

# Tulalip Tribes

## Wetland Program Plan

2020 -2026



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Prepared by

Jonathan V. Hall

Tulalip Natural and Cultural Resources Department

## Contacts

Jonathan V. Hall  
Wetland Biologist  
360-716-4594

Kurt Nelson  
Environmental Section Manager  
360-716-4617



*Beaver impoundment, Tulalip Reservation*

## Acknowledgement

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## Tulalip Wetland Program Plan Qualification

This Wetland Program Plan (2020-2026) provides a menu of activities that are necessary to protect, enhance, restore, and manage Tulalip wetlands. These activities coincide with three Tribal Wetland Program Development Grant (WPDG) funding opportunities anticipated for 2020, 2022, and 2024; and three Region 10 WPDG funding opportunities anticipated for 2021, 2023, and 2025. The proposed actions in the Wetland Program Plan (WPP) are modeled after the Core Elements Framework developed by the EPA. The EPA recognizes that the framework provides general guidance. A particular entity (e.g., tribe) may have additional wetland program goals that do not fit neatly into the Core Elements Framework. Some of the activities listed are sequential in nature and must occur prior to initiation of additional activities. Some activities can occur concurrently or independently of others, or are ongoing and long-term. Many of the proposed Wetland Program Plan actions and activities identified in this report are not currently funded. Completion of these activities will depend upon securing the necessary financial support.

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## **TULALIP TRIBES MISSION**

dəxʷqʷiqʷcut ʔə ti ʔalʔaltəd tiʔit gʷəʔ dibəʔ gʷədʒadad

*Together we create a healthy and culturally vibrant community*

## **TULALIP TRIBES VISION**

tiʔit ʔəsqʷuʔ ʔal dxʷlilap gʷəʔ čuʔ ʔacitʔalbixʷ.

dxʷdʒixʷqscut.

ʔuʔčil čəʔ dxʷʔal tiʔit ʔiʔhaʔʔ stalxil ʔə ti bəkʷ gʷat.

*We gathered at Tulalip are one people.*

*We govern ourselves.*

*We will arrive at a time when each and every person has become most capable.*

## **TULALIP NATURAL RESOURCES DEPARTMENT MISSION**

*Preserve, protect, and restore Treaty-reserved natural resources within the Tribes “Usual and Accustomed” area.*

## **TULALIP NATURAL RESOURCES DEPARTMENT VISION**

*Protect and sustain treaty reserved resources for cultural, subsistence, and economic purposes for the benefit of the Tulalip Tribes membership now and for future generations.*

## **TULALIP WETLAND PROGRAM MISSION**

*To preserve, protect, enhance, restore, and manage wetlands and their associated ecological services both on the Tulalip Reservation and within the larger traditional use areas, for the benefit of the Tulalip Tribes now and into the future.*

## OVERVIEW OF THE CURRENT (2013 – 2019) TULALIP WETLAND PROGRAM

### GOALS IDENTIFIED IN THE 2013 - 2019 TULALIP WETLAND PROGRAM PLAN:

The 2013 – 2019 Tulalip Wetland Program Plan identified goals, objectives, and proposed activities under four Core Elements. The goals and objectives under each element are listed below:

#### 1. MONITORING AND ASSESSMENT

**Goal:** An affordable, efficient, and effective monitoring and assessment strategy plan for the Tulalip Reservation wetlands.

**Objective 1:** Update the Tulalip Watershed Management Plan to provide the newest available resource information to guide development of the monitoring and assessment strategy.

**Objective 2:** Develop an attainable wetland monitoring and assessment strategy.

**Objective 3:** Begin implementation of the monitoring and assessment strategy.

#### 2. REGULATION:

**Goal:** A comprehensive regulatory framework that ensures no net loss of wetland acres and protects and enhances ecological processes and services associated with wetlands within the Reservation.

**Objective 1:** Provide technical support to tribal staff and membership regarding Tulalip wetland regulations, mapping, delineation, permit review, etc.

**Objective 2:** Support Tulalip Community Development Department with revision and Interpretation of tribal codes related to wetlands.

**Objective 3:** Encourage innovative land use and development practices that minimize disturbance to native soils, vegetation, and waters while allowing for sustainable economic growth for the Tribes and its individual members.

#### 3. VOLUNTARY RESTORATION AND PROTECTION

**Goal:** Identify and begin to restore and protect the most vulnerable Tulalip wetlands.

**Objective 1:** Prioritize wetland restoration and protection areas and actions.

**Objective 2:** Pursue options to secure high priority wetland restoration and protection sites.

**Objective 3:** Acquire high priority wetlands and implement high priority wetland restoration projects.

**Objective 4:** Enhance native vegetation species diversity and structural complexity in Tulalip wetlands and riparian corridors with an emphasis on increasing culturally significant and wildlife food and habitat species.

#### 4. WATER QUALITY STANDARDS FOR WETLANDS

**Goal:** Develop and apply clear, concise, and practical wetland water quality standards to protect fish and wildlife species and tribal practices that are dependent upon Tulalip wetlands.

**Objective 1:** Develop water quality and monitoring standards for Tulalip wetlands. Build on the 2010-2015 Tulalip Water Quality Monitoring Strategy (Zackey, 2010).

**Objective 2:** Implement the new wetland water quality standards and monitoring strategies.

#### **GOALS IDENTIFIED IN THE 1996 TULALIP WATERSHED MANAGEMENT PLAN:**

Given the Tribes' historic reliance on fishing and their treaty reserved harvest and habitat rights, the goals of the Watershed Management Plan are clear:

*(a) To protect the quality of surface water resources (streams, springs, ponds, wetlands, marine waters, etc.) on the Tulalip Reservation.*

*(b) To ensure that in the short term there is no net loss of wetlands function and acreage, and that in the long term there is a measurable net gain of wetlands function and acreage.*

*(c) To institute development alternatives that minimize economic hardship on private property owners and the Tulalip Tribes while providing adequate protection measures for wetlands and other valuable environmental and cultural resources.*

#### **TULALIP WETLAND PROGRAM ACTION AREA**

- Within the Tulalip Reservation boundaries (Figure 1)
- Within the Tulalip Tribes' Usual and Accustomed places (Figure 2)

#### **WETLAND PROGRAM RESOURCE FOCUS**

- Wetlands, associated streams, buffers/riparian corridors
- Wetlands and riparian habitat communities
- Wetland water quality and quantity (surface/groundwater, estuarine/freshwater)
- Wetland and riparian soils (suitable to sustain wetland plants; habitat restoration/altered landscape enhancements)
- Fish and wildlife associated with, and dependent upon wetland and riparian communities
- Overall watershed health (sustainable landscape processes; highest potential ecosystem services; healthy physical, chemical, and biologic condition)



## BACKGROUND

The Tulalip Tribes are successors in interest to the Snohomish, Snoqualmie, Skykomish and other allied tribes and bands signatory to the 1855 Treaty of Point Elliott. The tribal population is about 4,820 members (2019) and growing. The Tulalip Reservation is located at the mouth of the Snohomish River Watershed (Water Resource Inventory Area 7), north of Everett and west of Marysville, WA.

