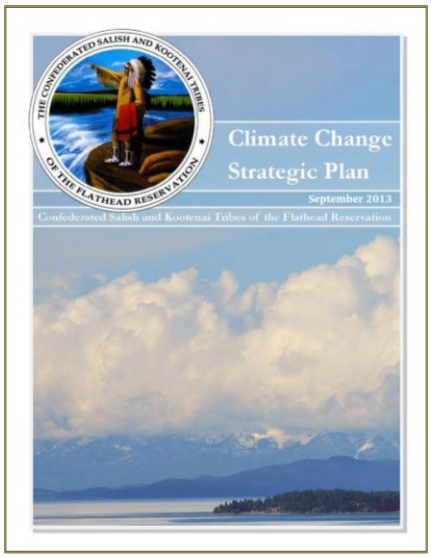
Confederated Salish and Kootenai Tribes: Climate Change Strategic Plan

The Confederated Salish and Kootenai Tribes (CSKT) are made up of the Salish, Kootenai, and Pend d'Oreille Tribes. There are about 7,900 enrolled tribal members, including about 5,300 who live on the reservation. The traditional territory of the Salish, Pend d'Oreille and Kootenai Tribes was between the Cascade Mountains and Rocky Mountains. The CSKT explain, "*these aboriginal territories spanned over 20 million acres of what is now known as western Montana, northern Idaho, and parts of southern Canadian provinces. On July 16, 1855, the Tribes ceded most of this land, reserving about 1.3 million acres, through the Treaty of Hellgate. This formed the Flathead Reservation in Montana.*" Today, the CSKT reservation is located in western Montana on the Flathead River and includes about 1.3 million acres, 790,000 acres of which are owned and managed by the Tribes.

In response to growing concerns about the impacts of climate change on tribal members and on their homelands, the CSKT developed a Climate Change Strategic Plan, which seeks to protect the cultural resources and land upon which the Tribes depend. The Confederated Salish and Kootenai Tribes depend upon these cultural resources to maintain their cultural practices, identity and sovereignty as a people. In order to practice sound stewardship of tribal lands and ensure continued vitality of their peoples' culture and identity, the Tribes are addressing climate change as a major planning priority.



CSKT developed the plan with support from several partners, including the Salish-Pend d'Oreille Culture Committee, the Kootenai Culture Committee, Next Seven Group LLC, the Great Northern Landscape Conservation Cooperative (LCC), the Kresge Foundation, and the Roundtable of the Crown Continent Adaptive Management Initiative, and by drawing from existing regional climate adaptation documents such as the Missoula County Climate Action.

The plan addresses climate impacts and vulnerability to nine categories of tribal life: forestry, land, fish, wildlife, water, air, infrastructure, people, and culture. It draws heavily on the knowledge of tribal elders to ensure that Traditional Ecological Knowledge (TEK) is integrated into adaptation planning by the tribe, and that cultural priorities inform all aspects of the plan. In the forward of the report, Tribal Chairman Joe Durglo states, "*As is our practice, we look ahead to prepare for coming challenges and apply the values taught by our ancestors*." From this line of thought, the CSKT created a Climate Change Strategic Plan that addresses impacts to their community by drawing on their peoples' knowledge and ability to overcome challenges.

This profile illustrates the role and importance of elders' knowledge in climate change adaptation planning, and it provides an overview of the categories that the tribe identified to be

impacted by climate change and a summary of how this document will serve CSKT needs in moving forward with climate adaptation.

Traditional Ecological Knowledge and Elders

The plan states that the Tribes "*understand that there is a direct relationship among everything in the natural environment. As such, Traditional Ecological Knowledge is not only incorporating Tribal traditions and culture, but it is applying Salish, Pend d'Oreille, and Kootenai world views into decision-making.*" TEK informed the plan in several ways. By taking TEK into account when identifying management priorities, the project team ensured that the Tribes' values are represented by the plan. Additionally, by including tribal elders and TEK holders in the project team, the CSKT is acting to effectively integrate TEK throughout future climate change planning. Finally, interviews conducted with tribal elders gave valuable insight into how climate change has already impacted the ecology of the CSKT homelands.

