

Michigan Swimmer's Itch Partnership

Michigan Lake Associations Working Together to Reduce Swimmer's Itch
Through Control, Prevention, Research and Education

Newsletter

Winter 2018

2017 - BANNER YEAR FOR PROVIDING SOLUTIONS TO SWIMMER'S ITCH

2017 was a banner year for the Michigan Swimmer's Itch Partnership. Aided by a \$250,000 grant from the State of Michigan, a significant amount of work was conducted on five northern Michigan Lakes. This work not only reduced the future risk of swimmer's itch on these lakes, but increased our understanding of swimmer's itch and suggested several new areas of inquiry which could help in the development of a long term, cost-effective control program. "We are grateful to the State of Michigan for providing this funding and understanding the critical need to act now to curb swimmer's itch and to lay the important groundwork for sustainable solutions to this problem, says Jim Vondale, Co-chair and founding member of the Michigan Swimmer's Itch Partnership. "Swimmer's Itch has a devastating impact on lakes, first to riparians and visitors who experience the painful result of swimming in an infected lake, but also to property values and to the tourism-based economy as a whole. Our work will help to protect swimmers and will benefit the Northern Michigan economy. We look forward to sharing our results with all of Michigan, and beyond."

We are also pleased to announce that an additional \$250,000 has been appropriated for 2018. Goals for 2018 include continuation of our work to create long term, science-based control programs, working with MDNR to finalize a Merganser Control Permit Program, Assessment

MERGANSER CONTROL ACTIVITIES 2017

Two highly qualified contractors worked to control common mergansers in 2017. Swimmer's Itch Solutions, headed by Dr. Curtis Blankespoor and son of Dr. Harvey Blankespoor, a pioneer of swimmer's itch research and control techniques, worked on Higgins Lake and Crystal Lake. Ron Reimink of Freshwater Solutions, who had worked with Dr. Harvey Blankespoor over the past several decades, worked on three lakes in Leelanau County: Glen Lake, Lake Leelanau and Lime Lake.



Dr. David Jude, Dr. Harvey Blankespoor, Dr. Randall DeJong and Dr. Curtis Blankespoor, of Swimmer's Itch Solutions, holding captured merganser chicks

In all, 355 mergansers were removed from these lakes, and relocated to areas where the swimmer's itch lifecycle cannot be completed, and, therefore the infected birds are not a threat to unsuspecting swimmers. Birds were banded. Geolocators were placed on 4 hens, *continued on page 2*



Mergansers perched in a tree
photo courtesy Freshwater Solutions

assistance to additional lakes; expansion of merganser relocation sites, refinement of a measurement metric to standardize reporting of levels of cercariae, supporting efforts to develop preventative measures, and successfully soliciting additional funds to support research efforts. For a complete list of goals, go to : <https://www.misip.org/reports>

NEW MERGANSER CONTROL PERMIT PROGRAM NEARS COMPLETION

We're excited to announce that the Michigan DNR is close to finalizing a Merganser Control Permit Program. MISIP has been working closely with MDNR for several years, encouraging them to find a way for more lakes to obtain the needed permits to control their merganser population to reduce swimmer's itch on their lake. Prior to this, the only way to obtain permission to trap and relocate the common merganser was to obtain a scientific collectors permit. This involved the development of a research program, with a minimum of a three year time frame, and specific reporting requirements.

The new program is close to completion and will simplify the permit process and reporting. We will inform you of the details of the program when the final version is approved. Many thanks to the great staff of the Michigan Department of Natural Resources Wildlife Division, and to Rob Karner, Glen Lake Wildlife Biologist, who has headed up this effort over the past several years, communicating frequently with the DNR, and attending numerous meetings on behalf of MISIP. Thanks also to Wayne Swallow and Jim Vondale who led MISIP efforts to provide science and data-based responses to the DNR proposals. We are greatly appreciative of the MDNR's willingness to hear our concerns and to put the hard work into developing this new program.

2017 CONTROL, continued from page 1 which may help us to understand their nesting habits next year.

Early removal and relocation of common merganser broods breaks the life cycle of the SI parasite and results in a significant reduction to a swimmer's risk of contracting swimmer's itch the following year.

2017 was the first year of control on Crystal, Glen and Lake Leelanau, the second on Lime Lake and third year of control on Higgins Lake. In three years, the snail infection rate on Higgins Lake has declined dramatically (98%).

"Children are swimming in Higgins Lake again" says Jim Vondale, "It is gratifying to see the lake come alive, with visitors to the parks and riparians once again enjoying the lake." *For complete details about the control work on all lakes in 2017, go to <https://www.misip.org/reports>.*



Ron Reimink, Freshwater Solutions and his crew successfully trap another merganser brood

SCIENTIFIC REVIEW COMMITTEE

In 2017, MISIP established a Scientific Review Committee to solicit and review research proposals. Rob Karner, Glen Lake Watershed Biologist, headed up the committee. 12 proposals were received from four researchers. The committee prioritized the proposals and sent their recommendations to the Steering Committee. It will be necessary to raise additional funds in order to pursue these research projects. If you are interested in learning about our research proposals, please contact Susan Price, Project Manager (sbprice05@gmail.com), or Rob Karner, Committee Chair (rkarner@leelanau.com) Thanks to the members of the Scientific Review Committee for their time and effort in reviewing these proposals.



