LEWS NEWS

Photo: Kristin Stanford, Northern Illinois University

Volume VIII **September 2003**

Protecting Lake Erie's Natural Heritage

U.S. Fish and Wildlife Service Approves LEWS Habitat Conservation Plan

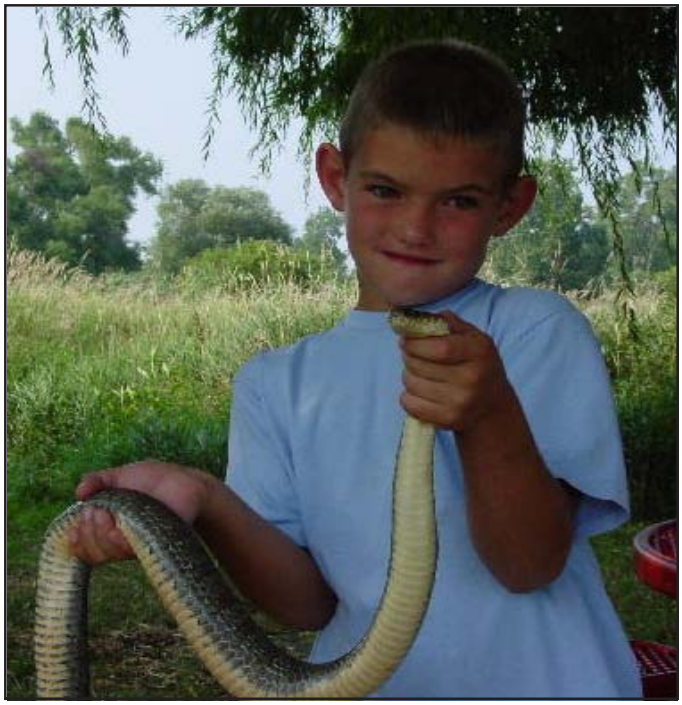
The U.S. Fish and Wildlife Service has approved a habitat conservation plan by Long Point Homeowner's Association, LLC (LPHA), to provide conservation measures for the Lake Erie water snake. The plan will conserve the Lake Erie water snake and its habitat on 15 acres of the Long Point peninsula of Kelleys Island while still allowing private development to occur.
A habitat conservation plan (HCP) is a scientifically-based agreement between a landowner and the Service that is a requirement of the permit application process. Once a HCP has been approved, the Service may issue a permit that allows a landowner to legally proceed with an activitiy that would otherwise result in the illegal take (kill, harass, or harm) of a listed species. The landowner in turn agrees to conservation measures that will mitigate and minimize the impact of the taking.

The approval of the HCP for the Lake Erie water snake allowed the Service to issue an Incidental Take Permit to the LPHA. Having received their permit, the LPHA is allowed to conduct development and land management activities on the 15-acre tract on Long Point without fear of violating Endangered Species Act provisions which prohibit taking (killing, harming or harassing) listed species. In return, LPHA must follow the HCP to ensure the welfare of the snakes through minimizing impacts and implementing mitigation measures to help the species.

The area covered by the Lake Erie water snake habitat conservation plan currently provides both summer and winter habitat for the Lake Erie water snake. Measures outlined in the plan to conserve the snake and its habitat include:

- incorporating a setback from the shoreline for development and land management activities to minimize disturbance of the snake's shoreline and near-shoreline habitat.
- adhering to seasonal and location-specific restrictions on mowing to minimize the potential of harming snakes with lawnmowers and to ensure that adequate native ground vegetation is available to provide cover for snakes.

(Cont. on page 5)



Arthur Wolf, the "Little Snakeman" of Middle Bass Island, holds a Lake Erie Watersnake. See article, page 2.

The Little Snakeman

"How many times have you been bitten?" He looks up at me inquisitively, asking the same questions every time I see him. Young Arthur Wolf, the "little snakeman", as I often refer to him.

"Probably hundreds," I say, waiting for a look of surprise that I will never get.

"I think that I will probably be bitten *thousands* of times by the time that I get big." He announces this to me proudly, as if to say: "Just you wait snakelady, I'm going to be a better snake hunter than you one day!"

Sometimes I wonder if that day hasn't already come! The 7-year-old Middle Bass Island resident has been catching snakes since he was able to walk. Ask the Middle Bass Island residents who they go to with a snake question or problem, "The little snakeman." they will tell you. Arthur is their resident expert.

Arthur and I first met about 2 years ago when I began to radio track water snakes on Middle Bass Island. His father, Art Wolf, senior, who is a boat captain for the OSU Stone Laboratory, approached me when I first started working at the lab. He told me of his then 5-year-old son, who would keep all the snakes that he found during the day for his father to see when he came home from work. The irony being that Art senior, is deathly afraid of snakes! He told me that young Arthur would probably really enjoy going out tracking with me and we agreed that I would stop by their house sometime.

