

COEUR D'ALENE TRIBE WETLAND PROGRAM PLAN

DECEMBER 2017



**Coeur d'Alene Tribe Wetland Workgroup
coordinated by the Environmental Programs Office
in the Natural Resources Department**



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Camas prairie (photo by John Hartman)



Our Vision –

“The earth gave grandmother the knowledge to live with the people, animals, and plants. This knowledge is to be used for our highest benefit, in turn, it will benefit all. Our lands are essential to our way of life. Our vision is to educate and conserve our wetlands. Our goal is to protect, restore, and enhance our wetlands. Our actions will assure that our cultural heritage will continue into the future”

William Mellick (Coeur d’Alene Tribe)

Funding for the development of the Coeur d’Alene Tribe’s Wetland Program Plan was provided by Region 10 of the U.S. Environmental Protection Agency.

This document is intended for conceptual planning purposes only and is not to be construed nor used for development of legal claims of water rights nor land ownership. All wetland acreages depicted in this document, either implied or explicit in nature, are intended for discussion purposes only.

Description of Coeur d'Alene Reservation and Wetlands

Historically, the aboriginal territory of the Coeur d'Alene Tribe consisted of approximately five million acres of the Pacific Northwest and extended north to the Cabinet Mountains, encompassing the entirety of Pend Oreille Lake, east to the mixed conifer woodlands of the Clark Fork River and the Bitterroot Range and as far south as the Clearwater Mountains of north central Idaho. Within this vast and once abundant territory a plethora of habitats existed that supported a great variety of plants and animals that nourished and supported the Coeur d'Alene people, physically, mentally, and spiritually.

The inland Pacific Northwest consists of a unique blend of mountain ranges, massive lakes, extensive river systems, wetlands, and vast regions of deep, fertile loess-derived soils. There are perhaps few regions in the United States that compare to the natural richness of this region, the aboriginal territory of the Coeur d'Alene people (Appendix 1, Figure 1).

Today, the Coeur d'Alene Reservation covers approximately 345,000 acres and spans the rich farming country of the Palouse to the western edge of the Northern Rocky Mountains. The once abundant wetland habitats that existed within the Coeur d'Alene Tribe's Reservation boundaries have been severely degraded by more than a century of farming, mining and logging activities in conjunction with European settlement (Figures 2 and 3 in Appendix 1). Indeed, it has been estimated that 65% of the wetlands once found within the Reservation boundaries have been lost since settlement of the area began in the 1800's (Coeur d'Alene Tribal GIS 2017; USFWS 2009).

The Coeur d'Alene Tribe holds sacred the many important environmental, ecological, and cultural functions and values of wetlands and has depended on the unique plants and animals found within Reservation wetland sites since time immemorial. Wetlands were critical for the survival of the Coeur d'Alene people who traditionally derived much of their sustenance and shelter from wetland flora and fauna. Although populations of these culturally important flora and fauna have declined, the people of the Coeur d'Alene Tribe continue to utilize many of the species that remain, and envision a day when these historic, culturally important species are restored for future generations to cherish.

Wetlands support shellfish and fish production and provide special foraging, cover, migratory feeding and resting grounds, nesting sites and habitat corridors for native wildlife such as amphibians, elk, deer, moose, waterfowl, muskrats, beaver, raptors, and other species. In fact, according to the International Union for Conservation of Nature, more than one-third of threatened and endangered species in the U.S. live exclusively in wetlands, while nearly one-half use wetlands at some point in their life cycle (IUCN, 2010). Wetland plants such as *sqigwts* (water potato), *p'ekhwpuhwn* (camas bulbs),

q'wosq'ws (tule/hardstem bulrush), and others are used by the Tribe as a source of food, medicine, and in the case of bulrush, a material for shelter building.

In addition to supporting the many native plant and animal species utilized by the Tribe, wetlands perform many other critical ecosystem functions. These functions include carbon storage, water quality improvement, regulation of surface water flows, flood storage, and others.

Due to the history and abundance of physical, cultural, and spiritual ties the Coeur d'Alene people have to Reservation wetlands, substantial Tribal appreciation and desire exists for Reservation and aboriginal territory wetland protection, conservation, and restoration. The Coeur d'Alene Tribe currently has several departments and programs that deal with various aspects of wetland habitats, but has no single, guiding wetland plan to direct efforts. The U.S. Environmental Protection Agency (EPA) has encouraged states and tribes to develop Wetland Program Plans (WPP), through the Enhancing State and Tribal Programs (ESTP) initiative. The goal of this initiative is to provide technical and financial support for state and tribal wetlands programs, with the overall objective of accelerating program development on a national scale. The EPA suggested a general procedure for developing the WPPs, known as the Core Elements Framework. There are four components to the framework, 1) Monitoring and Assessment, 2) Voluntary Restoration and Protection, 3) Regulatory Activities, and 4) Development of Water Quality Standards. Associated with each of these elements are goals, actions, and activities. Currently, the Tribe is focusing on the first two of these elements. Those elements should provide a solid foundation for future development of Regulatory Activities and Development of Water Quality Standards

The Coeur d'Alene Tribe WPP will act to unify the Tribe's departments and programs making wetland management and planning uniform, consistent and integrated within the Tribe.

Previous Coeur d'Alene Reservation Wetland Activities

The Coeur d'Alene Tribe has been involved with Reservation wetland activities in many varying forms for decades. To aid in drafting this WPP, the Tribe identified all of its plans, documents, and reports that dealt with any aspects of Reservation Wetland habitats (Appendix 2). Some of the documents pertinent to the Reservation wetlands include: The Coeur d'Alene Tribe Environmental Action Plan Assessment of Environmental Concerns on or near the Coeur d'Alene Reservation report (Coeur d'Alene Tribe 2000), the Tribe's Fish and Wildlife Habitat Protection Plan (Coeur d'Alene Tribe 2002), the Coeur d'Alene Tribe and State of Idaho's Lake Management Plan (LMP)(State of Idaho and Coeur d'Alene Tribe 2009) and the Tribe's Integrated Resource Management Plan (IRMP)(Coeur d'Alene Tribe 2012). These are some of the main documents that

describe the Tribe's wetland conservation and restoration goals and have aided the wetland work group in establishing the goals, actions, and activities laid out in this WPP.

The Tribe formed a Wetland Work Group that is comprised of employees from several Tribal Departments, including Natural Resources (Fisheries, Forestry, Wildlife, Land Services and Culture Programs), Lake Management (Water Resources, Hazardous Waste Management Program), Information Technology (GIS Program) and Public Works Departments (planning staff member). Input from this interdisciplinary group has greatly facilitated the development of the goals, actions, and activities described in this Wetland Program Plan. To date, the Wetland Work Group has met twelve times. Feedback from this group has been invaluable in the development of the Wetland Program Plan. Additionally, the Coeur d'Alene Tribe will continue to participate in the EPA Region 10 Tribal Wetlands Working Group (TWIG) meetings.

Goal Statement and Time Frame for Coeur d'Alene Tribe's Wetland Program Plan

It is the Tribe's intention to achieve the goals included in the core elements sections within this WPP within a three-year time frame. The overall vision statement and goal for this WPP is:

“The earth gave grandmother the knowledge to live with the people, animals, and plants. This knowledge is to be used for our highest benefit, in turn, it will benefit all. Our lands are essential to our way of life. Our vision is to educate and conserve our wetlands. Our goal is to protect, restore, and enhance our wetlands. Our actions will assure that our cultural heritage will continue into the future”

100-Year Desired Future Conditions for Wetlands (*excerpted from the Tribe's IRMP*):

The desired future conditions for wetlands within the Coeur d'Alene Tribe Reservation is fully functioning wetlands similar to what existed prior to settlement and development. A functional wetland is defined as one that a) provides sediment and nutrient filtration such that waters entering Reservation streams do not carry excess pollutants, and b) provides habitat for the full assortment of native fish and wildlife that use wetland habitats.

