



Paw Paw Lake Status Update

June 27, 2020

Timeline from 2015

Water Quality Monitoring (WQM)
Aeration units installed in Northern Lobe

WQM
Algal ID, enumeration and microcystin monitoring
Sonar treatment for nuisance, invasive aquatic plants
Branch & Derby Drain sampling

WQM
Algal ID, enumeration and microcystin monitoring
Branch & Derby Drain sampling

2016

2018

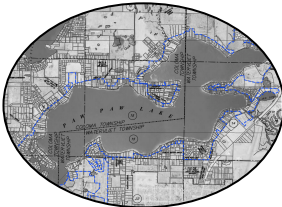
2015

2017

2019

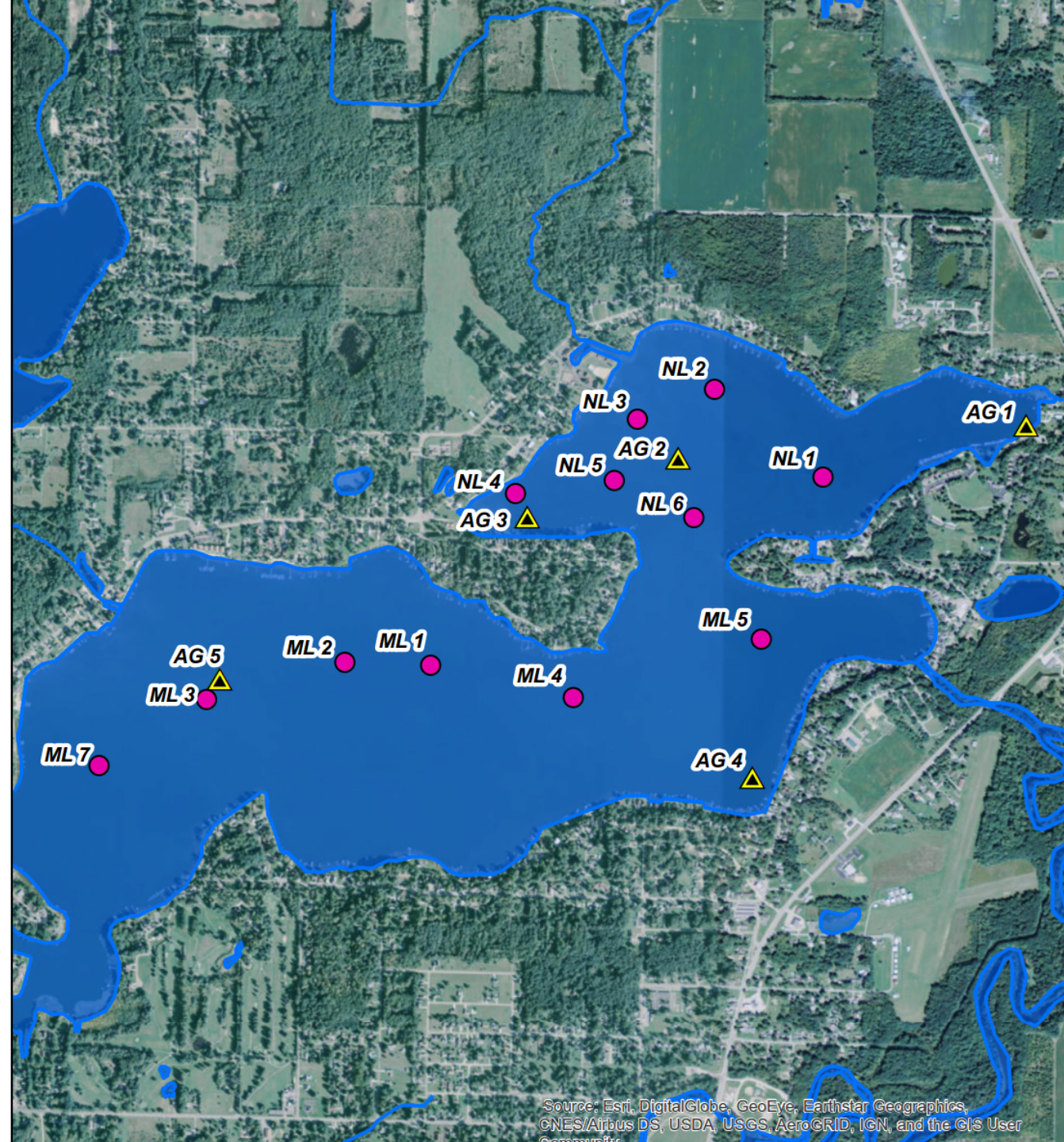
WQM
Algal ID, enumeration and microcystin monitoring
Aeration ceased to re-evaluate ambient lake conditions
Autosamplers purchased

WQM
Algal ID, enumeration and microcystin monitoring
Branch & Derby Drain sampling
Zebra mussel research



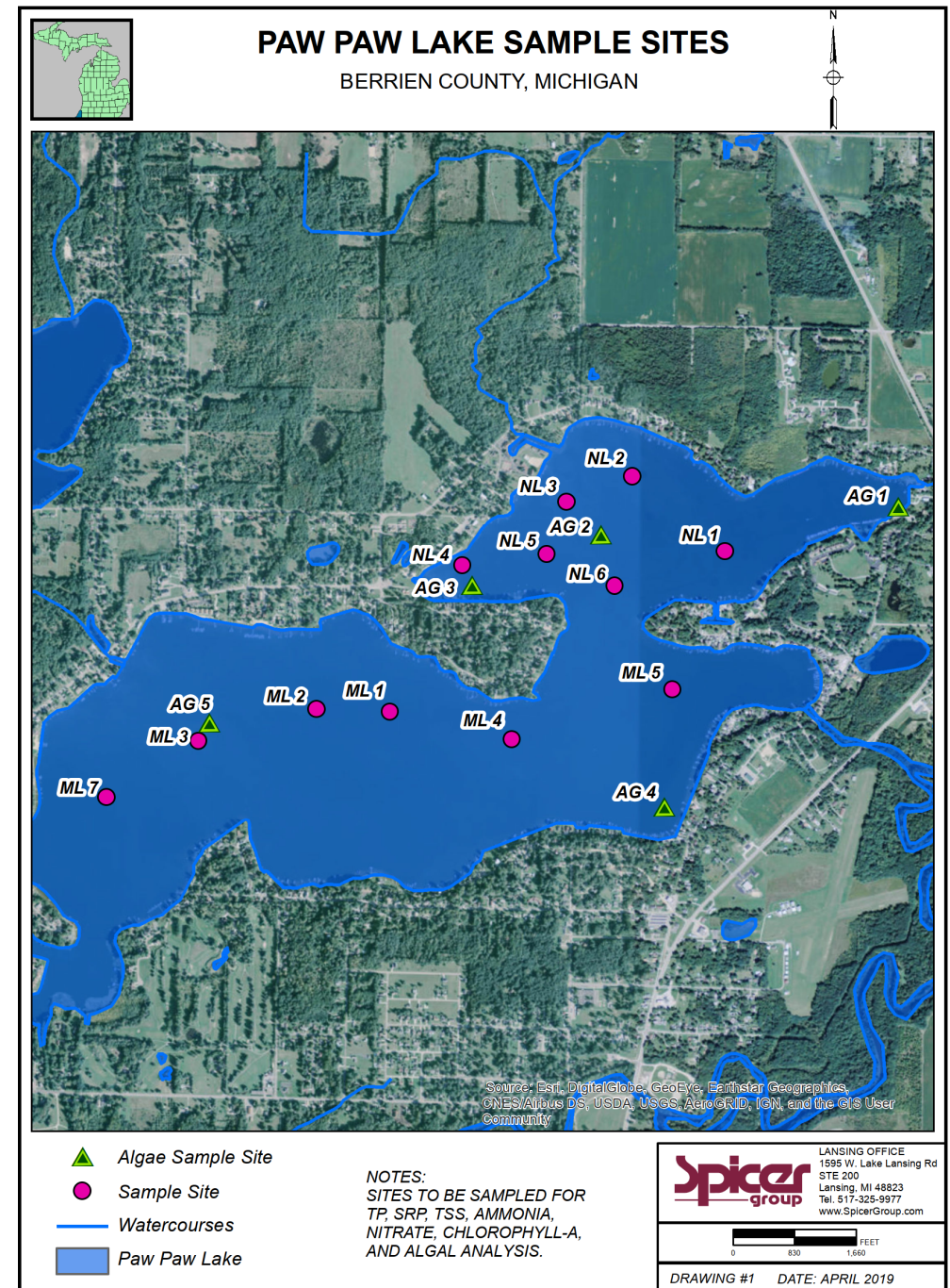
WQM

- 12 sample sites
- Sample top (epilimnion) and bottom (hypolimnion) of lake
- Parameters measured
 - Dissolved oxygen,
 - Total phosphorous,
 - Soluble reactive phosphorus,
 - Nitrate,
 - Ammonia,
 - Specific conductivity,
 - pH,
 - Total suspended solids,
 - Secchi Depth (visibility),
 - Temperature and
 - Chlorophyll-a.

