New resources support tribes in preparing for climate change

November 15 2018, by Michelle Ma

A tribal fire crew member in Oregon monitors a prescribed burn, a key tool for preventing large wildfires that are likely to become more common under climate change. Credit: Natural Resources Conservation Service

Which Pacific Northwest streams will warm the most in the next 50 years, and where would restoration work make a difference for salmon?

Where will wildfires and pests be most aggressive in forests as the Earth warms, and how can better management help?

As the natural world responds to climate change, American Indian tribes across the country are grappling with how to plan for a future that balances inevitable change with protecting the resources vital to their cultural traditions.

The University of Washington Climate Impacts Group and regional tribal partners have developed a collection of resources that may be useful to tribes at any stage in the process of evaluating their vulnerability to climate change. The project is a partnership among tribes, tribal associations, universities and the federal government.

"This work really is to support tribes' leadership in climate adaptation, and the goal is to make it easier for every tribe that wants to complete the process," said Meade Krosby, a research scientist at Climate Impacts Group and the project lead. "This is a way to support the tribes that are leading the way, but also to make sure those that are having a harder time getting started have the resources to begin."

Many tribes are deeply tied to the natural environment for culturally significant practices and traditions, health and livelihoods. Most tribes have reservations and treaty rights that are connected to specific places and resources, making it a challenge to go elsewhere in response to future changes in climate.

This new suite of resources is intended to support tribes in all phases of assessing the possible impacts of climate change—in other words, how a warming world might affect the things each tribe cares about most. The tools are tailored geographically to each of the 84 tribes in the Pacific Northwest and Great Basin regions of the western U.S., with the possibility to expand across the country.

The resources, mainly online, include a climate tool that provides interactive summaries of projected climate change on annual precipitation, stream temperatures, growing season, fire danger and other variables. It also provides links to resources such as guidebooks and sample climate assessments, and a technical support line for tribal staff and members to call with any questions. Both Western science and indigenous approaches that draw on traditional ecological knowledge are featured in the resource toolkit.

While other tools exist to help assess vulnerability to climate change, these resources present information about future predictions in a user-friendly format that focuses on areas of geographic importance to various tribes. Project leaders spent considerable time testing the tools with tribal staff and community members to make the resources more intuitive and responsive to their needs, Krosby said.

"This is a way to get cutting-edge climate information directly into the hands of tribes," she said. "Overwhelmingly, the response among tribes has been positive."

The project began about two years ago after an initial assessment led by Don Sampson, climate change project manager with the Affiliated Tribes of Northwest Indians, in partnership with the Northwest Climate Adaptation Science Center, found that a number of tribes didn't have the resources or staff to plan for climate change.

The resources are designed to serve all tribes in the Northwest and Great Basin regions. Credit: Rob Norheim/UW Climate Impacts Group

