

What are Cichlids?

Cichlids are an extremely diverse family of fish from East Africa. Over a thousand different species live in Lakes Malawi and Victoria alone. Since cichlids are so diverse, they hold many roles in their ecosystems and are vital for its health. Not only this, but Malawi and Victoria are a major resource to the people living around them, supplying food and drinking water to millions. Sadly, severe eutrophication, overfishing, and the introduction of invasive species have resulted in a loss of diversity for cichlids, jeopardizing the lakes they call home.

Research Question

How can the anthropogenic threats to cichlid biodiversity loss be mitigated in order to preserve cichlids and the lakes they live in as a resource for the future?



Photo from San Diego Zoo. Blood Parrot Cichlid



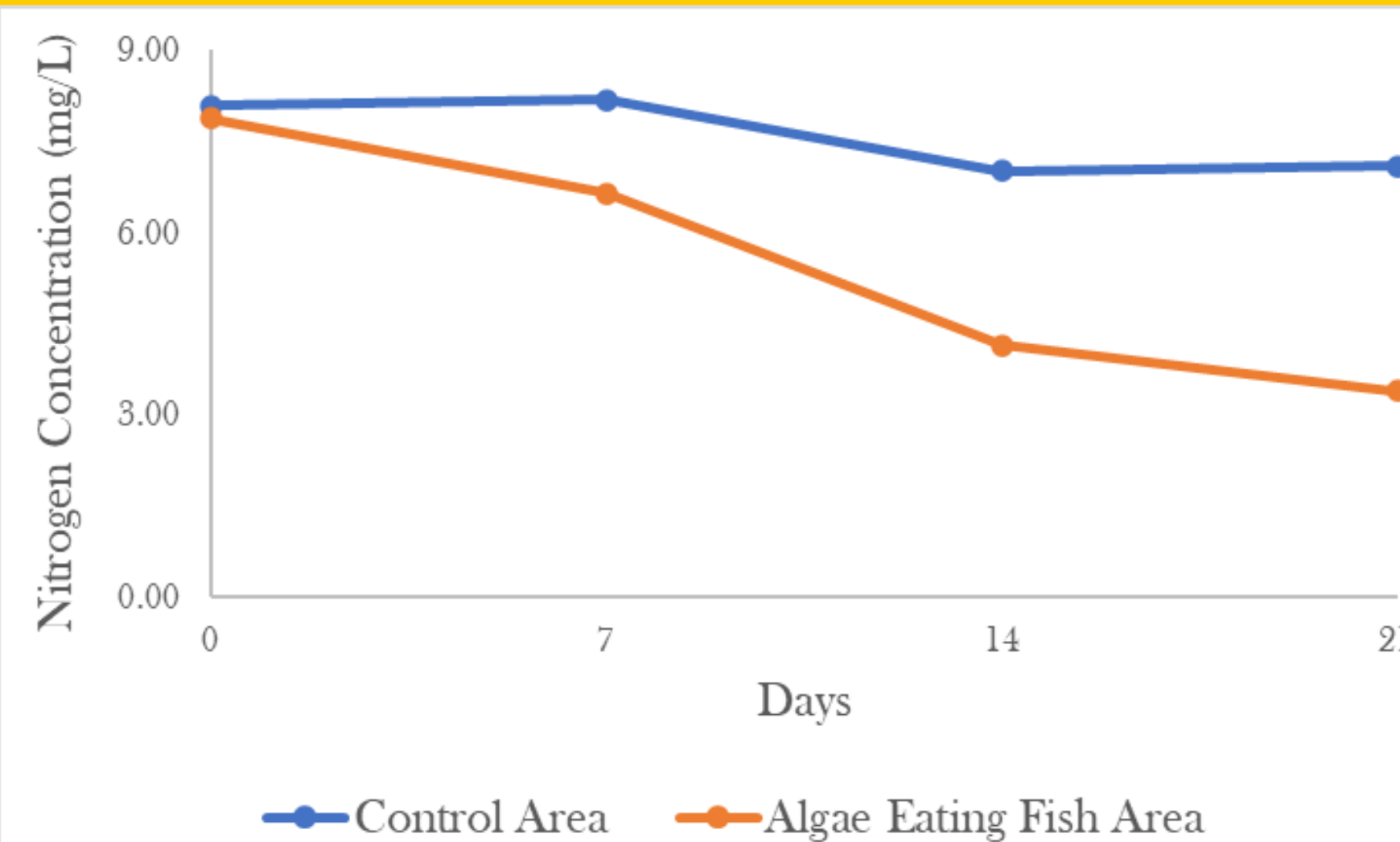
Photo by Amber Roegner. Algal Blooms in Lake Victoria's Kisumu Bay

Solutions

- ❖ Establish a network of no take fishing zones throughout the lakes.
- ❖ Increase the minimum net hole size for fishing nets used in the lakes.
- ❖ Plant cover crops surrounding agricultural areas and on slopes near the lakes.
- ❖ Construct WRRFs around Victoria to treat waste water before it is released.
- ❖ Establish a united conservation effort to provide consistent data and provide clear communication.

Methods

By examining comprehensive reports on Lakes Malawi and Victoria, and by investigating how cichlids speciate to begin with, I was able to identify the major problems affecting cichlids and why they were impacted so severely. From here, I was able to draw on conservation efforts that are analogous to the cichlid crisis to find data that could be applied to this problem.



Data adapted from Yang et. al, 2019. Effect of presence of algae eating fish on nitrogen concentration

Discussion

Even after establishing a concrete plan to help cichlids, there are even more problems to be addressed. The region around Lakes Victoria and Malawi is split between five different countries and coordinating legislation between them with regards to a shared resource is a daunting task. Despite this, there are numerous examples of successful multinational conservation efforts, and it can be done!

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