



LEWS



Photo: Kristin Stanford

NEWS



Volume XIX

September 2009

## Recovering Lake Erie's Natural Heritage

### Is LEWS Still Protected? **YES**, *But...*

If you think that over the past few years, more and more Lake Erie Watersnakes (LEWS) have been showing up along the shoreline, you are probably right! Annual population censuses Dr. Rich King and Kristin Stanford, Northern Illinois University (NIU), show adult LEWS numbers steadily increasing over the past 8 years.

The most recent population estimates demonstrate that true recovery of the LEWS population is happening. This is good news for several reasons—first, it indicates that LEWS may no longer need protection under the Endangered Species Act anymore. Additionally, it indicates that shoreline habitat important for the snake and many other fish and wildlife species is available and providing the right mix of food and cover. Endangered and threatened species recovery is about more than just numbers of critters. Habitat is important too.

Part of the LEWS Recovery Plan is to ensure that suitable habitat sufficient for protecting a portion of the LEWS population in perpetuity is available on each of the large islands. A number of partners in LEWS recovery have been working diligently to protect habitat on the islands, and as a result, the habitat protection

goals included in the LEWS Recovery Plan have been met. Major partners in land protection and management include the Ohio Department of Natural Resources, Lake Erie Islands Chapter of the Black Swamp Conservancy, Put-in-Bay Township Park District, Western Reserve Land Conservancy, and Cleveland Museum of Natural History.

So, the numbers of LEWS are up and LEWS habitat is protected, isn't that all we need to say they are "recovered" and remove them from the endangered species list? Not quite. In order to determine that LEWS are no longer threatened with extinction, we must address ALL past, present, and future threats to the species. One of the main threats to the species past, present, and likely future, is intentional persecution by humans.

Surely you have seen snake signs on the islands, read an issue or two of LEWS News, spoken with the Snake Lady, or seen THE episode of Dirty Jobs. All of these media encounters have been specifically planned and aimed at.... YOU! The goal of the public awareness campaign has been to expose people to the snake, and convince you that, like a cardinal, rabbit, monarch, or walleye, LEWS are part of the island environment that you live in. They have their place, and we have ours, and we can co-exist. You don't have to like the LEWS, talk about them, or even notice them--you just have to let them

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be. Several public opinion surveys of island residents were recently undertaken to see if the message was reaching folks, to assess the opinion of island residents towards the LEWS and to help determine if the threat of human persecution has been sufficiently abated.

Responses from the 2008 NIU survey of a subset of island residents on Kelleys, Middle Bass, North Bass, and South Bass indicate that 99% of respondents are aware that the Lake Erie Watersnake occurs on the island, and that 94% of respondents are aware that it is a protected animal. 83.5% of respondents indicate that their knowledge of Lake Erie Watersnake has increased since listing in 1999. Generally, these data indicate that our outreach and education campaign is reaching the vast majority of island residents, and helping to increase their access to information about the watersnake.

The public opinion surveys indicate that about 1/3 of island residents feel positively toward the snake, 1/3 feel negatively toward it, and 1/3 are neutral. While it is apparent that not all island residents like Lake Erie Watersnakes, the main factor in our evaluation of threats to the species is not how people feel about the snake, but how people *react* toward the snake—do they walk away from it or do they try to “get rid of it?” Opinion surveys seem to indicate that most people do not now and will not in the future kill Lake Erie Watersnakes.

We have also considered other potential threats to the LEWS, including contaminants, invasive species, roadkill, fishing bycatch, and LEWS population demographics, however recent research indicates that none of these are threatening the population.

It is important to understand that the “endangered” and “threatened” classifications are not just about numbers of animals. All threats to the listed critter must be addressed such that, if it were to be removed from the

endangered species list, it would not become endangered or threatened again within the foreseeable future. The process may seem slow to island residents, but it takes time and effort to ensure that a population of animals is secure. After all, the 10 years that the snake has been listed is only a small fraction of the time that the snakes have been present on the islands, and subject to a variety of threats that drove their numbers down to record lows. As we work through the de-listing process, we hope that you will continue to provide input on the status of the LEWS. We hope that you will try to appreciate the LEWS for what it is, an animal not unlike a squirrel or fish, that we share the island with. Most importantly, we hope that you as an individual will be one of the many that contribute to the LEWS’s survival and recovery, whether threatened or endangered, or not.