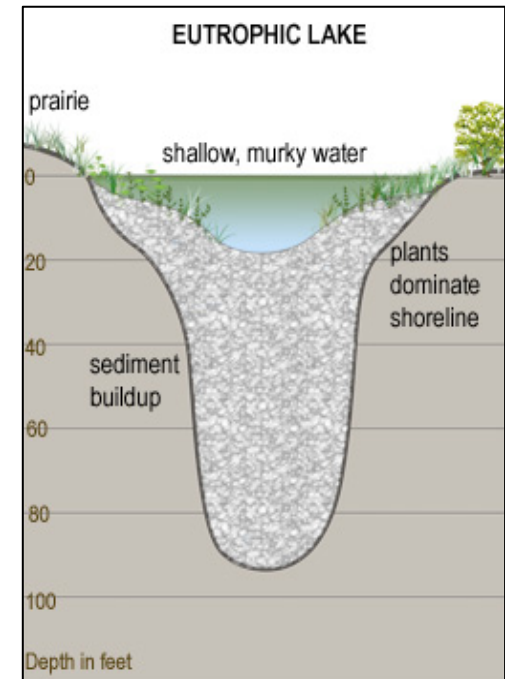
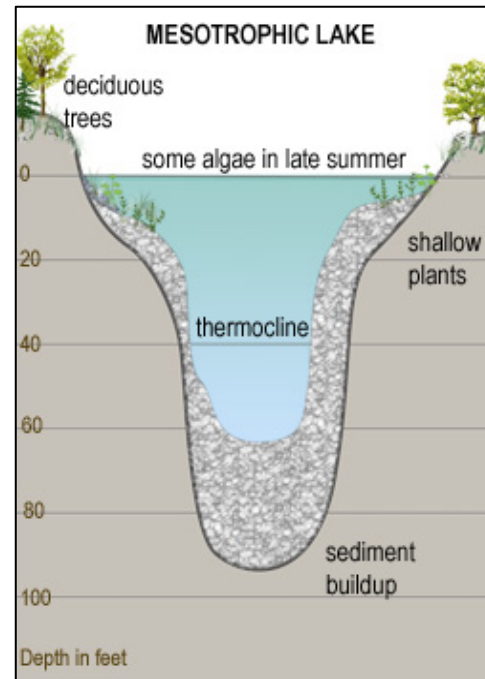
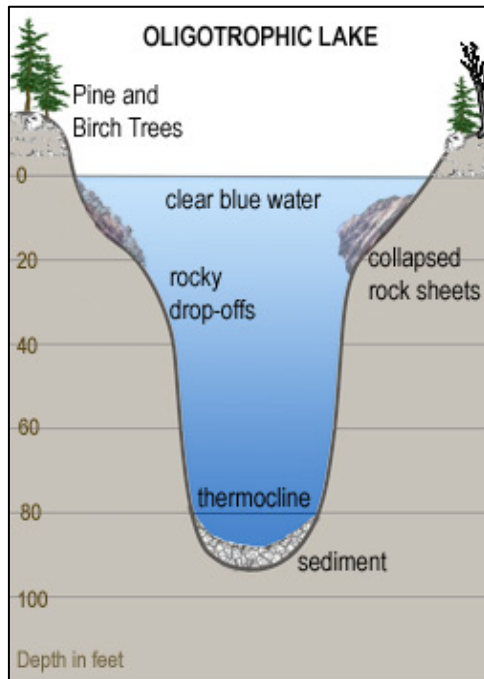


WQM

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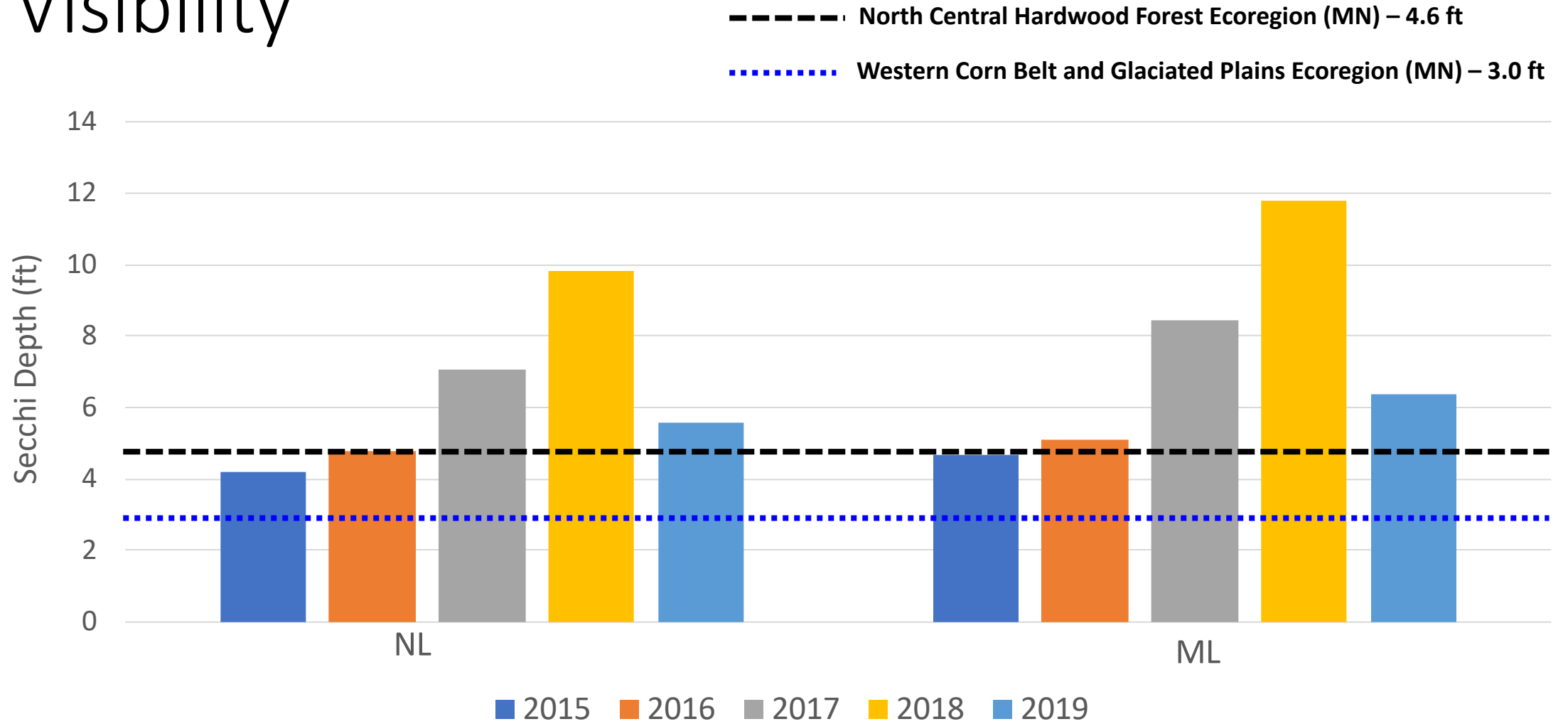
Trophic Status