Tulalip waters flow to the coastal waters of the Snohomish River Estuary, Possession Sound, and Port Susan via stream outlets, dispersed overland flow, and groundwater seeps. The Reservation consists of approximately 22,500 acres and is characterized by two geomorphic landforms; the Marysville trough which occupies the



*Skunk Cabbage*

eastern quarter of the Reservation, and the Tulalip Plateau which dominates the remaining Tulalip landscape. The Marysville trough is a low-lying valley dominated by deep sandy soils and high groundwater table. The Tulalip Plateau rises approximately 300 to 500 feet above the valley floor and is characterized by complex hills, ravines, bluffs, and stream valleys. The predominantly forested character of the Reservation was once common in the coastal Puget lowlands, but now contiguous tracts of forest land are relatively uncommon. Currently, approximately 67% of the reservation is undeveloped forested land. The Reservation is surrounded by agricultural, rural residential, suburban, and urban communities with ever-increasing pressure for development and encroachment from non-native invasive plant and animal species.

The Tulalip Wetland Program (Program) began in the early 1990's through funding provided by an EPA Water Quality 104(b) grant. The program was expanded in 2008 with support from an EPA Wetland Program Development Grant. Funds from this grant assisted the Tulalip Tribes in providing better predictability for tribal project planning and development; documenting baseline wetland location and habitat conditions (EPA Level 1 monitoring and assessment); and establishing the framework necessary to implement watershed-based wetland planning, protection, mitigation, restoration, and long-term monitoring and assessment.

Additional WPDG funding (2011-2012, 2013-2015, 2015-2017, and 2017-2019) supported important advancements of the Tulalip Wetland Program including developing the 2013-2019 Wetland Program Plan; development of the *Tulalip Reservation Wetland Risk Assessment* report (Hall et. al 2017); updating the geodatabase that hosts the Tulalip Wetland Inventory, updating and refining the wetlands inventory including adding new data fields and insuring that the inventory is continuously updated; implementing the Tulalip Monitoring and Assessment Strategy; identifying potential future wetland water quality

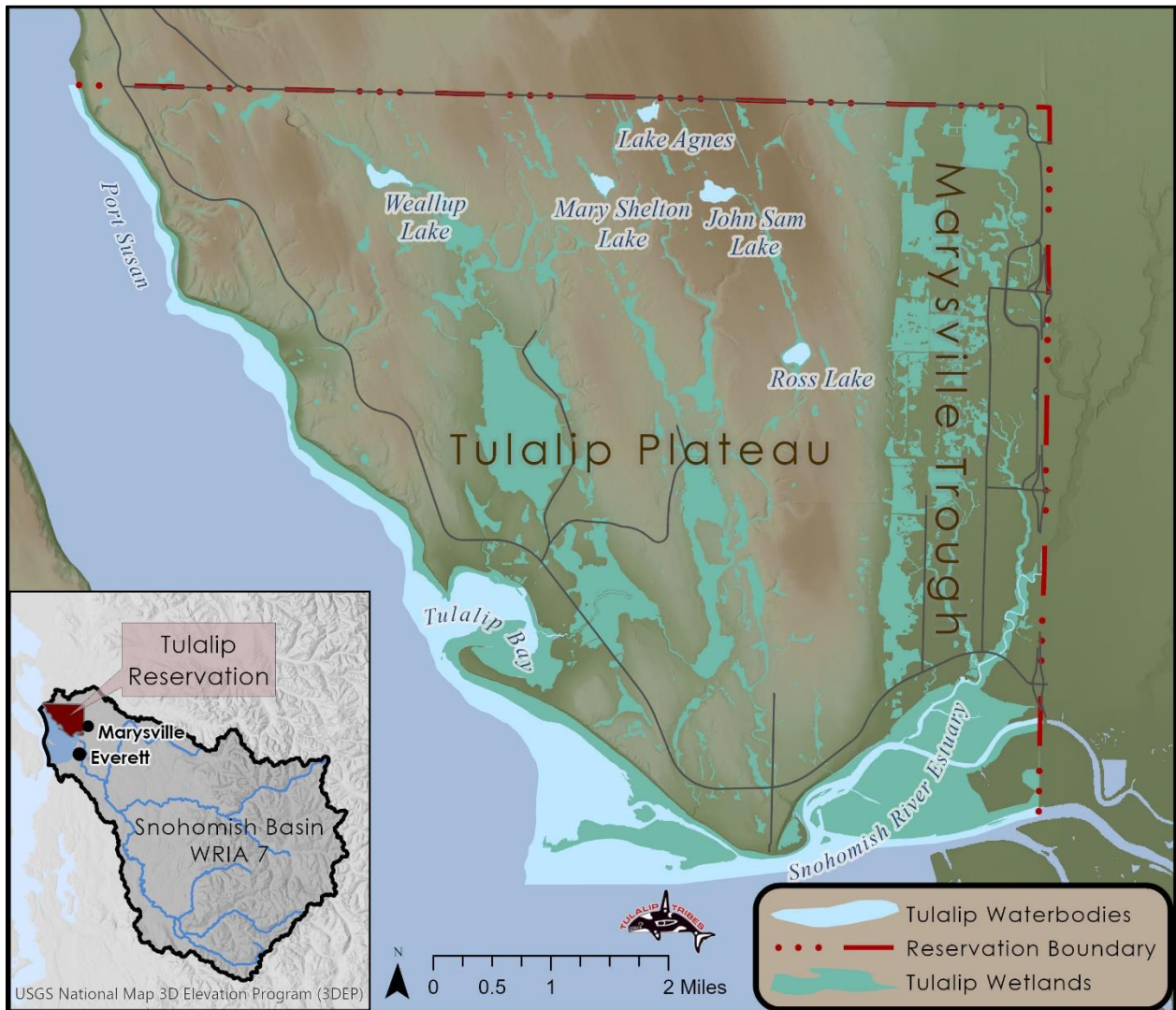
monitoring stations; and providing education and outreach material such as producing a *State of Our Watersheds Report* and developing wetland and riparian enhancement information sheets.

Approximately 19% of the Tulalip Reservation is occupied by wetlands. In 2019, the Tulalip Wetland Inventory showed a total of 525 wetlands or wetland complexes totaling approximately 4,359 acres on the reservation. The inventory includes an additional 2,625 acres of coastal habitats (i.e., beaches, flats, and subtidal channels) along the shores of Port Susan, Tulalip Bay, and Possession Sound. The majority of wetland acreage (86%) consists of wetland complexes greater than 10 acres in size. Nearly 3,230 wetland acres (74%) meet the highest Tulalip classification “Critical Value Wetlands” and offer high ecological and cultural importance. Approximately 49% of the wetland acres on the Tulalip Reservation are forested wetlands.

