

PROJECT UPDATE

Collaborating with the Pyramid Lake Paiute Tribe on Adaptation Strategies

Spring 2014

Climate Change Vulnerability of Native Americans in the Southwest

Native Americans in the Southwest are vulnerable to climate change because of their intimate relationship with the environment upon which their culture, tradition, and livelihood depend. Climate change may overwhelm tribes already stressed by economical and development challenges. A primary example is Nevada's largest tribe, the Pyramid Lake Paiute Tribe, located at the terminal end of the Truckee River Basin, who are deeply connected—culturally, physically, and spiritually—to Pyramid Lake and its ecosystem.

A Collaborative Research Approach

This research project seeks to investigate the potential of the Pyramid Lake Paiute Tribe to adapt to climate change. The project collaborators include the Pyramid Lake Paiute Tribe, the University of Arizona, the University of Nevada Las Vegas, and the U.S. Geological Survey. Funding for this project comes from a two-year grant from the USGS Southwest Climate Science Center.

“Climate change may disproportionately affect tribes and their lands because they are heavily dependent on their natural resources for economic and cultural identity.”

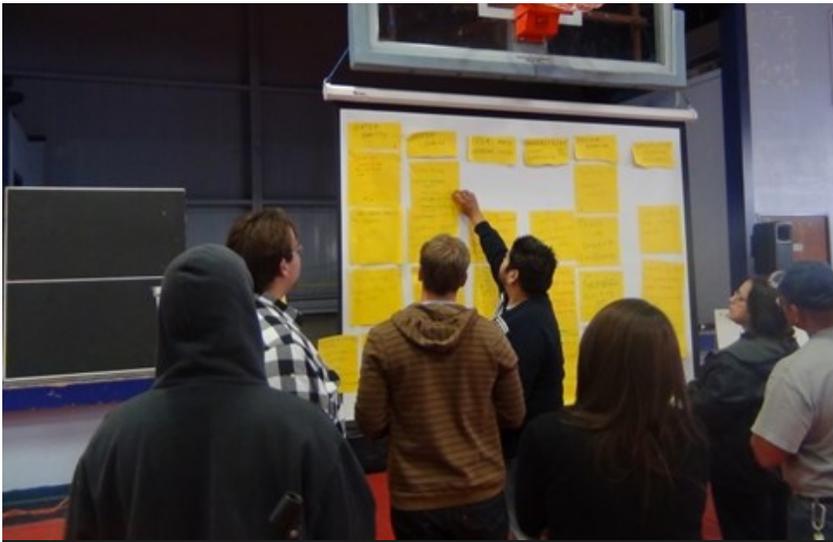
- U.S. Department of the Interior



Pyramid Lake shoreline in September 2013 (Photo by Schuyler Chew)

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Workshop participants brainstormed some environmental issues affecting Pyramid Lake and categorized the most pressing issues (Photo by Schuyler Chew)

Project overview

The goals of this research project are to (1) determine the potential of the Pyramid Lake Paiute Tribe (PLPT) to adapt to climate change, (2) propose collaborative tribal water management and adaptive strategies for the PLPT, and (3) explore the potential for effective partnerships and collaborations between tribes and scientists.

In order to meet these goals, the research team is developing tools that will aid tribal environmental managers in making decisions and provide them with a better understanding of the natural systems of Pyramid Lake.

Brainstorming workshop held at Nixon Gym provides research team with new insights

During the last week of September 2013, the research team hosted a two-day Brainstorming Workshop for tribal members at the Nixon Gym in Nixon, NV. The event featured opportunities for participation by tribal members, informative presentations by experts on cui-ui, rangeland management, and Anaho Island preservation efforts, as well as an interactive quiz raffle.

Thinking about environmental “problems”

On day one of the workshop all participants were given twenty minutes to write down as many “problems” or issues affecting the environment, water, and natural systems of Pyramid Lake. Afterward, the group listened to each idea and decided on some categories since many of the issues were related. The categories were:

- ◆ Land cover & environment changes, Habitat loss
- ◆ Water Quality
- ◆ Water Quantity
- ◆ Legal Aspects/upstream issues
- ◆ Management Issues/Governance
- ◆ Individual’s Behavior
- ◆ Sensitivity to Cultural Resources



Strategizing on Solutions

A similar activity took place on day two, in which participants came up with some solutions or management alternatives to these issues. It was very interesting to see the group collaborate on specific initiatives for action. These initiatives included:

- ◆ Legal
- ◆ Restoration
- ◆ Water Conservation
- ◆ Education & Outreach
- ◆ Community Organization
- ◆ Emergency Response Protection

In summary, this brainstorming workshop was very productive as it shed light on several key issues that are relevant to the development of climate change adaptation strategies for the Pyramid Lake Paiute Tribe. The research team would like to thank all of the workshop participants and the PLPT Environmental Department for their help in coordinating the event.