So, is LEWS still a federally threatened and state endangered species??? The answer is... “Yes, BUT...” The U.S. Fish and Wildlife Service (Service) is the Federal agency tasked with evaluating the status of Federal endangered and threatened species and determining if the listing is still appropriate. A 5-year review of the status of the LEWS was conducted in the fall of 2008, and it determined that the LEWS was recovered and should be delisted. Biologists in the Service’s Ohio office are currently writing the document that would remove the LEWS from the Federal threatened species list. This document will go through internal Service review, and then will be published in the Federal Register, and subject to public and peer review and comment. We anticipate that this document will be available for review and comment in the winter of 2009-2010. Once the comment period closes, all the comments will be considered, and addressed in a final rule, which will likely be published in 2010. Until a final delisting rule is published, no matter how many snakes you see basking on the shoreline, LEWS still has the full protection of the Endangered Species Act, and no take, harm or harassment, intentional or otherwise, is permitted.

~Megan Seymour  
U.S. Fish & Wildlife Service





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
4625 Morse Rd., Suite 104  
Columbus, Ohio 43230  
(614) 416-8993 / FAX (614) 416-8994

### **U.S. Fish and Wildlife Service Lake Erie Watersnake Management Guidelines for Construction, Development, and Land Management Activities August 19, 2009**

The Lake Erie Watersnake (*Nerodia sipedon insularum*) is a federally listed threatened species that occurs on the islands in the western basin of Lake Erie. Summer habitat includes cliffs with crevices, rocky shorelines, and rock-filled structures such as docks, breakwalls, and shoreline erosion control structures. Lake Erie Watersnakes forage in Lake Erie for small fish, primarily round goby. Suitable winter hibernation sites include cracks and crevices in bedrock, rocky soils, animal burrows, tree root masses, and human-made structures such as foundations, drainage tiles, and building pads. The Endangered Species Act prohibits “take” of all federally listed species. Take is defined as to pursue, harm, harass, hunt, wound, kill, trap, capture, collect, or to attempt to engage in any of these activities.

The U.S. Fish and Wildlife Service (Service) has developed the following guidelines to assist island landowners in avoiding take of Lake Erie Watersnakes during typical land management activities. However, implementation of these guidelines does not remove legal liability associated with take of a federally threatened species. The Service recommends that anyone planning a development project on the Lake Erie islands contact us early in the planning stages for project design assistance to avoid take of Lake Erie Watersnakes.

#### Excavation

During hibernation, Lake Erie Watersnakes are unable to move and are vulnerable to any disturbance of their hibernation sites. Excavation of any kind in potential suitable winter hibernation habitat within 528 ft (161 m) of shore should be avoided between October 15 and April 15. Activities to be avoided include, but are not limited to, digging foundations, burying utility lines, removing suitable tree roots or hollow tree bases, and destroying suitable human-made structures such as foundations or drainage tiles.

Excavation activities occurring between April 16 and May 31, or between September 15 and October 14 should only be conducted when air temperatures are above 60 degrees Fahrenheit. The construction site should be actively monitored for snakes before and during construction by an individual that can identify a Lake Erie Watersnake.

Any holes or trenches that are dug should be filled in as soon as possible to prevent watersnakes from inadvertently falling into them and becoming trapped. Holes or trenches should be inspected for Lake Erie Watersnakes before being filled.

#### Erosion Control

Mesh or woven erosion control fabrics or blankets should NOT be used to stabilize disturbed areas, as they have been documented to entangle and kill Lake Erie Watersnakes. Loose straw or mulch may be used as an alternative.

### Mowing

Shoreline vegetation is important habitat for Lake Erie Watersnakes, native birds, fish, amphibians, and mammals. It also helps to stabilize banks, prevent erosion, and promote water quality. Landowners are encouraged to avoid mowing within 69 feet (21 m) of the shoreline to protect these important habitat and water quality functions. Mowing between April 15 and September 15 within 69 feet (21 m) of the shore should be completed at dusk, when watersnakes will have taken cover for the night. Mowers should utilize a high setting, and the area to be mowed should be actively monitored for Lake Erie Watersnakes. If Lake Erie Watersnakes are encountered during mowing, activities should cease until the snake has left the area on its own.

### Shoreline Management

The island shoreline as well as shorelines adjacent to interior island ponds, inlets, bays, and marinas, are important habitat for Lake Erie Watersnakes. Excavation or removal of shrubs, standing or downed trees, root masses, animal burrows, piled rocks, cliffs, or bedrock within 69 feet (21 m) of the shoreline, ponds, inlets, bays, and marinas should be avoided.

The Service encourages preservation and construction of shoreline structures with designs beneficial to watersnakes. These include timber or steel crib docks and riprap erosion control structures instead of concrete or sheet steel. Furthermore, any project that will impact the shoreline or waters of Lake Erie must be coordinated with the U.S. Army Corps of Engineers (Corps) to ensure compliance with the Clean Water Act. The Buffalo District of the Corps can be contacted at (716)-879-4330.