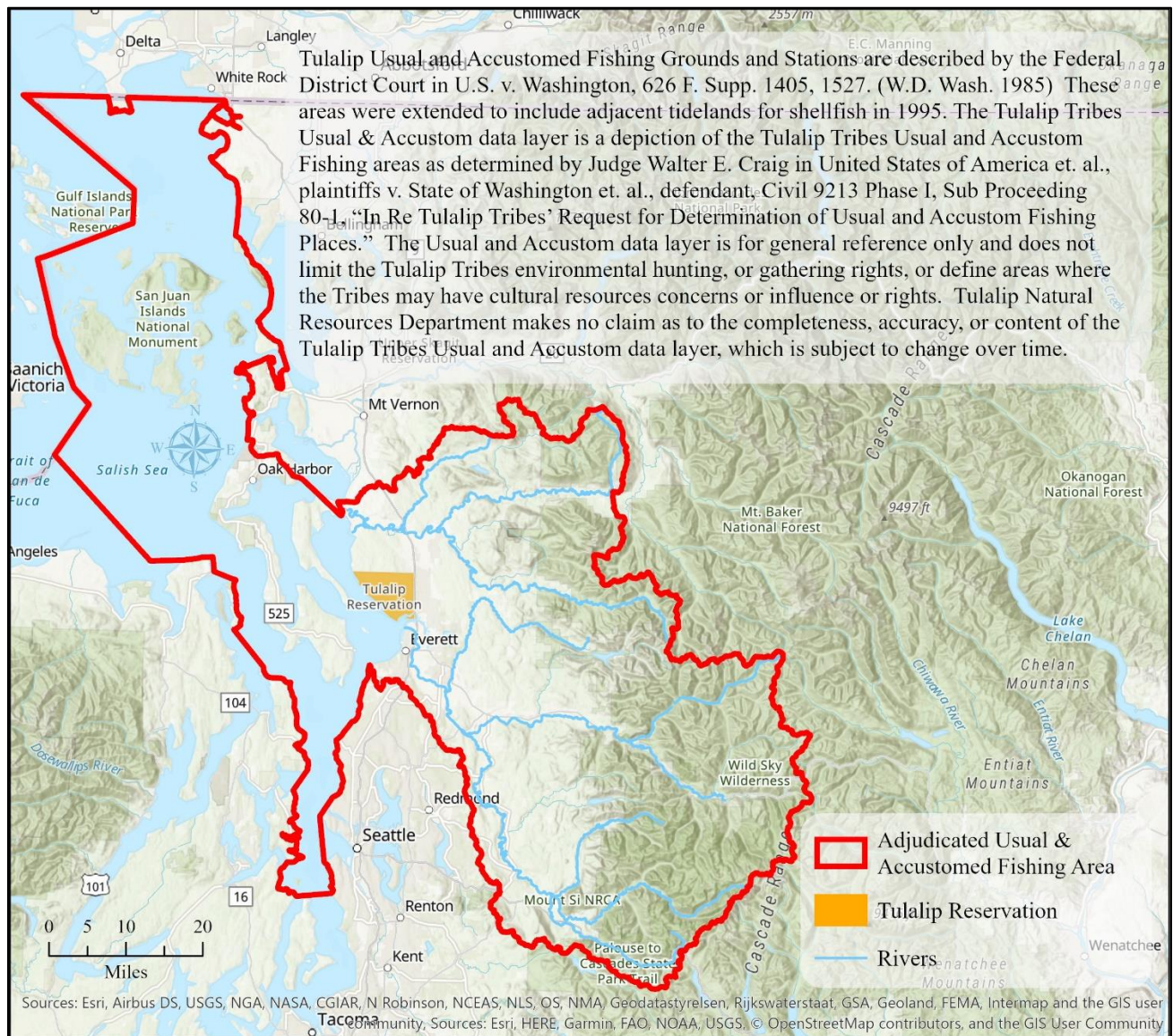
Currently, the Tulalip Wetland Inventory is being updated including adding previously undetected wetlands, refining wetland boundaries, adding coastal habitats, and recording new information for each wetland. In addition, the database that hosts the inventory has been modernized to allow for efficient updating and frequent distribution of the data to users. At midnight each day, approved edits to the wetland data layer are incorporated into the master data file and viewable by all users the following morning.



Figure 1. Tulalip Tribes Reservation



**Figure 2. Tulalip Tribes Usual and Accustomed Fishing Grounds and Stations**





## CORE ELEMENT ACTIONS AND ACTIVITIES

The following goals, objectives, and activities provide the best estimate of priority needs for the Tulalip Wetland Program over the next six years. The activities identified below are meant to be used as guidance and are subject to revision and/or redirection depending on tribal needs and available funding. A projected timeline for initiation and/or completion of the identified objectives for each of the Core Elements is provided in Appendix A. Some of the elements are carried over from the previous 6-year Wetland Program Plan (2013-2019). These retained elements may not have been addressed due to funding constraints, or they may be priorities that require long-term commitment.

### 1. MONITORING AND ASSESSMENT

**Goal:** An affordable, efficient, and effective monitoring and assessment program that leads to improved wetland conditions in locations throughout the reservation, and no reduction in overall functional capacity of the wetlands managed by the Tulalip Tribes.

**Objective 1:** Maintain the structure and management of the Tulalip Wetland Inventory so that it can be continuously updated and rapidly distributed to users.

**Objective 2:** Complete the update of the comprehensive hydro data layer (streams, ditches and stormwater conveyances) including modernizing the database structure and revising the data fields.

**Objective 3:** Institutionalize the implementation of the Wetland Monitoring & Assessment Strategy and data collection following the initiation of this work through grant support.

**Objective 4:** Monitor the status and trends of wetlands and riparian habitats in each of the 13 Tulalip Reservation watersheds in order to evaluate the effectiveness of wetland programs and policies.

**Objective 5:** Identify priority protection and restoration sites for which more detailed voluntary restoration and protection plans will be developed under the Voluntary Restoration and Protection Core Element



*Vegetation sampling,  
Weallup Lake*

### CURRENT STATUS OF MONITORING AND ASSESSMENT

The Tribes began data collection and resource planning measures for development of a Watershed Management Plan and a wetland inventory in the early to mid-1990s. At that time wetland locations were coarsely mapped and a Tulalip regulatory classification was assigned.

An intertidal mapping project was conducted in 2003 using EPA 106 funds (Zackey et. al, 2005) to identify nearshore habitat within the Reservation. The intertidal assessment was not specifically targeted to identify wetlands. However, it provides the best estimate of intertidal eelgrass and salt marsh habitat occurring west of the mouth of the Snohomish Estuary.

In 2004 the Tulalip Natural Resources Department obtained EPA WPDG funds to conduct baseline wetland bioassessment monitoring at four wetland locations (Sevigny 2006). Two locations were relatively undisturbed and two locations were moderately disturbed by human activities. The purpose of the study was to establish baseline data for amphibian diversity and to compare water quality, habitat characteristics, and amphibian assemblages to identify correlations between biotic and abiotic factors. Amphibian use was determined by aquatic funnel trapping and amphibian egg mass counts. The intent of this monitoring project was for it to be repeated in the future to establish trend data.

Additional Program work completed in 2008-2010 included development of the wetland geodatabase to document baseline conditions and to track changes to tribal wetlands; refinement of the wetland inventory; regulatory, vegetative, and landform classification of wetlands; a rapid remote assessment of wetland and adjacent upland habitat cover conditions; and identification of potential future wetland water quality monitoring stations.



