# Wiyot Tribe's Wetland Program Plan (WPP)

# 2017-2021

## Mission

The Wiyot Tribe respects and honors its wetland resources, biodiversity, and the functions and values they provide presently and for future generations. The Tribe will make efforts to restore their wetlands to their authentic and fully functioning state, with a primary goal being no net loss of wetlands and wetland quality.

## Introduction

The Wiyot Tribe (hereafter "Tribe") plans to develop its wetland program through continued monitoring and assessment of wetland resource conditions to ensure wetland protection. The Tribe will use this information to improve understanding of baseline wetland condition, to develop benchmarks for wetlands restoration, to inform development of wetland-specific water quality standards, and to prioritize wetland restoration and protection activities. The Tribe plans to achieve this goal through implementing the following actions and activities following the United States Environmental Protection Agency's (USEPA) Core Elements Framework (CEF) over the next five years:

**Core Elements of a Tribal Wetlands Program:**
1. Monitoring and Assessment
2. Regulatory activities (including 401 certifications)
3. Voluntary restoration and protection
4. Water quality standards for wetlands

**Year One 2017**

**Action (1):**
Using data collected from 2015-2016 Wetland Program Development Grant (WPDG) funded field work including the California Rapid Assessment Method (CRAM) surveys, WNRD staff have ranked wetland restoration needs, priorities, and threats in the Tribe's three wetland properties.

Based on this ranking the Wiyot Tribe's Natural Resources Department (WNRD) will begin restoration of the Table Bluff Reservation (TBR) wetland buffer, which contains alien dumped fill and non-native, invasive forbs and grasses that affect the hydrology and native plant community of the wetland **(Core Elements 1, 3, 4)**.

**Activities:**

- Conduct botanical surveys and monitoring of the TBR wetland to aid in wetland delineation and restoration efforts (Core Element 1; Wetland delineation completed under the WPDG in 2016).
- Map invasive species in the wetland and buffer area for restoration planning.
- Begin restoration pilot project plots for Himalayan blackberry (*Rubus armeniacus*) and poison hemlock (*Conium maculatum*) removal comparing various treatment methods *i.e.,* cutting and sheet-mulching and planting native plants vs. removing alien soil and sheet mulching (assisted through USEPA Clean Water Act (CWA) §319 nonpoint source pollution control funds).
- Assess wetland habitat suitability for the re-introduction of the Federally Endangered Western lily (*Lilium occidentale*), a geophyte with limited populations. The Tribe will work in collaboration with retired United States Fish and Wildlife Service (USFWS) rare plant botanist Dave Imper and the California Native Plant Society (CNPS), who maintains a bulb bank, to create a suitable ecotone between upland range habitats and the Tribe's depressional wetland on TBR.

**Action (2):**
The WNRD has completed a primary treatment of the invasive saltmarsh plant, dense-flowered cordgrass (*Spartina densiflora*), on Indian Island. The Tribe is in the process of acquiring more saltmarsh habitat on Indian Island and would like to pursue island-wide eradication. Along with treating new sites, sites treated in 2016 will require follow up treatment. This will maintain the investment made in the initial primary treatment **(Core Elements 1,3)**.

**Activities:**

- Apply for the Bureau of Indian Affairs' (BIA) Invasive Species Program grant in Fall/Winter 2017/2018.
- Assess restoration success from 2016 fieldwork by collecting percent cover data on plant species following established transects from 2015.
- Map and prioritize treated areas and conduct follow-up re-treatment.
- Map invasive *Spartina* and native plant populations on newly acquired lands on Indian Island and prioritize treatments.

**Year Two 2018**

**Action (1):**
The WNRD has completed a primary and secondary treatment of the invasive saltmarsh plant, dense-flowered cordgrass (*Spartina densiflora*), on Indian Island. The Tribe would like to pursue Spartina eradication on existing as well as any newly acquired salt marsh lands. Along with treating new sites, sites treated in previous years will need follow up treatment. This will maintain the investment made in the initial treatments **(Core Elements 1,3)**.

**Activities:**
- Apply for the Bureau of Indian Affairs' (BIA) Invasive Species Program grant in Fall/Winter 2018/2019.
- Assess restoration success from 2017 fieldwork by collecting percent cover data on plant species following established transects from 2015.
- Map and prioritize treated areas and conduct follow-up re-treatment.
- Map invasive *Spartina* and native plant populations on newly acquired lands on Indian Island and prioritize treatments.

**Action (2):**
Establish a long term water quality monitoring (WQM) station on Indian Island. In order to characterize waters of the Humboldt Bay adjacent to the Tribes' property and to identify trends over time, the WNRD will update the current WQM station on Indian Island. The understanding of water quality at this site will be used in conjunction with activities such as biological assessments and will identify any emerging water quality problems **(Core Elements 1, 2, 3, 4).**

**Activities:**
- Pursue funding through CWA §104 (b)(3) WPDG to purchase WQM equipment including two Yellow Springs Instruments (YSI) EXO2 series multiparameter sondes.
- Contact local stakeholders including California Coastal Conservancy (CCC) and U.S. Geological Survey (USGS) to determine current or planned WQM activities on Humboldt Bay in order to coordinate data sharing
- Continue collaboration with Humboldt State University (HSU) and the Central and Northern California Ocean Observing Systems (CeNCOOS) for possible funding as well as maintain real time observation equipment already in place at site.
- Assist other stakeholders with the development of water quality standards for Humboldt Bay.