Core Elements to be Addressed in the Coeur d'Alene Tribe's Wetland Program Plan

In Fiscal Year 2014, the Coeur d'Alene Tribe was the recipient of a Wetland Program Plan Development grant and this grant is being used to create the Tribe's WPP. The

Coeur d'Alene Tribe's WPP should be recognized as an evolving plan and the activities documented within each category are meant to be used as guidance and are subject to the availability of funding.

The goals and objectives for Monitoring and Assessment and Voluntary Restoration and Protection represent the Coeur d'Alene Tribe's desires and future aspirations for Reservation and aboriginal territory wetlands from a cultural, spiritual, ecological, and historical perspective. The following sections describe the actions, activities, and timeframes that the Tribe will pursue over the next three years. At this time, only the first two years of the actions and activities of this Wetland Program Plan have been funded. All actions and activities proposed for 2020 are therefore dependent on the availability of funding.

A. Monitoring and Assessment

A monitoring and assessment program is defined as the establishment and operation of appropriate devices, methods, systems and procedures necessary to monitor, compile, and analyze data on the condition of wetlands (Elements of a Safe Water Monitoring and Assessment Program 2003). The Coeur d'Alene Tribe's monitoring and assessment effort will form the basis of a successful Tribal WPP and establish a solid foundation from which other core elements can be built upon by providing baseline data on wetland condition, extent, function, and values. The Tribe has recommended the Cowardin wetland classification system as the Tribe's classification scheme for wetlands, and has identified wetland characteristics that are culturally important to the Tribe (Cowardin et al. 1979). The Tribe developed an assessment addendum that will be used in combination with a more widely used wetland functional assessment methodology. Once the Tribe completes a Quality Assurance Project Plan, baseline data collection on wetland function can proceed. This data is necessary to track changes and trends in wetland quantity and quality, gauge the progress and successfulness of projects, and inform and support management decisions regarding Reservation wetland sites.

The Tribe is also in the process of prioritizing wetlands for restoration and protection. While overall watersheds have been prioritized for restoration and protection, the tools required to assess wetlands have only recently been selected and refined by the Tribe. Thus, the Tribe is in an early phase of the wetlands prioritization process.



Montana Wetland Assessment Method Training

Current Monitoring and Assessment Efforts

The Tribe has completed its comparison of three wetland functional assessment methods: 1) The Montana Wetland Assessment Method (MWAM), 2) The Wetland Ecosystem Services Protocol, and 3) The Washington State Wetland Rating System for Eastern Washington. In 2017, a paper comparing the three methods was produced and reviewed by the Tribe's Wetland Workgroup (Summary in Appendix 3). The review was funded by a 2015 Environmental Protection Agency (EPA) Wetland Program Plan Development grant. Preliminary results suggest that the MWAM method is the method most suitable for Tribal use. In June 2017, one of the co-authors of MWAM conducted a two-day training seminar on the Coeur d'Alene Reservation. The training was well-attended, with staff from several Tribal programs and departments present. Additionally, the Tribe has developed an addendum to the MWAM that includes functions and indicators that are considered culturally important to the Tribe (Appendix 4). Both the MWAM and Tribal addendum have undergone field testing in the summer of 2017 at three wetland types.

The Tribe's wetlands program is reliant on the U.S. Fish & Wildlife Service's (USFWS) National Wetlands Inventory (NWI) database for information on wetland location and other wetland characteristics (USFWS 2009). The NWI is a national effort that was not intended to capture detail at a fine, local scale. Thus, the suitability of the NWI data for Reservation-scale wetland mapping and trend detection is not clear to Tribal wetland scientists. A process and strategy for determining the accuracy of the NWI will help the Tribe determine if the existing NWI data is suitable for use. Development of the process and strategy is completed and has been tested at three wetland types in the summer of 2017 (Summary in Appendix 5). This effort is also funded by an EPA Wetland Program Development grant. The wetland functional assessments and the NWI verification projects are expected to continue beyond the three-year time frame of this WPP. The Tribe is currently reviewing Quality Assurance Project Plans (QAPPs) from other Tribes and States. When this review is complete, the Tribe will develop a QAPP.

A comparison of historic, pre-settlement wetland extent to current wetland coverage using a geographic information system (GIS) approach is also completed (Summary in Appendix 6). The historical extent of Reservation wetlands has been estimated using 1919 Kootenai County soil surveys and 1930's Benewah County soil surveys, as well as current NWI data.

An additional component of this historical exercise is a comparison of current Reservation stream channels to those that existed prior to development of the region. This work is also being conducted using primarily GIS techniques, and is ongoing (Appendix 1, Figure 4 and Appendix 6).

The Tribe has developed a list of actions, activities and time frames for the Monitoring and Assessment core element below.

Table 1 - Monitoring and assessment actions and activities.

Action	Activity	Time Frame
1. Intra-Tribal coordination on wetland planning, assessment, and protection	Continue Wetland Workgroup meetings, with a goal of at least two meetings, annually.	2017 – 2020
2. Write Quality Assurance Project Plan	Draft Quality Assurance Project Plan (QAPP) that describes quality control procedures to be used during data collection for MWAM assessments and NWI ground-truthing	2017 – 2018
3. Inventory and assess a subset of Coeur d’Alene Reservation wetlands	Identify priority wetlands for functional assessment	2017 – 2018
	Conduct the Montana Wetland Assessment Method and Tribal addendum at a minimum of ten priority wetlands	2018 – 2020
	Begin to identify and prioritize high-priority wetlands to protect and restore	2019 – 2020

B. Voluntary Restoration and Protection

The purpose of encouraging voluntary wetland restoration and protection is to aid the Tribe in its objective to stem the loss of and encourage the gain of wetland systems and functions. Wetland restoration is defined as the manipulation of a former or degraded wetland’s physical, chemical, or biological characteristics to return to its natural functions (Council of Environmental Quality, White House Wetlands Working Group Report 2000). Restoration practices include: 1) Re-establishment, which is the building of a former wetland, and 2) Rehabilitation, which is defined as repairing the functions of a degraded wetland (EPA 2007).

Voluntary restoration and protection refers to activities not required by ordinances or regulations, such as purchasing titles or easements to wetland areas, land trusts, organizing voluntary wetland invasive species removal and native vegetation planting events. Voluntary restoration and protection may also entail encouraging land owners to change certain land management practices such as grazing, farming, and logging activities. Voluntary measures include approaches such as enrollment in conservation reserve programs, as well as placing restrictions on lease agreements, particularly with respect to farm leases.

These voluntary wetland restoration and protection activities will ultimately benefit the Tribe by preserving, protecting, and restoring Reservation and aboriginal territory wetlands and building partnerships with individual landowners, agencies, community and non-profit groups. In addition, this component will provide an excellent opportunity for public education and awareness of the valuable ecosystem functions of area wetlands.

Current Voluntary Restoration and Protection Efforts

In 2017, the Tribe applied for and has been selected for an award for an EPA Wetland Program Development grant, titled “Coeur d’Alene Tribe Wetland Program Development: Assessment and Conservation Planning.” One component of this grant is to attempt to enroll Tribal wetlands into voluntary conservation programs, such as those available from the Natural Resources Conservation Service. Enrolling lands into wetlands conservation programs has been identified as one of the best methods to increase protection for wetlands on the Coeur d’Alene Reservation. One of the main limiting factors to doing this in the past has been a lack of staff time and resources to complete



Benawah Creek wetland restoration site

this work. There are over 3,000 of acres of palustrine and riverine wetlands on the Coeur d’Alene Reservation identified in the National Wetlands Inventory in Tribal ownership to consider for enrolling in conservation programs. When looking at estimated historic wetlands on the Reservation, there are over 14,000 acres of lost wetlands that could potentially be enrolled into conservation programs and restored. The Tribe also intends to

develop a wetlands outreach plan. In the plan, the Tribe will include goals, targeted groups, and the tasks and timeframes for future outreach activities. Throughout the period covered by this WPP, the Tribe will continue to foster intra-tribal coordination and input through the Wetland Workgroup meetings.

