



THE BOT. SQUAD

FIGHTING TYPE E BOTULISM SINCE 2006

2016 Season Underway - No Sick or Dead Birds to Report!



Clear waters prevail as a result of cool, calm spring weather. View from North Manitou Island looking south toward South Manitou.

Focus on Nearshore - Offshore Waters

Over the past decade, there has been an increased incidence of bird deaths in Lake Michigan due to Type E avian botulism. Over 6,500 dead birds have been documented within the Sleeping Bear Dunes National Lakeshore (SLBE) alone. Scientists from the National Park Service (NPS), U.S. Geological Survey (USGS), University of Wisconsin-Milwaukee, and a SLBE citizen science dive team organized to assist last year, have been conducting a collaborative research project to determine the causes of these botulism outbreaks . *Continued on Page 3*

Audubon Outreach

Educational programs discussing the GLRI - avian botulism monitoring effort at SLBE were presented in April and May to the Grand Rapids and Benzie Audubon Societies.

These events were attended by over 100 Audubon members and friends, and generated thoughtful questions and positive feedback.

Invasive species, fluctuations in water level and temperature, and changes in Lake Michigan's food web were discussed relative to observations and bird mortality data collected by program volunteers during the past decade of monitoring in the Park. Our many nesting piping plover (as well as local waterbirds, and migratory waterfowl) have all been impacted by recent transformations in lake ecosystems, and will continue to be a focal point of ongoing research. Their fate is a continuing concern of ardent birders, scientists, and Park visitors as well.



*Avian Botulism Project Lead
Dan Ray at Benzie Audubon.*

Photo by John Ester

Outreach and Education

Rangers are attending special events throughout the summer spread the word on Avian botulism and invasive species plaguing the great lake region. The outreach schedule includes:

May 21st Empire Asparagus Festival

July 9th Bear Lake Days

July 16th Empire Anchor Day

August 12 & 13th Port Oneida Fair

August 19 & 26th TC Friday Night Live



Events are still being added to the outreach schedule, if you have any outreach suggestions please contact interpreter ranger Sarah Chalup at sarah_chalup@nps.gov



This summer rangers are starting a new interpretive beach walk program which will give visitors an opportunity to help collect data while learning about Avian botulism. Along with the beach walk, evening programs discussing Avian botulism and other Great Lakes issues will be given weekly.

Once summer hits, visit: www.nps.gov/slbe for a schedule of ranger programs.

Dr. Harvey Bootsma to Discuss Avian Botulism at Sleeping Bear Dunes National Lakeshore

May 25th, 7:00 p.m. Philip A. Hart Visitor Center Auditorium Empire

Continued from Page 1

This includes research being conducted at Sleeping Bear's Good Harbor Bay. To help us better understand the drivers of these outbreaks, Dr. Harvey Bootsma (University of Wisconsin-Milwaukee) will present a program entitled "Avian Botulism in Lake Michigan: How Does it Happen?" on May 25 at 7:00 p.m. at the Philip A. Hart Visitor Center Auditorium in Empire, Michigan. Dr. Bootsma will discuss research findings to date, which suggest that botulism outbreaks are the results of changes in nutrient dynamics and food web structure, ultimately linked to the invasion of the lake by quagga mussels and the round goby.

This talk is part of a Sleeping Bear Dunes National Lakeshore speaker series called "Research Rendezvous." To celebrate the 100th anniversary of the NPS and highlight the value of national parks as our nation's "living laboratories," the National Lakeshore is hosting a series of public talks by park researchers in 2016. All Research Rendezvous presentations offered at the National Lakeshore are free.

Talks are scheduled once or twice a month throughout 2016, with more being added frequently. Please check www.nps.gov/slbe/planyourvisit/events.htm for the current schedule of upcoming talks.

More Nearshore Monitoring News

Sleeping Bear Dunes is one of the few places in the Great Lakes where a continuous nearshore research and monitoring program has been established. The 2012 revision of the Great Lakes Water Quality Agreement called for increased monitoring and research in the nearshore zone. Research being conducted by scientists

continued on Page 5



Become a Bark Ranger at Sleeping Bear Dunes!

Sleeping Bear Dunes National Lakeshore is hosting an orientation meeting for anyone interested in volunteering to serve as a “Bark Ranger.” Bark Ranger volunteers and their canine companions will serve as ambassadors on National Lakeshore beaches to provide visitors information about the park, highlight pet policies, and pet safety. Bark Rangers will also help to protect the National Lakeshore’s nesting shorebirds.

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Interested individuals (no dogs, please) can attend an orientation session on Tuesday, May 24, 7:00-8:30 p.m., at the Philip A. Hart Visitor Center, 9922 Front Street, Empire, Michigan 49630. Bark Rangers will receive training and Bark Ranger gear for their dog, if they



Bark Ranger VIP Coordinator
Erica Adams



choose to volunteer with their dog. You do not have to own a dog to become a Bark Ranger. As part of the volunteer training, a brief session on preventative care for you and your dog while working in hot weather environments will be presented by Dr. Jennifer Sidge, DVM.

If you are interested in volunteering but are unable to attend either of the sessions, please contact NPS Wildlife Biologist Sue Jennings at 231-326-4751.

Continued from Page 3 from the National Park Service, and the School of Freshwater Sciences at the University of Wisconsin-Milwaukee has improved our understanding of the factors responsible for nuisance algal growth and bird deaths due to avian botulism, as well as the effects of invasive species, such as the round goby, on native fish populations. While monitoring at SLBE has been conducted at Good Harbor for years, researchers do not know how well the results of these studies apply to other parts of Lake Michigan. To answer this question, two other nearshore research sites have been set up on the west side of the lake. The University of Wisconsin-Milwaukee team is studying a site just north of Milwaukee, and more recently the Wisconsin Department of Natural Resources has established a site near Kewaunee in Wisconsin, where it is measuring dissolved phosphorus (which regulates algal growth), dissolved oxygen (which is an indicator of algal productivity) and the abundance of nuisance algae. Thus, research at SLBE becomes part of a greater research network, as identical measurements being made at all of these sites will allow researchers to answer some important questions such as - why are nuisance algae worse in some areas than others; why is avian botulism a bigger problem in northern Lake Michigan; and how important is the nearshore zone within the lake's food web?



In the next Newsletter:

Citizen Science Diving at Good Harbor Bay

Bot Squad VIP 2016 Season Organizational Meeting

Edited by: Sarah Chalup

Dan Ray

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