TROPHIC STATUS	TROPHIC STATE INDICATOR	CHLOR-A (MG/L)	SECCHI (FT)	TP (MG/L)	FISHERIES AND RECREATION
Oligotrophy – Clear water, oxygen throughout the year in the hypolimnion	<30	<0.00095	>26	<0.006	Salmonid fisheries dominate.
Hypolimnia of shallower lakes may become anoxic	30 – 40	0.00095 – 0.0026	13 – 26	0.006 – 0.012	Salmonid fisheries in deep lakes only.
Mesotrophy – Water moderately clear; increasing probability of hypolimnetic anoxia during summer.	40 – 50	0.0026 – 0.0073	7 – 13	0.012 – 0.024	Hypolimnetic anoxia results in loss of salmonids. Walleye may predominate.
Eutrophy – Anoxic hypolimnia, macrophyte problems possible	50 – 60	0.0073 – 0.0200	3 – 7	0.024 – 0.048	Warm-water fisheries only. Bass may dominate.
Blue-green algae dominate, algal scums and macrophyte problems.	60 – 70	0.0200 – 0.0560	1.6 – 3	0.048 – 0.096	Nuisance macrophytes, algal scums, and low transparency may discourage swimming and boating.
Hypereutrophy – Light limited productivity. Dense algae and macrophytes	70 – 80	0.0560 – 0.1550	0.8 – 1.6	0.096 – 0.192	-
Algal scums, few macrophytes	>80	>0.1550	<0.8	0.192 – 0.384	Rough fish dominate; summer fish kills possible.

