Onondaga Lake: Biological Productivity

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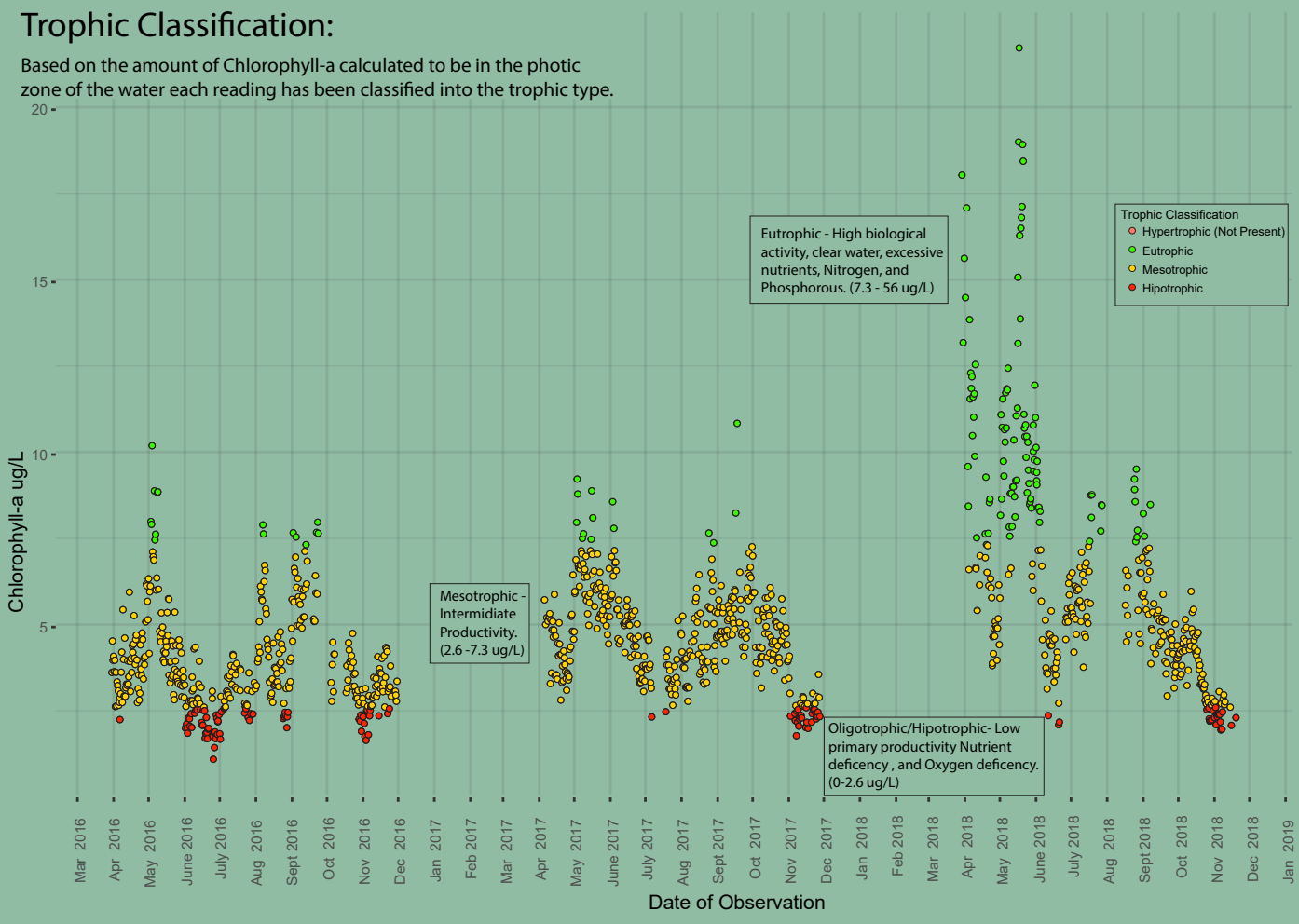
Swimming was banned in Lake Onondaga from 1940-1970 due to industrial development and increased population. During those years, the lake became a veritable wasteland and was used for sewage and industrial discharge. Efforts began in 1970 to control pollution and restore the lake to its former glory. The lake is now the cleanest it has been in decades. Monitoring critical data components is essential to this ongoing effort.

According to the Chlorophyll-a count in the Photic Zone in this section of the lake, what is the Trophic classification and how does it change over time?

