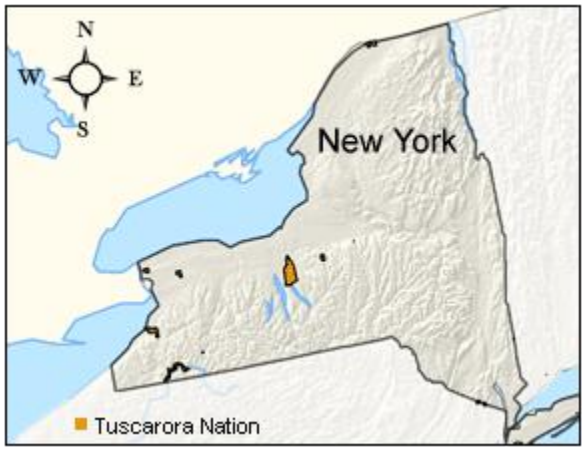
Tuscarora:

Drawing on Traditional Teaching to Confront a Changing Climate

Traditional teachings of the Haudenosaunee tribes have long warned of unsettling changes to the environment. The traditional "instructions," says the Tuscarora Nation's Environmental Program Director, Neil Patterson, "are very specific. They include predictions that we won't be able to drink the water--which is already true; that strawberry plants won't produce strawberries; and that there will be a change in the direction of the winds, the way storms move in. Those are things to watch out for. Unfortunately, some of them have already happened. The instructions say these things are coming, but they also say, 'Don't let it happen on your time. Here's what needs to happen so it doesn't occur on your watch.'"

Neil Patterson, Director, Tuscarora Environment Program

The Tuscarora Nation is one of Six Nations of the Haudenosaunee Confederacy, commonly referred to as the Iroquois, all based in New York state. Tuscarora, with a population of some 1200 citizens on its 6250-acre reservation, came to what is now Niagara County in the early 1700s, after they were driven from their North Carolina home--one of the first recorded land grabs by Euro-American settlers. Since their arrival to the Great Lakes region--what their culture calls "the western door of the Seneca"--they've seen a multitude of changes to their adopted land and ancient culture. In recent years the Haudenosaunee people have chosen to mount an aggressive program to restore their patch of the planet based on traditional teachings.



"One thing we have to understand is the concept of cultural survival," Patterson says, "making sure we continue to engage in cultural practices that not only ensure our physical survival but the continuity of the culture. So we're very interested not only in the 'bio-physical world' but the 'bio-cultural world.' We've taken a bio-cultural approach to restoration and to addressing climate change whenever we can."

As climate change increases its impacts, Patterson believes, such awareness will grow increasingly important to the Nation's physical and cultural health--factors that really can't be separated.

Each Nation in the confederacy has taken steps to address climate change impacts and promote cultural solidity by tapping their traditional knowledge base. The Tuscarora began an environmental program through the help of the Haudenosaunee Environmental Task Force (HETF), a committee of delegates working on resolving environmental problems. The HETF was established by the Grand Council of the Haudenosaunee in 1992. A staff of five comprise the 14-year-old Tuscarora program that has addressed an array of "bio-cultural" concerns through innovative programs that draw on traditional teachings. Although each response addresses

a separate component of ecological sustainability, Patterson points out that these components intertwine and are part of a consistent way of being in the world.

Haudenosaunee White Corn and "Heirloom" Food Plants

Protecting the community's traditional food base, says Patterson, is a fundamental way of preserving the culture. For Tuscarora, this has translated into both a seed-banking program and community-supported agriculture. Seeds that include Tuscarora White Corn as well as "heirloom" varieties of beans and squash--the traditional triad of foods that have sustained Tuscarora people long before Europeans arrived in North America--have been preserved, stored, and disseminated within the community. Maintaining a community garden complements seed preservation; through their shared growing space, the tribe both encourages the use of traditional foods and teaches students about traditional growing techniques.

Tuscarora maintains a vigorous heirloom-seed program as well as a community garden where traditional food s are grown.

Student learning to can deer meat using a pressure cooker.

Tuscarora traditional agriculture is based on a triad of plants that have sustained tribes across North America for millennia. Beans grow up the stalks of native corn, reinvigorate the soil with nitrogen, while squash occupies the soil between the plants, providing moisture-holding ground cover and making efficient use of garden space. Their approach extends to storage techniques, which includes canning workshops. "People can bring in their own produce, and we collectively can it," Patterson explains. Presently, around a dozen families are subscribers to the community garden cooperative. They maintain a constant effort to draw more tribal farmers and families into the Community Supported Agriculture program.

Along with active garden subscribers, the tribe's cultural understanding has always included the notion of food management. Although there is no tribal-wide program in place to stockpile foods in response to climate-change threats, he says, "Putting things away for the future has always been a part of our culture. Lots of people have gotten into local food products; it's just something most families have already been doing."

Land Stewardship

To ensure that the tribe maintains adequate agricultural land on the ten square mile reservation, the tribe is conducting comprehensive GIS analysis. "We're mapping out the Nation's resources," Patterson says, "to better understand soils, land use, land cover, to assess how self-sufficient we could be in terms of food, energy, timber, water, and other basic needs. Our interest is in using these cultural principles and instructions to measure what we can provide for ourselves, while protecting the sustainability of the resource. We look out, in theory, seven generations. So we're talking 100 years or more."

