Phase I
   *Completed per 2022 AIP*<sup>1,8</sup>
- Trestle Creek Habitat Enhancement Project Phase II
   Variance<sup>1</sup>; see Section 6.1.3
- Rattle Creek Habitat Enhancement Project Design
   *Completed per 2022 AIP*<sup>1, 9, 10</sup>

#### Fishery Resource Monitoring, Enhancement, and Management

Fish Resource Monitoring, Enhancement, and Management Plan
 *Variance*<sup>1, 7, 11, 12, 13, 14, 15</sup>; see Section 6.1.3

#### 6.1.3 **Projects with Significant Variances**

Project Plan	Variances
Pack River	The Pack River Native Salmonid Habitat Restoration Plan was not
Watershed	completed by the November 1, 2022 due date. The new completion
Management Plan	date for this document is November 1, 2023.
Addendum	
Trestle Creek	Based on the limited opportunities to add wood structures on Avista
Habitat	property, it was determined that conducting Phase II work as proposed
Enhancement	is not prudent to be initiated at this time. Therefore, a technical
Project Phase II	memoranda and design drawings will not be completed for this project.
Fish Resource	A temperature data logger was not placed in North Gold Creek. In
Monitoring,	addition, loggers from East Fork Lightning, Porcupine, Rattle, Savage,
Enhancement, and	and Trestle creeks only had data for about one month due to
Management Plan	temperature data being collected every minute rather than every 30
	minutes.

#### 6.1.4 Key 2022 References

- <sup>1</sup> Bouwens, K., A. Ransom, P. Kusnierz, and J. Erickson. 2022. Appendix A Idaho Tributary Habitat Acquisition and Fishery Enhancement Program. 2022 Annual Work Summary. Avista document identification number 2022-0278.
- <sup>2</sup> McFall, J. 2022. Summary of Strong Creek Site Visit (August 1, 2022). Technical Memorandum. Avista document identification number 2022-0191.
- <sup>3</sup> McFall, J. 2022. Strong Creek Site Bathymetry Survey (October 6, 2022). Technical Memorandum. Avista document identification number 2022-0204.
- <sup>4</sup> Benker, M. 2022. Avista Property Vegetation Management 2022 Report. Avista document identification number 2022-0205.
- <sup>5</sup> Erickson, J. *In prep.* Pack River Native Salmonid Habitat Restoration Plan.
- <sup>6</sup> Kusnierz, P. 2022. Lower Clark Fork River Minimum Flow and Water Temperature Monitoring. Project Completion Report. Avista document identification number 2022-0100.
- <sup>7</sup> Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (<u>Paul.Kusnierz@avistacorp.com</u>).

- <sup>8</sup> McFall, J. 2022. Trestle Creek Road Technical Support Status Update. Technical Memorandum. Avista document identification number 2022-0211.
- <sup>9</sup> McFall, J. 2022. Rattle Creek Hydraulic Analysis. Technical Memorandum. Avista document identification number 2022-0203.
- <sup>10</sup> Aero-Graphics, Inc. 2022. Rattle Creek ID Aerial Survey. Technical Project Report. Avista document identification number 2022-0271.
- <sup>11</sup> Ransom, A. L., and R. Jakubowski. 2022. Idaho Tributary Salmonid Abundance Monitoring. 2021 Annual Project Update. Avista document identification number 2022-0054.
- <sup>12</sup> Ransom, A. L., R. Jakubowski, and K. A. Bouwens. 2022. Pend Oreille Basin Bull Trout Redd Monitoring. 2021 Annual Project Update. Avista document identification number 2022-0035.
- <sup>13</sup> Ransom, A. L., K. A. Bouwens, and R. Jakubowski. 2022. 2009–2018 Idaho Tributary Monitoring. Comprehensive Project Report. Avista document identification number 2022-0261.
- <sup>14</sup> Ransom, A. L. 2022. Idaho Tributary Monitoring. 2022 Annual Project Update. Avista document identification number 2022-0235.
- <sup>15</sup> Ransom, A. L., R. Jakubowski, and K. A. Bouwens. *In prep.* Pend Oreille Basin Bull Trout Redd Monitoring. 2022 Annual Project Update.

#### 6.2 Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (License Article 405 – CFSA Appendix B)

#### 6.2.1 **Purpose and Resource Benefit**

The purpose of this program is to offset the impacts of the power peaking and reservoir operational impacts of the Clark Fork Project to native salmonids and recreational fisheries in Montana. This is achieved through a multiple-component program that includes the restoration and enhancement of Clark Fork River tributary watersheds, support of recreational fishery monitoring and management, and evaluation and implementation of recreational fishery enhancement projects. These programmatic efforts benefit tributary habitats within the project area and the native salmonid and recreational fisheries associated with them.

#### 6.2.2 2022 Annual Implementation Plan Project Plans

#### **Tributary Habitat Acquisition and Enhancement**

- Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan
   *Variance* <sup>1, 2, 3, 4</sup>; see Section 6.2.3
- Redd Surveys in Montana Tributaries
   Variance<sup>1, 5, 6</sup>; see Section 6.2.3
- Sims Meander Stream and Floodplain Restoration Project
   Variance<sup>1,7</sup>; see Section 6.2.3
- Stream Gage Monitoring

   Completed per 2022 AIP <sup>1, 4, 8, 9, 10, 11, 12, 13</sup>
- Crow Creek Bull Trout Investigation
   Variance<sup>1,14</sup>; see Section 6.2.3
- Graves Creek Pilot Habitat Enhancement Project
   *Completed per 2022 AIP*<sup>1, 15</sup>
- Upper Prospect Creek LWD Project
   Variance<sup>1, 16, 17, 18</sup>; see Section 6.2.3
- Lower Clark Fork Watershed Group Project Coordination
   *Variance*<sup>1, 19</sup>; see Section 6.2.3
- Habitat Restoration Monitoring, Maintenance and Contingency Allocation
   Completed per 2022 AIP<sup>1, 20</sup>

- Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Allocation
  - Completed per 2022 AIP<sup>1</sup>
- East Fork Bull River Morphology, Connectivity, and Habitat Enhancement Project
   *Variance*<sup>1, 21, 22</sup>; see Section 6.2.3

#### **Recreational Fishery Enhancement**

- Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan
   Completed per 2022 AIP<sup>1, 23, 24</sup>
- Pilot Project: Treatment of Eurasian Watermilfoil Beds with a Mechanical Harvester
   *Variance*<sup>1</sup>; see Section 6.2.3
- Mountain Lake Fisheries Monitoring Project
   Variance<sup>1, 25</sup>; see Section 6.2.3
- Lower Bull River Day Use Boat Access Site Operation
   Completed per 2022 AIP<sup>1, 26</sup>
- Noxon Reservoir Boat Ramp Improvements
   *Completed per 2022 AIP*<sup>1, 27</sup>
- Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs
   *Completed per 2022 AIP*<sup>1, 28</sup>
- Dreissenid Mussel Sampling on Noxon and Cabinet Gorge Reservoirs
   Completed per 2022 AIP<sup>1, 29</sup>
- Noxon Reservoir Bathymetry Update
   *Completed per 2022 AIP*<sup>1, 30</sup>

#### 6.2.3 **Projects with Significant Variances**

Project Plan	Variances
Habitat Restoration	Sampling in Swamp Creek did not occur in 2022 due to logistical
Monitoring and	constraints; sampling is scheduled to occur in 2023.
Native Salmonid	
Abundance	
Monitoring Plan	
<b>Redd Surveys in</b>	Ice and snow precluded conducting a Brown Trout redd survey,
Montana Tributaries	including the sampling of eggs from Brown Trout redds in the East
	Fork Bull River. Conditions also precluded performing the Bull River
	Bull Trout redd index survey.

Project Plan	Variances
Sims Meander Stream and Floodplain Restoration Project	The As-built Monitoring Report was not completed by USFS in 2022. This report has been rescheduled to be completed by March 31, 2023.
Crow Creek Bull Trout Investigation	The Project Completion Report was not completed by MFWP in 2022. This report has been rescheduled to be completed by December 31, 2023.
Upper Prospect Creek LWD Project	A report summarizing post-installation and one-year post-runoff physical data and associated photo-points was produced in 2022. The information in these work products (not specified in the Project Plan) will be incorporated into the technical memo as conditions allow for additional post-runoff data collection in either 2023 or 2024.
Lower Clark Fork Watershed Group Project Coordination	The Lower Clark Fork Stream Restoration Summary 1995–2021 review draft was not completed by March 31, 2022. The draft will be available for review by April 30, 2023.
East Fork Bull River Morphology, Connectivity, and Habitat Enhancement Project	The beaver management plan and flow management assessment and recommendations memoranda were completed but were late (due in July 31 and November 1, 2021, respectively).
Pilot Project: Treatment of Eurasian Watermilfoil Beds with a Mechanical Harvester	After consulting with the Sanders County Aquatic Plants Task Force, harvesting did not occur in 2022 due to a lack of EWM in areas adjacent to boat launches on Noxon Reservoir. As a result, the effects of mechanical removal versus herbicide treatment were not monitored and a comprehensive report will not be produced.
	Based on information gathered through this process the project partners determined that mechanical harvesting is not a feasible option at this time. This project will not be submitted to the MC for implementation in 2023.
Mountain Lake Fisheries Monitoring Project	The Comprehensive Project Report was not completed by December 31, 2022. This report will be finalized by December 31, 2023.

## 6.2.4 Key 2022 References

- <sup>1</sup> Rehm, T. 2022. Appendix B Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program. 2022 Annual Work Summary. Avista document identification number 2022-0289.
- <sup>2</sup> Rehm, T., J. Blakney, and T. Tholl. 2022. Native Salmonid Abundance and Tributary Habitat Restoration Monitoring. 2021 Annual Project Update. Avista document identification number 2022-0072.

- <sup>3</sup> Rehm, T., J. Blakney, and T. Tholl. *In prep*. Native Salmonid Abundance and Tributary Habitat Restoration Monitoring. 2022 Annual Project Update.
- <sup>4</sup> Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (<u>Paul.Kusnierz@avistacorp.com</u>).
- <sup>5</sup> Moran, S. *In prep.* Lower Clark Fork River, Montana Avista Project Area 2022 Annual Bull Trout and Brown Trout Redd Survey. 2022 Annual Project Update.
- <sup>6</sup> Moran, S. 2022. Lower Clark Fork River, Montana Avista Project Area 2021 Annual Bull Trout and Brown Trout Redd Survey. 2021 Annual Project Update. Avista document identification number 2022-0034.
- <sup>7</sup> Neesvig, C. *In prep.* As-Built Monitoring Report Sims Meander Stream and Floodplain Restoration Project.
- <sup>8</sup> USFS. 2022. Water Temperature Data Report, WY 2022, Bull River @ historic USGS Gaging Station – Noxon, Montana. Avista document identification number 2022-0280.
- <sup>9</sup> USFS. 2022. Water Temperature Data Report, WY 2022, East Fork of the Bull River Noxon, Montana. Avista document identification number 2021-0281.
- <sup>10</sup> USFS. 2022. Water Temperature Data Report, WY 2022, Rock Creek at Hwy 200 Noxon, Montana. Avista document identification number 2022-0282.
- <sup>11</sup> USFS. 2022. Water Sediment Temperature Data Report, WY 2022, Trout Creek at 214 bridge Trout Creek, Montana. Avista document identification number 2022-0283.
- <sup>12</sup> USFS. 2022. Water Sediment Temperature Data Report, WY 2022, Vermilion River at red bridge – Trout Creek, Montana. Avista document identification number 2022-0284.
- <sup>13</sup> USFS. 2022. Water Temperature Data Report, WY 2022, Graves Creek at Blue Slide Road
   Thompson Falls, Montana. Avista document identification number 2021-0285.
- <sup>14</sup> Blakney, J. In prep. Crow Creek Bull Trout Investigations. Project Completion Report; 2016– 2017.
- <sup>15</sup> Trout Unlimited, Montana Fish, Wildlife & Parks, Avista, and Lower Clark Fork Watershed Group. 2022. Graves Creek Pilot Habitat Enhancement Project. Two-year, post-runoff technical review of substrate changes (includes annual fixed-point photo-documentation). Avista document identification number 2022-0064.
- <sup>16</sup> Trout Unlimited, Montana Fish, Wildlife and Parks, Lolo National Forest, and Lower Clark Fork Watershed Group. 2022. Prospect Creek Large Woody Debris Monitoring 2020, 2021. Avista document number 2022-0232.

- <sup>17</sup> Trout Unlimited, Montana Fish, Wildlife and Parks, Lolo National Forest, and Lower Clark Fork Watershed Group. 2022. Upper Prospect Creek Large Wood Addition Project Photopoints: 2020 and 2021. Avista document number 2022-0233.
- <sup>18</sup> Trout Unlimited. In prep. Prospect Creek Large Woody Debris Monitoring post runoff technical memorandum.
- <sup>19</sup>Olson, B., and J. Blakney. *In prep*. Lower Clark Fork Stream Restoration Summary 1995– 2021. Comprehensive Project Report.
- <sup>20</sup> Rossel, C. and M. Thrash. 2022. Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process. Project Completion Report. Avista document identification number 2022-0223
- <sup>21</sup>Oldenburg, E. 2022. Beaver Management in the East Fork Bull River. Avista document identification number 2022-0206.
- <sup>22</sup> River Design Group, Inc. 2022. East Fork Bull River Preliminary Design Modeling. Memorandum. Avista document identification number 2022-0222.
- <sup>23</sup> Blakney, J., and T. Tholl. 2022. Cabinet Gorge and Noxon Reservoir Fisheries Monitoring. 2019 Annual Project Update. Avista document identification number 2022-0267.
- <sup>24</sup> Rehm, T., J. Blakney, and T. Tholl. 2022. Cabinet Gorge and Noxon Reservoir Fisheries Monitoring. 2021 Annual Project Update. Avista document identification number 2022-0225.
- <sup>25</sup> Blakney, J., R. Kreiner, J. Dukovcic, M. Terrazas, and T. Tholl. *In prep.* Mountain Lake Fisheries Monitoring Project. Comprehensive Project Report: 2016-2020.
- <sup>26</sup> Pinnacle Research and Consulting. 2022. 2022 Clark Fork Recreation Site Visitation. Avista document identification number 2022-0244.
- <sup>27</sup> Bennetts, D. 2022. Thompson Falls State Park Early Season Boat Ramp Access Plan of Action. Avista document identification number 2022-0037.
- <sup>28</sup> Clean Lakes Inc. 2022. 2022 Aquatic Invasive Species (AIS) Aquatic Pesticide Application Report (APAR). Avista document identification number 2022-0224.
- <sup>29</sup> Kusnierz, P. 2022. 2022 Dreissenid Mussel Sampling on Noxon and Cabinet Gorge Reservoirs. Memorandum. Avista document identification number 2022-0147.
- <sup>30</sup> Avista. 2022. Internal-use ReefMaster map; for more information on this map contact Eric Oldenburg (Eric.Oldenburg@avistacorp.com).

# 6.3 Fish Passage/Native Salmonid Restoration Plan (License Article 406 – CFSA Appendix C)

#### 6.3.1 **Purpose and Resource Benefit**

The purpose of the Fish Passage/Native Salmonid Restoration Plan is "...to mitigate the continuing effects of the project as obstructions to fish passage", and the resource benefit is "to increase the long-term population viability of native Salmonids in the Lake Pend Oreille (LPO)-lower Clark Fork River system" (FERC License Article 406). This goal is accomplished through the aggressive implementation of the Clark Fork River Native Salmonid Restoration Plan (NSRP).

#### 6.3.2 2022 Annual Implementation Plan Project Plans

#### Annual Operations

- Upstream Fish Passage Program

   Variance <sup>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</sup>; see Section 6.3.3
- Westslope Cutthroat Trout Transport Evaluation
   *Completed per 2022 AIP*<sup>1, 11, 12</sup>
- Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
   Variance<sup>1, 10, 13</sup>; see Section 6.3.3
- PIT-Monitoring Station Operation and Maintenance
   *Completed per 2022 AIP*<sup>1</sup>
- Non-native Fish Suppression Project in the East Fork Bull River
   *Variance*<sup>1,14</sup>; see Section 6.3.3
- Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations
  - Variance <sup>1, 15</sup>; see Section 6.3.3

#### Facilities

- Fish Capture Facilities Operation, Development, and Testing
   Variance 1, 9, 16, 17, 18, 19, 20, 21, 22, 23, 24; see Section 6.3.3
- Graves Creek Permanent Weir Trap Enhancements
   *Completed per 2022 AIP*<sup>1, 25, 26</sup>

## 6.3.3 **Projects with Significant Variances**

Project Plan	Variances
Upstream Fish Passage Program	Construction of the Cabinet Gorge Fish Passage Facility (CGFPF) was delayed and start up and commissioning did not occur until mid-July of 2022; therefore, the CGFPF was not operated in the spring prior to spill.
	Due to the delay in construction of the CGFPF the Fish Passage Facility subgroup decided to transport all Montana origin Bull Trout, captured downstream of Cabinet Gorge Dam by any method, upstream during 2022.
	The Upstream Fish Passage Program Comprehensive Project Report was due in December 2022. Development of this report is in progress with completion anticipated in 2023.
Tributary Trapping	The Comprehensive Project Report including a Graves Creek
and Downstream	Monitoring and Evaluation Plan Report (appendix within the former)
Juvenile Bull Trout	include data from 2022
Transport Program	
	The Graves Creek permanent weir trap Monitoring and Evaluation (M&E) Plan was not evaluated during 2022. The Aquatic Implementation Team will evaluate the Plan during 2023.
Non-native Fish	The Non-native Fish Suppression Project in the East Fork Bull River
Suppression Project	Drainage, Montana: 2007–2020 Project Completion Report, was
in the East Fork Bull River	completed in December as opposed to the September 1, 2022, due date.
Evaluation of	The 2022 project plan included a memorandum for the Evaluation of
Potential Actions for	Potential Actions for Reducing Non-native Threats to Native Salmonid
<b>Keducing Non-native</b>	Populations project as a work product. Rather, this was completed in the form of a Project Completion Report
Salmonid	the form of a froject Completion Report.
Populations	
Fish Capture	A decision on a new date to reinitiate discussions on the need for a fish
Facilities Operation,	passage facility at Noxon Rapids Dam was not approved by the MC in
Development, and	2022. The topic was discussed with management agencies and a
resung	proposal will be submitted to the MC in 2023.

#### 6.3.4 Key 2022 References

<sup>1</sup> Bernall, S., E. Oldenburg, and S. Moran. 2022. Appendix C Fish Passage/Native Salmonid Restoration Plan. 2022 Annual Work Summary. Avista document identification number 2022-0277.