*Black lily, Quilceda estuary*

The improved wetland inventory developed during the 2008-2010 time period found that approximately 96% (4,122 acres) of the wetlands on the Reservation have surface water connections to other tribal waters (streams, lakes, coastal shoreline). Wetlands were associated (named) according to their drainage basin to allow for future assessment and monitoring of physical, biological, and chemical influence/support/impairments to tribal streams and coastal waters.

The Tulalip wetland geodatabase was developed to establish a digital repository for long term storage of and access to wetland information. The database currently stores baseline information for wetland, upland, and stream field data as well as information about watershed association; surface water connections; wetland classes (Tulalip, Cowardin, and HGM); individual wetland mapping confidence; soil, water, and vegetative information; location of culturally significant plant communities; and photo records.

Some of the information is proprietary (i.e., for use only by the Tulalip Tribes). Modernization of the geodatabase that hosts the wetland data layer was completed in 2018. This allows for efficient updating of the inventory and frequent distribution of the latest inventory version to a wide number of users.

In 2012, the Tulalip Tribes developed and began implementing a wetland functional assessment tool (EPA Level 2 monitoring and assessment) to help identify ecological services provided by wetlands within the Lower Quilceda Neighborhood Smart Growth planning area in the southeast corner of the Reservation.

Approximately 50 wetlands characterized by varying hydrogeomorphic and Cowardin classes were analyzed within the 2,700 acre project area using the Wetland Evaluation Services Protocol for the United States (Adamus, 2011). In consultation with the author (Paul Adamus), modifications to this protocol were made in order to make it more applicable to the Puget Sound ecoregion; and to address certain Tulalip tribal needs.

In 2015, the Tulalip Monitoring and Assessment Strategy (WMAS) was started for the entire Tulalip Reservation. The goal was to collect detailed data on wetland characteristics, stressors, and functions using EPA's Level 1-3 Framework for wetland monitoring (US EPA 2006). Through data collection on a subset of the reservation's wetlands, the WMAS will establish a baseline in wetland extent, condition, and function; detect change; and characterize trends over time. By the end of 2019, a total of 35 wetlands had been assessed. These wetlands are distributed across all 13 watersheds and include representative wetlands from all HGM types. In addition, the sites range from relatively pristine wetlands to disturbed wetlands (e.g., cleared or partially drained).

In 2017, with support from an EPA Wetland Program development Grant, a major effort began to update the Tulalip Wetland Inventory including reviewing and revising wetland boundaries, updating data fields, and adding previously unmapped wetland areas to the tribes geodatabase. This comprehensive update was completed in April, 2019.

## **PROGRAM DEVELOPMENT MONITORING AND ASSESSMENT ACTIVITIES FOR WETLANDS (2020 – 2026)**

### **Wetland Inventory**

- Maintain the geodatabase that hosts the wetland data layer to ensure that the inventory can be efficiently updated and routinely distributed to users.
- Routinely edit the wetland data layer when new information is obtained from field observations or during reviews of updated digital aerial imagery. Expand the inventoried area to include off-reservation parcels owned by the Tulalip Tribes.
- Add Landscape Position, Landform, Water Flow Path, and Waterbody Type classification (LLWW) (Tiner 2014) to all wetland polygons in the Tulalip Wetland Inventory. These descriptors can be used to predict wetland functions.
- Complete the update of the hydro data layer (streams, ditches and stormwater conveyances) including revisions to data fields. Move the hydro data layer into the same geodatabase structure that hosts the wetlands layer to ensure that the hydro data can be efficiently updated and routinely distributed to users.
- In 2018 the Tulalip Natural Resources Department developed a mobile application (app) and supporting database designed for collecting and managing spatial data on the location of invasive plant species on the Tulalip Reservation. During the 2020 - 2026 time frame, staff will insure that occurrences of invasive plants in wetlands and buffers (streams and wetlands) will be documented and made a priority for inclusion in this invasive species inventory.

### **Hydrologic Feature Inventory**

- An update to the hydro data layer was initiated in 2018. A full update requires a multi-year commitment. While major and medium-sized streams are incorporated into the Tulalip wetland inventory update, the hydro data layer includes all streams, ditches, and stormwater conveyances.
- Revisions to the layer will include deletion of redundant or obsolete data fields, addition of new relevant fields, and restructuring of attribution (e.g., insertion of dropdown menus). Convert the geodatabase that hosts the hydro layer to the format developed for the wetland data layer. This will allow for continuous updating of the master data layer. At midnight each day, the updates will become viewable by Tulalip natural resource data users (e.g., Planning, Forestry, Wildlife, and Utilities departments).
- Review and edit the spatial alignment for all features in the hydro layer. New features will be added based on in-field observations and geolocation collection (GPS); and use of new aerial imagery (e.g., orthophotos and LiDAR).

### **Monitoring and Assessment Strategy Plan**

- Maintain, at a minimum with base funding, EPA Level II and III M&A data collection at 11 wetlands annually. Ensure that the selected sites represent a cross section of hydrologic settings (watersheds and HGM types) and vegetation types. Also ensure that sites are representative of the disturbance gradient (from relatively pristine to highly disturbed).
- Toward the end of the planning period covered by this WPP (2020-2026), develop a protocol to conduct a 10-year reassessment of wetland M&A sites and update the Tulalip Tribes Wetland Monitoring QAPP accordingly. Two wetlands (STU0010 and TUL0026a) were assessed in 2016 and will be scheduled for the 10-year reassessment in 2026.
- As the field data from wetland M&A sites continues to be collected, ensure that the data is efficiently compiled and stored to allow for comprehensive analysis.
- Develop descriptions of reference standard conditions from data collected at wetlands that correspond to the highest level of functioning for a given HGM class. Use this information to build templates to aid in the development of restoration/rehabilitation plans.

### **Status and Trends of Wetlands and Riparian Habitats**

- Establish protocols and conventions to conduct an analysis of wetland and riparian habitat losses and gains on the Tulalip reservation. Optimally, the analysis would include portions of reservation watersheds that extend past the reservation boundary. It would report data by watersheds, land ownership (e.g., fee-simple vs. trust land), wetland classes (Cowardin and HGM), riparian classes, and activities that caused the change (e.g., commercial development, residential development, agriculture, natural changes, etc.).

- Conduct the status and trends study using high-resolution aerial imagery and LiDAR data over two time frames (i.e., 1974 to 1995, and 1995 to 2020). Funding for the study was received in 2019 through the EPA Tribal Set-Aside Wetland Program Development Grant program. Using two time frames during the analysis will provide information on the rate of change over time. The 1995 date represents the time when specific wetland protection language was first included in Tulalip Tribal Codes, including Wetland Value Categories, wetland buffers, and associated use restrictions. In addition, in the mid-1990's the concept of "no net loss" of wetland extent and functions was included in Tribal natural resource planning documents.

It is expected that the study results will lead to the review of programs and policies (e.g., permitting, enforcement, Tulalip Tribes/Snohomish County Inter-governmental coordination, and Tribal Codes) that directly relate to the protection of wetlands and other habitats on the Tulalip Reservation.

