



LEWS NEWS



Kristin Stanford talks to Mike Rowe during filming of "Dirty Jobs"

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Protecting Lake Erie's Natural Heritage

LEWS in the Limelight! Discovery Channel's "Dirty Jobs" to feature the Island Snake Lady and the Lake Erie Watersnake!

Life as a field biologist has been a fun and rewarding career choice. It's always interesting to see the reactions of people whom I meet, when I tell them what I do. "I study snakes." Their confused response is often times, "Why?"

It's true that being a field biologist often isn't the most glamorous profession. In fact, much of what I do is down right gross. Not many people allow their limbs to be regularly chewed on by dozens of watersnakes and come home from a days work covered in snake poo. Am I a weirdo? Maybe.

Thankfully, this is exactly the kind of job Mike Rowe, the creator and host of Discovery Channel's Dirty Jobs, looks for in a story. Mike and his crew recently came to Put-in-Bay to spend a day filming with me in early August for an upcoming episode of Dirty Jobs. If you have never seen the show, the concept is simple. The host, Mike Rowe, showcases three different jobs by assuming the duties that the "experts" give him. As the title of the show describes, the jobs Mike performs usually have a dirty aspect to them. And more often than not "dirty" is a bit of an understatement.

So how did they hear about the LEWS and the island snake lady? Well, I just e-mailed them. It was that easy. After watching the show one evening, my fiancé looked over at me and suggested that I send them an e-mail telling them what I do for my job.

"What you guys do with those snakes is pretty dirty" he said. "I bet they would come out if you contacted them." Would they? I wasn't so sure.

After several days of prodding, he convinced me that it was worth a shot. I composed a message and posted it on the Dirty Jobs discussion forum (<http://dsc.discovery.com/fansites/dirtyjobs/splash.html>). Not in a million years did I think that I would get a response from their researchers the very next day asking me to contact them with more information!

After months of e-mailing, logistical planning and working around Mike's busy film schedule (he recently hosted Shark week for Discovery), we finally got a film date set for August 10th. Beginning at 10:00am, the crew filmed Mike conducting several aspects of the LEWS research that I do including, snake catching, measuring, weighing, sexing and even diet analysis, better known as puking! We finally finished the shoot just before 8:00pm. It was an unbelievably fun experience.

Did we get good footage? Did he manage to catch a snake?

Well, you'll all just have to watch and see. The segment will air sometime this fall. The show is on Tuesdays at 9pm ET/PT but be sure to check your local listings or the Dirty Jobs website.

I used to joke around with friends saying that one day they may see me on the Discovery Channel and gasp saying "I know that girl!"

That was my pie-in-the-sky—something to look forward to at the pinnacle of my career.

So is this it? Can it get any better from here?

(cont. page 2)

Lake Erie Watersnake – Round Goby Population Interactions

This summer, an investigation into the consumption of round gobies (an invasive fish species) by Lake Erie Watersnakes (LEWS) began. The goal of this research was to determine the amount of round gobies LEWS eat in a given period of time. LEWS were captured on South Bass Island and held at the F.T. Stone Lab for digestive rate trials. These trials were set up to discover the length of time it took for an average watersnake to digest an average-sized round goby. The trials consisted of a watersnake being fed a round goby weighing 5% of the snake's weight. The snake was then placed in a temperature controlled tank for a specified number of hours. At the end of the trial, the snake was manually stimulated to regurgitate, and the remnants of the round goby were weighed. By weighing the round goby before and after digestion, we determined how much of the round goby was digested during the trial time. Preliminary analysis of these data shows that round gobies can be digested in just 16-20 hours. Once the final analysis has been completed, we can use LEWS population density data to determine how many gobies watersnakes can eat in a given amount of time.