Drs. Curt and Harvey Blankespoor of Swimmer's Itch Solutions release captured merganser hens and chicks

Save the Date! MISIP Presentation at Michigan Lake and Streams Association Conference and MISIP General Membership Meeting - Saturday, April 21

MISIP will once again be presenting at the annual Michigan Lake and Streams Association Meeting on Saturday, April 21st at 1:30 PM at the Crystal Mountain Resort. Presenters will include Jim Vondale, co-chair of the Michigan Swimmer's Itch Partnership, Dr. Curt Blankespoor of Swimmer's Itch Solutions, Ron Reimink of Freshwater Solutions, and Wayne Swallow, Watershed Biologist for Lake Leelanau. They will be focusing on describing the impressive work completed on five lakes during 2017, results of these control and research programs, and insights gained from that work. They will also be discussing the new Merganser Control Permit Program, with tips about how a lake can prepare to apply for and qualify for a permit. In addition, Wayne Swallow will speak about progress on a new preventative cream that he has been developing for many years.

The Conference will also feature many other important and interesting topics regarding issues affecting Michigan's inland lakes and streams.

For more information about the conference and to register to attend the conference, please go to : <http://www.mymlsa.org/mlsa-57th-annual-conference-2/>

Prior to the ML&SA presentation, a **meeting of the MISIP membership** will be held at the Crystal Mountain conference facility. All members are welcome to attend from 9:30 to 12:30 where they will learn the latest MISIP news. Please email Susan Price (sbprice05@gmail.com) if you plan to attend the MISIP General Membership Meeting.

NEW QPCR LAB ESTABLISHED

A qPCR lab was established at FWS Headquarters on Lime Lake this summer. Dr. Patrick Hanington, a leader in applying this cutting-edge technology, assisted the set



Dr Hanington demonstrates the qPCR lab at FWS Headquarters on Lime Lake

up and provided training for the technicians.. qPCR is an alternative method to snail infection rate for analyzing the levels of the swimmer's itch-causing larvae (cercariae). It is being studied to determine if it can provide a reliable and less expensive method of measuring lake-wide infection rates by analyzing water samples from a lake. Water samples from perennial hotspot areas were collected weekly to determine parasite levels in the water. These results, along with qPCR analysis conducted in 2016 helped to determine a baseline for swimmer's itch severity and was essential in several other research projects.



Ron Reimink of Freshwater Solutions tests a baffle system and conducts a water depth cercariae distribution study on Lake Leelanau in 2017

2017 RESEARCH SUMMARY

2017 Research aimed to further understand the dynamics of the swimmer's itch lifecycle, and the factors that may increase a swimmer's likelihood of contracting swimmer's itch. At right, Aaron (FWS) throws a ring into the water to sample snails in Lake Leelanau. Below is a list of research conducted this summer:



- Assessment of parasite loads in breeding common merganser hens (SIS) – Higgins, Crystal
- Web tagging of captured merganser broods (SIS) - Crystal, Higgins, ,FWS) - Glen, Lake Leelanau, Lime
- Geolocators placed on hens (FWS) Glen, Lime, Lake Leelanau
- Assessment of Snail Infection Level (SIS) - Higgins
- qPCR Water sampling and analysis (FWS) – Glen, Lake Leelanau, Lime
- Time of Day/Wind research (FWS) - Glen
- Time of Day Heat Map (FWS) – Glen
- Water Depth Cercariae Distribution (FWS) – Glen
- Hot Spot Control development testing (FWS) – Glen, Lake Leelanau
- Hot Spot Analysis – snail, waterfowl survey, fecal analysis(FWS)– South Lake Leelanau
- Copper Sulfate treatment effectiveness analysis (FWS)– South Lake Leelanau

For more details on the research and results, and for access to the full contractor reports in 2017 and prior please go to <https://www.misip.org/reports>.

TRAINING PROGRAM ESTABLISHED TO INCREASE NUMBERS OF QUALIFIED CONTRACTORS

2017 marked the launch of a training program intended to increase the number of qualified contractors who can provide trapping and relocation services on lakes. Under the leadership of Glen Lake, and their Watershed Biologist, Rob Karner, two science teachers from Leelanau School, Bruce Hood and Joe Blondia, were trained by Ron Reimink of Freshwater Solutions. Ron, who, with his team, conducted the control work on the three Leelanau Lakes, helped to develop the nets and techniques of trapping that allow mergansers to be safely collected and relocated. "Mergansers are diving birds and are extremely difficult to trap". Says Rob Karner, Glen Lake Wildlife Biologist. "We are extremely fortunate to have such an expert in the field able and willing to train others, and to share the details of the design of the nets. Next summer, Joe and Bruce will be able to conduct control activities on our lakes at a significantly reduced cost."