## 2. REGULATION

**Goal:** A comprehensive regulatory framework that ensures no net loss of wetland acres and protects and enhances ecological processes and services associated with wetlands within the Reservation and in off-reservation parcels owned by the Tulalip Tribes.

**Objective 1:** Formalize and automate a permit tracking system that includes linkage to a GIS database and staff calendars.

**Objective 2:** Provide continuing technical support, and training to tribal staff (e.g., Planning, Forestry, and Public Works) and membership regarding Tulalip wetland regulations, permit reviews, functional assessments, restoration, etc. Implement outreach to all landowners (tribal and fee-simple lands) on the reservation that have wetlands, streams, and/or buffers on their parcels.

**Objective 3:** Support Tulalip Planning Department in the major effort to revise/update tribal codes related to wetlands, streams, and other waterbodies (e.g., lakes).

**Objective 4:** Encourage innovative land use and development practices that minimize disturbance to native soils, vegetation, and waters while allowing for sustainable economic growth for the Tribes and its individual members.

### CURRENT STATUS OF WETLAND REGULATION

The Tribes have been actively involved in guiding the development of wetland policies and regulations in Washington State for over 25 years, contributing to numerous federal, state, and local initiatives and updates, and requesting that these aquatic resources along with the functions and services that they



provide, be protected and preserved. The Tribes conducted a cursory wetland inventory and developed guiding protective policies and regulations in the early to mid-1990's. A preliminary wetland inventory (1992-1994), a watershed plan (1996), and the first Tulalip wetland regulations were established during that time period. The 2009 Tulalip Tribes Comprehensive Land Use Plan (Tulalip Tribes 2009) identifies a



*Peat soil from bog, Tulalip Reservation*

goal to ensure “no net loss” of wetlands function and acreage, and promotes a measurable gain of wetlands function and acreage” (Policy EN 1-3). Wetlands are recognized as sensitive areas that warrant special management policies and guidelines.

A detailed assessment of the current policies and regulations for streams, wetlands, and their protective buffers was completed during the 2008 Program improvement to assess current protective measures and to provide better predictability for tribal project planning and development (ESA

Adolfson 2010).

The majority of Tulalip wetlands (64%) are under tribal ownership, however, the remaining 1/3 of the Reservation including large portions of important wetland habitat are currently in non-tribal, fee-simple ownership. While there has been some conflict between the Tribes and Snohomish County regarding jurisdictional authority for non-Indian fee-simple parcels within the Reservation, the coordination between the Tribes and County has gradually improved. This has led to more efficient management and protection of tribal waters on these parcels in question.

Under the current Tulalip zoning classification approximately 2,224 acres (51%) of wetland are located within areas zoned for residential, industrial, commercial, and/or agricultural uses and are therefore “at risk” of potential development impact. In 2017, with EPA WPDG funds, the Tulalip Tribes completed a Wetland Risk Assessment (Hall et al. 2017) that analyzed current and future risks to wetlands at the watershed, wetland catchment, and wetland scales. The analysis addressed the 13 watersheds wholly or partly contained within the reservation's boundaries, and the 525 wetlands and wetland catchments on the reservation). Among other findings, the study found that the four Tulalip watersheds receiving the highest future risk scores are located in the eastern and southwestern sections of the reservation: Coho Creek, Tulalip Bay, Quilceda Creek and Sturgeon Creek. Reduction of the risks affecting wetlands are addressed in comprehensive goals, policies, and Tulalip Tribal Codes including Title 7 (Land Use) and Title 8 (Natural Resources). Table 1 provides a summary of policies, ordinances, plans, and resource tools that protect and guide activities in and near Tulalip wetlands.

In 2013, Quil Ceda Village developed an in-lieu-fee wetland mitigation program for future development within Quil Ceda Village (Tulalip Tribes 2013). The in-lieu-fee program provides a planned comprehensive, ecologically sound, watershed-based approach to compensatory mitigation as an alternative to more

traditional individual piece meal permittee responsible compensatory mitigation. As of June 2019, the program had not yet been used for compensatory mitigation for a specific project.

**Table 1:** Summary of regulatory policies, ordinances, plans and resource tools that support the Tulalip Wetland Program.

EPA Core Elements	Ordinances/Policies/Plans That Guide Activities in Wetlands and Their Buffers	Supporting Documents and Resource Tools
<p><b>1. Regulation</b></p>	<ul style="list-style-type: none"> <li>• Tribal Codes; Title 7 – Land Use (Chapter 7.110 - Environmentally Sensitive Lands)</li> <li>• Tribal Codes; Title 8 – Natural Resources (Chapter 8.20 - Environmental Infractions)</li> <li>• Draft Tulalip Tribes Shoreline Management Plan (ICF International 2010)</li> <li>• Tulalip Tribes Comprehensive Land Use Plan (Tulalip Tribes 2009)</li> <li>• Quil Ceda Village In-Lieu Fee Mitigation Program (Tulalip Tribes 2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Tulalip Tribes Watershed Management Plan (Tulalip Tribes 1996b)</li> <li>• Water Resources of the Tulalip Indian Reservation (Frans and Kresch 2004)</li> <li>• Tulalip Tribes Vision Plan II (Mithun 2010)</li> <li>• Tulalip Bay Watershed Management Plan (Tulalip Tribes 2010)</li> <li>• 2010 Tulalip Reservation Wetland Program Development (Boyer and Weatherly 2011)</li> <li>• Tulalip Tribes Assessment of Aquatic Resource Guidance, Regulation, and Protection Report (ESA Adolphson 2010)</li> </ul>
<p><b>2. Water Quality Standards for Wetlands</b></p>	<ul style="list-style-type: none"> <li>• 401 Certification, Treatment As a State (TAS)</li> <li>• NPDES Permit (EPA)</li> <li>• Tulalip Tribes Nonpoint Source Pollution Management Plan – Update FY 2016 to 2020 (Tulalip Tribes 2014b)</li> </ul>	<ul style="list-style-type: none"> <li>• Tulalip Tribes Final Water Quality Standards (Tulalip Tribes 1996a)</li> <li>• Tulalip Reservation Shoreline Water Quality Assessment and Mapping (Zackey et al. 2005)</li> <li>• Draft Phase 1 Report Tulalip Bay Water Quality Investigation (O’Neal and Rensel 2006)</li> <li>• Detection of F+ RNA Coliphage and Bacteroides 16s rRNA Gene in Tulalip Bay (Lefthand 2008)</li> <li>• Tulalip Tribes Water Quality Monitoring Strategy 2010-2015 (Zackey 2010)</li> <li>• EPA Water Quality Standards Handbook, Appendix D: National Guidance Water Quality Standards for Wetlands (U.S. EPA 2014)</li> </ul>