- <sup>2</sup> Bernall, S., K. Duffy, and J. Johnson. *In prep.* Upstream Fish Passage Program. Comprehensive Project Report (2001–2021).
- <sup>3</sup> Bernall, S., and K. Duffy. *In prep.* Upstream Fish Passage Program. 2022 Annual Project Update.
- <sup>4</sup> Adams, B., R. Headley, and J. VonBargen. 2022. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2021 Annual Project Update. Avista document identification number 2022-0146.
- <sup>5</sup> Adams, B., R. Headley, and J. VonBargen. *In prep.* Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2022 Annual Project Update.
- <sup>6</sup> Sprague, L. 2022. Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho. 2021 Annual Project Update. Avista document identification number 2022-0207.
- <sup>7</sup> Sprague, L. *In prep.* Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho. 2022 Annual Project Update.
- <sup>8</sup> Avista. Passive Integrated Transponder (PIT) Tag Database; for more information on this database contact Shana Bernall (<u>Shana.Bernall@avistacorp.com</u>).
- <sup>9</sup> Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Minutes from March 15, 2022. Avista document identification number 2022-0065.
- <sup>10</sup> Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (<u>Paul.Kusnierz@avistacorp.com</u>).
- <sup>11</sup> Kovach, R. In prep. University of Montana Conservation Genetics Laboratory Report.
- <sup>12</sup> Rehm, T. In prep. Westslope Cutthroat Trout Transport Evaluation. Project Completion Report.
- <sup>13</sup> Oldenburg, E. W. *In prep*. Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Comprehensive Project Report - 2018–2022 (includes Graves Creek permanent weir trap monitoring and evaluation plan report as an appendix).
- <sup>14</sup> Moran, S., J. Storaasli, and P. Kusnierz. 2022. Non-native Fish Suppression Project in the East Fork Bull River Drainage, Montana; 2007–2020. Project Completion Report. Avista document identification number 2022-0268.
- <sup>15</sup> Moran, S., J. Blakney, T. Rehm, and K. Aceituno. 2022. Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations. Project Completion Report. Avista document identification number 2022-0033.

- <sup>16</sup> Avista. 2022. Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan (February 18, 2022). FERC Submittal. Avista document identification number 2022-0022.
- <sup>17</sup> Avista. 2022. Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo to the Management Committee (October 26, 2022). FERC Submittal. Avista document identification number 2022-0170.
- <sup>18</sup> Avista. 2022. Cabinet Gorge Dam Fishway Project Certifications and Final Construction Report (November 4, 2022). Avista document identification number 2022-0181.
- <sup>19</sup> Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Record from September 21, 2022. Avista document identification number 2022-0194.
- <sup>20</sup> Avista. 2022. Final Construction As-Built Exhibit A and Exhibit F-1 & F-9; Submittal for Approval Exhibits F-8 & F-11 (November 18, 2022). FERC Submittal. Avista document identification number 2022-0201.
- <sup>21</sup> Avista. 2022. Operations and Maintenance Manual Volume 1 Fish Handling Facility; for more information on this document contact Shana Bernall (<u>Shana.Bernall@avistacorp.com</u>).
- <sup>22</sup> Avista. 2022. Operations and Maintenance Manual Volume 2 Fish Handling Facility; for more information on this document contact Shana Bernall (<u>Shana.Bernall@avistacorp.com</u>).
- <sup>23</sup> LLC, James A. Sewell and Associates. 2022. Cabinet Gorge HED Avista Fish Handling Facility 2020 Upgrade; for more information on this document contact Shana Bernall (Shana.Bernall@avistacorp.com).
- <sup>24</sup> Stantec. 2022. Cabinet Gorge Dam Fishway as-built drawings; for more information on this document contact Shana Bernall (<u>Shana.Bernall@avistacorp.com</u>).
- <sup>25</sup> Kleinschmidt. 2022. As-built drawings for the Graves Creek permanent weir trap enhancements. Avista document identification number 2022-0237.
- <sup>26</sup> Lower Clark Fork Watershed Group. 2022. Graves Creek permanent weir post-construction revegetation plan. Avista document identification number 2022-0023.

# 6.4 Bull Trout Protection and Public Education Project (License Article 407 – CFSA Appendix D)

#### 6.4.1 **Purpose and Resource Benefit**

The purpose of this project is to protect Bull Trout, a federally listed species (threatened), through a combination of enhanced law enforcement efforts by the states of Idaho and Montana, coupled with a public education outreach program. This project will increase the numbers and population viability of Bull Trout by reducing intentional and incidental illegal harvest. In addition, the project increases public awareness on Bull Trout life history, habitat needs, identifying characteristics, and the potential for adverse impacts due to land use and other human activities.

#### 6.4.2 2022 Annual Implementation Plan Project Plans

- Idaho Bull Trout Protection and Education Officer Support
   Variance<sup>1</sup>; see Section 6.4.3
- Montana Bull Trout Education and Communication Support
   Variance<sup>1</sup>; see Section 6.4.3
- Montana Bull Trout Education Outreach Support
   Variance<sup>1</sup>; see Section 6.4.3
- Montana Game Warden Support
   *Completed per 2022 AIP*<sup>1</sup>
- Trout Unlimited Outreach Coordination
   *Completed per 2022 AIP*<sup>1</sup>
- Pend Oreille Water Festival
   *Completed per 2022 AIP*<sup>1</sup>

#### 6.4.3 **Projects with Significant Variances**

Project Plan	Variances
Idaho Bull Trout	The small sign in the IDFG office will not be installed as the Bull
Education Officer	in the 2020 project plan).
Support	
Montana Bull Trout	Social media posts were not run as described in the 2022 project plan
Education and	and will be posted in 2023. The online Bull Trout identification test
Communication	has not yet been released to the public; it is anticipated that this test
Support	will be available in early 2023.

Project Plan	Variances
Montana Bull Trout Education Outreach	A "Bull Trout Country" sign was not posted along the Bull River. Further investigations into sign placement along the Bull River are
Support	ongoing for 2023.

### 6.4.4 Key 2022 References

<sup>1</sup> Masin, D., D. Tabish, A. Maddigan, T. Johnson, A. Anderson, and G. Bolin. 2022. Appendix D Bull Trout Protection and Public Education Project. 2022 Annual Work Summary. Avista document identification number 2022-0266.

#### 6.5 Watershed Councils Program (License Article 408 – CFSA Appendix E)

#### 6.5.1 **Purpose and Resource Benefit**

The purpose of this program is to facilitate the protection and restoration of tributary stream habitat in the Lake Pend Oreille (LPO)-lower Clark Fork River watershed. This will improve conditions for aquatic life, including macroinvertebrate communities and native fish species (Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish). The associated protection and enhancement of tributary streams and the aquatic life inhabiting them will serve as mitigation and resource enhancements to offset impacts to aquatic life due to continued power peaking operation of the Cabinet Gorge and Noxon Rapids projects.

#### 6.5.2 2022 Annual Implementation Plan Project Plans

- Pack River Watershed Council, Bonner Soil and Water Conservation District
   Completed per 2022 AIP<sup>1, 2, 3</sup>
- Lower Clark Fork Watershed Council Projects
   Completed per 2022 AIP<sup>1,4</sup>

#### 6.5.3 Key 2022 References

- <sup>1</sup> Garcia, S., J. Erickson, and B. Olson. 2022. Appendix E Watershed Councils Program. 2022 Annual Work Summary. Avista document identification number 2022-0234.
- <sup>2</sup> Pack River Watershed Council. 2022. The River Ranger. Volume 14, Issue 1. Avista document identification number 2022-0238
- <sup>3</sup> Erickson, J., and S. Garcia. 2022. Public webpage for the Pack River Watershed Council. <u>www.bonnerswcd.org/pack-river-watershed-coucil</u> (December 2022).
- <sup>4</sup> Olson, B. 2022. Public webpage for the Lower Clark Fork Watershed Group. <u>https://lowerclarkforkwatershedgroup.org/</u> (December 2022).

# 6.6 Clark Fork River Water Quality Monitoring Program (License Article 409 – CFSA Appendix F1)

#### 6.6.1 **Purpose and Resource Benefit**

The purpose of this program is to provide for the systematic, long-term water quality monitoring of nutrients and metals in the Avista project area. Excessive nutrient loading and metals represent high-priority water quality concerns in the LPO-lower Clark Fork River system. Resource benefits are accomplished through providing valuable information on trends in water quality associated with the project and their reported role as nutrient and/or metals retention "sinks."

#### 6.6.2 2022 Annual Implementation Plan Project Plans

Clark Fork River Water Quality Monitoring Program
 *Completed per 2022 AIP*<sup>1, 2, 3, 4, 5</sup>

#### 6.6.3 Key 2022 References

- <sup>1</sup> Kusnierz, P. 2022. Appendix F1 Clark Fork River Water Quality Monitoring Program. 2022 Annual Work Summary. Avista document identification number 2022-0272.
- <sup>2</sup> Clark Fork Coalition. 2022. Annual water quality and benthic algae monitoring results for the Clark Fork River basin. 2021 Annual Project Update. Avista document identification number 2022-0210.
- <sup>3</sup> Clark Fork Coalition. *In prep.* Annual water quality and benthic algae monitoring results for the Clark Fork River basin. 2022 Annual Project Update.
- <sup>4</sup> Osborne, L. 2022. Estimate of 2021 nutrient loads from the Clark Fork River into Lake Pend Oreille. Technical Memorandum. Avista documentation identification number 2022-0070.
- <sup>5</sup> Osborne, L. *In prep*. Estimate of 2022 nutrient loads from the Clark Fork River into Lake Pend Oreille. Technical Memorandum.

#### 6.7 Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals (License Article 410 – CFSA Appendix F2)

#### 6.7.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for monitoring of Noxon Reservoir during periods when reservoir stratification is possible. If the reservoir stratifies, the program will intensify monitoring of nutrient and metals levels. Resource benefits are accomplished through providing a better understanding of whether nutrients and/or metals in the reservoir sediments are released into the water during periods of low flow and/or high water temperature.

#### 6.7.2 2022 Annual Implementation Plan Project Plans

- Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals
  - Completed per 2022 AIP<sup>1, 2, 3</sup>

#### 6.7.3 Key 2022 References

- <sup>1</sup> Kusnierz, P. 2022. Appendix F2 Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals. 2022 Annual Work Summary. Avista document identification number 2022-0273.
- <sup>2</sup> U.S. Geological Survey. 2022. National Water Information System. 12389000 Clark Fork near Plains MT. Available: <u>https://nwis.waterdata.usgs.gov/mt/nwis/uv?cb\_00060=on&cb\_00065=on&format=gif\_d</u> <u>efault&site\_no=12389000&period=&begin\_date=2022-07-01&end\_date=2022-09-30</u> (October 2022).
- <sup>3</sup> HydroSolutions. *In prep.* Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals. Comprehensive Project Report.
#### 6.8 Aquatic Organism Tissue Analysis (License Article 411 – CFSA Appendix F3)

#### 6.8.1 **Purpose and Resource Benefit**

The purpose of this PM&E measure is to ensure that resources are available to monitor aquatic organisms for the presence of heavy metals and/or other substances of concern. It provides funding to collect fish and other aquatic organism tissue samples. These samples are analyzed to determine the presence of heavy metals or other substances. Resource benefits are accomplished through providing information that can be used to develop and refine fish consumption advisories.

#### 6.8.2 2022 Annual Implementation Plan Project Plans

Noxon and Cabinet Gorge Reservoirs Fish Mercury Study
 Variance <sup>1, 2, 3, 4</sup>; see Section 6.8.3

#### 6.8.3 **Projects with Significant Variances**

Project Plan	Variances
Noxon and Cabinet	Samples were not sent to the laboratory to be analyzed until the third
Gorge Reservoirs	quarter of 2022. As a result, the lab report on fish tissue analysis,
Fish Mercury Study	Comprehensive Project Report, and incorporation of results into
	Montana's fish consumption guidelines did not occur in 2022. It is
	anticipated that this work will be completed by December 1, 2023.

#### 6.8.4 Key 2022 References

- <sup>1</sup> Kusnierz, P. 2022. Appendix F3 Aquatic Organism Tissue Analysis. 2022 Annual Work Summary. Avista document identification number 2022-0274.
- <sup>2</sup> MFWP. *In prep*. Lab report on fish tissue analysis.
- <sup>3</sup> MFWP. In prep. Comprehensive Project Report.
- <sup>4</sup> MFWP. *In prep*. Montana fish consumption guidelines.

#### 6.9 Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities (License Article 412 – CFSA Appendix F4)

#### 6.9.1 **Purpose and Resource Benefit**

The purpose and resource benefit of this PM&E measure is to develop and implement a plan that minimizes or eliminates the effects of project-related maintenance, construction, and emergency activities on water quality, aquatic resources, and beneficial uses of the lower Clark Fork River. The Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities at the Cabinet Gorge and Noxon Rapids Hydroelectric Developments was developed in 2002 and updated in 2011. This plan has been continuously implemented since 2002 with case-specific protection measures developed with appropriate stakeholders.

#### 6.9.2 2022 Annual Implementation Plan Project Plans

- Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities
  - *Completed per 2022 AIP* <sup>1, 2, 3, 4</sup>

#### 6.9.3 Key 2022 References

- <sup>1</sup>Oldenburg, E. W. 2022. Appendix F4 Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities. 2022 Annual Work Summary. Avista document identification number 2022-0276.
- <sup>2</sup> Avista. 2022. Email exchange between Eric Oldenburg and Steve Lentini regarding 2022 General Operating Limits and communication with the USACE at Albeni Falls. Avista document identification number 2022-0265.
- <sup>3</sup> Avista. 2010. Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities. Avista document identification number 2010-0452.
- <sup>4</sup> Avista. 2022. Designated contacts for notification purposes under the Water Quality Protection and Monitoring Plan (December 2022). Avista document identification number 2022-0236.

## 6.10 Dissolved Gas Supersaturation Control, Mitigation, and Monitoring (License Article 413 – CFSA Appendix F5)

#### 6.10.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the study, control, mitigation, and monitoring of gas supersaturation and the associated impacts to biological resources in the LPO-lower Clark Fork River system related to spill at the Clark Fork Projects. Resource benefits are accomplished through reducing total dissolved gas (TDG) and mitigating for the potential effects of excess TDG on fish in the Clark Fork River downstream of Cabinet Gorge Dam and in LPO.

#### 6.10.2 2022 Annual Implementation Plan Project Plans

#### **Operations**

Operations
 *Completed per 2022 AIP <sup>1, 2</sup>*

#### TDG Mitigation and Monitoring Program

- Total Dissolved Gas Monitoring

   Completed per 2022 AIP<sup>1, 2, 3</sup>
- Project Scoping Allocation
   *Completed per 2022 AIP*<sup>1</sup>
- Analysis of Gas Bubble Disease Monitoring Data
   *Completed per 2022 AIP <sup>1, 4</sup>*
- Mapping the Potential for Fish to Compensate for Total Dissolved Gas in the Lower Clark Fork River
  - Completed per 2022 AIP<sup>1,5</sup>
- Nutrient Level Impacts on Salmonid Populations in the Lower Clark Fork River
   *Completed per 2022 AIP <sup>1, 6</sup>*
- Temperature Monitoring Data Compilation
   *Variance*<sup>1,3</sup>; see Section 6.10.4
- Walleye Geochemistry Study
   *Completed per 2022 AIP*<sup>1,7</sup>
- Trophic Monitoring in Lake Pend Oreille and Pend Oreille River Idaho
   Variance<sup>1</sup>; see Section 6.10.4

- Box Canyon Reservoir Northern Pike Suppression
   *Completed per 2022 AIP*<sup>1, 8, 9</sup>
- Lake Pend Oreille Experimental Walleye Angler Incentive Program
   Completed per 2022 AIP<sup>1, 10, 11</sup>
- Lake Pend Oreille/Clark Fork River Walleye Population Assessment
   *Completed per 2022 AIP*<sup>1, 10, 11</sup>
- Lake Pend Oreille Lake Trout Angler Incentive Program
   *Completed per 2022 AIP*<sup>1, 10, 11</sup>
- Lake Pend Oreille Lake Trout Netting Program
   *Completed per 2022 AIP*<sup>1, 10, 11</sup>
- Demography of Adfluvial Bull Trout in Lake Pend Oreille
   Variance<sup>1, 12</sup>; see Section 6.10.4
- Lake Pend Oreille Bull Trout Population Monitoring and Evaluation
   *Completed per 2022 AIP*<sup>1, 13</sup>
- Lake Pend Oreille Nearshore Index Netting
   Variance<sup>1,14</sup>; see Section 6.10.4
- Idaho Protection and Education Officer Support
   *Completed per 2022 AIP*<sup>1</sup>
- Lake Pend Oreille Tributary PIT-Monitoring Station Installation
   Variance<sup>1</sup>; see Section 6.10.4
- Lake Pend Oreille Tributary PIT-Monitoring Station Operation and Maintenance
   *Variance*<sup>1,3</sup>; see Section 6.10.4
- Clark Fork River Population Monitoring
   Variance<sup>1, 15, 16, 17</sup>; see Section 6.10.4
- Lightning Creek Delta Connectivity Project
   Variance<sup>1, 18, 19</sup>; see Section 6.10.4
- Lower Clark Fork River Flow Model
   *Completed per 2022 AIP*<sup>1, 20</sup>
- Lake Pend Oreille and Pend Oreille River Creel Survey
   *Completed per 2022 AIP*<sup>1, 21, 22</sup>

Gas Supersaturation Control Program Total Dissolved Gas Abatement
 *Completed per 2022 AIP*<sup>1, 23, 24</sup>

#### 6.10.3 Other 2022 Activities

 January 24, 2022 request for approval for the Lake Pend Oreille and Pend Oreille River Creel Survey project plan (CFSA Appendix F5; approved February 10, 2022).
 *Completed per Consent Mail*<sup>1, 21</sup>

#### 6.10.4 **Projects with Significant Variances**

Project Plan	Variances	
Temperature Monitoring Data Compilation	A temperature data logger was not placed in North Gold Creek. In addition, loggers from East Fork Lightning, Porcupine, Rattle, Savage, and Trestle creeks only had data for about one month due to temperature data being collected every minute rather than every 30 minutes.	
Trophic Monitoring in Lake Pend Oreille and Pend Oreille River Idaho	Due to safety and boat mechanical concerns in windy conditions, Idaho DEQ was unable to sample Lakeview, Pend Oreille Midlake, Kootenai Bay, and Oden Bay in September.	
Demography of Adfluvial Bull Trout in Lake Pend Oreille	The results of the model were not published in the peer reviewed literature. The IDFG does not plan to publish the results at this time. This project is now complete.	
Lake Pend Oreille Nearshore Index Netting	Avista and IDFG were unable to fully complete fall netting due to weather issues (32 of 60 planned nets were set).	
Lake Pend Oreille Tributary PIT- Monitoring Station Installation	It took longer than anticipated to acquire landowner authorizations, permits, and schedule power service installs for the Pack River and Grouse Creek PIT stations. Once the authorizations were acquired, supply chain limitations precluded the contractor from scheduling the install during 2022. The two Pack River and the Grouse Creek PIT stations will be installed in 2023.	
Lake Pend Oreille Tributary PIT- Monitoring Station Operation and Maintenance	Because the PIT stations were not installed in the upper Pack River, lower Pack River, and Grouse Creek in 2022, temperature and pressure (depth) loggers were not installed.	
Clark Fork River Population Monitoring	The Comprehensive Project Report through 2021 was not completed by November 1. It is anticipated to be completed by November 1, 2023.	

Project Plan	Variances
Lightning Creek	It was determined that the amount of excavation and the overall
Delta Connectivity	magnitude of the construction necessary to re-connect the eastern
Project	channel was not practical, especially given the dynamic nature of the
	area. Project stakeholders agreed that this project plan will not be
	continued.

