



Volunteer Lake Assessment Program Individual Lake Reports

HALFMOON POND, WASHINGTON, NH

MORPHOMETRIC DATA

| | | | | | |
|-----------------------|-------|---------------------------|---------|-----------------------------------|------|
| Watershed Area (Ac.): | 4,947 | Max. Depth (m): | 5.8 | Flushing Rate (yr ⁻¹) | 16.6 |
| Surface Area (Ac.): | 83 | Mean Depth (m): | 2.6 | P Retention Coef: | 0.38 |
| Shore Length (m): | 3,200 | Volume (m ³): | 856,000 | Elevation (ft): | 1432 |

TROPIC CLASSIFICATION

| Year | Trophic class |
|------|---------------|
| 1981 | MESOTROPHIC |
| 2001 | MESOTROPHIC |

KNOWN EXOTIC SPECIES

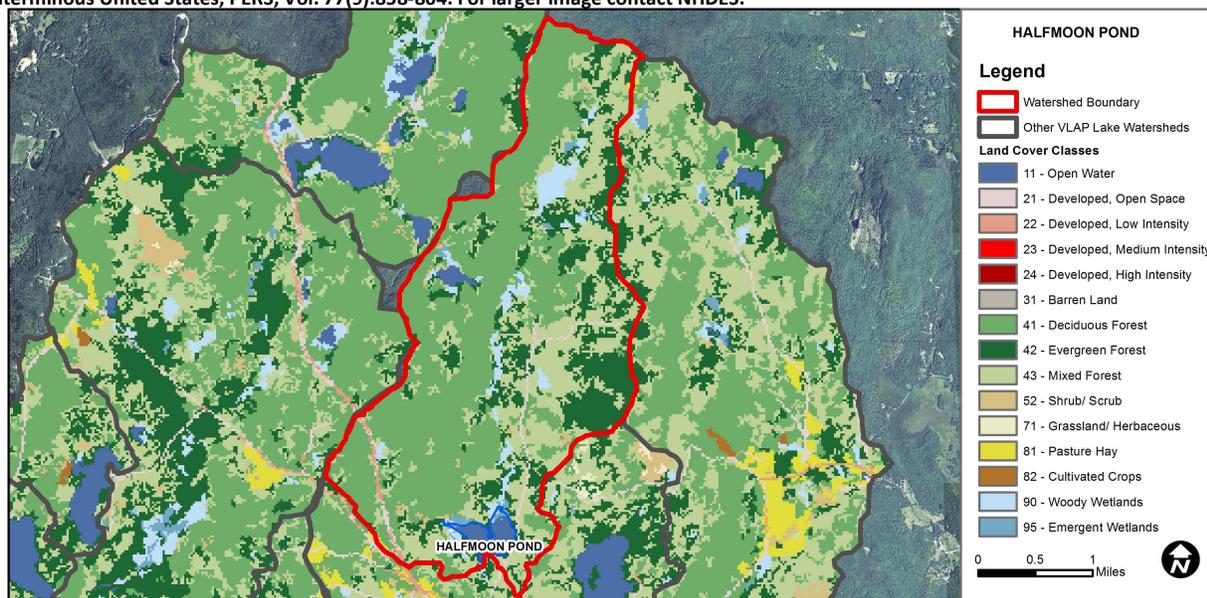
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The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

| Designated Use | Parameter | Category | Comments |
|----------------------------|--------------------|--------------|---|
| Aquatic Life | Phosphorus (Total) | Good | >/=5 samples and median is < threshold but > 1/2 threshold value. |
| | pH | Bad | >10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin. |
| | D.O. (mg/L) | Encouraging | < 10 samples and no exceedance of criteria. More data needed. |
| | D.O. (% sat) | Slightly Bad | >10% of samples exceed criteria by a small margin (minimum of 2 exceedances). |
| | Chlorophyll-a | Good | >/=5 samples and median is < threshold but > 1/2 threshold value. |
| Primary Contact Recreation | E. coli | Good | Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred. |
| | Chlorophyll-a | Very Good | At least 10 samples with 0 exceedances of criteria. |