Along with the digestive rate trials, a maximum prey consumption experiment was also performed using LEWS. The goal for this test was to determine the maximum amount of round gobies a watersnake would eat in a given amount of time. Watersnakes were put in aquaria containing a set of weighed round gobies. The aquaria were checked periodically throughout the day,

and any eaten round gobies were replaced with new, weighed round gobies. After 8 hours, any remaining round gobies were removed. All the round goby weights for the day were totaled, and the remaining round goby weights were subtracted to give the total weight consumed for the day. This process was continued for five days for each snake. Although individual watersnakes varied in the amount they ate, some individuals ate a dozen or more gobies in five days. Further analyses will allow us to determine a theoretical maximum amount of round gobies LEWS could eat in a given period of time. Together with the digestive rate analysis, we hope that a realistic value for the consumption of round gobies by LEWS can be determined.

Finally, we surveyed a watersnake population on South Bass Island at two week intervals to determine the frequency and size of round gobies consumed by free-ranging watersnakes. Following capture, watersnakes were measured and manually stimulated to regurgitate, providing us with information on the proportion of snakes that had recently fed. Coupled with information on digestive rate, these data are providing a picture of the impact that watersnakes might be having on round goby populations in the island region. In contrast to the typical view that snakes eat large meals at infrequent intervals and then digest their food slowly, we are learning that LEWS eat frequent small meals and can digest their food quickly. As a consequence, LEWS may control round goby populations in the island region, potentially lessening the impact these invasive fish have on native fish populations.

~Peter Jones
Northern Illinois University

(Limelight, cont. from page 1)

All I know for sure is that I am extremely grateful to Mike and his crew for allowing me the opportunity to share our LEWS with the rest of the country. Although the show plans to highlight the "dirty" aspects of my job, I am confident that it will also highlight the importance of our research and conservation efforts.

And if that's as good as it gets, then I'd say I've done pretty well!

~Kristin Stanford
The Island Snake Lady



With the help of researchers, LEWS regurgitate round gobies as part of a dietary study. Photo: Kristin Stanford



ODNR builds Artificial Snake Hibernacula on Middle Bass Island

In August of this year, the Ohio Department of Natural Resources built two artificial hibernation structures for the Lake Erie Watersnake at the Middle Bass Island State Park (MBISP). These structures will hopefully provide hibernation habitat for LEWS and other snake species residing within the park and marina. The “hibernacula” are just a portion of the beneficial aspects for LEWS the ODNR has included within their plans for development.

So just how does one build a snake “hibernaculum?”

The MBISP hibernacula were modeled after similar structures built in southern New Jersey by other snake researchers, but with a few modifications.

Construction begins by digging a hole approximately 6’ deep and 10’ x 10’ in size. Large rocks are placed at the bottom of the hole to create crevices that the snakes can utilize. Several pieces of flexible drain pipe fitted with “T” shaped pieces at the terminal ends are placed among the rocks within the structure providing entrance. The pipes also had 2” holes cut into the sides along the entire length of the pipe to provide snakes multi-level access. More large rocks, small logs and left over pieces of drain pipe are carefully placed and piled creating a multi-layered shelter. In the case of the MBISP hibernacula, recycled pieces of concrete were also used from an old septic tank the park had planned to remove.

Smaller rock rubble is then piled on top and a piece of filter fabric is laid over the structure. The fabric is covered with approximately 2-3’ of sand and dirt while leaving the ends of the flexible pipes uncovered. As a final step, the entrances are surrounded with more pieces of small rock to reduce erosion.

In late October, after the snakes have moved to where they plan on spending their winter, the hibernacula will be surrounded with a “snake barrier” made of silt fencing and small snake traps. As snakes begin to emerge from hibernation in the spring of 2007, the structures will be monitored to determine whether any snakes have successfully spent the winter within the hibernacula.

