



Volunteer Lake Assessment Program Individual Lake Reports

DORRS POND, MANCHESTER, NH

MORPHOMETRIC DATA

| | | | | | |
|-----------------------|-------|---------------------------|--------|----------------------------------|------|
| Watershed Area (Ac.): | 1,473 | Max. Depth (m): | 2.9 | Flushing Rate (yr ¹) | 31.2 |
| Surface Area (Ac.): | 18 | Mean Depth (m): | 1.3 | P Retention Coef: | 0.39 |
| Shore Length (m): | 1,600 | Volume (m ³): | 92,000 | Elevation (ft): | 270 |

TROPHIC CLASSIFICATION

| Year | Trophic class |
|------|---------------|
| 1981 | EUTROPHIC |
| 1997 | MESOTROPHIC |

KNOWN EXOTIC SPECIES

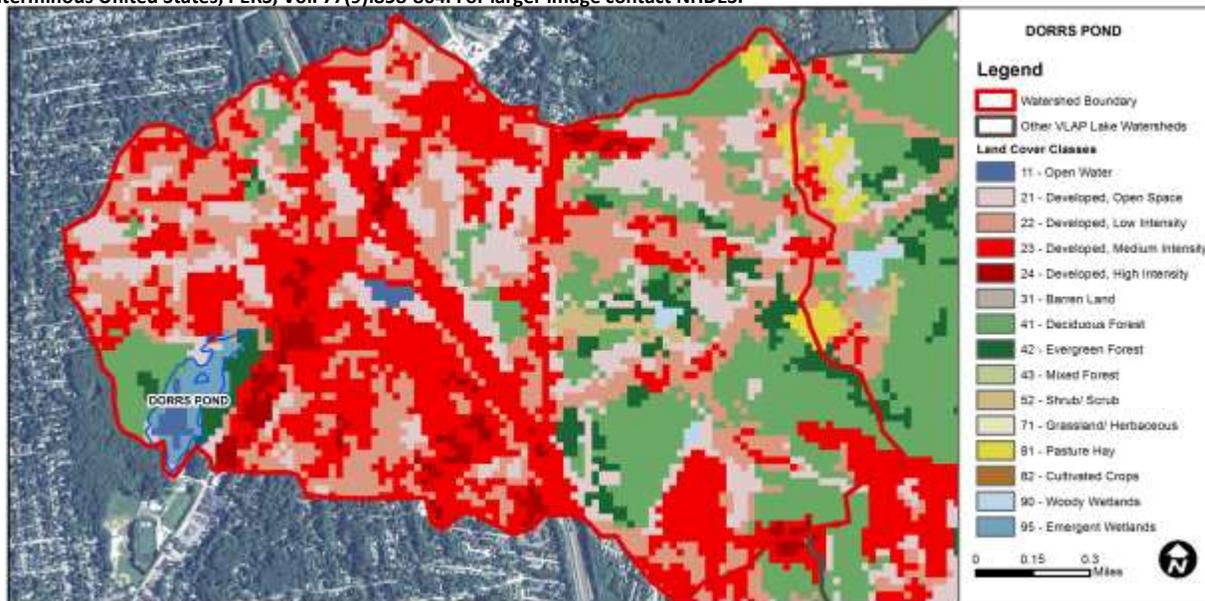
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The Waterbody Report Card tables are generated from the DRAFT 2018 305(b) report on the status of N.H. waters, and are based on data collected from 2008-2017. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organization/divisions/water/wmb/swqa/index.htm

| Designated Use | Parameter | Category | Comments |
|----------------------------|-------------------------|--------------|--|
| Aquatic Life | Phosphorus (Total) | Bad | Data exceed water quality standards or thresholds for this parameter by a large margin. |
| | pH | Good | Sampling data commonly meet water quality standards or thresholds for this parameter. |
| | Oxygen, Dissolved | Slightly Bad | Data periodically exceed water quality standards or thresholds for this parameter by a small margin. |
| | Dissolved oxygen satura | Slightly Bad | Data periodically exceed water quality standards or thresholds for this parameter by a small margin. |
| | Chlorophyll-a | Slightly Bad | Data exceed water quality standards or thresholds for this parameter by a small margin. |
| Primary Contact Recreation | Escherichia coli | No Data | No data for this parameter. |
| | Chlorophyll-a | Slightly Bad | Data periodically exceed water quality standards or thresholds for this parameter by a small margin. |

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



| Land Cover Category | % Cover | Land Cover Category | % Cover | Land Cover Category | % Cover |
|----------------------------|---------|---------------------|---------|----------------------|---------|
| Open Water | 0.65 | Barren Land | 0 | Grassland/Herbaceous | 0 |
| Developed-Open Space | 16.8 | Deciduous Forest | 16.18 | Pasture Hay | 0.63 |
| Developed-Low Intensity | 25.3 | Evergreen Forest | 4.15 | Cultivated Crops | 0 |
| Developed-Medium Intensity | 30.9 | Mixed Forest | 0.13 | Woody Wetlands | 0.26 |
| Developed-High Intensity | 2.94 | Shrub-Scrub | 0.76 | Emergent Wetlands | 1.23 |