Local Climate Impacts

In order to better understand how climate will impact the Tribes, the project team drew on existing research of national, regional and local climate impacts. A major asset for the Tribes was the recently completed *Missoula County Climate Action: Creating a Resilient and Sustainable Community Report*, which provides detailed models and information for climate impacts to the local and adjacent Missoula County. Drawing from this data, several impacts were identified. Amongst them were changes to temperature and precipitation, changes in storm event intensity, reduction in snowpack, hydrological changes including increasing water temperatures, change to forest species composition, reduced air quality, increased wildfire activity, and increased stress to fish and wildlife populations.

Chippy Creek fire, photo by Ron Swaney

Impacts and Vulnerability

The plan organizes the vulnerability assessment into nine categories which reflect tribal management priorities. Climate impacts to each category are discussed in the plan, based on the climate data discussed above. The project team used a vulnerability matrix to place categories into one of three vulnerability rankings (low, medium or high), based on the level of risk to climate impacts and the adaptive capacity of each category. Brief descriptions of both the expected impacts to each category and the vulnerability of the category to climate changes are provided below.

Forestry

The Tribe identified wildfire's effects on forest and rangeland landscapes as a major climate impact to consider. By analyzing existing fire regimes and using climate modeling across CSKT lands, the project team identified how fire regimes are likely to change in the near future. Projections show several impacts to forest ecosystems, including: fire regimes disturbing forest ecology, spread of invasive species, a decrease in water-holding capacities, and increased timber mortality from insects. These impacts will occur across four fire regimes (areas categorized by general patterns of natural fires over time in an ecosystem): non-lethal, mixed, lethal and timberline. Lethal fire regimes are an area of high vulnerability because drought is expected to increase the severity of this fire regime. Conversely, non-lethal fire regimes have a

much lower vulnerability, in part because this ecosystem type is more drought resistant. The differences in vulnerability—based on which fire regime is being discussed—demonstrate how fine-scale climate impact data will help the CSKT to adapt and mitigate climate impacts on forests.

Land
Both short and long-term climate impacts to ecosystem composition and function are a concern for the Tribes. A diverse set of ecosystems, including intermountain grasslands, riparian, prairies and croplands, make up CSKT lands, and each ecosystem has unique vulnerabilities. Of particular concern are vulnerabilities to native plants and ecosystems from by noxious weeds and agriculture which are projected to be magnified by climate impacts.

Fish
Fish habitat and health are expected to be impacted by climate in the short term (in the next ten years). Fish are highly vulnerable to climate impacts, and the CSKT has identified fish habitat and species as having low adaptive capacity. Given that the impacts facing fish are slated to occur soon, this area is a high priority for the Tribes moving forward. Some effects on fish may be mitigated by restoring and improving the resiliency of fish habitat.


Stream Measurements at Post Creek, photo by W. Keenan

Wildlife
Major impacts facing wildlife center on habitats becoming drier. Wetlands are expected to experience desiccation (extreme dryness) more frequently, while alpine and grasslands ecosystems are also projected to become drier. These impacts are already becoming evident in CSKT lands.

Because of the wide range of ecosystem and species types in CSKT lands, vulnerability is highly variable. Some ecosystems and associated species, such as wetlands and wetland-dependent species, are highly vulnerable to climate impacts because of their sensitivity to changes in moisture. Conversely, more resilient ecosystems such as prairies have a medium vulnerability to the climate impacts identified above. In all instances, the plan identifies a trend in which impacts to wildlife will begin slowly and increase over time.

Water
Both water quality and water quantity will be impacted by climate change. Major concerns include decreases to snowpack and increases to water temperatures that may lead certain species to lose habitat. The plan notes that the water resources important to the Tribes extend beyond reservation boundaries and that water impacts are therefore a regional as well as local issue. Water quality faces a high vulnerability to climate change impacts. This is in part because of existing stresses to the water supply from extensive agricultural production, and from urban water uses such as storm and wastewater runoff. Climate impacts including changes in seasonality and amount of rainfall will add further stress to water systems. Because of these vulnerabilities, risk to water quality is high; this has serious implications for aquatic species, human health and agriculture in the area.

Water quantity faces a low vulnerability. While precipitation will change in seasonality, annual precipitation is not expected to dramatically decrease. Because of extensive existing infrastructure and the high priority that water quantity has in the community, the adaptive capacity of water quantity is high.

Air Quality

Due to increased drought and wildfire events, air quality is projected to decrease in CSKT lands relatively soon (in 11-16 years). Both dust from dry topsoil and wildfire particulate pose human health risks.