The Tribe has developed a list of actions, activities and time frames for the Voluntary Restoration and Protection core element below.

Table 2 – Voluntary restoration and protection actions and activities.

Action	Activity	Time Frame
1. Investigate wetland conservation programs	Identify wetland conservation programs, along with their requirements and deadlines for application to enroll.	2017 – 2018
	Identify Coeur d’Alene Reservation lands that are eligible for wetlands conservation programs, particularly for high priority areas, such as Tribal key watersheds, etc.	2018 – 2019
	Enroll eligible lands in conservation programs (contingent upon approval by Tribal Council)	2018 – 2020
2. Develop a wetlands outreach plan for the Coeur d’Alene Reservation	Complete draft of a wetlands outreach plan	2017 – 2018
	Request Tribal Council approval of the wetlands outreach plan	2018 – 2019
	Begin to conduct outreach activities identified in the wetlands outreach plan	2019 – 2020

C. Regulatory Activities

Most state and federal regulatory programs to varying degrees incorporate some type of avoidance, minimization and compensatory mitigation system for authorized or certified impacts to aquatic resources. Regulatory authority provides a Tribe direct control over the management of its aquatic resources and can assist with ensuring that overarching wetland and watershed goals are met. Again, as with all of the core element activities, devising and implementing regulatory activities will be dependent on funding.

Wetland regulatory and permit programs in general consist of a few basic elements, a jurisdictional scope, a method to authorize impacts to aquatic resources, and assess proposed authorizations, and a method of assuring compliance. The effectiveness of a tribal regulatory program depends on clear definition, guidelines regulations, assignment of responsibilities, and procedures that are applied consistently by program staff and

understood by the public (Elements of a State Water Monitoring and Assessment Program 2006).

State and Tribal wetland and aquatic resource regulatory programs are defined by the authority under which they operate (i.e. Clean water Act (CWA)§404, CWA §401, State or Tribal law) and how the program is implemented. State and Tribal programs regulating aquatic resources fall into four main categories (Elements of a State Water Monitoring and Assessment Program 2006):

- Implementation of a CWA §401 certification program that requires federal permits and licenses from the state or tribe in order to be valid. See: <https://www.epa.gov/cwa-404/overview-section-401-certification-and-focusing-wetlands>
- Implementation of a State Programmatic General Permit (SPGP) or a Regional General Permit (RGP). SPGPs and RGPs are general permits that are issued by the U.S. Army Corps of Engineers (USACOE) that authorize activities regulated by another entity, such as a state or tribe. See: <http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Obtain-a-Permit/>
- Assumption of the CWA §404 permitting authority so that the state or tribe issues all CWA §CWA 404 permits for the discharge of dredge or fill material into waters of the U.S. within the state/tribe’s jurisdiction. See: <https://www.epa.gov/cwa-404/overview-section-401-certification-and-focusing-wetlands>
- Implementation of a state or tribal permitting program under state or tribal laws and regulations, independent of EPA or USACOE review.

The Tribe does not anticipate devising or implementing new regulatory activities during the timeframe of this WPP.

D. Water Quality Standards for Wetlands

The foundation of water quality-based wetland pollution controls are water quality standards. According to EPA’s Core Elements framework, water quality standards should define the goals for a wetland by designating it highest attainable uses, setting criteria that reflect the current and evolving body of scientific information to protect those uses, and establishing provisions to protect wetlands from further degradation.

Water quality standards for wetlands may differ from traditional water quality standards developed for other surface water bodies. For example, there may be more focus on characteristic such as diversity of vegetation and macroinvertebrates, and less emphasis on specific water quality parameters. Establishing scientifically valid water quality standards for the Tribe’s wetlands is expected to involve a comprehensive and intensive

review of new and existing Tribal wetland data, as well as review of water quality standards that have been developed for other wetlands. According to the USEPA's Core Elements Framework, a suite of measures will likely be needed to assess and track the full range of wetland functions and condition on Tribal lands. The Tribe does not anticipate developing water quality standards for wetlands during the timeframe of this WPP.

References

U. S. Fish and Wildlife Service. 2009. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.
<http://www.fws.gov/wetlands/>

Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C.

International Union for Conservation of Nature. 2010. Webpage:
<https://www.iucn.org/content/world-wetlands-day-celebrating-wetland-biodiversity>.
Visited 9/29/2017.

Coeur d'Alene Tribe. 2000b. EAP Assessment of Environmental Concerns on and near the Coeur d'Alene Reservation. 399 pp.

Coeur d'Alene Lake Management Plan. 2009. Prepared by State of Idaho Department of Environmental Quality and the Coeur d'Alene Tribe. 164 pp.

Coeur d'Alene Tribe. 2012. Integrated Resource Management Plan. 307 pp.

