

Joining Forces to Address Climate Change

Alaska Communities Threatened by Coastal Erosion & Flooding

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On the edge of the Bering Sea, Yup'ik villagers have adapted to harsh elements for millennia. Until now, traditional knowledge and wisdom have enabled them to survive hardship and define their sense of people and place. Today, with erosion literally eating away their village, the Newtok tribal council has decided to move inland.

Relocating Newtok and other villages threatened by climate change has required an unprecedented cooperation among local, state, and federal entities. It took no less than an Act of Congress for the Newtok tribal elders to negotiate a land exchange with the US Fish and Wildlife Service.

Newtok, a native village of 321 where Traditional Council meetings are held in Yup'ik, has had to find common ground with, for example, the Army Corps

of Engineers, which determined that the land under village residences and infrastructure will erode away before the end of the decade. Different realities exist between official Washington and the little village, where the Ninglick River and the Yukon-Kuskokwim Delta are swallowing the land at a rate of 90 feet per year.

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Environmental health

Climate change affects human health when drinking water and sanitation infrastructure are

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The solution was to design a planned community that can withstand the challenges of climate change while retaining native traditions. Newtok and three other endangered villages can serve as models for other Alaskans and Northwesterners as global warming reshapes our landscapes.

Newtok residents will move to a new village called Mertarvik nine miles away. The new village is based on Oujé-Bougoumou, a small community of Cree aboriginal people in Quebec who were repeatedly displaced by mining activity. After a lengthy process, the Oujé-Bougoumou won recognition by Canadian and provincial governments to locate a permanent village. So far, the physical elements are in place, and the Oujé-Bougoumou are focusing on rebuilding the

compromised. In some communities, sewage lagoons overflow during storms. In Newtok, *E. coli* contamination was a problem and a Village Safe Water grant is part of the solution.

Storm surges, brought on by earlier seasonal melting and the reduction of the Arctic ice pack, hammer away at coastlines. The land itself is becoming increasingly susceptible to erosion due to the thawing permafrost. The resulting floods can drain freshwater lakes and replace them with seawater, endangering food stocks and drinking water.

These conditions pose serious threats to the health of the native communities, and public health professionals are forming new partnerships to resolve them in a culturally appropriate manner.

New partnerships

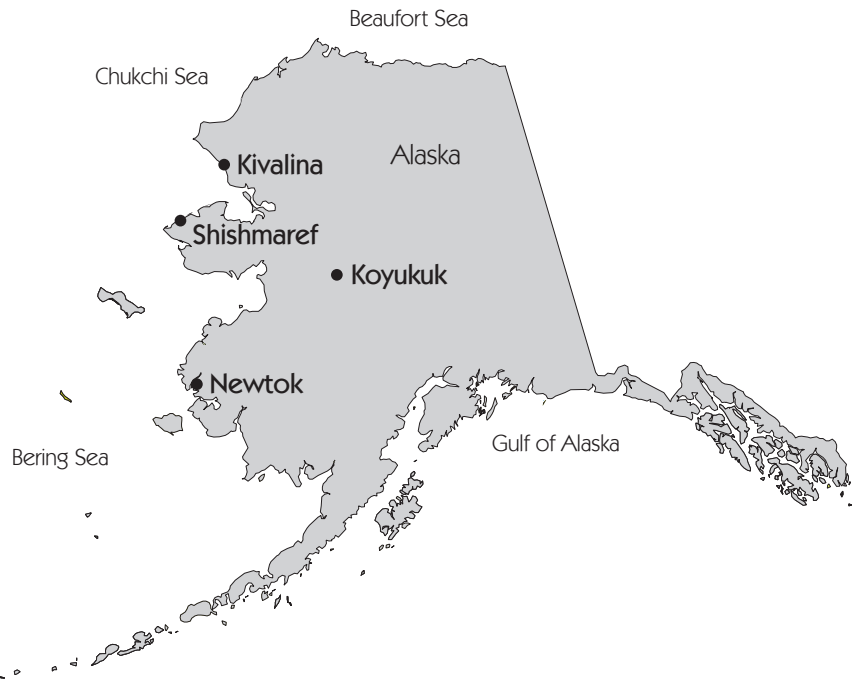
In September 2007, Alaska Governor Sarah Palin established a Climate Change Sub-Cabinet and asked its members to develop a long-term strategy for statewide action while addressing the urgent needs of the most imperiled communities. Thus, the Immediate Action Work Group was formed; the State invited the US Army Corps of Engineers to co-chair it. The Group was asked to identify actions that needed to be taken within 12 to 18 months to protect lives, critical services and infrastructure, and prevent substantial damage to property.

The Immediate Action Work Group has brought focus and coordination to the fore. In 2008 it identified critical needs, which with support of the Governor and Legislature, received \$10.6 million from the state and helped mobilize \$40 million in new federal funding.

The state has established a small grant program to build capacity and empower individuals at the local level. This year, the Alaska Division of Homeland Security and Emergency Management visited six communities in peril, providing evacuation training and assistance with emergency response planning.

Relocation provides communities such as Newtok with an opportunity to incorporate elements of sustainability into community master plans. The state's Village Safe Water program has worked with Newtok and other communities to ensure that efficiencies are built into the design for water and utility systems, and into the residential and public building grid. The Cold Climate Housing Research Center is playing a key role in design of the structures themselves, to maximize energy and environmental conservation.

Everyone involved with the Immediate Action Work Group is learning to respect and appropriately take into consideration the best of Traditional Knowledge, Science, and Technology. Together, they have brought significant resources to the project and



have set an example for working together across disciplines, agencies, and cultures. This collective effort can be viewed as an effective model for a variety of endeavors. ■

Authors

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Resources

GAO report www.gao.gov/new.items/d04142.pdf

Alaska Climate Change Strategy www.climatechange.alaska.gov

New York Times articles on Hamilton (Nov. 12, 2006) and Newtok (May 27, 2007), both by William Yardley.

Moving a Town

Hamilton began life as a timber town in Washington's Skagit Valley. Of course, it was established on the banks of the Skagit River so logs could be floated to the sawmill.

A few years ago, the Washington State Department of Health, in concert with Skagit County Public Health Department, helped relocate the town's well field out of the flood plain, said Corinne Story, Environmental Public Health Manager. Her Department provides homeowners with information and technical assistance regarding home cleanup and on-site sewage septic systems after frequent floods. A Public Development Authority is planning to relocate the town's 445 residents to a new town site on higher ground.

While not universally accepted, the relocation project is viewed as an opportunity to revitalize the economy, enhance river habitat, and reduce the public and private costs of flood response, recovery, and reconstruction.