



# LEWS NEWS



Lake Erie Islands

Photo: Karen Vigmostad © 2005

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## Protecting Lake Erie's Natural Heritage

### Lake Erie Shore Not Just for Snakes...for the birds too!

In addition to being important habitat for the Lake Erie Watersnake, the western Lake Erie shoreline and islands contain critically important stopover sites for migratory birds as they cross the Lake Erie basin. Ongoing threats, including rapid development of this area, create an urgency to protect the most important stopover sites.

The Nature Conservancy, a nonprofit conservation organization dedicated to preserving biological diversity, is working with a variety of partners to develop a better understanding of these stopover sites. The Conservancy's Great Lakes program is coordinating a multi-agency, multi-state study to identify sites in western Lake Erie that provide significant resting and refueling stops for birds migrating between their breeding and wintering grounds.

The working group divided into teams to address the needs of bird groups: waterfowl, shorebirds, raptors, landbirds, and non-waterfowl waterbirds. Each team extensively surveyed published literature as well as unpublished reports, accounts, and theses, and interviewed bird migration experts in the region. This information was used to describe ecological and geographical characteristics of important stopover sites for each group of birds. Using the best knowledge available, these attributes

are being mapped using geographic information system technology so that protection and restoration efforts will be well focused and guide conservation efforts in the region. Preliminary assessment suggests that complexes of forests, shrublands, grasslands, and marshes near Lake Erie, and Lake Erie shorelines and islands are frequently used stopover sites by all groups of birds.

This work will serve as a model for stopover site protection in the entire Great Lakes basin and elsewhere. Identification and conservation of stopover sites on the Lake Erie shoreline will benefit a wide range of communities that depend on high quality habitat. For more information, contact Dave Ewert at: [dewert@tnc.org](mailto:dewert@tnc.org).

Elaine Fujimura  
The Nature  
Conservancy,  
Ohio Chapter

Great blue herons use the island shorelines for resting and foraging, and the forested island interiors for nesting.  
Photo: USFWS



## Public Comment Period Open on Draft Environmental Assessment and Habitat Conservation Plan for LEWS on Kelleys Island

The U.S. Fish and Wildlife Service invites public comment on a plan that would provide conservation and protection for the federally threatened Lake Erie Watersnake and its habitat on Long Point, Kelleys Island. A notice of availability of a draft Environmental Assessment (EA) and Habitat Conservation Plan (HCP) and an application for an incidental take permit under the Endangered Species Act, appears in the August 12 *Federal Register*. The public will have 60 days to comment on the assessment and plan. The permit application was made by Predevelopment LTD which proposes a single residential development on Long Point on Kelleys Island. The proposed development would alter or destroy habitat needed by the Lake Erie Watersnake.

If approved, the incidental take permit would allow the proposed residential development to affect some habitat used by the snakes, as well as take of some snakes, as long as measures outlined in the HCP to avoid, minimize, and mitigate impacts are followed. Before issuing an incidental take permit, the Service must evaluate alternatives considered in the HCP. This analysis is included in the EA that is now available for public review and comment, along with the HCP.

The Endangered Species Act prohibits take – harming, harassing, or killing a listed species, including destruction of habitat. However, the Act allows incidental take – take which is incidental to but not the intent of a particular activity – as long as an approved HCP is in place that would mitigate the effects of take and provide for future conservation of the species.

Predevelopment LTD is proposing to develop a 6.45-acre property on Kelleys Island, an area occupied by Lake Erie Watersnakes. The area contains one multi-owner residential lot, and under the draft HCP, measures would be taken by landowners to conserve the snake and its habitat on the property. Proposed actions to conserve the

snake and lessen the impacts of construction and development include:

- Restrictions on when ground-disturbing activities, such as construction and mowing, can occur. Snakes are vulnerable in spring and fall while moving to and from hibernating areas;
- Establishment of a conservation area to protect important lakeside habitat, used by Lake Erie watersnakes during summer and winter months;
- Restrictions on the use of pesticides and fertilizers in the conservation area, although spot-treatment for poison ivy would be permitted;
- Restrictions on the size and placement of the residence, garage, deck, driveway and septic system;
- Monitoring of the Lake Erie Watersnake for 15 years to gauge the effectiveness of these measures.

Written comments on the draft HCP and EA may be directed to Regional HCP Coordinator, U.S. Fish and Wildlife Service, 1 Federal Drive, Fort Snelling, MN, 55111-4056; fax 612-713-5292; e-mail: peter\_fasbender@fws.gov. Copies of the draft Habitat Conservation Plan and Environmental Assessment are available by writing, telephoning, faxing, or e-mailing the addresses above, and they are also available for viewing at the Service's webpage at: <http://www.fws.gov/midwest/nepa/>. A copy is also available at the public library at 528 Division Street on Kelleys Island. Written comments are due on or before October 11, 2005.