### Tree Removal

Tree root masses may provide suitable hibernation habitat for the Lake Erie Watersnake. If you plan to remove trees on your property, the Service recommends that only the above-ground portion of the tree be removed. The root mass should be left underground. Within 69 feet (21 m) of shore, heavy machinery should be limited to paved areas so as not to harm watersnakes that may have retreated under rocks, logs, and other material.

Summary of habitat management practices, timing, and location where applicable.

<b>Time</b>	<b>Location</b>	<b>Recommendation</b>
Oct. 15-April 15	Within 528 feet (161 m) of shore	No Excavation.
April 16-May 31	Within 528 feet (161 m) of shore	Excavation only when temperature above 60° F. Mow at dusk, on high setting.
June 1-Sept 14	Within 69 feet (21 m) of shore	Mow at dusk, on high setting. Coordinate all construction and excavation projects along shoreline with Service.
Sept. 15-Oct. 14	Within 528 feet (161 m) of shore	Excavation only when temperature above 60° F. Mow at dusk, on high setting.

### Further Information

The Service recommends that anyone planning a development project on the Lake Erie islands contact us early in the planning stages for project design assistance to avoid take of Lake Erie Watersnakes. If any of these guidelines cannot be implemented, we recommend you contact the Service. Questions regarding these guidelines should be directed to the Service at (614)-416-8993. Additional information about the Lake Erie Watersnake is also available at our website: [http://www.fws.gov/midwest/Ohio/endangered\\_LEWS.html](http://www.fws.gov/midwest/Ohio/endangered_LEWS.html)

## Middle Bass Island Marina Project Snake Update

From April 1 to November 1 2008 the Ohio Department of Natural Resources (ODNR) renovated the Middle Bass Island State Park (MBISP) Marina. Lake Erie Watersnakes (LEWS) were known to inhabit the rocky shorelines of the marina and utilize near-shore foraging areas, thus being directly affected by this construction. In order to minimize potential impacts to the local population of LEWS residing within the marina area, the ODNR implemented several preventative measures including the construction of a large-scale exclusion barrier (2875 linear feet of silt fencing buried 6 inches and extending 3 vertical feet) around the construction site and employed Kristin Stanford, Keith Hanson, and others in the relocation of all snakes captured within the site.

LEWS were captured within the construction area via hand-capture, cover boards, floating minnow traps and funnel traps attached to the silt fence. Animals were measured, weighed and implanted with a PIT tag and then relocated to a site 0.3 mi. from the construction area. To monitor the relocation success and site fidelity of the LEWS during construction, the relocation site and a brushpile just outside the snake fence were periodically surveyed. Six relocated individuals were implanted with radio-transmitters in order to examine potential differences in movements and home range size, as compared to snakes monitored within MBISP in 2006 and 2007.

During the 25 weeks of LEWS activity, a total of 226 individual adult LEWS were relocated from the construction site, and 13 were unintentionally killed as a result of construction activities. Fifty-eight individual snakes required multiple relocations, some as many as 4 times, indicating that site fidelity can be extreme in this species. Although the number of relocated snakes monitored using radio-telemetry was low, observations suggest that site fidelity is much stronger for female LEWS and that this may ultimately affect survival. All of the relocated female snakes required multiple relocations, and two were eventually found predated within the construction site. Alternatively, the two translocated male LEWS seemed to adapt well to the relocation site without requiring any additional relocations and even hibernated at the relocation site.

Although the long term effects of relocation on the local population of LEWS are not yet determined, installation of the exclusion fence coupled with relocation and consistent monitoring likely reduced the potential mortality of snakes during the project. Kristin Stanford is currently working with students at OSU's Stone Laboratory to evaluate to what extent LEWS have re-colonized the marina basin now that the snake fence is down and construction is nearly complete.

~Kristin Stanford, Northern Illinois University/Ohio State University;  
Keith Hanson; Stephanie Bohlen; and  
Melissa Cheung



Middle Bass Island State Park marina during construction. The dashed line indicates the location of the "snake fence."

## THANKS!

Many thanks to those of you who participated in the public opinion surveys, who allowed access to your property for LEWS summer shoreline surveys, who tolerate piles of LEWS on your shoreline during the mating season, who call with questions/stories/ideas, who talk with neighbors and friends about wildlife and habitat on the islands, or who point out interesting plants or animals to your children or grandchildren! You are helping to protect the natural heritage of your island!



Lakeside daisy grows at the old quarry on Kelleys Island. Photo: Melanie Cota, USFWS.



U.S. FISH AND WILDLIFE SERVICE  
4625 MORSE RD., SUITE 104  
COLUMBUS, OH 43230

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Have questions, comments, or ideas for LEWS News?

Contact us! [Megan\\_Seymour@fws.gov](mailto:Megan_Seymour@fws.gov)