Appendix 1. Figures

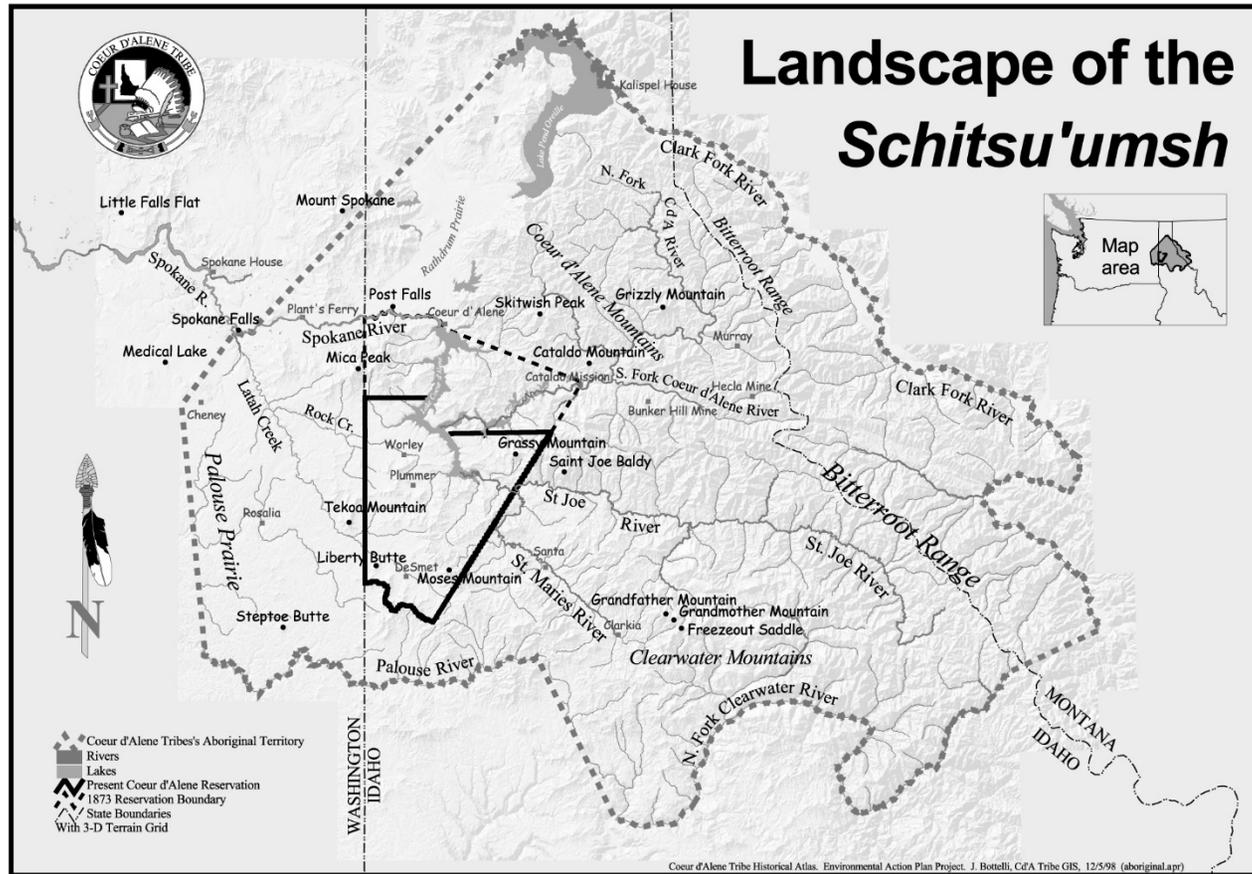


Figure 1. Aboriginal territory of the Coeur d'Alene Tribe

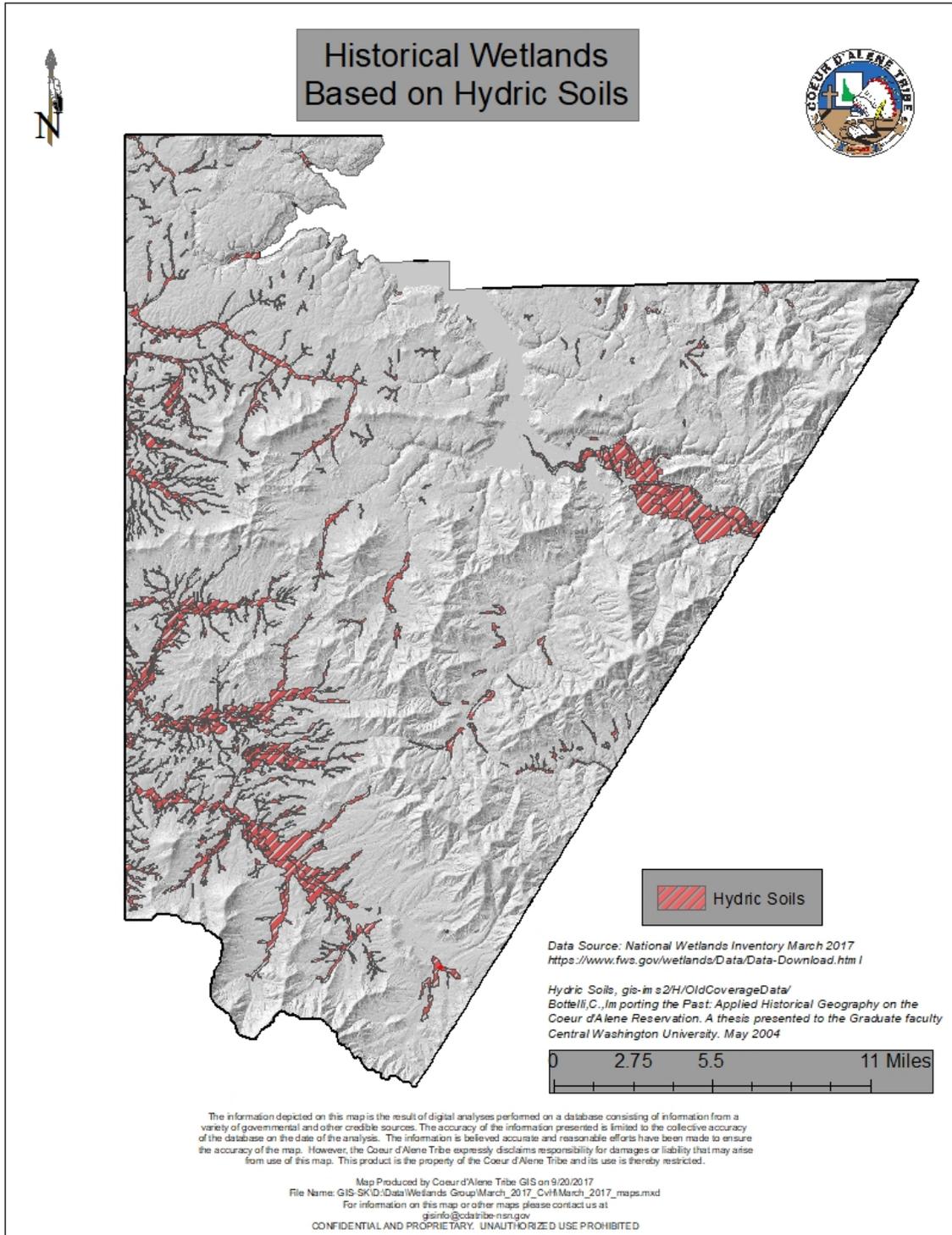


Figure 2. Historical (ca. 1920) extent of wetlands on the Coeur d'Alene Reservation

