



Fond du Lac Band of Lake Superior Chippewa: Reducing its Carbon Footprint and Adapting to Climate Change

The Fond du Lac Band of Lake Superior Chippewa, located in northeastern Minnesota, is striving to reduce its carbon footprint and adapt to the impacts of climate change. Sustainability, energy efficiency, and the development of renewable energy are key goals, and the Band aims to protect the reservation and its resources for the cultural, spiritual, and physical well-being of its people.

The Reservation covers 101,000 acres, including forested areas, undisturbed wetlands, and wild rice waters. Animals commonly found on the Reservation include black bear, timber wolf, fisher, marten, bald eagle, owls, and white-tail deer. The Band also retains fishing, hunting, and gathering treaty rights in the Ceded Territories (areas ceded by the Band in treaties signed in 1854 and 1837), which consist of 8 million acres in the Arrowhead Region of Minnesota. However, the Band sees these steps as necessary in order to protect resources for everyone, not just tribal members.

Impacts of Climate Change

Experts predict that the climate in Minnesota will become warmer through the century, with more precipitation extremes ranging from flooding to drought. Air pollution is expected to increase as a result of the warmer temperatures. These changes could lead to greater threats from invasive species, such as the emerald ash borer. Some species may leave the area as temperatures increase—the moose population in northern Minnesota is already decreasing. The loss of maple trees could mean a decrease in the amount of maple syrup collected from sugar bush locations. Flooding or drought can be very harmful to the production of wild rice, which requires relatively constant water levels.



The moose population is decreasing.

Traditional knowledge shows that climate change is indeed occurring in the area. Besides the decrease in moose population and increase in the emerald ash borer, Band members also talk of how deer are moving farther north. The Fond du Lac Band fully recognizes what climate change can mean for their way of life and are committed to slowing or reversing the warming trends that have been occurring, through responsible action. Like other tribes, the Fond du Lac Band cannot “move” to follow species that no longer live on the Reservation or in the Ceded Territories.

Renewable Energy and Energy Efficiency

The Fond du Lac Reservation Business Committee adopted the Kyoto Protocol in February 2007; this means that 20% of the Reservation's electric energy must come from renewable energy sources by the year 2020. Implementation of the Protocol falls largely under a variety of projects being pursued by Bruno Zagar, the Fond du Lac Environmental Specialist and Energy Projects Manager.

Fond du Lac staff and energy consultants have been working with Minnesota Power, the electric utility company that provides power to northeastern Minnesota, conducting energy audits of all Fond du Lac buildings and performing the most cost-effective upgrades to conserve energy, doing work with the greatest payback first. The energy rebates from these go in an energy efficiency account, which can then be used to perform more upgrades. For example, \$16,000 in rebates from the new Natural Resources building (see below) will enable the Band to install energy-saving LED lights in several locations: resource-management garage, transportation garage, the Black Bear Casino hotel stairwells, and the Band's recycling and re-use area. The Fond du Lac Reservation Business Committee has also decided to install LED lights in the casino parking ramp. The time needed to recoup the costs of these LED projects averages around 1.3-1.8 years. The casino project alone will save \$201,125 over five years. Another possible project is to install high bay fluorescent lights in five gymnasiums, which would save \$200,000 over five years. Upgrades also include improvements to the efficiencies of the heating/ventilation/air-conditioning systems in the Band's casino and hotel complex.



Light collectors on the roof bring natural light into the Resource Management Division building.



A "rain garden" has been established in this catchment for overflow runoff.

The Resource Management Division is now housed in a new energy-efficient building, with LEED certification in progress. An important part of the energy-saving potential of this building is the installation of 12.25 kW's worth of solar panels on the building's roof. Power generated by these panels is either used in the building or sold to the grid. Since its installation, the system appears to be on target with its goal of producing 17,150 kilowatt-hours of energy per year. This will reduce CO₂ emissions by 13.72 metric tons each year.

Bruno organized a building design review team and developed an architect competition platform to find the best LEED architect in the region to design the resource management building. The Reservation Business Committee and staff worked together to obtain funding for construction, which

included an Indian Community Development Block Grant, Department of Energy Grant, tax credit financing and a low-interest loan from the Shakopee Mdewakaton Tribe.

The Fond du Lac Reservation Business Committee and staff are researching a biomass co-generation wood pellet plant project that will provide electricity and wood pellet fuel for heating buildings in the region. They also worked with Minnesota Power, the Fond du Lac Ojibwe School, and the Fond du Lac Tribal and Community College to install a 3.15 kW photovoltaic system to provide power at the Band's powwow grounds. Fond du Lac has also been collecting wind data for five years and conducting a heat recovery feasibility study to generate electricity in the future.



A roof with growing vegetation is one of the many green features of the Resource Management Division building.