A few weeks later, I met Arthur at a Middle Bass softball game. His mother, Marge Wolf, approached me and said that Arthur had a few snakes at the house and wondered if I could come by and have a look. Soon after the game, the shy, softspoken little snakeman came over holding his mother's hand and we walked across the street to his house. There on the porch, was a 5-gallon bucket full of the day's catch. A couple Brown snakes, a small Garter snake and 3 or 4 young Lake Erie water snakes. He held up each one and asked what kind of snakes they were until we had gone through every one, at least twice. "What kind of snake is it?" "How do you know?" "Is it a boy or a girl?" "How come it's not biting you right now?" Question upon question. I had a hard time keeping up!

We spent the next hour or so looking at every "snakey" thing he had in his house— posters on the bedroom wall, rubber toy snakes, stuffed animal snakes, and of course, his snake book, Arthur's most prized possession. His sister, Cinnamon, often calls it "his bible." Marge told me that she and Arthur have to read from the snake book every night before bed. He looks at all the pictures and points out which snakes he likes the best, although that list changes from day to day.
Before I left, Arthur asked when I would be coming back to Middle Bass. I told him that in a few days, I would have to return to radio track the water snakes again and invited him to come along.

"Sure," he said, half hiding behind his mother's leg.
"I'll come by and get you." I looked to Marge, who smiled and nodded approvingly. "I think Arthur would enjoy that very much." She said.

That evening, we started what has become a ritual. Every time I come to Middle Bass to do research, I always invite Arthur to come along.

In the two years that has passed since our first snake hunt, Arthur has helped me radio track the snakes on Middle Bass multiple times, he has been helping collect Brown Snakes and Garter Snakes for other research projects that are going on in our lab at Northern Illinois University, and he was able to participate in the "Nerodio", our annual Lake Erie Water Snake census, for the first time this year. Arthur continues to catch all the snakes he can find and keeps them a day or two in a special snake cage that I have provided him with a water dish and a giant plastic rat that he says the snakes really like. Some Middle Bass Island residents have even begun to ask Arthur to come by their house and remove snakes that are a little too close for comfort. Overall, Arthur's interest and enthusiasm is sparking other island kids to learn about snakes. Arthur, along with another South Bass Island snake enthusiast, 13-year-old Alex Karr, frequently bring snakes in for show and tell to school and pass on information about the different kinds of snakes found on the islands.

It seems that Arthur's interest in snakes has become infectious. Kids from all of the islands are excited to learn about snakes. This year, the Lake Erie Islands Chapter of the Black Swamp Conservancy sponsored a Nature Camp for Kids, in which the kids and chaperones participated in a snake hunt. A total of 23 young Lake Erie water snakes were captured by the kids themselves in less than an hour! Unfortunately, we only had part of an afternoon set aside for this activity despite the enthusiasm of several of the kids to keep looking; Arthur, of course, being one of them. In fact, the snake activity apparently was a highly spoken about event. The next day, two older

boys that were not signed up for Nature Camp, showed up at my office having heard about the adventure through the grapevine and excitedly asked where the "Snake Hunt" was being held. I actually felt bad having to tell them that the "Snake Hunt" was a one-time event for Nature Camp. Although I think that it's something that I'd like to change. Perhaps, if there was enough interest, I could teach a whole day workshop entirely devoted to snakes!

It is my job to educate people about the Lake Erie water snake and all the snakes of the islands. I receive e-mails and letters that praise our research and conservation efforts of the snake, and unfortunately, also those that question and criticize. It is sometimes difficult and frustrating to attempt to resolve misconceptions about snakes that many people have grown up with.
Kids like Arthur are helping to change that. Every time he gets a little girl to hold or touch a snake at a softball game, every time he shares an interesting little life-history tidbit about a snake with his schoolmates at show and tell, and every time residents of the island see their young little snakeman out doing research with me and "getting involved"—All of these things are changing people's outlook on snakes, which is not an easy thing to do. I'd like to take this opportunity to thank Arthur for all of his help and his role in snake conservation. You are our future Arthur, and it's going to be a great one!

Kristin Stanford, Northern Illinois University

Email Kristin at: theislandsnakelady@yahoo.com if your children would be interested in attending a snake workshop!