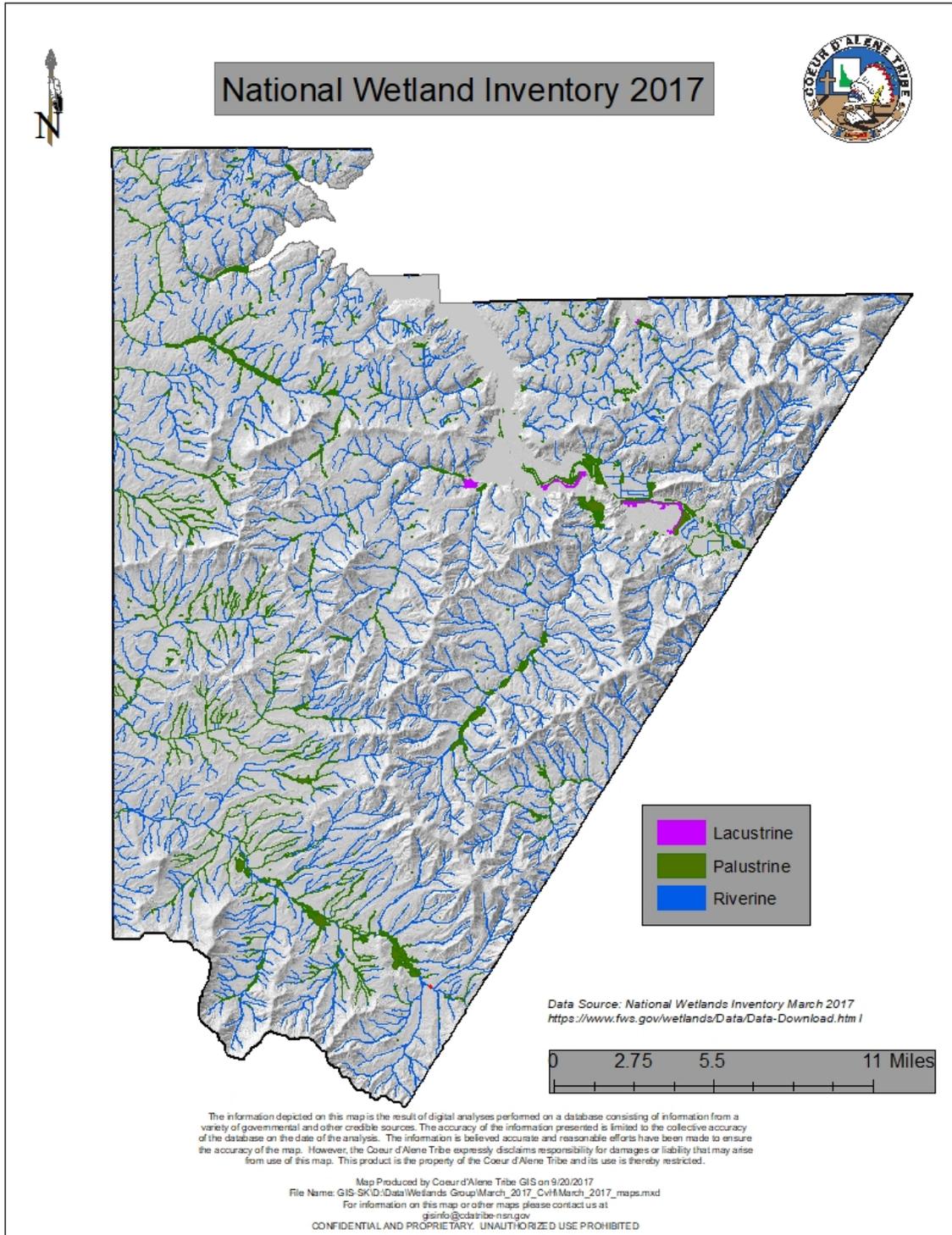


Figure 3. Current extent of Coeur d'Alene Reservation Wetlands (USFWS 2009)

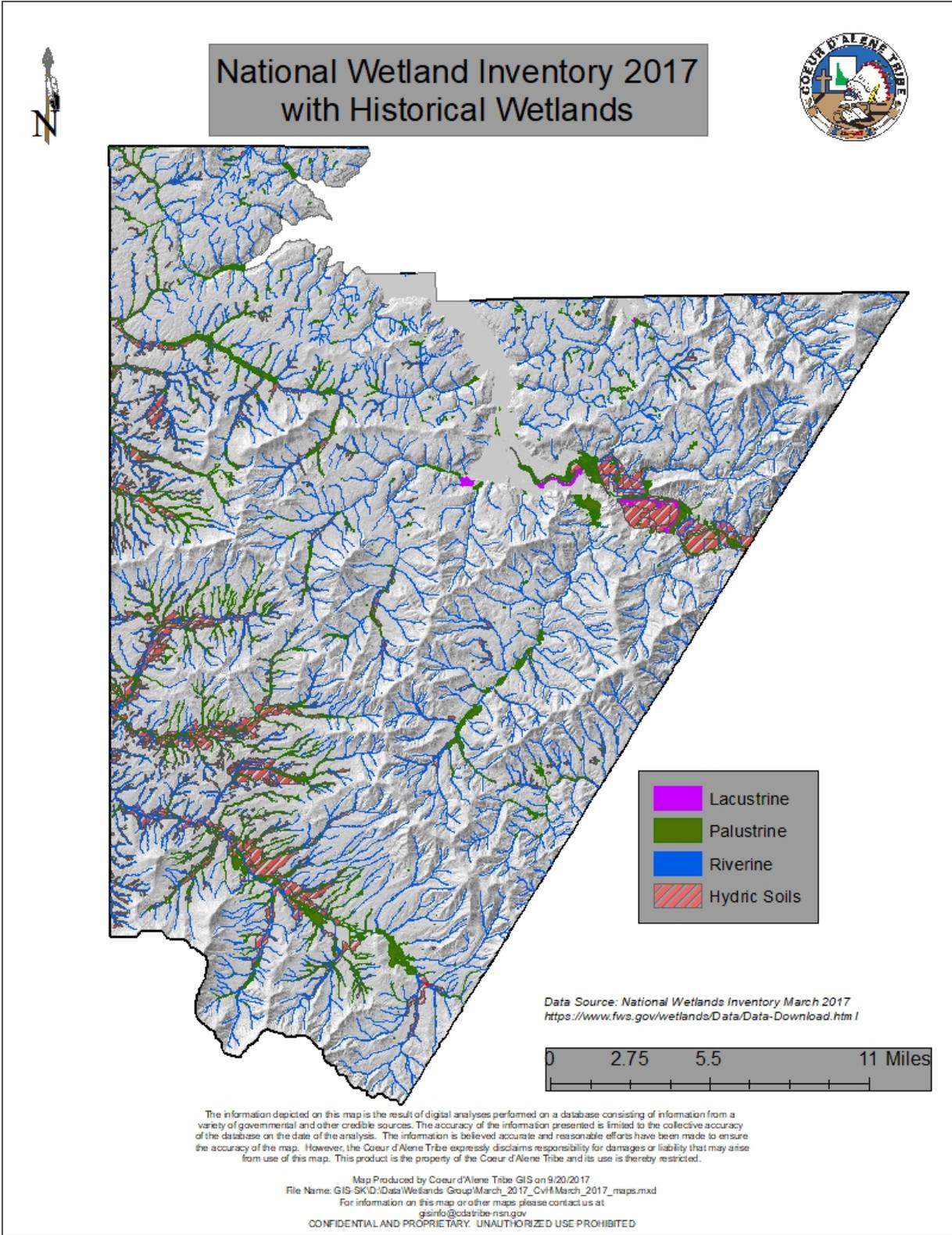


Figure 4. Current wetlands on the Coeur d’Alene Reservation compared with estimated historic wetlands