Protecting the farmland they have or could develop is high on their list of priorities. So far Tuscarora has restored about 80 acres of grassland, removing mostly invasive cool-season grasses with warm-season grasses. Patterson explains: "The cool-season grasses don't store a lot of carbon compared to the native warm-season prairie types. The restoration not only stores carbon more efficiently but helps regenerate our soils, building up organic matter, so that in the future we actually have places to produce food."

Tuscarora's land-restoration efforts will soon include reviving a degraded swamp on Gill Creek, which runs through the Nation. The swamp once served as a nursery for migratory fish such as pike and suckers, providing the basis for what Patterson believes was once a major food base for the tribe.

The stream itself was rerouted for the construction of a "pump-storage reservoir," which, unlike traditional reservoirs, involves underground conduits coupled with a reservoir storage system to run Niagara River water off a nearby escarpment. A catastrophic fire in the 1920s struck a vicious blow to the one-time forested wetland. Small dams and barriers put in place since construction of the reservoir further impeded fish migration. Now, invasive plants and trees seek to make their home there. These changes have all but decimated the watercourse's few remaining fish.

"Our research indicates a restoration 'replacement' at the swamp," says Patterson. "We want to create some open-water habitat that could potentially maintain a year-round fishery on the reservation."

Passing the Torch

In line with Tuscarora's seven-generations consciousness, the tribe has established a program to pass cultural knowledge and wisdom down to younger citizens. The HETF Youth Corps program maintains a training effort in which young people travel into surrounding wildlands. "They learn basic skills," Patterson says, "survival skills, the ability to identify plants and animals in local ecosystems not only in a bio-physical sense but in a bio-cultural sense. So we talk about plant names, the actual Haudenosaunee names for different species. Often those words contain a lot of information about the species and its relationship to other species in the forest, the water, and the air.

"For example, our word for sturgeon is actually the same word used for 'dandelion.' The sturgeon is native to North America, but the dandelion is not. When the dandelion came over with the Mayflower, Tuscarora people noticed these flowers were blooming at the time sturgeon were running and it was time to fish for them. So the dandelion became known as the 'sturgeon flower.' One of our interests has been in looking at questions like, 'Are the sturgeon still running when the dandelion bloom, or has climate change affected them so much that

these relationships, recorded in our language, no longer apply?'"

Sadly, he says, the sturgeon question has been obscured by other impacts that include overfishing, stream degradation, and migration obstacles. "They're having a tough time running, or even getting to reproductive age. So again, this brings up other important factors we should know and account for in the environment."

The desire to extend that kind of awareness to the Haudenosaunee community, and to Western culture at large, will soon lead to a youth wilderness journey that combines a historical celebration with environmental outreach. The year 2013 marks three centuries since the Tuscarora people began their 80-year migration from the Carolinas to their present home in New York. Their plan is to organize a hike that mirrors that migration path while also demonstrating ecological principles, including effects of climate change on the regional ecosystem. "One of the specific examples we talk about: in a lot of IPCC [Intergovernmental Panel on Climate Change] models are predictions of plants and animals migrating northward, so that the North Carolina climate will actually be in the Great Lakes due to warming. So we're expecting to see these species that are now endemic in the south moving northward, and the species we have here moving northward to Ontario and Quebec. The trip we're planning is itself a sort of metaphor, not only to celebrate the Tuscarora migration and survival but to reflect on impacts of climate change."

The tribe is still raising funds and studying the trip's logistics, which includes an analysis of river basins and various species found along the route. The plan includes publicizing the event through a variety of social media, "so people will be able to follow us as we move along."

Sustainable Living: an Integrated Approach

In line with the tribe's focus on traditional teachings and the realities of a changing climate, their sustainability efforts extend to energy use and sourcing as well. "A hydropower project was built that took a lot our land in the 1950s," Patterson says. "We got involved with the dam relicensing, and as a result we were able to get a low-cost power allocation from this huge hydro-electric project. That has really created a focus in our program of looking at our energy supply and distribution. It really has jump-started us—it's a catalyst to look at our internal energy demands. We're looking at how much electricity we could replace in the Nation through sources such as solar, wind, and biomass."

Patterson recently facilitated a weatherization program on the reservation, seeking to increase the efficiency of citizens' individual energy use. The tribe is constantly looking for new opportunities to enhance their push toward sustainable living. Through an agreement with the Indian Health Service, for example, Tuscarora citizens are also receiving upgraded septic systems and wells, which should help improve the quality of both groundwater they rely on and surface water in and around the reservation.

In the face of increasing pressures and demands of a convenience-oriented society, regaining the ancient balance is a big challenge in the 21st century. By constantly looking for new ways to further communication and collaboration among Tuscarora citizens (their long-running newsletter, for example, has moved to the web and includes a Facebook page), Tuscarora is taking responsibility for their own place in the world and demonstrating an ability to adapt that has sustained them since time immemorial.

Resources

Tuscarora Environment Program: http://tuscaroraenvironment.com/default.aspx
Haudenosaunee Environmental Task Force: http://hetf.org/

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