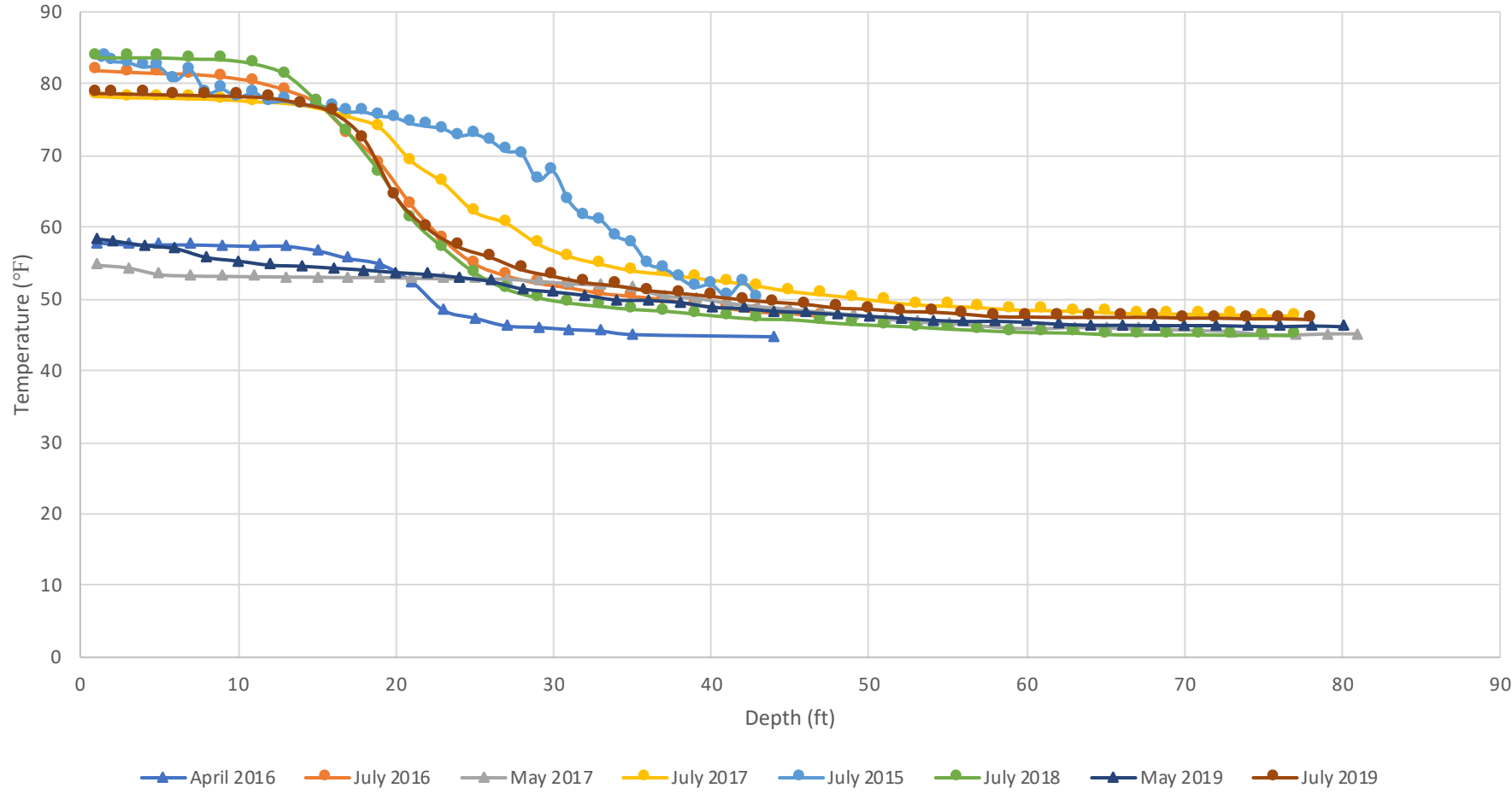
- 2018
- 2019
- 2017
- 2016

Visibility

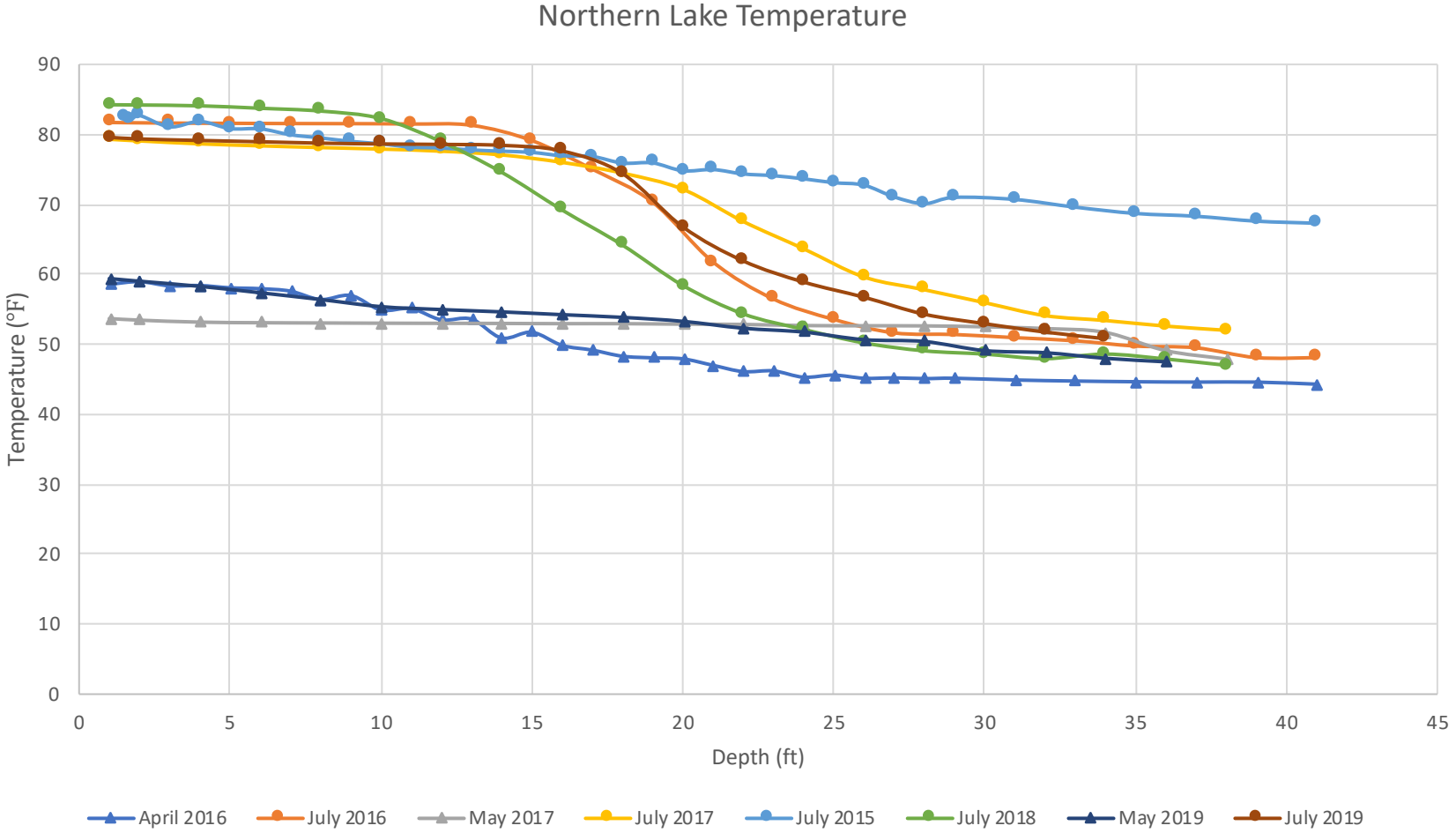


Temperature Profile

Middle Lake Temperature

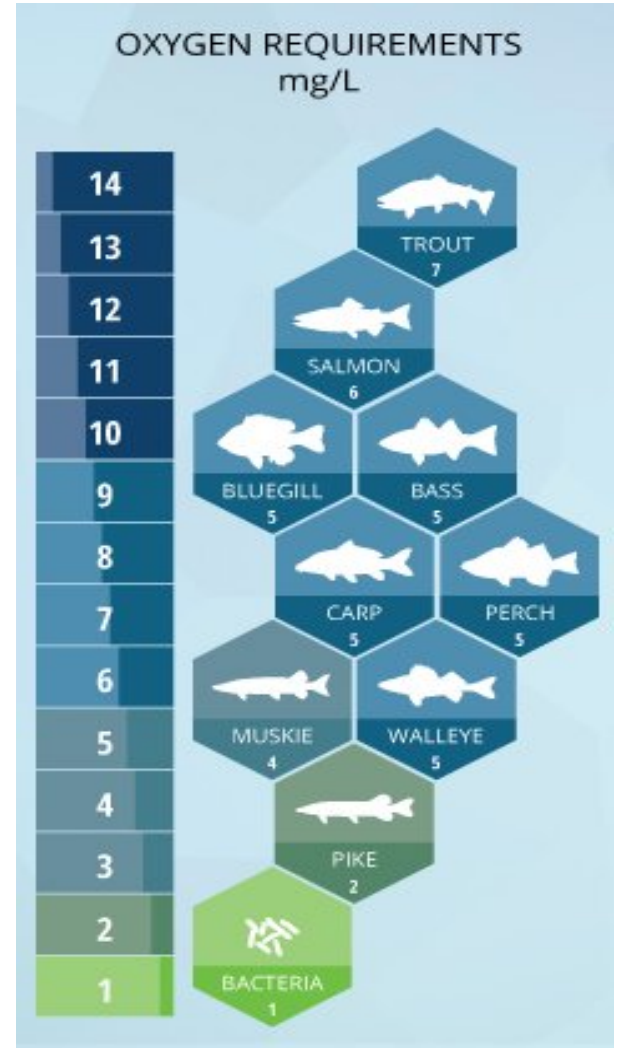
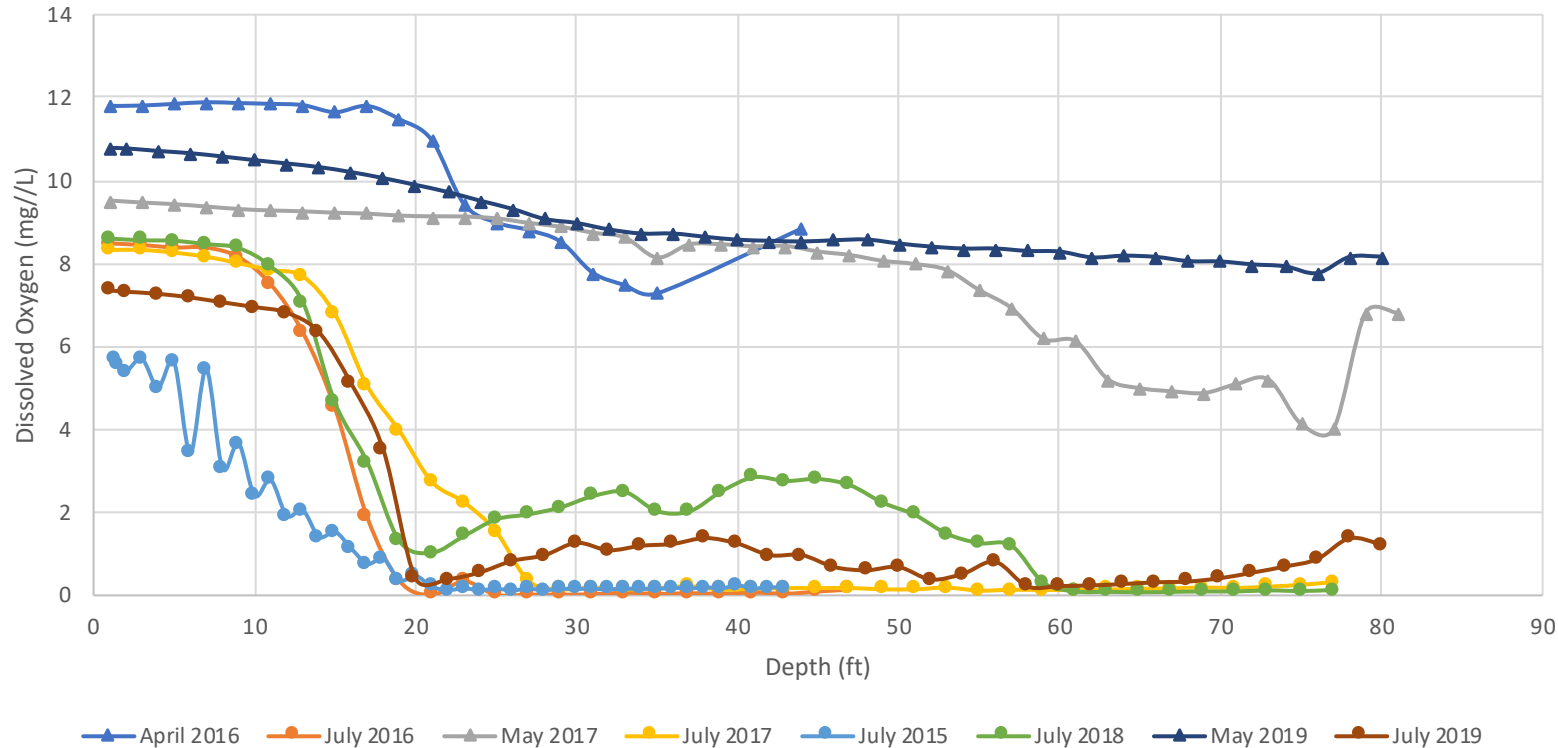