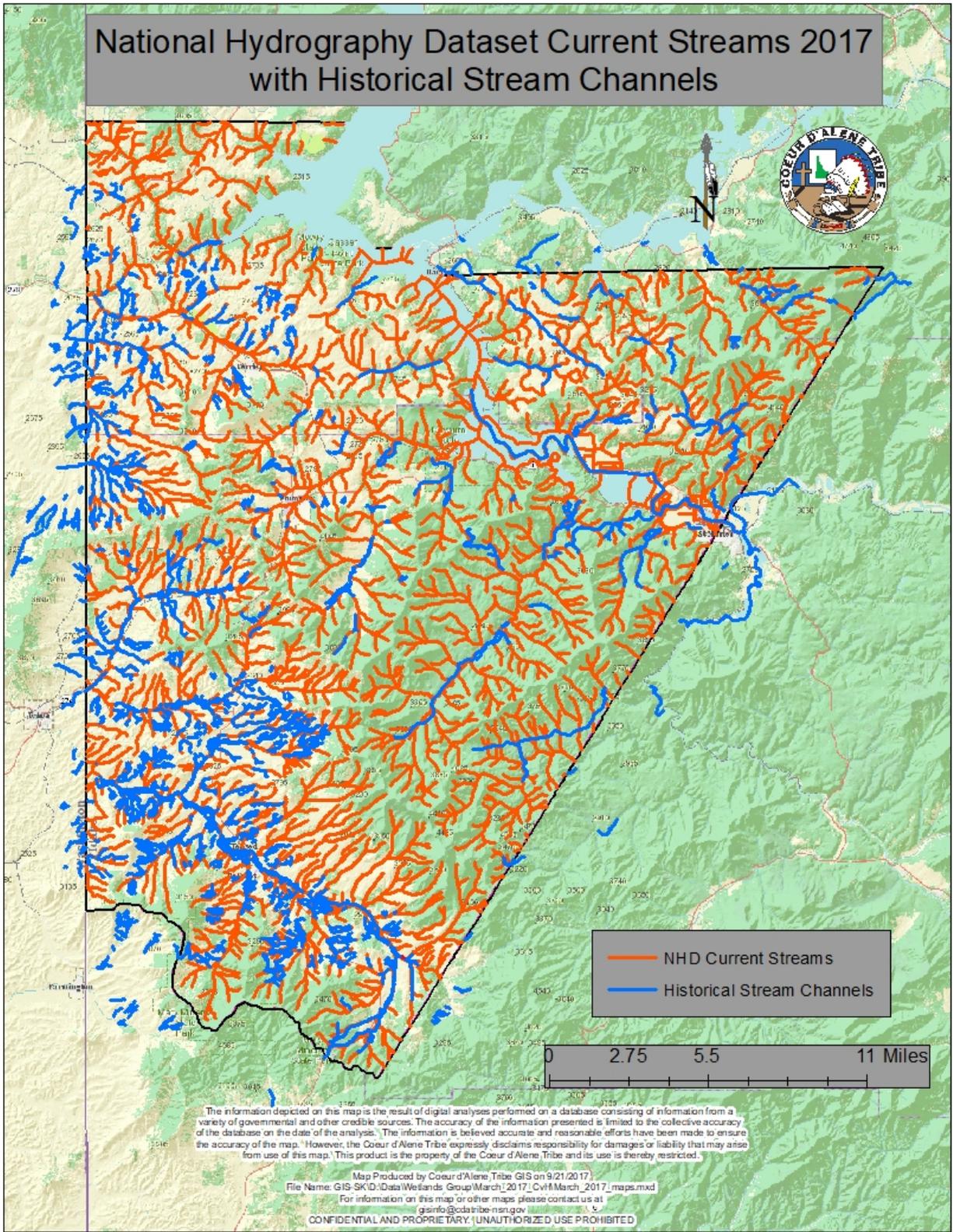


Figure 5. Current streams compared with historical stream channels on and near the Coeur d'Alene Reservation (partially complete)

Appendix 2. List of Tribal documents used in development of Wetland Program Plan

Document Title	Date
Coeur d'Alene Tribe Environmental Action Plan (EAP) Assessment of Environmental Concerns on and near the Coeur d'Alene Reservation	2000
Report of Injury Assessment and Injury Determination: Coeur d'Alene Basin Natural Resource Damage Assessment	2000
Tribal Water Quality Code 42	2000
Coeur d'Alene Tribe Fish and Wildlife Habitat Protection Plan	2002
Coeur d'Alene Reservation Forest Management Plan	2003
Spokane River Hydroelectric Project Impact Statement	2005
Coeur d'Alene Tribe Non-Point Source Pollution Assessment	2006
Coeur d'Alene Tribe's Benewah Creek Wildlife Mitigation Unit (WMU) Management Plan	2006
Coeur d'Alene Tribe's hnt'k'wipn Management Plan (for portions of Hangman Creek Watershed)	2007
Goose Haven Lake WMU Wildlife Management Plan	2008
Windy Bay WMU Wildlife Management Plan	2008
Hepton Lake Management Plan	2008
Joint Tribal/State Coeur d'Alene Lake Management Plan	2009
Water Quality Standards for approved surface waters of the Coeur d'Alene Tribe	2010
Coeur d'Alene Tribe's Prioritization Area Selection within the Hangman Watershed of the Coeur d'Alene Reservation	2011
Coeur d'Alene Tribe Integrated Resource Management Plan (IRMP)	2012

Appendix 3. Executive Summary: Evaluation of three wetland assessment methods for potential use in the Coeur d'Alene Tribe wetland program

Wetlands provide a broad spectrum of functions that are difficult or impossible to replace. These functions include habitat for many species of plants, birds, fish, invertebrates and other organisms that critically depend on wetlands for one or several stages of their life cycle. Other functions that wetlands provide include flood attenuation, water storage, nutrient and carbon sequestration, shoreline stabilization, groundwater recharge, as well as recreational opportunities. A systematic evaluation of these functions is helpful in determining the overall value of wetlands, especially when determining and mitigating for impacts due to activities such as urban development, road construction, agricultural activities, and other impact.

The Coeur d'Alene Tribe evaluated three functional assessment methods: Wetlands Ecosystem Services Protocol, the Montana Department of Transportation Wetland Assessment Method, and the Washington State Wetland Rating System for Eastern Washington. For the first two methods, wetlands were visited and rating took place predominately during field visits in Summer 2015. The WRS-EW rating was performed in the Summer of 2017, and was based on previously collected data obtained using the other two methods, as well as on new data obtained in field assessments in 2017. Three wetlands were used for evaluating the assessment methods, Benewah Creek (9.7-ac riverine wetland), Hangman Creek (12.5-ac palustrine wetland) and Plummer Bay (0.3-ac lacustrine littoral wetland).

The three methods yielded a varying degree of detail of wetland functions. All three provide an assessment of hydrological, pollutant removal, and habitat functions. The MWAM and WESPUS methods expand on these basic functions and (depending on method), include other items such as carbon sequestration, uniqueness, public use, thermoregulation, food web support, and others. The WESPUS method was by far the most comprehensive, with field measurement of 141 indicators of wetland function. However, this came at a cost of much more time required for the assessment. The MWAM and WRS-EW methods ranked the wetlands similarly, with Benewah Creek ranking highest, followed by Plummer Bay, and the lowest functional score for Hangman Creek.

The Montana Wetland Assessment Method is recommended by Tribal staff as the preferred functional assessment method, based on several factors. First, it has already seen extensive use in this region by the Idaho Transportation Department (ITD). Also, staff found MWAM to be both more efficient and more straightforward to apply. The Tribe thinks that this method will serve as an adequate approach to assess wetlands throughout the Coeur d'Alene Reservation.

Appendix 4. Addendum to the Montana Wetland Assessment Method that reflects functions and indicators considered important to the Tribe

Coeur d'Alene Tribe Wetland Functional Assessment Addendum

<i>A. General</i>			
Wetland:		Date:	Reviewer(s):
Department:		Program:	
General description of wetland:			
1. Has this site been identified by the Tribe for a restoration project?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<i>B. Wildlife</i>			
2. Is there evidence of amphibians?			
<input type="checkbox"/> Vocalizing	<input type="checkbox"/> Egg masses	<input type="checkbox"/> Larvae	<input type="checkbox"/> Adults
If yes, describe:			
3. Are waterfowl present (mallards, geese, etc)?			
If yes, list:			
4. Are wading birds present (sandpipers, herons, etc)?			
If yes, list:			
5. Is there suitable habitat for songbirds, e.g. riparian shrubs?			
<input type="checkbox"/> Yes		<input type="checkbox"/> No	
6. Are there sites available for raptor nesting and roosting?			
<input type="checkbox"/> Large snags	<input type="checkbox"/> Cottonwood s	<input type="checkbox"/> _____	<input type="checkbox"/> _____
7. Is large woody debris present, for small animal habitat?			
<input type="checkbox"/> Yes		<input type="checkbox"/> No	
8. Any evidence of big game activity?			
<input type="checkbox"/> Scat	<input type="checkbox"/> Tracks	<input type="checkbox"/> Sighting	
If yes, likely species:			
9. Any evidence of beavers?			
<input type="checkbox"/> Chewed trees	<input type="checkbox"/> Dams	<input type="checkbox"/> Lodges	<input type="checkbox"/> _____
10. Using the Coeur d'Alene Tribal checklist (attached at end of form) for wetland plants and animals, please identify all species on the list that there is evidence of in this wetland area.			

C. Restoration Potential

11. Describe any known or visible disturbances to the wetland, e.g. straightened streams, parts of wetland filled, roads, logging, grazing, vehicle impacts, loss of fishery, etc.

12. Potential obstacles to restoration

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Land tenure | <input type="checkbox"/> Major stream channel restoration needed | <input type="checkbox"/> Major re-vegetation needed | <input type="checkbox"/> Unsuitability of adjacent land use |
| <input type="checkbox"/> Drainage tile removal | Notes/Other: | | |

13. Restoration approaches

- | | | | |
|--|--|--|--------------------------------|
| <input type="checkbox"/> Culvert removal | <input type="checkbox"/> Berm breach | <input type="checkbox"/> Hydrologic reconnection | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Increase buffer | <input type="checkbox"/> Land purchase | <input type="checkbox"/> Ditch plugging | <input type="checkbox"/> _____ |

Notes/Other:

14. Possible strategies for biological restoration

- Species re-introduction (list species): _____
- Native planting Exotics removal Other habitat enhancement _____
- Alter management _____ _____

Notes/Other:

15. Potential for restoration to pre-settlement condition (High = easier to restore)

- High Medium Low Relatively pristine wetland; no restoration req'd.