#### 6.10.5 Key 2022 References

- <sup>1</sup> Bouwens, K., D. Masin, A. Ransom, P. Kusnierz, E. Oldenburg, L. Conrad, K. Lowell, S. Harvey, and N. Bean. 2022. Appendix F5 Dissolved Gas Supersaturation Control, Mitigation, and Monitoring. 2022 Annual Work Summary. Avista document identification number 2022-0290.
- <sup>2</sup> Kusnierz, P. 2022. Total Dissolved Gas Monitoring 2022 Cabinet Gorge and Noxon Rapids Dams. Memorandum to the Gas Supersaturation Subcommittee, September 15, 2022. Avista document identification number 2022-0145.
- <sup>3</sup> Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (<u>Paul.Kusnierz@avistacorp.com</u>).
- <sup>4</sup> Kusnierz, P. 2022. Analysis of Gas Bubble Disease Monitoring Data. 2021 Annual Project Update. Avista document identification number 2022-0085.
- <sup>5</sup> Kusnierz, P. *In prep*. Mapping the Potential for Fish to Compensate for Total Dissolved Gas in the Lower Clark Fork River. Project Completion Report.
- <sup>6</sup> Kusnierz, P. *In prep*. Nutrient Level Impacts on Salmonid Populations in the Lower Clark Fork River. Project Completion Report.
- <sup>7</sup> Linley, T. J., J. M. Janak, G. A. McMichael, L. Garavelli, and M. K. Nims. 2022. Geochemical Assessment of Walleye Natal Origin in Lake Pend Oreille, Idaho. Project Completion Report. Avista document identification number 2022-0220.
- <sup>8</sup> Harvey, S., and N. Bean. 2022. Box Canyon Reservoir Northern Pike Suppression Project. 2022 Annual Project Update. Avista document identification number 2022-0202.
- <sup>9</sup> Harvey, S., and N. Bean. *In prep.* Box Canyon Reservoir Northern Pike Suppression Project 2012–2024. Comprehensive Project Report.
- <sup>10</sup> Bouwens, K. A, J. Strait, A. L. Ransom, and R. Jakubowski. 2022. Lake Pend Oreille Predator Management Program. 2021 Annual Project Update. Avista document identification number 2022-0063.
- <sup>11</sup> Bouwens, K. A, J. Strait, A. L. Ransom, and R. Jakubowski. *In prep.* Lake Pend Oreille Predator Management Program. 2022 Annual Project Update.

- <sup>12</sup> Mucciarone, N. G., M. P. Corsi, J. L McCormick, E. Roche, K. A. Bouwens, and P. Kusnierz. 2022. Demography of Adfluvial Bull Trout in Lake Pend Oreille, Idaho. Project Completion Report. Avista document identification number 2022-0036.
- <sup>13</sup> Ransom, A. L., K. A. Bouwens, and R. Jakubowski. *In prep.* Lake Pend Oreille Bull Trout Population Monitoring and Evaluation. Comprehensive Project Report.
- <sup>14</sup> Ransom, A. L., K. A. Bouwens, and R. Jakubowski. *In prep.* Lake Pend Oreille Nearshore Index Netting. Project Completion Report.
- <sup>15</sup> Ransom, A. L. 2022. 2018 and 2021 Lower Clark Fork River Salmonid Abundance Monitoring Project. Annual Project Update. Avista document identification number 2022-0021.
- <sup>16</sup> Ransom, A. L. *In prep*. Lower Clark Fork River Population Monitoring (through 2021). Comprehensive Project Report.
- <sup>17</sup> Ransom, A. L. *In prep.* Lower Clark Fork River Population Monitoring. 2022 Annual Project Update.
- <sup>18</sup> McFall, J. 2022. Lightning Creek Strategic Gravel Mining Phase I Construction 60% Design. Avista document identification number 2022-0226.
- <sup>19</sup> McFall, J. 2022. Lower Lightning Creek Hydraulic Analysis. Technical Memorandum. Avista document identification number 2022-0135.
- <sup>20</sup> McFall, J. *In prep*. Flow analysis and modeling in the Clark Fork River. Comprehensive Project Report.
- <sup>21</sup> Avista. 2022. Consent Mail approval of Appendix F5– Lake Pend Oreille and Pend Oreille River Creel Survey (February 10, 2022). Avista document identification number 2022-0018.
- <sup>22</sup> Hardy, R. *In prep.* Lake Pend Oreille and Pend Oreille River Creel Survey. Comprehensive Project Report.
- <sup>23</sup> Avista. 2022. Final 2022 Phase III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project. Avista document identification number 2022-0053.
- <sup>24</sup> Avista. 2022. Gas Supersaturation Subcommittee Meeting Notes from September 8, 2022. Avista document identification number 2022-0166.

#### 6.11 Project Operations Package (License Article 429/430/431 – CFSA Appendix T)

#### 6.11.1 **Purpose and Resource Benefit**

The purpose of this PM&E measure package is to mitigate for the impacts of maintaining flexibility of project operations. This is to be accomplished by implementing measures that enhance native salmonids and provide recreational fishery opportunities. Most of these implementation measures are addressed in other sections of this report; they primarily concern PM&E measures identified in CFSA appendices A, B, D, and E.

The Project Operations Package also establishes general operating limits for the Clark Fork Project and requires Avista to communicate to Albeni Falls, a downstream U.S. Army Corps of Engineers project, forecasts of daily discharge from Cabinet Gorge Dam.

#### 6.11.2 2022 Annual Implementation Plan Project Plans

- Project Operations and Coordination
   Variance <sup>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</sup>; see Section 6.11.4
- Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade
   *Completed per 2022 AIP*<sup>1, 11, 12</sup>
- Clark Fork River (Derr Island) Boating Access Site Improvement
   Completed per 2022 AIP<sup>1</sup>

#### 6.11.3 Other 2022 Activities

May 3, 2022 request for approval Appendix T – Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade (CFSA Appendix T; approved on May 18, 2022).
 *Completed per Consent Mail <sup>1, 12</sup>*

#### 6.11.4 **Projects with Significant Variances**

Project Plan	Variances
Project Operations and Coordination	The General Operating Limit for Noxon Rapids Hydroelectric Development maximum daily forebay draft rate is two feet per day (net). This draft rate was exceeded for the day of March 11, 2022 by 0.06 feet. This was the result of human error and five preventative measures were voluntarily enacted to prevent future occurrences. The exceedance was reported both to the Management Committee and filed with the FERC on April 4. The FERC responded on June 6 that they "will not consider this deviation to be a violation of Article 429 of wour license"

#### 6.11.5 Key 2022 References

- <sup>1</sup>Oldenburg, E., S. Bernall, and K. Bouwens. 2022. Appendix T Project Operations Package. 2022 Annual Work Summary. Avista document identification number 2022-0275.
- <sup>2</sup> U.S. Geological Survey. 2022. National Water Information System. 12391950 Clark Fork River below Cabinet Gorge Dam ID. Available: <u>CLARK FORK RIVER BELOW CABINET</u> <u>GORGE DAM ID - USGS Water Data for the Nation</u> (December 2022).
- <sup>3</sup> Avista. 2010. Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities. Avista document identification number 2010-0452.
- <sup>4</sup> FERC. 2019. Order Amending License and Approving Exhibits A and F (August 8, 2019). Avista document identification number 2019-0175.
- <sup>5</sup> Avista. 2017. Letter outlining the one-time Avista funding commitment to CFSA Appendix T. Avista document identification number 2017-0432.
- <sup>6</sup> FERC. 2017. Order amending minimum flow pursuant to Article 429. Avista document identification number 2017-0382.
- <sup>7</sup> Avista. 2022. Email exchange between Eric Oldenburg and Steve Lentini regarding communications with the U.S. Army Corps of Engineers at Albeni Falls. Avista document identification number 2022-0264.
- <sup>8</sup> Avista. 2022. Email exchange between Eric Oldenburg and Steve Lentini regarding 2022 General Operating Limits and communication with the USACE at Albeni Falls. Avista document identification number 2022-0265.
- <sup>9</sup> Avista. 2022 Maximum Draft Exceedance (April 4, 2022). FERC Submittal. Avista document identification number 2022-0049.
- <sup>10</sup> FERC. 2022. Forebay Elevation Deviation Article 429 (June 6, 2022). FERC Issuance. Avista document identification number 2022-0082.
- <sup>11</sup> GPR Data Inc. Ground Penetrating Radar (GPR) Survey. Avista document identification number 2022-0219.
- <sup>12</sup> Avista. 2022. Consent Mail approval of Appendix T Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade (May 18, 2022). Avista document identification number 2022-0089.

#### Section 7: Terrestrial Resources PM&E Measures Implementation Efforts

## 7.1 Implementation of Land Use Management Plan (License Article 414 – CFSA Appendix G)

#### 7.1.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the long-term protection and maintenance of sensitive and important resources on Avista-owned project lands, including the existing rural and semiremote character of the shoreline, through the implementation of the Land Use Management Plan (LUMP). Avista project lands are managed to protect these qualities while still allowing for reasonable public access and other compatible uses.

#### 7.1.2 2022 Annual Implementation Plan Project Plans

- Administration of the Land Use Management Plan (LUMP)
   *Variance* <sup>1, 2, 3, 4, 5, 6, 7, 8</sup>; see Section 7.1.3
- Monitoring Associated with the Land Use Management Plan (LUMP)
   *Completed per 2022* AIP<sup>-1</sup>
- Enforcement Associated with the Land Use Management Plan (LUMP)
   *Completed per 2022* AIP<sup>1</sup>

#### 7.1.3 **Projects with Significant Variances**

Project Plan	Variances	
Administration of the LUMP	Recreation permit site identification markers were not replaced in 2022. This work will be initiated in 2023.	

#### 7.1.4 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Avista. 2010. Avista Utilities Clark Fork Project Land Use Management Plan (revised December 17, 2003 and February 28, 2010). Avista document identification number 2010-0508.
- <sup>3</sup> Avista. 2002. Pesticide and Herbicide Use Plan for the Clark Fork Project, FERC Project No. 2058. Avista document identification number 2002-0020.
- <sup>4</sup> Avista. 2022. Pesticide/Herbicide Application Summary for Clark Fork Project 2022. Avista document identification number 2022-0241.

- <sup>5</sup> Avista. 2022. Avista Property Use Permits Dock Map 2022. Avista document identification number 2022-0243.
- <sup>6</sup> Drumheller, S. 2022. Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs. 2022 Annual Work Summary. Avista document identification number 2022-0242.
- <sup>7</sup> Avista. Terrestrial Resources Technical Advisory Committee Meeting Packet from January 20, 2022. Avista document identification number 2022-0067.
- <sup>8</sup> Avista. Terrestrial Resources Technical Advisory Committee Meeting Minutes from August 31, 2022. Avista document identification number 2022-0195.

#### 7.2 Implementation of the Recreation Resource Management Plan (License Article 415 – CFSA Appendix H)

#### 7.2.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for appropriate and adequate recreational opportunities and facilities associated with the Clark Fork Project through implementation of the Recreation Resource Management Plan (RRMP). The Land Use, Recreation, and Aesthetics Work Group developed the plan and identified seven goals to be met through its implementation:

- Manage existing recreation resource needs.
- Manage future recreation resource needs.
- Provide adequate and safe public access.
- Preserve recreation resources.
- Coordinate recreation planning and needs.
- Provide cost-effective and desirable recreation opportunities.
- Provide compatible recreation opportunities.

#### 7.2.2 2022 Annual Implementation Plan Project Plans

- RRMP Administration and Resource Integration
   *Completed per 2022 AIP*<sup>1</sup>
- RRMP Recreation Facility Development
   *Completed per 2022 AIP*<sup>1, 2, 3</sup>
- RRMP Monitoring

   Variance <sup>1, 4, 5, 6</sup>; see Section 7.2.4
- RRMP Operation and Maintenance
   *Completed per 2022 AIP*<sup>1</sup>
- RRMP Interpretation and Education
   *Completed per 2022 AIP*<sup>1</sup>

#### 7.2.3 Other 2022 Activities

- April 21, 2022 request for approval of Appendix H Facilities Fund Budget Allocation for Pilgrim Creek Park (CFSA Appendix H; approved on May 6, 2022).
   *Completed per Consent Mail <sup>1, 2</sup>*
- October 5, 2022 request for approval of Appendix H Facilities Fund Budget Allocation for Cabinet Gorge Dam Viewpoint Road Replacement (CFSA Appendix H; approved on October 25, 2022).
  - Completed per Consent Mail<sup>1,3</sup>

#### 7.2.4 **Projects with Significant Variances**

Project Plan	Variances
RRMP – Monitoring	The Recreation Resources Subgroup did not meet in 2022; however, MFWP, USFS, Avista, and other stakeholders compiling the
	subgroup will revisit the status of this program in 2023 for potential implementation.

#### 7.2.5 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Avista. 2022. Consent Mail approval of Appendix H Facilities Fund Budget Allocation for Pilgrim Creek Park (May 6, 2022). Avista document identification 2022-0088.
- <sup>3</sup> Avista. 2022. Consent Mail approval of Appendix H Facilities Fund Budget Allocation for Cabinet Gorge Dam Viewpoint Road Replacement (October 25, 2022). Avista document identification 2022-0167.
- <sup>4</sup> Pinnacle Research and Consulting. 2017. Clark Fork Project Recreation Resource Management Plan, Interim Update. Avista document identification number 2017-0410.

<sup>5</sup> Pinnacle Research and Consulting. 2022. 2022 Clark Fork Recreation Site Visitation. Avista document identification number 2022-0244.

<sup>6</sup> Avista. 2022. Avista Property Use Permits Dock Map 2022 (showing dock densities per 0.5mile segments of shoreline). Avista document identification number 2022-0243.

## 7.3 Implementation of the Aesthetics Management Plan (License Article 416 – CFSA Appendix I)

#### 7.3.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the protection and enhancement of aesthetic resources associated with Avista's Clark Fork Project and to mitigate for project related impacts to those resources through the implementation of the Aesthetics Management Plan. Aesthetic guidelines and considerations of the Aesthetics Management Plan are implemented by permit standards and land use classifications of the LUMP, site design and monitoring in the RRMP, and shoreline stabilization guidelines of the Shoreline Stabilization Guidelines Program. Ongoing coordination with other interest groups and agencies will occur as described in the Aesthetics Management Plan.

#### 7.3.2 2022 Annual Implementation Plan Project Plans

- Monitor recreation, land management, erosion, and facility construction programs to ensure AMP guidelines are considered.
  - Completed per 2022 AIP<sup>1</sup>
- Continue to investigate measures to restore views and remove vegetation as needed, also addressing any identified issue from the 2018 re-inventory of 41 key viewpoints. Sites will be revisited again in 2023 to take photos to compare to past inventories.
   *Completed per 2022 AIP <sup>1,2</sup>*

#### 7.3.3 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Pinnacle Research and Consulting. 2018. Aesthetics Management Plan Five-Year Inventory Review, 2018. Avista document identification number 2018-0422.

#### 7.4 Implementation of the Wildlife, Botanical, and Wetland Management Plan (License Article 417 – CFSA Appendix J)

#### 7.4.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the organization and presentation of the various wildlife, botanical, and wetland PM&E measures, site-specific plans, and other management activities within a single, comprehensive management plan document.

#### 7.4.2 2022 Annual Implementation Plan Project Plans

- Utilize the Wildlife, Botanical and Wetland Management Plan to help guide implementation of Wildlife, Botanical, and Wetland Protection, Mitigation, and Enhancement programs.
  - Completed per 2022 AIP<sup>1</sup>
- Continue to update the habitat protection spreadsheet as acquisitions are completed.
   *Completed per 2022 AIP <sup>1, 2, 3</sup>*
- As approved by the Management Committee at their March 15, 2016 meeting, observations regarding bald eagles, peregrine falcons, and common loons will be reported here annually.
  - Completed per 2022 AIP<sup>1</sup>

#### 7.4.3 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Avista. 2022. Habitat protected through CFSA Activities 2000–2022. Avista document identification number 2022-0287.
- <sup>3</sup> Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Record from September 21, 2022. Avista document identification number 2022-0194.

## 7.5 Wildlife Habitat Acquisition, Enhancement, and Management Program (License Article 418 – CFSA Appendix K)

#### 7.5.1 **Purpose and Resource Benefit**

The purpose of this program is to mitigate for the potential effects to wildlife resources and habitat due to the continued operation of the Clark Fork Project. The program will focus on the types of habitat most significantly affected, such as wetland and riparian habitat. The goal is to provide for a continuing source of financial resources that will be used to acquire, protect, enhance, and/or manage important wildlife habitat in the vicinity of the project.

#### 7.5.2 2022 Annual Implementation Plan Project Plans

- Operation and Maintenance of Acquired Property and Contingency Fund
   Variance<sup>1</sup>; see Section 7.5.3
- Habitat Acquisition and Conservation and Contingency Fund
   *Completed per 2022 AIP*<sup>1</sup>

#### 7.5.3 **Projects with Significant Variances**

Project Plan	Variances
Operation and	Conversations between Avista and LCFWG were initiated for the
Maintenance of	Wood Duck Property; however, a long-term strategy will be
Acquired Property	developed during future meetings involving additional stakeholder
and Contingency	groups in the spring of 2023.
Fund	

#### 7.5.4 Key 2022 References

## 7.6 Black Cottonwood Habitat Protection and Enhancement (License Article 419 – CFSA Appendix L)

#### 7.6.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the protection of black cottonwood trees and stands on Avista owned project lands through the development of site-specific management and enhancement plans for three specific cottonwood sites identified by the Wildlife, Botanical, and Wetlands Work Group. Additionally, existing stands and trees are protected through the implementation of land use classifications in the Land Use Management Plan (LUMP).

#### 7.6.2 2022 Annual Implementation Plan Project Plans

- Continue to protect black cottonwood stands along the Clark Fork Project through the implementation of the Land Use Management Plan.
   *Completed per 2022 AIP*<sup>1</sup>
- Continue to monitor and maintain the exclosures at Hereford Slough.
   *Completed per 2022 AIP*<sup>1</sup>

#### 7.6.3 Key 2022 References

## 7.7 Wetlands Protection and Enhancement Program (License Article 420 – CFSA Appendix M)

#### 7.7.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the protection of wetlands occurring on Avista-owned project lands, and for the evaluation and potential enhancement of selected wetland areas. The overall goal is to ensure no net loss of wetlands, or of wetland function and values in certain high-priority wetland areas while also evaluating opportunities for enhancements.

#### 7.7.2 2022 Annual Implementation Plan Project Plans

- Continue to explore potential wetland enhancement for the 2016 Twin Creek acquisition.
  - Competed per 2022 AIP  $^{1}$
- Monitor enhancements previously completed at Hereford Slough, McKay Creek, Finley Flats, and Blacktail Bay/Islands.
   *Completed per 2022 AIP*<sup>1</sup>

#### 7.7.3 Key 2022 References

## 7.8 Forest Habitat Protection and Enhancement (License Article 425 – CFSA Appendix P)

#### 7.8.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the protection and enhancement of specific forest habitat parcels of Avista project land along the reservoirs. The Wildlife, Botanical, and Wetland Work Group identified these parcels as having significant wildlife habitat value.

#### 7.8.2 2022 Annual Implementation Plan Project Plans

- Continue to manage those areas that have been classified as Conservation 1, and as such are afforded the maximum protection provided through the Land Use Management Plan.
  - Completed per 2022 AIP<sup>1</sup>
- Honey Flats is being managed to minimize impacts to the site (e.g., no motorized vehicles, no timber harvest, and minimize human use of site). The Confederated Salish and Kootenai Tribe and CRMG have expressed an interest in having this site managed for traditional plants and uses. Continue to work with the Confederated Salish and Kootenai Tribe to define management options.
  - Completed per 2022 AIP<sup>1</sup>
- Continue to monitor and enforce the road closure to Stevens Creek Point (closure was instituted in 2001).
  - Completed per 2022 AIP<sup>1</sup>
- Continue to prohibit motorized use of Finley Flats Point.
   Completed per 2022 AIP<sup>1</sup>
- Continue to utilize the Montana Fish Wildlife and Parks Block Management Program to provide hunter access to the Tuscor, South Fork Bull River, and Wood Duck properties.
  - Completed per 2022 AIP<sup>1</sup>
- Continue weekly patrols of the forested lands surrounding the State Shop property and continue to reduce the amount of disturbance and litter in this area.
   *Completed per 2022 AIP*<sup>1</sup>
- Initiate timber stand improvement efforts in stands that have disease (beetle kill, root rot, mistletoe, etc.), high fire danger or other problems. This work will be evaluated on a case-by-case basis and specific proposals will be presented to the TRTAC and MC as they are developed.
  - Completed per 2022 AIP<sup>1, 2, 3</sup>

#### 7.8.3 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Avista. 2022. Terrestrial Resources Technical Advisory Committee Meeting Minutes from August 31, 2022. Avista document identification number 2022-0195.
- <sup>3</sup> Inland Forest Management, Inc. 2022. Forest Stand Assessment Vermillion Bay/Blue Slide Road Property. Avista document identification number 2023-0007.

