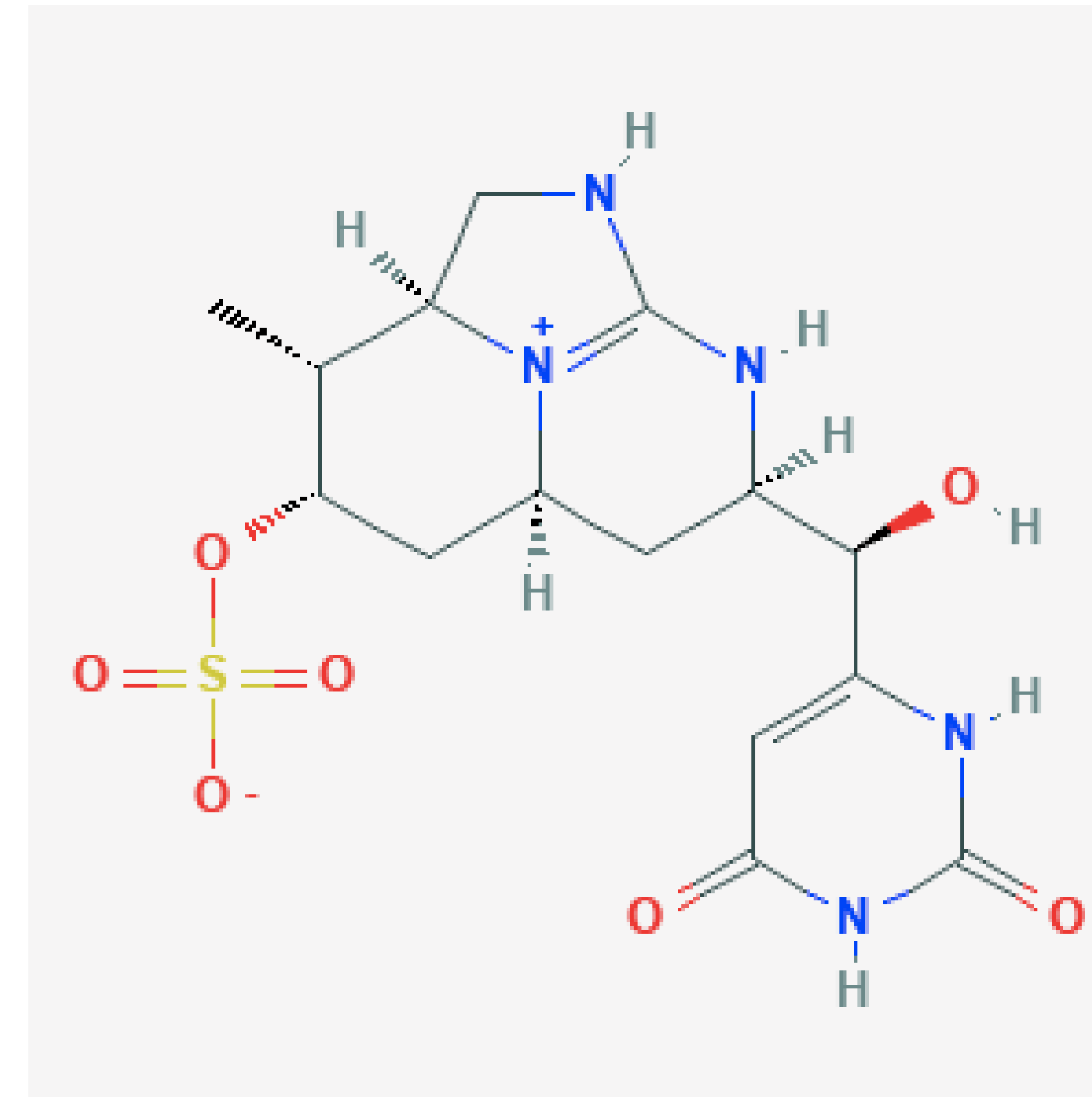


# Studying the Levels of Cylindrospermopsin in Various Bodies of Water

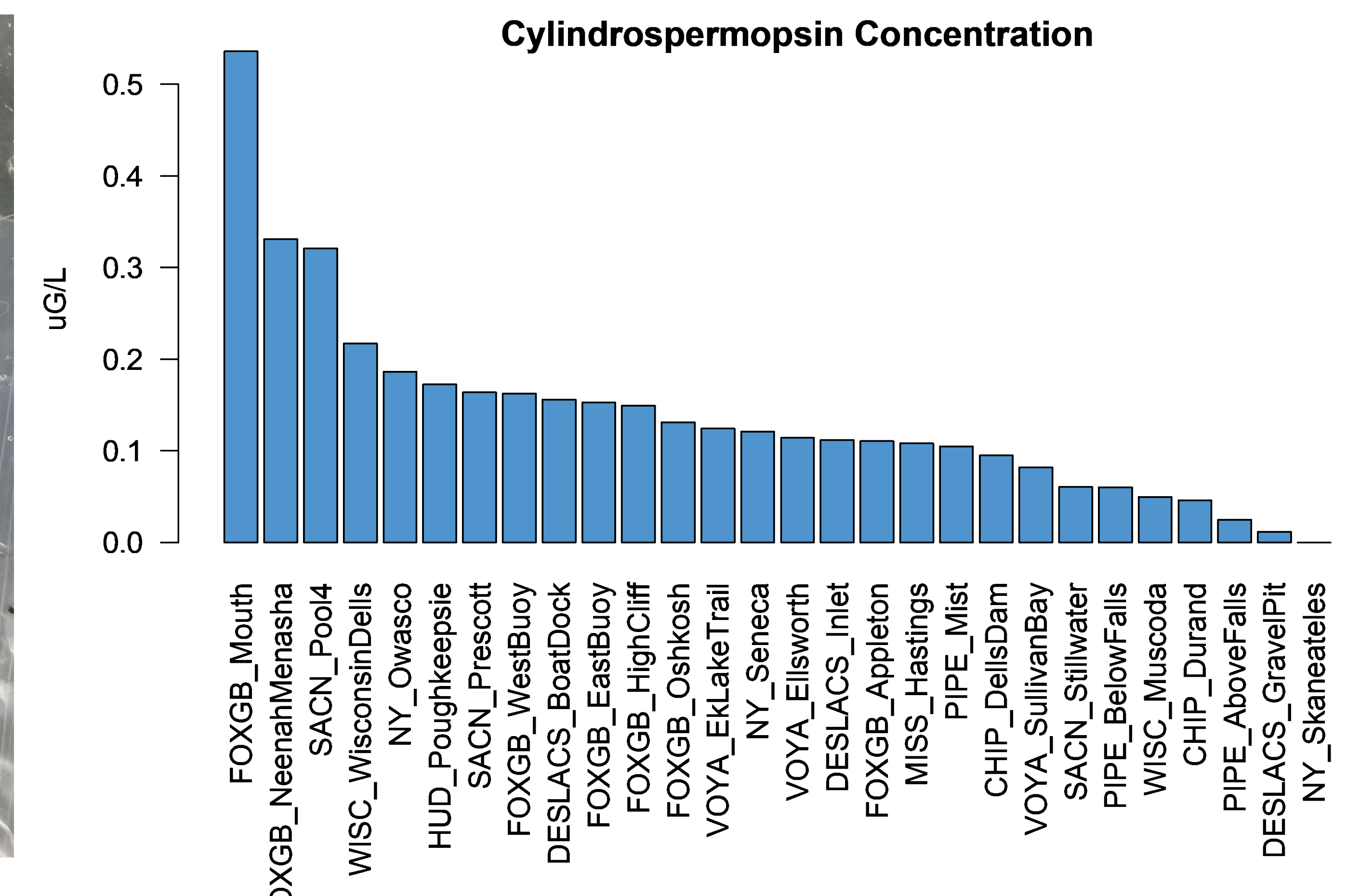
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Measuring water quality is critical to identifying safe sources of water, both for drinking water and recreational uses. The concentration of cylindrospermopsin, a toxin produced by freshwater cyanobacteria which is toxic to kidney and liver tissue, is one way to measure water quality. Water samples were obtained from water bodies throughout the Great Lakes region and analyzed for cylindrospermopsin using ELISA (enzyme-linked immunoassay). The mean concentration of the toxin was 0.14 +/- 0.41 micrograms per liter across all 29 water bodies sampled. The range in concentrations was from non-detectable to a max of 0.28 micrograms per liter. Identification of water with high levels of toxins can direct resources towards environmental clean up where they can be most beneficial. Additionally, areas with high toxin levels can be identified for the safety of humans and other animals.

Solid Phase Adsorption Toxin Tracking (SPATT) is a sampling technique that uses submerged C18 resins to give long term information over a multiple week deployment.



Throughout the testing process various water sources had high levels of the toxins while others tested very low. Testing water sources for this toxin is crucial to the safety of humans. By identifying which bodies of water have high levels of CYN it allows for the various water sources to be cleaned and safe again.



A validated ELISA kit was used to measure the concentration of cylindrospermopsin.

## References

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- Roué, Mélanie et al. "Solid Phase Adsorption Toxin Tracking (SPATT) Technology for the Monitoring of Aquatic Toxins: A Review." *Toxins* vol. 10,4 167. 20 Apr. 2018, doi:10.3390/toxins10040167