Temperature Profile

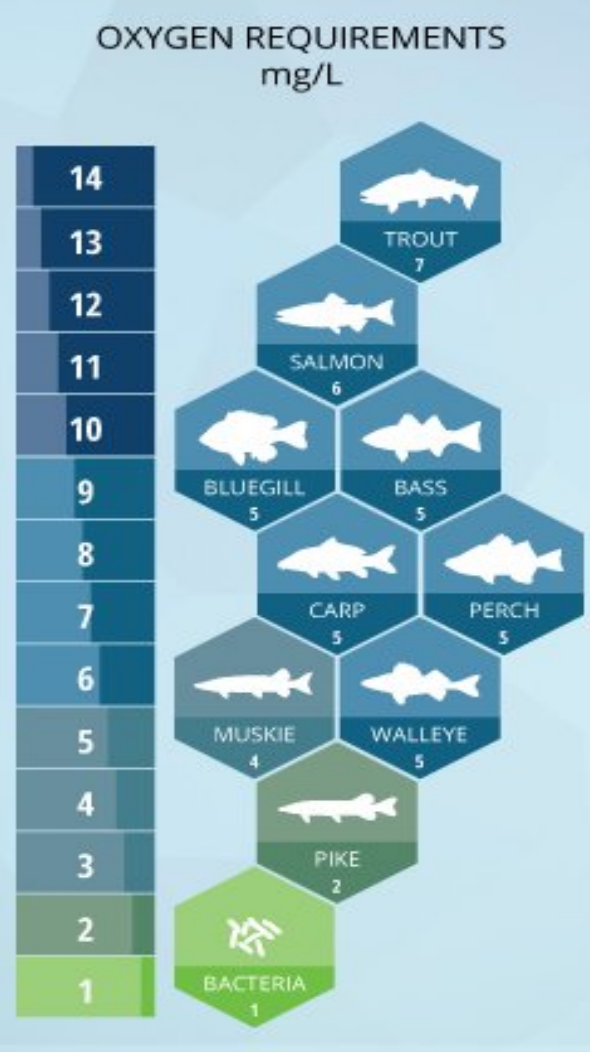
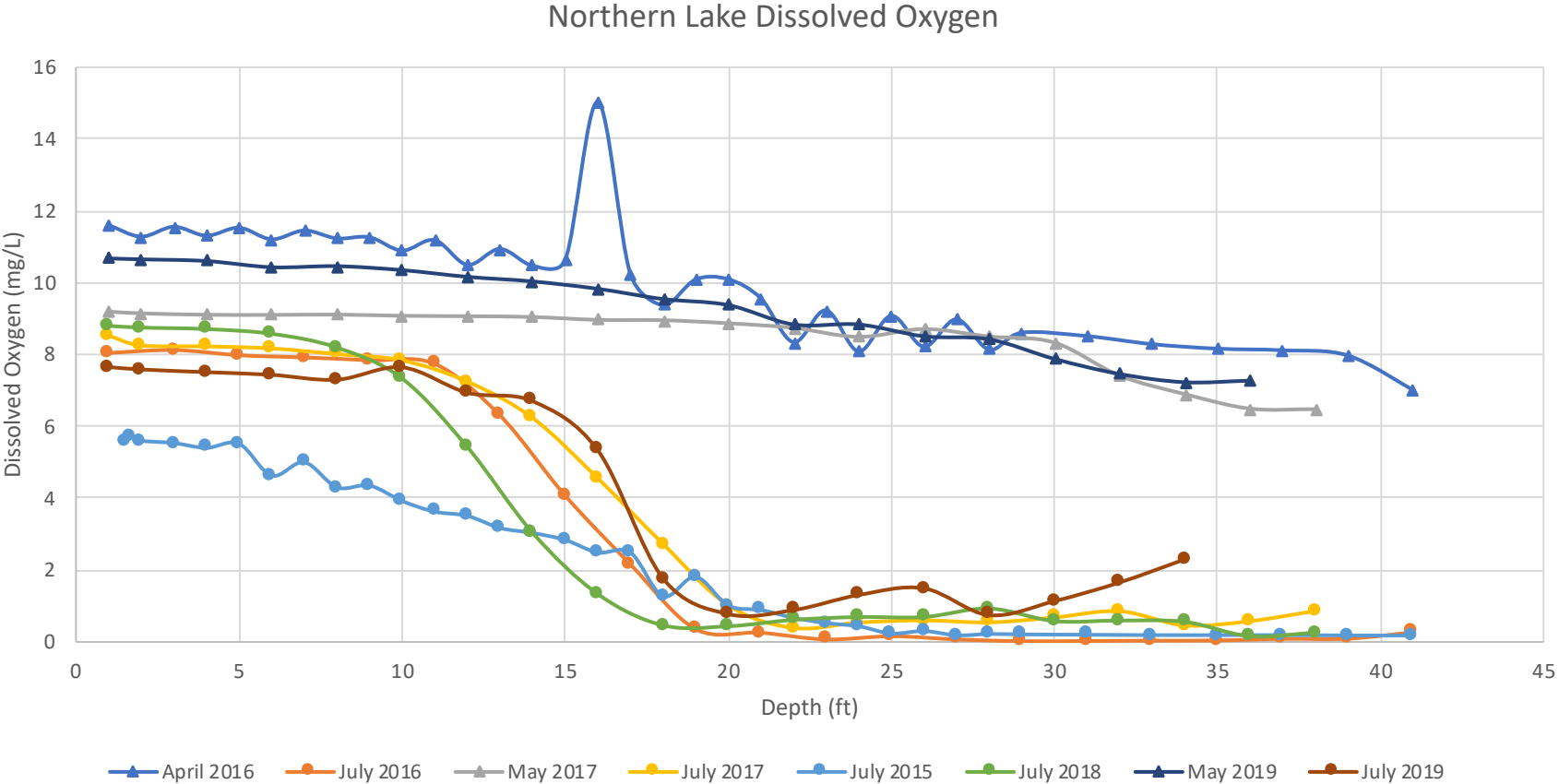


