# Volunteer Lake Assessment Program Individual Lake Reports

## TUREE POND, BOW, NH

**MORPHOMETRIC DATA**

| | | | | | |
|---|---|---|---|---|---|
| **Watershed Area (Ac.):** | 1,953 | **Max. Depth (m):** | 3 | **Flushing Rate ($yr^{1}$)** | 9.5 |
| **Surface Area (Ac.):** | 47 | **Mean Depth (m):** | 1.9 | **P Retention Coef:** | 0.49 |
| **Shore Length (m):** | 1,800 | **Volume ($m^3$):** | 357,000 | **Elevation (ft):** | 328 |

**TROPHIC CLASSIFICATION**

| Year | Trophic class |
|---|---|
| 1989 | EUTROPHIC |
| | |

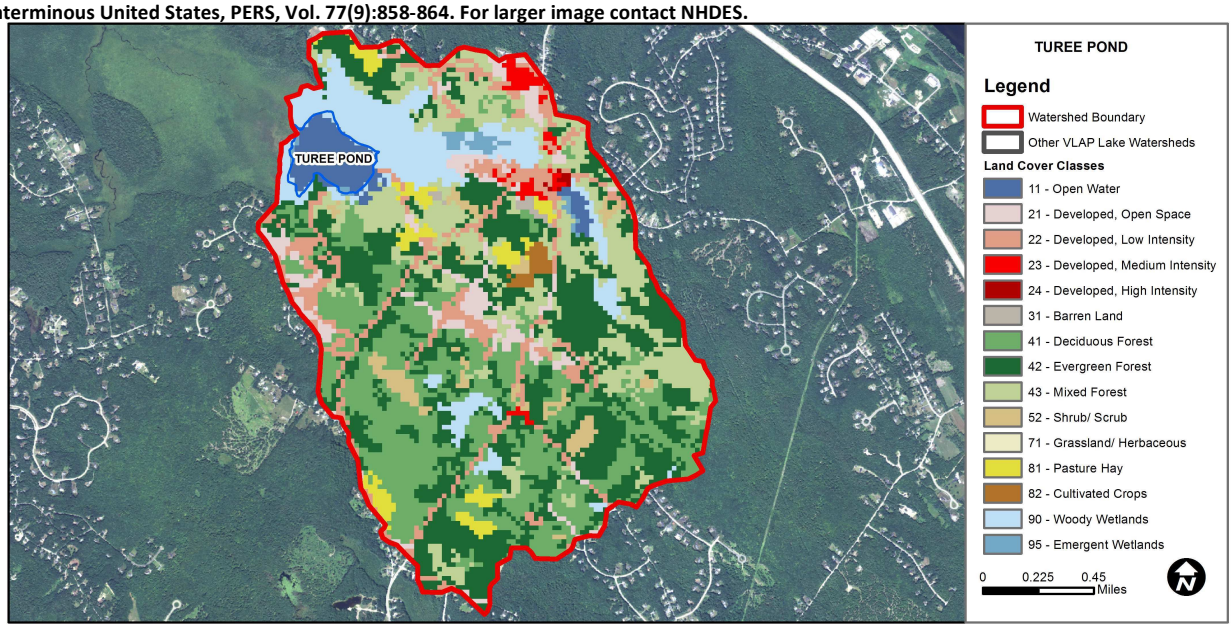
**KNOWN EXOTIC SPECIES**

**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 | Slightly Bad | >10% of samples exceed criteria by a small margin (minimum of 2 exceedances). |
| | D.O. (mg/L) | Cautionary | < 10 samples and 1 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 | Very Good | >5 samples and median is < 1/2 threshold. |
| Primary Contact Recreation | E. coli | Encouraging | >2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geomertic mean. No single sample exceedances. More data needed. |
| | 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 | 3.29 | Barren Land | 0.29 | Grassland/Herbaceous | 0 |
| Developed-Open Space | 4.64 | Deciduous Forest | 22.25 | Pasture Hay | 2.66 |
| Developed-Low Intensity | 8.39 | Evergreen Forest | 27.92 | Cultivated Crops | 0.58 |
| Developed-Medium Intensity | 1.14 | Mixed Forest | 15.64 | Woody Wetlands | 9.78 |
| Developed-High Intensity | 0.13 | Shrub-Scrub | 2.5 | Emergent Wetlands | 0.78 |

# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
## TUREE POND, BOW, NH
## 2012 DATA SUMMARY

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

- **CHLOROPHYLL-A:** Turee Pond chlorophyll levels increases slightly from June to July and were slightly greater than the NH lake median, however have decreased steadily since 2010. Firehouse Pond chlorophyll was relatively low and below the NH lake median.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were elevated at all stations, particularly in Village Inlet which receives stormwater runoff from residential roads and driveways.
- **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus was elevated in Turee Pond and was greater than the NH lake median. Firehouse Pond and Inlet phosphorus were also slightly elevated.
- **TRANSPARENCY:** Turee Pond transparency was lower than normal and has decreased steadily since 2007. The pond is shallow and water level may play a role in overall transparency levels. Firehouse Pond transparency was good and the Secchi disk was visible on the pond bottom.
- **TURBIDITY:** Epilimnetic turbidity was average for the pond. Firehouse Pond turbidity was low. Village Inlet turbidity was slightly above average likely due to low flow conditions.
- **PH:** pH tends to fluctuate below desirable levels in the pond.
- **RECOMMENDED ACTIONS:** Epilimnetic phosphorus concentrations have increased greatly from the monitoring period of 1996 – 2002. Increased development and stormwater runoff may be factors influencing the phosphorus levels. Educate homeowners on ways to reduce stormwater runoff from their properties utilizing DES' "NH Homeowner's Guide to Stormwater Management". Discuss with the Town, High School and local landscapers the design and construction of rain gardens to capture and filter stormwater runoff from roads and impervious surfaces before entering storm drains. Keep up the great work!

Table 1. 2012 Average Water Quality Data for TUREE POND

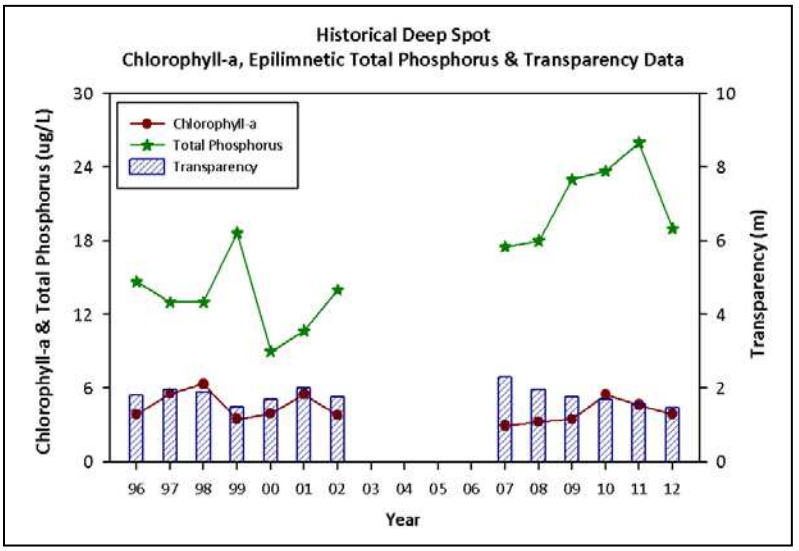
| Station Name | Alk. | Chlor-a | Chloride | Cond. | Total P | Trans. | | Turb. | pH |
|---|---|---|---|---|---|---|---|---|---|
| | mg/l | ug/l | mg/l | uS/cm | ug/l | m | | ntu | |
| | | | | | | NVS | VS | | |
| Deep Epilimnion | 10.6 | 4.70 | 40 | 170.7 | 19 | 1.48 | 1.75 | 1.30 | 6.73 |
| Firehouse Pond | | 2.29 | | 114.9 | 17 | 1.50 | | 0.94 | 6.65 |
| Village Inlet | | | 65 | 218.0 | 17 | | | 1.43 | 7.22 |

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.
**Alkalinity:** 4.9 mg/L
**Chlorophyll-a:** 4.58 mg/m$^3$
**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 | N/A | Ten consecutive years of data necessary for trend analysis. |
| Transparency | N/A | Ten consecutive years of data necessary for trend analysis. |
| Phosphorus (epilimnion) | N/A | Ten consecutive years of data necessary for trend analysis. |

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