<p><b>3. Monitoring and Assessment</b></p>	<ul style="list-style-type: none"> <li>• Tulalip Tribes Monitoring &amp; Assessment Strategy (Holly Zox and Tulalip Tribes 2015)</li> </ul>	<ul style="list-style-type: none"> <li>• Tulalip Wetlands Bioassessment Monitoring Program Final Report (Sevigny 2006)</li> <li>• Quilceda Estuary Vegetation Characterization &amp; Monitoring (Tulalip Tribes 2007)</li> <li>• Tulalip Bay Watershed Management Plan (Tulalip Tribes 2010)</li> <li>• Water Resources of the Tulalip Indian Reservation and Adjacent Area (Frans and Kresch 2004)</li> <li>• Lower Quilceda Neighborhood Project Wetland Functional Assessment (unpublished)</li> </ul>
<p><b>4. Voluntary Restoration and Protection</b></p>	<ul style="list-style-type: none"> <li>• Tulalip Early Learning Center Wetland Mitigation Plan (The Watershed Company 2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Coho Creek Habitat Enhancement Project</li> <li>• Qwuloolt Estuary Restoration Project</li> <li>• Wetland Restoration and Reintroduction of <i>Sagittaria latifolia</i> (Wapato) on the Tulalip Reservation (Verlinde and Boyer 2015)</li> </ul>

**PROGRAM DEVELOPMENT - REGULATION ACTIVITIES FOR WETLANDS (2020 – 2026)**

- In collaboration with the Planning Department and other programs, continue the development of updates to Tribal Codes related to wetlands, streams, and other aquatic resources (e.g., Title 7 - Land Use, Chapter 7.110 - Environmentally Sensitive Lands). Include authorization of the Quil Ceda Village In-Lieu Fee Mitigation Program.
- Following the completion of the update to the Tulalip Wetland Inventory in 2019, review the wetland value categories (i.e., Critical, High, and Moderate) assigned to all Tulalip Reservation wetlands. In addition, assess and assign categories to all wetlands on off-reservation parcels acquired and owned by the Tulalip Tribes.
- Develop mitigation guidance and compensatory mitigation ratios for unavoidable and un-permitted impacts (e.g., filling, clearing, draining, etc.) of wetland and buffer areas. The guidance and ratios will relate to Tulalip wetland value categories to ensure that the compensation is proportionate to the proposed loss or degradation of wetland area and/or functions.
- Conduct additional land suitability analysis using the information gathered from the 2019 wetland inventory update, the in-progress update to the hydro data layer (e.g., streams), recent digital orthophotography and LiDAR data, and other existing land suitability information (steep slopes, aquifer recharge areas, etc.) to better inform the update of the Tulalip Tribes Comprehensive Land Use Plan, including *Future Land Use Map*, and the current zoning map.

- In order to ensure that permit conditions and mitigation requirements are monitored, implement an automated permit tracking system that is linked to GIS and calendars.
- Ensure that climate change considerations (e.g., sea level rise, seasonal storm intensity, increased fire danger, etc.) are addressed by the Permit Review Committee when permit applications are received and reviewed. In addition, continue the involvement of the wetland biologist in climate change working groups and special projects (e.g., using the GIS-based Ecosystem Management Decision Support application for climate change projections related to resources of importance to the Tulalip Tribes).
- Using GIS data layers (land parcel ownership, wetlands, streams, and buffers), conduct a major mail outreach effort to communicate with tribal and non-tribal landowners. This outreach (e.g., letter and brochure) will explain the permit process, and identify who should be contacted if development activities are being considered. Currently, a significant number of un-permitted activities (e.g., buffer clearing and wetland filling) are being found, mostly by non-tribal landowners on fee-simple parcels within the reservation boundaries.
- Due to accelerating growth in the region surrounding the Tulalip Reservation, consider adding resources to the Tulalip program that focuses on the review of municipality, county, and Federal permits for activities that may have an impact on resources important to the Tulalip Tribes (e.g., salmon).
- Further develop 401 Certification Program to ensure that federal licenses and permits issued within Tulalip Tribes reservation meet applicable water quality standards and criteria. Coordinate this with the efforts to finalize the Draft *Water Quality Standards for Surface Waters of the Tulalip Tribes* (Tulalip Tribes 2014a).



*Un-permitted clearing and grading in wetland/stream buffer, Tulalip Reservation*

### **3. VOLUNTARY RESTORATION AND PROTECTION**

**Goal:** Continue expansion of restoration capacity (e.g., personnel with restoration expertise and responsibilities) in order to identify, plan and facilitate restoration projects on the reservation and in the Tribes' usual and accustomed area.

**Objective 1:** Prioritize wetland restoration and protection areas and actions, both on and off-reservation.

**Objective 2:** Insure that all of the Tribes' land acquisition efforts fully incorporate assessments of wetland resources and wetland restoration potential in the early stages of acquisition.

**Objective 3:** Continue initiative (2019) to build inter-program capacity and commitment to respond to the growing threat from invasive plant plants.

**Objective 4:** Enhance native vegetation species diversity and structural complexity in Tulalip wetlands and riparian corridors with an emphasis on increasing culturally significant and wildlife food and habitat species.

## **CURRENT STATUS OF VOLUNTARY RESTORATION AND PROTECTION**

Protection and restoration of aquatic and riparian habitat is an integral element for preservation of tribal Treaty Rights. The Tulalip Tribes are co-managers of salmon fisheries in their usual and accustomed area and have been active participants in planning, evaluation, construction, and monitoring of mitigation and restoration activities in the Snohomish and Stillaguamish Basins. In partnership with other entities, the Tulalip Tribes focuses on natural watershed processes in seeking and prioritizing opportunities for restoration and protection in these areas.

The Tulalip Tribes served as the lead project coordinator for the 354-acre Qwuloolt Estuary Restoration Project, along the northern edge of Ebey Slough, within the City of Marysville. The breaching of the dike separating the project area from Ebey Slough occurred in August, 2015.

Within the reservation, the Tribes manage the Coho Creek habitat enhancement project to restore salmonid rearing and spawning habitat. While some components of the project have been completed, the project is ongoing and focuses on improving the quality and quantity of rearing and spawning habitat in Coho Creek. This creek supports coho and chum salmon rearing and spawning habitat, and cutthroat trout. Other activities related to voluntary wetland restoration or enhancement projects on the reservation include reintroduction of Wapato (*Sagittaria latifolia*) into several locations (2015), work parties organized to remove invasive plant colonies or plant native vegetation, and tree planting in riparian buffers on tribal lands that were cleared prior to the establishment of buffer protections.



*Flagging showing locations of planted Wapato (*Sagittaria latifolia*), Tulalip Reservation*

Various assessments or documentation of restoration opportunities have been developed by the Tribes including coastal sites (Herrera 2010), sites in the Quil Ceda Village In-Lieu Fee Mitigation Program Area (Tulalip Tribes 2013), and a GIS data layer showing potential sites identified during routine field work by various programs (e.g., Forestry and Natural Resources).

In 2011, the Tulalip Tribes opened the Hibulb Cultural Center and Natural History Preserve. The Preserve is a 50 acre site containing streams, riparian wetlands, tidal marsh, and mature upland forests. It represents one part of the cultural legacy of the Tulalip Tribes. It is intended to be a place where the community can rediscover natural and cultural environments and their relationship with them. One of



the goals of the Preserve is to restore its natural systems and character including native vegetation, salmon and other fish, birds, and wildlife.

