



Apostle Islands National Lakeshore

Natural Resources Highlights

Summer 2010

Bear DNA Detectives

Have you ever wondered if the bear lumbering down the beach on Sand Island are the same ones you see at Little Sand Bay? Or if the bear with cubs that sniffed around your camp on Stockton Island are the same ones you saw a few years ago? We'll be able to find that out this year by repeating a study that was done in 2002.

That study was done to see if the use of hair collecting sites combined with DNA analysis would be a good way to monitor bears populations on the islands. The technique worked well – the hair collecting sites are easy to set up and obtained hair samples without having to capture and handle the animals. The collection sites are

simply a strand of barbed wire strung around three trees. Some fish oil is poured on some old logs and anise is sprayed on trees to attract the bears. When a bear puts its head under the wire to investigate the smells, some hair is snagged on the barbs. The hair is then collected and tested for DNA. The wonders of modern science can tell us not only the sex of the bear, but uniquely identify individuals. We'll be able to determine if the same bears that were on Stockton and Sand Islands in 2002 are still there, who moved out and who moved in. In 2002 there were 26 bears on Stockton and 6 on Sand. This year, we'll get an updated population estimate for these islands and information on bears from a variety of other islands. Researchers from Mississippi State University will be conducting the study.



Setting up a bear-hair collection site



wetland area on Stockton Island where swallows are being surveyed

Swallows Assist Superior Decisions

Tree swallows that move into nest boxes placed at Little Sand Bay and Stockton Island this summer will help make decisions that clean-up our Great lakes. Feeding very close to their nest site, they are an excellent indicator of toxic chemical levels in a specific wetland. They will allow us to determine if high levels of mercury, for example, are being transferred from the aquatic into terrestrial food web. The USGS Biological Research Division's Upper Midwest Environmental Science Center has been studying swallows throughout the Great Lakes. By comparing data from clean and contaminated sites, researchers can help government and industry make

important decisions that will protect Lake Superior waters. At the Apostle Islands, a 2 year study conducted by USGS Biological Research Division researchers, will look at the reproductive success of swallows that nest near the lagoons including number of eggs laid, hatched, and fledged. It will also measure contaminants in eggs.

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Remote monitoring helps Park Be “Green”

New technology is changing our methods of frog and toad surveys at the Apostle Islands. Traditional call surveys, where a person travels to 10 sites in one evening, listening and recording frog and toad calls works well where you can drive from site to site, but becomes far more challenging when a boat is needed. The park experimented with conducting traditional surveys but weather, distance, and time of night made it infeasible to use standard methods. We also experimented with an early version of a frog logger, but it required tapes (remember those?) and had very

limited options for recording. Frog loggers/songmeters have come a long way. The current version is called a songmeter and consists of a little green box with a digital recorder, memory card, and microphone inside. It can be programmed much like a wildlife camera to record at specific times of day. These songmeters can be used for extended periods of time in remote locations, recording large amounts of data. Back in the office, the recordings are downloaded to a computer where software is used to identify species by their calls. The possibilities of these songmeters are very exciting. They will allow us to do high quality long-term monitoring of frogs and toads in the park, keeping track of these excellent environmental indicators. In addition, we'll be able to monitor wetland birds, several of which call in the evening and are missed by our breeding bird surveys. The advantage of -using this technology is that we can capture species and sites that are otherwise under surveyed, as well as being “green” by deploying the remote sensors for an extended period of time, which reduces boat trips .



Wood Frog, *Rana sylvatica*
photo by G.S. Casper

Wood Frog



Check out the Park Newspaper for more information about ALL upcoming Park projects related to the Great Lakes Restoration Initiative

GLRI: Measurable Progress

This summer Great Lakes Restoration Initiative (GLRI) funding is helping all of the Great Lakes. Among the projects that will benefit park resources are ones that focus on protecting native plants from both over-abundant wildlife and exotic species.

The GLRI is providing funding for two seasonal employees. One that focuses on deer and another that will concentrate on exotic species. Some of the work has already begun. On Sand and York Islands, a significant number of deer have been removed, helping to halt the decimation of Canada yew. Summer seasonals are measuring the amount of deer browse this spring, and hopefully the results will show some progress in the slow recovery of the Canada Yew. Population estimates are also being obtained by a pellet count (deer poop) and a project has started that tests the use of

wildlife cameras for obtaining a population estimate. The other seasonal employee is focusing on exotic species management. She will be updating an inventory of exotic plant species at historic and developed sites and conducting invasive species control. This employee will also expand monitoring for exotic insects and their impact on forest health.

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