#### 7.9 Reservoir Island Protection (License Article 426 – CFSA Appendix Q)

#### 7.9.1 **Purpose and Resource Benefit**

The purpose of this measure is to provide for the protection of islands owned by Avista in the project reservoirs. The goal is to maintain the unique and high-quality wildlife habitat functions and values of these islands.

#### 7.9.2 2022 Annual Implementation Plan Project Plans

Continue to ensure restrictions developed for the protection of these areas utilizing the land use classifications described in the Land Use Management Plan.
 *Completed per 2022 AIP*<sup>1</sup>

#### 7.9.3 Key 2022 References

#### 7.10 Erosion Fund and Shoreline Stabilization Guidelines Program (License Article 428 – CFSA Appendix S)

#### 7.10.1 **Purpose and Resource Benefit**

The purpose of this measure is to address impacts to resources of interest caused by erosion attributed to the continued operation of the Clark Fork Project. Resources of interest include important cultural or natural resources, and private or public property not covered by applicable easement.

#### 7.10.2 2022 Annual Implementation Plan Project Plans

- Address erosion concerns identified by the Cultural Resources Management Group (CRMG).
  - Completed per 2022 AIP<sup>1</sup>
- Continue to evaluate and provide technical assistance for an erosion control project being undertaken by an adjacent landowner on Noxon Reservoir (Vermilion Point Area). This is a continuation of a 2017 project. The ability to complete this project will depend upon the adjacent landowner's availability.
  - o Completed per 2022 AIP<sup>1, 2</sup>
- Utilize a geotechnical contractor to assist with evaluating erosion control proposals received by Avista.
  - Completed per 2022 AIP<sup>1</sup>

#### 7.10.3 Key 2022 References

- <sup>1</sup> Avista. 2022. Terrestrial Resources Program. 2022 Annual Work Summary. Avista document identification number 2022-0291.
- <sup>2</sup> Avista. 2022. Terrestrial Resources Technical Advisory Committee Meeting Minutes from August 31, 2022. Avista document identification number 2022-0195.

#### **Section 8: Other Clark Fork License Articles**

This section specifically addresses annual compliance with articles 432 through 443 of the Clark Fork Project License.

#### 8.1 Threatened and Endangered Species Plan and Annual Report (License Article 432 – Amended June 13, 2003)

#### 8.1.1 Purpose

Article 432 of the Federal Energy Regulatory Commission (FERC) License requires that Avista file a Threatened and Endangered Species Plan (T&E Plan) and Annual Report for Commission approval before April 15 of each year, after consultation with the Management Committee (MC). The T&E Plan must address compliance with the Reasonable and Prudent Measures (RPMs) and implementing terms and conditions of the incidental take statement issued by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. The USFWS issued a biological opinion and incidental take statement with regard to Project relicensing on August 23, 1999, and it was attached as Appendix D to the FERC License Order.

On March 28, 2018, FERC requested formal consultation with USFWS under Section 7 of the Endangered Species Act regarding Avista's proposed License Amendment to construct and operate a permanent upstream fish passage facility at Cabinet Gorge Dam [Cabinet Gorge Fish Passage Facility (hereafter, "CGFPF" or "CGDF")]. Subsequently, on February 1, 2019, USFWS issued a new biological opinion and incidental take statement analyzing the CGFPF as well as Avista's continued operation of the Project. This 2019 biological opinion updated and superseded USFWS's 1999 biological opinion for the Project. The 2019 biological opinion included an incidental take statement, which was incorporated into the August 8, 2019 FERC License Order approving construction and operation of the CGFPF. Compliance with the RPMs, and implementing terms and conditions, in the February 1, 2019 incidental take statement will be reported in this T&E Plan and Annual Report. References herein to an "incidental take statement" are to the statement that was issued as part of the 2019 biological opinion.

In 2002, Avista and USFWS agreed that Article 432's T&E planning requirement, as well as Avista's annual reporting and consultation requirements for several Protection, Mitigation and Enhancement (PM&E) measures, are adequately addressed through the Annual Implementation Plans (AIPs), which are approved by the MC, and by providing the annual activity summaries contained in this section of the Annual Report. Those PM&E measures are:

- Idaho and Montana Tributary Habitat Acquisition and Fishery Enhancement Programs (License Articles 404 and 405).
- Fish Passage/Native Salmonid Restoration Plan (License Article 406).
- Bull Trout Protection and Public Education Project (License Article 407).
- Watershed Councils Program (License Article 408).
- Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities (License Article 412).
- Dissolved Gas Supersaturation Control, Mitigation, and Monitoring (License Article 413).
- Project Operations Package (License Articles 429, 430, and 431).

Section 8.1.2 below provides the 2022 activity report for the PM&E measures listed above, which comprises Avista's T&E Plan and is intended to satisfy Avista's annual reporting requirement for these measures. To assist the Commission and USFWS in evaluating compliance with USFWS's RPMs and their associated terms and conditions, Section 8.1.2 is organized by RPM.

#### 8.1.2 2022 Activity Summary

#### 8.1.2.1 Terms and Conditions to Implement RPM #1 and Corresponding Activities

The incidental take statement's RPM #1 states:

Identify adult bull trout attempting to migrate upstream of Cabinet Gorge and/or Noxon Rapids Dams, and in a manner agreed to by the Service and consistent with the Clark Fork Settlement Agreement (as amended), provide safe, timely and effective fish passage.

The four terms and conditions (1 through 4) and corresponding 2022 activities implementing RPM #1 are listed below.

### 1) The likely natal origin of adult bull trout captured downstream of Cabinet Gorge Dam shall be determined using genetic testing, or other methods deemed appropriate by the Service.

Genetic sampling and testing to determine the likely natal origin of adult Bull Trout was initiated in 1999 and is an ongoing activity for all adult Bull Trout captured downstream of Cabinet Gorge Dam in the lower Clark Fork River. Genetic sample collection and testing in 2022 was approved by the MC, including the USFWS. In 2022, 34 individual adult Bull Trout (≥300 mm in length) were captured downstream of Cabinet Gorge Dam. Thirty-one of these individual fish required rapid-response genetic analysis while the other three Bull Trout had been captured in previous years and had already been genetically tested. Capture histories and genetic analysis results for these fish were then used to make upstream transport decisions. Juvenile Bull Trout fin tissue samples were also collected from tributaries to the Clark Fork River and Lake Pend Oreille (LPO) to allow for an improvement in the accuracy of the genetic baseline that is used to determine transport locations.

2) A permanent fish tagging system shall be implemented for all bull trout handled during monitoring and other fisheries investigation activities in the project area. The tagging system shall have the capability to positively identify bull trout originating from spawning tributaries above Cabinet Gorge and/or Noxon Rapids Dams.

A permanent fish tagging system, utilizing Passive Integrated Transponder (PIT) tags, was utilized again in 2022 as approved by the MC and USFWS. All Bull Trout  $\geq 100$  mm in length captured during the implementation of Clark Fork Settlement Agreement (CFSA) projects were implanted with PIT tags. A PIT-tag database, originally developed in 2000, continued to be utilized in 2022 to allow for the storage of information on all Bull Trout PIT tagged in the project area. Data from 2022 PIT tagging events were recorded in the PIT-tag database. The PIT-tag database is updated annually, and data requests are processed upon request.

3) A program to capture and transport adult bull trout originating from tributaries above Cabinet Gorge and/or Noxon Rapids Dams shall be implemented to provide safe, timely and effective upstream fish passage, and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).

Protocols for capture, transport, and release of Bull Trout were approved by the MC, including the USFWS, in March of 2022.

#### Fish Capture:

Construction of the CGFPF was completed in 2022. The project team planned to begin start up and commissioning of the CGFPF in April, although a few minor delays prevented the CGFPF from being commissioned until after spring spill. These delays were primarily a result of a need to reconfigure the hydraulic power unit system that controls the entrance gates, dissipation valves, and brail. Start-up and commissioning began in mid-July. During this process there were periods of time when the CGFPF was not operational as the project team worked to improve/modify operation of the CGFPF and address any fish health issues. Regular updates were provided to the MC and designated Fish Passage Facility subgroup. Monthly construction reports, final construction reports, certifications, and as-built drawings were submitted as required by permitting and approval agencies (i.e., FERC Portland Regional Office). The project team also installed permanent erosion and sediment control measures in a manner to provide long-term sediment and erosion control from spillage during fish transfer activities, including a concrete apron and drain on the thrust block.

Other documents needed for operation of the CGFPF were developed and when appropriate in consultation with the appropriate agencies and MC. These documents included a transport protocol, Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations, Cabinet Gorge Dam Fish Passage Facility Monitoring and Evaluation Plan, Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan, and fish handling protocol. Pertinent documents were then submitted to FERC.

The CGFPF was operational for approximately 10 days in July, 18 days in August, 25 days in September and 12 days in October. During those time periods a total of 704 fish were captured and transported to the Fish Handling Facility including: 322 Smallmouth Bass, 180 Brown Trout, 58 Lake Whitefish, 46 Black Bullhead, 36 Northern Pikeminnow, 29 Walleye, 12 Rainbow Trout, 6 kokanee, 5 Westslope Cutthroat Trout, 4 Westslope Cutthroat and Rainbow Trout hybrids, 2 Bull Trout, 2 Pumpkinseed, 1 Mountain Whitefish, and 1 Tench. During the startup period while the project team was learning how to operate the facility there were a number of time periods when the CGFPF was shut down to make improvements. Some of the issues leading to shutdowns included oil leakage in the hydraulic power unit system that controls the entrance gates, dissipation valves, and brail; hopper to brail seating that needed improvement; issues with the hopper lid staying in its guide; along with observation of fish mortality in the Vee-trap area. A number of fish of various species were collected from the Vee-trap area on multiple occasions including one Bull Trout mortality that was discovered trapped below the Vee-trap in late September. Other fish including 17 Smallmouth Bass, 11 Lake Whitefish, 7 Northern Pikeminnow, 6 Brown Trout, 2 Walleye and 1 kokanee were also collected as mortalities during these events. The project team continued to identify and fix these problem areas.

The original plan for 2022 was to only transport Montana origin Bull Trout captured in the CGFPF upstream to Montana. Adult Bull Trout captured using other methods [as described in the "Cabinet Gorge Fish Passage Facility Monitoring and Evaluation Plan (M&E Plan)"] were to be PIT tagged and released near their capture location to assist in evaluating the capture efficiency of the CGFPF. Since construction was delayed and start up and commissioning resulted in time periods when the CGFPF was not in operation, the Fish Passage Facility subgroup decided to transport Montana origin Bull Trout captured by any method upstream. The MC approved the Fish Passage Facility subgroup's authority to make changes to the M&E Plan at the March 2022 meeting. Some portions of the M&E Plan were modified during initial operation of the CGFPF based on observations. The Fish Passage Facility subgroup provided direction to make changes in flows and entrance gate use along with other variables as appropriate during the short time the CGFPF was in operation to learn as much as possible in preparation for operation of the CGFPF in 2023. Data collected during 2022 is being compiled and with the help of a statistician will be presented in the Annual Project Update. As part of the CGFPF M&E Plan five 3'circular PIT antennas were deployed in the lower Clark Fork River to provide information on Bull Trout presence downstream of Cabinet Gorge Dam. These antennas provided valuable information including the detection of 29 Bull Trout, 45 Westslope Cutthroat Trout, 4 Rainbow Trout, 1 Rainbow and Westslope Cutthroat Trout hybrid, and 1 Brown Trout.

A total of 34 adult Bull Trout were captured downstream of Cabinet Gorge Dam in 2022 (Table 1). These methods were used at a similar level of intensity as previous years, although this was the first year the CGFPF was in operation. During start up and commissioning of the CGFPF night electrofishing was not conducted for a two-week period at the end of July to allow personnel to focus efforts on fish lifts at the CGFPF. Information related to final construction and start up and commissioning of the CGFPF can be found in the Appendix C "Fish Capture Facilities Operation, Development, and Testing" annual work summary for 2022.

The final Operations and Maintenance manual and as-built drawings for the Cabinet Gorge Fish Handling Facility were completed in 2022.

No new work was proposed or conducted for the Noxon Rapids Dam Permanent Fishway and fish handling facility project in 2022. Based on agreements made in Amendment No. 1 to the CFSA, final design and construction of the Noxon Rapids Dam Permanent Fishway shall be deferred for an interim period ending no sooner than December 31, 2021. With 2022 being the first year of operation of the CGFPF and continuing to refine capture and transport of juvenile Bull Trout from Montana tributaries, discussion of a fish collection facility at Noxon Rapids Dam was not reinitiated in 2022. Rather it was postponed to a future date, once there is a better understanding of the effectiveness of the ongoing activities. In the interim, a proposal will be made to the MC at the March 2023 meeting to discuss this topic annually and monitoring equipment will be included in the 2023 Upstream Fish Passage Program Project Plan. The proposal will include funding to purchase and install circular submersible PIT antennas to deploy downstream of Noxon Rapids Dam to learn more about Bull Trout presence in this area.

**Table 1.** Number of adult Bull Trout (≥300 mm in length) captured downstream of Cabinet Gorge Dam under the Upstream Fish Passage Program in 2022 (not including within year recaptures).

Method of Capture	Dates of Operation	Bull Trout Handled	Adult Bull Trout Transported
Ladder Trap	August 10–October 14	9	9
Electrofishing	April 5–September 8	18	17
Hook-and-Line	April 14–September 17	2	2
Twin Creek Weir	August 22–October 14	2	2
CGFPF	July 18–October 12	3	2
	Total	34	32

#### Fish Transport:

Thirty-two Bull Trout were transported upstream to Montana based on genetic assignments, previous capture histories, or other approved criteria in 2022 (Table 2).

**Table 2.** Release regions for adult Bull Trout captured downstream of Cabinet Gorge Dam and either released in Idaho or transported upstream to Montana in 2022 (the Bull Trout that died at the CGFPF is not included in the table below).

Release Region	Adult Bull Trout
Lower Clark Fork River (Region 1)	1
Cabinet Gorge Reservoir (Region 2)	5
Noxon Reservoir (Region 3)	23
Thompson Falls Reservoir (Region 4)	4
Total	33

#### Fish Pathogens:

Avista is required by the CFSA Amendment No. 1 to lethally sample 60 Bull Trout collected downstream of Cabinet Gorge Dam and test them for pathogens prior to the issuance of a Montana Fish, Wildlife and Parks (MFWP) import permit. There were no pathogens of concern detected in the group of Bull Trout (captured as bycatch from the LPO Lake Trout Netting Program) tested in 2021, which allowed for the upstream transport of Bull Trout in 2022. In 2022, 60 adult Bull Trout were again collected and analyzed for pathogens. No pathogens of concern were detected, and these results will be used to apply for a 2023 MFWP import permit.

## 4) The upstream capture and transport program shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations above Cabinet Gorge and/or Noxon Rapids Dams.

The Appendix C Fish Passage/Native Salmonid Restoration Plan AIP, including the Upstream Fish Passage Program Project Plan, for 2022 was reviewed and approved by the Water Resources Technical Advisory Committee and MC, including a representative from the USFWS. The Upstream Fish Passage Program Project Plan describes activities related to Bull Trout including upstream transport and release protocols. The USFWS also has a representative on the Aquatic Implementation Team, which is a sub-group that reviews AIPs and the progress of projects on a monthly basis to determine if efforts are in line with agency requirements and guidelines. These annual and monthly review processes allow for adaptive management of local Bull Trout populations above Cabinet Gorge and Noxon Rapids dams.

#### 8.1.2.2 Terms and Conditions to Implement RPM #2 and Corresponding Activities

The incidental take statement's RPM #2 states:

Identify juvenile bull trout attempting to migrate downstream to Lake Pend Oreille, and in a manner agreed to by the Service and consistent with the Clark Fork Settlement Agreement (as amended), provide safe, timely and effective fish passage.

The two terms and conditions (5 and 6) and corresponding 2022 activities implementing RPM #2 are listed below.

5) A program to trap and transport juvenile bull trout from tributaries above Cabinet Gorge and/or Noxon Rapids Dams shall be implemented to provide safe, timely and effective downstream fish passage, and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).

Term and Condition 5 of RPM #2 was fulfilled through the adaptively managed Tributary Trapping and Downstream Juvenile Bull Trout Transport Program.

There were a total of 268 capture events of 267 individual juvenile (i.e., <300 mm) Bull Trout during 2022 (13 of these individuals were recaptures from previous stream electrofishing or trapping efforts). A total of 261, 120–250 mm, Bull Trout were captured in Montana tributaries and transported to Idaho during 2022 (Table 3). An additional five juvenile Bull Trout were captured and released on site (one of these was captured twice and transported the second time) because they did not meet one or more of the transport criteria (i.e., fish length or direction of travel). There were two juvenile Bull Trout mortalities observed in 2022. The first mortality was predated on by an adult Bull Trout while in the fish transport tank (see discussion pertaining to Term and Condition 20). In addition, one juvenile transport was transported to Idaho but escaped into the effluent water system at the Cabinet Gorge Dam Fish Handling Facility and is considered a mortality. Following capture, fish were measured (length and weight) and implanted with a PIT tag if they were greater than 99 mm and if a PIT tag was not already present. All juvenile transports were released in the lower Clark Fork River at the Cabinet Gorge Fish Hatchery site.

There were 22 capture events of 21 individual adult Bull Trout in tributary traps during 2022. Twelve of these individuals were transported back to the Clark Fork River downstream of Cabinet Gorge Dam and nine were released on site.

**Table 3.** Tributary and method of capture for juvenile Bull Trout transported to Idaho under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program in 2022.

Tributary	Method	Bull Trout Transported
Graves Creek	Permanent Weir	164
East Fork Bull River	Weir/Screw Trap/Stream Electrofishing	85
Vermilion River	Stream Electrofishing	12
	Total	261

## 6) The downstream trap and transport program shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations above Cabinet Gorge and/or Noxon Rapids Dams.

Avista works closely with the USFWS through the CFSA process to adaptively manage trapping protocols on an inter- and intra-annual basis. Based on information gathered largely through CFSA programs, it is believed that Graves Creek, East Fork Bull River, and the Vermilion River are the only three Montana tributaries to the Clark Fork River within the Avista project area where meaningful numbers of Bull Trout naturally exhibit a migratory life history. In light of this, the USFWS and MFWP have collectively agreed that for the time being juvenile transport efforts should be limited to these three drainages and that these efforts should be, "aggressive but prudent".

#### 8.1.2.3 Terms and Conditions to Implement RPM #3 and Corresponding Activities

The incidental take statement's RPM #3 states:

Implement a dissolved gas supersaturation control, mitigation, and monitoring program.

The three terms and conditions (7 through 9) and corresponding 2022 activities implementing RPM #3 are listed below.

## 7) The Gas Supersaturation and Control Program (and 2009 Addendum), shall be implemented in a manner consistent with the Clark Fork Settlement Agreement (as amended).