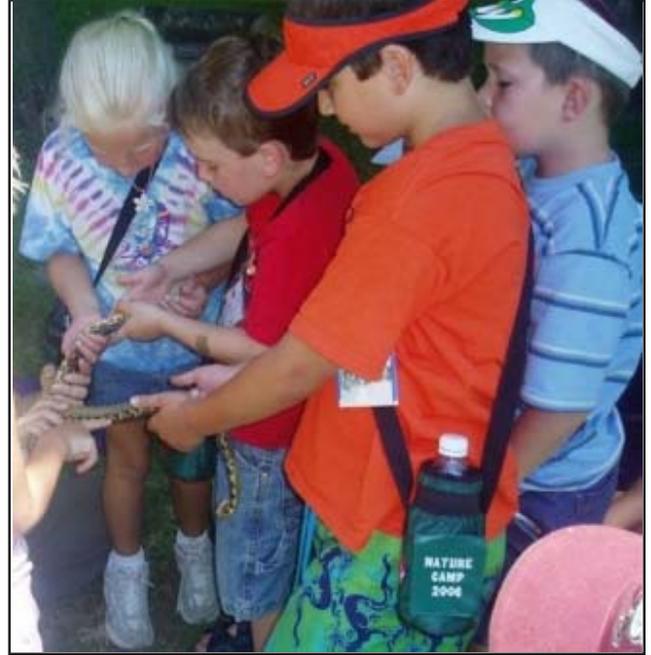
Special thanks to those who helped in the planning and construction of these unique structures. We will look forward to hearing about their future success!

~Kristin Stanford, The Island Snake Lady

Thanks for Making Nature Camp a Success!

Nature Camp Programs presented by the Lake Erie Islands Chapter of the Black Swamp Conservancy were a big success this summer teaching over 100 kids about our unique island environment! New this summer was Preschool Nature Camp with stories, games and crafts about birds, dragonflies, and leaves. Nature Camp for the younger children on both Middle Bass and South Bass included programs on Bees, Bats, and Bubbles! A joint lunch with both morning and afternoon sessions was enjoyed by all. Environmental Adventure Camp on Middle Bass included fishing with Pat Chrysler, an ROV trip from OSU Stone Lab, kayaking with Kayak the Bay to Gibraltar, and an overnight at the Middle Bass Island State Park. Adventure Camp at the Bay included a trip to North Bass for snakes and butterflies, Ladd Carr Wildlife Woods to pull garlic mustard, and ended with kayaking and camping at South Bass Island State Park. Both groups learned about bat conservation and built bat boxes which will be used at North Bass, Middle Bass, Kelleys, and South Bass State Parks as well as Perry's Cave. Programs on the Lake Erie Watersnake presented by Kristin Stanford for all the campers are always a favorite and important part of our camp program. All campers were awarded a prize for reusing and recycling their water bottles for the week. Plans are already underway for next year's camps!

A big thank you goes to the Middle Bass Yacht Club and to the Middle Bass Town Hall for use of their facilities during our Middle Bass Nature Camp week sponsored by the Middle Bass Local Board of Education. On South Bass thanks goes to the Lake Erie Islands Historical Society, North Bass School Board of Education, Perry Holiday Hotel, South Bass Island State Park, Perry's Cave and O.S.U. Stone Lab for the use of their facilities during our camp program. Thanks also to the Put-in-Bay Recreation Committee and all our Nature Camp Fund donors who made the camp possible. We couldn't have done it all without our 2006 staff—Lisa Brohl, Carol Ferguson, Valerie Mettler, Kim Miles, Emily Peterson, Kelly McCarthy, Matt Okneski, Sandi Glauser, Sally Duffy, Kristin Stanford, Annmarie Eriksen, Lianne Genzman, and Sue Bixler. Thanks goes to special instructors, John Schrenk, Tim Krynak of the Cleveland Metroparks, Mark Pecot from 41 Degree North, Vicky Wigle of Kayak the Bay, Debbie Nofzinger of the Wood County Metroparks, Dr. Dave Moore, Ranger Chris Desh, Helen Skelton,



Nature Camp participants hold an Eastern Fox Snake. Photo: Lisa Brohl

Arnold Bigler, and Eric Mayer. We would also like to thank everyone in the community that donated supplies, support, or services to make a successful program!