The Band has faced challenges while developing and implementing the various projects, including the huge amount of time required to write grant applications; coordinating the various project participants, who come from many different points of view; dealing with the great financial cost and technological complexities of projects; and determining the feasibility of various renewable energy projects.

Outreach and Education

Through her efforts in environmental education, Shannon Judd, Environmental Education Coordinator, has become another climate change go-to person at the Fond du Lac Band. Shannon has held compost bin sales and raffles to expand household composting, helps operate the vermicomposting (worm bin) program at the Ojibwe School, and takes students on the school's nature trail to practice phenology (the observation of the timing of events in nature, such as when the first robin of spring is sighted, or when different plants flower). She is also trying to incorporate energy efficiency requirements into the procurement policies for any energy-consuming devices purchased by the Resource Management Division, such as office equipment, vehicles, etc.

In addition to working with the Ojibwe School students and the general public on outreach activities, Shannon has been working with Bruno on a feasibility study, under a grant from the BIA Division of Energy and Minerals Development to study waste-to-energy and food waste diversion projects. Shannon also coordinates the Band's recycling and re-use center. Shannon says, "All of these activities, either vermicomposting or re-use and recycling, help keep items out of the waste stream and reduce the number of miles of hauling done on the Reservation. It all ties together."

Forestry Program

Steve Olson, Reservation Forester for the Fond du Lac Band's Forestry Program, has been working on a number of climate-change-related projects. Steve participates in a USDA Forest Service project called the Climate Change Response Framework. This effort will produce a document that will help lead decision-making by taking expected impacts of climate change into consideration. The project could also tie in to the Band's Integrated Resource Management Plan, which addresses invasive species and climate change interactions. Steve has also been working with the Northeastern Minnesota Landscape Committee, which includes private, state, county, federal, and tribal landowner representatives. This committee is currently rewriting its landscape plan.

The Fond du Lac Band's Forestry Division has also been working to re-forest land that has lately been used for agricultural purposes. While the Band could apply for carbon credits for these activities, they haven't, for a couple of reasons. One, the Band might have to become a Certified Forest, which would include the cost of certifying the planting. Also, the Band has not applied for carbon credits because right now the carbon market is low. Steve's advice for undertaking climate projects: "Frame it differently, not necessarily as a climate change project. Do it to save money and to decrease the use of finite resources."

Other Projects

The Resource Management Division has a number of other climate change-related projects underway, including:

- The Reservation's school buses idle for prolonged periods to keep interior temperatures warm enough for the children. The Fond du Lac Air Program is pursuing ways to install heaters in the buses to reduce the need for idling. The Environmental Program has also written a draft Reservation "idling policy," which it hopes to implement in the future.
- Members of the entire Environmental Program have started meeting monthly to discuss climate change issues and coordinate efforts.
- Other members of the Fond du Lac Resource Management team are also working on climate-adaptation projects. The Office of Water Protection has conducted on-Reservation stream sampling of water flow and temperature, to set a baseline that can be used to measure changes that might result from climate change.
- Mike Schrage, the Fond du Lac Wildlife Manager, is currently working with the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife Service to study moose populations in northern Minnesota, and to try to find ways to keep the populations healthy.



Here the Forestry Department is planting seedlings.

About the Fond du Lac Band

The Fond du Lac Reservation is in northeastern Minnesota, about 20 miles west of Duluth, with the tribal headquarters located in Cloquet, MN. The Reservation was established by the LaPointe Treaty of 1854 and is one of six reservations inhabited by members of the Minnesota Chippewa Tribe. In the treaty, the various bands on Lake Superior and Minnesota Chippewa ceded about 25% of the land in the present states of Minnesota and Wisconsin and the balance of the Upper Peninsula of Michigan to the United States. The Chippewa Nation is the second largest ethnic group of Indians in the United States.

(Fond du Lac Band website: <http://www.fdlrez.com/>)



References and Resources

Fond du Lac Band of Lake Superior Chippewa Reservation website: www.fdlrez.com/

Fond du Lac Resource Management Division: www.fdlrez.com/newnr/main.htm

USDA Forest Service Northwoods Climate Change Response Framework:
<http://nrs.fs.fed.us/niacs/climate/northwoods/>

Global Climate Change Impacts in the United States (US Global Change Research Program, 2009):
www.globalchange.gov/publications/reports/scientific-assessments/us-impacts

Confronting Climate Change in the U.S. Midwest (Union of Concerned Scientists, 2009):
www.ucsusa.org/global_warming/science_and_impacts/impacts/climate-change-midwest.html

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Photos in this profile are courtesy of the Fond du Lac Band of Lake Superior Chippewa.

Joy Wiecks, Fond du Lac Band of Lake Superior Chippewa, and Jennifer Youngblood, National Tribal Environmental Council, developed this profile in 2012 for the Institute for Tribal Environmental Professionals, Northern Arizona University.

The profile is available on the Tribes & Climate Change website: www4.nau.edu/tribalclimatechange/. 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.

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