



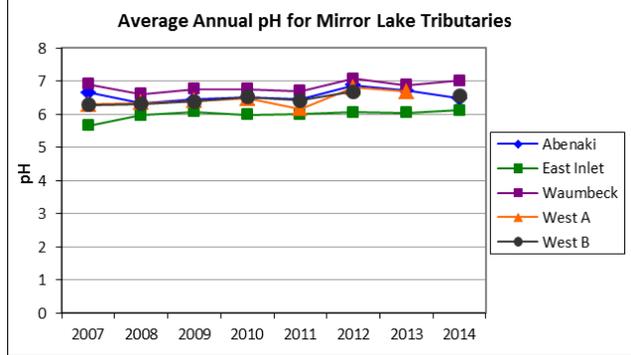
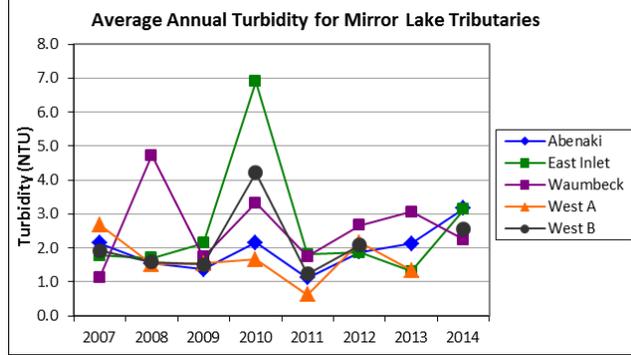
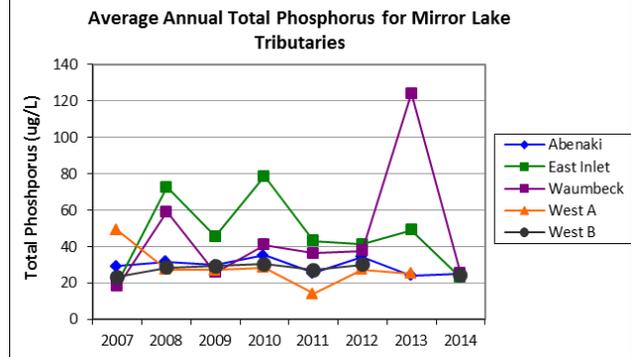
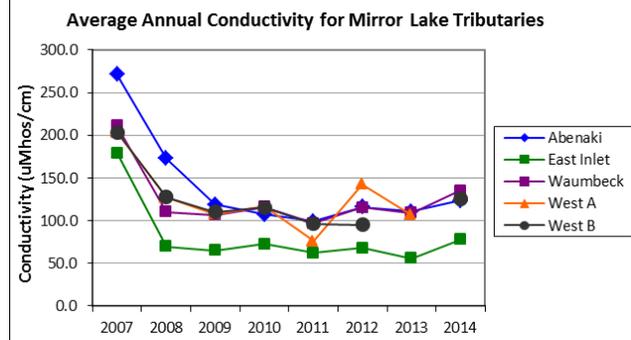
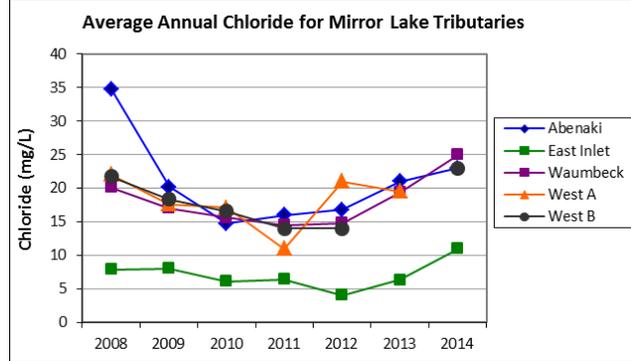
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

MIRROR LAKE, TUFTONBORO

2014 DATA SUMMARY

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

- CONDUCTIVITY/CHLORIDE:** Chloride and conductivity levels increased slightly at all stations in 2014. Average conductivity levels ranged from 77.5 to 135.0 uMhos/cm. Conductivity levels greater than 100 uMhos/cm are generally indicative of eutrophication. Chloride levels chronically greater than 230 mg/L exceed water quality standards. Conductivity levels were slightly greater than 100 uMhos/cm and chloride levels were much less than 230 mg/L, however greater than the state median chloride level of 4 mg/L. Conductivity levels at all stations have decreased from the elevated levels measured in 2007, however chloride levels seem to have increased since 2011.
- TOTAL PHOSPHORUS:** 2014 phosphorus levels generally remained stable or decreased from those measured in 2013. Average phosphorus levels ranged from 23 to 25 ug/L and were slightly above average for NH lakes. Phosphorus levels generally remained stable at all station from July to September and from upstream to downstream stations. East Inlet phosphorus levels appear to have decreased slightly since monitoring began in 2007. Waumbeck Rd. phosphorus levels decreased greatly from a spike in 2013.
- TURBIDITY:** Turbidity levels generally increased in 2014, and have increased at all stations since 2011. Average turbidity ranged from 2.24 to 3.17 NTUs. June turbidities were elevated due to dry and stagnant conditions in the tributaries. Waumbeck Rd. turbidity increased in July following a significant storm event.
- pH:** pH levels at Waumbeck Rd. were within the desirable range 6.5–8.0 units, however pH levels at other stations have historically fluctuated below the desirable range. pH levels ranged from 6.12–7.02. The lowest pH levels were measured at stations that are influenced by wetlands and contain higher levels of tannic and humic acids. pH levels at all station appear to have improved slightly since monitoring began in 2007.
- RECOMMENDED ACTIONS:** Chloride levels have increased slightly since 2011 at all stations. Winter de-icing activities and the application of road salt are likely the cause of the increased chloride levels. Encourage local road agents and winter maintenance companies to obtain a Voluntary NH Salt Applicator license through the UNH Technology Transfer Center's Green SnowPro Certification program. Educate local lake and watershed residents on utilizing best management practices when applying de-icing products. Visit www.t2.unh.edu/green-snowpro-training-and-certification for educational resources. Turbidity has increased slightly in the tributary system. The increased frequency and intensity of storm events and resulting stormwater runoff may be contributing sediments to the system causing the increased turbidity, particularly during and after storm events. Identify areas of erosion in the tributary system and try to implement stormwater best practices to capture and infiltrate stormwater before it reaches the tributary. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource. Keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for MIRROR LAKE				
	Chloride mg/l	Cond. uS/cm	Total P ug/l	Turb. ntu	pH
Abenaki Lagoon	23	123.4	25	3.17	6.48
East Inlet	11	77.5	23	3.13	6.12
Waumbeck Rd	25	135.0	25	2.24	7.02
West Inlet B	23	125.6	24	2.55	6.56

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: between 6.5-8.0 (unless naturally occurring)