

COREY LAKE BREEZE

MAY 2020



PHOTO BY JIM GILLARD

COVID 19 AND CLA SUMMER EVENTS

Hopefully all of our Corey Lakers are doing well and surviving the current global pandemic. The Corey Lake Board of Directors met on May 5 by video conference to discuss the impact of Covid 19 on the CLA summer schedule and events.

This is a moving target as our state begins to reopen. This is the current schedule of events:

June- Annual Meeting: postponed until further notice

July 3rd: Fireworks at 10:30 pm

July 3rd Boat Parade: pending DNR approval which cannot be given until the Governor opens the state

Children's Parade: cancelled

August 1: All Lakes Garage Sale

Please note that the Breeze will not be mailed, but we will endeavor to provide you with information on the CLA website at coreylake.com.

NOTE that the CLA does not sponsor and is not involved with the Poker Run as that is now sponsored by private parties on the lake.



Swimmer's Itch Impact on
Corey Lake (2019 survey)



By: Melissa Ostrowski

Dear Corey Lake Association and Lake Members,

On behalf of the 2019 Swimmer's Itch team, we would like to thank you again for your participation with last year's summer project and your continued support! I have sent a copy of Dr. Tom Raffel's 2020 presentation and a copy of our 2019 MISIP report to Jay Wiseman to pass along to the Corey Lake community. Thank you to Jay, Charlene Chase, and Mary Stalter for your assistance with getting access to sample sites at Corey Lake! Below is a bit more explanation of our 2019 Swimmer's Itch project.

What was the purpose of our project?

The primary purpose of this study was to quantify the distribution and abundance of trematode parasites and their snail intermediate hosts across southern Michigan, and to investigate the potential drivers of these patterns. One particularly interesting group of trematodes is avian schistosomes, whose infective stages (cercaria) cause an itchy rash known as "swimmer's itch" (Fig. 1). We conducted a large-scale field survey to 1) quantify snail densities, 2) measure environmental variables, and 3) collect snails and screen them for trematode infection. We also collected filtered-water samples for DNA detection of avian schistosome parasites, in collaboration with Ron Reimink (Freshwater Solutions) and Dr. Patrick Hanington (University of Alberta). With

the data collected in this study, we hope to fill knowledge gaps about the distribution and environmental drivers of snail and trematode parasites in southern Michigan lakes. We will compare them to data collected in a 2016 swimmer's itch survey that our lab performed in northern Michigan. Data from both surveys will help inform lake managers and associations about potential measures they could take to reduce problematic trematode infections. We conducted this project in partnership with snail expert Dr. Deanna Soper (University of Dallas).

How did we execute this project? Why is it relevant to Corey Lake?

We selected lakes based on historical swimmer's itch reports, scientific studies, and treatment permits in Southern Michigan between 1939-1967. (Corey Lake was one of these historical lakes that we found! 😊) Sites were largely selected based on accessibility and included city/county parks, boat launches, and residential property owned by our local contacts. Lake sizes varied from ~30 acres to 2600 acres, located within Barry, Calhoun, Jackson, Lenawee, Mecosta, Missaukee, Muskegon, Newaygo, Oakland, Osceola, Saginaw, St. Joseph, and Wexford Counties. We surveyed 38 sites on 27 lakes. We sampled up to three sites per lake, based on lake size. We surveyed each site twice, once in mid-June and once in July/ August. At each site, we conducted an EPA-based habitat assessment in the riparian and littoral zones, conducted water quality measurements, surveyed for snails, and collected a 25 L filter water sample for DNA analysis of the presence and abundance of avian schistosome cercariae in the water. We used quadrat sampling and timed searches to quantify snail densities, and we collected snails to screen them for trematode parasites. Following screening, snails and parasites were preserved for later identification in the lab.

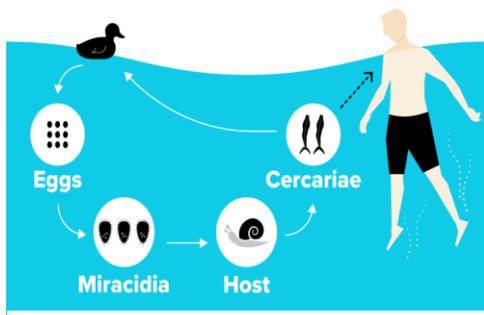


Figure 1. Life cycle of avian schistosomes, the group of trematode parasites that cause "swimmer's itch".

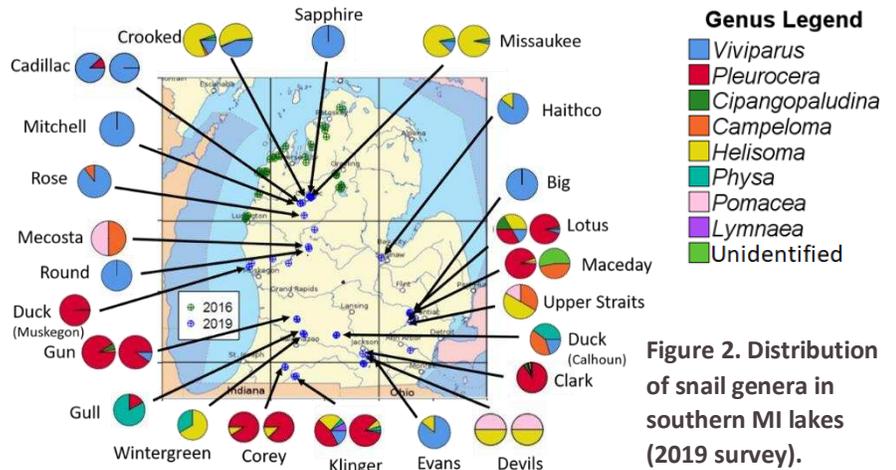


Figure 2. Distribution of snail genera in southern MI lakes (2019 survey).