Notes/other:

16. Potential for restoring (or re-introducing) native plants and animals (High = easier to restore)

- High Medium Low Species present likely reflect pre-settlement condition

Notes/other:

CDA Reservation Native Wetland Plant Species

Wetland plant species list developed from CDA Tribe IRMP & CDA Tribe archival information.

Common Name	CDA Tribal Name	Genus & Species	Check if Present
Alder		<i>Alnus incana</i>	
Aspen	du/du/p or dare/du/du/p	<i>Populus tremuloides</i>	
Bitter Cherry	pachlen	<i>Prunus emarginata</i>	
Paper Birch		<i>Betula papyrifera</i>	
Black Cottonwood	mulsh	<i>Populus trichocarpa trichocarpa</i>	
Black Locust		<i>Robinia pseudoacacia</i>	
Black Raspberry	mtsukw, ti/te/l'lmkhw	<i>Rubus leucodermis</i>	
Blue Elderberry		<i>Sambucus cerulea</i>	
Broad-leaf Cattail		<i>Typha latifolia</i>	
Camas	Etqhwé', apl'etkhwe (baked) sqha'wlutqhwé (raw) p'ekhwpuhwn (bulbs)	<i>Camassia quamash</i>	
Chokecherry	laqhwluqhw (plural); laqhwluqhw	<i>Prunus virginiana</i>	
Cow Parsnip	q'wosq'ws or qhoqhl/p	<i>Heracleum lanatum</i>	
Currant	sts'erus	<i>Ribes spp.</i>	
Douglas Hawthorn	kwela or squhu'nech	<i>Crataegus douglasii var.douglasii</i>	
Golden Currant		<i>Ribes aureum</i>	
Grand Fir	stmarimlpecht	<i>Abies grandis</i>	
Horsetail	he st'ede'le t'ukhwen	<i>equisetum spp.</i>	
Lodge-pole Pine		<i>Pinus contorta</i>	
Nodding Onion		<i>Allium cernuum</i>	
Oceanspray		<i>Holodiscus discolor</i>	
Ponderosa Pine	'yatqwelp	<i>Pinus ponderosa</i>	
Red-osier Dogwood	Stichskhwelp or stichtskhw	<i>Cornus sericea</i>	
Rocky Mountain Maple	sqwaxt	<i>Acer glabrum</i>	
Rose	qa'lqhelp	<i>Rosa nutkana var. hispida</i>	
Serviceberry	s/laq	<i>Amelanchier alnifolia</i>	
Skunk Cabbage		<i>Lysichitum americanum</i>	
Snowberry	Tmtmni'elp	<i>Symphoricarpos albus</i>	
Softstem Bulrush		<i>Schoenoplectus tabernaemontani</i> (<i>Scirpus validus</i>)	
Spring Beauty, Indian Potato		<i>Claytonia lanceolata</i>	
Strawberry	stsaqwm	<i>Fragaria spp.</i>	
Tall Oregon Grape		<i>Mahonia aquifolium</i>	
Tule/Hardstem Bulrush	q'wosq'ws	<i>Schoenoplectus acutus var. occidentalis</i> (<i>Scirpus acutus</i>)	
Water Birch		<i>Betula occidentalis</i>	
Water Parsnip		<i>Sium suave</i>	
Water Potato	sqigwts	<i>Sagittaria latifolia</i>	
Western Red Cedar		<i>Thuja plicata</i>	
Willow		<i>Salix spp.</i>	
Woods Rosa	Skhwaayapa'qn	<i>Rosa woodsii</i>	
<u>Other natives and non-native:</u>			
<u>Comments:</u>			

CDA Reservation Native Wetland Animal Species

Wetland plant species list developed from CDA Tribe IRMP & CDA Tribe archival information.

Common Name	CDA Tribal Name	Genus & Species	Observed (O) or Reported (R)*
Amphibians			
Boreal Chorus Frog	warch	<i>Pseudacris maculata</i>	
Coeur d'Alene Salamander		<i>Plethodon idahoensis</i>	
Columbian Spotted Frog	warch	<i>Rana pretiosa</i>	
Idaho Giant Salamander		<i>Dicamptodon aterrimus</i>	
Long-toed Salamander		<i>Ambystoma macrodactylum</i>	
Pacific Chorus Frog (Pacific tree frog)	warch	<i>Pseudacris regilla</i>	
Tailed Frog		<i>Ascaphus truei</i>	
Tiger Salamander	chenchenticht	<i>Ambystoma tigrinum</i>	
Western Toad	Warch or s'me'mi'pep	<i>Bufo boreas</i>	
Reptiles			
Common Garter Snake	alq'its'ench	<i>Thamnophis sirtalis</i>	
Painted Turtle	sp'ark'walqs	<i>Chrysemys picta</i>	
Western Terrestrial Garter Snake	alq'its'ench	<i>Thamnophis elegans</i>	
Birds			
American avocet		<i>Recurvirostra americana</i>	
American Bittern		<i>Botaurus lentiginosus</i>	
American Coot	Stareqshn; stareqshen	<i>Fulica americana</i>	
American Dipper		<i>Cinclus mexicanus</i>	
American Wigeon	Qhwatqhwat (generic name for duck)	<i>Anas americana</i>	
Bald Eagle	pacha'lqn	<i>Haliaeetus leucocephalus</i>	
Bank Swallow		<i>Riparia riparia</i>	
Black Tern		<i>Chlidonias niger</i>	
Blue-winged Teal	Qhwatqhwat (generic name for duck)	<i>Anas discors</i>	
Bufflehead	Qhwatqhwat (generic name for duck)	<i>Bucephalaalbeola</i>	
Canadian Goose	hn'm'ma'ma'mts'm; hn'm'ma'ma'mts'n or sq'weq'walqw or s(ihnt	<i>Branta canadensis</i>	
Canvasback	Qhwatqhwat (generic name for duck)	<i>Aythya valisineria</i>	
Cedar waxwing		<i>Bombycilla cedrorum</i>	
Cinnamon Teal	Qhwatqhwat (generic name for duck)	<i>Anas cyanoptera</i>	
Common Goldeneye	Qhwatqhwat (generic name for duck)	<i>Bucephala clanguala americana</i>	
Common Loon	ch'eqhq'n	<i>Gavia immer</i>	
Common Merganser		<i>Mergus merganser</i>	
Common Snipe	p'esta, or t'Et'aqwi'n	<i>Gallinago gallinago</i>	
Common Yellowthroat		<i>Geothlypis trichas</i>	
Gadwall	Qhwatqhwat (generic name for duck)	<i>Anas stepera</i>	
Great Blue Heron		<i>Ardea herodias</i>	
Greater yellowlegs		<i>Tringa melanoleuca</i>	
Green-winged Teal	Qhwatqhwat (generic name for duck)	<i>Anas platyrhynchos</i>	
Harlequin Duck		<i>Histrionicus histrionicus</i>	
Hooded Merganser		<i>Lophodytes cucullatus</i>	
Lesser Scaup	Qhwatqhwat (generic name for duck)	<i>Aythya affinis</i>	
Lesser yellowlegs		<i>Tringa flavipes</i>	
MacGillivray's Warbler		<i>Oporornis tolmiei</i>	
Mallard	Qhwatqhwat (generic name for duck)	<i>Anas platyrhynchos</i>	
Northern Pintail	Qhwatqhwat (generic name for duck)	<i>Anas acuta</i>	
Northern Rough-winged		<i>Stelgidopteryx serripennis</i>	

CDA Reservation Native Wetland Animal Species

Wetland plant species list developed from CDA Tribe IRMP & CDA Tribe archival information.