Dissolved Oxygen Profile

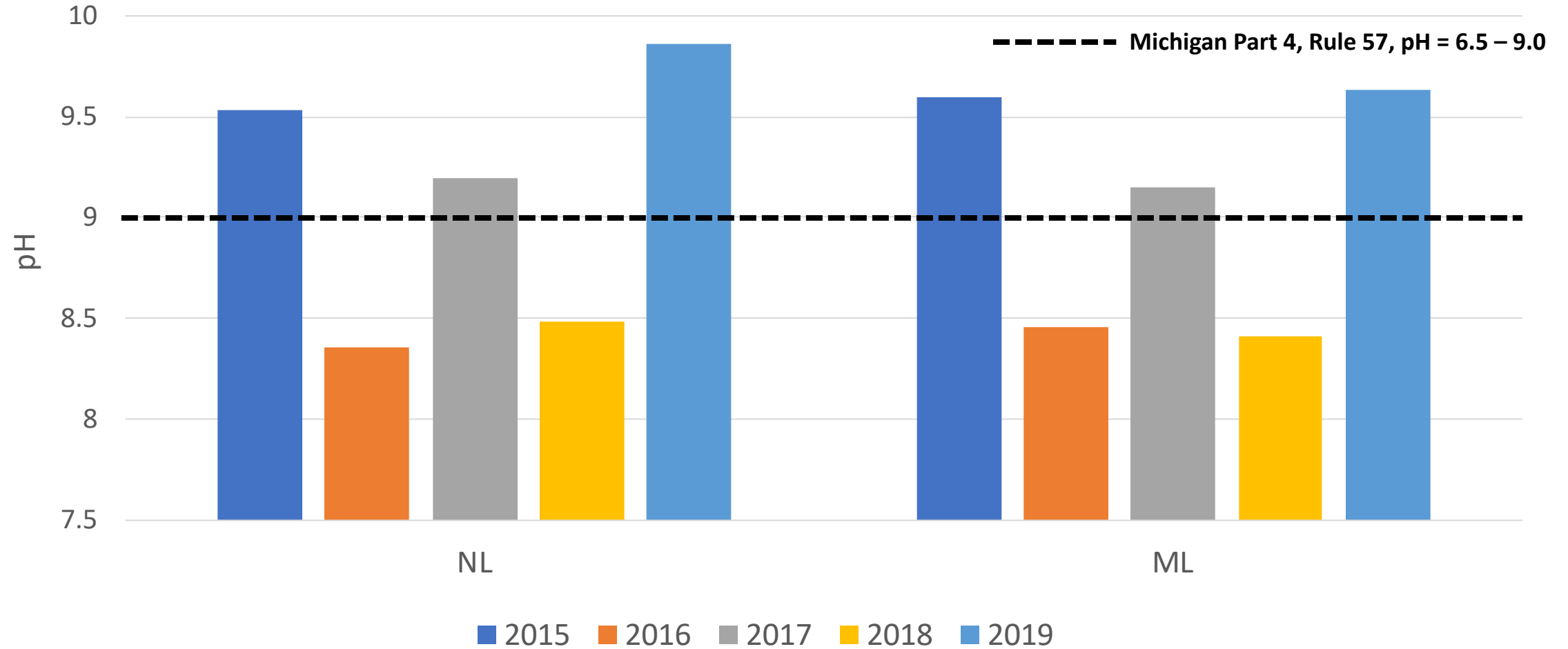
Middle Lake Dissolved Oxygen



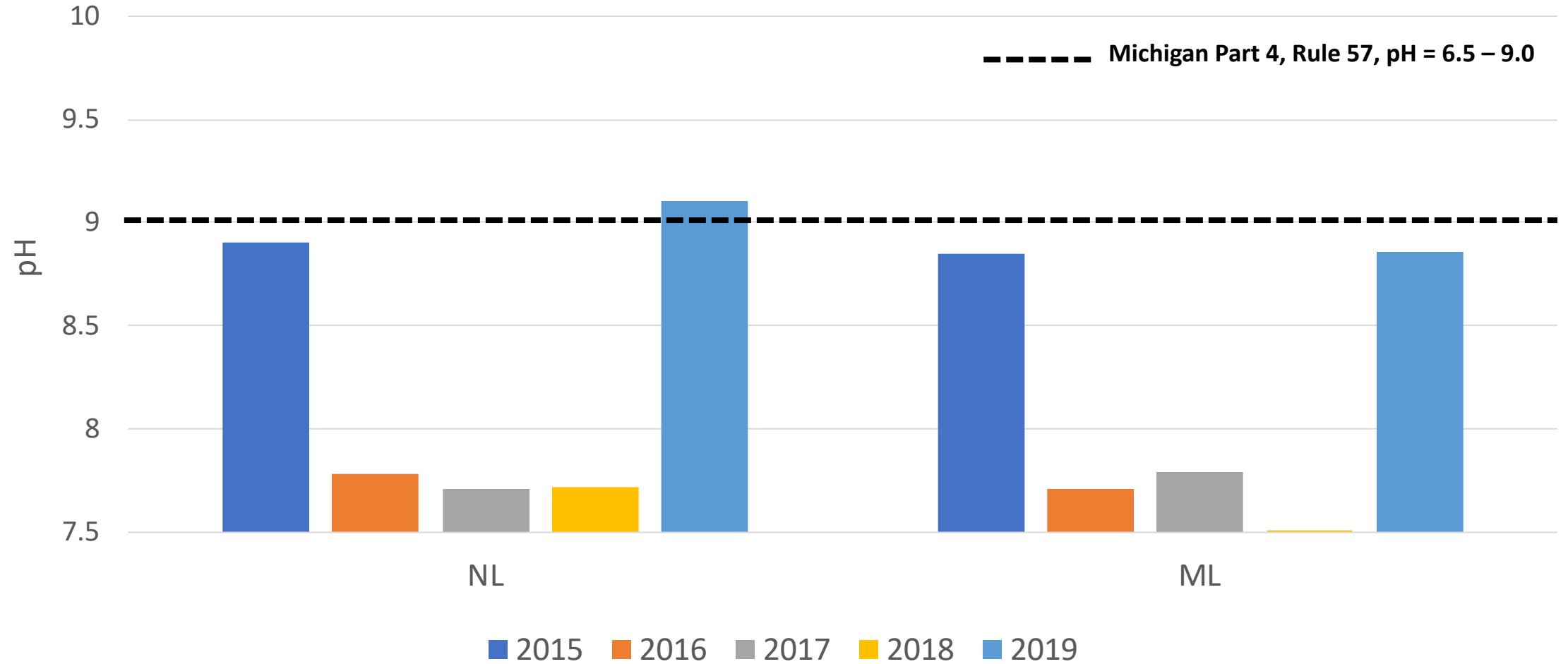
Dissolved Oxygen Profile



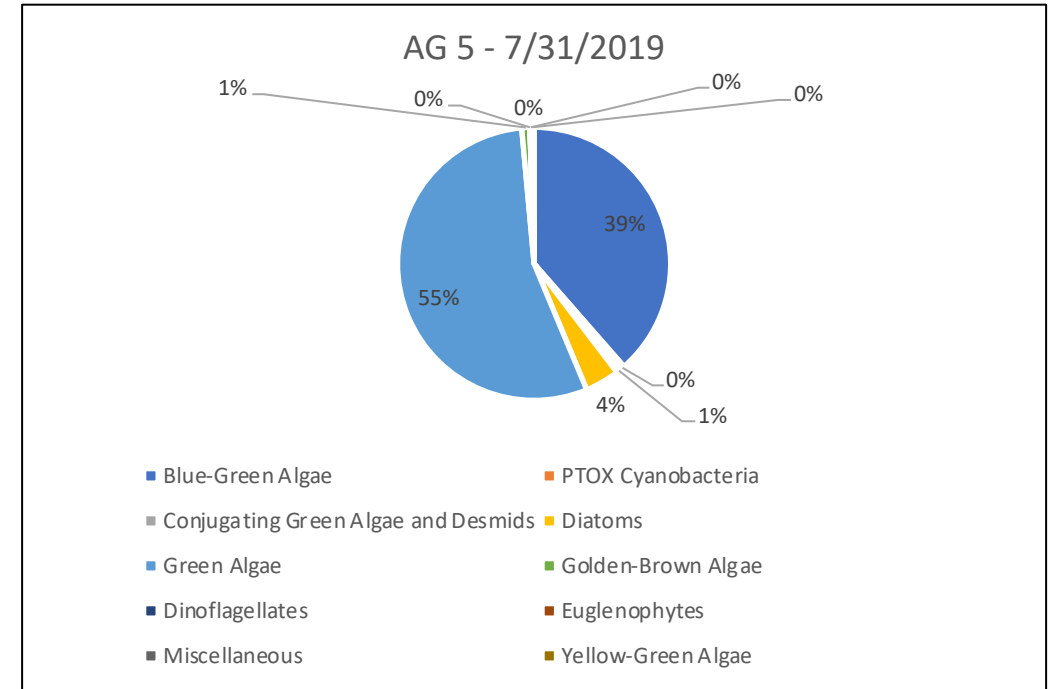
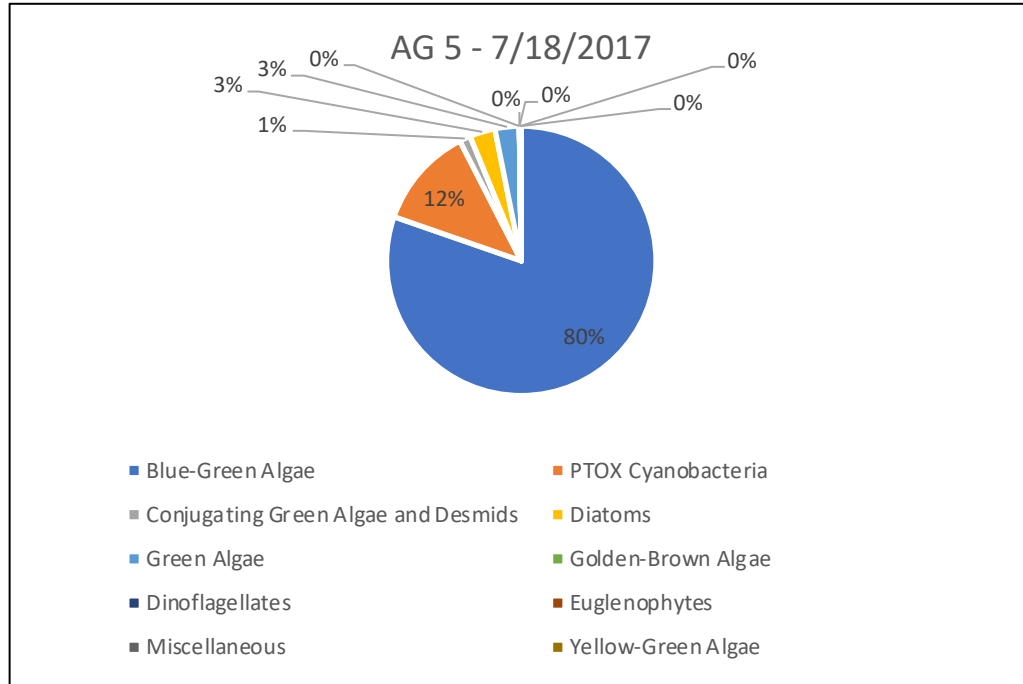
pH - Epilimnion