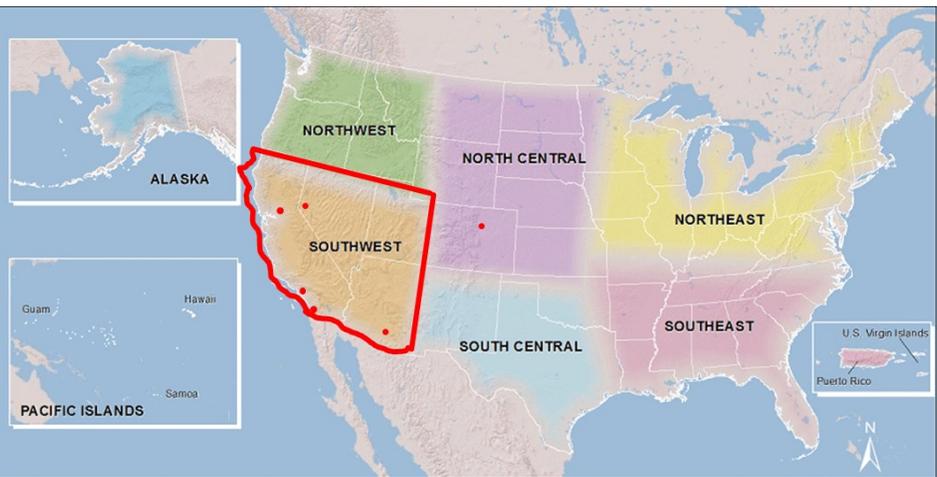
USGS Southwest Climate Science Center

In 2009, U.S. Department of the Interior Secretary Ken Salazar launched a bold response to climate change with Secretarial Order 3289. As a result, eight regional Climate Science Centers (CSCs) were established throughout the U.S. as partnerships between universities and the U.S. Geological Survey.

These CSCs are intended to combine the expertise of scientists and resource managers on adaptation science. The Southwest CSC is a consortium of six institutions throughout the region whose mission is “to provide scientific information, tools, and techniques to anticipate, monitor, and adapt to climate change.”

Our research efforts are funded by a two-year grant from the Southwest CSC which began in late 2012. For more information on the SW CSC, please visit their website at:

www.swcsc.arizona.edu



Map of the eight regional Climate Science Centers (www.doi.gov/csc/index.cfm)

Sharing our progress

Collaboration is a key component of this research effort. The project kicked-off in November of 2012 at Nixon, NV. Since then, the research team has presented at several conferences in Reno, NV in 2013, including the National Congress of American Indians Tribal Leader/Scholar Forum, the Nevada Water Resources Association River Symposium, and most recently at the Great Basin Consortium. These presentations resulted in a number of valuable interactions with participants from the PLPT, other tribes and intertribal groups, and the broader scientific and management community. For more information on these conferences, visit:

- <http://www.ncaiprc.org/tribal-leader-scholar-forum>
- <http://www.nvwra.org/past-events-archive/>
- <http://environment.unr.edu/consortium/index.html>

Moving forward

The aim of this research project is to identify adaptive strategies that will help the Pyramid Lake Paiute Tribe prepare for climate change. As such, we have focused on two culturally and economically important species to the tribe —the Cui-ui and the Lahontan Cutthroat Trout (pictured below).

One product of this investigation is a Youtube video presentation that describes the habitat and spawning requirements of these two fish. We plan to use the ecological information related to Pyramid Lake and its fish in order to identify environmental thresholds that could be affected by climate change.

For more information on the project, visit our website and Facebook page at:

- <http://nativeadaptation.arizona.edu>
- <https://www.facebook.com/nativeadaptation>



Meet our research team

University of Arizona

- **Dr. Karletta Chief**, Lead-PI, Assistant Professor & Extension Specialist, Dept. of Soil, Water, and Environmental Sciences
- **Dr. Aleix Serrat-Capdevila**, Co-PI, Research Associate Professor, Dept. of Hydrology & Water Resources

University of Nevada, Las Vegas

- **Dr. William J. Smith Jr.**, Co-PI, Research Associate Professor, Dept. of Anthropology

U.S. Geological Survey

- **Dr. David E. Busch**, Co-PI, Biologist, Pacific Southwest Area

Pyramid Lake Paiute Tribe

- **Autumn Bryson**, Director, Environmental Dept.



For more info

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