Angela Zimmerman  
Ohio Endangered Species Coordinator  
U.S. Fish and Wildlife Service



## Island Nature Camps a Great Success!

The Lake Erie Islands Chapter of the Black Swamp Conservancy (LEIC-BSC) hosted three nature experiences for children this summer to help them learn about the unique natural resources that are found on the Lake Erie Islands. Kristin Stanford provided programs for all three camps about the Lake Erie Watersnake. The highlight of the Nature Camp at South Bass was getting to catch a watersnake that promptly threw up a mudpuppy for the kids to see! They had a new respect for the snake's eating abilities! Getting to radio track snakes was a great experience for the kids as well.

A week long Nature Camp was co-sponsored by the Middle Bass Board of Education on Middle Bass Island with 25 kids ages 6 -8 attending in the morning and 25 kids 9 and older attended in the afternoon. Highlights for both camps included a visit by Mona Rutger with her animals from Back to the Wild. The younger children enjoyed fishing from the Middle Bass Yacht Club marina, hunting for snakes, trapping insects and spiders, and viewing a butterfly program. The older children built a butterfly garden, learned to track snakes using a radio transmitter, and went to the Ohio State University's Stone Lab for trawling, plankton, and fish programs.

On South Bass Island, the LEIC-BSC received an Ohio Environmental Education Fund grant to educate children about our unique island resources. The Nature Camp at the Bay included programs on spiders, butterflies, and snakes with a trip to the Butterfly House, Stone Laboratory for seining, and a water festival at the South Bass Island State Park for over 30 children aged 6-8. The Environmental Adventure Camp included a cook out and trip to Middle Bass Island State Park, an opportunity to talk with researchers at Stone Lab, a trip out with the ROV underwater camera, a visit to the glacial grooves, alvar, and quarry at Kelley's, and a kayaking experience along the cliffs and wetlands of the island for 20 children ages 9 and older. A questionnaire was distributed to evaluate the camps and to also gauge attitudes toward island resources and the Lake Erie Watersnake.

Thanks goes to our co-sponsor on South Bass, the Lake Erie Islands Historical Society, and our collaborators-the Lake Erie Islands State Parks and the Ohio State University Stone Laboratory, as well as our dedicated staff of Carol Ferguson, Valerie Mettler, Lisa Brohl, Kim Miles, Lisa Bircher, Justine Rhode, Kelsey Reider, John Ladd, Bonnie Petro, Emily Peterson, and Roberta Jones for making the program a success.

Lisa Brohl  
Chair, Lake Erie Islands  
Chapter, Black Swamp  
Conservancy



Ericson Booker holds an immature  
LEWS during Nature Camp at the  
Bay while Christian Berry looks on.  
Photo: LEIC-BSC

## Contaminants in LEWS Have Not Increased as a Result of Consuming Round Gobies

More than 150 non-native species are now living in the North American Great Lakes. Such invasions often have dramatic negative economic and biological effects. For example, non-native zebra and quagga mussels have changed food web organization (who eats who), resulting in new patterns of energy flow and nutrient cycles. These changes can also influence the transfer of environmental contaminants. The recent establishment and rapid population growth of the round goby, a non-native fish, may be having such an effect. Round gobies feed extensively on zebra and quagga mussels. Zebra and quagga mussels have higher fat content than do native mussels and because many environmental contaminants (e.g., pesticides and related compounds) are fat soluble, these mussels have higher concentrations of contaminants. These contaminants are passed on to round gobies and to predators on round gobies, resulting in successively higher concentrations, a process called bioaccumulation. Over the last 8 years, Lake Erie Watersnakes have shifted from a diet consisting of native fishes and amphibians to more than 90% round gobies. Thus, we might expect that concentrations of environmental contaminants are higher in watersnakes today than in the past.

Fortuitously, blood samples collected from Lake Erie Watersnakes in 1990 (before the round goby invasion) for other analyses had been frozen, providing an opportunity to test directly for changes in watersnake contaminant levels over time. For comparison, new blood samples were collected in 2003. Blood samples were collected by Richard King (Northern Illinois University), Kristin Stanford (Northern Illinois University and The Ohio State University F. T. Stone Laboratory), and Kim Fernie (Canadian Wildlife Service, Burlington, Ontario). Contaminant analyses were conducted by Ken Drouillard (Great Lakes Institute for Environmental Research, University of Windsor). All four investigators are participating in ongoing statistical analyses and interpretation. A preliminary analysis is presented here.

