

APPLIED STEWARDSHIP SUMMER AND FALL 2022 NEWSLETTER

WCSU DEPARTMENT OF BIOLOGY



THOMAS HILLING: RESEARCH AND EDUCATION CONCERNING ANTHROPOGENIC AND NATURAL THREATS TO THE COMMON LOON (*GAVIA IMMER*).

The opportunity to collaborate with the New England Regional Loon Necropsy Network (NERLNN), and learn from Dr. Mark Pokras, has been extremely rewarding. Participating in these necropsy events have expanded my knowledge related to avian anatomy and various disease processes, while adding to a multi-decade repository of common loon necropsy data. This repository has provided conservation agencies with clear rationale when recommending mitigation efforts and population management of this iconic species. Additionally, through participating in NERLNN events and collaborating with New England organizations focused on common loon conservation, I was able to present NERLNN data and my thesis research to the Atlantic Marine Bird Cooperative (AMBC) community. This opportunity provides future engagement with a broader community, and experience presenting scientific research.

The Applied Stewardship experience is a valuable one and is the perfect opportunity to manage and organize a project with faculty. Future cohorts of graduate students in the IBD program should have the opportunity to participate in the final Applied Stewardship presentation and discussion. Students taking Stewardship Seminar should be strongly encouraged to attend this event to understand the goals of the course. Personally, I would've benefitted from the opportunity. Given that, the skills, and connections I've made through the process will greatly benefit my post-grad career.



IAN OLSEN: SAMPLING LAKE KENOSIA FOR TMDL ANALYSIS AND CALCIUM INFILTRATION FROM WATERSHED.

Lake Kenosia is a 65-acre freshwater lake located in Danbury, CT with a history of excess nutrient inputs resulting in eutrophic conditions. High nutrient inputs, specifically phosphorus and nitrogen, impair the lake's recreational usage, can create health risks, as well as impede its use as a back-up water supply. Due to Lake Kenosia's location in the urbanized watershed of Danbury, multiple sources of nutrient deposition regularly occur from sources such as surface water flow, stormwater runoff, and groundwater infiltration.

Lake Kenosia remains highly eutrophic based on Secchi disk transparency and water testing results. To my knowledge, few of the mitigation efforts suggested by the Connecticut DEP in their 2004 TMDL analysis have been implemented. Road runoff, specifically from I-84, and other urban land uses are continuing to cause nutrient runoff excess and inflow in Lake Kenosia.

This nutrient load monitoring and calcium sampling project allowed me to further develop training in the equipment and methods needed to accurately examine a lake and surrounding watershed. I was also able to contribute to developing a better understand of the calcium and conductance levels in the lake for Zebra Mussel mitigation, per the interests of the Lake Kenosia commission.



KIMBERLY DURHAM: CHARACTERIZING ANTHROPOGENIC MORTALITY FACTORS OF SEA TURTLES IN NEW YORK STATE.

The project focused on the coding and characterization of mortality records of sea turtles recovered by the New York State Sea Turtle Stranding and Salvage Network organization, Atlantic Marine Conservation Society. Mortality data was coded for anthropogenic factors including vessel strike, fisheries (hooking or entanglement) and marine debris for the four sea turtle species which inhabit New York waterways the Kemp's ridley (*Lepidochelys kempii*), Loggerhead (*Caretta caretta*), Atlantic Green (*Chelonia mydas*) and Leatherback (*Dermochelys coriacea*).

The applied stewardship project is essential to providing students effective tools which can contribute to the monitoring and conservation of an organism. I would tell a new student that this experience will certainly provide a means to strengthen public engagement skills by providing the experience of practicing effective discourse with stakeholders. This skill set is an invaluable asset to ensure professional growth. I do believe it is worth it as a degree requirement.