

Summary of the 2021 Internship program

In 2021 Three Lakes Association hosted five students from four area high schools for a 3-month internship to study two snails native to Torch Lake as potential consumers of the diatoms associated with golden brown algae. It was funded by the Gerrit Lee Wierda Memorial Internship Fund, a grant from the Dole Family Foundation (\$2,000), and the TLA general fund.

During the first two months of field and lab work, students collected snails, built and secured enclosures to the bottom of Torch Lake in sandy and rocky substrates, recovered snails from enclosures after 1 week of grazing on golden brown algae, collected feces from the snails, and examined the snail feces through high powered microscopes.

They created slides using several different slide preparation techniques, identified and counted diatom types, and tallied each diatom as living or dead. Professor Jan Stevenson from MSU provided the students with a half-day training on diatom identification and supported their studies throughout. Since this was an original and authentic investigation into a question of interest to TLA and our partner researchers, students learned a lot about what they want (and don't want) to pursue after high school.

"I realized that I want my future career to have the same aspects of field work/research. I loved getting my hands in on the work, problem solving on the spot, and being able to work in multiple locations." –Anna

"It impacted me to decide to apply for a research job at the college I will be attending next year." –Grace

"It's a good experience to see what field and lab work is like. Working with the other volunteers teaches you a lot about teamwork too." –Lily

"My TLA experience has definitely helped me decide what I do and do not want to do in college. I gained a greater appreciation for terrestrial biology and learned I don't want to look in microscopes." –Vivian

"I gained experience doing hands on work that I wouldn't have had the ability to do in my high school classes." –Rebekah

After microscopically examining dozens of samples of snail feces, they determined that the snails do graze on golden brown algae diatoms, but they are an unlikely natural solution to this aesthetic problem because most of the diatoms found in snail feces were undigested and still alive.

Students spent two months in the field and in the laboratory and one month preparing their presentation and report. Together, they presented their results to the Three Lakes Association Board of Directors at our August board meeting, which their parents also attended. They each presented to their respective school boards throughout the fall. Anna Anger also presented the results to the Freshwater Summit, a local annual scientific conference on the protection and status of local water bodies. Each intern received a \$550 stipend as a thank you for their participation.

A full report written by the interns is available on our website on this page:

<https://www.3lakes.com/projects/summer-intern-reports/>

Here are some photos of the summer experience:



Prof Jan Stevenson and TLA interns microscopically examining diatoms



Summer interns placing their first enclosures on Torch lake



Sorting snails and eating muffins!



2021 interns after their presentation to the board
(l to r) Vivian, Rebekah, Anna, Lilly, Grace

Also see the TLA Quarterly newsletters for more photos and stories:

July 2021: <https://www.3lakes.com/july-21-newsletter/>

Are snails influencing Golden Brown Algae in Torch Lake?

Memorial Fund Set up to Support TLA Internship Program

October 2021: <https://www.3lakes.com/october-21-newsletter/>

The Best Summer Ever, by Anna Anger, 2021 Intern

February 2022: <https://www.3lakes.com/February-22-newsletter/>

Summer Interns Present to School Boards