Nez Perce Tribe Wetland Program

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Project History

- Funded by EPA’s Wetland Program Development Grant, under CWA 104(b)3, from 2001 to 2010
- 2001-02: Developed functional assessment methodology; tested it in two pilot watersheds
- 2003 – 2007: Inventoried and assessed wetlands in all watersheds on the Reservation
- 2008: Completed assessment on off-reservation fee lands (covered 250 wetlands on tribal land)
- 2009: Inventoried and assessed 44 wetlands in private ownership on the reservation
- 2010: Monitored water quality and macroinvertebrates at 35 sites in 12 wetlands
Project Goals

- Inventory existing wetlands on tribal land
- Assess the functions and condition of those wetlands
- Plan for proper management of the Tribe’s wetland resources
Project Objectives

- determine the causes, effects, and extent of wetland degradation
- develop strategies to prevent, reduce, or eliminate negative impacts on wetlands
- identify, evaluate, and prioritize wetlands in need of restoration or mitigation
- identify and prioritize wetland areas to be considered for acquisition
Data Collected

- Location, wetland size, type of water body, hydrology, soils;
- wetland classification by Hydrogeomorphic Method (HGM) and Cowardin system;
- land use and impacts on wetland;
- inventory of noxious and invasive weeds, cultural plants, wetland plants; estimate of percent cover;
- evaluation of wildlife habitat (including suitability for beaver); wildlife observed;
- potential wetland functions and values;
- recommendations for management and restoration.
Products

- GPS map of each wetland
- GIS coverage of all tribal wetlands
- Photos of each wetland (hyperlinked to GIS)
- Access database of data collected
- Plant specimens for herbarium
- Management plan
Highlights of Findings

- Most wetlands are class PEMC (Palustrine Emergent Seasonally Flooded) or Riverine (nonperennial).
- Half the wetlands are found in the upper watershed of intermittent streams.
- Lapwai Creek has the most wetlands of any watershed, followed by Lawyer Creek.
- Over half of the wetlands are less than 2 ½ acres in size.
Grazing is the most common land use in wetlands.
Livestock grazing is also the most frequently observed negative impact on wetlands.
64% of wetlands provide good to excellent wildlife habitat.
The most frequently found plant around wetlands is Canada thistle, an invasive noxious weed (in 59% of wetlands).
Highlights of Findings, cont’d

- Tule (hardstem and softstem bulrush) was only found in 42 wetlands, mostly in tiny patches.
- Almost all wetlands support at least 1 cultural plant species, most often black hawthorn or cattails.
Selected 12 representative wetlands, mostly in Lapwai Creek watershed

Installed 3 piezometers and 3 suction lysimeters in each wetland

Collected quantitative data on water quality in ground water and surface water in the field

Measured depth to water table in piezometers

Sampled macroinvertebrates and amphibians

Processed bacteria and turbidity samples

Sent water samples to lab for nutrient analysis
<table>
<thead>
<tr>
<th>#</th>
<th>Wetland Name</th>
<th>Watershed</th>
<th>Tribal Unit</th>
<th>Location</th>
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Installing Lysimeters & Piezometers
Completed Installation
Parameters Monitorred

- temperature
- pH
- dissolved oxygen
- redox potential
- conductivity
- turbidity
- nitrate/nitrite/ammonia
- phosphorus
- bacteria
Problems Encountered

- Monitoring wells were difficult to install
- Cattle and wildlife vandalized monitoring equipment
- Original multiparameter meter proved unsuitable
- pH probe on new meter stopped working in August
- Floods bent piezometer, inundated lysimeters
- Some wetlands dried out by mid-July
What’s next?

- Analyze data from past field season
- Identify macroinvertebrates collected
- Enter data into STORET
- Update wetland management plan
- Install monitoring equipment in 3 additional wetlands
- Monitor 44 sites in 15 wetlands next field season