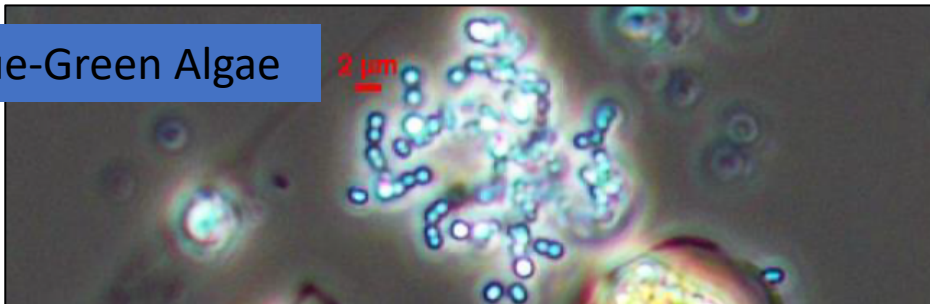
pH - Hypolimnion



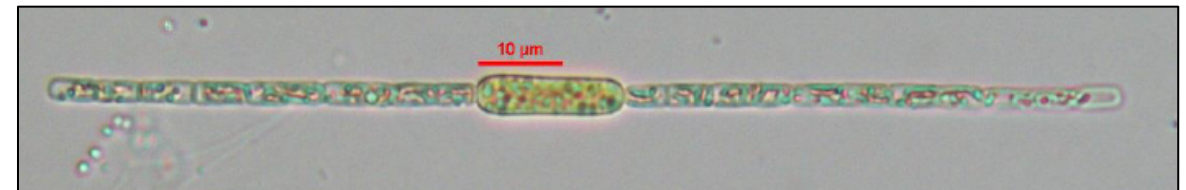
Algal Analysis



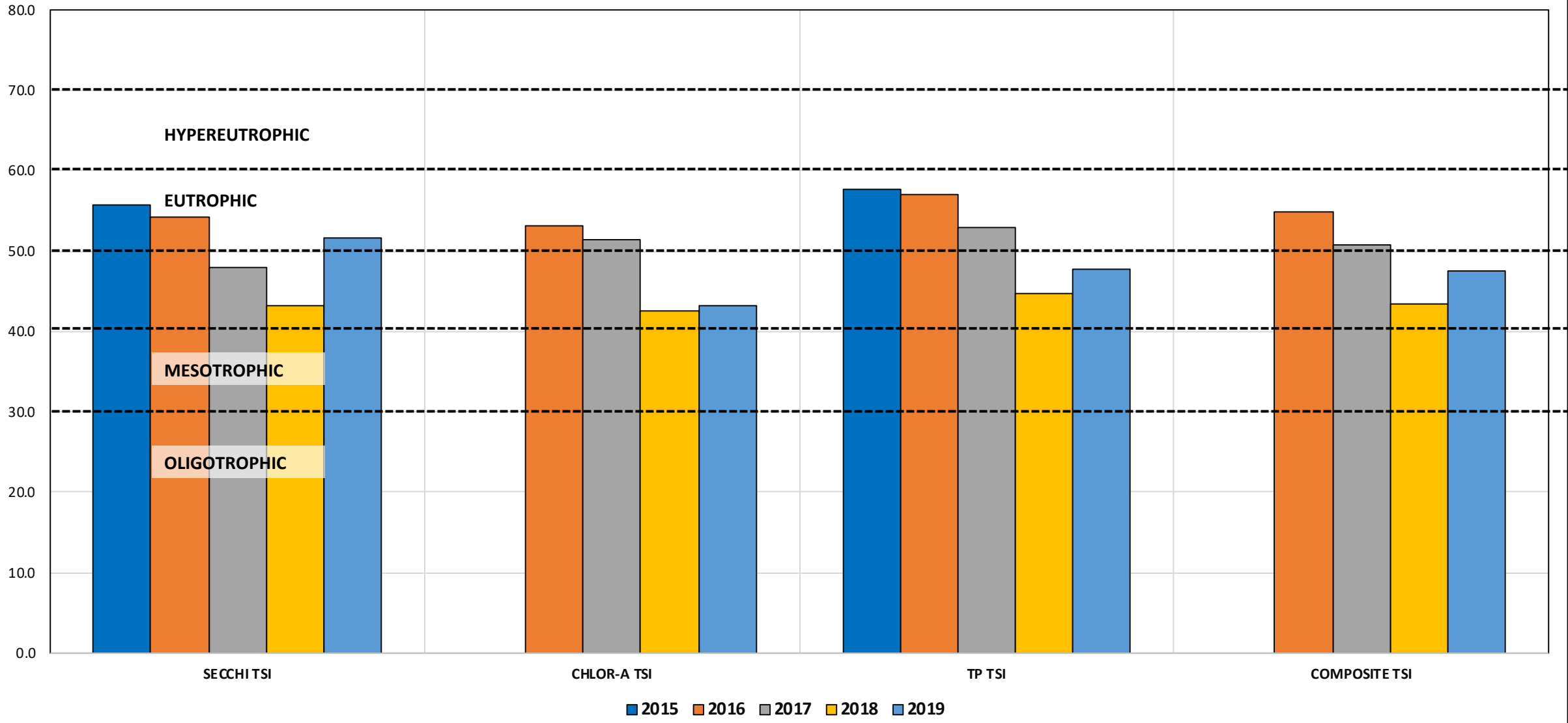
Blue-Green Algae



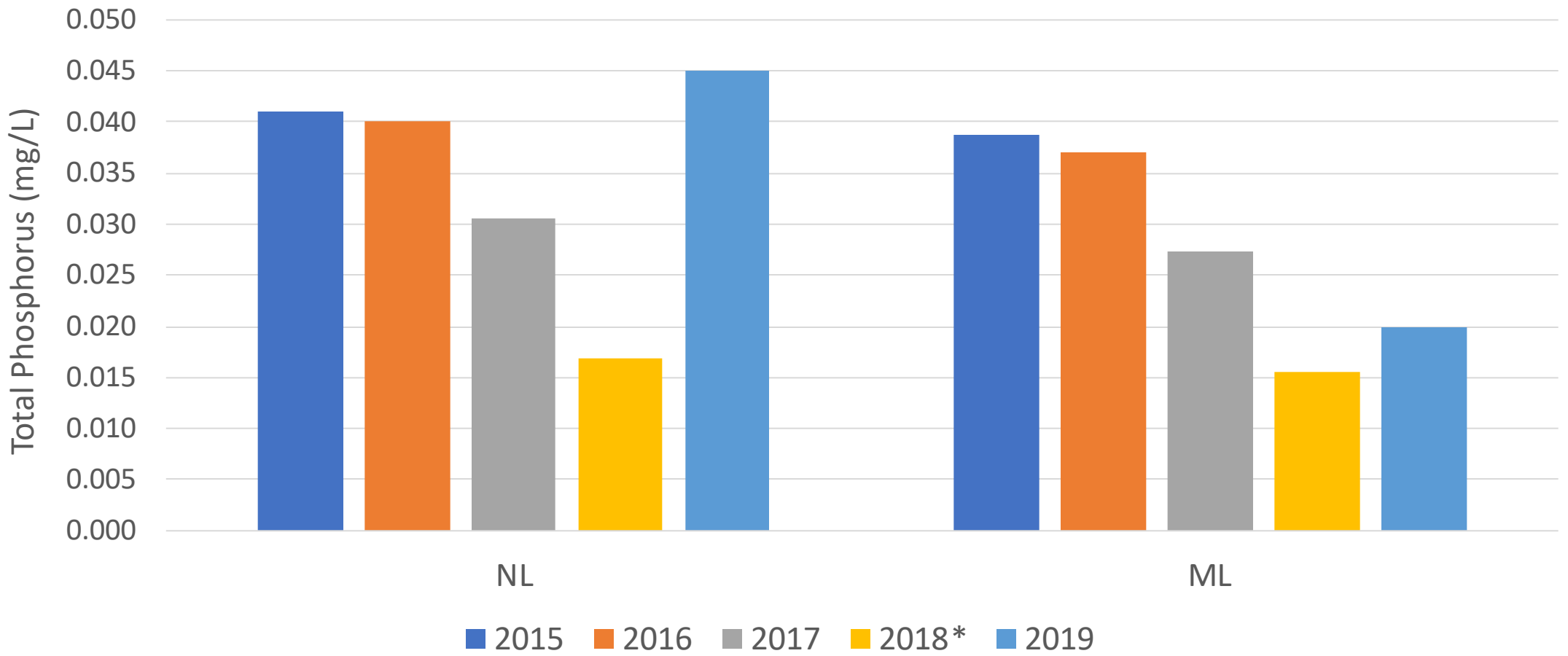
PTOX Cyanobacteria