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 | 1.87 | Barren Land | 0 | Grassland/Herbaceous | 0.04 |
| Developed-Open Space | 1.21 | Deciduous Forest | 44.45 | Pasture Hay | 0.16 |
| Developed-Low Intensity | 0.4 | Evergreen Forest | 19.38 | Cultivated Crops | 0 |
| Developed-Medium Intensity | 0 | Mixed Forest | 26.91 | Woody Wetlands | 4.1 |
| Developed-High Intensity | 0 | Shrub-Scrub | 0.73 | Emergent Wetlands | 0.76 |



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

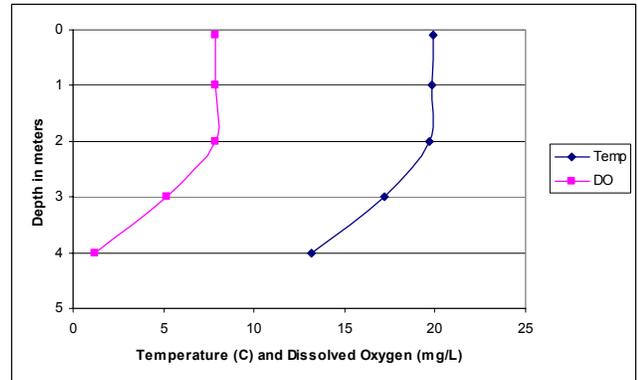
HALFMOON POND, WASHINGTON, NH

2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels were elevated in August making the 2012 average greater than previous years. Historical trend analysis indicates a relatively stable chlorophyll level since monitoring began.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Conductivity levels were low at the deep spot and tributaries, however were elevated at the Boat Launch.
- 🔥 **TOTAL PHOSPHORUS:** Phosphorus levels were elevated at the Boat Launch and Hypolimnion (lower water layer). Turbidity levels were also elevated indicating potential sediment contamination. North Inlet phosphorus levels were also slightly elevated but likely due to natural wetland influences.
- 🔥 **TRANSPARENCY:** Transparency levels increased slightly in 2012 and historical trend analysis indicates a relatively stable transparency since monitoring began.
- 🔥 **TURBIDITY:** Turbidity was elevated at the Boat Launch in June and August. Turbidity was elevated in the Hypolimnion in August likely due to lower water levels and potential bottom sediment contamination.
- 🔥 **pH:** pH levels were low and potentially critical to aquatic life.
- 🔥 **RECOMMENDED ACTIONS:** Investigate elevated phosphorus and turbidity levels at the Boat Launch. These levels are much higher than measured at other stations in and around the lake. Look at potential erosion issues from stormwater runoff and fertilizer use. Educate homeowners on ways to reduce stormwater runoff from their properties.

Dissolved Oxygen & Temperature Profile



| Station Name | Table 1. 2012 Average Water Quality Data for HALFMOON POND | | | | | | |
|------------------|--|---------|-------|---------|--------|-------|------|
| | Alk. | Chlor-a | Cond. | Total P | Trans. | Turb. | pH |
| | mg/l | ug/l | uS/cm | ug/l | m | ntu | |
| | | | | | NVS | | |
| Boat Launch | | | 69.9 | 36 | | 3.65 | 5.8 |
| Dam Outlet | | | 21.6 | 6 | | 0.49 | 6.17 |
| Deep Epilimnion | 2.25 | 5.67 | 21.6 | 8 | 3.05 | 0.75 | 6.5 |
| Deep Hypolimnion | | | 22.4 | 18 | | 1.62 | 5.73 |
| North Inlet | | | 22.8 | 16 | | 1.36 | 6.03 |

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

- Alkalinity:** 4.9 mg/L
- Chlorophyll-a:** 4.58 mg/m³
- Conductivity:** 40.0 uS/cm
- Chloride:** 4 mg/L
- Total Phosphorus:** 12 ug/L
- Transparency:** 3.2 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:** 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

| Parameter | Trend | Explanation |
|-------------------------|----------|--|
| Chlorophyll-a | Stable | Data not significantly increasing or decreasing. |
| Transparency | Stable | Data not significantly increasing or decreasing. |
| Phosphorus (epilimnion) | Variable | Data fluctuate annually, but are not significantly increasing or decreasing. |

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
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Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data