Figure 3. Snail genera found during our 2019 survey of southern MI lakes. We found *Helisoma* and *Pleurocera* snails in Corey Lake.



Figure 4. Types of trematode cercariae isolated from snails collected at Corey Lake. Echinostome (left) and amphistome (right) cercariae are not known to cause swimmer's itch. However, we did detect DNA from one species of avian schistosome cercariae in the water, suggesting that some *Helisoma* snails at Corey Lake are infected with swimmer's itch causing parasites.

Conclusions from our survey:

- In our 2016 survey of northern MI lakes, *Lymnaea catascopium* ("Stagnicola") were the most common avian schistosome host snails. However, these snails were virtually absent from the southern MI lakes in our 2019 survey (Fig. 2, 3). *Physa* and *Helisoma* snails widely distributed throughout both northern and southern MI (Fig. 2). Based on these findings, *Physa* and *Helisoma* snails are probably the most important snail taxa for avian schistosomes in southern MI lakes. *Pleurocera* spp. (hornsnails) were also widespread and abundant in southern MI lakes (Fig. 2), but these snails are not known hosts for avian schistosome parasites.
- At Corey Lake, we screened 49 snails (all *Helisoma* or *Pleurocera*) and found that 4 (8%) were infected with echinostome or amphistome parasites (Fig. 4). These parasites are (distantly) related to avian scistosomes but are not known to cause swimmer's itch. However, DNA analysis (qPCR) showed that avian schistosome cercariae were present in our filtered water samples from two sites on Corey Lake collected on 8/3/19. Further DNA analysis showed these cercariae were of a recently discovered parasite species produced by *Helisoma* snails. Based on these results, avian schistosomes appear to be present in Corey Lake but may only infect a small fraction of the *Helisoma* snails, so we did not detect them in our snail screenings.
- Overall, our results suggest that swimmer's itch in southern MI lakes is most likely caused by avian schistosome species that use *Physa* and *Helisoma* snails as intermediate hosts, rather than the parasites associated with the *Lymnaea* snails that are so abundant in northern MI lakes. An important implication of these results is that managing swimmer's itch may require different solutions in different regions within Michigan.

Thank you for taking the time to read about our project.

Best,

Raffel & Soper labs

(in collaboration with the Reimink & Hanington labs)



On behalf of the Corey Lake Association, I wish to personally thank all of the people involved in the swimmers itch study! Thank you for sharing this information. ~Cindy Gillard, Pres.

LIGHTS OF LOVE

Submitted by Mary Sue Pollitt

Each year we make a small donation in memory of our loved ones from Corey Lake to the Three Rivers Health "Lights of Love" program. In December 2019, the goal was reached and with the funds a Compliant Chair Lift System for the Rehab Therapy Pool and a Vein Finder for the OR Department were purchased. We are pleased to be able to participate in this program which purchases needed equipment for our local hospital. This year, in December 2020, the 30th year of Lights of Love will be celebrated with the traditional tree lighting ceremony. The of the names of both the honored and in memory will be printed in the Three Rivers Commercial News. Let us now remember, reflect, and celebrate the lives of the men and women we have loved and lost, who also loved Corey Lake. Each has made a difference in the lives of many of us here at Corey Lake. In the name of love and friendship I submit to you our lost friends and loved ones:

Jacqueline "Jackie" Bendure
Ralph Vogel

Tom Wilson
Hank Chrobot

Isabelle Westfall
Lou Langfeld

No Funding this Year for Cooperative Lakes Monitoring Program

The Corey Lake Association with the assistance of several volunteers over the years (i.e. Ralph Vogel, Mary Sue Pollitt) have participated in the Cooperative Lakes Monitoring Program that monitors the water quality of Corey Lake through regular testing funded through MiCorps. MiCorps is a network of volunteer water quality monitoring programs in Michigan created by former Governor Granholm under Michigan Executive Order #2003-15 to assist the Department of Environment, Great Lakes, and Energy (EGLE) in collecting and sharing water quality

data. Initial funding for the MiCorps program was provided through the Clean Michigan Initiative (CMI) bond; however, due to the exhaustion of these CMI funds, MiCorps has dealt with uncertainty in the past few years while trying to find another long-term funding source. It appears the funding for water testing will not be available for 2020, however, funding for the Cooperative Lakes Monitoring Program ("CLMP") for 2021 has been secured from Renew Michigan Initiative in order to create a new five-year contract for the MiCorps program. The CLMP and the Volunteer Stream Monitoring Program (VSMP) will both be included in the new contract.

In recent years, Mary Sue Pollitt was our volunteer water tester, having taken over the duties when Ralph Vogel retired. Mary Sue has now turned over the reins to Jim Snell.

We want to give Mary Sue a huge thank you for her years of volunteer service to the CLA! We also wish to welcome Jim Snell and thank him for taking on this important role of monitoring our water quality.

New Board Member: Jim and Barb Snell have volunteered to serve on the CLA Board for Sector 3: all of Sandy Harbor .

We need a volunteer Sector Representative for Sector 6: 59704 Summit Road to 11301 Horseshoe Drive. If you have an interest and you live in Sector 6, please contact me.

BREEZE ADS: WE will not have Breeze ads this year as we will not be printing and mailing the Breeze. If anyone wants to place an ad on the WEBSITE, please contact Cindy Gillard or Jay Wiseman. The cost of the ad is \$50 for the entire season.

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