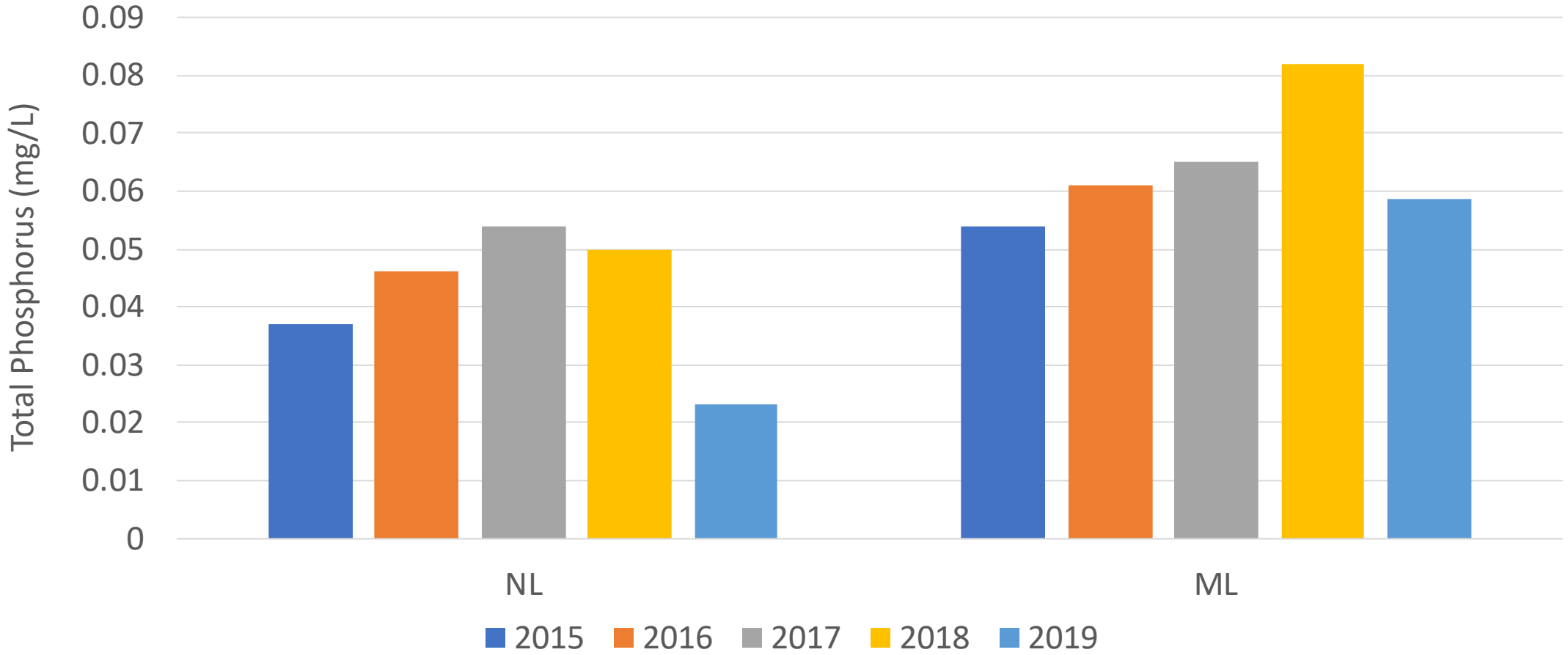
PAW PAW LAKE TROPHIC STATUS INDEX



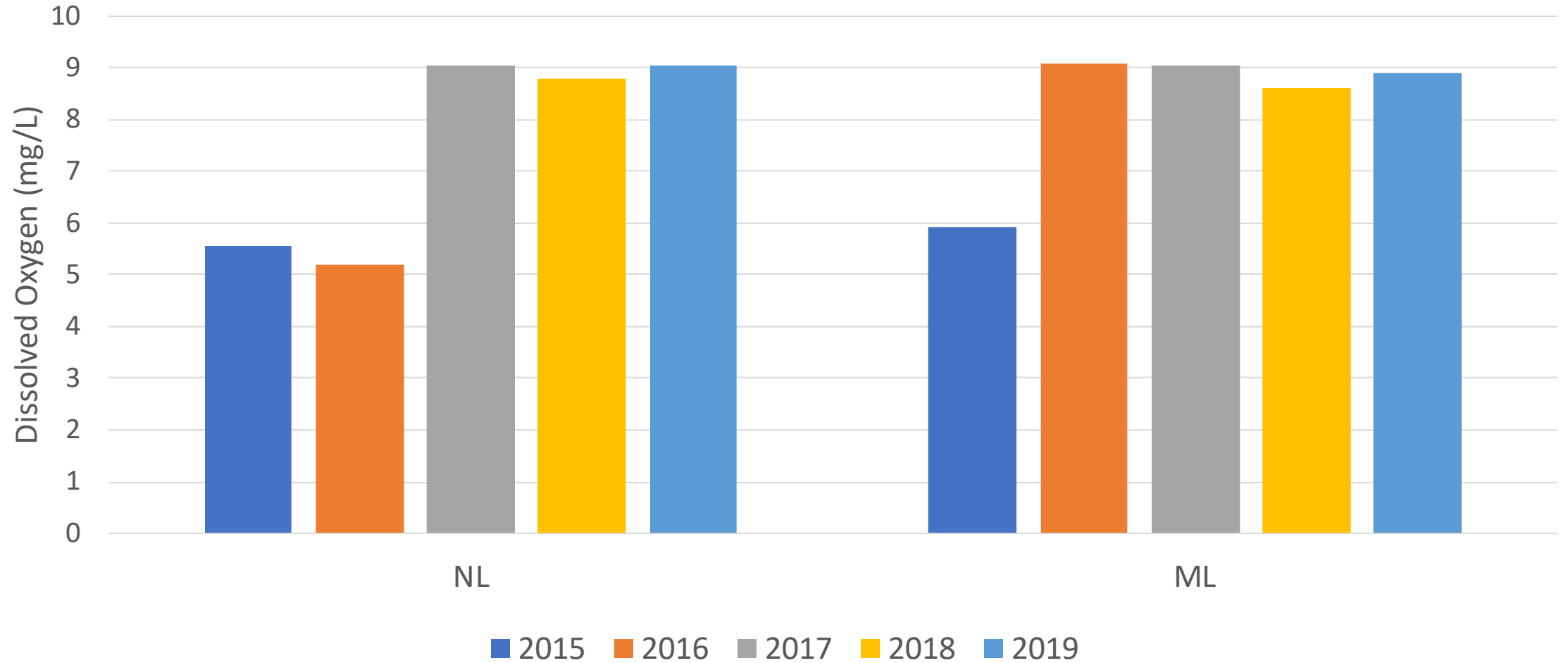
Total Phosphorus - Epilimnion



Total Phosphorus - Hypolimnion



Dissolved Oxygen - Epilimnion



Dissolved Oxygen - Hypolimnion

