



Climate Pioneers: Relocating a Village

Newtok, Alaska

Newtok is one of the first communities in North America that is losing its home to climate change. As the shoreline erodes and the permafrost thaws, the village along the Bering Sea is starting to disappear. Literally right on the edge of an inlet, the community is now racing to relocate before the next devastating storm. Newtok is in the process of moving to a new village site, Mertarvik, across the inlet on higher ground. The Cold Climate Housing Research Center has been working with the people of Newtok since 2008 to design durable buildings that can be built affordably at the new site. In 2016, a demonstration home was built by a local crew. In 2019, crews are building 13 additional homes in Mertarvik.

Though the Yup'ik people have lived in the region for thousands of years, Newtok itself is relatively new. Before settling on the Ninglick River, the local people traveled around seasonally, hunting seals on the coast in the fall and moving upriver in the spring to fish. They spent winters in an area called Kealavik, living in shelters along the river built from driftwood and sod. Compared to modern homes of today, the sod shelters were very basic, but warm.

In 1959, the federal government shipped materials out to Kealavik to build a school. But when the barge bottomed out in shallow water, the school was built instead at a low-lying spot where the Kealavik River poured into the Ninglick River. The village of Newtok grew up around it. But the



Newtok is threatened by several effects of climate change. As the permafrost thaws, it is sinking into the tundra. And the loss of sea ice along the coast has led to severe erosion of its banks.

Ninglick River was already becoming wider and more powerful. Today, the village is losing a battle to the river.

Erosion has been an issue from the very beginning of Newtok. Sometimes it moves slow and steady, claiming about 80 feet per year; other times it surges, devouring the same amount of land in a single storm. Between 1954 and 2003, the river chewed off nine football fields worth of coast. Today, less than 10 yards of soft, thawing tundra protect the nearest house from the river. Newtok is one storm away from disaster.

Quick Facts About Newtok

Population: 354

Number of homes at new site: 7

Number of homes under construction in 2019: 13



The new village site, Mertarvik, sits across the inlet from Newtok on higher ground. The rocky soil provides a more stable place to build. Construction of roads, a landfill, and more homes began in Summer 2019.

When the village voted to move in 1996, residents picked a spot on a rocky island across the river. They call it Mertarvik, which means “place to get water” in Yup’ik. In addition to a fresh spring, the island also is also rich in moose, muskox, blackberries, and salmonberries. But relocation is a complicated process fraught with challenges. First, the village is difficult to access. Mertarvik can only be reached by boat in the summer or by traveling across the ice in winter. And the logistics are complicated too—residents don’t want to move to a place without a school, store, or infrastructure.

With funding from the Denali Commission, Newtok is building 13 homes in Mertarvik in Summer 2019. CCHRC designed a home with an integrated truss that combines the roof, walls, and floor into a single piece for easy transport and quick assembly. The building envelope is super-insulated with blown-in fiberglass to fend off the cold maritime climate. Because the new village will be built in stages, the home has water and sewer systems that can function independently, or connect to centralized utilities in the future.



In 2016, CCHRC led a local crew in the construction of an energy efficient demonstration home on a moveable foundation. The technologies and skills from this project inform the next generation of homes in Mertarvik.

Many other activities are occurring in 2019 as well: roads, power, and a landfill are under construction. A temporary school will be opened in the recently enclosed evacuation center, with the first class of students attending in Fall 2019.

People of Newtok see themselves not as refugees but as people of the land, adapting and leading the way in a changing world. There are many challenges when it comes to relocating an entire community, including funding, appropriate designs, and the logistics of building at a remote site. As other communities face the effects of a warming climate, they can look to Newtok for lessons on how to build a strong, sustainable village.