



Tribal Climate Resilience Program — Northwest Region

NORTHWEST REGION

In the Northwest Region, higher temperatures affect snowmelt, flooding, stream temperatures, salmon runs, and forest health. Sea level rise, ocean acidification, and toxic blooms are also prime concerns. Northwest Tribes are united through the Affiliated Tribes of the Northwest (ATNI), Columbia River (CRITFC) and Northwest (NWIFC) Fisheries Commissions, North Pacific LCC, BIA NWT RO, States, and the PNW Tribal Climate



CLIMATE IMPACTS

- Coastal Erosion
- Sea Level Rise
- Flooding
- Prolong Droughts
- Melting Glaciers
- Extreme Rainfall
- Food Scarcity
- Increased Wildfires

FUNDED STRATEGIES

More than a third of BIA TCRP Climate Funding has been awarded to Northwest Tribes, who leverage a variety of collaborative frameworks to share results broadly. ATNI, NP LCC, and BIA NWT RO jointly work with youth and interns to host Climate Training for all area Tribes and build climate capacity and awareness region-wide. The Washington Climate Impacts Group, Adaptation International, the Model Forestry Policy Program, Earth Economics, and Global Ocean Health are just a few of the nonprofit partnerships Northwest Tribes take advantage of towards resilience.

Many individual and joint climate adaptation plans and vulnerability assessments have resulted, as well as, shared geospatial and data platforms. For example, the PNW TCC Tribal Climate Change Guide provides funding, planning, program, science, disaster, and climate career and events -

<http://tribalclimateguide.uoregon.edu>

EXAMPLE PROJECTS

Swinomish Indigenous Health Indicators Tool

The Indigenous Health Indicators tool focuses on Coast Salish ways to include ecosystem health and social and cultural beliefs and values integral to indigenous definitions of health. In assisting in prioritization, IHI will help guide decisions to mutually benefit ecosystem protection and restoration, coastal hazards mitigation, community health, and adaptation to climate change. - <http://bit.ly/2kt8qy8>



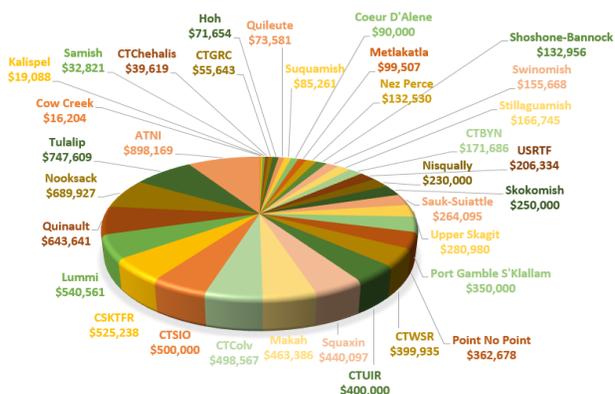
Tulalip Tribes Innovative Pollution Reduction

Fisheries managers identified pollution from manure runoff at local dairy farms as a major cause of salmon mortality. The Tulalip Tribes sought a mutually beneficial solution to resolve this conflict. The animal wastes now powers an anaerobic biodigester to generate methane gas for the local utility. The digester effluent is stored in lagoons and returned to the farmers for irrigating their fields. The salmon-friendly energy is then sold to local utility. The Sustainable Lands Strategy (SLS)

compliments this effort by collaborating across the river basin on riparian buffers to further improve water quality <http://bit.ly/2IsPAZ9>



NORTHWEST TRIBAL AWARDS



Some of the many highlights include fish and wildlife vulnerability assessments that have led to improved state and tribal species co-management, plans to create new estuaries as critical habitat is lost to sea level rise, revised human exposure recommendations and subsistence harvest toxicity testing, phased community relocations and natural - rather than structural - coastal protection options, improved traditional knowledge integration into climate science studies, and an enhanced focus on the multiple dimensions of culture and values in comprehensive planning.



CLIMATE SCENARIOS

2035 and 2060 CMIP5 Climate Projections

From EPA CREAT Projection Map - <http://arcg.is/2cEzv2p>

Success at emissions controls over time, as well as development and population trends, will determine the degree of climate change we can anticipate. Managers should test the robustness of decision over a range of potential futures to reduce overall risks and costs.

DATA ANALYSIS EXAMPLE

Fish Habitat Degradation - <http://bit.ly/2qJrSKL>

Data Source: National Fish Habitat Partnership

Temperature Scenarios

Precipitation Scenarios



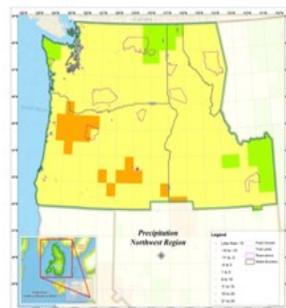
Hot 2035



Hot 2060



Dry 2035



Dry 2060



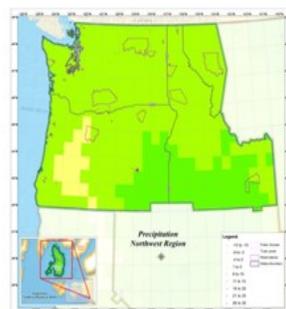
Central 2035



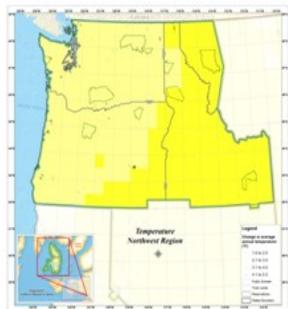
Central 2060



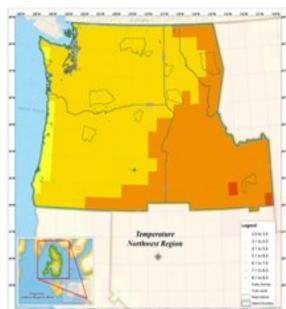
Central 2035



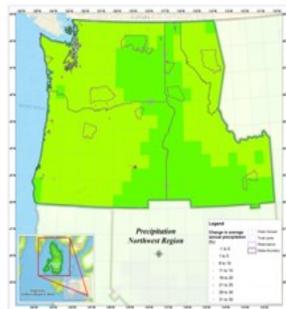
Central 2060



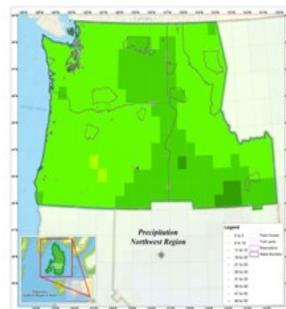
Warm 2035



Warm 2060



Wet 2035



Wet 2060

With increasing temperatures and lower flows on Northwest streams in late season, compounded by more rapidly melting glaciers and less snowpack, Tribes ability to maintain endangered salmon and other natural, northwest fisheries is growing more complex. In co-management with the states and federal government, the Columbia River Inter-Tribal Fish Commission is specifically addressing climate change as a threat to their lifeways by improving cold water refugia, restoring ecosystem function, seeking greater water rights flexibility to maintain instream flows, and studying ways to reduce fish stressors - <http://bit.ly/2qzhl0P>