~Lisa Brohl

Lake Erie Islands Chapter, Black Swamp Conservancy

Nerodio 2006

The 2006 annual spring Lake Erie Watersnake census (*Nerodio 2006*) occurred from 30 May - 11 June 2006 and involved a total of 25 participants. During this period, more than 1,450 LEWS captures were made. Especially noteworthy were the recaptures of two LEWS, initially marked 9 and 10 years ago (in 1997 and 1996). These snakes, both males, were adults when initially marked. Their recapture extends the maximum observed survival of adult LEWS to 10 years. 1996 represents the first year that watersnakes were marked using PIT tags and the first year of LEWS field work following a three-year hiatus (1993 - 1995). Thus, it is possible that adults sometimes survive even longer than 10 years, as may be documented in future annual censuses. Mark-recapture data collected during *Nerodio 2005* and *Nerodio 2006* are currently being used to update estimates of LEWS population size. (cont. on pg. 5)

The small Ohio islands in Lake Erie were a particular target of field work during *Nerodio 2006*. With the exception of West Sister Island, LEWS were encountered in high numbers on the small Ohio islands in 2006, consistent with censuses in previous years (see table). Of particular interest is the continued presence of LEWS on Green Island. Watersnakes were present on this island in the early 1900s, but were not found during repeated searches in the 1980s and early 1990s. The renewed presence of LEWS on Green Island was first noted by C. Caldwell and S. Butterworth of the ODNR, Division of Wildlife, who visited the island in 2002. This year, a team of researchers captured and marked 40 large adults on the island. LEWS also occurred on West Sister Island in the early 1900s, but were not found during repeated searches in the 1980s and early 1990s. A visit to this island in 2002 resulted in the capture of one adult female watersnake. However, an intensive search of West Sister Island on 9 June 2006 by six workers resulted in no watersnake sightings or captures. This result suggests that LEWS remain exceedingly rare or absent from West Sister Island. Possibly, the watersnake captured there in 2002 was a transient individual that swam or drifted to the island rather than a member of a permanent resident population.

Island	Census Date	Number of watersnake captures
Rattlesnake	2-Jun-04	51
	30-May-06	48
Ballast	8-Jun-04	48
	3-Jun-06	73
Sugar	24-Jul-02	27
	4-Jun-04	80
	3-Jun-06	80
Green	25-Jun-02	20 (sightings)
	23-Jul-02	9
	5-Jun-06	40
West Sister	26-Jul-02	1
	9-Jun-06	0
Gibraltar	5-Jun-04	57
	14-Jun-04	17
	2-Jun-05	29
	10-11 June 2006	21

~Richard King
Northern Illinois University

Ohio Edison Installs Artificial Hibernaculum

As one offsetting measure to enhance LEWS habitat, artificial hibernacula may be constructed, such as this one on the Miller Ferry property on South Bass Island. This habitat enhancement was to offset habitat impacts due to a new power cable being installed by Ohio Edison. Thanks to Kim Harpel from Ohio Edison; Bill Wenger, Stan Neff and project manager Tim Paquette of Durocher Marine and Kokosing construction; and the Kokosing construction crew pictured from left: Brice Shepard, Bart Winand, Rob Hines, and Jay Overholt. Photo: Kristin Stanford



Middle Bass Island State Park Telemetry Research and Consultation Update

In May of this year, 10 Lake Erie Watersnakes from Middle Bass Island State Park were implanted with radio-transmitters as part of a 3 year study examining habitat use before and after the proposed marina development within the park.

Kristin Stanford and her assistants have been monitoring their movements approximately twice per week. Some interesting movement patterns have been observed with these newly implanted snakes, showing a much larger activity zone than LEWS that were monitored at this same site four years ago.

Specifically, it seems as though several of the snakes are utilizing the interior waters of the marina for foraging, and swimming out of the marina entrance to the shallow waters outside. These snakes have been moving between the marina and a nearby breakwater and small private cribdock near Hazards lakeshore condominiums (see photo above). Kristin plans to continue to monitor these snakes until fall to determine new areas of hibernation.

Formal consultation between ODNR and the U.S. Fish and Wildlife Service is currently ongoing, to assess the impact the marina rehabilitation and associated actions will have on the LEWS. ODNR has proposed a number of avoidance, minimization, and offsetting measures to protect the LEWS to the maximum extent practicable before, during and after construction. Formal consultation will likely be completed by the middle of September 2006.

~Kristin Stanford & Megan Seymour



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