

Building a Collaborative Tribal Climate Adaptation Program via the Integration of Cultural Values and Perspectives

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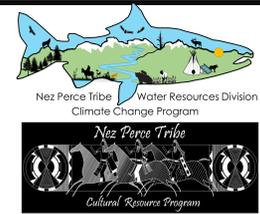
Abstract

Many indigenous peoples are working to maintain cultural survival through integration of indigenous knowledge (e.g., phenological observations, wild cultivation expertise, and ecosystem management expertise) with climate change research and climate based ecological restoration/adaptation. Even though local, place-based climate knowledge maintained through story and knowledge of sacred sites, ancestral gathering, hunting, camping and fishing areas are incredibly valuable for climate change adaptation planning, this information is not readily transferable to the scientific literature, and in most cases, it would be inappropriate or offensive to publish. This presents a challenge for those working to blend traditional knowledge and western science during the development of climate change adaptation programs and collaborative relationships with scientific and educational institutions. The Nez Perce Tribe is working to overcome these barriers through meaningful community participation, surveys and elder interviews, hiring in-house social and natural science professionals, climate smart conservation projects that include cultural values without revealing sacred information, and the leadership and grace of the Tribal Community, Government, and Staff. We present a case study on collaborations with Point Blue Conservation Science and the University of Idaho to include cultural traditions and values in a restoration toolkit for ecological and cultural resilience, and a climate-smart agricultural program. We discuss the steps taken by the Tribe to overcome barriers, lessons learned, suggestions for methodologies, and measures to honor the resilience, wisdom, and wishes of the Nez Perce People during this process. Our collective future depends upon collaborations amongst human beings with a checkered collective past, and bold and courageous leadership. Tribal communities are demonstrating a model of leadership and grace by working with each other and with western scientists in visionary ways on climate change resilience planning. This has allowed for collaborative relationships that are expanding the capacity of the Nez Perce Tribe to address climate change and integrate cultural values and perspectives into the process.



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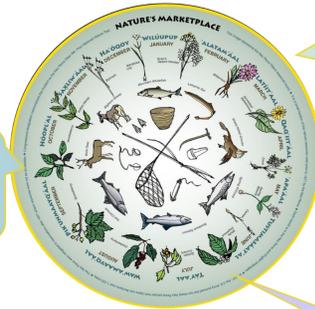
CLIMATE SMART RESTORATION TOOLKIT

BACKGROUND

- There is growing recognition of the value of including Traditional Ecological Knowledge (TEK) in ecological restoration and adaptation planning especially with regards to wetland systems
- Good resources are available to teach western practitioners about TEK, but few tools exist to help western practitioners integrate cultural values into restoration projects
- Climate change is applying a top-down pressure on Indigenous communities AND ecological restoration efforts



Roots like Camas: Size, quality, and abundance has changed. The hydrology of forests is changing, and wetland plants like camas are affected.



Gathering Impacts:

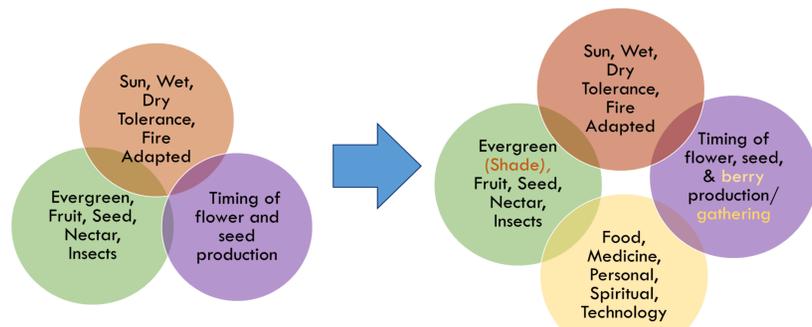
- Timing of early spring wild foods has changed
- Gathering period shortened
- Ancient gathering sites impacted

Berries: Distribution, timing, and quality is changing

SOLUTION

Develop a tool from existing framework to help us manage for shifts in seasons, temperature and precipitation, on restoration projects **AND** make it easier and timelier to incorporate the cultural uses that are most important to tribal members.

Take the PBCS **Climate-smart ecological restoration** process of enhancing ecological function of degraded or destroyed areas in a manner that prepares them for the consequences of climate change.; and apply it with cultural values integrated.



POINT BLUE'S CLIMATE SMART TOOL KIT **NEW RESTORATION TOOLKIT FOR CULTURAL AND ECOLOGICAL RESILIENCE**

FINAL THOUGHTS

- The Tribe has discretion about how to share the results of toolkit
- All Tribes have different customs; Toolkit integration is versatile
- Trainings on new Toolkit coming in 2020; email Stefanie Krantz