While higher particulate data has already been observed at monitoring stations, due to the adaptive capacity of the surrounding communities, who already employ dust mitigation techniques, the project team identified the air quality sector as medium vulnerability. The high adaptive capacity of local communities means that impacts to the air quality sector may be felt, but not as severely as they otherwise would be.

Infrastructure

The Tribes also studied climate impacts to power and housing, including tribally owned housing. There are no projected impacts to power; it is expected that electricity supply for the community will be unaffected. There is no data available on potential impacts to housing.

People

Several issues affecting tribal members, including social services, safety and tribal health and human resources are expected to be impacted by climate change. Social services include emergency welfare services to impoverished tribal members. Given their fragile economic position, these vulnerable tribal members will need extra care in facing climate impacts. Safety is a concern with regards to storms and floods potentially harming tribal employees and tribal members. Health and human resources address the impacts that climate change may have on providing support and healthcare to tribal members. Increased health risks and the potential for storms to disrupt transportation are possible impacts.

These categories have highly variable vulnerability, as each subsection has several factors to consider. Some notable concerns include the high vulnerability of foster children and elderly people to climate impacts and a high vulnerability of people to increased pollution-related and heat-related diseases.

Culture

The culture of the Tribes—the Salish, Pend d'Oreille and Kootenai people—may be impacted by climate in several ways. Investigating how climate change will impact the Tribes' culture has two purposes, 1) to understand how climate impacts will affect the cultural survival of the Tribes, and 2) to provide explanations for climate change and adaptation using the Tribes' culture and worldview. Additionally, discussing climate change impacts to culture draws a critical eye to the mindset that enabled climate change; the CSKT hopes that their peoples' perspectives can demonstrate alternative viewpoints to current beliefs and practices about the natural world and human stewardship.

Culture has a high likelihood of being impacted and is highly vulnerable to many climate impacts. The adaptive capacity of cultural practices is variable and in many cases uncertain. Given the importance of cultural practices to the identity, well-being and sovereignty of American Indian peoples, this category is an important priority for the Tribes.

Goals and Actions

The plan identifies goals and actions moving forward. These goals and actions address the short- and long-term future of the Tribes and provide important information about how to put the plan into action. For each category, the project team identified which Tribal agency is responsible for future planning, the purpose and priorities of climate impact planning, a list of goals, a list of preparedness actions which includes timeframes for each action, an inventory of the existing capacity of the Tribes and Tribal departments to effectively address climate impacts, and finally a list of potential collaborators and funding to aid in addressing climate impacts. Identifying goals and actions also provides a template to other tribes who are hoping to bridge the gap between gathering climate data, and finding ways to put that data to use.

Moving Forward

The CSKT view this plan as a tool to help them regularly reevaluate and reassess how they are responding to climate impacts; in this sense, it is a working document. The Tribes have taken further actions to ensure that they continue being proactive in addressing climate change. These actions include forming a Climate Change Oversight committee, continuously monitoring the progress in each of the nine categories identified in the plan, incorporating strategic planning information into guiding documents, encouraging and supporting the use of TEK to address climate change, and updating the plan regularly to reflect the most current data. The thorough approach taken by the CSKT addresses climate impacts from many different angles. In doing so, the Tribes are taking steps to secure climate change planning as an important consideration for them moving forward, and this will help them to safeguard their peoples' health, culture and lands.

Resources

- Confederated Salish and Kootenai Tribes Climate Change Strategic Plan: http://www.cskt.org/NRD/docs/CSKT%20Climate%20Change%20Adaptation%20Plan%20FINAL%2009%2010%202013.pdf
- Confederated Salish and Kootenai Tribes website: http://www.cskt.org/
- Missoula County Climate Action: Creating a Resilient and Sustainable Community Report: http://www.geosinstitute.org/431-program-highlights/1037-missoula-montana-case-study.html

For more information, please contact:

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Photos in this profile were provided by the Confederated Salish and Kootenai Tribes.

Tribal Climate Change Profile Project:
The University of Oregon Environmental Studies Program and the USDA Forest Service Pacific Northwest Research Station are developing tribal climate change project profiles as a pathway to increasing knowledge among tribal and non-tribal organizations interested in learning about climate change mitigation and adaptation efforts. Each profile is intended to illustrate innovative approaches to addressing climate change challenges and will describe the successes and lessons learned associated with planning and implementation. For more information about the PNW Tribal Climate Change Project, contact Kathy Lynn at kathy@uoregon.edu, or visit http://tribalclimate.uoregon.edu/.

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