Lake Erie Water Snake Research Update

Researchers Rich King and Kristin Stanford from Northern Illinois University (NIU), continue to lead research efforts on the Lake Erie water snake (LEWS) with support from the U.S. Fish and Wildlife Service, ODNR Division of Wildlife, Ohio Sea Grant Program, Lake Erie Protection Fund, and The Ohio State University F. T. Stone Laboratory.

Data collection on movement patterns and hibernation sites using radiotelemetry is now nearly complete (4 snakes with functioning transmitters continue to be monitored), and final analyses will be completed this winter.

Another intensive spring water snake census was conducted in late May and early June 2003 with help from former and current NIU undergraduate and graduate students and volunteers from the Toledo and Detroit Zoos. More than 1300 water snake captures have been logged to date (nearly 300 of these are recaptures of snakes marked earlier in the summer or in previous years). Census data is being used to update population estimates for the Ohio islands. In addition, Kristin Stanford is using census data and radiotelemetry data to estimate annual adult survivorship (the proportion of adult snakes that survive from one year to the next). She will also be marking large numbers of newborn water snakes at one or two study sites this fall in order to obtain survivorship data for younger age classes. This survivorship information is valuable in guiding management and projecting future population trends.

A new research focus during 2003 has been to collect data on the prey consumed by LEWS. To date, 145 prey items have been recovered. Of these, 124 (86%) were round gobies, a non-indigenous fish introduced into the Great Lakes in the 1990s. The rest included mudpuppies (n = 10, 7%), native fish (n = 1, <1%), and yet-to-be identified fish (n = 10, 7%). This represents a dramatic change in the diet composition of the Lake Erie water snake. Of 46 prey items recovered from LEWS in 1996 – 1998 (shortly after round gobies appeared in the island region of Western Lake Erie) just 24% were round gobies; the remainder included mud puppies (33%) and native fish (43%). Of 48 prey items recovered in 1989 – 1992, 82% were native fish, 13% were mud puppies, and 4% were other amphibians. Prey recovered from 23 water snakes on Pelee Island in 1948 included 69% native fish, 13% mud puppies, 4% other amphibian, and 8% unidentified.

Another new research focus during 2003 is the analysis of contaminant levels in LEWS. During spring census work in 2003, blood samples were collected from 83 adult Lake Erie water snakes at eight locations on four islands. Arrangements have been made for the Canadian Wildlife Service to analyze these samples for the presence of polychorinated biphenyls (PCBs) and related compounds.
(Cont. on page 5)

30,000 GREAT LAKES ISLANDS—SEEING THE BIG PICTURE

More than 30,000 islands dot the clear blue waters of the Great Lakes – the largest inland island system on earth. These pockets of land—ranging in size from small boulders to more than a hundred thousand acres—are vitally important to conserving wildlife and allowing continued recreational opportunities in the Great Lakes Basin.

Great Lakes islands provide unique habitat for plants, fish, and wildlife

Homes for wildlife

Great Lakes islands are of great value to fish and wildlife because they can provide relatively undisturbed habitat that have fewer predators, allowing vulnerable species to survive. Many islands of the Great Lakes are also located in key positions on bird migration routes, providing habitat for ducks, geese and other waterfowl, and other migratory birds such as terns, hawks and bitterns. The very nature of islands provides high biodiversity compared to similar mainland habitats due to the significant distances of shorelines (where the water meets the land), which provide essential habitat for a large variety of fish and wildlife species.

Encompassing just 1 percent of the land area in the 288,000 square-mile Great Lakes Basin, islands provide habitat for 10 percent of the endangered, threatened or rare species that live in the basin. Endangered and threatened species such as piping plovers and gray wolves use both island and mainland habitat in the Great Lakes region, while the threatened Lake Erie water snake occurs on only a few Great Lakes islands. The shoals and shallow waters of the islands provide spawning and nursery areas for many imperiled aquatic species of the Great Lakes, including freshwater mussels. Many islands provide habitat for rare plants that have largely disappeared from the mainland, such as the eastern prairie fringed orchid and lakeside daisy.

The water surrounding the islands are also home to walleye, bass, northern pike and other fish species, helping to support the $4 billion Great Lakes sport fishing industry.

Threats

The natural resources in the world's largest freshwater island system face a number of threats. Many of the islands have recreational, commercial and residential uses such as hiking, camping, birding and boating. Over-use, over-development or abuse of island habitat and natural resources can cause unintentional destruction of natural plant and animal communities. Urban sprawl can damage wildlife habitat, as well. Native plant and animal communities on and around islands are vulnerable to invasion by non native species such as purple loosestrife and zebra mussels. Sewage disposal, toxic contamination through heavy metals and pesticides, runoff from agriculture and urbanization, and air pollution are other threats to island habitat.

What is the Service Doing to Help?