Appendix F5 of the CFSA requires that "...study, control, mitigation, and monitoring of gas supersaturation..." occur. The Gas Supersaturation Control Program (GSCP) and GSCP Addendum were developed to guide how these requirements would be achieved. The FERC issued an order approving the GSCP on January 11, 2005 and approved the final GSCP Addendum on February 19, 2010. On March 15, 2022, the MC approved the document titled "Final 2022 Phase

III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project". This document is a follow-up to the document titled "Final 2009 Addendum Final Gas Supersaturation Control Program for the Clark Fork Project" and describes how mitigation funding for Appendix F5 will be calculated and used for the remainder of the CFSA license term (i.e., 2022–2045). In 2022, high-flow spill protocols were followed as described under Term and Condition 8 and total dissolved gas monitoring occurred at two established sites as described under Term and Condition 9.

### 8) High-flow spill protocols shall be finalized and implemented to address total dissolved gas production and shall be consistent with the Clark Fork Settlement Agreement (as amended).

Interim spillgate procedures were formalized in the GSCP approved by the FERC on January 11, 2005 and the GSCP Addendum approved by the FERC on February 19, 2010. Spillway operations at Cabinet Gorge Dam were amended to include the use of spillway 2 in 2014, spillways 4 and 5 in 2016, and spillways 1 and 3 in 2018 after modifications were made to these spillways to reduce total dissolved gas (TDG). The purpose of these spillgate procedures is to achieve the CFSA Appendix F5 requirement to control (i.e., reduce) the amount of TDG produced at Noxon Rapids and Cabinet Gorge dams and reduce potential effects to aquatic organisms downstream. The spillgate procedures were followed to the extent practicable in 2022; however, FERC-required testing resulted in a variance of the spill protocol. Effects to TDG levels were minimal.

The hydraulic capacity of the powerhouse at Noxon Rapids Dam was exceeded on 31 of 153 days between March 1 and July 31, 2022. Spill occurred on May 11, from May 19 to May 23, and from May 26 to July 12 under normal operations. In addition to the spill that resulted due to flow conditions, all eight gates were opened to one foot meeting the FERC requirement for annual spillway gate operation tests. Full height gate tests did not occur for gates 2, 4, and 6–8 in 2022; however, full height gate tests are required once every five years and the most recent tests occurred on these gates in 2020. The peak flow recorded at Noxon Rapids Dam in 2022 was 88,973 cubic feet per second (cfs) on June 14, 2022.

In 2022, spill occurred on May 3 and 4, May 10 and 11, May 18 to July 12, and on July 27 at Cabinet Gorge Dam. Gates 1–8 were opened to a height of one foot between May 11 and June 11, meeting FERC annual gate operation testing requirements. All eight gates were opened to full height at least once between June 21 and June 23 meeting the FERC requirements that all gates are opened fully at least once every five years. The peak flow recorded at Cabinet Gorge Dam in 2022 was 99,900 cfs on June 13.

## 9) Total dissolved gas monitoring shall be done at established sites and shall be conducted in a manner that is consistent the Gas Supersaturation and Control Program (and 2009 Addendum), and the Clark Fork Settlement Agreement (as amended).

Prior to deployment in 2022, TDG monitoring equipment was sent to the manufacturer for annual maintenance and calibration. Consistent with the GSCP and CFSA, Avista personnel deployed a TDG probe in the Cabinet Gorge Dam forebay on March 16 and two TDG probes approximately one mile downstream of Cabinet Gorge Dam on March 17. The Cabinet Gorge Dam Forebay operated continuously until November 2. The Downstream Cabinet Gorge station operated until

July 28, well after sustained spilling had ceased. The duplicative Downstream Cabinet Gorge station operated continuously until June 29 when power issues resulted in a loss of data until July 5. It came back online on July 5 and operated until October 9.

Downstream of Noxon Rapids Dam, from May 26 to July 12 (when sustained spill occurred at Noxon Rapids Dam), TDG in the Cabinet Gorge Dam Forebay had a mean of 110.8% saturation with a minimum of 104.6% and a maximum of 117.2%. Downstream of Cabinet Gorge Dam from May 11 to July 11 (when sustained spill occurred at Cabinet Gorge Dam), TDG at the Downstream Cabinet Gorge station, had a mean of 116.5% saturation with a minimum of 100.3% and a maximum of 137.7%. Of the 62 days from May 11 to July 11, TDG downstream of Cabinet Gorge Dam exceeded 110% saturation on 43 days and exceeded 120% on 29 days. The greatest discharge measured at USGS monitoring location 12391950 (Clark Fork River below Cabinet Gorge Dam, ID) resulting in TDG less than 110% saturation was 53,100 cfs and the greatest discharge with TDG being less than 120% was 69,000 cfs. The greatest discharge value associated with 120% in 2022 was consistent with those observed in 2019 and 2021, the most recent years with all four units operating at Cabinet Gorge Dam. However, the greatest discharge value associated with 110% in 2022 was about 4,000 cfs less than was observed in both 2019 and 2021.

No TDG-reducing modifications were made to Cabinet Gorge Dam in 2022. Proposals for future modifications (if warranted) will be outlined in a future project plan for Appendix F5 (Dissolved Gas Supersaturation Control, Mitigation, and Monitoring) through the AIP process.

#### 8.1.2.4 Terms and Conditions to Implement RPM #4 and Corresponding Activities

The incidental take statement's RPM #4 states:

#### Maintain sufficient in-stream flow downstream of Cabinet Gorge Dam.

The two terms and conditions (10 and 11) and corresponding 2022 activities implementing RPM #4 are listed below.

### 10) From September 15 through October 31, the instantaneous minimum flow below Cabinet Gorge Dam shall be maintained at 5,000 cubic feet per second or greater.

Clark Fork River discharge (i.e., "flow") is estimated both through the project as well as at the U.S. Geological Survey gage station located approximately 500 m downstream of Cabinet Gorge Dam. Computers in the Cabinet Gorge Dam control room constantly monitor discharge through turbines and spillgates. Accusonic flow meters located in the penstocks relay individual unit discharge to the control room computers. The Cabinet Gorge Dam minimum flow General Operating Limit was modified in late 2017 and is 3,000 cfs during the period from November 1 through September 14 and 5,000 cfs from September 15 through October 31. The 5,000 cfs minimum flow was maintained from September 15 through October 31, 2022.

## 11) From November 1 through September 14, the instantaneous minimum flow below Cabinet Gorge Dam shall be maintained at 3,000 cubic feet per second or greater.

The 3,000 cfs minimum flow was maintained from November 1, 2021 through September 14, 2022.

#### 8.1.2.5 Terms and Conditions to Implement RPM #5 and Corresponding Activities

The incidental take statement's RPM #5 states:

Implement a program that manages non-native species in a manner that is beneficial for bull trout.

The two terms and conditions (12 and 13) and corresponding 2022 activities implementing RPM #5 are listed below.

# 12) Non-native fish management programs shall be implemented in the Clark Fork Project action area for the benefit of bull trout and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).

In 2018, the MC approved the Clark Fork River Native Salmonid Restoration Plan (NSRP) Five-Year Plan for the 2019 through 2023 time period, consistent with the CFSA and RPM #5. This update highlighted numerous potential actions and data needs for developing non-native species management plans for future implementation. Efforts undertaken in 2022 in accordance with this direction included Lake Trout angler incentive and gill net suppression programs in LPO, assessing the Walleye population and feasibility of Walleye suppression through an angler incentive program on the LPO-lower Clark Fork River, suppression of Northern Pike in Box Canyon Reservoir, compilation of 14 years of data and a project completion report on the non-native fish suppression program in the East Fork Bull River, and the development of a list of potential actions to reduce non-native threats in the three adfluvial Bull Trout streams in the Cabinet Gorge and Noxon reservoirs reaches that may be implemented in future Project Plans. The details of these activities are described below.

#### Lake Pend Oreille Lake Trout Angler Incentive Program:

This program has been implemented annually since 2006, in an effort to reduce predator, specifically Lake Trout, abundance in LPO. In 2022, funding of the LPO Angler Incentive Program continued. Anglers participating in the program turned in Lake Trout heads along with information cards at freezers maintained at access points around LPO. In 2022, anglers turned in 2,682 Lake Trout (Table 4), which was an increase from 2,509 in 2021.

Lake Pend Oreille Angler Incentive Program funds were also used to sponsor angling derbies on LPO. Sponsorship dollars were used to encourage additional anglers to participate in harvestoriented angling of LPO Lake Trout and to encourage Bull Trout education. In 2022, seven LPO derbies were recipients of sponsorship funding.

#### Lake Pend Oreille Lake Trout Netting Program:

The goal of this program is to increase kokanee numbers by reducing predator abundance. The focus of this program is Lake Trout reduction and efforts to obtain this goal have been implemented annually in conjunction with the LPO Angler Incentive Program since 2006.

In 2022, the LPO Lake Trout Netting Program was implemented for the seventeenth year and removed 7,332 Lake Trout (Table 4). Since 2006, a combination of angling and netting has removed more than 259,000 Lake Trout. Netting catch rates for Lake Trout have declined substantially since the program was initiated.

Standardized trap net catch rates were the primary index used to track changes in adult Lake Trout abundance since 2006. Idaho Department of Fish and Game (IDFG) discontinued trap net trends in 2018 because they developed a more robust and less expensive assessment tool (cohort analysis) using the harvest data from netting and angler incentive programs, along with an estimation of age structure for each year assessed. They were able to use this tool to estimate the age-specific abundances of Lake Trout back to 2006. Lake Trout abundances declined an average of 7.5% annually from 2006–2017, however the population stopped declining and stabilized after 2015, which may be a result of a premature reduction of fishing effort that started in 2015. The estimated total abundance of age 4+ Lake Trout was 40,336 fish at the end of 2017. In 2018, IDFG further improved the accuracy of the cohort analysis by collecting age structure information using a randomized assessment gill-netting program, which is designed to avoid the size selectivity problems associated with trap nets and gill nets specifically targeting juveniles.

Collection Method	Lake Trout Harvested
Angling	2,682
Netting	7,332
Total	10,014

Table 4. Lake Trout harvested and removed from LPO, Idaho in 2022 by collection method.

An increase in the kokanee population has been associated with the reduction in the Lake Trout population. Age-specific abundance estimates are not yet finalized for 2022. Kokanee abundance increased from about 2010-2013 has maintained at a high level since.

The Bull Trout population has remained robust in the Idaho portion of the LPO core area. Idaho Department of Fish and Game continues to observe high Bull Trout catch and low mortality in gill-netting operations. The responses observed to date suggest that suppression of Lake Trout can be achieved and provide benefits for both kokanee and Bull Trout. Lake Pend Oreille predator removal success will continue to be monitored by evaluating the population response of Lake Trout, Bull Trout, and kokanee.

#### Lake Pend Oreille/Clark Fork River Walleye Population Assessment:

Walleye, which were illegally introduced into Noxon Reservoir approximately 30 years ago, have become well established throughout Noxon and Cabinet Gorge reservoirs and have reached LPO. An expanding Walleye population has the potential to put several fish populations in LPO at risk

through direct predation and competition. This project was first implemented in 2018 to establish fundamental information to help assess the current status of the Walleye population, to evaluate the opportunities for management (suppression), and estimate the likely scope of their influence on the current fish community in LPO. There were two major components to this project: 1) tracking acoustic- and radio-tagged Walleye; and 2) gill netting.

From the telemetry efforts, it was determined that Walleye were again concentrated at two main areas during the spring: the Clark Fork River and delta, and the Pack River area west to the eastern edge of Oden Bay. Walleye were more widely distributed during the summer period with loose concentrations of fish located in the Clark Fork River and delta, in shallow warmer bays including Denton Slough, Oden Bay, and Kootenai Bay, and downstream to near the Sandpoint bridges into the Pend Oreille River. With increased monitoring available in 2022, it was learned that Walleye also appear to utilize the south end of the lake in the fall when kokanee concentrate in that area.

Gill netting proved to be a very effective method for capturing Walleye during the pre-spawn period. Walleye were concentrated in relatively shallow water and catch rates were relatively high while bycatch was reasonably low. A total of 369 Walleye were removed in 2022 (Table 5).

#### *Lake Pend Oreille Experimental Walleye Angler Incentive Program:*

This program was first implemented in 2019 in an effort to evaluate the potential to reduce the Walleye abundance in LPO through angling. Anglers participating in the program turned in Walleye heads along with information cards at freezers maintained at access points around LPO. In 2022, anglers turned in 1,247 Walleye (Table 5).

Collection Method	Walleye Harvested
Angling	1,247
Netting	369
Total	1,616

Table 5. Walleye harvested and removed from LPO, Idaho in 2022 by collection method.

#### Box Canyon Reservoir Northern Pike Suppression:

Northern Pike (NP) were illegally introduced in the Clark Fork drainage in Montana and have since expanded to the Pend Oreille River, where they have caused declines in native species and game fish being managed by the Kalispel Tribe Natural Resources Department (KNRD), Washington Department of Fish and Wildlife (WDFW), and IDFG. Northern Pike range expansion threatens to undermine current and future recovery efforts for Bull Trout and Westslope Cutthroat Trout, as well as other native salmonids, minnows, suckers and introduced game fish within the watershed. Reducing the predatory effect of NP on Bull Trout increases the probability that entrained fish are collected and transported upstream of Albeni Falls Dam to complete their life history and contribute genetic diversity to upstream populations.

After being detected in 2004, the NP population grew exponentially in Box Canyon Reservoir to over 5,500 in 2010. In 2012, KNRD supported by WDFW, and funded in part by Avista under the CFSA, initiated a mechanical suppression program to reduce the population of NP within Box

Canyon Reservoir. This suppression has been successful in significantly reducing the NP in Box Canyon Reservoir and efforts since 2015 have been focused on maintaining this greatly reduced NP population through springtime netting and monitoring for effectiveness. The objective of NP suppression is to maintain the abundance of NP in Box Canyon Reservoir at or below the target of <1.73 NP/net night between Pioneer Park and Riverbend (i.e., the southern half of Box Canyon Reservoir) and <0.5 NP/net night north of Riverbend monitored in the annual Spring Pike Index Netting (SPIN) survey.

A total of 814 NP were removed from 626 net sets in 2022. The effort targeted spawning locations to remove mature individuals as they staged to spawn. The SPIN survey mean catch-per-unit-effort (CPUE) was 0.26 NP/net night in the core area that includes the southern half of the reservoir and all sloughs (target <1.7); and the mean CPUE north of Riverbend was 0.1, which was less than the 95% confidence interval (target <0.5). Based on 2022 SPIN results, the adult population relative abundance in the core area has been reduced by more than 93% after multiple years of mechanical suppression.

#### Non-native Fish Suppression Project in the East Fork Bull River:

The eight-year non-native fish suppression project in the East Fork Bull River was implemented from 2007 through 2014. Based on the results of this project and increases in numbers of adult Bull Trout transported to the East Fork Bull River (and resultant higher redd counts), an extension of this project using less intensive suppression methods was implemented from 2015 through 2022. The less intensive methods of suppression for the Non-native fish suppression project in the East Fork Bull River included the on-site release of non-native trout captured during electrofishing, and the transport and release of non-native trout captured in fish traps to the lower Bull River.

Efforts to remove non-native trout in 2022 began with the April 5 installation of fish traps in the lower East Fork Bull River under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. One or the other of the two weirs on the split channels were at least partially disabled by a combination of high flows or ice build-up, combined with debris, for a total of 7 days from November 1 through the 10; however, during these partially disabling events, channel-spanning, weir integrity was maintained so that upstream access to non-native trout was impeded. In 2022, a total of 69 non-native salmonids were captured in all traps, with 35 Brown Trout, 33 Brook Trout, and 1 Rainbow Trout being transported and released in the lower Bull River. Genetic analysis of eggs sub-sampled from putative Brown Trout redds from 2015 through 2021 confirmed an absence of Bull Trout genetic material.

Excavation of Brown Trout redds to subsample eggs for genetic analysis did not occur in 2022 due to extensive ice and snow, which precluded safe access and observation for much of the area. Fortunately, weir integrity at the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program's traps was maintained throughout the fall trapping season, which should have prevented access to upstream areas by spawning adult Brown Trout, thereby minimizing the potential for superimposition of Brown Trout redds on Bull Trout redds.

A comprehensive evaluation of this project was finalized in 2022. Findings of this report showed that a lasting positive response by native species has not occurred, as juvenile Bull Trout abundance within the suppression area did not widely reach levels recorded from 2003 through

2005, which followed the higher redd counts of the early 2000's. Analysis showed that while juvenile abundance appeared to be related to previous year's higher redd counts, the relationship was not significant. Potential reasons for this include environmental stochasticity, and the effect of beaver dams on Bull Trout movement. Furthermore, it appears that a threshold level of higher redd counts in the order of twenty or more redds is required to show significant effect in subsequent juvenile abundance as was observed prior to suppression when such higher redd counts were more common.

*Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations:* The purpose of this project was to identify and evaluate potential actions for non-native species that could benefit native salmonid populations for the East Fork Bull River, Vermilion River, and Graves Creek. The Project Completion Report was finalized in 2022.

## 13) Non-native fish management programs shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations within the Lake Pend Oreille Core Area.

The MC, including the USFWS, approved an updated NSRP Five-Year Plan in 2018. The purpose of this NSRP Five-Year Plan is to provide the MC with continued and consistent guidance of implementation of the NSRP for the 2019 through 2023 time period. This includes implementation of CFSA appendices A, B, C, and F5 and denotes a need to identify, evaluate, and if appropriate, address non-native species concerns. More specifically, under Appendix C of the NSRP Five-Year Plan, there is agreement that management efforts should be concentrated on those streams known to be utilized by migratory native salmonids (of which Bull Trout are a priority). In 2020, a Project Plan that was to summarize non-native salmonid distribution and abundance in these priority streams and develop a prioritized list of potential actions was approved. Fisheries data were compiled and a report that included a list of potential management actions for the three adfluvial Bull Trout streams (i.e., East Fork Bull River, Vermilion River, and Graves Creek) was completed in 2022.

#### 8.1.2.6 Terms and Conditions to Implement RPM #6 and Corresponding Activities

The incidental take statement's RPM #6 states:

Implement the Native Salmonid Restoration Plan and Clark Fork Settlement Agreement (as amended) in a manner consistent with the Final Bull Trout Recovery Plan and Columbia Headwaters Recovery Unit Implementation Plan.

The term and condition (14) and corresponding 2022 activities implementing RPM #6 are listed below.
## 14) Tributary enhancement programs shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations within the Lake Pend Oreille Core Area.

Bull Trout upstream and downstream transport programs were implemented in 2022, as described in RPM #1 and #2, above. These programs are implemented annually to restore adfluvial Bull Trout populations in the lower Clark Fork River–Lake Pend Oreille watershed consistent with the intent of the NSRP and CFSA.

Coordination and outreach to inform and facilitate both the public and cooperating agencies' involvement in tributary habitat protection and enhancement efforts is the principal consideration of the Watershed Councils Program (CFSA Appendix E). Efforts in Idaho and Montana in 2022 included holding meetings between Watershed Council groups and cooperators, the distribution of outreach materials including websites, and assisting with the administration required to help develop watershed restoration plans, secure grants, and execute contracting and permitting necessary for implementing stream enhancement and restoration efforts.