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

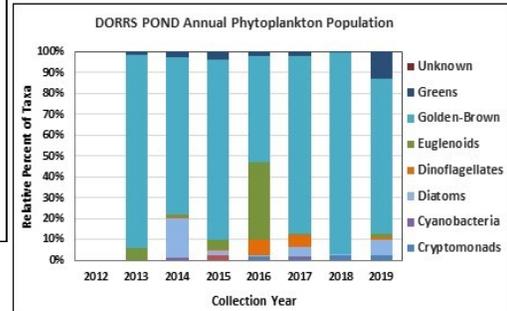
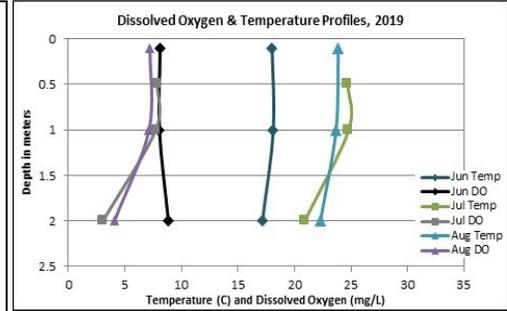
DORRS POND, MANCHESTER

2019 DATA SUMMARY

RECOMMENDED ACTIONS: The improving chlorophyll levels are a positive sign, however phosphorus levels remain greater than the threshold for mesotrophic lakes. East II Inlet phosphorus levels have improved since 2017 and we hope to see this continue. The fountain was active in July and August and during this time algal growth increased and water clarity (transparency) decreased. Chloride levels are likely toxic to some aquatic life in the pond. Once again, this is representative of an urban watershed, and best efforts should be made to try and reduce the use of salts on roads, parking lots, driveways, and walkways. Keep up the great work!

OBSERVATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was low in June, increased to slightly elevated level in July, and then decreased slightly in August. Average chlorophyll level decreased from 2018 and was approximately equal to the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot) and tributary conductivity and chloride levels remained elevated and much greater than the state medians. Chloride levels at East II Inlet and Lessard Inlet exceeded the state chronic chloride standard. Chloride levels at all other stations approached the chronic standard on each sampling event but did not exceed the standard. Historical trend analysis indicates highly variable epilimnetic conductivity levels since monitoring began.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was highly tea colored, or dark brown.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were elevated and decreased slightly as the summer progressed. Average epilimnetic phosphorus level decreased from 2018 but remained greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates stable epilimnetic phosphorus levels since monitoring began. East II Inlet phosphorus levels fluctuated within a moderate range. Juniper St. Inlet phosphorus levels were low in June and August and elevated in July when turbidity levels were also elevated. Lessard Inlet phosphorus levels were elevated but within a normal range for this station. Outlet phosphorus levels were slightly elevated in June and July and decreased to a moderate level in August.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June, decreased (worsened) in July and remained stable in August. Average NVS transparency increased (improved) slightly from 2018. Historical trend analysis indicates relatively stable transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic turbidity levels were within a moderate range for that station and remained stable from June to August. East II Inlet turbidity levels were low. Lessard Inlet turbidity levels were elevated in July and August during dry conditions. Juniper St. Inlet turbidity levels were slightly elevated in June and increased in July and August. Outlet turbidity levels were slightly elevated in July.
- ◆ **pH:** Epilimnetic, East II Inlet, Juniper St. Inlet, Lessard Inlet, and Outlet pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began.



| Station Name | Table 1. 2019 Average Water Quality Data for DORRS POND - MANCHESTER | | | | | | | | | |
|-------------------|--|--------------|---------------|-----------|-------------|--------------|----------|------|-----------|------|
| | Alk. mg/l | Chlor-a ug/l | Chloride mg/l | Color pcu | Cond. us/cm | Total P mg/l | Trans. m | | Turb. ntu | pH |
| | | | | | | | NVS | VS | | |
| Epilimnion | 26.9 | 4.85 | 210 | 117 | 723.7 | 22 | 1.58 | 1.72 | 2.35 | 7.14 |
| East II Inlet | | | 274 | | 968.0 | 18 | | | 0.47 | 7.11 |
| Juniper St. Inlet | | | 180 | | 651.0 | 16 | | | 4.74 | 6.51 |
| Lessard Inlet | | | 418 | | 1395.7 | 31 | | | 10.39 | 7.09 |
| Outlet | | | 209 | | 727.3 | 24 | | | 1.58 | 7.03 |

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

- Alkalinity:** 4.5 mg/L
- Chlorophyll-a:** 4.39 ug/L
- Conductivity:** 42.3 uS/cm
- Chloride:** 5 mg/L
- Total Phosphorus:** 11 ug/L
- Transparency:** 3.3 m
- pH:** 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

- Chloride:** > 230 mg/L (chronic)
- E. coli:** > 88 cts/100 mL – public beach
- E. coli:** > 406 cts/100 mL – surface waters
- Turbidity:** > 10 NTU above natural level
- pH:** between 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

| Parameter | Trend | Explanation | Parameter | Trend | Explanation |
|-----------------|--------|---|-------------------------|-----------|---|
| Conductivity | Stable | Trend not significant; data highly variable. | Chlorophyll-a | Improving | Data significantly decreasing. |
| pH (epilimnion) | Stable | Trend not significant; data show low variability. | Transparency | Stable | Trend not significant; data moderately variable. |
| | | | Phosphorus (epilimnion) | Stable | Trend not significant; data show low variability. |