Concentrations of 60 different environmental contaminants were measured. Some contaminants fell below detectable levels in most or all samples, but

others showed markedly higher concentrations. In particular, measurable levels of PCBs, nonachlor, chlordane, hexachlorbenzene, octachlorstyrene, DDE (produced by the breakdown of DDT), heptachlor epoxide, and dieldrin were observed.

Statistically significant differences between 1990 and 2003 were detected in concentrations of heptachlor epoxide, dieldrin, and chlordane (see table). Interestingly, concentrations of these contaminants were lower (not higher) in 2003, following the round goby invasion, than in 1990. Concerns that the establishment of non-native quagga mussels, zebra mussels, and round gobies has resulted in increased bioaccumulation of contaminants by top predators appear not to be borne out by this analysis.

Contaminant	Concentration ( $\mu\text{g}/\text{kg}$ of lipid)	
	1990	2003
Heptachlor epoxide	164	40
Dieldrin	460	164
Chlordane	146	63

Statistically significant differences between males and females were detected in concentrations of DDE and heptachlor epoxide; Concentrations were higher in males than in females. This probably results from the transfer of contaminants from females to their young during reproduction. Higher toxin concentrations in males than in females has also been reported in turtles and gulls in the Great Lakes region, presumably for the same reason.

Significant variation among sampling locations was detected for DDE, dieldrin, nonachlor and chlordane. Concentrations varied among sites by 2.5 fold (dieldrin) to 7.1 fold (chlordane). The Kelleys Island Southeast Shore sampling location had consistently low levels of all contaminants except dieldrin. The North Bass Island South Shore sampling location had consistently high levels for all contaminants except DDE. Other sites that tended to have low contaminant levels included Middle Bass Island State Park and Pelee Island Lighthouse Point whereas South Bass State Park tended to have high contaminant levels. Differences in contaminant concentrations among locations were striking given the short distances involved – a result that will be the focus of further analysis and interpretation.

Richard B. King  
Northern Illinois University

## Memorial Dedication for Kent Kroonemeyer

All those who care about the Lake Erie Watersnake will remember Kent Kroonemeyer and the significant contributions he made toward awareness, appreciation and conservation of the snake. Kent was the Field Supervisor of the U.S. Fish and Wildlife Service's Reynoldsburg, Ohio Ecological Services Field Office from 1980 until his untimely death in 2001. On Saturday, June 25, 2005, friends, family, and partners came together on Kelleys Island to remember him and to celebrate his many contributions. Kent's achievements and his passion for natural resources touched many lives. Several individuals who had the honor

of working with Kent shared recollections of those special times and of his abilities at the dedication ceremony. Kent's concern for the Great Lakes islands and the Lake Erie Watersnake, and his ability to connect with people and impart those concerns were some of his true gifts. To honor his achievements, a bench and plaque were placed on East Quarry Trail in Kelleys Island State Park and were dedicated to his memory. Most importantly, his work will live on in the continued conservation of the resources he cared so much about.



"Watersnakes Welcome Here" The late Field Supervisor Kent Kroonemeyer working with partners on Kelleys Island to post "snake friendly" signs about the Lake Erie watersnake and its unique habitat. Photo: USFWS 1998



The family of the late Field Supervisor Kent Kroonemeyer along with friends and colleagues gathered on Kelleys Island to honor Kent's contributions. A bench and plaque were placed in his memory at Kelleys Island State Park.



## Clean Ohio Conservation Fund Grant to Preserve Two Island Properties

The Lake Erie Islands Chapter of the Black Swamp Conservancy has been awarded a Clean Ohio Conservation Fund Grant to purchase 2 acres of woods on South Bass Island. Three donors made the matching funds possible—they will be choosing a name for the property. The woodlot is a good example of the unique forest habitat found here on the Lake Erie Islands with sugar maple, common hackberry, and basswood. Blue ash is also found here as the dolomite is close to the surface. The area is carpeted with wildflowers: Dutchman's Breeches early in the spring, followed by Wild Hyacinths, and finally by a large display of Appendaged Waterleaf in late spring. Spring and fall bring migratory songbirds to this wooded spot. We are excited about this opportunity and hope to have a dedication of the property by next year at this time! Thanks to all who helped with the grant application or wrote letters of support!



This Cape May Warbler is one of many migratory birds that use the Lake Erie islands for stop-over areas during their long journey. Photo: USFWS

The Black Swamp Conservancy also assisted the Catawba Island Township Trustees in their Clean Ohio Conservation Fund Grant application to purchase a 65-acre property which includes wetlands and woods. What a great opportunity for open space preservation for the residents of and visitors to Catawba Island!

Lisa Brohl  
Chair, Lake Erie Islands Chapter, Black Swamp Conservancy



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