Tributary habitat protection and enhancement to benefit native salmonids is the principal consideration of the Idaho and Montana Tributary Habitat Acquisition and Fishery Enhancement Programs (CFSA appendices A and B). Specific efforts undertaken in 2022 for the furthering of these efforts in Idaho included the continued cooperative development of stream habitat prioritization evaluations for critical native salmonid tributaries in the Pack River drainage, and planning a project to reintroduce large woody debris into Rattle Creek to enhance Bull Trout spawning and rearing conditions, and investigating a project to re-connect the flowing waters of Strong Creek to Lake Pend Oreille for migratory adult Bull Trout under low flow conditions.

In Montana, efforts undertaken in 2022 included the continuation of riparian reforestation efforts along the Bull River and adjacent areas of the lower East Fork Bull River, and an extensive revegetation effort along the recent channel reconstruction project in the Vermilion River. Recently enacted habitat enhancement projects in Graves Creek and upper Prospect Creek were further monitored through the collection of physical habitat measurements in 2022, and two of the three redds observed in upper Prospect Creek utilized gravel retained by recently installed large woody debris. A beaver management plan, the survey and completion of preliminary hydrologic design set, and revegetation work were completed in 2022 as part of an ongoing study to investigate channel morphology, the effects of beaver activity, revegetation, and other aspects of the split channels of the lower East Fork Bull River. This effort will help ensure connectivity and enhance habitat to benefit native salmonids in this important Bull Trout rearing tributary. Annual fisheries monitoring is conducted under both the Idaho and Montana programs to inform cooperators of the status, abundance, and distribution of species of special concern, non-native species abundance and distribution, and through redd surveys, monitoring trends in Bull Trout spawning effort.

#### 8.1.2.7 Terms and Conditions to Implement RPM #7 and Corresponding Activities

The incidental take statement's RPM #7 states:

Implement reporting and consultation requirements as outlined in the terms and conditions below in order to minimize take of bull trout related to implementation of the Native Salmonid Restoration Plan and other fisheries monitoring activities.

The six terms and conditions (15 through 20) and corresponding 2022 activities implementing RPM #7 are listed below.

#### 15) An annual assessment of bull trout populations in the Lake Pend Oreille Core Area shall be prepared and submitted to the Service. The assessment shall be conducted in a manner consistent with the Clark Fork Settlement Agreement (as amended), and use the best available information (e.g., tributary redd counts).

#### Bull Trout Redd Surveys in LPO Core Area Tributaries:

The 2022 Idaho annual redd count table was provided, by email, to the USFWS from IDFG on December 5, 2022. Following consolidation of Bull Trout and Brown Trout redd information, redd survey information from Montana tributaries will be included in an annual project update to be forwarded to the USFWS from Avista in early 2023.

#### Lake Pend Oreille Bull Trout Population Monitoring and Evaluation:

This is a continuing activity that was first approved by the MC in 2021. This project replaces the "Lake Pend Oreille Bull Trout Survival Study" (completed in 2021) and will provide a mechanism to combine the unique and valuable data that has been collected through CFSA projects into one integrated monitoring program. Many of these data sets have been collected through previous CFSA-supported projects but also include data collected via other funding mechanisms. Specifically, Bull Trout-specific data collected from the LPO netting programs (Lake Trout and Walleye), angler incentive programs, tributary monitoring, PIT antennas, and redd counts will be evaluated together in this project. These data will be utilized together to evaluate the LPO Bull Trout metapopulation. In 2022, most of the work consisted of data compilation, Bull Trout age determination, and data analysis.

#### <u>Demography of Adfluvial Bull Trout in LPO:</u>

This was a continuing activity in 2022. The objectives of this project are to: 1) quantify the effects of netting bycatch on Bull Trout survival and growth; 2) estimate abundance of Bull Trout in LPO; and 3) develop optimal sampling and statistical methodologies, as well as an integrated population demographic model to be used for future Bull Trout monitoring. This project will allow IDFG to evaluate scenarios involving recreational fisheries harvest, varying levels of Lake Trout suppression, and techniques to modify Bull Trout bycatch as Lake Trout netting efforts evolve. In 2022, the project team completed the final report. The main takeaways from the demography model were that the Lake Pend Oreille Bull Trout population appears to be robust and stable and that the Lake Trout netting operations are leading to an overall increase in Bull Trout survival in Lake Pend Oreille despite a limited amount of Bull Trout mortality associated with netting activities.

16) An assessment of Lake Pend Oreille prey base population trends shall be prepared and submitted to the Service. The assessment shall be conducted in a manner consistent with the Clark Fork Settlement Agreement (as amended), be based on the best available information, and evaluate the need for measures to benefit bull trout prey species in Lake Pend Oreille.

Idaho Department of Fish and Game continued annual monitoring and assessment of LPO prey base population trends. Based upon 2002 interagency discussions and IDFG management actions, IDFG, in consultation with Avista and USFWS, conducted the seventeenth season of a large-scale spring and fall netting operation on LPO in 2022. Periodic updates of this netting operation are provided to both Avista and USFWS, through email, by IDFG. These program updates constitute Avista's "assessment" and "evaluation of need" for 2022. Annual kokanee total abundance estimates associated with the LPO Lake Trout Netting Program provide further insight into the LPO prey base.

# 17) An annual report shall be submitted to the Service indicating the actual number of bull trout taken, if any, as well as any relevant biological/habitat data or other pertinent information on bull trout that was collected. This report shall be submitted to the Service by March 31<sup>st</sup> each year.

This annual report satisfies this Term and Condition. This was the twenty-second year of program implementation. Sampling techniques are always being refined, and new techniques employed. During field activities conducted in 2022, the total number of Bull Trout handled and "the extent of intentional and incidental take" for Bull Trout is described in Table 6. The number of Bull Trout proposed to be intentionally "taken" by each activity in 2023 is also outlined in Table 6.

There were a total of 1,183 Bull Trout capture events during implementation of CFSA Appendix F5 LPO Lake Trout Netting and LPO Angler Incentive programs in 2022, which includes 330 mortalities, and is covered under a separate Section 6 Agreement between the USFWS and IDFG. There were 12 Bull Trout handling events during gill-netting efforts targeting Walleye in LPO under the CFSA Appendix F5 LPO/Clark Fork River Walleye Population Assessment program with 6 incidental Bull Trout mortalities. These mortalities are also reported under the Section 6 agreement between the USFWS and IDFG. There were likely instances where Bull Trout were handled multiple times under the programs described previously and some of these Bull Trout may have been handled during implementation of CFSA Appendix C programs in 2022.

Bull Trout "take" numbers for CFSA Appendix A and Appendix B programs are also reported by IDFG and MFWP personnel as part of their reporting requirements. These numbers are included with CFSA Appendix C Bull Trout "take" numbers in Table 6. There were a total of 457 Bull Trout captured under Appendix A, and none were recaptured in 2022. Appendix B project implementation resulted in the intentional take of 253 unique Bull Trout. A total of 305 unique Bull Trout were handled during CFSA Appendix C program implementation. Eighteen of these fish were captured twice during 2022, and one fish was captured three times. Eighteen were adult Bull Trout transported upstream of Cabinet Gorge Dam in 2022 and later captured in tributary traps in either Graves Creek or East Fork Bull River.

The 2022 proposed "take" of Bull Trout under CFSA Appendix A was exceeded in 2022. The proposed "take" was 300 Bull Trout, whereas, the actual take was 457 capture events. Avista notified the USFWS of this exceedance through an e-mail correspondence, and the USFWS agreed that no additional action was needed as these events were the result of many young of the year

Bull Trout being captured during a follow-up fish sampling survey of Trestle Creek. All fish were handled according to approved protocols and released alive.

CFSA Program	Capture Events	Unique Bull Trout	Bull Trout Mortalities	Proposed 2023 Bull Trout Take
Appendix A	457	457	0	300
Appendix B	253	253	5	350
Appendix C	325	305	3	1,300
Total	1,035	1,015	8	1,950

**Table 6.** Bull Trout take and mortalities reported in 2022 along with proposed intentional take for 2023.

18) An annual report shall be prepared and submitted to the Service that details the next year's proposed activities under the Native Salmonid Restoration Plan and other fisheries monitoring that may result in intentional as well as incidental take of bull trout. The report shall quantify the number of bull trout proposed to be intentionally ''taken'' by each activity and summarize the extent of intentional take from all previous year's activities. This report shall be submitted to the Service by March 31<sup>st</sup> each year.

The USFWS, as a member of the MC, reviews and approves AIPs for the NSRP and other fisheries monitoring plans that have the potential to result in take of Bull Trout. This review process begins at the technical level with the Aquatic Implementation Team and continues through the Water Resources Technical Advisory Committee, with final approval of all proposed AIPs occurring at the March MC meeting.

The USFWS also verified that the information reported in this Annual Report is sufficient to cover the requirement for a report quantifying the number of Bull Trout proposed to be intentionally "taken" (see Table 6, above) and summarizing the extent of intentional take from all previous year's activities.

## 19) During project implementation the FERC or licensee shall promptly notify the Service of any emergency or unanticipated situations arising that may be detrimental for bull trout relative to the proposed activity.

Throughout the sampling season numerous occurrences of fungal growth were observed on fish (primarily Bull Trout) captured in Graves Creek. These observations were reported to the USFWS (and MFWP) through email and discussed at Aquatic Implementation Team meetings. No action was requested.

20) Upon locating dead or injured bull trout, or upon observing destruction of bull trout redds, the FERC or licensee shall notify the Service within 24 hours. The FERC or licensee shall record information relative to the date, time, and location of dead or injured bull trout when found, and possible cause of injury or death of each fish and provide this information to the Service. As directed by the USFWS, notifications of all dead or injured Bull Trout were sent to the USFWS representatives Kevin Aceituno and Ben Conard. Bull Trout mortalities were reported to the USFWS on two occasions during 2022. The first report was submitted to the USFWS on September 24, 2022, and to the FERC on October 13, 2022. This report pertained to one adult Bull Trout mortality that was observed on September 23 in the CGFPF. The second report was comprised of two mortality events and was reported to the USFWS on October 27, 2022 and to the FERC on October 28, 2022 (a correction to the FERC was filed on December 20, 2022). The reporting of these two individuals was not made to the USFWS within the 24-h reporting window and actions were implemented to ensure future reports are made on time.

#### 8.1.2.8 Terms and Conditions to Implement RPM # 8 and Corresponding Activities

The incidental take statement's RPM #8 states:

Construct and operate the CGFPF consistent with Amendment #1 of the Clark Fork Settlement Agreement, and the Clark Fork Project License (including amendments).

The five terms and conditions (21 through 25) and corresponding 2022 activities implementing RPM #8 are listed below.

# 21) The FERC or licensee shall ensure that construction, operation, and maintenance of the CGDF remain consistent with the proposed action described in the final Biological Assessment (Avista and FERC 2017). The Service shall be promptly notified of any changes to construction, operations or maintenance activities.

Avista completed construction of the CGFPF in 2022. Avista operated and maintained the CGFPF consistent with the proposed action described in the final Biological Assessment. There were no changes identified in 2022 that would impact construction, operations or maintenance activities.

## 22) The fish salvage plan shall be completed and approved by the Service prior to construction of the cofferdam.

The USFWS approved the CGFPF Fish Salvage Plan on February 12, 2019; followed by approval by the FERC on November 19, 2019.

### 23) The FERC or licensee shall provide an annual report to the Service detailing the progress of CGDF construction. This report shall be submitted to the Service by March 31<sup>st</sup> each year.

This annual report, including the discussion under Term and Condition 3, satisfies this requirement.

24) The FERC or licensee shall provide an annual report to the Service detailing the past year's operation of the CGDF, including the number of bull trout that interacted with the CGDF and any mortality. This information can be included in the annual report required under T&C 17 above and shall be submitted to the Service by March 31<sup>st</sup> each year.

This annual report, including the discussion under Term and Conditions 3 and 17, satisfies this requirement.

## 25) Any shut-downs of the CGDF during normal operating conditions, as agreed to in the Clark for Settlement Agreement (as amended), shall be reported within 24 hours to the Service.

Construction of the CGFPF was complete in 2022. There were a number of instances when the CGFPF was shut down during the initial start up phase while minor adjustments and fixes were put in place to improve operation and improve fish health. These shutdowns were frequent during this first year of learning how to operate the CGFPF and were communicated to the Service in a timely manner.

#### 8.1.3 Key 2022 References

- Adams, B., R. Headley, and J. VonBargen. 2022. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2021 Annual Project Update. Avista document identification number 2022-0146.
- Adams, B., R. Headley, and J. VonBargen. *In prep*. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2022 Annual Project Update.
- Aquatic Implementation Team. 2018. Clark Fork River Native Salmonid Restoration Plan. Five-Year Plan (2019–2023). Avista document identification number 2018-0318.
- Avista. 2002. Annual 2001 reports on Threatened and Endangered Species Plan (License Article 432) and Fishway Plan (License Article 433), as presented to MC; reports contain revised format that will be included in future *Clark Fork Project Annual Reports on Implementation of PM&E Measures*. Avista document identification number 2002-0184.
- Avista. 2002. Letter sending the Proposed Gas Supersaturation Control Plan to USFWS, IDEQ and FERC for approval. Avista document identification number 2002-0483.
- Avista. 2009. Final 2009 Addendum. Final Gas Supersaturation Control Program for the Clark Fork Project. Avista document identification number 2009-0290.
- Avista. 2015. Correspondence via letter to IDEQ, MTDEQ, USFS, IDFG, MFWP, KTI and USFWS regarding Cabinet Gorge Dam Minimum Flow. Avista document identification number 2015-0242.
- Avista. 2022. Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan (February 18, 2022). FERC Submittal. Avista document identification number 2022-0022.

- Avista. 2022. Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo to the Management Committee (October 26, 2022). FERC Submittal. Avista document identification number 2022-0170.
- Avista. 2022. Cabinet Gorge Dam Fishway Project Certifications and Final Construction Report (November 4, 2022). Avista document identification number 2022-0181.
- Avista. 2022. Biological Opinion Condition 20 Report regarding Bull Trout (October 28, 2022). Avista document identification number 2022-0178.
- Avista. 2022. Biological Opinion Condition 20 Report regarding Bull Trout (September 23, 2022). Avista document identification number 2022-0157.
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- Trout Unlimited, Montana Fish, Wildlife and Parks, Lolo National Forest, and Lower Clark Fork Watershed Group. 2022. Prospect Creek Large Woody Debris Monitoring 2020, 2021. Avista document number 2022-0232.
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- USFWS. 2019. Endangered Species Act Section 7 Consultation Biological Opinion. Avista document identification number 2019-0026.

#### 8.2 Fishway Plan and Annual Report (License Article 433 – Amended June 13, 2003)

#### 8.2.1 Purpose

Article 433 of the FERC License (License) requires that, on or before April 15 of each year and after consultation with the MC, the Licensee file for Commission approval a Fishway Plan and Annual Report. The Plan must address the Licensee's compliance with the USFWS Section 18 fishway prescriptions contained in CFSA Appendix C to the License, including a detailed description of any fish passage devices or measures and any proposed modifications to project facilities or operations; documentation of any consultations; copies of comments and recommendations received on the completed plan; and specific descriptions of how entities' comments are accommodated by the Plan or Avista's reasons for not including such comments, based on Project-specific information.

In 2002, Avista and USFWS agreed that the Article 433 Fishway Plan requirement, as well as Avista's annual reporting and consultation requirements for CFSA appendices A, B, and C (License Articles 404, 405, and 406) are adequately addressed through the AIPs, which are approved by the MC, and by providing the annual activity summaries contained in this section of the Annual Report. Section 8.2.2 below provides the 2022 activity report for these PM&E measures, which comprises Avista's Fishway Plan and is intended to satisfy Avista's annual reporting requirement for these measures.

#### 8.2.2 2022 Activity Summary

#### 8.2.2.1 Prescription 1 Conditions and Corresponding Activities

#### **Prescription 1 Description**

USFWS's Section 18 Prescription 1 states the following:

The licensee shall assess, plan, design, construct, operate, and maintain upstream fishway devices or measures and downstream fish protection devices or measures in accordance with the Native Salmonid Restoration Plan (Plan) (License Application Volume IV.A). Construction, operation, and maintenance of fishways will proceed in a stepwise manner, beginning at the effective date of the Settlement Agreement (License Application Volume III), utilizing the principles of adaptive management (i.e., the ability to change program direction based on new information provided by monitoring and evaluation of experimental measures). Following initial feasibility assessments, and within one year of the effective date of the Settlement Agreement, an experimental fish trap and truck program for the purpose of moving bull trout from below Cabinet Gorge Dam to the Cabinet Gorge Reservoir pool shall be constructed, operated, and maintained. Assessment and implementation of other fish stock enhancement measures shall begin at the effective date of the Settlement Agreement, as described in the Plan. Evaluation of the effectiveness of the fish trap and truck program below Cabinet Gorge, and evaluation of other stock enhancement measures will determine the timing of construction, operation, and maintenance of other upstream fishway facilities and measures and downstream fish entrainment protection devices at Cabinet Gorge and Noxon Rapids Dams.

#### 2022 Activities Associated with Prescription 1

#### Cabinet Gorge Fish Passage Facility:

Construction of the CGFPF was completed in 2022. The project team planned to begin start up and commissioning of the CGFPF in April, although a few minor delays prevented the CGFPF from being commissioned until after spring spill. These delays were primarily a result of a need to reconfigure the hydraulic power unit system that controls the entrance gates, dissipation valves, and brail. Start-up and commissioning began in mid-July. During this process there were periods of time when the CGFPF was not operational as the project team worked to improve/modify operation of the CGFPF and address any fish health issues. Regular updates were provided to the MC and designated Fish Passage Facility subgroup. Monthly construction reports, final construction reports, certifications, and as-built drawings were submitted as required by permitting and approval agencies (i.e., FERC Portland Regional Office). The project team also installed permanent erosion and sediment control measures in a manner to provide long-term sediment and erosion control from spillage during fish transfer activities, including a concrete apron and drain on the thrust block.

Other documents needed for operation of the CGFPF were developed. These documents included a transport protocol, Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations, Cabinet Gorge Dam Fish Passage Facility Monitoring and Evaluation Plan, Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan, and fish handling protocol. Pertinent documents were then submitted to FERC.

The CGFPF was operational for approximately 10 days in July, 18 days in August, 25 days in September and 12 days in October. During those time periods a total of 704 fish were captured and transported to the Fish Handling Facility including: 322 Smallmouth Bass, 180 Brown Trout, 58 Lake Whitefish, 46 Black Bullhead, 36 Northern Pikeminnow, 29 Walleye, 12 Rainbow Trout, 6 kokanee, 5 Westslope Cutthroat Trout, 4 Westslope Cutthroat and Rainbow Trout hybrids, 2 Bull Trout, 2 Pumpkinseed, 1 Mountain Whitefish, and 1 Tench. During the startup period while the project team was learning how to operate the facility there were a number of time periods when the CGFPF was shut down to make improvements. Some of the issues leading to shutdowns included oil leakage in the hydraulic power unit system that controls the entrance gates, dissipation valves and brail; hopper to brail seating that needed improvement; issues with the hopper lid staying in its guide; along with observation of fish mortality in the Vee-trap area. A number of fish of various species were collected from the Vee-trap area on multiple occasions including one Bull Trout mortality that was discovered trapped below the Vee-trap in late September. Other fish including 17 Smallmouth Bass, 11 Lake Whitefish, 7 Northern Pikeminnow, 6 Brown Trout, 2 Walleye and 1 kokanee were also collected as mortalities during these events. The project team continued to identify and fix these problem areas.

#### Adult Bull Trout Capture and Transport:

The original plan for 2022 was to only transport Montana origin Bull Trout captured in the CGFPF upstream to Montana. Adult Bull Trout captured using other methods [as described in the "Cabinet

Gorge Fish Passage Facility Monitoring and Evaluation Plan (M&E Plan)"] were to be passive integrated transponder (PIT) tagged and released near their capture location to assist in evaluating the capture efficiency of the CGFPF. Since construction was delayed and start up and commissioning resulted in time periods when the CGFPF was not in operation, the Fish Passage Facility subgroup decided to transport Montana origin Bull Trout captured by any method upstream. The MC approved the Fish Passage Facility subgroup's authority to make changes to the M&E Plan at the March 2022 meeting. Some portions of the M&E Plan were modified during initial operation of the CGFPF based on observations. The Fish Passage Facility subgroup provided direction to make changes in flows and entrance gate use along with other variables as appropriate during the short time the CGFPF was in operation to learn as much as possible in preparation for operation of the CGFPF in 2023. Data collected during 2022 is being compiled and with the help of a statistician will be presented in the Annual Project Update. As part of the CGFPF M&E Plan five 3'circular PIT antennas were deployed in the lower Clark Fork River to provide information on Bull Trout presence downstream of Cabinet Gorge Dam. These antennas provided valuable information including the detection of 29 Bull Trout, 45 Westslope Cutthroat Trout, 4 Rainbow Trout, 1 Rainbow and Westslope Cutthroat Trout hybrid, and 1 Brown Trout.

A total of 34 adult Bull Trout were captured downstream of Cabinet Gorge Dam in 2022. Three adult Bull Trout were captured in the CGFPF, 18 were captured night electrofishing, 2 were captured hook-and-line sampling, 9 were captured in the hatchery fish ladder trap, and 2 were collected in the Twin Creek weir trap. These methods were used at a similar level of intensity as previous years, although this was the first year the CGFPF was in operation. And during start up and commissioning of the CGFPF night electrofishing was not conducted for a two-week period at the end of July to allow personnel to focus efforts on fish lifts at the CGFPF. Information related to final construction and start up and commissioning of the CGFPF can be found in the Appendix C "Fish Capture Facilities Operation, Development, and Testing" annual work summary for 2022.

The final Operations and Maintenance manual and as-built drawings for the Cabinet Gorge Fish Handling Facility were completed in 2022.

#### Westslope Cutthroat Trout Experimental Transport:

The management goal for passage is to reestablish connectivity and increase the number of large migratory Westslope Cutthroat Trout available to spawn in Montana tributaries. This was the eighth year Westslope Cutthroat Trout were captured downstream of Cabinet Gorge Dam and transported upstream to Cabinet Gorge Reservoir. Night electrofishing and hook-and-line sampling were utilized to capture 27 fish for upstream transport. Fish were transported upstream from mid-April through mid-June and were released at the Big Eddy Recreation Area boat ramp in Cabinet Gorge Reservoir. Four fish were detected entering the Bull River drainage during the spring spawning time period. A project was initiated in 2022 to evaluate the reproductive success of Westslope Cutthroat Trout transported upstream of Cabinet Gorge Dam. Genetic fin tissue samples were collected from juvenile and adult Westslope Cutthroat Trout captured during electrofishing and hook-and-line sampling efforts in the Bull River drainage. These genetic samples were shipped to a genetics lab where an analysis will be conducted to determine if any of those fish are offspring of a Westslope Cutthroat Trout transported upstream of Cabinet Gorge Dam in previous years. The results of this analysis will be available in a lab report anticipated to be available in 2023.

#### Noxon Rapids Dam Permanent Fishway:

No new work was proposed or conducted for the Noxon Rapids Dam Permanent Fishway and fish handling facility project in 2022. Based on agreements made in Amendment No. 1 to the Clark Fork Settlement Agreement, final design and construction of the Noxon Rapids Dam Permanent Fishway shall be deferred for an interim period ending no sooner than December 31, 2021. With 2022 being the first year of operation of the CGFPF and continuing to refine capture and transport of juvenile Bull Trout from Montana tributaries, discussion of a fish collection facility at Noxon Rapids Dam was not reinitiated in 2022. Rather it will be postponed to a future date once there is a better understanding of the effectiveness of the ongoing activities. In the interim, a proposal will be made to the MC to discuss this topic annually and purchase and install a few circular submersible PIT antennas to deploy downstream of Noxon Rapids Dam in 2023 to learn more about Bull Trout presence in this area.

#### Downstream Fish Passage:

Safe downstream passage of Bull Trout is addressed through the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Under this program, juvenile Bull Trout are captured in traps during their outmigrations, or through targeted stream electrofishing efforts. Following capture, juvenile Bull Trout are measured, implanted with a PIT tag, and transported to the Clark Fork River downstream of Cabinet Gorge Dam where they are released. In addition, adult Bull Trout that were previously transported upstream and are recaptured in tributaries following the spawn are transported back to the Clark Fork River downstream of Cabinet Gorge Dam (albeit, in consultation with the USFWS, the decision was made to release one-half of the post-spawn adults captured within Graves Creek on site so that the benefits and limitations of this strategy can be directly evaluated).

Fish trapping and transport for 2022 was conducted from March 24 through July 1 and August 29 through November 18 in Graves Creek. Volitional upstream passage was provided at Graves Creek on alternating weeks through October 4. The East Fork Bull River was trapped from April 5 through July 1 and August 29 through November 17. A log broke the middle screw trap loose on May 6 and that trap was disabled for the remainder of the season. East Fork Bull River stream electrofishing was conducted during five days from October 17 through October 21. Vermilion River electrofishing occurred on seven days from October 24 through November 1. Only twelve juvenile transports were captured through this effort. Upon consultation with the management agencies, the final three days of electrofishing were not completed due to the extremely low abundance of fish observed in the area.

There were a total of 268 capture events of 267 individual juvenile (i.e., <300 mm) Bull Trout during 2022 (13 of these individuals were recaptures from previous stream electrofishing or trapping efforts). A total of 261, 120–250 mm, Bull Trout were captured in Montana tributaries and transported to Idaho during 2022 (Table 1). An additional five juvenile Bull Trout were captured and released on site (one of these was captured twice and transported the second time) because they did not meet one or more of the transport criteria (i.e., fish length or direction of travel). There were two juvenile Bull Trout mortalities observed in 2022. The first mortality was predated on by an adult Bull Trout while in the fish transport tank (see discussion pertaining to Term and Condition 20). The second juvenile transport was transported to Idaho but escaped into

the effluent water system at the Cabinet Gorge Dam Fish Handling Facility and was considered a mortality.

There were 22 capture events of 21 individual adult Bull Trout in tributary traps during 2022. Twelve of these individuals were transported back to the Clark Fork River downstream of Cabinet Gorge Dam and nine were released on site.

**Table 1.** Tributary and method of capture for juvenile Bull Trout transported to Idaho under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program in 2022.

Tributary	Method	Bull Trout Transported
Graves Creek	Permanent Weir	164
East Fork Bull River	Weir/Screw Trap/Stream Electrofishing	85
Vermilion River	Stream Electrofishing	12
	Total	261

Following a feasibility investigation, Avista constructed a concrete-bedded weir trap (permanent weir trap) on lower Graves Creek in late 2012 and initiated operation in 2013. Operation of the permanent weir trap was anticipated to facilitate higher capture efficiencies for outmigrating juvenile Bull Trout, particularly during periods of higher streamflow that proved difficult to trap with existing methodologies. The Graves Creek Permanent Weir Trap Monitoring and Evaluation Plan was completed in 2013 and was designed to evaluate the operation and fish capture effectiveness of the permanent weir trap. The plan was updated during 2017 and continues to be implemented.

From the inception of permanent weir operation through 2018, a number of issues were identified and iteratively addressed by Avista, MFWP, and USFWS. After careful consideration and extensive testing of a prototype, an engineering firm was hired to design substantial enhancements to the permanent weir trap. Design was finalized in 2020 and construction of the enhancements occurred in the summer and fall of 2021. The enhancements became operational on November 3, 2021 and preliminary results suggest the new trap meets and exceeds the various goals and expectations that warranted the change. In addition, due to the marked increase in the number of juvenile Bull Trout being handled during 2019 and 2020, Avista constructed a fish handling facility near the permanent weir trap that also became operational in 2021. This facility provides protected, flow-through stream water to minimize stress while holding and working up fish prior to transport or release.

#### 8.2.2.2 Prescription 2 Conditions and Corresponding Activities

#### **Prescription 2 Description**

USFWS's Section 18 Prescription 2 states the following:

At the effective date of the Settlement Agreement (License Application Volume III), the licensee shall develop and implement a fish passage program in accordance with the terms of the Clark

Fork Settlement Agreement and the Native Salmonid Restoration Plan (License Application Volume IV.A). Implementation of the Plan shall include initial project scoping activities resulting in goals and objectives; background information, compilation and updating in areas of fish genetics, fish pathogens, exotic fish control, existing fish populations, stream and mainstem habitat conditions; assessment of suitable fish stock availability, fish transfer options, and fish hatchery options; and implementation of experimental and comprehensive fish passage measures, as appropriate, and a monitoring program to assess the effectiveness of fishways and other measures.

#### 2022 Activities Associated with Prescription 2

Avista continued to provide safe, timely, and efficient fish passage in 2022, adaptively managed in consultation with USFWS and other MC members. Following approval of the CFSA Amendment by the MC, Avista and stakeholders reinitiated development of the next NSRP Five-Year Plan. The updated NSRP Five-Year Plan for the 2019–2023 time period was approved at the September 25, 2018 MC meeting. In 2022, the USFWS reviewed and approved AIPs, including those related to Bull Trout passage. The USFWS received the project plans that were approved by the MC, which the USFWS is a member of, in April 2022. The pertinent project plans include:

- Upstream Fish Passage Program
- Westslope Cutthroat Trout Transport Evaluation
- Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
- Non-native Fish Suppression Project in the East Fork Bull River
- Redd Surveys in Montana Tributaries
- Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations
- Fish Capture Facilities Operation, Development, and Testing
- Graves Creek Permanent Weir Trap Enhancements

Assessing and/or improving stream and mainstem habitat conditions and the implementation of a monitoring program to assess the effectiveness of fishways and other measures are activities addressed through the coordinated implementation of CFSA appendices A, B, C, and F5.

#### 8.2.3 Key 2022 References

- Adams, B., R. Headley, and J. VonBargen. 2022. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2021 Annual Project Update. Avista document identification number 2022-0146.
- Adams, B., R. Headley, and J. VonBargen. *In prep*. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. 2022 Annual Project Update.
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- Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Record from September 21, 2022. Avista document identification number 2022-0194.
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- Avista. 2022. Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo to the Management Committee (October 26, 2022). FERC Submittal. Avista document identification number 2022-0170.
- Avista. 2022. Cabinet Gorge Dam Fishway Project Certifications and Final Construction Report (November 4, 2022). Avista document identification number 2022-0181.
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- FERC. 2000. Order Issuing New License for Clark Fork Project No. 2058, effective date March 1, 2001. Avista document identification number 2000-0047.
- FERC. 2019. Order Amending License and Approving Exhibits A and F (August 8, 2019). Avista document identification number 2019-0175.
- FERC. 2019. Order Approving Fish Salvage Plan (November 19, 2019). Avista document identification number 2019-0298.
- FERC. 2022. Order Approving 2021 Annual Report and 2022 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (May 31, 2022). Avista document identification number 2022-0075.
- Kovach, R. In prep. University of Montana Conservation Genetics Laboratory Report.

- Moran, S., J. Storaasli, and P. Kusnierz. 2022. Non-Native Fish Suppression Project in the East Fork Bull River. Project Completion Report (2007–2020). Avista document identification number 2022-0268.
- Moran, S., J. Blakney, T. Rehm, and K. Aceituno. 2022. Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations. Project Completion Report. Avista document identification number 2022-0033.
- Moran, S. 2022. Lower Clark Fork River, Montana Avista Project Area 2021 Annual Bull Trout and Brown Trout Redd Survey. 2021 Annual Project Update. Avista document identification number 2022-0034.
- Moran, S. *In prep.* Lower Clark Fork River, Montana Avista Project Area 2022 Annual Bull Trout and Brown Trout Redd Survey. 2022 Annual Project Update.
- Oldenburg, E. W. *In prep.* Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Comprehensive Project Report - 2018–2022 (includes Graves Creek permanent weir trap monitoring and evaluation plan report as an appendix).
- Rehm, T. In prep. Westslope Cutthroat Trout Transport Evaluation. Project Completion Report.
- USFWS. 2019. Endangered Species Act Section 7 Consultation Biological Opinion. Avista document identification number 2019-0026.

#### 8.3 Other Clark Fork License Articles

#### 8.3.1 Purpose

This section of the Annual Report highlights any annual activities (Section 8.3.2) that occurred in 2022 associated with other License Articles for the Clark Fork Project No. 2058 that do not directly tie to a specific CFSA PM&E measure.

#### 8.3.2 2022 Activity Table

License Article Number	License Article Description	2022 Activity
438	Dispute Resolution	No activity
		occurred
439	Rock Creek Mine Discharge Facility	No activity
		occurred
440	Revised License Exhibit G	No activity
		occurred
441	Alterations per Fish and Wildlife Program	No activity
		occurred
442	Permission for Use and Occupancy of Project Lands and	See Section 8.3.2.1
	Waters	
443	Construction, Operation, and Maintenance of Fishways	See Section 8.2.2.1

#### 8.3.2.1 Permission for use and Occupancy of Project Lands and Waters

In 2022, Avista granted permission for certain types of use and occupancy of Project lands and waters to comply with CFSA appendices G and H (License Articles 414 and 415). Uses and occupancy are included in sections 7.1 and 7.2 of this report. Avista conveyed no new easements in 2022.

#### 8.3.3 Key 2022 References

Avista. 2022. Avista Property Use Permits, 2022. Avista document identification number 2022-0010.

#### 9.1 Purpose

The purpose of this section is to inform FERC of any "out of the ordinary" issues pertaining to the implementation of the Clark Fork License No. 2058 and any items requiring FERC action through December 31, 2022. The FERC-related activities for 2022 (such as FERC filings, FERC orders, and FERC correspondence), and FERC awareness items (such as Clark Fork Settlement Agreement PM&E measure modifications and clarifications and specific issues of interest) are also included in this section of the Annual Report.

#### 9.2 FERC Activities/Awareness

In 2022, FERC activities related to the Clark Fork Project included the following:

- Avista's February 18, 2022 submittal of the Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan.
- Avista's April 4, 2022 submittal of a Maximum Draft Exceedance for Noxon Rapids HED regarding the maximum forebay draft rate of two feet per day was exceeded by 0.06 feet on March 11, 2022.
- Avista's April 7, 2022 submittal of the 2021 Clark Fork Annual Report and the 2022 Clark Fork Annual Implementation Plans.
- Avista's April 7, 2022 submittal of the Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo.
- FERC's May 31, 2022 Order Approving 2021 Annual Report and 2022 Annual Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433.
- FERC's June 6, 2022 letter declaring the forebay elevation deviation on March 11, 2022 is not in violation of Article 429.
- FERC's June 30, 2022 notice of the July 2022 Environmental Inspection of the Clark Fork Project.
- FERC's July 26, 2022 letter regarding the results of the July 2022 Environmental Inspection of the Clark Fork Project.
- Avista's October 13, 2022 submittal of a Biological Opinion Condition 20 Report regarding Bull Trout Mortality for September 2022.
- Avista's October 26, 2022 submittal of the Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo shared at the March 2, 2022 Management Committee.
- Avista's October 28, 2022 submittal of a Biological Opinion Condition 20 Report regarding two Bull Trout Mortalities for September and October 2022.
- Avista's November 18, 2022 submittal of Cabinet Gorge Dam Fishway Project Final Construction Exhibits A and F.
- Avista's December 20, 2022 submittal of correction to the October 28, 2022 Biological Opinion Condition 20 Report.

#### 9.3 Key 2022 References

- Avista. 2022. Cabinet Gorge Dam Fishway Non-native Fish and Aquatic Invasive Species Prevention Plan (February 18, 2022). FERC Submittal. Avista document identification number 2022-0022.
- Avista. 2022. Maximum Draft Exceedance (April 4, 2022). FERC Submittal. Avista document identification number 2022-0049.
- Avista. 2022. 2022 Clark Fork Annual Implementation Plans and 2021 Clark Fork Annual Report (April 7, 2022). FERC Submittal. Avista document identification number 2022-0051.
- Avista. 2022. Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations (April 7, 2022). FERC Submittal. Avista document identification number 2022-0050.
- FERC. 2022. Order Approving 2021 Annual Report and 2022 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (May 31, 2022). FERC Order. Avista document identification number 2022-0075.
- FERC. 2022. Forebay Elevation Deviation Article 429 (June 6, 2022). FERC Issuance. Avista document identification number 2022-0082.
- FERC. 2022. Notice of July 12 and 13, 2022 FERC Environmental Inspection of the Clark Fork Project (June 30, 2022). FERC Issuance. Avista document identification number 2022-0104.
- FERC. 2022. Results of the 2022 Environmental Inspection of the Clark Fork Hydroelectric Project (July 26, 2022). FERC Issuance. Avista document identification number 2022-0116.
- Avista. 2022. Biological Opinion Condition 20 Report Regarding Bull Trout (October 13, 2022). FERC Submittal. Avista document identification number 2022-0157.
- Avista. 2022. Cabinet Gorge Dam Fishway Operations Plan Summary and Emergency Operations Memo to Management Committee (October 26, 2022). FERC Submittal. Avista document identification number 2022-0170.
- Avista. 2022. Biological Opinion Condition 20 Report Regarding Bull Trout (October 28, 2022). FERC Submittal. Avista document identification number 2022-0178.
- Avista. 2022. Cabinet Gorge Dam Fishway Project Final Construction As-Built Exhibits A & F-1 & F-9 and Submittal for Approval Exhibits F-8 & F-11 (November 18, 2022). FERC Submittal. Avista document identification number 2022-0201.

Avista. 2022. Biological Opinion Condition 20 Corrected Report Regarding Bull Trout (December 20, 2022). FERC Submittal (correction to FERC Accession Number 20221028-5375). Avista document identification number 2022-0251.

#### Section 10: Amendments, Modifications, and Clarification of License Articles

#### 10.1 Purpose

This portion of the Annual Report highlights and summarizes all amendments, modifications, and/or clarifications (other than one-time filing extensions or Exhibits and annual approvals) made to the License for Clark Fork Project No. 2058, through December 31, 2022. Note that terms and conditions of the original license took effect on March 1, 2001.

Each FERC amendment, modification, or clarification to/of an existing license article are included in Section 10.2. The date of each amendment, modification, or clarification is also documented. There were no activities in 2022.

#### 10.2 Amendments/Modifications/Clarifications of License Articles for Clark Fork Project No. 2058

Article	Description	Date Amended or			
Number	Description	Clarified			
L-2	Exhibit Drawings	10/29/2013			
201	Authorized Installed Capacity and Annual Charges	07/13/2006			
201	Authorized Installed Capacity and Annual Charges	10/10/2006			
201	Annual Charges and Exhibit A	06/15/2007			
201	Authorized Installed Capacity and Annual Charges	04/10/2008			
201	Exhibit G Drawings and Annual Charges	02/10/2009			
201	Exhibit G Drawings and Annual Charges	10/09/2014			
204	Exhibit F and Exhibit G Drawings	01/09/2002			
412	Water Quality Protection and Monitoring Plan	12/10/2002			
412	Water Quality Protection and Monitoring Plan	06/23/2011			
413	Exhibit F Drawings	11/18/2016			
413	Exhibit F Drawings	03/01/2018			
413	Exhibit A and Exhibit F Drawings	08/08/2019			
427	Programmatic Agreement	10/30/2000			
429	Minimum Flows	12/18/2017			
431	Coordination of Flows with Albeni Falls	11/22/2002			
432	Threatened and Endangered Species Plan	06/13/2003			
433	Fishway Plan	06/13/2003			
434	Erosion Plan	03/04/2003			
435	Solid Waste and Waste Water Plan	12/10/2002			
436	Oil and Hazardous Substance Plan	12/10/2002			
437	Pesticide & Herbicide Use Plan	11/22/2002			
438	Dispute Resolution	10/30/2000			
438	Dispute Resolution	11/22/2002			
442	Use and Occupancy of Project Lands and Waters	11/22/2002			
443	Fishway Prescriptions	10/30/2000			
n/a	Approval to Replace Transmission Lines	03/05/2014			

#### Section 11: Clarifications and Modifications to Clark Fork Settlement Agreement and PM&E Measures

#### 11.1 Purpose

This portion of the Annual Report highlights and summarizes all clarifications and modifications to the CFSA and PM&E measures.

Each clarification or modification document are included in Section 11.2, with the date of MC (or, in the case of the Programmatic Agreement, CRMG) approval. There were no activities in 2022.

### 11.2 Clarifications/Modifications to Clark Fork Settlement Agreement and PM&E Measures

Document or Appendix	Document Title	Date Approved		
CFSA ¶ 26	Cost Over-Run Guidelines	09/27/2000		
CFSA ¶ 26	Management Committee Membership Application	12/29/2000		
CFSA ¶ 26	Management Committee Procedures	09/30/2003		
CFSA	Amendment No. 1	09/26/2017		
CFSA Appendix C	Clarification of Usage of Funding Sources	09/30/2003		
CFSA Appendix C	Joint Agreement Regarding Fish Passage	03/16/2010		
CFSA Appendix C	Resolution of O&M Funding for CGDF	09/26/2017		
CFSA Appendix F1	Title Revised	10/26/2016		
CFSA Appendix N1	Obligation Fulfilled	10/26/2016		
CFSA Appendix N2	Obligation Fulfilled	10/26/2016		
CFSA Appendix N3	Obligation Fulfilled	10/26/2016		
CFSA Appendix O	Obligation Fulfilled	10/26/2016		
CFSA Appendix T	Project Operations during Low Inflows	09/26/2001		
CFSA Appendix V	Guidelines for Acquisition of Land Interests	03/26/2010		
PA	Programmatic Agreement (CRMG) Reporting	04/12/2001		
PA	Programmatic Agreement (CRMG) Reporting	11/23/2004		

#### 11.3 Key 2022 References

- Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Minutes from March 15, 2022. Avista document identification number 2022-0065.
- FERC. 2022. Order Approving 2021 Annual Report and 2022 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (May 31, 2022). Avista document identification number 2022-0075.
- Avista. 2022. Clark Fork Settlement Agreement Management Committee Meeting Record from September 21, 2022. Avista document identification number 2022-0194.

#### Section 12: Annual Budget and Grant Summary

#### 12.1 Budget Summary

On the following page is a spreadsheet summary of budget activities for each of the PM&E measures for the 2022 calendar year (January – December). The MC approved activity year is from April through March therefore, the following budget spreadsheet summary includes the fourth quarter of 2021 approved activities and the first through third quarters of the 2022 approved activities.

The "2021 Carryover Funding" column in the budget spreadsheet shows funding obligations carried over from 2021 (.39% int). Total carryover was \$12,001,799.

The "2022 Funding Obligation" column, totaling \$5,261,998, details Avista's annual funding obligation per Appendix U (Funding Summary Table) of the CFSA plus an additional \$162,569 "GDP" (Gross Domestic Product) escalation for inflation (4.59% GDP) under terms of Paragraph 23 of the CFSA.

The "Total Funding Obligation" column is the sum of the "2021 Carryover Funding" column, plus the "2022 Funding Obligation" column. For 2022, the "Total Funding Obligation" was \$17,216,502. Note that the MC approved the removal of CFSA appendices N1, N2, N3, and O from the ongoing list of CFSA PM&E measures, as Avista has met the obligation under these appendices for the remainder of the current FERC license.

The "2022 Annual Implementation Plan Budget" column, totaling \$14,539,156, shows the implementation budget amounts determined by the TRTAC and WRTAC and approved by the MC. Note that, due to TRTAC, WRTAC, and MC decisions, some 2022 AIP budgets were more or less than the actual 2022 funding obligations. Note there were no approved budgets for CFSA appendices F4, P annual fund, or Q.

The "Total 2022 Expenditures" column shows expenditures for each of the PM&E measures, totaling \$8,445,402.

The "Unspent Dollars" column shows the amount of unspent dollars for certain annual funding obligations totaling \$14,171,118. In 2012, expenditures from CFSA Appendix C (Annual Facilities Obligation) Fund exceeded the annual obligation and all carryover dollars were depleted. Since then the dollar amounts represented in the "Appendix C Facilities" row have been represented as negative amounts. The negative amounts accurately reflect the expenditures above and beyond the annual obligation to date.

Under terms of Paragraph 23 of the CFSA, the "Treas constant maturity 1-year", (4.73% for 2022) column adjusts the unspent dollars for interest. This equates to an additional \$579,965 for 2022.

The final column on the spreadsheet is the "2022 Carryover Funding". For more details regarding the current interest rates utilized, refer to both Paragraph 23 and Appendix U (Funding Summary Table) of the CFSA. Total 2022 end-of-year carryover, plus interest, is \$14,481,998.

#### Avista CFSA Annual Budget Report 2022 Year Twenty-Four of CFSA

App.	PM&E - Description	2021 Carryover <sub>g</sub> Funding <sup>g</sup>	Fund	GDP*** 4.59% <u>Amt</u>	2022 Funding <u>Obligation</u>	Total Funding <u>Obligation</u>	2022 Annual Implementation Plan Budget	Total 2022 <u>Expenditures</u>	Unspent <u>s</u> <u>Dollars</u>	Treas constant maturity 1-year 4.73% <u>Amt</u>	2022 Carryover <u>Funding</u>
А	Idaho Tributary & Fishery Enhancement Program										
	Tributary Habitat Acquisition & Enhancement	\$2,734,027	Fund	\$27,075	\$616,935	\$3,350,962	\$457,618	\$137,602	\$3,190,567	\$150,914	\$3,341,481
Fis	sh Resource Monitoring, Enhancement & Management	\$0	Budget	\$2,338	\$53,266	\$53,266	\$118,515	\$76,058	\$0	\$0	\$0
_	Montana Tributary Habitat Acquisition &										
В	Recreational Fishery Enhancement	<u> </u>		<u></u>							** *** ***
	I ributary Habitat Acquisition & Enhancement	\$2,091,406		\$19,291	\$439,567	\$2,530,973	\$334,432	\$119,952	\$2,411,021	\$114,041	\$2,525,063
0	Recreational Fishery Enhancement	\$1,313,699		\$12,860	\$293,042	\$1,606,741	\$228,159	\$19,686	\$1,587,055	\$75,068	\$1,662,123
C	Fish Passage/Native Salmonid Restoration Plan	¢4 005 047		¢07.005	¢0.40.000	¢0.455.440	¢4 570 700	¢700.000	¢4 407 440		<u><u><u></u></u></u>
	Annual Operation	\$1,305,617	Budget	\$37,295	\$849,826	\$2,155,443	\$1,576,786	\$728,330	\$1,427,113	\$67,502	\$1,494,616
<b>D</b>		-\$30,909,091	Fund	\$27,075	\$010,937	\$010,937	\$0,911,080	\$5,467,848	-\$4,850,911	-\$229,448	-\$35,989,450
	Buil Front Protection & Public Education Project	\$107,485	Budget	\$8,348	\$190,223	\$357,708	\$224,892	\$132,407	\$225,300	\$10,657	\$235,957
	Clark Fark River Water Quality Manitoring Program	\$17,94Z	Budget	000¢	\$10,217 \$20,000	\$33,109 \$24,150	\$10,000 \$24,150	\$12,920 \$10,150	\$20,234	\$957	\$20,000
ГІ		φ11,3ZZ	Budget	<b>Φ1,002</b>	φ22,020	\$34,150	φ <b>3</b> 4,150	φ10,100	\$10,992	\$756	\$10,749
	5yr intensive monitoring		Periodic			\$10,000	\$10,000	\$0	\$10,000		\$10,000
F2	Monitoring Noxon Reservoir Stratification		Estimate			\$0	\$55,107	\$0	\$55,107		
F3	Aquatic Organism Tissue Analysis	\$15,000	****			\$15,000	\$10,000	\$0	\$15,000		\$15,000
F4 F5	Water Quality Protection & Monitoring Plan for Maintenance, Construction & Emergency Activities Gas Supersaturation Mitigation (Section 3.1)	\$1,841,535 2	Periodic	\$0	\$625,000	\$0	\$0 \$2,466,535 ₅	\$0	\$0 \$1,317,912	\$62,337	\$1,380,249
	(Section 2.2)	2,			¢022.612	¢022 612	¢105.462	0.1	¢022 612		¢022 612
	(Section 3.2)	3	~~		\$932,01Z	\$932,012	\$105,463	\$U	\$932,01Z		\$932,012
G	Implementation of Land Use Mgmt Plan		Estimate			\$0	\$167,500	\$60,214	\$107,286		
Н	Implementation of Recreation Resource Mgmt Plan										
	Management		Estimate			\$0	\$241,500	\$201,675	\$39,825		
	Facilities Fund	\$496,880	Fund	\$10,325	\$235,282	\$732,162	\$526,200 <sup>2</sup> ,3	\$178,519	\$553,643	\$26,187	\$579,830
	Implementation of Aesthetics Mamt Plan	. ,	Estimate	. ,	. ,	02	\$7,000	0\$	\$7,000		. ,
•	Implementation of Wildlife Botanical & Wetland		Louinate			ψυ	ψ1,000	ψυ	ψ1,000		
Л	Mamt Plan		Estimate			\$0	\$5,000	\$0	\$5,000		
ĸ	Wildlife Habitat Acquisition & Enhancement Fund	\$767 603	Fund	\$13 451	\$306 493	\$1 074 096	\$104 550	\$2 510	\$1 071 586	\$50.686	\$1 122 272
L	Black Cottonwood Habitat on Avista Property	\$97.079	Budget	\$328	\$7,475	\$104,554	\$15,000	<u>\$0</u>	\$104,554	\$4,945	\$109,500
M	Wetlands on Avista Property	\$136,430	Budget		<i></i>	\$136,430	\$12,000	\$0	\$136,430	\$6,453	\$142.883
Р	Forest Habitat for Selected Avista Lands	, ,				,,	¥ )		, ,		· / /
	Appual Fund		Pariodia			02	02	0\$	02		
			Fellouic			¥0	ψυ	ψŪ	ψυ		
	Improvement Fund		Periodic			\$0	\$5,000	\$0	\$0		
~	Timber Revenue	\$226,818				\$226,818		\$0	\$226,818		\$226,796
Q	Reservoir Islands Owned by Avista					\$0	\$0	\$0	\$0		
R	Clark Fork Heritage Resource Program		Estimate			\$0	\$73,000	\$28,807	\$44,193		
S	Erosion Fund & Shoreline Stabilization - Guidelines							\$0	\$0		
	Annual Fund	\$200,000	Fund	\$2,514	\$57,295	\$200,000	\$58,000	\$0	\$200,000	\$9,460	\$200,000
Т	Project Operating Limits	\$578,957	Estimate			\$578,957	\$775,558 4	\$112,087	\$466,869		\$466,869
	Total 2022 Annual Report	\$12,001,799 1		\$162,569	\$5,261,998	\$17,216,502	\$14,539,156	\$8,445,402	\$14,171,118 1	\$579,965 Page 96	\$14,481,999

#### NOTES:

- \* Refers to Appendix U "Funding Summary Table"
- \*\*\* Used Qtr3 GDP for Implicit price deflators.
- \*\*\*\*\* Treasury constant maturity 1-year as of Dec-31
- \*\*\*\* Pay actual costs up to not-to-exceed limit. Unspent dollars does not receive an interest escalated.
- \*\* annual funding of 932,612 without GDP escalation, unexpended funds carryover without interest beginning 2022
- App S Total Fund amount capped at \$200,000
- App E Pursuant to the CFSA, unexpended funds with interest in any one year shall not exceed \$20,000.
- App C charges for EFBR & Vermillion node projects were charged to the Facilities fund in error in the amount of \$8,073. Correction will be reflected in the 2023 annual budget report.
- The totals of "Carryover Funding Obligations w/int", "Unspent Dollars", "Carryover Dollars", and "Carryover Dollars with Interest" columns exclude App C Facilities Fund balance. The negative amounts depict total expenditures exceeding the defined annual App C Facility Fund contribution in the CFSA. If the App C Facility Fund carryover was included in the total it would not accurately reflect the total funding carryover.
- 2 "Section 3.1 funding" refers to the funding mechanism defined in Section 3.1 of the "2022 Phase III of the Final Gas Supersaturation Control Program Addendum for the Clark Fork Project" (hereafter, "Phase III agreement," approved by the MC on 3/15/2022). Pursuant to the Phase III agreement, all Appendix F5 projects will be funded through Section 3.2. If the 'total available' Section 3.1 funds are exceeded during any given year, the balance will be funded through Section 3.2 funding.
- 3 App F5 Section 3.2 refers to the funding mechanism defined in Section 3.2 of the Phase III agreement. The annual contribution associated with this funding is not subject to GDP inflation and unexpended funds are not subject to interest
- Fund refers to dollars that are made available annually. These funds are adjusted annually by the percentage change of the GDP-IDP as reported by the Bureau of Economic Analysis. Unused funds are carried forward to the next year and increased by the yield in percent as reported in the Federal Reserve Statistical Release H-15 of US treasury securities as a constant maturity.
- Estimate refers to dollars that are projections made now however; Avista will pay the actual costs of implementation. Unused funds are not carried forward to the next year. refers to dollars that support initiatives within programs that are the responsibility of other parties. Avista will pay the actual costs in an amount not to exceed the agreed budget. Unused funds are carried forward to the next year and increased by the yield in percent as reported in the Federal
  - Budget Reserve Statistical Release H-15 of the US treasury securities as a constant maturity.

Periodic

refers to dollars that are periodic or a one-time cost. Avista will pay the actual costs in an amount not to exceed the specified budget. Funding Obligation does not receive a GDP escalation. Unspent dollars does not received an interest escalation.

#### CONSENT MAILS:

- 1 App H Facilities Fund \$100,000, Cabinet Gorge Dam Viewpoint dtd 10/5/22
- 2 App H Facilities Fund \$33,000, Pilgrim Creek Park fence repair dtd 4/21/22
- 3 App H Facilities Fund \$17,000, Pilgrim Creek Park lawn mower 4/21/22
- 4 App T \$ 645,000, Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade dtd 5/3/22
- 5 App F5 \$100,000, Lake Pend Oreille and Pend Oreille River Creel Survey dtd 1/24/22

#### 12.2 Grant Summary

Appendices B and H of the CFSA includes a provision intended to leverage PM&E measure funds through grants. Avista employs a grant writer who pursues creative funding opportunities to match and enhance the financial commitments being made to implement the PM&E measures. Any funding received does not reduce Avista's contribution to the implementation effort; rather, the funds create additional protection, mitigation, and enhancement opportunities.

The grant writer coordinates with program leaders, technical committees, MC members, and other local constituencies to identify projects for grant funding, research funding sources, prepares grant applications, and conducts grant project follow-up and reporting.

During 2022, the grant writing program exceeded a milestone of \$13,000,000 in grants received since project start-up in October 1999. Grants received in 2022 totaled \$368,053. Grants still pending at the end of 2022 totaled \$55,000. A total of \$13,276,544 in federal, state, and private foundation grants have been acquired since 1999.

Grant funds received in 2022 will be used to enhance riparian areas in the Bull River watershed, form a diverse group of stakeholders to plan restoration priorities for the lower Priest River, and support the addition of a Big Sky Watershed Corps member to assist with outreach and on-theground projects in the lower Clark Fork River watershed. Additionally, grant funds will assist with design of improved irrigation and enhanced fish habitat on the largest ranch property in Sanders County, and initiate planning and design for future restoration in the Vermilion River.

In Idaho, the national office of Trout Unlimited applied for and received funds from the U.S. Bureau of Reclamation WaterSMART Cooperative Watershed Management Program. The application scored among the highest of proposals submitted and was awarded the full request of \$156,108. Funds will be used to establish the Priest River Watershed Group to support and enhance the native coldwater fishery in the lower Priest River watershed through collaborative planning, public outreach, data compilation, and diverse stakeholder engagement. Project start-up funds in the amount of \$8,143 were provided to Trout Unlimited through an IDFG Commission Challenge Grant.



Volunteers measuring water temperatures in the Priest River, Idaho.

In Montana, the Lower Clark Fork Watershed Group (LCFWG) and Green Mountain Conservation District (GMCD) teamed up to apply for funding to improve riparian health and function with private landowners and other partners in the Bull River watershed. Grants acquired for the Bull River re-vegetation program included \$5,500 from the Sanders County Resource Advisory Committee (RAC), \$5,000 from the Trout and Salmon Foundation, \$18,606 from Montana Department of Natural Resources and Conservation (DNRC), and \$69,196 from Montana Department of Environmental Quality (DEQ). The application to Montana DEQ ranked number one in the state. Other projects in partnership with LCFWG and GMCD received a total of \$86,000 in grants including \$10,000 from the Montana DNRC for support for the District's new

Administrator; \$6,000 from the Montana Watershed Coordinating Council to help cover costs so the District could employ a Big Sky Watershed Corps member to conduct landowner outreach and field work; and \$20,000 from the Montana DNRC Irrigation Development Grant program to support design of an irrigation system on a local ranch to conserve water and benefit Westslope Cuthroat Trout in Sqaylth-Kwum Creek, a tributary to the lower Clark Fork River. The GMCD was also the recipient of a \$50,000 grant from Montana DNRC's Reclamation and Development Grants program to develop and implement a pre-project monitoring system for restoration work planned for three reaches of the Vermilion River. The Vermilion River project aims to restore the river and floodplain to improve water quality and benefit native cold-water trout, and to create the infrastructure for a robust effectiveness monitoring program that can be used for the Vermilion River and other stream restoration projects.

Grants in Montana also included a \$20,000 award by the state's Aquatic Invasive Species program to Sanders County for continuation of its Eurasian watermilfoil control program. A reduction in grants received was made to reflect payment from the Trout and Salmon Foundation to LCFWG that was \$500 less than the \$3,500 grant reported in 2021. The adjustment balances the amount for total grants received since project start-up.

Two grant applications totaling \$55,000 were still pending at the end of 2022. These include a proposal for riparian enhancement in the Bull River, submitted to Montana Fish, Wildlife and Parks (\$30,000), and a LCFWG proposal to the Sanders County RAC for \$25,000 to support survey and design work for the planned restoration of 1.5 miles of the Vermilion River.

Along with Avista CFSA PM&E funds, a variety of partners provide funds and in-kind match support for grant projects. In 2022, matching partners included:

- Sanders County
- Sanders County Aquatic Invasive Plants Task Force
- Natural Resource Conservation Service
- Montana Department of Natural Resources
- Montana Department of Environmental Quality
- Montana Fish, Wildlife and Parks
- Montana Watershed Coordination Council
- U. S. Forest Service
- Trout Unlimited
- Idaho Forest Group
- Idaho Department of Fish and Game
- Lower Clark Fork Watershed Group
- Green Mountain Conservation District
- Project ASCENT
- Private landowners