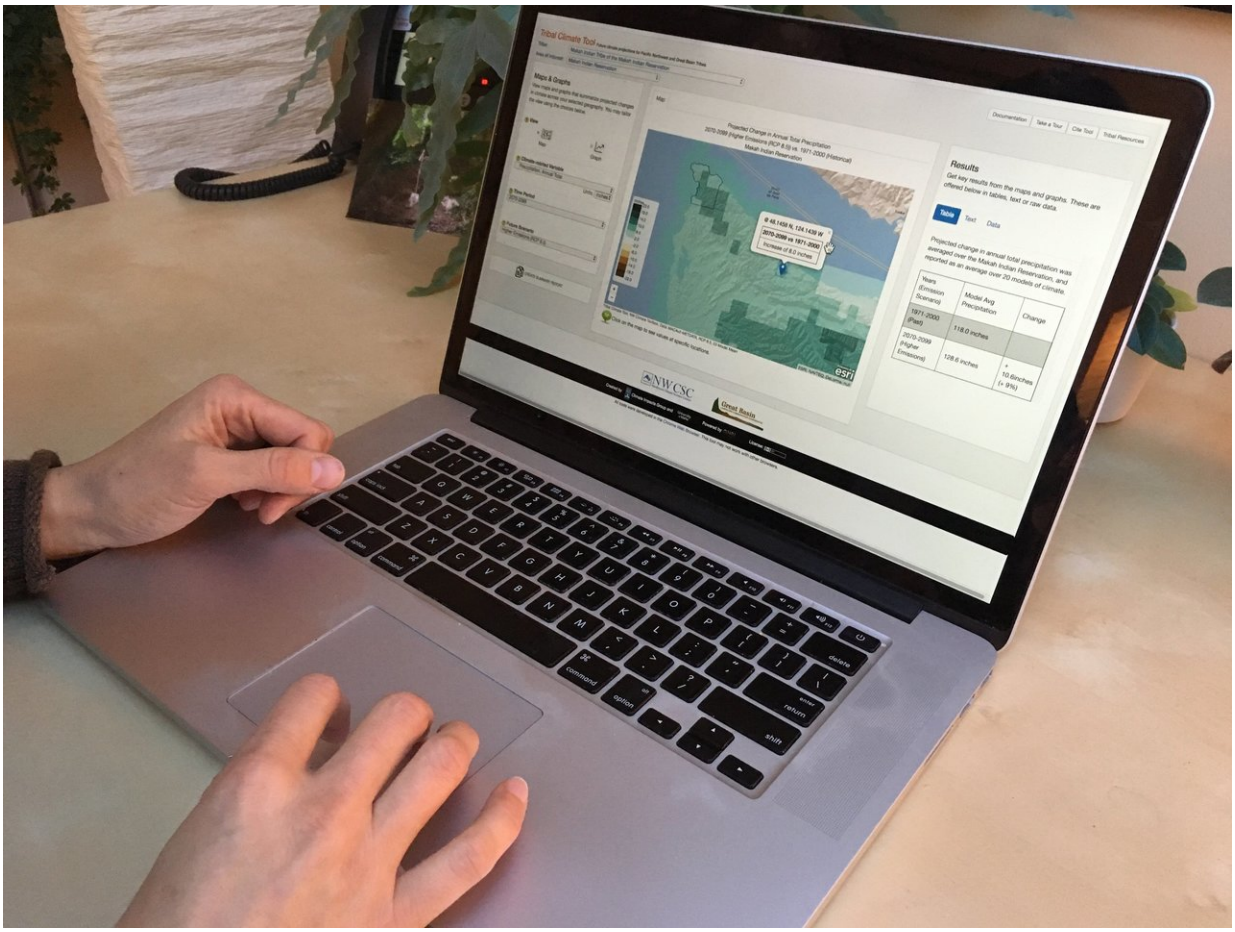
In response, the Northwest Climate Adaptation Science Center and Great Basin Landscape Conservation Cooperative funded the UW Climate Impacts Group—under the guidance of a tribal advisory group—to develop climate change resources that could help fill gaps for those tribes needing additional support.

The Climate Impacts Group contacted all 84 tribes in the Northwest and Great Basin regions, asking what climate impacts they were most concerned about and which geographic areas are important to them. As responses came in, it was clear each tribe had specific factors they were most concerned about, including how stream temperatures, snowpack and habitat might change in the future in their location.

"For some tribes just beginning to look at climate impacts on important resources to their communities, they can analyze quite quickly and begin to narrow their focus to some of the priority resources, whether it be salmon, deer and elk, or migratory birds," Sampson said. "Our goal is for all of Indian Country to have a tool like this and get all of the tribes in the country able to assess the impacts of climate on their resources."

"The Affiliated Tribes of Northwest Indians and the tribes of the Pacific Northwest are leading tribal efforts nationwide to address climate change impacts in Indian Country. This project, in collaboration with the University of Washington, represents us using our traditional knowledge and the best available scientific analysis," said Leonard Forsman, president of the Affiliated Tribes of Northwest Indians.

As one example, the Makah Tribe in northwest Washington has started to form a plan to adapt to climate change, drawing on these resources as well as community surveys, elder interviews and staff input to consider aspects such as natural resource management, infrastructure, health, cultural activities and carbon mitigation. They have found the new tools to be particularly useful in analyzing potential climate impacts on their specific area, said Mike Chang, climate adaptation specialist at the Makah Tribe.



The new climate resources are mainly online and include a climate tool, links to resources and a technical support line for tribal staff and members. Credit: University of Washington

"The downscaled climate models are able to provide information at locally relevant scales. This is super helpful because many regional climate models can't provide hyper-local climate projections, which is crucial when making planning and adaptation decisions," Chang said.

Like the Makah Tribe, planning for climate change is underway for many tribes across the country, said Rachael Novak, Tribal Resilience Program coordinator with the Bureau of Indian Affairs. About 10

percent of federally recognized tribes have a plan drafted, but the remaining tribes—still over 500—are at various points in the process, from implementing adaptation plans to assessing possible impacts to not having begun. Time and resources are usually the biggest barriers to creating a plan, she said.

"There's so much diversity across Indian Country and Alaska Native Villages in terms of staffing and resources," Novak said. "It's important to have tools to be able to connect and meet people where they are in planning for climate change."

Provided by University of Washington