Alaska Region

Norton Bay Inter-Tribal Watershed Council

The Arctic: On the Front Lines of Climate Change

Climate change is coming fast and furious to the Arctic. The Arctic region is warming more than twice as fast as the rest of the planet, and climate change knows no political boundaries. Human settlements and villages are seeing their critical infrastructure threatened by storm surges, eroding coastlines, degrading sea walls, melting sea ice, and melting permafrost. People have died by falling through rivers that are normally frozen solid enough to bear the weight of snow machines and 4-wheelers, which are used as primary sources of transportation. Species in the Arctic are impacted by warming ocean temperatures and dramatic losses of sea ice. Alaskan Native Villagers are highly dependent on many of the subsistence species that are impacted, including walruses, beluga whales, salmon, caribou, berries, and other plants, and people rely on them for both sustenance and as a major part of their economy. There have been extensive die-offs of sea birds, seals, gray whales and other marine species. Elders have observed different species encroaching into new areas, such as trees now growing in places like Golovin (40 miles southeast of Nome, Alaska) that have never had trees before, and freshwater fish are being replaced by warm water species. Lesions are appearing on fish and seals. Although these subsistence species are being severely impacted, the critical infrastructure threats are so acute that they must be dealt with immediately.

One of 18 dead seals along the shore, north of Kotlik, Alaska, U.S., is shown in this photo taken May 7, 2019. Photo credit: Harold Okitkun / NOAA / Handout via Reuters

Fish die off Tubutulik River, Seward Peninsula, Alaska. July 2019. Photo credit: Hal Shepherd

In July 2019, the effects of climate change in Alaska demonstrated clear acceleration, including record breaking temperatures reaching 90 degrees in the interior and south-central regions, and 70 to 80 degrees in the Arctic regions. These temperatures coincided with a massive forest fire on the Kenai Peninsula and fires throughout the state that will likely take months to contain and, according to Hal Shepherd of the Norton Bay Inter-Tribal Watershed Council, appear to be accelerating the ultimate collapse of biodiversity in the Arctic. This was illustrated not only by continued grey whale and seal die-offs and exceedingly high fresh water temperatures in salmon spawning streams, but additionally the Villages reported significant numbers of minnows, salmon, blue mussels, and king crab die-offs, believed to be another result of temperature increases.

Resiliency in Action

The Norton Bay Inter-Tribal Watershed Council (NBITWC) formed in 2012 after recognizing the need for Alaskan Native Villagers in the Arctic to come together to develop community projects to address those critical infrastructure threats. The NBITWC is based in the Norton Bay area, at the southern end of Norton Sound on the Seward Peninsula, and focuses their efforts on issues related to the Norton Bay watershed. Five federally recognized tribal governments are represented on the NBITWC: the Native Villages of Elim, Unalakleet, Shaktoolik, Golovin, and Shismaref. Together, their voices are stronger than any individual Village's could be.

In 2013, NBITWC worked with the Model Forest Policy Program to develop a regional climate change adaptation plan for Norton Bay. The plan then served as a basis for several Villages to develop their own climate change adaptation plans, and projects within those plans for things such as hazard mitigation plans, which are required by the Federal Emergency Management Agency (FEMA) for access on funding in order to implement resiliency projects:

Public Gathering. Photo credit: Hal Shepherd

After helping Villages in the Norton Bay watershed address infrastructure that is being threatened by climate change, the NBITWC has pivoted its focus to mitigating the threats to subsistence resources. Using a grant awarded to them from the Bureau of Indian Affairs' (BIA) Tribal and Coastal Resiliency Program, NBITWC is currently developing a marine protection area climate risk assessment for the Norton Bay watershed. They will conduct a risk assessment to uncover what impacts climate change is having on species found in the watershed. This risk assessment uses a template from the Commission for Environmental Cooperation called the North American Marine Protected Area Rapid Vulnerability Assessment Tool. This tool guides the user to select three types of habitat, and then to consider the impacts of both climate change and non-climate stressors on those three habitats. The tool then has the user define how non-climate stressors are exacerbating climate change stressors. Based on those impacts, strategies are then developed to address both climate and non-climate stressors.