The U.S. Fish and Wildlife Service plays a key role in Great Lakes island management and conservation. Because of the numerous resources in the Great Lakes Basin, a team of Fish and Wildlife Service field stations representing a range of Service programs, and partners including The Nature Conservancy, The Nature Conservancy of Canada, U.S. Environmental Protection Agency, and numerous state and provincial agencies, universities, and non-profit organizations, formed the Great Lakes Basin Ecosystem Team (GLBET). The Team addresses landscape-scale resource objectives using a holistic approach to conservation.

One subset of the GLBET is the Island Subcommittee. Members of this subcommittee recently formed a binational collaborative to study this important island system, and to recommend conservation measures to preserve the imperative functions of islands as supporters of native fish, wildlife, and plants. The collaborative received a $200,000 grant from the U.S. Environmental Protection Agency's Great Lakes National Program Office to develop a framework for

island conservation. This framework will include the following products: (1) A "State of the Islands Report" that will identify priority islands, indicators of island health, best management practices, current and future needs, and gaps in protection. This report will be a tool to reach great lakes policy makers to inform them about the islands, their importance, and the resources needed to protect the islands. (2) Guides for public and private landowners that will describe how to best manage and conserve important island habitat, specifically shorelines, and the plant and animal species that live there. (3) A list of feasible "pilot projects" that could use the guides to successfully conserve and manage specifically identified island properties.

How you can help

There are several ways that island users can help to preserve these jewels of the Great Lakes:

*Help stop the spread of invasive species: learn to identify non-native species; never use exotic species as bait; learn the proper way to clean a boat to prevent the transport of non-native species from one water body to another.

*Minimize your "footprint" on islands you live on or visit: reduce disturbance to wildlife and habitat by cleaning up litter and completely dousing campfires; keep pets leashed to help avoid injuring wildlife or disturbing habitat; plant only native plants in island gardens to keep non-native plants from invading; and minimize disturbance of soils and vegetation which provide important habitat features for many types of wildlife.

* Maintain and restore natural shorelines, which provide some of the most important habitat for birds, fish, plants, and wildlife on islands.

Great Lakes Basin Ecosystem Team,
U.S. Fish and
Wildlife Service

Research update (cont. from page 3)

Because water snakes now feed on round gobies, which feed on zebra mussels, which filter microorganisms from the water column, the possibility exists that environmental contaminants are becoming increasingly concentrated in organisms at the top of this food chain, such as the LEWS.

Finally, Julie Ray, a master's student at NIU, has collated data on LEWS body size for a 23-year period beginning in 1980 and continuing through 2003 (more than 6,000 data records). Julie is using these data to investigate year-to-year variation in body size and has found maximum body size has increased since the mid-1990's. This corresponds to the introduction of the round gobies into Western Lake Erie and together with the dietary data summarized above, suggests that round gobies may be having a positive effect on the LEWS.

Dr. Richard King,
Northern Illinois University

Habitat Conservation Plan (cont. from page 1)

C installing artificial hibernacula to replace natural hibernacula disturbed by construction of residences
C adhering to seasonal and temperature restrictions on excavation to avoid disturbing snakes during hibernation
C limiting the total area that can be cleared of existing vegetation to preserve both summer and hibernation habitat.

The HCP and associated documents are available on the Internet at: http://midwest.fws.gov/NEPA . Copies of the HCP also may be obtained by contacting the Service's Reynoldsburg, Ohio Field Office at 614/469-6923. For more information on this plan and HCPs in general, please contact Angela Zimmerman of the Reynoldsburg, Ohio Field Office at (614) 469-6923 ext. 22.

Angela Zimmerman, Endangered Species Biologist
U.S. Fish and Wildlife Service

Approved Lake Erie Water Snake Recovery Plan to be Released Soon

The U.S. Fish and Wildlife Service (Service) has finished accepting comments on the Lake Erie water snake Draft Recovery Plan, and is currently reviewing the comments we have received. The comments will be analyzed, evaluated, and addressed in the final plan, which is expected to be available to the public by November, 2003.

Individuals and groups that submitted comments on the draft plan will be mailed a copy of the final plan when it becomes available. Other interested persons that would like a copy of the final Plan may request one from the Service's Ohio Ecological Service's Field Office, 6950 Americana Pkwy., Suite H, Reynoldsburg, OH 43068, (614) 469-6923, email: lewatersnake@fws.gov. The plan will be available online www.endangered.fws.gov.

LEWS courting. Photo: Kristin Stanford, NIU

U.S. FISH AND WILDLIFE SERVICE
6950 AMERICANA PKWY.
SUITE H
REYNOLDSBURG, OH 43068-4127