Common Name	CDA Tribal Name	Genus & Species	Observed (O) or Reported (R)*
Swallow			
Northern Shoveler	Qhwatqhwat (generic name for duck)	<i>Anas clypeata</i>	
Northern Waterthrush		<i>Seiurus noveboracensis</i>	
Osprey	ts'ikhwts'ekhw	<i>Pandion haliaetus</i>	
Pied-billed Grebe		<i>Podilymbus podiceps</i>	
Redhead	Qhwatqhwat (generic name for duck)	<i>Aythya americana</i>	
Red-necked Grebe		<i>Podiceps grisegena</i>	
Red-winged Blackbird	t'ech't'ch; t'ech'tch'	<i>Agelaius phoeniceus</i>	
Ring-necked duck	Qhwatqhwat (generic name for duck)	<i>Aythya collaris</i>	
Ruddy Duck	Qhwatqhwat (generic name for duck)	<i>Oxyura jamaicensis</i>	
Sandhill Crane	skwarshn	<i>Grus canadensis</i>	
Sora		<i>Porzana carolina</i>	
Spotted Sandpiper		<i>Actitis macularia</i>	
Tundra Swan	qhewitqhawit (generic name for white swan)	<i>Cygnus columbianus</i>	
Virginia Rail		<i>Rallus limicola</i>	
Western Grebe		<i>Aechmophorus occidentalis</i>	
Wilson's Warbler		<i>Wilsonia pusilla</i>	
Wood Duck	Qhwatqhwat (generic name for duck)	<i>Aix sponsa</i>	
Yellow Warbler		<i>Dendroica petechia</i>	
Yellow-headed Blackbird	t'ech't'ch; t'ech'tch'	<i>Xanthocephalus xanthocephalus</i>	

Mammals

American Beaver	hnmulshench	<i>Castor canadensis</i>	
Dusky Shrew		<i>Sorex monticolus</i>	
Mink	ts'aqhyu'ts'en	<i>Mustela vison</i>	
Muskrat	chelekhw	<i>Ondatra zibethicus</i>	
Northern River Otter	Itku'; Itku; Itku' or hnq'oq'os'mich'nshtkw'	<i>Lutra canadensis</i>	
Water Shrew		<i>Sorex palustris</i>	
Water Vole	k'wit'e'n	<i>Microtus richardsoni</i>	

Other natives and non-natives:

Comments:

*If a species was observed on the day of the assessment, record "O". If there has ever been a reliable sighting of the species on the site, record "R".

Appendix 5. Executive Summary: Ground truthing National Wetlands Inventory data on the Coeur d'Alene Reservation

The Tribe developed a strategy and process to ground truth and inventory current Coeur d'Alene Reservation wetlands, as compared to the National Wetlands Inventory (NWI) data and conduct a pilot study to test the strategy and process. The United States Fish and Wildlife Service (USFWS) has mapped wetlands across the United States, through the NWI program, since the mid 1970's. The goal of the program has been to produce a nationwide "snapshot" of wetlands, currently at a mapping scale of 1:24,000. The intent of the NWI was not to produce fine-scale local maps of wetland types and boundaries, but to produce a somewhat generalized national depiction of wetlands, thus some loss of local detail would be expected. Local and regional entities, such as states, counties, and tribes may wish to improve on the NWI products through such efforts as purchasing larger-scale photography, field visits to verify/change NWI data, etc.

The Tribe, through its Wetland Workgroup, decided that the strategy used to ground truth and inventory Tribal wetlands would not involve actual mapping of wetlands at this stage of wetland program plan development, but rather generally determine if the location of NWI data is correct, as well as determine if NWI attributes are correct. The Federal Geographic Data Committee's (FGDC) guidelines for wetland mapping on federally funded projects are extensive, therefore the Tribe decided to forgo efforts aimed at revising NWI map products at this stage. Instead, the Tribe developed a process whereby: 1) A field check of accuracy of NWI wetland boundary is performed, 2) The actual wetland type (palustrine, etc.) and other wetland attributes are field-checked and compared to NWI data, and 3) Soil parameters are compared to Natural Resource Conservation Service soil survey data, particularly with respect to hydric soil status. The USFWS/NWI has developed a field data collection form for ground-truthing NWI data. That form was used to develop a field form for the Coeur d'Alene Tribe. This approach was used at three wetlands in Summer of 2017. In one case (Benewah Creek), the NWI data substantially underestimated the actual extent of the wetland. In two other wetlands (Plummer Bay and Hangman Creek), the NWI data appeared to be mostly correct.

Appendix 6. Executive Summary: Historical wetlands and stream channels on the Coeur d'Alene Reservation

One component of the Environmental Protection Agency (EPA) grant, titled “Coeur d'Alene Tribe Wetland Program Plan Development: A Tribal Cultural Approach” was to update information on current wetlands, compared to pre-settlement wetlands, on the Reservation using available current and historical sources of information. One of the goals of this project was to increase knowledge and documentation of where current and pre-settlement wetlands are located on the Reservation, to assist in determining locations for restoration, protection, monitoring and assessment.

The Tribe has combined soil survey data from the Natural Resource Conservation Service (Soil Survey Staff 2017) and the National Wetlands Inventory (NWI) (USFWS 2009) to compare current wetland extent and type to estimates of pre-settlement wetlands on the Reservation. In essence, this exercise approximated the historical extent of palustrine wetlands as those regions that are currently mapped as hydric soils. Current wetland extent was estimated using NWI data. The project was predominantly executed using a Geographic Information System, ArcGIS ArcMap 10.5.1.

There are three types of wetlands within the Coeur d'Alene Indian Reservation as defined by the Cowardin wetland classification system (Cowardin et al. 1979); riverine, palustrine, and lacustrine (no tidally-influenced systems). Two of these systems, lacustrine and riverine also have deepwater, non-wetland portions on the Reservation. According to the NWI, within the Reservation boundary, there are 5,347 acres of palustrine wetlands, 161 acres of lacustrine wetlands, and 3,625 acres of riverine wetlands, for a total of 9,133 acres of wetlands (Appendix 1; Figure 3).

The historical extent of Reservation wetlands was estimated for the Tribe's Environmental Action Plan (EAP 2000) using hydric soils as mapped in 1919 Kootenai County soil surveys and 1930's Benewah County soil surveys. Those results showed that the Reservation once contained 16,280 acres of palustrine, 2,186 acres of lacustrine, and 7,276 acres of riverine wetlands, for a total of 25,742 wetland acres. One of the main findings of this task was that there has been an estimated 65% loss of palustrine wetlands on the Reservation. It should be noted that several limitations exist with the procedure used to estimate historic wetland extent. For example, NWI tends to miss densely forested wetlands, and those less than 10 acres in size. Also, the current extent of hydric soils was used to estimate the predevelopment extent of palustrine wetlands. The use of hydric soil maps alone may have led to some inaccuracies in final results.

One component of a subsequent EPA wetlands grant awarded in 2015 was to map historical stream channels and compare this to current stream channels, again using GIS techniques. Currently, three of seven mainstems of key Reservation streams have been completed and two others have been partially completed. Of the 1417.65 stream miles on the Reservation identified in the National Hydrography Dataset of 2017, 588.2 miles have been completed (a few of these

stream miles lie outside of the Reservation boundary). It is estimated that all of the current stream miles and at least 40% of all of the historical Reservation stream segments have been mapped (Appendix 1, Figure 4).

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