In 2017, the Tulalip Tribes completed the *Tulalip Wetland Restoration, Enhancement, and Protection Plan* (Meidav and Tottman 2017). This plan, in conjunction with the *Tulalip Reservation Wetland Risk Assessment* (Hall et al. 2017) and the *Tulalip Wetland Monitoring and Assessment Strategy* (Zox and The Tulalip Tribes 2015), provides tools used by the Tulalip Tribes to identify and prioritize wetland restoration, enhancement, and protection sites.

## **PROGRAM DEVELOPMENT - VOLUNTARY RESTORATION AND PROTECTION ACTIVITIES FOR WETLANDS (2020 – 2026)**

- Prioritize wetland restoration, enhancement, and protection areas and actions within the Reservation. Update and revise when additional information is obtained or conditions change.
- Maintain and continuously update the GIS data layer that identifies restoration, enhancement, and protection areas.
- Build on the 2019 initiative to develop an inter-program invasive species team to monitor and control invasive plant infestations in wetlands and other habitats on the reservation.
- Expand the use of inter-program work parties to plant native vegetation, especially in riparian zones and wetland buffers. Other activities for the teams include trash/debris removal from sensitive habitats and invasive plant control.
- Starting in late 2019, the Natural Resource Department added an additional staff person assisting the Tulalip Restoration Ecologist. Continue partnering with the restoration staff to seek opportunities and resources (funding) for wetland restoration and enhancement.
- Increase tribal member knowledge of and accessibility to culturally important wetlands in order to expand interest in wetland restoration and protection.
- Use GIS technologies to identify former wetland areas that have the potential to be restored.
- Provide technical expertise (e.g., wetland assessment) to the Realty section when parcels are being considered for tribal acquisition.
- Expand outreach of wetland enhancement techniques (e.g., invasive control, planting plans, etc.) to landowners (tribal and non-tribal) within the reservation boundary.
- Re-visit goals of the Hibulb Natural History Preserve and assess resources available to move forward in establishing this Preserve as an important cultural destination for the tribal community. Continue partnering with the Hibulb Rediscovery Program to target enhancement and restoration opportunities that will support Tulalip cultural activities into the seventh generation; and ensure that culturally important plant species are incorporated into restoration planting plans.

## 4. WATER QUALITY STANDARDS FOR WETLANDS



*Tulalip Tribes Marina, Tulalip Bay*

**Goal:** Develop and adopt clear and practical narrative wetland water quality standards designed to protect fish and wildlife species and tribal practices that are dependent upon Tulalip wetlands.

**Objective 1:** Continue refinement of draft water quality and monitoring standards identified in *Water Quality Standards for Surface Waters of the Tulalip Tribes* (Tulalip Tribes 2014a).

**Objective 2:** Incorporate data collected in the Monitoring and Assessment Strategy (EPA 3-level) into narrative water quality standards for wetlands.

**Objective 3:** Expand the number of water quality sampling locations in wetlands.

### CURRENT STATUS OF WETLAND WATER QUALITY STANDARDS

The 2004 baseline wetland bioassessment monitoring (Sevigny 2006) included a comparison of water quality within four sample wetlands. Water quality parameters measured included: dissolved oxygen, temperature, pH, turbidity, total suspended solids (TSS), ortho-phosphates, nitrates, and fecal coliform bacteria. The purpose of the study was to establish baseline data for amphibian diversity and to compare water quality, habitat characteristics, and amphibian assemblages to identify correlations between biotic and abiotic factors. While the intent was to continue monitoring the four wetland sites in the future to establish trend data, the monitoring was discontinued due to insufficient funding.

During the 2008-2010 time period, 48 proposed wetland sampling locations were identified in 13 basins (and sub-basins) across a range of hydrogeomorphic and vegetative classes. Due to funding constraints, only three sites were established for monitoring (Zackey 2010). As of June, 2019, these three wetland sites were still actively sampled: two sites in Tulalip Creek and one site in Battle Creek. In addition to the three sites specifically selected as wetland monitoring sites, several other sites are located in streams within wetland complexes, or in lake waters bordering lacustrine fringe wetlands. While there have been several attempts over the past decade to establish additional wetland sites, none have been added through 2019.

In 2014, draft Water Quality Standards for Surface Waters of the Tulalip Tribes were prepared (Tulalip Tribes 2014a). As of December, 2019, these standards were still at a draft stage pending additional development, refinement, and coordination. The draft standards for wetlands are narrative, including reference to narrative criteria for water quality, antidegradation, and toxic substances.





*Riparian wetland, West Fork Battle Creek*



*Forested swamp, Coho Creek watershed*

## **PROGRAM DEVELOPMENT - WATER QUALITY STANDARDS ACTIVITIES FOR WETLANDS (2020 – 2026)**

- Continue refining the narrative standards for wetlands in the Draft *Water Quality Standards for Surface Waters of the Tulalip Tribes*.
- During the reassessment of water quality sampling locations started in 2019, seek to add additional wetland sites. Where practical, sites that correspond to *Wetland Monitoring and Assessment* sites will be a priority for adding.
- Use data (condition, stressor scores, functional scores, etc.) collected at relatively pristine wetlands in the *Wetland Monitoring and Assessment* study to refine the narrative standards for wetlands. Other relevant data may include fish & wildlife and cultural use, floristic quality, and selected wetland function scores.
- Collaborate with the Tribes' existing water quality monitoring program to identify shared goals and activities. Work to improve accessibility and currentness of the reported data.

## **PUBLIC EDUCATION AND OUTREACH**

Education and outreach is integral to all elements of the Tulalip Wetland Program. Between 2006-2019 the Program coordinated brown bag lunches to encourage the sharing of technical knowledge between tribal staff; has presented numerous wetland PowerPoint presentations to varying tribal audiences including tribal government staff, the Northwest Indian College, the NW Tribal GIS Users Group, the Region 10 Intertribal Wetland Working Group (TWIG), regional scientific conferences, and local schools. In addition, the Wetland Program has published articles in the Tulalip Tribes' weekly newspaper, and the

Northwest Treaty Tribes Magazine; participated in Tulalip GIS Day activities to help increase awareness and knowledge of the presence and importance of wetlands; and has hosted high school and college interns to learn about wetland functional assessment and wetland mapping efforts on the Reservation.



*Harvesting Native Trailing Blackberry;  
Wetland Fringe, Tulalip Reservation*

The Tribes recognize the need to continue purposeful outreach and education efforts to increase awareness of wetlands, streams, and riparian areas on the reservation, and the importance of these habitats in maintaining natural and cultural environments that are important to the Tulalip community. It is critical that this outreach focus on both tribal and non-tribal residents within the reservation boundary. The waters that flow through all lands within the reservation are a critical resource that needs to be protected. This is especially important as economic trends in the region are increasing pressure to expand residential, commercial, and industrial development.

#### **PROGRAM DEVELOPMENT PUBLIC OUTREACH AND EDUCATION ACTIVITIES FOR WETLANDS (2020 – 2026)**

- In conjunction with the regulatory outreach (targeted information mailing) described in Section 2 (Regulation), include information on the functions and values of all wetlands and waters within the reservation boundaries.
- Widely distribute information sheets developed in 2019 that provide landowners (tribal and non-tribal) with basic information on restoration and enhancement of disturbed wetlands and riparian areas. Topics covered by information sheets include:
  - Native Plant Sources
  - Basic Guidelines for Developing a Planting Plan Using Native Species
  - 3 Separate Planting Guides: Native Shrubs and/or Trees in (1) Wetland. (2) Riparian, and (3) Upland
  - Overall Tulalip Native Plant List coded for habitat type and cultural use
  - 4 Separate Guide for Removal of Invasive Himalayan Blackberry, Japanese Knotweed, Poison Hemlock, and Scotch Broom
  - Planting Techniques – Native Woody Species
- Expand wetland-related training for tribal staff within the Natural Resources Department and in other departments such as Forestry, Planning, Treaty Rights, and Housing & Construction. The training would cover topics such as use of the updated (2019) wetland inventory, wetland functions, basic wetland classification (e.g., Cowardin and HGM) and delineation, and wetland regulations.

- At least semiannually, submit a write-up on a wetland related topic (e.g., functions of a well-known wetland on the reservation) to a Tulalip media outlet such as the Tulalip weekly newspaper (*syəcəb*) and monthly employee newsletter (*The Hub*).
- Continue participation in natural resource-related education & activity programs such as “scientist-in-the-schools,” Earth Day, and Hibulb Cultural Center & Natural History Preserve events
- Design, construct, and install identification and educational signs for Tulalip wetlands and waters in public areas. Possible partners include Tulalip Data Services, Hibulb Cultural Center, Lushootseed Language Department, Tulalip Public Works, Quil Ceda Village, Northwest Indian College, and local schools.

## **PROGRAM EVALUATION**

This Wetland Program Plan should be evaluated in approximately 3 years (2023) to ensure that the plan is on track for achieving identified objectives and activities. Program evaluation should specifically include comment from colleagues in the Natural Resources Department, Fish & Wildlife, and Forestry Sections, and the Hibulb Rediscovery Program.

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# **APPENDIX A**

## **APPROXIMATE TIMELINE OF WETLAND PROGRAM ACTIVITIES**

**2020-2026**

**Proposed Timeline for Tulalip Wetland Program Activities Between 2020 – 2026 (schedule is approximate and is dependent on funding)**

<b>CORE ELEMENTS AND OBJECTIVES</b> (C) = continuing/ongoing activity (N) = new activity	2020	2021	2022	2023	2024	2025	2026
<b>MONITORING AND ASSESSMENT</b>							
<b>Objective 1:</b> Maintain the structure and management of the Tulalip Wetland Inventory so that it can be continuously updated and rapidly distributed to users (C)	X	X	X	X	X	X	X
<b>Objective 2:</b> Complete the update of the comprehensive hydro data layer (streams, ditches and stormwater conveyances) including modernizing the database structure and revising the data fields (C)	X	X					
<b>Objective 3:</b> Institutionalize the implementation of the Wetland Monitoring & Assessment Strategy and data collection following the initiation of this work through grant support (N)			X	X	X	X	X
<b>Objective 4:</b> Monitor the status and trends of wetlands and riparian habitats in each of the 13 Tulalip Reservation watersheds in order to evaluate the effectiveness of wetland programs and policies (N)	X	X					
<b>Objective 5:</b> Identify priority protection and restoration sites for which more detailed voluntary restoration and protection plans will be developed under the Voluntary Restoration and Protection Core Element (C)	X	X	X				
<b>REGULATION</b>							
<b>Objective 1:</b> Formalize and automate a permit tracking system that includes linkage to a GIS database and staff calendars (N)		X	X				
<b>Objective 2:</b> Provide continuing technical support, and training to tribal staff (e.g., Planning, Forestry, and Public Works) and membership regarding Tulalip wetland regulations, permit reviews, functional assessments, restoration, etc. Implement outreach to all landowners (tribal and fee-simple lands) on the reservation that have wetlands, streams, and/or buffers on their parcels (C)	X	X	X	X	X	X	X
<b>Objective 3:</b> Support Tulalip Planning Department in the major effort to revise/update tribal codes related to wetlands, streams, and other waterbodies (e.g., lakes) (C)	X	X	X				
<b>Objective 4:</b> Encourage innovative land use and development practices that minimize disturbance to native soils, vegetation, and waters while allowing for sustainable economic growth for the Tribes and its members (C)	X	X	X	X	X	X	X

(continued)



CORE ELEMENTS AND OBJECTIVES (C) = continuing/ongoing activity (N) = new activity	2020	2021	2022	2023	2024	2025	2026
<b>VOLUNTARY RESTORATION AND PROTECTION</b>							
<b>Objective 1:</b> Prioritize wetland restoration and protection areas and actions, both on and off-reservation (C)	X	X	X				
<b>Objective 2:</b> Insure that all of the Tribes' land acquisition efforts fully incorporate assessments of wetland resources and wetland restoration potential in the early stages of acquisition (C)	X	X	X	X	X	X	X
<b>Objective 3:</b> Continue initiative (2019) to build inter-program capacity and commitment to respond to the growing threat from invasive plant plants (C)	X	X	X	X			
<b>Objective 4:</b> Enhance native vegetation species diversity and structural complexity in Tulalip wetlands and riparian corridors with an emphasis on increasing culturally significant and wildlife food and habitat species (C)	X	X	X	X	X	X	X
<b>WATER QUALITY STANDARDS FOR WETLANDS</b>							
<b>Objective 1:</b> Continue refinement of draft water quality and monitoring standards identified in <i>Water Quality Standards for Surface Waters of the Tulalip Tribes</i> (Tulalip Tribes 2014a). (C)	X	X	X				
<b>Objective 2:</b> Incorporate data collected in the Monitoring and Assessment Strategy (EPA 3-level) into narrative water quality standards for wetlands.							
<b>Objective 3:</b> Expand the number of water quality sampling locations in wetlands (N)		X	X				
<b>PUBLIC EDUCATION AND OUTREACH (Sample of activities that will span all four Core Elements above)</b>							
<ul style="list-style-type: none"> <li>Widely distribute information sheets developed in 2019 that provide landowners (tribal and non-tribal) with basic information on restoration and enhancement of disturbed wetlands and riparian areas (N)</li> </ul>	X	X	X	X	X	X	X
<ul style="list-style-type: none"> <li>Expand wetland-related training for tribal staff within the Natural Resources Dept. and in other departments such as Forestry, Planning, Treaty Rights, etc. (N)</li> </ul>		X	X	X	X	X	X
<ul style="list-style-type: none"> <li>At least semiannually, submit a write-up on a wetland related topic (e.g., functions of a well-known wetland on the reservation) to a Tulalip media outlet such as the Tulalip weekly newspaper (<i>syacəb</i>) and monthly employee newsletter (<i>The Hub</i>) (N)</li> </ul>	X	X	X	X	X	X	X
<ul style="list-style-type: none"> <li>Continue participation in natural resource-related education &amp; activity programs such as "scientist-in-the-schools," Earth Day, and Hibulb Cultural Center &amp; Natural History Preserve events (C)</li> </ul>	X	X	X	X	X	X	X