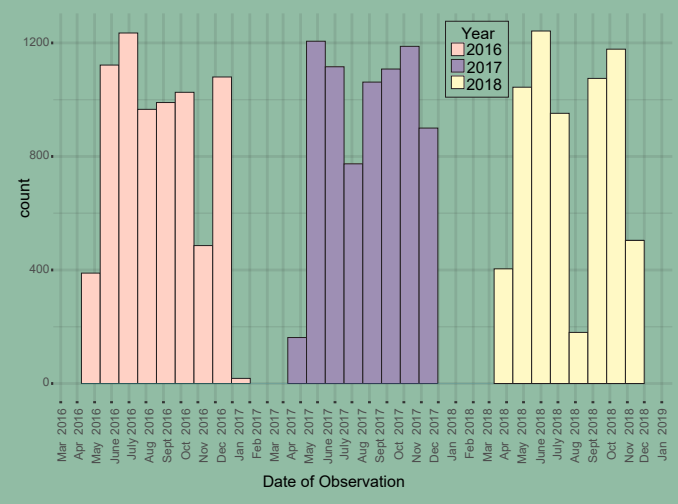
Trophic Classification:

Based on the amount of Chlorophyll-a calculated to be in the photic zone of the water each reading has been classified into the trophic type.

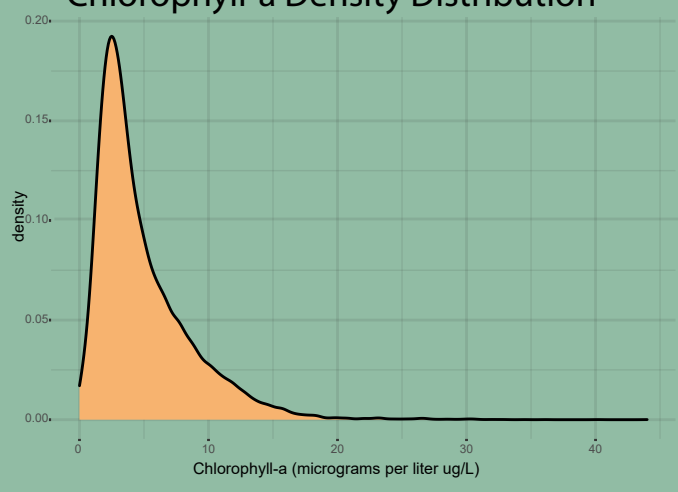


Lake Onondaga's life support

Date of Observation Distribution



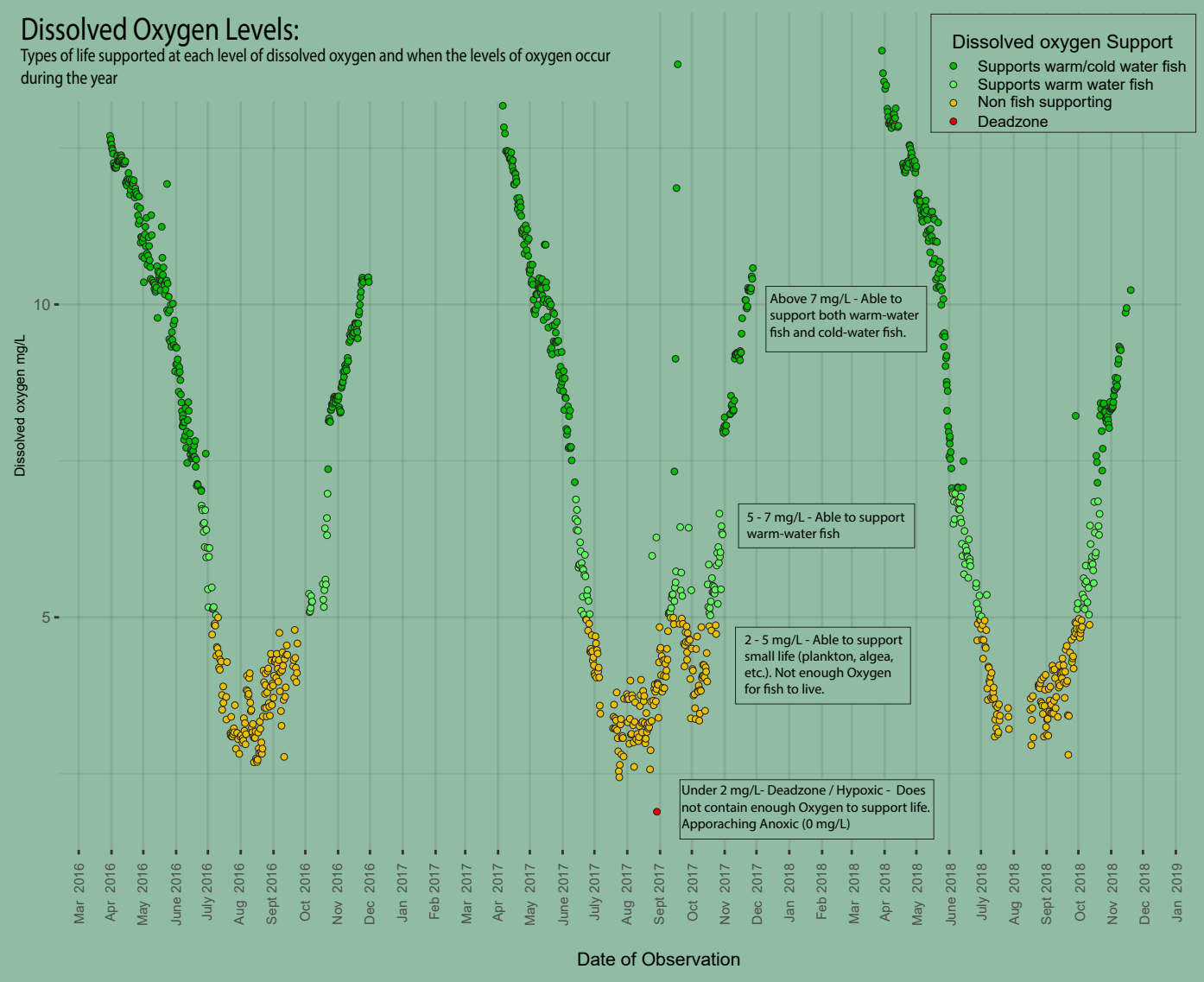
Chlorophyll-a Density Distribution



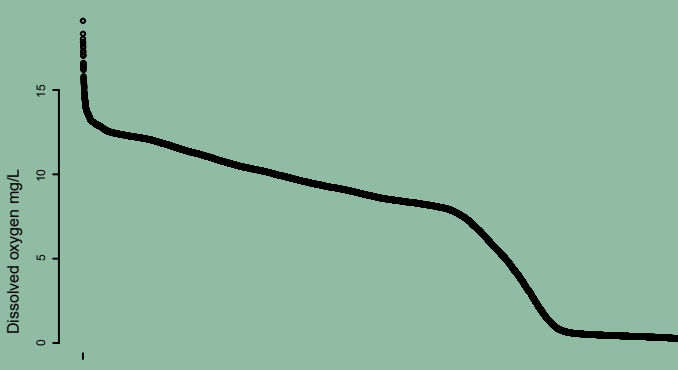
What types of organisms does the amount of dissolved oxygen sustain during different parts of the year?

Dissolved Oxygen Levels:

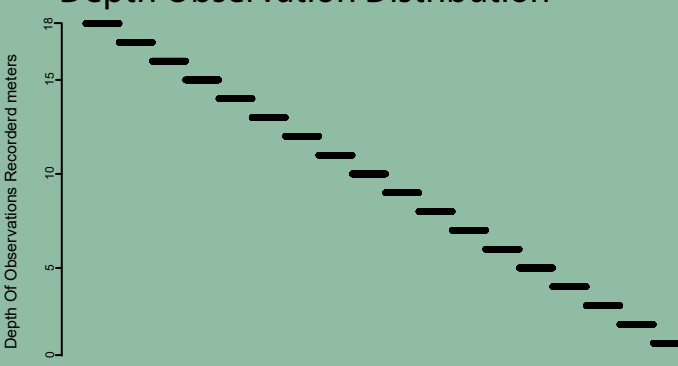
Types of life supported at each level of dissolved oxygen and when the levels of oxygen occur during the year



Dissolved Oxygen Distribution



Depth Observation Distribution



Data Source

The data was obtained from Onondage County Deparment of water envionment Protection and Upstate Freshwater Insitute, collected from 2016-2018 at the South Deep Station and from the NOAA National Climate Data Center.
This data was collected from the Photic zone of the lake with samples taken at each meter to a depth of 18m. The Photic zone encompasses the areas which receive enough sunlight that organisms that preform photosynthesis can thrive. This zone supports most of the lake's aquatic life. The following plots display average readings to visualize data available pertaining to dissolved oxygen and Trophic classification based on chlorophyll-a content.

Data - https://www.ncdc.noaa.gov
Trophic Classification-https://www.knowyourh2o.com/outdoor-4/ecosystem-and-lake-productivity-by-chlorophyll-analysis#:~:text=Hypereutrophic%20lakes%20have%20a%20visibility%20depth%20of%20less,lower%20depths%20creating%20dead%20zones%20beneath%20the%20surface.
Disolved Oxygen Levels- https://www.knowyourh2o.com/outdoor-4/ecosystem-and-lake-productivity-by-chlorophyll-analysis#:~:text=Hypereutrophic%20lakes%20have%20a%20visibility%20depth%20of%20less,lower%20depths%20creating%20dead%20zones%20beneath%20the%20surface.