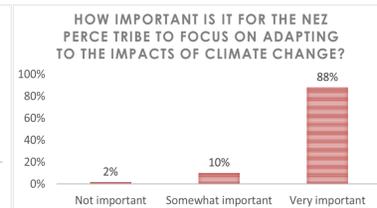
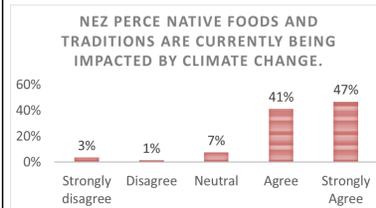
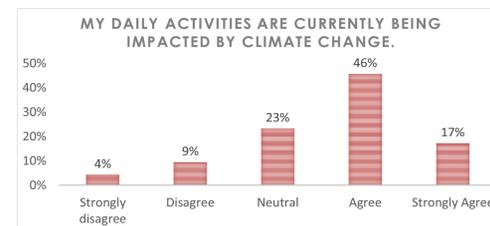
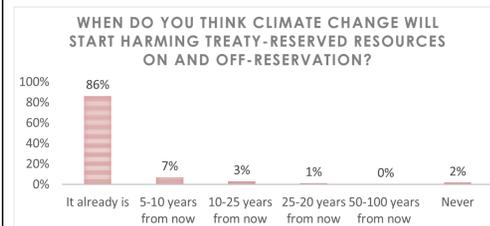


CLIMATE CHANGE VULNERABILITY ASSESSMENT

BACKGROUND

- After facing increasing climate change impacts, the Nez Perce Tribe initiated a vulnerability assessment, which included a participatory processes aimed at engaging and empowering the tribal community
- The **Community Well-being and Climate Change Survey** is an element of this participatory process, with the goals of 1) measuring levels of concern about climate change among tribal community members, 2) identifying community members who are interested in future engagement, and 3) gathering information about what kinds of activities community members are most interested in

SELECTED RESULTS



SELECTED OPEN-ENDED SURVEY RESPONSES

"[I] have had to find different areas to hunt and fish. I feel like we are 'threatened' more by natural occurrences such as floods and wildfires. Wildfires in particular have impacted my opportunity to spend time in the forests. Water issues have limited my opportunity to fish for salmon locally (this year anyway)."

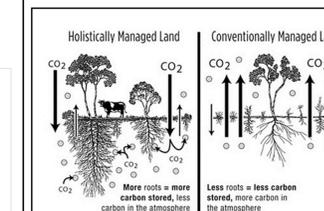
"Make sure you are looking at this issue as a whole. How it affects people on a personal level, day to day, those with limited financial resources as well as how it affects our natural resources."

"I am a gatherer of our plants. Our berries are impacted by the amount of moisture, which is impacted by the warmth if we are to get rain. Our fish are impacted by this because our rivers are getting too warm for them to live in that climate. So all of our restoration efforts are wasted if we do not look at that. Our fish run this year was greatly impacted, I heard various stories of why, that our drought a few years ago is finally catching up on it. All I know is that we are greatly impacted as a tribal people. We can pass our knowledge to the next generation - but if we do not in some way preserve this land for our future, what will we have to pass on? "

CLIMATE SMART AGRICULTURE PROJECT

BACKGROUND

- One-quarter of American Indians and Alaskan Natives were food insecure in the first decade of the 21st century compared to 10% of Whites (Jernigan, Huyser, Valdes, & Simonds, 2017)
- Agriculture practices/food systems contribute approximately 19% - 29% of the total annual anthropogenic greenhouse gas emissions to the atmosphere (<https://ccafs.cgiar.org/bigfacts/#theme=food-emissions>)
- The Nez Perce people traditionally engaged in a form of food-plant production based on non-enclosed harvestable areas or "gardens", which increased the productivity of food-plant resources



APPROACH

In an effort to decarbonize, democratize, and increase the sustainability of agricultural and food sovereignty, the Tribe recently collaborated with the University of Idaho to conduct a **Climate Smart Agriculture Situational Analysis**.

WHAT IS CLIMATE SMART AG

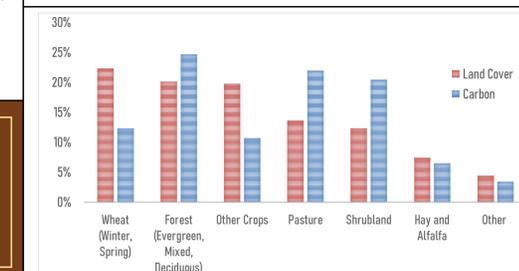
An approach to transform and reorient agricultural systems under the realities of climate change to improve food security (Lipper et al 2014).



EARLY ANALYSIS RESULTS

Almost half (42%) of the Reservation is associated with wheat and forest land cover/use types; Over half of this area (52%) is within Tribal jurisdiction (USDA 2019 Cropland Data).

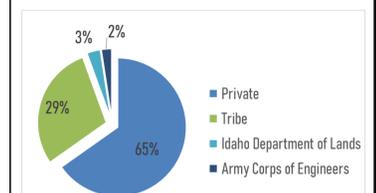
Across Reservation extents, the total market value of agricultural products sold in 2017 was \$89.5 million or \$179k per-farm operation. Based on sales classes, self-identified Native American farmers appear to be disproportionately associated with lower sales classes.



The proportion of USDA Cropland aggregate cover-types in 2018 (USDA, 2019) and related soil carbon content (Soil Survey Staff, 2013) across the Nez Perce Reservation.

PROJECT INTEGRATIONS

- Alaina Doll of the Tribe's Economic and Community Development Planning Department is working on a regenerative farm project aimed at food sovereignty and alleviation of poverty
- Modeling forest and crop carbon dynamics to inform carbon management based scenarios
- Collaborating with an economist to evaluate different agriculture system solutions



The proportion of above-ground forest carbon stock (Kellnendorfer et al., 2012) within the Nez Perce Reservation among the parcel ownership/jurisdiction types in 2000.