**Year Three 2019**

**Action (1):**
Establish a WQM station on Cock Robin Island (CRI). Due to the ongoing California drought and increase in toxic algal blooms in the Eel River estuary, water quality assessment would act as a bell-weather for river conditions in the lower Eel River valley and upstream. This station would shed light into possible water quality issues including, but not limited to, agricultural run-off, water temperature and dissolved oxygen fluctuations, sediment loads, or any other threats to fish, humans, pets, livestock, and wildlife **(Core Elements 1, 2, 3, 4)**.

**Activities:**

- Identify support opportunities either through collaboration with HSU and/or CeNCOOS or funding through agency and nongovernmental organizations (NGO).
- Use the water quality monitoring experience of WNRD staff (Specialists/Technicians) to identify the sampling/station site on CRI, such that samples could be safely collected throughout the year (winter-summer) and to minimize equipment damage.
- Collaborate with HSU and other groups to identify the most important metrics for evaluating water quality and toxic algae levels in the Eel River estuary.
- Collaborate with other agencies to make web-based, real-time CRI water quality data, particularly toxic algae levels, accessible to the public.
- Assist other stakeholders with the development of water quality standards for the Eel River estuary

**Action (2):**

Continue to monitor, assess, and treat Spartina infestations on Indian Island. The WNRD has completed primary, secondary, and tertiary treatments of this invasive saltmarsh plant. Along with treating new sites, sites previously treated will need follow up treatment. This will maintain the investment made in the initial treatments and accelerate cover of native salt marsh plants in areas where Spartina has been removed **(Core Elements 1,3)**.

**Activities:**

- Apply for the Bureau of Indian Affairs' (BIA) Invasive Species Program grant in Fall/Winter 2019/2020.
- Assess restoration success from 2018 fieldwork by collecting percent cover data on plant species following established transects from 2015.
- Map and prioritize treated areas and conduct follow-up re-treatment.

**Year Four 2020**

**Action (1):** Develop and expand the WNRD Native Plant Nursery to supply plants for multiple projects on TBR including buffer plantings in TBR road drainage swales and native plantings following restoration activities in the TBR wetland. Expand the nursery to a commercial level, focusing on native wetland plants to promote and advocate wetland restoration to the greater public, while providing a standard quantity of free plants/year to Tribal citizens wishing to establish native plants on their private properties and wetlands **(Core Elements 3,4)**.

**Activities**:

- Identify funding sources for nursery expansion through grants and programs (i.e., United States Department of Agriculture's [USDA] Natural Resources Conservation Service [NRCS], BIA, CNPS, etc.).
- Allocate space in the Tribe's Community Garden area for the WNRD Native Plant Nursery.
- Propagate plants, focusing on willows (*Salix hookeriana*, *S. lasiandra*), berries, hazelnut, and species of cultural and environmental concern to the Wiyot Tribe (Consult Wiyot Plant Species List).

- Plant willows as a buffer to drainage swales on the TBR road system. **Plantings should take place in the fall months (Oct-Dec) to ensure establishment of plants during winter rains and reduce the need for watering sites.**
- Expand plantings on the wetland edge and buffer upslope from the TBR wetland, focusing on the restoration of hazel scrub (*Corylus cornuta* ssp. *californica*), a rare legacy ecotype of past Wiyot land management.

**Action (2):**
Continue to monitor, assess, and treat Spartina infestations on Indian Island. Along with treating new sites, sites previously treated will need follow up treatment. This will maintain the investment made in the initial treatments and accelerate cover of native salt marsh plants in areas where Spartina has been removed **(Core Elements 1,3)**.

**Activities:**
- Apply for the Bureau of Indian Affairs' (BIA) Invasive Species Program grant in Fall/Winter 2020/2021.
- Assess restoration success from 2019 fieldwork by collecting percent cover data on plant species following established transects from 2015.
- Map and prioritize treated areas and conduct follow-up re-treatment.

**Year Five 2021**

**Action (1):**
Evaluate the successes and limitations of the 2017-2021 Wiyot WPP to plan and draft the 2022-2026 WPP **(Core Elements 1, 3, 4)**.

**Activities:**
- Evaluate and assess the restoration of the TBR wetland, assessing monitoring transects/plots established in 2017.
- Evaluate the re-introduction of the western lily, ensuring the maintenance of suitable habitat.
- Evaluate and assess invasive Spartina removal on II and plan future maintenance and management.
- Evaluate and assess the CRI water quality monitoring station, provide a summary report of findings and trends.
- Evaluate the successes of the WNRD Native Plant Nursery and various plantings around the TBR. Evaluate the commercial potential for the nursery.
- Based on the evaluation of activities performed during the 2017-2021 period as well as any new needs base on that work, draft and approve an updated 2022-2026 Wiyot WPP.

**Action (2):**
Continue to monitor, assess, and treat Spartina infestations on Indian Island as well as any newly identified infestations. Along with treating new sites, sites previously treated will need follow up treatment. This will maintain the investment made in the initial treatments and accelerate cover of native salt marsh plants in areas where Spartina has been removed **(Core Elements 1,3)**.

**Activities:**

- Apply for the Bureau of Indian Affairs' (BIA) Invasive Species Program grant in Fall/Winter 2021/2022.
- Assess restoration success from 2020 fieldwork by collecting percent cover data on plant species following established transects from 2015.
- Map and prioritize treated areas and conduct follow-up re-treatment.