Volunteer Lake Assessment Program Individual Lake Reports
Snake River, New Hampton/Center Harbor
2016 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **Conductivity/Chloride:** Conductivity levels decreased slightly from May to August at Sites 1 and 2, and increased slightly at Sites 3 and 4. Chloride levels increased from May to August at all sites. