The Restoration Partnership (Partnership) is a collaborative effort comprising the Coeur d'Alene Basin Natural Resource Trustees which are the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM); the Coeur d'Alene Tribe (Tribe); the U.S. Department of Agriculture, represented by the U.S. Forest Service (USFS); and the State of Idaho, represented by the Idaho Department of Fish and Game (IDFG) and Idaho Department of Environmental Quality (DEQ). The Partnership's primary mission is to develop and implement a restoration plan to help restore the health, productivity, and diversity of injured natural resources from releases of mine waste contamination and the services they provide in the Coeur d'Alene Basin for present and future generations. This includes compensation for lost human use services of those resources by developing and implementing projects under the framework of a Restoration Plan for the Coeur d'Alene Basin. The following Partnership activities occurred throughout fiscal year 2022 (FY22):

- The Partnership continued support for ongoing operations and maintenance by USFWS, Ducks Unlimited (D.U.), and private landowners for wetlands at the Schlepp Agriculture to Wetlands Conversion Project. The construction and implementation of this restoration project has been completed, for more information visit: https://www.restorationpartnership.org/schlepp.html.

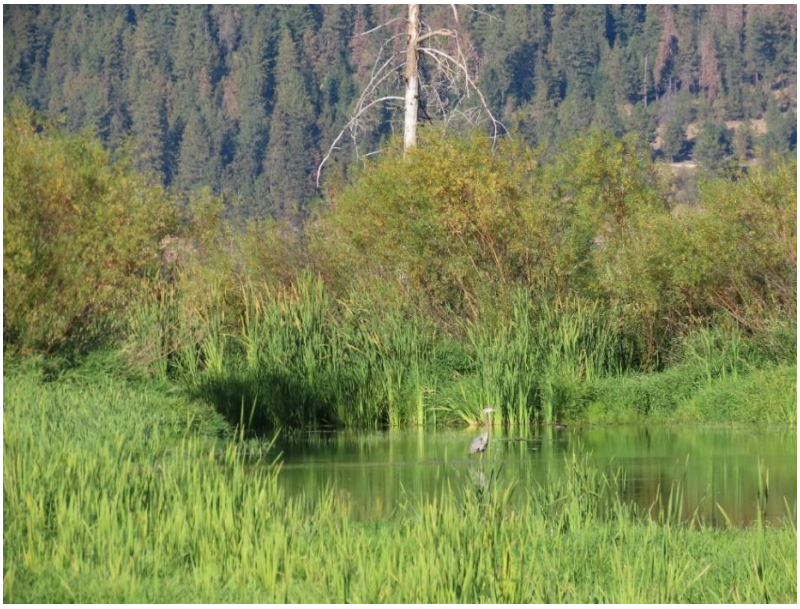
- The Trustees coordinated quarterly reporting and site visits with the Project Sponsors and Project Leads as appropriate throughout FY22.

- Implementation of the following projects continued in FY22 with the exception of some work being delayed due to the COVID-19 pandemic and staff turnovers. The amounts expended in FY22 are noted with a brief narrative of work that was completed. The full annual reports can be found following this narrative.

    - ***Ongoing:*** **Wetland and Stream Enhancement at Cougar Bay on Coeur d'Alene Lake (BLM and USFWS sponsors).**

      -Funds Originally Allocated in FY18 and 19 on Cougar and Johnson parcel jointly: $407,000.
      -Amount Expended in FY22: $164,121
      -FY22 Activities: 1) Ducks Unlimited awarded a construction contract to LKE Corporation for the Cougar Bay Wetland restoration project and implementation started in October 2021, 2) BLM donated $12,000 for purchasing riparian plants

and deer fencing to protect the plantings, 3) Additional plantings scheduled for the Spring and Fall of 2023, and 4) Ongoing monitoring of stream becoming sufficiently stabilized by the establishment of both planted and natural riparian vegetation.



Resident Great Blue Heron at Cougar Bay wetland complex. Photo courtesy of: Mike Stevenson, BLM

- ***Ongoing: Gul Hnch'mchinmsh*** **- Native Willow Nursery for Support of Restoration Actions throughout the Restoration Partnership Project Area (Tribe sponsor).**

  -Funds Originally Allocated in FY18: $205,462
  -Amount Expended in FY22: $8,476
  -FY22 Activities: 1) Coeur d'Alene Tribal staff worked with USFS Panhandle National Forest Tree Nursery to develop a protocol for harvesting willows from the Tribal Willow Nursery, and 2) Created a Standard Operations Procedure to annually allocate willows for restoration projects in the Restoration Planning Area.

- ***Complete:*** **Cultural Harvest opportunities in the Hangman Creek Watershed (Tribe sponsor).**

  -Funds Originally Allocated in FY18: $97,335
  -Amount Expended in FY22: $1,471
  -FY22 Activities: 1) The original scope of the project shifted to newly acquired lands in the Hangman drainage in Washington and RP funds are not to be

expended in Washington therefore, 2) The remaining funds for this project were shifted to the Hepton Levee Breach Repair project as per Trustee Council approval.

- ***Ongoing:*** **Culturally Significant Plants in the Hangman Creek (Tribe sponsor).**

  -Funds Originally Allocated in FY18: $187,770
  -Amount Expended in FY22: $13,022
  -FY22 Activities: 1) Tribal staff coordinated restoration efforts with ongoing Bonneville Power Administration and Avista efforts for cost sharing purposes in the Hangman watershed and, 2) Harvested camas bulbs throughout the Basin to plant along Hangman Creek to restore lost cultural services for Tribal members.

- ***Ongoing:*** **Coeur d'Alene Lake Monitoring and Modeling (Tribe sponsor).**

  -Funds Originally Allocated in FY18: $268,668
  -Amount Expended in FY22: $30,673
  -FY22 Activities: 1) Collected and analyzed water quality samples from 4 sites over an eight month period as other Tribal budgets were used for the other sampling events, 2) Filled data requests from the National Academy of Sciences (NAS) 3) Continued data analysis and writing the synthesis report for Coeur d'Alene Lake, and 4) Continued calibration of the AEM3D model and reporting to the NAS.

- ***Ongoing*****: Hepton Lake (*Gu̱ł Hnch'mchinmsh)* Wetland Restoration Planning and Implementation (Tribe sponsor).**

  -Funds Originally Allocated in FY18: $ 210,900 and $85,332 from remaining funds from the Cultural Harvest opportunities in the Hangman Creek Watershed
  -Amount Expended in FY22: $73,808
  -FY22 Activities: 1) Tribal staff completed the competitive bid processes to select contractors to deliver structural materials for the project; and to install/remove sheet piling on the river side of the levee breach as a critical component of water management, 2) Submitted the final Wetland Reserve Program of Operations to the Natural Resources Conservation Service (NRCS) and secured matching funds from NRCS for construction with Partnership funds, 3) transitioned Tribal oversight from planning, design, cultural resource inventory and assessment over to construction planning (Phase II), and 4) removed reed canary grass to prepare the Site for establishment of culturally significant plant species as per the Cultural Resources Mitigation Plan under the National Historic Preservation Act Section 106.

- ***Ongoing:*** **Wetlands restoration planning at Gray's Meadow (IDFG sponsor).**

-Funds Originally Allocated in FY18 $ 250,000 (remedial match provided by the Work Trust, $5.2 M)
-Amount Expended in FY22: $19,338
-FY22 Activities: 1) IDFG staff worked with Pioneer Technical to produce the final construction drawings, 2) Baseline ecological monitoring/evaluation was completed by ALTA (Montana Wetlands Assessment Method) and IDFG (Wetlands Ecosystem Services Protocol for the United States (WESPUS)) to establish a baseline/benchmark wetlands condition against which to evaluate future condition post remediation/restoration completion, 3) A water management working group consisting of IDFG and water quality staff from the CDA Tribe and IDEQ was formed to consult and recommend water management strategies that minimize water transfer effects on the CDA River/CDA Lake while still accommodating construction and wetland management needs, and 4) Water quality monitoring continued on an as needed basis.

- ***Ongoing:*** **Gene Day Pond Fishing Access (IDFG sponsor)**

  -Funds Originally Allocated in FY18: $25,000
  -Amount Expended in FY22: $3,581
  -FY22 Activities: 1) Completed a draft Trail of the Coeur d'Alene's' Right of Way permit for infrastructure improvements, and 2) Prepared for FY23 ground work to commence.

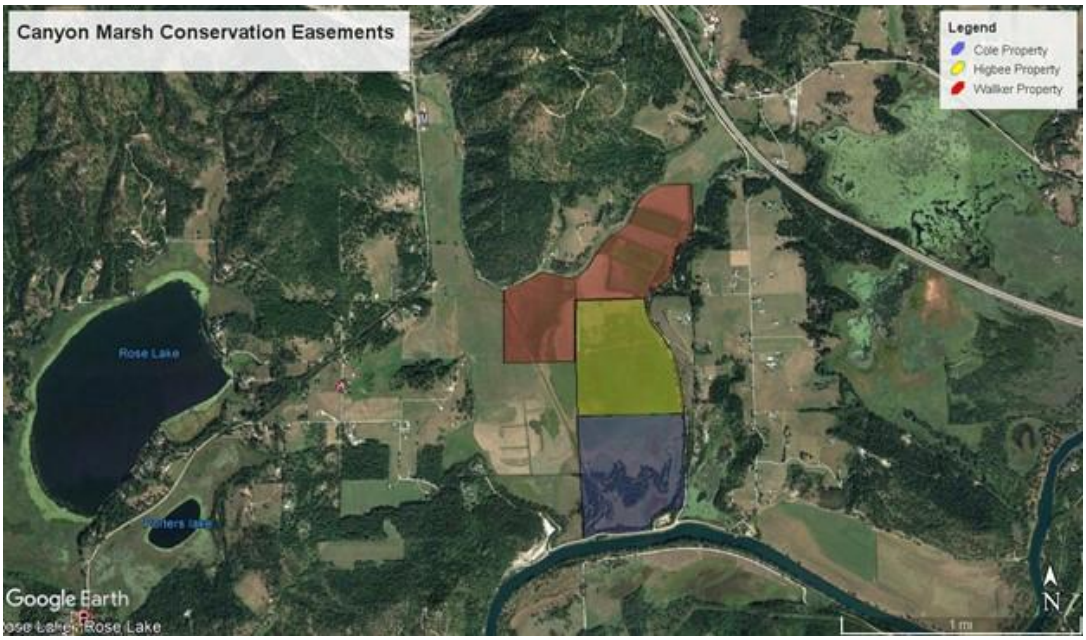
- ***Ongoing:*** **Conservation Easement, North Fork Coeur d'Alene River (IDFG sponsor)**

  Funds Originally Allocated in FY21: $600,000
  -Amount Expended in FY22: $0
  -FY22 Activities: 1) Completed an appraisal with 3 different scenarios being considered, and 2) Met with landowner and coordinated with AVISTA on negotiating the conservation easement while considering permanent protection of natural floodplain communities and cold water hyporheic flow.

- ***Ongoing:*** **Conservation of Agricultural to Wetlands Conversion Properties within Canyon Marsh (USFWS sponsor with the Inland Northwest Land Conservancy (INLC)).**

  -Funds Originally Allocated in FY18 $801,480 and in FY19 $372,400
  -Amount Expended in FY22: $321,250
  -FY22 Activities: 1) Finalized terms of conservation easement with landowners and INLC, 2) USFWS collected soil samples across the a portion of the Canyon Marsh Complex for lead characterization, 3) Established agreements with landowners for pumping infrastructure to manage water levels during spring

tundra swan migration, and 4) USFWS hired a new restoration specialist to take on the oversight of this project.



- ***Ongoing:*** **Conservation of Agricultural to Wetlands Conversion Property Gleason's Marsh (USFWS sponsor with INLC)**

  -Funds Originally Allocated in FY18: $656,140
  -Amount Expended in FY22: $0
  -FY22 Activities: 1) USFWS, EPA, the CDA Work Trust, IDFG, and Ducks Unlimited (DU) met onsite to discuss existing infrastructure, hydrology, contamination levels, and waterfowl use to help lay the groundwork for developing an integrated strategy to address remediation and restoration at Gleason's, and 2) USFWS secured the conservation easement with INLC.

- ***Ongoing:*** **Lake Creek Watershed Restoration (CDA Tribe sponsor)**

  -Funds Originally Allocated in FY21: $615,951
  -Amount Expended in FY22: $63,542
  -FY22 Activities: 1) Large woody debris placement, 2) Upper Lake Creek upland and riparian plantings, 3) Upper Lake Creek stream channel enhancement, 4) West Fork Lake Creek riparian plantings, 5) Forest Road Treatments, 6) East Bozzard Creek culvert replacement, 7) Tribal staff monitored fish passage throughout FY22, and 8) Drafted and submitted a NOAA drought resilience grant, entitled "Wetlands to Combat Drought: Strengthening Drought Preparedness on the Coeur d'Alene Reservation through Wetland Restoration and Monitoring". The proposal identifies restoration project sites in the Lake Creek watershed that will (1) restore capacity of wetlands to mitigate drought, (2) enhance fish refugia, and (3) provide additional habitat for culturally important wetland plant and

wildlife species. If the proposal is funded, requested funds would be leveraged with Restoration Partnership funds and other funding to accomplish restoration projects identified in the upper watershed.

- ***Ongoing:*** **Prichard Creek Phase I: Conservation Easement and Restoration Planning (IDEQ sponsor with Idaho Forest Group and Trout Unlimited)**

  -Funds Originally Allocated in FY21: $1,908,450
  -Amount Expended in FY22: $120,293
  -FY22 Activities: 1) Continued working on completing the conservation easement with Kaniksu Land Trust, 2) Initiated restoration planning and design, 3) Harvested and staged logs for future construction, and 4) Treated invasive Bohemian knotweed.

- ***Ongoing*****: Red Ives Phase I Dam Removal Complete, started Phase II Planning (USFS sponsor)**

  -Funds Originally Allocated in FY19: $30,000
  -Amount Expended in FY22: $0 (utilized dedicated USFS funds).
  -FY22 Activities: 1) Contracted large woody debris provider with wood placement scheduled for FY23, and 2) Initiated Phase II discussions.

Total Funds Expended in FY22: $819,575

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Cougar Bay Wetlands -Aug 9, 2018 (44) and Johnson Parcel

Project Approval Date: Jan. 11, 2020 (52)
Trustee Council Resolutions #: 44 and 52

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $282,000 (44) and $125,000 (52)
Funds Spent this Quarter: $6939
Funds Spent this Fiscal Year: $164,121

A. GENERAL INFORMATION

Project Proponent Name: Doug Evans BLM, Mike Stevenson, BLM (ret)
Primary Telephone Number: (208) 769-5020
Email: cstevenson@blm.gov

Project Sponsor: Doug Evans, BLM, Mike Stevenson, BLM (ret)
Primary Telephone Number: (208) 769-5020
Email: devans@blm.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.
    - Ducks Unlimited awarded a construction contract to LKE Corporation for the Cougar Bay Wetland restoration project. Implementation started in October 2021.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

    - Permits took longer than anticipated to obtain due to regulatory staffing shortages at both IDWR and the Army Corps of Engineers.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.
2) Please describe other cost share or contributing funds.

Project Expenditures: **FY20 Oct 1, 2021- September 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	$0	$0
Travel	$0	$0	$0	$0	$0
Supplies	$1129 (riprap)	$0	$4070	$6939	$12,138
Equipment	$0	$1225 Mini exc. work	$0	$0	$1225
Contractual (Honorarium)	$150,758	$0	$0	$0	$150,758
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$0	$0	$0	$0	$0
Indirect Costs	$0	$0	$0	$0	$0
Total	$151,887	$1225	$4069.94	$6939	$164,121

D. PROJECT PARTNERS

Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable. BLM donated $12,000 to the project. This funding was used primarily to purchase riparian plants and deer fencing to protect them.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

Describe measures of success and how each is related to the goals and objectives of the proposed project.

The project is still ongoing, with additional plantings scheduled for spring and fall of 2023.

Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

When the new channels have become sufficiently stabilized by the establishment of both planted and natural riparian vegetation.

Quarter 4/ Annual Project Update Form

Project Title: ***Guł Hnch'mchinmsh - Native Willow Nursery for Support of Restoration Actions throughout the Restoration Partnership Project Area***

Project Approval Date: October 24, 2022
Trustee Council Resolution #: 44

Reporting Quarter/FY: Quarter 4/ FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $205,462.00
Funds Spent this Quarter: $1,060.63
Funds Spent this Fiscal Year: $8,476.20

A. GENERAL INFORMATION

Project Proponent Name: Eric Hendrickson
Primary Telephone Number: (208)686-8902
Email: ehendrickson@cdatribe-nsn.gov

Project Sponsor: *Coeur d'Alene Tribe*
Primary Telephone Number: *(208)686-1800*

B. PROGRESS DESCRIPTION

- Coeur d'Alene Tribe staff provided survey information on potential harvest opportunities for the Tribe and the partnership. Along with mowing of the reed canary grass to keep the rows of willows visible and accessible. Allocations of willow harvest will be determined and the numbers will be shared at the end of July. After the growing season an additional fall survey was conducted so the Partnership could maximize their harvest opportunities.

C. EXPENDITURES

- Supplies were purchased for survey equipment and fuel for mowing.

Project Expenditures: **FY20 Oct 1, 2021- Sept. 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	$0	$0
Travel	$0	$0	$0	$0	$0
Supplies	$5,038.18	$783.48	$1,593.91	$1,060.63	$8,476.20
Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$5,038.18	$783.48	$1,593.91	$1,060.63	$8,476.20
Indirect Costs	$0	$0	$0	$0	
Total	$5,038.18	$783.48	$1,593.91	$1,060.63	$8476.20

D. PROJECT PARTNERS

- **RP Technical Staff, USDA Forest Service Coeur d'Alene Nursery Staff.**

E. MEASURES OF SUCCESS

Spring Survey Results:

		Trustees allotment assuming they receive 60% of the 25%				Tribal allotment assuming they receive 40% of the 25%			
		Total willows		80% CI		Total willows		80% CI	
Species	Assesment Date	Poles	Whips	Poles	Whips	Poles	Whips	Poles	Whips
Bebb	6/27/2022	0	789	0	243	0	526	0	162
Drummond	6/27/2022	30	2131	12	179	20	1420	8	119
Geyer	6/27/2022	0	1485	0	631	0	990	0	421
Sitka	6/27/2022	0	1352	0	290	0	902	0	193
Makenzie	6/27/2022	0	1397	0	159	0	931	0	106
Pacific	6/27/2022	263	1674	90	254	176	1116	60	170

Fall Survey Results:

		Trustees allotment assuming they receive 60% of the 25%				Tribal allotment assuming they receive 40% of the 25%			
		Total willows		80% CI		Total willows		80% CI	
Species	Assesment Date	Poles	Whips	Poles	Whips	Poles	Whips	Poles	Whips
Bebb	9/28/2022	0	739	0	147	0	493	0	98
Drummond	9/28/2022	312	2569	215	309	208	1713	144	206
Geyer	9/28/2022	0	1554	0	389	0	1036	0	259
Sitka	9/28/2022	633	2275	168	163	422	1517	112	109
Makenzie	9/28/2022	372	2640	140	119	248	1760	93	79
Pacific	9/28/2022	613	1235	122	309	409	823	82	206

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: ***Cultural Harvest Opportunities within the Coeur d'Alene Reservation***

Project Approval Date: **August 28, 2018**
Trustee Council Resolution #: **44**

Reporting Quarter/FY: **Quarter 4 / FY2022-Annual**

Partnership Funds Expenditures
Funds Allocated: **$97,335.00**
Funds Spent this Quarter: **$1,470.95**
Funds Spent this Fiscal Year: **$1,470.95**

A. GENERAL INFORMATION

Project Proponent Name: ***Thomas Biladeau***
Primary Telephone Number: ***(208)686-6307***
Email: ***thomas.biladeau@cdatribe-nsn.gov***

Project Sponsor: ***Coeur d'Alene Tribe***
Primary Telephone Number: ***(208)686-1800***

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.
    - **Additional engineering design and ground surveys were completed for a potential parking area at the proposed release location.**

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.
    - **A formal request is being made as part of this report, to transfer the remaining balance of funds, totaling $85,332.66, from the Restoration Partnership Project entitled Cultural Harvest Opportunities within the Coeur d'Alene Reservation to support the construction of the Hepton levee breach repair. This is necessary to address the cost increases that have occurred since the engineer's estimate of probable cost was finalized in April 2021. At the same time, the anticipated scope for the Cultural Harvest Opportunities project has changed. The Tribe recently purchased property on Hangman Creek near the confluence with the Spokane**

River in Spokane County, WA. Future cultural releases of salmon are likely to take place at this location, and Restoration Partnership funds may not be accessible for that purpose, given the location is outside of the project area. No additional funding requests to the Restoration Partnership are anticipated in order for the Hepton levee repair to proceed to construction.

C. EXPENDITURES

1) Please describe any unforeseen expenditures. **NA**
2) Please describe other cost share or contributing funds. **NA**

Project Expenditures: **FY20 Oct 1, 2020- September 30, 2021**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	1040.77	1040.77
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	$0	$0	$0
Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$0	$0	$0	$0	$0
Indirect Costs	$0	$0	$0	430.18	430.18
Total	$0	$0	$0	1470.95	1470.95

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable. **NA**

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

This report will be the final close-out report for the Coeur d'Alene Tribe's Restoration Partnership funded project "*Cultural Harvest Opportunities Within the Coeur d'Alene Reservation*." The Coeur d'Alene Tribe would like to extend our gratitude to the RP Trustee Council for their continued support toward mitigating the impacts due to contamination and lost resources in the Coeur d'Alene watershed.

The following are the goals outlined in the final proposal for Cultural Harvest Access, and the associated measures of success:

1) **Construct an access site for harvest of culturally significant resources**
   - **This goal is associated with the majority of the allocated funding, and although some of which was spent on design and survey, this goal was incomplete. The Coeur d'Alene Tribe's outlook for salmon recovery and the importance to reconnect the Tribal community with salmon is still very important. However, the potential locations along Hangman Creek within the current boundaries of the Reservation are no longer considered a priority for this action. Focus for an access site for harvest of salmon has shifted to lower Hangman Creek near the mouth of the Spokane River, of which is outside the Restoration Partnership project area.**

2) **Preserve and increase culturally significant hunting, fishing, and gathering opportunities**
   - **With the resources provided the Restoration Partnership, progress toward this goal was completed. Culturally significant fishing activities were expanded upon in July, 2020.**
3) **Provide Tribal harvest opportunities in uncontaminated areas**
   - **In July of 2020, 75 adult salmon were translocated and released into upper Hangman Creek within the reservation boundaries. A significant number of**

community members, including tribal youth, were able to harvest adult salmon from Hangman Creek for the first time in over 100 years. This event was supported by Restoration Partnership funds via this grant.

4) Restore lost Tribal harvest opportunities of salmonids in endemic waters

- **Refer to #3 above.**

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful. **NA**

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: *uł qhesu'lumkhw* (land is good again): Cultural Significant Plant Restoration

Project Approval Date: August 9, 2018
Trustee Council Resolution #: 44

Reporting Quarter/FY: Quarter 4/ FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $187,770.00
Funds Spent this Quarter: $634.66
Funds Spent this Fiscal Year: $13,022.02

A. GENERAL INFORMATION

Project Proponent Name: Gerald I. Green, Coeur d'Alene Wildlife Program
Primary Telephone Number: 208-686-0312
Email: gerald.green@cdatribe-nsn.gov

Project Sponsor: Coeur d'Alene Tribe
Primary Telephone Number: 208-686-0312
Email: gerald.green@cdatribe-nsn.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

- **Expenditures for this fourth quarter covered reporting and planning efforts. The FY2022 Third Quarter Report was submitted as scheduled. The planning efforts encompassed organizing camas restoration. It is hoped that finances from this project can be used to cover the costs of harvesting camas bulbs for out planting to other potential camas sites. However, this entails identifying workers far in advance of the bulb harvesting effort and arranging their time to be paid by this project. As of the close of this reporting period, the issues had not been completely solved.**

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

- **Identifying specifically which field technicians will be assigned to harvest camas and having their salaries, fringes and indirects paid by this Project while they harvest camas was not accomplished due to the overlapping needs of other restoration efforts. However, the need to harvest camas bulbs remains and a process of reimbursing other restoration budgets for the harvesting of camas bulbs may have been identified. It may be possible to use the Journal Voucher process to move funds from this Cultural Resource Plant Restoration budget to reimburse other budgets when field crews work focus their work to restore these plants to their former range. This process is being explored.**

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

- **There were no unforeseen expenditures this Fourth Quarter of FY2022.**

2) Please describe other cost share or contributing funds.

- **BPA funded Hangman Restoration Project for FY2022 totaled $317,000 for restoration of the hydrologic cycle of the Hangman Watershed. The USF&WS funded Hangman Howellia Restoration for FY2022 totaled $16,477.07. Avista Restoration expenditures for the restoration of wetlands and floodplains within Hangman totaled $63,044. Tribal Revenue funds expended on tools, equipment and labor totaled $40,402.**

Project Expenditures: **FY20 Oct 1, 2021- Sept. 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$556.07	$0	$369.43	$477.73	$1,403.23
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	$11,123.86	$0	$11,123.86
Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$556.07	$0	$11,493.29	$477.73	$12,527.09
Indirect Costs	$206.31	$0	$131.69	$156.93	$494.93
Total	$762.38	$0	$11,624.98	$634.66	$13,022.02

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

- **Establishing the culturally significant shrubs and trees, and the restoration of camas for harvest is part of a much larger process of restoring the natural resources that provided sustenance to the Coeur d'Alenes. Fourth Quarter efforts for BPA and Avista funds centered on landscape alterations that filled drainage ditches cut through valley bottoms and side-hill wetlands to de-water the landscape to provide more arable land. This drainage ditch decommissioning involved the placement of thirty nine thousand, one hundred and eleven (39,111) yards of earthen fill to cover 10.23 acres of drainage ditches in order to reestablish**

natural wetland and stream channels. This was in addition to the 1,800 willow and aspen one-gallon tall ones, and 1,200 conifer seedlings planted and the control of noxious weeds within project sites.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

- **The success of seeding efforts will be measured with line transects randomly placed through the middle of the seeded area. The results of these transects will deliver a density of the desired plant of Cultural Significance for a specific planting effort. This density is readily translated into the availability of that resource to Community Members.**

- **The success of tall-one planting efforts will continue to be measured with counts of planting survival in the first and second years after planting. It is assumed these years represent the time period of greatest mortality since this effect is commonly demonstrated. Survival rates can readily be translated into the availability of a particular food or utilitarian resource to Community Members.**

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

- **Camas production will be measured with line transect derived indices of density the third, and fifth years after seed dispersal. Camas establishment is a slow process. In 2021, a quick examination of the area broadcast with camas seed in the fall of 2019 revealed no evidence of camas production. Nor was camas established from the 2019 seeding effort detected in FY2022. Camas establishment cannot be ruled out till no flowering is detected after year 5 years post seeding. The lack of camas blooms is not a reason to consider the first seeding of camas a failure.**

- **The survival of planted woody vegetation will be measured through survival counts for the first two years after planting. Monitoring on a separate restoration project site indicated that 5-gallon sized planting stock was tested and the first year survival rates exceeded 90%. Given this result in a drought year, a sift to larger planting stock was warranted, particularly if the same number of plants establish with less man-power investment and similar costs. FY2022 plantings were delayed till FY2023 in order to allow the plants to grow into the larger sized 2-gallon containers. The 2-gallon tall-one containers were selected for FY2023 because we have no data on the survival rates of this sized nursery stock and growth to a 5-gallon sized container would take an additional year. Survival rates of the 2-gallon sized class will be tested rather than wait that extra year for 5-gallon sized plants.**

- **The maturation of these resources over time will be observed and as is the case with all efforts to restore Cultural Significant Plants in the Hangman Watershed, the restoration will be considered successful when the abundance of these natural resources are sufficient to entice harvest.**

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: ***chdelm khwa chatq'ele'et*** **Part B –**
Monitoring and Modeling Coeur d'Alene Lake's Response to Restoration

Project Approval Date: **August 9, 2018**
Trustee Council Resolution #:44

Reporting Quarter/FY: **Quarter 4/ FY2022-Annual**

Partnership Funds Expenditures
Funds Allocated: **$268,668.00**
Funds Spent this Quarter: **$6,224.59**
Funds Spent this Fiscal Year: **$30,672.96**

A. GENERAL INFORMATION

Project Proponent Name: **Dale Chess, Coeur d'Alene Tribe. Lake Management Department**
Primary Telephone Number: **208.686.1803**
Email: dchess@cdatribe-nsn.gov

Project Sponsor: **Coeur d'Alene Tribe**
Primary Telephone Number: **208.667.5772**
Email: **rstevens@cdatribe-nsn.gov**

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

- **Successfully sampled sites C5, C6, SJ1 and the Coeur d'Alene River at Harrison on October 18th and 19th.**

- **Successfully sampled sites C5, C6, SJ1 and the Coeur d'Alene River at Harrison on November 16th and 17th.**

- **On May 3, successfully sampled the Coeurd'Alene River at Harrison (CDARHarr), St. Joe River (SJ1), Coeur d'Alene Lake (C5) and Chatcolet Lake (C6).**

- **On June 6 and 7, successfully sampled the Coeurd'Alene River at Harrison (CDARHarr), St. Joe River (SJ1), Coeur d'Alene Lake (C5) and Chatcolet Lake (C6).**

- **On July 11 and 13, successfully sampled the Coeurd'Alene River at Harrison (CDARHarr), St. Joe River (SJ1), Coeur d'Alene Lake (C5) and Chatcolet Lake (C6).**

- **On August 8 and 9, successfully sampled the Coeurd'Alene River at Harrison (CDARHarr), St. Joe River (SJ1), Coeur d'Alene Lake (C5) and Chatcolet Lake (C6).**

- **On September 12 and 13 successfully sampled the Coeurd'Alene River at Harrison (CDARHarr), St. Joe River (SJ1), Coeur d'Alene Lake (C5) and Chatcolet Lake (C6).**

- **Submitted the quality assurance project plan (QAPP) for the Coeur d'Alene Lake monitoring project to Meghan Dunn, Region 10 EPA. The plan was accepted, and project codes were submitted to the EPA Manchester laboratory for metals analysis of the project samples in 2022.**

- **Continued data analysis and writing synthesis report.**

- **Filled a data request from the National Academy of Sciences committee which is reviewing the water quality data we have collected from the Coeur d'Alene Lake monitoring project.**

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

- **We were not able to sample sites C5, C6, SJ1 and the Coeur d'Alene River at Harrison in December, January and February due to a combination of low lake elevation and ice conditions on the lake.**

- **Mechanical boat issues prevented us from sampling the lake in April.**

C. EXPENDITURES

1) Please describe any unforeseen expenditures. **NA**
2) Please describe other cost share or contributing funds. **NA**

Project Expenditures: **FY20 Oct 1, 2021- Sept. 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$4,654.95	$6,824.17	$4,166.76	$4,370.58	$20,016.46
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	$124.95	$0	$124.95
Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring/Lab Fees	$0	$0	$2,520	$0	$2,520
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$4,654.95	$6,824.17	$6,686.76	$4,495.53	$22,661.41
Indirect Costs	$1,968.74	$2,692.03	$1,621.52	$1,729.06	$8,011.35
Total	$6,623.69	$9,516.20	$8,308.28	$6,224.59	$30,672.76

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable. **NA**

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project. **NA**

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful. **NA**

Project Title: **Project Part C - Hepton Lake wetland restoration project *Gul Hnch'mchinmsh* (Swimmer's Landing among the Cottonwoods)**

Project Approval Date: December 6, 2021
Trustee Council Resolution #: 56

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $193,638.00
Funds Spent this Quarter: $49,021.80
Funds Spent this Fiscal Year: $73,808.12

A. GENERAL INFORMATION

Project Proponent Name: Angelo Vitale
Primary Telephone Number: (208) 686-6903
Email: angelo.vitale@cdatribe-nsn.gov

Project Sponsor: Coeur d'Alene Tribe
Primary Telephone Number: (208) 686-6903
Email: angelo.vitale@cdatribe-nsn.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

- **Project management: Competitive bid processes were completed to select contractors to, 1) deliver structural materials for the project; and 2) install/remove sheet piling on the river side of the levee breach as a critical component of water management. Multiple bids were received to provide structural materials and the low bid contractor, Danielson Logging of St. Maries, ID, was selected to work on the project. Multiple bids were received to install sheet pile and the low bid contractor, Wesslen Construction of Spokane, WA was selected to work on the project.**

- **Access Road: A total of 10,659' of road surface across the top of the levee was brushed, graded and rocked to provide access for heavy equipment to the construction site. The condition is adequate for heavy equipment access and for dust abatement during dry weather conditions (Photo 1).**

- **Staging Area: The east side of the levee was excavated/graded to the design elevations to generate approximately 1600 CY of fill that was hauled, graded and compacted to develop 11,750 sq. ft. of staging area for stockpiling structural fill (rock). A total of 630 CY of key trench rock and 600 CY of structural fill have been hauled to the staging area as of 9/30/2022 (Photo 2, Photo 3). The staging area adjacent to the levee breach is only large enough to accommodate approximately 3100-3500 CY of structural fill. The haul plan is to fill the staging area to capacity, as favorable conditions allow, prior to construction. Additional fill will be hauled to the staging area next year after construction commences.**

- **Water Management: A sheet pile design is currently being prepared by the contractor. Installation is planned for late November/early December when the water elevation at the levee breach recedes below 2125'.**

- **Cultural Resources Mitigation (NHPA Section 106): Reed canary grass was removed from a 43,500 sq. ft. area located north of the Hepton Native Plant Nursey to prepare the site for establishment of culturally significant plant species as part of cultural resources mitigation for unavoidable impacts that will result from construction of the levee breach repair. A total of 125 5-gallon containerized aspen and cottonwood were planted at the site. Each plant was protected with 6' tall fencing to reduce animal browse and improve survival. Many thousands of cottonwood seedlings also volunteered on the newly exposed soil. All containerized plants survived through the first growing season.**

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

- **High water levels in the month of June reached 2130', saturating low lying areas around Hepton Lake, and greatly limiting our ability to prepare the stockpile area near the levee breach early in the season. Consequently, work to finish preparing the stockpile area was delayed until September.**

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

- **The degree of saturation in the areas around the stockpile location warranted use of additional rock to provide a stable access route for heavy equipment beyond what was identified in the engineer's cost estimate.**

- **Rocking the 10,659' of access road on top of the levee was not accounted for in the engineer's cost estimate, but this was deemed important as a means of providing**

adequate dust abatement during dry weather conditions and extending favorable access conditions during variable weather.

- **The combination of supply chain issues and inflation has greatly affected the cost of all materials, supplies and contractor services necessary for construction of the project. For example, the low bid for sheet pile installation exceeded the engineer's cost estimate by nearly 20%. Similar cost increases have been noted for nearly all materials and supplies. Additional fund raising efforts will need to be undertaken to cover such contingencies.**

A formal request is being made as part of this report, to transfer the remaining balance of funds, totaling $85,332.66, from the Restoration Partnership Project entitled Cultural Harvest Opportunities within the Coeur d'Alene Reservation to support the construction of the Hepton levee breach repair. This is necessary to address the cost increases that have occurred since the engineer's estimate of probable cost was finalized in April 2021. At the same time, the anticipated scope for the Cultural Harvest Opportunities project has changed. The Tribe recently purchased property on Hangman Creek near the confluence with the Spokane River in Spokane County, WA. Future cultural releases of salmon are likely to take place at that location, and Restoration Partnership funds may not be accessible for that purpose, given the location is outside of the project area. No additional funding requests to the Restoration Partnership are anticipated in order for the Hepton levee repair to proceed to construction.

Table 1. Project Expenditures: FY20 Oct 1, 2021- Sept. 30, 2022

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	$0	$0
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	1,329.52	56,304.60	57,634.12
Equipment	$0	$0	16,174.00	$0	16,174.00
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0

Total Direct Costs	$0	$0	$0	$0	$0
Indirect Costs	$0	$0	$0	$0	$0
Total	$0	$0	$17,503.52	56,304.60	73,808.12

2) Please describe other cost share or contributing funds.

- **A funding request supporting construction was submitted to the Bureau of Indian Affairs in January 2022 and confirmation of a funding award in the amount of $125,000 was received in June. Additional cost share for construction comes from BPA in the amount of $215,420. These funds will provide a cost share totaling 28.6% of the engineer's opinion of probable cost. Funding cost shares for construction of the project from sources other than the Restoration Partnership now total $1,140,420.**

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

- **A new funding request to the Bureau of Indian Affairs Invasive Species Program was authorized in the amount of $125,000. Funds were received in September.**

- **Contractual documents were negotiated and signed between the Tribe and NRCS to obligate $800,000 of funding on 9/12/2022.**

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]
Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

- **Nothing to report**

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

- **Nothing to report**

Photo 1. The construction access road across the top of the levee (left) has been improved to provide dust abatement during dry weather conditions and to extend site access during variable weather.

Photo 2. Structural fill is being stockpiled on top of the regraded levee on the east side of the breach in preparation for construction, which is scheduled for 2023.

Photo 3. A low lying stockpile/staging area has been prepared adjacent to the levee breach and will be able to accommodate up to 2,000 CY of structural fill.

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Gray's Meadow

Project Approval Date: 8-9-18
Trustee Council Resolution #: 44
Trustee Council Resolution #: 59

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $250K Planning; 5.25M construction
Funds Spent this Quarter: $9,948.65
Funds Spent this Fiscal Year: $19,338.44

A. GENERAL INFORMATION

Project Proponent Name: David Leptich
Primary Telephone Number: 208-769-1414
Email: david.leptich@idfg.idaho.gov

Project Sponsor: Idaho Department of Fish and Game
Primary Telephone Number: 208-769-1414
Email: david.leptich@idfg.idaho.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

Pioneer Technical produced final construction drawings and technical specifications documents. CDA Trust put the Gray's Meadow Remediation and Restoration Project out to bid with the 6 previously qualified (through an RFQ process) contractors. Five of the six contractors returned proposals that included both project implementation strategy (means, methods, sequencing, timeline) and a price. These were scored with an 11-factor bid evaluation scoring matrix. North Wind Construction Services had the top-ranking proposal and has been awarded the contract. Mobilization began in September.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

No challenges resulting in delays occurred this quarter.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

No unanticipated expenditures occurred this quarter.

2) Please describe other cost share or contributing funds. The EPA/CDA Trust expended $651,845.89 in matching/cost share funds this quarter:

Investigation:	$ 0.00
Design:	$131,942.02
Construction:	$519,903.87
Total:	**$651,845.89**

Project Expenditures: **FY20 Oct 1, 2021- September 30, 2022**

	Q1 Oct - Dec	Q2 Jan -	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe					
Travel					
Supplies	$6,187.85		$2,226.94	$4,732.89	$13,147.68
Equipment					
Contractual (Honorarium)	$975.00			$5,215.76	$6,190.76
Permitting					
Long-term operation and maintenance					
Monitoring					
Other (Community Activities)					
Total Direct Costs	$7,162.85	$0.00	$2,226.94	$9,948.65	$19,338.44
Indirect Costs					
Total	**$7,162.85**	**$0.00**	**$2,226.94**	**$9,948.65**	**$19,338.44**

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

EPA/ CDA Trust FY 2022 Expenditures:

Investigation:	$ 34,635
Design:	$ 704,961
Construction:	$ 2,805,703
Total:	**$ 3,545,299**

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

Baseline ecological monitoring/evaluation was completed by ALTA (Montana Wetlands Assessment Method) and IDFG (Wetlands Ecosystem Services Protocol for the United States (WESPUS)) to establish a baseline/benchmark wetlands condition against which to evaluate future condition post remediation/restoration completion. This effort supports the long-term improved wetland habitat/function goals and objectives of this project.

Lamb's Peak water transfers were redirected from Lamb's Peak to the CDA River. A water management working group consisting of IDFG and water quality staff from the CDA Tribe and IDEQ was formed to consult and recommend water management strategies that minimize water transfer effects on the CDA River/CDA Lake while still accommodating construction and wetland management needs. Water quality monitoring continues on an as needed basis. All turbidity reading were well below the 50 NTU limit. Together these efforts serve the water quality goals and objectives of the project.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

At this point in the project this amounts to construction management monitoring to ensure the work is executed as designed/contracted and on time line. Professional engineers from Pioneer Technical the EPA/CDA Trust/RP contractor make regular inspection of the work and sign off on as-built and substantial completion documents.

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Gene Day Pond

Project Approval Date: 5-29-19
Trustee Council Resolution #: 46

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $25,000
Funds Spent this Quarter: $0
Funds Spent this Fiscal Year: $3,581.41

A. GENERAL INFORMATION

Project Proponent Name: Chris Pfhal
Primary Telephone Number: 208-753-3812
Email: sveng@hughes.net

Project Sponsor: Idaho Department of Fish and Game
Primary Telephone Number: 208-769-1414
Email: david.leptich@idfg.idaho.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

Project leads have resolved all local administrative hurdles and have completed a draft TOC ROW permit to allow installation of the new restroom and other infrastructure improvements. It is currently under legal review with both IDFG and IDPR and no substantiative changes are expected. We anticipate starting work on the ground next spring when weather improves and closing out this project in the current (2023) fiscal year.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

None to report.

C. EXPENDITURES

1) Please describe any unforeseen expenditures. No unforeseen expenditures this quarter.

2) Please describe other cost share or contributing funds. IDFG provided in-kind labor to fabricate a Gene Day Pond Kiosk and porta-potty housing.

Project Expenditures: **FY22 Oct 1, 2021- September 30, 2022**

	Q1 Oct - Dec	Q2 Jan -	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe					$0.00
Travel					$0.00
Supplies		$2,976.41	$605.00		$3,581.41
Equipment					$0.00
Contractual (Honorarium)					$0.00
Permitting					$0.00
Long-term operation and maintenance					$0.00
Monitoring					$0.00
Other (Community Activities)					$0.00
Total Direct Costs		$2,976.41	$605.00		$3,581.41
Indirect Costs					$0.00
Total					**$3,581.41**

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

BLM and ITD are collaborators on this project with portions of parking and restroom infrastructure developed on their adjoining ownership.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration

project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

This project is characterized as a human use project related to an ecological restoration project (Gene Day Pond). The project goal is safe public access to restored fishing opportunity and reduced risk of recreational exposure to metals contamination. Gene Day Pond experiences regular public use as a family and ADA friendly urban fishery. Completion of infrastructure projects as designed will satisfy the project goal and be deemed successful.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

Construction performance is verified through transmittal review and regular site inspections by IDFG construction managers for conformance to project technical specifications. Because of the nature of this project infrastructure development in conformance with design standards is considered successful.

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Rehart Conservation Easement

Project Approval Date: 12-21-20
Trustee Council Resolution #: TBD – Approved funding is contingent on TBD acceptable CE

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $600,000
Funds Spent this Quarter: $0
Funds Spent this Fiscal Year: $0

A. GENERAL INFORMATION

Project Proponent Name: Andy Dux
Primary Telephone Number: 208-769-1414
Email: andy.dux@idfg.idaho.gov

Project Sponsor: Idaho Department of Fish and Game
Primary Telephone Number: 208-769-1414
Email: david.leptich@idfg.idaho.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

The conservation easement appraisal has been completed. Three different scenarios were considered, and CE values were between $600,000 and $900,000 depending on the scenario. IDFG/AVISTA have decided to pursue/negotiate based on the scenario 2 footprint and CE price of approximately $750,000 (see attached). Project proponents have met with the landowner and are continuing to draft and negotiate details of the CE with the landowner.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

No significant challenges.

C. EXPENDITURES

1) Please describe any unforeseen expenditures. No unexpected expenditures.

2) Please describe other cost share or contributing funds.

AVISTA's real estate contractor continues to facilitate negotiations with the family and contractor scheduling.

Project Expenditures: **FY20 Oct 1, 2021- September 30, 2022**

	Q1 Oct - Dec	Q2 Jan -	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe					$0.00
Travel					$0.00
Supplies					$0.00
Equipment					$0.00
Contractual (Honorarium)					$0.00
Permitting					$0.00
Long-term operation and maintenance					$0.00
Monitoring					$0.00
Other (Community Activities)					$0.00
Total Direct Costs					$0.00
Indirect Costs					$0.00
Total					**$0.00**

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

No new project partners this quarter.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

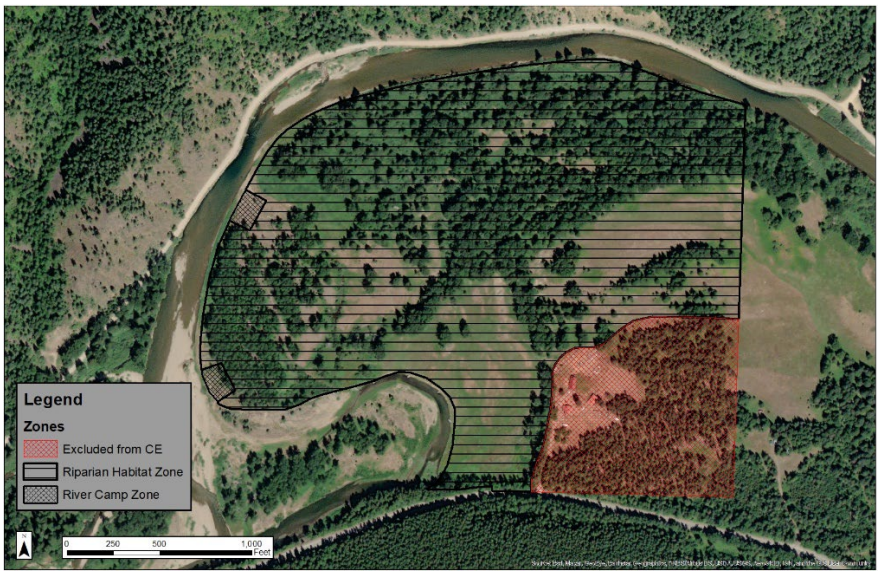
Permanent protection of the natural floodplain communities and cold water hyporheic flow.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

A signed and monitored conservation easement providing specific protections and agreeable to all parties is viewed as successful.

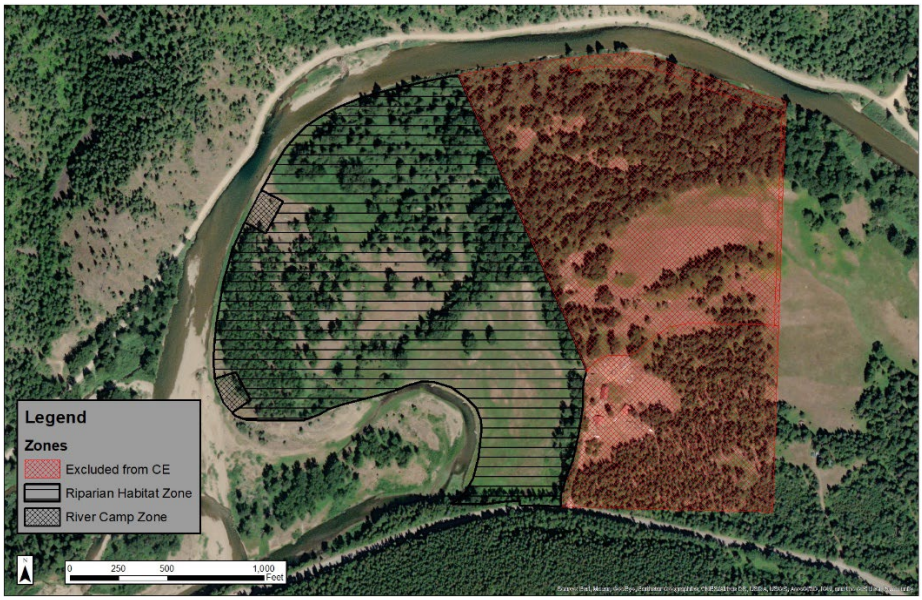
Attachment 1.

Scenario 1 - 104 acres with 4,030' of frontage on main river and 2,086' of frontage on the oxbow. Before value of about $1,800,000 and value of the conservation easement in the $800,000-900,000 range.



Scenario 2 - 101.7 acres with 2,830' of frontage on main river and 2,086' of frontage on the oxbow. Value of conservation easement is in the $750,000 range. The acreage of Scenario 2 is only 2.3 acres less than Scenario 1, since the narrow strips of land that make up the trail to the river, and the strip along the river, are not very large in size. However, those 2.3 acres have a big impact on value because it is the very high value river frontage which adds a lot of value to the 21 acres retained up above. Thus, even though only 2.3 acre difference, it reduces value of the conservation easement by $50,000-$100,000.

Scenario 3 - 59.70 acres with 2,373' of frontage on main river and 2,086' of frontage on the oxbow. Value of conservation easement is in the $600,000 range.



Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Canyon Marsh Agriculture to Wetland Conservation Easement

Project Approval Date: August 9, 2018 and May 29, 2019
Trustee Council Resolution #: 44 (Walker-Hass & Wilhelm-Miner) and 46 (Cole)

Reporting Quarter/FY: Quarter 4/ FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $801,480 (44) and $372,400 (46)
Funds Spent this Quarter: $0
Funds Spent this Fiscal Year: $321,250

A. GENERAL INFORMATION

Project Proponent Name: Christy Johnson-Hughes
Primary Telephone Number: 208-513-4984
Email: christy_johnsonhughes@fws.gov

Project Sponsor: U.S. Fish and Wildlife Service (FWS)
Primary Telephone Number: 208-513-4984
Email: christy_johnsonhughes@fws.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

   During this reporting period, FWS worked with the Inland Northwest Land Conservancy (INLC) to reconcile cost accounting for executing three individual conservation easements. On December 19, 2018 (Q1/FY19), FWS transferred $700,000 of RP funds (TR 44) to INLC via a cooperative agreement (F19AC00027-30) to support establishing perpetual easements on two tracts of land (Walker-Hass and Wilhelm-Miner). Through the cooperative agreement and on August 14, 2019 (Q4/FY19), INLC successfully purchased the Walker-Hass easement for $344,850, securing 162 acres for future remediation/restoration and conversion of drained agricultural lands into productive clean feeding habitat for waterfowl and other wetland dependent wildlife. The following quarter (Q1/FY20), INLC drew down expenditures for title insurance, closing costs, professional services to negotiate the terms of the easement, and stewardship services to monitor and enforce the conditions of the easement ($42,365).

INLC finalized the conservation easement for the Wilhelm-Miner tract on March 27, 2020 (Q2/FY20), permanently protecting 128 acres of wetland habitat for waterfowl and wildlife. INLC drew down expenditures for the actual easement cost ($244,000) and title insurance, closing costs, easement negotiations, and the stewardship fund ($42,090) during Q3/FY20. Wilhelm subsequently transferred her easement to her neighbor (Terry Groth).

During accounting activities in Q4/FY22, we discovered that INLC still needed to drawdown costs incurred for developing the baseline resource reports for the Walker-Hass and Wilhelm-Miner easements, as well as indirects for administering terms of the agreement; funds owed **($18,000)** were not drawdown until October 17, 2022, and will therefore **need to be reported in Q1/FY23**. A balance of **$8,695** remains in the cooperative agreement with **INLC (F19AC00027-30)**, which does not expire until December 19, 2023 (Q1/FY24) and could be used to help transfer Schlepp's easement to INLC, if the Trustees deem this as an appropriate use of RP funds.

On March 1, 2021 (Q2/FY21), FWS transferred $321,560 of RP funds (TR 46) to INLC via a cooperative agreement (F21AC00910) to execute a third conservation easement (Cole's). During the first quarter of this annual reporting period (December 10, 2021; Q1/FY22), INLC closed on the Cole easement, permanently protecting 129 acres in the southeast corner of Canyon Marsh, including the outlet of Fourth of July Creek. The addition of this third easement resulted in the perpetual conservation of a cumulative 419 acres in Canyon Marsh (Figure 1), which ensures future opportunities for remedial and restoration actions that enhance clean feeding habitat for waterfowl and other wetland dependent species.

INLC drew down $270,000 toward the actual easement cost ($272,000) during Q1/FY22; the remaining $2,000 plus expenditures for the baseline resource report, title insurance, closing costs, easement negotiations, the stewardship fund, and indirects ($49,250) were drawn down the following quarter (Q2/FY22). During accounting activities in Q4/FY22, FWS discovered that INLC still needed to drawdown **$310** in indirect costs; funds were not drawn down until December 2022, and will therefore **need to be reported in Q1/FY23**. FWS is currently working with INLC to close the agreement (F21AC00910; expired December 31, 2021), recognizing a future agreement (or financial transaction) for $3,000 may need to be put in place to enable INLC to update the baseline resource report after remediation/restoration (note: costs were included in the initial RP proposal).

During this annual reporting period (Q4/FY22), FWS collected soil samples across approximately 200 acres along the western portion of Canyon Marsh (Cochran's property) to help to characterize contamination concentrations for remedial/restoration planning. FWS anticipates having soil samples analyzed and a lead characterization map created by Spring 2023 (Q2/FY23). If Cochran's property is relatively uncontaminated, FWS has

established an agreement with the landowner, which would allow existing pumping infrastructure to be used to drawdown water levels earlier during spring migration to create additional clean feeding areas for waterfowl in exchange for FWS covering additional Avista power charges.

Figure 1. As of the FY22 annual reporting period, RP funds have been used to secure three conservation easements, permanently protecting 419 acres of Tier 1 wetland along the eastern portion of Canyon Marsh. Note: The Wilhem-Miner tract was previously known as Higbee, and is now owned by Groth.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

Progress was delayed during the vacancy/hiring of Vice Kiser, but with the selection of Elise Brown and her officially joining the RP Tech Staff on November 20, 2022 (Q1/FY23), FWS is well-positioned to fulfill remaining commitments as project sponsor. Canyon Marsh landowners continue to express concern about the leaky Fourth of July Creek culvert(s) and failing pumping infrastructure. EPA and the Trust are still skeptical about their ability to reprioritize remedy on Canyon Marsh and contribute funding in the near term.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

Cost savings ($8,695) associated with the INLC agreement for executing Walker-Hass and Wilhelm-Miner easements (F19AC00027-30) came from leftover contingency funding, and $6,000 that will expire before it is time to update the baseline resource reports (2) post-remediation/restoration (note: costs were included in the initial RP proposal).

In the Q1/FY22 report, FWS mistakenly identified that there was a cost savings associated with the actual cost of Cole's easement. During cost accounting activities, we discovered that there was no cost savings associated with the INLC agreement for executing Cole's easement (F21AC00910), and because of higher than anticipated closing and easement costs, FWS may need to request an additional $6,000 from the RP to update the resource report after remediation/restoration is completed.

During cost accounting activities for the INLC agreement, discrepancies were discovered between expenditures FWS previously reported and our Financial and Business Management System (FBMS). Revised budget tables for FY19-21 are provided below to help with transparency and future accounting.

2) Please describe other cost share or contributing funds.

In 2021, FWS provided $18,539.10 of Partners for Fish and Wildlife (PFW) funding for labor and materials to repair dilapidated outlet gates, rebuild a pump house, retrofit a leaky pipe with steel bands, and install a new pump electrical breaker to allow for continued water level management for both waterfowl use and agricultural operations.

The PFW program recently committed another $10,500 to be used sometime in 2023 to patch a rotted intake pipe on one of two 36-inch pumps to improve pumping efficiency.

Project Expenditures: **FY22 Oct 1, 2021- Sept. 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	$0	$0
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	$0	$0	$0
Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	270,000	51,250	$0	$0	321,250
Permitting	$0	$0	$0	$0	$0

Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$0	$0	$0	$0	$0
Indirect Costs	$0	$0	$0	$0	$0
Total	$270,000	$51,250	$0	$0	$321,250

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

On August 16, 2022 (Q4/FY22), FWS, EPA, the Trust, IDFG, Ducks Unlimited (DU), and the Eastside Highway District (ES-HD) met onsite with several of the Canyon Marsh landowners to develop a common understanding about immediate infrastructure needs (e.g., replacing leaky Fourth of July Creek culverts) in light of project partner objectives, including road maintenance, managing water levels for agriculture and future remediation/restoration. During the site visit, project partners agreed on the following:

1. The rotted intake pump on the 36-inch pump should be patched. Note: After the meeting, FWS committed $10,500 of PFW funding to assist landowners with making repairs in 2023.
2. The leaky culverts should be repaired sooner rather than later. Note: FWS asked ES-HD to update cost estimates for replacing the culverts and to help find an engineer or supplier who can provide an estimate for replacing the head gates, recognizing ES-HD will not be responsible for head gates. With updated cost estimates, FWS will either be able to apply for funding directly or steer (assist) potential recipients towards opportunities, such as America the Beautiful and/or BIL Fish Passage.
3. Lead sampling should occur on Cochran's property to determine if shallow clean feeding habitat for waterfowl could be made available by drawing down water during spring migration using the existing pump infrastructure and landowner agreement with Cochran. Note: FWS collected soil samples in Sep/Oct 2022, and anticipates having lead analyses completed by Spring 2023.
4. Hydrology and topography data should be collected to help inform potential water management strategies in Canyon Marsh (e.g., flooding contaminated portions and attracting waterfowl to less contaminated portions). Note: FWS plans to use some of

the remaining funds from TR 44 & 46 to establish a cooperative agreement with DU to complete this work. Through the cooperative agreement, DU will work collaboratively with project partners to develop a conceptual wetland restoration plan that will serve as the idealized vision for future remediation/restoration design and implementation. FWS and DU will continue to promote landowner outreach to potentially expand the overall project footprint.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

   Securing the Walker-Hass, Wilhelm-Miner, and Cole conservation easements was the first step towards ensuring future opportunities for remedial and restoration actions that enhance clean feeding habitat for waterfowl and other wetland dependent species in Canyon Marsh. FWS continues to work with neighboring landowners to discuss conservation options, which could potentially expand the project footprint. Solidifying landowner commitments to conservation in Canyon Marsh is a major accomplishment, as this area may be one of the most important to remediate and restore in the entire lower basin due to bird use, size, and geographic location in the basin.

   INLC resource reports for all three easements provide information on the baseline conditions of the properties prior to remedial and restoration actions that may be useful for future condition comparisons.

   The FWS conducts annual waterfowl surveys at Canyon Marsh as part of EPA's Basin Environmental Monitoring Plan (BEMP); waterfowl use could be compared pre and post remedial/restoration to evaluate project success and inform adaptive management.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

   The primary objective of the initial proposals for Canyon Marsh (TR 44 & 46) have been

met and included conserving 419 acres of Tier 1 wetland that can be converted to clean habitat for waterfowl and other wetland dependent wildlife. Opportunities to conserve agricultural lands that may be converted to clean wetland habitat are limited within the lower Coeur d'Alene River Basin. The three easements secured ensure future opportunities for remedial and restoration actions in high priority conservation areas within the lower Basin.

FWS is working with project partners to meet the second objective, which is to collect feasibility information to determine if clean feeding habitat can be established in the interim until the full project footprint is realized and remedial actions are implemented.

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Gleason's Marsh Agriculture to Wetland Conservation Easement

Project Approval Date: August 9, 2018
Trustee Council Resolution #: 44

Reporting Quarter/FY: Quarter 4/ FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $656,140
Funds Spent this Quarter: $0
Funds Spent this Fiscal Year: $0

A. GENERAL INFORMATION

Project Proponent Name: Christy Johnson-Hughes
Primary Telephone Number: 208-513-4984
Email: christy_johnsonhughes@fws.gov

Project Sponsor: U.S. Fish and Wildlife Service (FWS)
Primary Telephone Number: 208-513-4984
Email: christy_johnsonhughes@fws.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

   During this reporting period, FWS worked with the Inland Northwest Land Conservancy (INLC) to reconcile cost accounting for executing the conservation easement. On December 19, 2018 (Q1/FY19), FWS transferred $544,000 of RP funds to INLC via a cooperative agreement (F19AC00027-40) to facilitate this accomplishment. Through the cooperative agreement and on February 11, 2020 (Q2/FY20), INLC successfully purchased Gleason's easement for $475,000, securing 252 acres for future remediation and restoration of drained agricultural lands into productive clean feeding habitat for waterfowl and other wetland dependent wildlife. The following quarter (Q3/FY20), INLC drew down expenditures for title insurance, closing costs, professional services to negotiate the terms of the easement, and stewardship services to monitor and enforce the conditions of the easement ($43,472).

During accounting activities in Q4/FY22, we discovered that INLC still needed to drawdown costs incurred for developing the baseline resource report, as well as indirects for administering terms of the easement; funds owed **($9,000)** were not drawn down until October 17, 2022, and will therefore **need to be reported in Q1/FY23**. A balance of **$16,528** remains in the cooperative agreement with **INLC (F19AC00027-40)**, which does not expire until December 19, 2023 (Q1/FY24) and could be used to help transfer Schlepp's easement to INLC, if the Trustees deem this as an appropriate use of RP funds.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

Progress was delayed during the vacancy/hiring of Vice Kiser, but with the selection of Elise Brown and her officially joining the RP Tech Staff on November 20, 2022 (Q1/FY23), FWS is well-positioned to fulfill remaining commitments as project sponsor.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

Cost savings ($16,528) associated with the INLC agreement for executing Gleason's easement came from the actual purchase cost of the easement, and $3,000 that will expire before it is time to update the baseline resource report post-remediation/restoration (note: costs were included in the initial RP proposal).

During cost accounting activities for the INLC agreement, discrepancies were discovered between expenditures FWS previously reported and our Financial and Business Management System (FBMS). Budget tables have been revised in the FY19 and FY20 reports. No changes/expenditures occurred in FY21.

2) Please describe other cost share or contributing funds.

N/A

Project Expenditures: **FY22 Oct 1, 2021- Sept. 30, 2022**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$0	$0	$0	$0	$0
Travel	$0	$0	$0	$0	$0
Supplies	$0	$0	$0	$0	$0

Equipment	$0	$0	$0	$0	$0
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$0	$0	$0	$0	$0
Indirect Costs	$0	$0	$0	$0	$0
Total	$0	$0	$0	$0	$0

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

   On August 16, 2022 (Q4/FY22), FWS, EPA, the Trust, IDFG, and Ducks Unlimited (DU) met onsite to discuss existing infrastructure, hydrology, contamination levels, and waterfowl use to help lay the groundwork for developing an integrated strategy to address remediation and restoration at Gleason's. FWS plans to use some of the remaining funds from TR 44 to collect topographic, hydrologic, and soil agronomic data via a cooperative agreement with DU. Through the cooperative agreement, DU will work collaboratively with project partners to develop a conceptual wetland restoration plan that will serve as the idealized vision for future remediation/restoration design and implementation.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

   Securing Gleason's easement was the first step towards ensuring future opportunities for remedial and restoration actions that enhance clean feeding habitat for waterfowl and other wetland dependent species on this tract of land.
   The FWS conducts waterfowl surveys at Gleason's and waterfowl use could be compared for pre and post remedial/restoration conditions.

   INLC resource report for Gleason's easement provides information on the baseline conditions of the property prior to remedial and restoration actions that may be useful for future condition comparisons.

   The FWS conducts annual waterfowl surveys at Canyon Marsh as part of EPA's Basin Environmental Monitoring Plan (BEMP); waterfowl use could be compared pre and post remedial/restoration to evaluate project success and inform adaptive management.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

   The primary objective of the initial proposal for Gleason's (TR44) has been met and included conserving 252 acres of Tier 1 wetland that can be converted to clean habitat for waterfowl and other wetland dependent wildlife. Gleason's Marsh is regularly used during spring migration by tundra swan and other waterfowl as documented by FWS waterfowl surveys (2005-2022). After remediation, water level and vegetation management at Gleason's may help to attract waterfowl and reduce exposure in an area adjacent to other regularly used and contaminated wetlands (Strobl and Lane Marsh).

   FWS is working with project partners to meet the second objective, which is to collect feasibility information to help determine future remedial and restoration options.

Project Title: Lake Creek Watershed Restoration

Project Approval Date: 1/11/20
Trustee Council Resolution #: 52

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $615,951
Funds Spent this Quarter: $18,598.96
Funds Spent this Fiscal Year: $63,542.43

A. GENERAL INFORMATION

Project Proponent Name: Coeur d'Alene Tribe Fisheries Program
Primary Telephone Number: (208) 686-6903
Email: angelo.vitale@cdatribe-nsn.gov

Project Sponsor: Coeur d'Alene Tribe
Primary Telephone Number: (208) 686-6903
Email: angelo.vitale@cdatribe-nsn.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

Project #7/13 – Upper Lake Creek Upland Planting

A silvicultural prescription was developed to convert 15.7 acres of former agricultural lands to conifers to restore an upland forested buffer adjacent to approximately 583 meters of upper Lake Creek. Portions of the site were burned prior to planting in the spring to help with seedling establishment by providing nutrients, reducing competition with grasses and reducing mortality from small rodents like voles. Trees were planted in early May following site preparation at a rate of 300 trees/acre for a total of 4,710 trees using 10 cubic inch plugs available from the USFS Nursery in Coeur d'Alene, Idaho. Ponderosa pine was the primary species used based on site conditions, including elevation, aspect, past land use and survival of nearby plantings.

Project #7/13 – Upper Lake Creek Riparian Planting

Planting adjacent to the stream is proposed for up to 583 meters of channel to provide shade to moderate water temperature, maintain stream bank stability, increase wildlife habitat values, and improve aesthetics. The stream buffer will be planted over several years.

A small test plot encompassing an area on the west side of the channel at the downstream end of the property was planted in early May. Plantings consisted of 25 cottonwood and 25 aspen, which are adapted to a high water table and will spread by suckering once established. Planting methods emulated those used on nearby parcels which have proven to be successful; wherein individual planting sites were identified, treated with an aquatics approved herbicide (e.g., Rodeo®) 14 days prior to planting, planted using large (5 gallon) containerized stock, and then fenced to protect plants from animal browse. These plantings were clustered along the outer margins of the valley bottom floodplain.

Project #7/13 – Upper Lake Creek Stream Channel Enhancement

We surveyed 580 m of channel to develop specific recommendations and designs for stream enhancement, taking into account the existing channel pattern, profile, dimension and the frequency and duration of floodplain engagement. Primary goals are to support native fisheries, wildlife and wetland functions include:

1. Floods spread over the full width of the valley bottom floodplain so flood pulses are diffused and subdued;
2. Maintain high water table and close connection between stream flow and ground water to ensure reliable base flow and continuous water exchange between surface and subsurface water;
3. Provide diverse habitats and cold water refugia across a wide range of flows.

A detailed design suitable for fit in the field construction will be developed during the coming 6-8 months, with construction anticipated for 2023.

A contractor, Anderson Environmental, was hired to conduct a cultural resource inventory on this property in compliance with NHPA Section 106 requirements. Selection of the contractor was made following a competitive bid process. Field inventory is scheduled for October/November with a final report of findings due by March 2023.

Project #unassigned – West Fork Lake Creek Riparian Planting

Planting was completed at an existing restoration site to improve riparian community diversity, provide shade to moderate water temperature, increase wildlife habitat values, and improve aesthetics. A total of 75 large (5 gallon) containerized aspen were planted and then fenced to protect plants from animal browse. These plantings were clustered along the outer margins of the valley bottom floodplain adjacent to 800 meters of restored stream channel that was treated between 2010-2012.

Project #15/16/19/21 – Forest Road Treatments

The Coeur d'Alene Tribe Fish and Wildlife Program worked with Inland Empire Paper Company (IEP) in July-September 2022 to complete road improvements on IEP lands within the Lake Creek Watershed. The roads targeted for this treatment were near some of the most important habitats for spawning and rearing of westslope cutthroat trout in the watershed. Forest roads and native surface roads are of particular management interest because they can serve as a major source of sediment to streams and disrupt natural drainage patterns in a watershed, which has important implications for fish spawning success and survival.

Road segments to be treated were identified in the Forest Road and Fish Passage Inventory completed in 2008 and in a supplemental survey completed in 2021. A total of 22 road improvement projects were identified and outlined in an MOA that was signed between the Tribe and IEP in April 2022. Best management practices applied to these road segments included cross-drain replacement and/or maintenance, improving road surface conditions by resurfacing with gravel, and regrading ditches. Road construction guidelines outlined in the Coeur d'Alene Tribe Forest Road Management Policy and Inland Paper guidelines were followed in completing the work.

A total of $4,918.37 of Restoration Partnership funds was spent on rock to resurface 12 different sections of the IEP road network. More than 450 tons of rock (including 1 ¼" minus and 2"-4" quarry spalls) were hauled by IEP and applied to their roads. In addition, IEP worked to clean out cross-drains on 6 crossings and re-establish ditches on 10 crossings. They also closed a spur road to public use and stabilized the road. Reseeding of disturbed areas will be done this fall.

Project #unassigned – EF Bozard Creek Culvert Replacement

An emergency installation was completed for a culvert on the EF Bozard Creek that failed following high flows in June. The inlet of a 3' diameter culvert had become plugged by a beaver dam and high flows saturated, and then liquefied the road fill, which flushed sediment directly into spawning habitat for cutthroat trout. The road condition was highly unstable and would have contributed much more sediment if left untreated through the coming winter and spring.

We coordinated with the private landowner and conducted a survey, then developed a design in August. The former pipe was properly sized to pass the 50-year flood and was not classified as a barrier when it was previously surveyed by the Tribe in 2008. However, improper bedding material had been used in the previous installation, which contributed to the failure. A new 3' diameter pipe was installed at the same elevation and an overflow pipe was added to provide drainage in the event of a blockage in the future.

Other Accomplishments

- Operated PIT tag arrays to monitor movement of tagged fish throughout the watershed.

- While Upper Lake Creek supports moderate to high densities of Age 1+ cutthroat trout in the range of 20-50 fish/100m, little use of the stream by adfluvial fish for spawning or rearing has been noted in the recent past (Firehammer and Vitale 2018). This may be due in part to the presence of a fish passage barrier located at rkm 2.3. The removal of this barrier in 2018 improved passage to no less than 2526 m of cold water habitat in the upper watershed to migratory cutthroat trout. As such, these reaches represent good opportunity for improving the habitat attributes that can contribute in the short term to increasing stream productivity, and especially for the adfluvial life history variant. Accordingly, this area has been targeted for restoration actions that are underway and/or already completed.
- Operated traps in lower Lake Creek to track the number of returning adult spawners and outmigrating juveniles at the watershed scale.
- Northern pike removal activities were conducted in Windy Bay in fall and spring.
- Drafted and submitted a NOAA drought resilience grant, entitled "Wetlands to Combat Drought: Strengthening Drought Preparedness on the Coeur d'Alene Reservation through Wetland Restoration and Monitoring", in partnership with the Ohio State University. The proposal identifies restoration project sites in the Lake Creek watershed that will (1) restore capacity of wetlands to mitigate drought, (2) enhance fish refugia, and (3) provide additional habitat for culturally important wetland plant and wildlife species. If the proposal is funded, requested funds would be leveraged with Restoration Partnership funds and other funding to accomplish restoration projects identified in the upper watershed.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

None to report

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

Replacement of the EF Bozard Creek culvert was not a project originally scoped and identified in the project proposal. However, the condition of the pipe and its failure following high flows in June justified its replacement. Unanticipated costs billed to this project totaled $6,748.84 to cover the purchase and installation of the new culvert.

2) Please describe other cost share or contributing funds.

A cost share in the amount of $6,062 was received from Bonneville Power Administration for implementation of Project #7/13 Upper Lake Creek Riparian Planting. A cost share for services

and materials valued at $750 was received from a landowner for implementation of the same project.

A cost share for services and materials valued at $13,890 was contributed by Inland Empire Paper for planning and implementation of Project #15/16/19/21 Forest Road Treatments.

A cost share for materials valued at $1,613 was received from a landowner for implementation of the EF Bozard Creek culvert replacement. A cost share in the amount of $5,196 was received from Bonneville Power Administration for survey, design and installation.

Project Expenditures: **FY20 Oct 1, 2020- September 30, 2021**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe	$297.85	$595.17	$7,229.01	$4,613.38	$12,735.41
Travel	$0	$0	$0	$0	$0
Supplies	$70.00	$26,965.40	$5,126.01	$10,041.14	$42,202.55
Equipment	$0	$0	$1,159.97	$1,890.00	$3,049.97
Contractual (Honorarium)	$0	$0	$0	$0	$0
Permitting	$0	$0	$0	$0	$0
Long-term operation and maintenance	$0	$0	$0	$0	$0
Monitoring	$0	$0	$0	$0	$0
Other (Community Activities)	$0	$0	$0	$0	$0
Total Direct Costs	$367.85	$27,560.57	$13,514.99	$16,544.52	$57,987.93
Indirect Costs	$122.91	$245.82	$3,131.33	$2,054.44	$5,554.50
Total	$490.76	$27,806.39	$16,646.32	$18,598.96	$63,542.43

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

Project partners involved during this reporting period include Bonneville Power

Administration, Ohio State University, Inland Empire Paper Company, John and Terry Bauer, Glen and Judy Ruark, Steve and Kelly Hicks, and Bob Hustralid.

A NOAA drought resilience grant, developed in partnership with the Ohio State University, and entitled "Wetlands to Combat Drought: Strengthening Drought Preparedness on the Coeur d'Alene Reservation through Wetland Restoration and Monitoring", was awarded funding beginning October 1, 2022. The proposal identified restoration project sites in the Lake Creek watershed that will (1) restore capacity of wetlands to mitigate drought, (2) enhance fish refugia, and (3) provide additional habitat for culturally important wetland plant and wildlife species. Awarded funds will be leveraged with Restoration Partnership funds and other funding to accomplish restoration projects identified in the upper watershed.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

Monitoring has been conducted during the past fiscal year to describe several indices of the cutthroat trout population in Lake Creek at multiple spatial scales. Data are compiled and analyzed for bi-annual reports to the Bonneville Power Administration. The most recent report was published in March 2022 covering the period January 2020 – December 2021. An excerpt from this report on the monitoring actions, results, discussion and lessons learned are provided below.

Monitoring Actions

Status and trend monitoring is conducted at the watershed scale by generating annual estimates of adfluvial spawners and juvenile outmigrants that serve to describe trajectories in adfluvial production and aid in the assessment of population responses to collective habitat restoration efforts. Survival rates of both life stages are also assessed annually at the watershed scale to evaluate population response to northern pike suppression measures. Monitoring is also conducted at the sub-drainage and reach scales to describe the spatial distribution of WCT during summer rearing periods which permits an examination of whether

abundance trajectories differ across sub-drainages or reaches within sub-drainages. The detection of declining trends or persistently low numbers of fish at these scales may signal localized degradation or deficiencies in habitat conditions that need to be addressed and prioritized for prospective habitat improvements. The spatial distribution of the adfluvial life-history variant is also assessed at the sub-drainage scale to examine potential impediments to adfluvial production and to prioritize future restoration efforts for either the preservation or re-establishment of the migratory life-history strategy.

In the past, monitoring efforts for WCT have primarily focused on assessing the status and trend of populations at the watershed scale to identify primary factors limiting population recovery, and tracking the status and trend of sub-populations at smaller, sub-drainage scales to identify impairments in stream habitat for the prioritization of localized restoration efforts. More recently, however, monitoring actions are serving in analyses to evaluate the effectiveness of non-native fish suppression measures. Migrant traps will continue to be used as the preferred method to evaluate the numerical response of adfluvial WCT in the Lake Creek watershed to pike suppression, for estimates generated from both adult and juvenile traps are invaluable when interpreting population trajectories.

PIT-tag technology has been used to describe the spatial distribution of the adfluvial life-history form in the Lake Creek watershed, and to illustrate movements and growth rates of out-migrating juvenile WCT that allude to important seasonal spring habitats that can be reproduced with habitat restoration actions. Currently, it is being used to evaluate actions aimed at re-establishing the migratory component in sub-drainages in which the variant is seemingly deficient.

Results

Effectiveness monitoring of non-native northern pike suppression

In Windy Bay, a total of 48 nets were deployed over six days in the spring of 2020 in which 81 NP were captured. Netting commenced on March 18 but was immediately suspended because of restrictions imposed by the COVID-19 pandemic. The suspension was lifted with precautionary measures (e.g., wearing of masks) approximately eight weeks later and netting resumed on May 12. Daily catch rates averaged 3.25 NP/net during the first two spring deployments, which were separated by almost two months, but promptly declined to levels below 1 NP/net throughout the final three deployments in May. During fall suppression periods in 2020, a total of 32 nets were deployed over four days of netting from October 1 to October 9 in which 52 NP were captured. The daily catch rate approached 3 NP/net for the first deployment event, but declined to rates below 1 NP/net over the final two deployment days.

In 2021, a total of 64 nets were deployed in Windy Bay over eight days in the spring in which 73 NP were captured. During the first week of netting, which commenced on March 22, daily catch rates averaged 1.2 NP/net, and declined from 2.4 NP/net to values less than 1.0. The low catch rates triggered the suspension of successive weekday deployments, and thereafter nets were deployed periodically on four separate occasions, with the last three deployment events

generating daily catch rates that were less than 1.0 NP/net. During the fall, a total of 48 nets were deployed in which 65 NP were captured. Deployments occurred during three discrete occasions, separated by at least 10 days of suspended activity and each consisting of two consecutive days of netting. Daily catch rates averaged 1.4 NP/net over the six days of netting, and in each of the three occasions catch rates did not exceed 1.0 NP/net during the second day of netting.

A total of 1,510 NP have been removed from Windy Bay over the seven years of the suppression program. The number of NP annually removed during the spring had declined by more than 80% from 2015 to 2018, but was found to rebound in 2019 to levels that exceeded the number removed in the first suppression year. Over the last two years, however, numbers annually removed in the spring have declined considerably and have approached those documented back in 2018. When examining annual spring catch data collected since 2017 (omitting 2020 because of suspended efforts), the year a standardized sampling design was instituted in Windy Bay, a strong relationship was detected between the mean catch rates generated during the first week of gillnetting and the total number of NP removed ($R2 = 0.986$). Moreover, the mean catch rates generated for the first week of spring netting in 2018 and 2021 were comparable and significantly less than those generated for the other suppression years.

Abundance and productivity of adfluvial WCT at the watershed scale

In Lake Creek, only six ascending adfluvial adults were captured in the spring of 2020 prior to the termination of trapping efforts because of COVID-19 restrictions; three of the adults were PIT tagged in prior years, and two received PIT-tags. The HDX antenna at the adult trap site was able to be maintained throughout the spring, however, and a total of 142 putative adfluvial adults that were PIT tagged in prior years were interrogated. In 2021, 111 ascending and 272 descending adfluvial adult WCT were captured in the migrant trap, and a spawner abundance estimate of 335±24 adfluvial WCT was generated from recaptured marked individuals. Excluding recaptures, 112 (38%) of the adults captured in 2021 were males (mean TL, 400 mm) and 179 were females (mean TL, 384 mm). A total of 74 putative adfluvial adults that were PIT tagged in prior years were interrogated at the HDX antenna at the adult trap site in 2021.

A total of 981 outmigrating juvenile WCT was captured in Lake Creek in 2021 of which 536 received PIT tags. Captured juveniles averaged 152 mm in length, with 80% of the fish between 130 and 175 mm in length. Twenty-one trap efficiency trials were conducted from March 19 to June 1 (mean, 24 fish/trial) to generate an outmigrant abundance estimate of 2997±642 fish. Trap efficiencies averaged 48% prior to May 14 when the rotary screw trap was the primary outmigrant trap; thereafter, when the low-water outmigrant trap was used because of declining levels of spring flow, trap efficiencies averaged only 20%.

Temporal trends of adfluvial westslope cutthroat trout

Adfluvial WCT spawner abundances generated annually from mark-recapture data collected at traps has varied by approximately five-fold over the last thirteen years in Lake Creek. From 2009 to 2011, spawner abundance averaged just under 200 fish but markedly increased to a

level of 400 fish in 2012. Thereafter, abundance declined considerably over a four year period to low levels of only 100 fish. From 2016 to 2019, however, abundance estimates increased substantially with a doubling of spawners from 2018 to 2019. Though a decline was detected in 2021, the estimates of 492 and 335 spawners derived respectively in 2019 and 2021 were two of the largest three abundance estimates documented over the monitoring program.

Because trapping was suspended in 2020, an alternative estimate of spawner abundance was generated using prior estimates of adfluvial abundance for both life-stages and their respective rates of return estimated from PIT interrogation data. An abundance estimate of 453 spawners was generated in 2020 using this methodology. Incidentally, this estimate was greater than the similarly derived estimate of 402 spawners for the 2019 ascension. All of the alternative abundance estimates generated from 2016 to 2019 were bounded by the 95% confidence interval of their respective mark-recapture trap estimates.

Juvenile WCT outmigrant abundance estimates in Lake Creek have ranged from a low of 3000 to a high of approximately 8000 fish from 2014 to 2021, and have mostly tracked spawner abundance estimates two years prior. However, over this time period, the record low number of juveniles estimated to have outmigrated in 2021 followed the largest spawning run documented two years before in 2019. Incidentally, outmigrant estimates prior to 2014, which were obtained using a fixed-panel trap, were negatively biased because of the trap's inability to effectively operate under moderate to high flows and consequently were not illustrated.

In the Lake Creek watershed, the percentage of tagged adfluvial WCT that have been found to return to spawn in subsequent years has increased since 2015. For fish tagged as juvenile outmigrants, return rates as first-time spawners within two years of tagging have averaged 4.2% for cohorts outmigrating from 2016 to 2018. In comparison, two-year return rates for juvenile cohorts outmigrating from 2005 to 2014 averaged just under 1.0%. Moreover, another 2.1% of fish on average from the 2016 and 2017 cohorts required more than two years to mature, a value considerably greater than what had been documented for prior cohorts, increasing the overall return rates for these two year classes to 6.2-6.7%, which is a four-fold increase over the overall return rate averaged for cohorts tagged from 2005 to 2014. A recent decline in juvenile-to-spawner return rate metrics, however, has been detected, with only an additional 0.6% of the fish tagged in 2018 returning in 2021, and 1.3% of the outmigrants tagged in 2019 returning within the last two years.

Repeat spawn return rates have also increased in the Lake Creek watershed, where tagged adfluvial adults in spawning ascensions from 2015 to 2020 have returned in subsequent years at rates averaging 47%, with all six of the return rate estimates greater than 40% (**Error! Reference source not found.**). In comparison, repeat spawn return rates averaged 39% for tagged adults ascending over the six year period prior to 2015, with only a third of the estimates greater than 40%.

Discussion

Effectiveness of non-native northern pike suppression efforts

Northern pike abundance in Windy Bay, as indexed by catch rates recorded during spring netting efforts, alluded to a relatively small population, particularly in comparison to what was recorded two years ago in 2019. Few deployments were required in the spring of 2021 to apparently deplete the population to where daily catch rates were depressed and maintained at levels below 1 fish/net, whereas several weeks of netting were required in the spring of 2019 to depress catch rates below this threshold (Firehammer and Vitale 2020). Spring netting results in 2021 were also comparable to what was observed in 2020, though the interpretation of the data in 2020 was tempered by the lack of deployments that year because of COVID-19 restrictions. Nonetheless, the last two years of spring data attest to the effectiveness of the suppression efforts in checking the upsurge in production that was witnessed in 2019 when almost 340 NP were removed in the spring. Moreover, catch rate data and the total number of NP removed in spring of 2021 reflected that recorded in 2018, the year in which spring catch indexed the lowest NP abundance in Windy Bay since initiation of the suppression program (Firehammer and Vitale 2020).

Fall suppression efforts in Windy Bay, in addition to providing another seasonal period to deplete the population, have been instrumental in serving as a reliable forecasting tool to project the number of NP present during spawning periods the following spring. For example, prior to the spring of 2019 in which NP were captured in large numbers, daily catch rates in the fall of 2018 averaged 2.2 fish/net and did not exhibit a declining trend. In contrast, the rapid decline in daily catch rates observed in the fall of 2020 projected a substantially smaller population of NP in the spring of 2021 which was confirmed by our netting results. Though the rate of decline in fall catch rates in 2021 was not as dramatic nor as consistent as that observed in 2020, fifty percent of daily fall deployments in 2021 yielded rates that did not exceed 1.0 fish/net. This finding suggests that a small number of NP were indeed present in shallow habitats in Windy Bay in the fall of 2021, and projects a level of abundance in the spring of 2022 that should not be unlike what was documented in the spring of 2021.

The effectiveness of suppression efforts in depleting NP populations is being evaluated by examining whether catch rates are depressed to a threshold level that does not exceed 1 fish/net. In Windy Bay, this objective was attained during seasonal netting efforts in both years as daily catch rates were reduced below this threshold. However, the objective is to not only demonstrate during seasonal efforts that the removal of NP can deplete abundance, and thus reduce daily catch rates, but also to show that removal efforts are having a measurable impact on annual population size over the course of the suppression program. To that end, catch rate indices are being generated at the onset of seasonal removal efforts to statistically evaluate whether abundance is declining annually and approaching our numerical catch rate objective.

The catch rate index needs to be a reliable, consistent predictor of abundance for confidence to be placed in the conclusions drawn. In Windy Bay, the catch rate index is generated during the

first week of netting in the spring, when NP are concentrated in the shallow western fringe of the bay for spawning. Importantly, a strong relationship has been detected between the index and the total number of NP removed in the spring over the years analyzed. Moreover, the total number of fish removed, given the declining catch rates that have been typically observed in the spring, would be comparable to an abundance estimate generated using depletion methodology. As such, the catch rate generated during the first week of spring netting is considered to be a robust index of population size in Windy Bay.

In 2021, the catch rate index of 1.2 fish/net generated during the first week of spring in Windy Bay approximated our numerical objective of 1 fish/net, indicating that the suppression program is indeed having the desired effect of reducing the size of the NP population. However, as witnessed by the spring results in 2019, which had followed a year of depressed abundance, the NP population in Windy Bay can quickly rebound to an elevated state. Several consecutive years of a spring catch rate index that satisfies our target objective would offer confidence that compensatory numerical responses may not be a recurring phenomenon and attest to the ability of the suppression program in keeping NP numbers in check.

Response metrics of WCT to evaluate recovery of the adfluvial life-history

Migrant traps have served as a valuable tool for monitoring the effectiveness of the NP suppression efforts in recovering adfluvial WCT populations in reservation watersheds of the Coeur d'Alene basin. Adult traps have provided annual estimates of adfluvial WCT spawner abundance, one of the primary metrics used to evaluate the success of the suppression program. Juvenile outmigrant traps, however, have also been instrumental in facilitating the derivation of metrics used by the effectiveness monitoring program. Outmigrant traps enable the marking of large numbers of juvenile WCT in a short period of time thereby providing the sample sizes necessary for the robust evaluation of adfluvial juvenile-to-adult return rates. In addition, tagging fish as they are captured leaving the watershed in the spring rather than tagging fish during summer stream surveys circumvents the necessity for estimating in-stream mortality rates, a nuisance factor that can certainly confound the estimation of juvenile-to-adult return rates.

Annual estimates of WCT outmigrant abundance can also serve to inform the interpretation of spawner abundance trajectories, for the manifestation of the spawner response to NP removal efforts is not only contingent upon in-lake survival rates but also partly dependent on the number of juvenile outmigrants leaving watersheds. For example, in the Lake Creek watershed, though over 4% of the 2016 juvenile outmigrant cohort were found to return by 2018, which was considerably greater than what had been documented for prior cohorts, the relatively modest spawner estimate of 230 fish derived in that year was likely attributed to the meager number of juveniles that outmigrated in 2016 when compared with earlier years. Given that juvenile outmigrant abundance in 2021 was also low, comparable to the 2016 outmigrant estimate, expectations of spawner abundance in upcoming years should be tempered even under elevated in-lake survival rates.

The abundance of juvenile outmigrants derived from traps can also serve to assess in-stream carrying capacity as more adfluvial adults return to the Lake Creek watershed in response to the NP suppression program. Generally, trend data from Lake Creek indicated that large year classes of spawners produced sizable numbers of outmigrants two years later, implying that the current capacity of spawning and rearing habitat is under-seeded and has the capability of supporting greater numbers of migratory juveniles than what has been typically observed in most years. However, the results documented in the spring of 2021, in which a record low number of juvenile outmigrants followed a record high spawning run in 2019, indicated that this relationship is not always upheld.

The reason for the unexpectedly low number of adfluvial juveniles that were estimated to have outmigrated from Lake Creek in 2021 is unclear. Juvenile WCT tagged across Lake Creek sub-drainages in late summer of 2020 were detected outmigrating in the spring at rates that were on the low end of their respective range of contemporary values. This alluded to either a postponement of their outmigration or a high residualization rate, or alternatively an elevated level of mortality after tagging had occurred. The most probable explanation may not be able to be evaluated until trapping and stream surveys of 2022. However, it is possible that the stream conditions experienced by tagged fish could have been unusually stressful during the fall and winter prior to their outmigration supporting the latter supposition.

Anecdotal reports from the upper Bozard sub-drainage indicated that water levels in streams were exceptionally low in late summer and fall of 2020. Assuming the validity of these reports, a reduction in the availability and quality of pool habitats, especially under the high densities of WCT measured, could have exacerbated rearing conditions during fall and overwintering periods leading to low rates of survival. Incidentally, the outmigration rates observed in 2021 were comparable to that observed in the spring of 2016 which followed the extremely low water year of 2015 in which stream sections in the upper Lake Creek watershed were observed to de-water. In 2016, not only were outmigration rates low for fish tagged across the core adfluvial reach of the Bozard sub-drainage, but adfluvial production was atypically absent from stream sections further up the sub-drainage and was negligible across the WFL sub-drainage. Thus, if low water conditions were not just a localized incident but a regional occurrence in 2020 that impacted survival rates across the upper watershed, this could have likely explained the low numbers of adfluvial juveniles outmigrating from Lake Creek in 2021. Furthermore, given the low water conditions that were observed during summer rearing periods in 2021, it is expected that another weak year class of outmigrants will be produced in the spring of 2022. Carrying capacity in the upper Lake Creek watershed may be a shifting concept that is decidedly regulated by water availability during stream rearing periods, which could be highly variable under projected climate change scenarios and which should warrant attention when planning stream restoration measures.

Stream surveys that generate demographic metrics for WCT in sub-drainages of adfluvial watersheds of the Coeur d'Alene basin can also be viewed contemporarily as a monitoring tool to evaluate the effectiveness of NP suppression measures. As populations of NP are depleted

over time, it is expected that greater numbers of large, fecund adfluvial adults should return to sub-drainages of the upper Lake Creek watershed which in turn should increase production and stream-rearing densities of juvenile WCT. In addition, the resilience of sub-drainage populations of WCT to periodic severe water years that induce taxing conditions during stream residence, like those projected under climate change scenarios (Barnett et al. 2005; Luce and Holden 2009), should also increase due to the availability of an adfluvial 'reserve' in Coeur d'Alene Lake.

In other sub-drainages, active stream restoration measures have been recently implemented in an attempt to re-introduce the adfluvial life-history form. For example, a culvert in the UFL sub-drainage of the Lake Creek watershed, which had been imputed to be a barrier to ascending adfluvial spawners and thus an impediment to the establishment of adfluvial production, was removed in 2018 to facilitate the re-colonization by the adfluvial form. Despite the strong evidence of fidelity in the upper watershed, which could delay the re-colonization process, a passive approach is being undertaken in this sub-drainage relying on the straying of adfluvial spawners rather than actively translocating early life-stages of fish from nearby known adfluvial streams (e.g., age-0 fish from the Bozard sub-drainage) to jump-start the process, which could be logistically and numerically challenging. The fact that approximately 8% of adfluvial spawners on average have ascended the UFL sub-drainage since 2018, which based on derived spawner abundance estimates for the Lake Creek watershed has equated to approximately 50 fish in some years, supports our preferred approach and is deemed to be sufficient to initiate adfluvial production.

At this time, it is too soon to evaluate the response of adfluvial production in the UFL sub-drainage to the culvert that was replaced in 2018. Indices of juvenile adfluvial productivity have varied almost four-fold over the three years they have been monitored since 2018, rendering it difficult to interpret the results documented. Moreover, some of the variability could have been attributed to the additional stream restoration measures that were recently implemented across the UFL reach (e.g, an additional culvert was replaced at the upstream end of the assessment reach in 2019), which could have introduced acute disturbances that influenced either WCT behavior or abundance and thus confounded analyses. Consequently, the average of the three juvenile adfluvial productivity indices derived since 2018, which is 7.9, will be used as a baseline value to evaluate whether our objective of increasing this adfluvial index by two times is being met in future assessments. Notably, a doubling of the index to a value of approximately 16 is similar to the average of the juvenile adfluvial indices derived for the core adfluvial reach in the Bozard sub-drainage (i.e., 16.1) over the five years it has been assessed. Moreover, the use of Bozard, the primary adfluvial sub-drainage in the Lake Creek watershed, as a comparative control for the evaluation of the re-colonization process in the UFL sub-drainage could prove instrumental in the interpretation of results. The low rates of outmigration detected in 2021 for fish tagged across reaches of the UFL sub-drainage was also apparent in Bozard-tagged fish, suggesting that regional processes may have similarly influenced the mechanisms leading to the comparable findings in both sub-drainages.

The adult adfluvial indices, represented by the percentage of tagged spawners ascending the UFL assessment reach, also cannot yet be examined in the context of a response to the culvert replacement. The expectation is that as the adfluvial form gains a strong foothold in the UFL reach and becomes the dominant life-history strategy, the abundance of adfluvial juvenile outmigrants annually produced will increase and in turn will increase the abundance of adfluvial spawners that return. Given that the culvert replacement would have first facilitated upstream passage for adfluvial spawners in the spring of 2019, several more years thereafter will need to elapse, likely representing one generation (e.g., 4-5 years), to properly begin evaluating the adult adfluvial response. As with the adfluvial juvenile index, the average percent of ascending spawners that selected the UFL sub-drainage since 2018, which is approximately 8%, will be used as a baseline value to evaluate whether our numerical objective of increasing this percentage by two times is being met over time. Despite the inability to evaluate ascension into the assessment reach prior to 2021 because HDX interrogation equipment at the downstream terminus had yet to be installed, the fact that all but one of the spawners that ascended the UFL sub-drainage in 2021 were also found to continue upstream into the assessment reach suggests that similar migratory behavior was probable in earlier years and lends support to the use of the four-year average as the baseline adult adfluvial index.

The addition of the HDX interrogation station at rkm 16.2 in the UFL sub-drainage was also instrumental in providing additional resolution as to the stream reaches used by juvenile WCT during their outmigration in 2021. Many of the fish tagged during summer stream surveys across the forested 1.5 km assessment reach in the UFL sub-drainage were found to spend extended periods of time the following spring in downstream reaches between rkm 13.8 and 16.2 prior to outmigrating. In addition, the delay in outmigration was apparently associated with permitting additional growing opportunities, given that data collected in 2021 indicated that fish tagged at smaller sizes were found to leave the watershed later in the spring than those tagged at larger sizes and that growth rates and condition factors of juvenile outmigrants progressively increased over spring periods.

These findings were comparable to the results that have been documented during prior reporting periods for outmigrating juvenile WCT in the upper Lake Creek watershed, in which growth rates progressively increased for those fish exiting the watershed later in the spring (Firehammer et al. 2016; Firehammer and Vitale 2018; Firehammer and Vitale 2020). Similar relationships between delayed outmigration and growth rate, whereby fish temporarily utilized low-velocity habitats for apparent feeding opportunities, have also been documented for anadromous salmonids (Sommer et al. 2001). Delaying downstream movement to permit additional growth may be an adaptation to increase survival rates in distant adult rearing habitats, and apparently may be the reason that a high percentage of juvenile WCT in Lake Creek have consistently not been found to outmigrate until the middle of May. Moreover, juvenile return rate data in the Lake creek watershed have shown that larger outmigrants

return from Coeur d'Alene Lake to spawn at much greater rates than their smaller counterparts (Firehammer and Vitale 2020).

Distinct differences in outmigration behavior, however, were observed in the spring of 2021 between juvenile WCT originating from the UFL sub-drainage and those originating from the Bozard sub-drainage. Fish tagged in the UFL creek, though delaying their outmigration in lower reaches of the sub-drainage, were found to quickly move downstream through mainstem reaches once they exited the sub-drainage. Rapid movement downstream by UFL-tagged fish was also detected in the spring of 2020, wherein outmigrants were found to spend on average only 3.9 d in mainstem habitats upstream of the trap site once they exited the UFL sub-drainage. Conversely, Bozard-tagged fish, in addition to exiting their tagging stream much earlier than UFL-tagged fish, spent extended periods of time in both the WFL and UFL sub-drainages and in mainstem habitats prior to their outmigration in 2021. Moreover, the behavior observed by Bozard outmigrants in 2021 has been a phenomenon repeatedly documented for this sub-drainage in previous reporting periods (Firehammer et al. 2016; Firehammer and Vitale 2018). The reason why this behavior, in which juvenile fish have been found to exit a sub-drainage in early spring but then spend extended periods of time elsewhere prior to outmigrating, has consistently been exhibited by fish originating from the Bozard sub-drainage is not well understood. Possibly, low-velocity refuge habitat, that would support temporary feeding habitats, may not be adequately available in this sub-drainage, resulting in juveniles being displaced under periods of high spring discharge, forcing them to seek alternative locations.

Aerial flights by drones have recently been conducted in sub-drainages of the upper Lake Creek watershed to illustrate the availability of potential refuge habitats during spring outmigration periods. Reaches within the lower UFL sub-drainage were found to exhibit a more anastomosing channel planform, with more abundant side-channel habitat, than those found in the Bozard sub-drainage. Side-channels likely provide low-velocity areas during high flow periods that serve as energetically-efficient feeding zones for fish, habitats that apparently may not be abundantly available in the Bozard sub-drainage. Because seasonal spring habitats that confer additional opportunities for growth may be linked to higher probabilities of survival in the lake environment, stream restoration measures that re-create these conditions should be prescribed for those reaches that would most benefit outmigrating WCT. Additional data that describe the actual micro-habitats utilized by juvenile outmigrants, the physical and biological (e.g., invertebrate production) features that define these micro-habitats, and the associated channel planform would help inform the restoration approach.

Furthermore, such habitat improvement projects may not only benefit outmigrants but could also serve as profitable, seasonal rearing habitats for other life-history forms. Indeed, WCT tagged in forested reaches of the UFL sub-drainage that were not detected outmigrating, were also found to spend extended periods of time that approximated two months in the spring in lower reaches of the sub-drainage prior to moving elsewhere or re-ascending into the forested reach as summer approached. Under warmer thermal regimes projected by climate change

scenarios, lower elevation, low-gradient reaches, which may be dismissed because of their unsuitability during summer periods, may increase in their rearing value during spring and fall periods and should not be overlooked when prioritizing restoration projects (Armstrong et al. 2021).

Data collected from adfluvial spawners in the Lake Creek watershed over the last nine years also suggest that lower elevation, low-gradient reaches could be serving as valuable spawning habitat. On average, almost 20% of PIT-tagged adfluvial adults were not interrogated ascending the primary three sub-drainages in the upper watershed, but apparently utilized either the six km mainstem reach or small, first-order tributaries that enter this mainstem reach for spawning. The fact that the incidence of this spawning behavior has been sustained over time is not only reinforced by the fidelity documented in adfluvial adults in this watershed but its prevalence also alludes to a successful strategy. Furthermore, mainstem reaches may occasionally afford young life-stages of WCT more favorable opportunities for growth than higher-elevation sub-drainage reaches further up the watershed, which has been supported by prior data collected in the Lake Creek watershed. For juvenile WCT captured outmigrating in the spring of 2014, those that were detected exclusively utilizing mainstem reaches the prior summer were found to grow at much greater rates than those that resided in sub-drainage reaches (Firehammer et al. 2016). Notably, such a life-history strategy, where spawning in lower-elevation reaches can confer a greater growth potential for progeny, can be viewed as a fitness advantage in this system given the documented positive relationship between size at outmigration and the probability of returning from the lake to spawn.

Alternatively, spawning habitat in lower-elevation mainstem reaches and adjoining intermittent tributaries may not be suitable, and the documented behavior of ascending adfluvial adults may just be a homing response to mainstem reaches where they were forced to emigrate to during early life-history stages. Disruptive events in natal reaches that induce movement (e.g., de-watering during summer periods) or displace fish (e.g., flushing rain-on-snow events) to lower-gradient mainstem reaches may not permit imprinting mechansims from becoming firmly established or may interrupt their sequential development (Keefer and Caudill 2014, and reference therein), leading to a potential disconnect from natal habitats and a return as spawners to where most of the stream-dwelling transpired. Indeed, confused behavior during spawning ascensions was not an uncommon occurrence for adfluvial adults that were detected returning to mainstem reaches in this reporting period. PIT-tagged spawners that were found to select mainstem reaches during the spring of 2020 and 2021 more frequently exhibited desultory behavior during prior spawning ascensions, wherein they were interrogated at the mouths of multiple sub-drainages without an apparent ascension, than those tagged spawners that were detected ascending a sub-drainage.

Thus, rather than serving as a boost to fitness, this behavior, where adfluvial adults seek out low-quality spawing habitat in mainstem reaches because of their compromised homing instinct, could be perceived as a reproductive sink. Moreover, given that both low water conditions during the summer and more frequent rain-on-snow events have been projected for

this region under climate changes scenarios, which could induce a higher incidence of this behavior, it may be essential to evaluate which of the competing hypotheses is correct. Depending on the results, management actions could be prioritized to either preserve this life-history strategy (e.g., prevent encroaching development of lower elevation, low-gradient reaches) or to discourage its occurrence (e.g., restore stream habitats in upper elevations to retain young life-stages).

Lessons learned and adaptive management

Response metrics of WCT derived in adfluvial watersheds

An alternative method was required in 2020 to generate an estimate of adfluvial spawner abundance in the Lake Creek watershed because trapping efforts were suspended under the COVID-19 restrictions. Prior estimates of juvenile outmigrant and spawner abundance along with their attendant return rate estimates were used to derive the alternate abundance estimate. To evaluate the validity of this methodology, alternate abundance estimates were also derived for spawning year-classes of 2016-2019 to determine if they approximated those generated with the standard mark-recapture methodology applied at migrant traps. The fact that alternate abundance estimates for all four years were delimited by the 95% confidence intervals of their respective mark-recapture estimates provided confidence that the novel methodology can be periodically used to evaluate spawner abundance.

Several limitations, however, were apparent in utilizing the alternative methodology to generate spawner abundance estimates. First, the uncertainty around the alternate abundance estimates, which would be compounded by the composite of errors associated with each of the prior life-stage abundance and return rate estimates, was not derived in this analysis to assess precision, though additional statistical computations could be performed to generate desired confidence intervals. In addition, the alternative methodology did require the use of passive interrogation data to derive return rate estimates, so interrogation infrastructure (e.g., PIT antennas) has to be installed and operational for abundance estimates to be generated. Furthermore, the methodology should not be used to generate a series of adult spawner abundances, because the inclusion of the alternate adult estimates, which will most certainly have a higher degree of uncertainty than mark-recapture estimates, in the formulaic derivation of successive adult abundances will tend to propagate the uncertainty. Nevertheless, it is re-assuring that the similarity in the two spawner abundance estimates illustrated by the analysis can support the use of the alternative method to provide a surrogate data point in trend analyses when circumstances (e.g., compromised migrant traps) occasionally preclude the use of mark-recapture methodology.

The installation of another HDX interrogation station up the UFL sub-drainage in the upper Lake Creek watershed provided additional information in this reporting period that better defined movements and the stream reaches frequented by adfluvial WCT. A similar strategy may need to be introduced into the WFL sub-drainage given some of the trends that have been recently documented. The decline in the percentage of adfluvial spawners that have ascended the WFL

over the last four years to rather low levels is disconcerting given that it could suggest that this life-history form is gradually being selected against in this sub-drainage. Incidentally, only 40% of the PIT-tagged spawners that ascended the WFL in this reporting period were found to exit the sub-drainage in the spring. In comparison, 93% of the spawers that ascended the Bozard sub-drainage were subsequently detected migrating back downstream.

The reason for the discrepancy in the detection of post-spawn adfluvial spawners between sub-drainages is unclear. Though adults that have been PIT-tagged as juveniles have been found to shed their tags during spawning ascensions and thus are not detectable during their post-spawn descent, there is no evidence that this is occurring more frequently in the WFL than in the Bozard sub-drainage or that juvenile-tagged adults are more prevalent in the group of spawners that select the WFL than those that ascend Bozard. Moreover, the substantial difference in the percent of spawners detected descending between the two sub-drainages is not just a recent occurrence but has been repeatedly observed in years prior to this reporting period. Alternatively, the differences observed between sub-drainages could be due to the excessive removal of spawners from stream reaches of WFL by predators (e.g., a family of river otters) or by illegal harvesting. The strategic placement of a HDX interrogation station up the WLF sub-drainage may help to clarify if either of these two mechanisms is plausible.

Though PIT interrogation data have been instrumental in describing the spatial distribution and seasonal movements of adfluvial and resident life-history forms of WCT in the Lake Creek watershed in this and prior reporting periods (e.g., Firehammer and Vitale 2018; Firehammer and Vitale 2020), it would be preferable in the future to phase the tagging program out because of its invasive procedures and to instead rely on a natural marker for describing life-history phenomena. The myxozoan parasite, Myxobolus squamalis, which has been detected in migratory life-stages of WCT in the upper Lake Creek watershed may serve as such a practical marker. Given that the alternate host of the parasite is likely an oligochaete (e.g, a Tubifex species), which would probably be more common in depositional, fine-grained streambeds than in gravel and cobble reaches, the prevalence of M. squamalis and the parasitic infestation of WCT should more likely occur in lower gradient, mainstem habitats than in higher-gradient reaches in upper elevation sub-drainages. Consequently, the presence of the parasitic infestation in captured WCT could be used as an indicator of the general reaches utilized by the fish to ascertain life-history strategies and ontogenetic habitat shifts.

Over the last several years, the noted presence of M. squamalis on captured ascending PIT-tagged WCT has permitted the identification of potential spawning habitats utilized by adfluvial adults with this infestation. From 2019 to 2021, all of the parasitized tagged spawners were not interrogated on sub-drainage HDX stations during spring ascensions, but apparently returned to mainstem reaches to spawn. Given the high degree of fidelity observed in the Lake Creek watershed, the return to mainstem habitats suggested a homing instinct to locations where juvenile rearing predominantly occurred. These findings suggest that this parasite may be useful in addressing the questions that were formerly proposed regarding whether the selection of mainstem reaches during spawning ascensions is evidence of a successful life-

history strategy or of a compromised homing instinct. The combination of the presence of the parasitic infestation and otolith microchemistry could be used in captured, sacrificed outmigrating juveniles to evaluate the location of their natal habitats and whether ontogenetic changes in habitat use are occurring during early life-history stages that collectively would shed light on the mechanisms giving rise to the observed spawning behavior.

Project Title:

Project Approval Date: 1/11/2020
Trustee Council Resolution #: 52

Reporting Quarter/FY: Quarter 4 – FY 2022 (July 1, 2022 – September 30, 2022)

Partnership Funds Expenditures

Total Amount Awarded:	**$3,808,450.00**
Partnership Funds Spent this Quarter:	**$ 16,293.24**
Partnership Funds Spent this Fiscal Year:	**$ 120,293.19**

A. GENERAL INFORMATION

Project Proponent Name: Idaho Forest Group – Reid Ahlf
Primary Telephone Number: (208) 762-2969
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Project Sponsor: Idaho Department of Environmental Quality
Primary Telephone Number: (208) 769-1422
Email: robert.steed@deq.idaho.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

   Conservation Easement: IFG continues to work with Kaniksu Land Trust to get the conservation easement completed. IFG supplied TU with a letter in September confirming their continued commitment to complete this process to protect the project area from future mining and development.

   Restoration Planning: In October, Inter-Fluve submitted a draft of the Prichard Creek Assessment and Restoration Strategy document. This document lays out currently known information about the watershed and the restoration alternatives for each potential restoration reach. The document is not yet complete, as ground water data is still in analysis which is needed to complete potential alternatives for the main dredged section of stream. This document should be in final form this winter and then the team can work on deciding the desired path forward for future phases of the Prichard Creek Restoration.

   Stamped design plans for the Phase 1 project area were completed by Inter-Fluve this quarter. Project specifications were also delivered to TU.

Construction Preparation: In September a contract was awarded to J&P Idaho Services, LLC to harvest and haul logs to the staging areas for the Phase 1 project areas. These logs are being harvested from nearby IFG forestlands and IFG is donating the value of the logs. Logging began during second week of October and could be completed this fall or early next summer if conditions get too wet.
An RFP for construction of Phase 1 will be released before the end of October with the goal of having a site visit for the potential applicants before the snow falls.
Construction should begin as soon as conditions warrant in summer 2023 and will be completed before the end of 2023 barring no unforeseen delays.

IDFG Fish Surveys: During the first week of August IDFG led electrofishing surveys throughout the Prichard watershed. Four teams made up of IDFG, DEQ, TU, and IFG employees surveyed defined stream sections. This data should provide a solid understanding of species presence and number throughout the watershed. This was also an excellent way to make observations about the habitat quality and disturbance occurring in some of the tributaries to Prichard Creek.

Invasive Species Management: In mid- October, IFG is contracting an applicator to treat stands of Bohemian knotweed in the Prichard project area. This will be the second annual application of herbicide on most of these clumps of knotweed. The first treatment proved extremely effective at knocking back the populations.

Plants: All plants, except willows, were pre-ordered from Plants of the Wild to be grown for the entire Phase 1 project. Plants will be delivered in early fall of 2023 for the contractor to install once construction is complete and the rainy season is anticipated.
Sources for willows are still being evaluated. The project partners will create a plan to secure or secure these cuttings in the next quarter.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.
Ideally, we had planned to get construction started this fall, but this did not occur mainly because sourcing logs took a little longer than was initially anticipated. Even with this being the case, the project is still on course for completion in 2023 which is alignment with the original planning and project permitting.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

There have been no unforeseen expenditures this year.

2) Please describe other cost share or contributing funds.

Cost share is currently totaling $103,256.55 for the life of the project. $34,056.55 was committed this year primarily from IFG time and materials.

Project Expenditures:

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe					
Travel					
Supplies					
Equipment					
Contractual (Honorarium)	$0	$103,999.95	$0	$16,293.24	$120,293.19
Permitting					
Long-term operation and maintenance					
Monitoring					
Other (Community Activities)					
Total Direct Costs					
Indirect Costs					
Total	$	$103,999.95	$	$16,293.24	$120,293.19

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

The only new partner added this quarter was J&P Idaho Services, the contractor working on harvesting and hauling logs to the staging areas. No other new partners were added.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]
Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

In development of the Scope of Work for the Prichard Creek Restoration Project there were five broad goals defined for the project.

1. ***Protect: Ensure long-term protection of natural resources and restoration investments.***
2. ***Connect: Improve connectivity and aquatic organism passage in migratory corridors for westslope cutthroat trout and other aquatic life.***
3. ***Restore: Establish functional stream channels and floodplains to provide high quality, complex habitats and water quality that fully supports cold water aquatic life.***
4. ***Enhance Communities: Improve economic vitality, recreational value and educational opportunity for the local communities.***
5. ***Collaborate: Collaborate successfully among diverse private companies, public entities, and non-governmental organizations.***

This last year has taken us closer to each of these goals. IFG is very close to completing the Conservation Easement with Kaniksu. The phased restoration planning and the Phase 1 design is taking us closer to improving connectivity and restoration. The project has begun to add value to the local communities by employing local contractors to source wood for the project. The project has already proven very collaborative already involving numerous public entities, private companies and non-profit organizations. The Project Partners have taken a number of groups on tours of the project area which has helped bring transparency to the project and to bring in new supporters. This diverse set of partners is sure to grow along with the project.

The restoration work measures of success have been designated as an increase of fish density within the stream channel, decreased or stable water temperatures, and an increase in fish habitat value and riparian vegetation. Restoration in the Phase 1 project area is process based which means that an increase in habitat types may take years to occur. There should be an immediate increase in covered areas and woody debris in the stream, but pools and bar stabilization (and then vegetation) of some of the riparian areas may take years to develop.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.
Performance standards will be decided as a team after the phased preliminary restoration plan has been adopted and the phases are defined.

Restoration Partnership

Quarter 4/ Annual Project Update Form

Project Title: Red Ives Creek Restoration

Project Approval Date: June 2019
Trustee Council Resolution #: 52

Reporting Quarter/FY: Quarter 4 / FY2022-Annual

Partnership Funds Expenditures
Funds Allocated: $30,000.00
Funds Spent this Quarter: $0
Funds Spent this Fiscal Year: $0

A. GENERAL INFORMATION

Project Proponent Name: USFS/Wade Jerome
Primary Telephone Number: (Cell) 208 512-5097
Email: terry.jerome@usda.gov

Project Sponsor: USFS/Wade Jerome
Primary Telephone Number: (Cell) 208 512-5097
Email: terry.jerome@usda.gov

B. PROGRESS DESCRIPTION

1) Include a description of project accomplishments this reporting period. Describe progress in securing required permits, quantify, as appropriate, x number of acres or habitat restored, and completion of any compliance documents as described in your original application.

   The wood sourcing contract (Wahoo Wood Extraction) providing the supply of large woody debris to Red Ives Creek has been assigned a Contracting Officer. The project has been awarded and work has begun on the project. The large woody debris will be used to continue restoration efforts adjacent to the two hundred feet of streambank and fish habitat improvement that were completed with the Red Ives Dam removal effort and will continue upstream for an additional 3,000 ft. Please note this is only a step in the restoration of Red Ives Creek with additional contracts for wood placement to be implemented in the future.

2) Describe any challenges which may have delayed progress this quarter, and how those challenges were/may be overcome. Include any changes to project specifications originally proposed in your application.

   The project was delayed due to staffing and capacity issues for approximately 90 days. Due

to the good weather this fall the contractor started work to get as much of the project completed as possible. Due to the late start the contract was extended to a completion date of July 31, 2023.

C. EXPENDITURES

1) Please describe any unforeseen expenditures.

Inflation on construction work indicated a 17.3% increase above the originally estimated project cost of $149,238.00. The Wahoo Wood Extraction contract has awarded for $180,310.00.
To date, none of the contract award dollars have been spent due to no invoicing from the contractor. It is anticipated an invoice will be submitted in the near future.

2) Please describe other cost share or contributing funds.

Restoration Partnership $30,000 NRDA funds (Trustee Council Resolution 52) have been applied to the award of Wahoo Wood Extraction.
Idaho Conservation League has contributed $78,037.56 to the Red Ives Creek Restoration Core Budget funds applied to project $72,272.44

Project Expenditures: **FY20 Oct 1, 2020- September 30, 2021**

	Q1 Oct - Dec	Q2 Jan - Mar	Q3 Apr - Jun	Q4 July-Sept	Annual
Salaries/Fringe					
Travel					
Supplies					
Equipment					
Contractual (Honorarium)					
Permitting					
Long-term operation and maintenance					
Monitoring					
Other (Community Activities)					

Total Direct Costs					
Indirect Costs					
Total					

D. PROJECT PARTNERS

1) Please describe the involvement of project partners (or new partners acquired) this reporting period, if applicable.

   This portion of the Red Ives Creek Restoration project is being completed utilizing USDA-Forest Service contracting procedures and personnel.

E. MEASURES OF SUCCESS – [Annual and Project Close-out reports only]

Describe monitoring efforts (if completed) that measures or evaluates the success and the effectiveness of the restoration project. The success, viability and sustainability of the restoration project should be documented at completion. *For example, one of the identified restoration goals for this Solicitation includes restoring wetland habitat. Therefore, restoration projects attempting to restore wetland resources will need to document a long term, quantitative increase in wetland habitat quality and/or corresponding migratory waterfowl use of the restored area*.

1) Describe measures of success and how each is related to the goals and objectives of the proposed project.

   Red Ives Creek Restoration planning, and implementation is on-going. This portion of the project is harvesting, hauling, and staging the woody debris materials needed to enhance habitat along Red Ives Creek for 3,000 feet upstream of the dam removal.

2) Describe performance standards for all phases of the restoration project and describe how the project will be certified as complete and successful.

   Performance standards for this portion of the Red Ives Creek Restoration project will be supplying and staging 1150+ logs and logs with rootwads for habitat enhancement placement along Red Ives Creek.