Ron (FWS) and trainee Bruce Hood band a captured merganser hen

ABOUT MISIP

The Michigan Swimmer's Itch Partnership (MSIP) is an informal partnership of lake associations formed in 2014. Its mission: to bring together lake associations and provide leadership in Michigan to address swimmer's itch through effective, comprehensive, science-based control programs, targeted research, education, and the development and testing of preventive measures. We work with Tip of the Mitt Watershed Council, who acts as our Fiduciary and Grantee. Here's what we do:

Educate members of our lake associations, state and local government leaders, government regulators, businesses and the public about the importance of our lake resources in Michigan and the serious adverse impacts of swimmer's itch.

Bring together and provide strong leadership for lake associations in Michigan, state and local government leaders, government regulators, businesses and the public to address the critical problem of swimmer's itch.

Advance the state-of-the-art of swimmer's itch science for control programs, prevention and research.

Act as a one stop resource and provide information to lake associations in Michigan for swimmer's itch control programs, prevention and research.

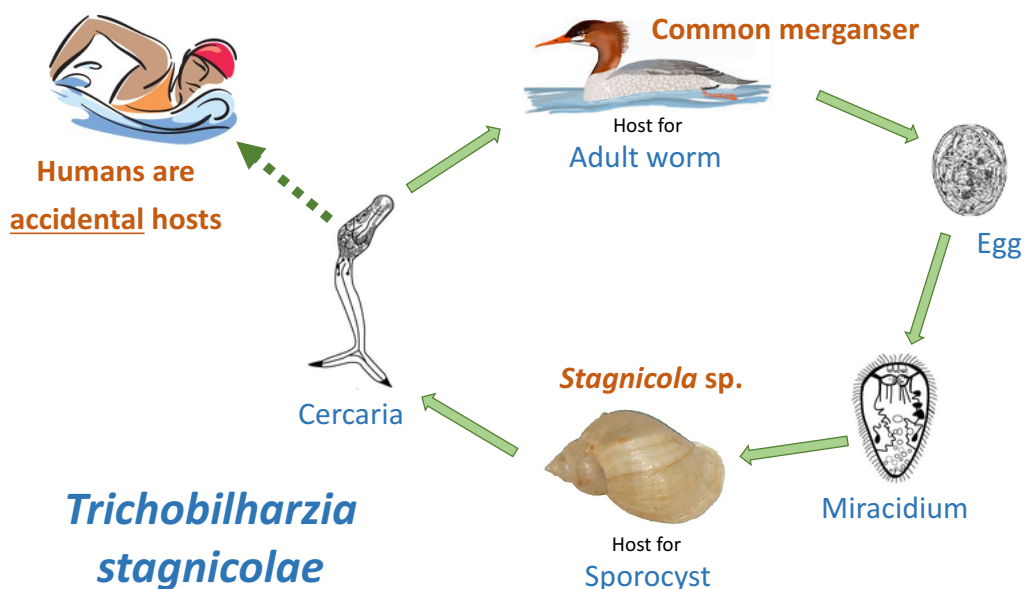
What We've Achieved

- Created an association of lake associations who have banded together to combat swimmer's itch.
- Held numerous conferences to present and discuss the most recent information about swimmer's itch.
- Assisted Lake Associations in determining the proper steps to take to reduce swimmer's itch in their lake..
- Connected Lake Associations with experts in the field who can perform necessary control work and research on their lake.
- Was instrumental in 2016 and 2017 State appropriations which are assisting lake associations in funding their control and research efforts.
- Worked closely with the MDNR to develop a new Merganser Control Permit Program
- Spurred new training and research programs which will benefit future effectiveness and costs of control, as well as overall understanding of the life cycle and of merganser behavior.

DONATE TODAY!

If you are interested in assisting MISIP's research initiatives and other work, please go to : <https://www.watershed-council.org/gifts-and-donations.html> and select MISIP. Thank you!

The Swimmer's Itch Lifecycle



Swimmer's itch is caused by a group of parasitic flatworm species, called avian schistosomes. All avian schistosomes live as adult worms in a definitive (vertebrate) host, and pass their eggs in the feces of their host. If the eggs land in water they hatch within an hour and the resulting free-living larvae (called miracidia) need to penetrate into the correct intermediate host (always a snail) in order for the parasite to survive. Once inside a snail, the flatworms reproduce asexually and

after 3-4 weeks develop into second free-living larval stages (called cercariae). These cercariae leave their host to find a new definitive host. Swimmer's itch, a severe dermatitis, occurs when cercariae accidentally penetrate humans when they are in lake water, where they die before reaching the skin's dermal layer. In many Michigan lakes, the common merganser is the primary or sole vertebral host.

For more information on swimmer's itch, go to: <https://www.misip.org/swimmers-it/>