Due to the government shutdown in the first quarter of 2019 which led to delayed funding, NBITWC is just getting started on this project in the summer of 2019. They are putting together workshops for their Council members, and will start filling out the template using Traditional Knowledge. The NBITWC utilizes Public Gatherings in the Villages of the Norton Bay watershed as a major component of every project. Of critical importance to the NBITWC is the empowerment of the Alaskan Native Villagers. To that end, they not only ask the communities for their input, but always write tribal staff into their grants to implement the projects in their own communities. They ensure that the staff can remain in the Village

where they reside, and help to build up the tribes' environmental programs. Their ultimate goal is to step back and turn the work over to the tribal staff, once enough capacity and support are in place. The NBITWC then can take on the role of consultants, participating on the side when asked.

There are several Alaska Native communities pursuing site expansion and relocation due to extreme climatic impacts causing current settlements to be uninhabitable. However, there is a major barrier in obtaining funds to relocate. For communities living on disappearing land and unable to access funds to relocate, they may have to "protect in place" and find ways to protect their lives and built infrastructure.

Public Gathering. Photo credit: Hal Shepherd

The NBITWC points to tribal resiliency as the greatest strength supporting these projects. Tribes are used to calling on their community strength and resilience; they know more about their native lands than the scientists do. Groups such as the National Oceanic and Atmospheric Association and Fish and Wildlife provide important technical support, but empowering, enabling, and supporting local people who have Traditional Knowledge with capacity and funding is the role of the NBITWC.

Although political tides ebb and flow, the current national and state administrations are focused on resource extraction in the Arctic, leading to significant challenges for both climate adaptation and mitigation. Funding resources are being invested in oil and gas extraction in the Arctic as well as disaster response for large metropolitan areas in the lower 48, while coastlines underneath small Alaskan Native Villages crumble into the sea. For 2.6 million years there has been permanent sea ice in the Arctic; both the winter and summer sea ice extents are in decline, and the Bering Sea not only lost ice in February of 2018 when it should have been at peak growth rates for the season, but also achieved record low levels throughout the season (D. Perovich, et. al. 2018). For the Arctic region at large, the last 12 years have produced the 12 lowest extents of sea ice ever recorded. Without that ice, walruses have no place to haul out and rest, and polar bears have no place from which to hunt. Warming Arctic seas are no longer measured as occurrences, but rather as a continual pattern. The political tide may eventually flow back towards the protection of our planet, but in many places in the Arctic, that iceberg has already calved into the sea. Tribal strength, resiliency, collaboration, and traditional knowledge will remain the cornerstones of thriving Arctic people.

References
D. Perovich, W. Meier, M. Tschudi, S. Farrell, S. Hendricks, S. Gerland, C. Haas, T. Krumpen, C. Polashenski, R. Ricker, and M. Webster, 2018: Sea Ice in Arctic Report Card: Update for 2018, https://www.arctic.noaa.gov/Report-Card

This profile was developed in 2019 by Dara Marks-Marino, Institute for Tribal Environmental Professionals, Northern Arizona University, with financial support from the Bureau of Indian Affairs. The profile is available on the Tribes & Climate Change website: www7.nau.edu/itep/main/tcc/Tribes. The tribal climate change profiles featured on the website are intended to be a pathway to increasing knowledge among tribal and non-tribal organizations interested in learning about climate change mitigation and adaptation efforts.

Special thanks to Hal Shepherd for his assistance in developing this profile.

For more information please contact:
Nikki Cooley, Co-Manager
928/523-7046
Nikki.Cooley@nau.edu
Karen Cozzetto, Co-Manager
928/523-6758
Karen.Cozzetto@nau.edu

Citation: Marks-Marino, D. (August 2019) Norton Bay Inter-Tribal Watershed Council, August, 2019. Climate Change Program, Institute for Tribal Environmental Professionals, Northern Arizona University. Available at: www7.nau.edu/itep/main/tcc/Tribes/ak_nortonBay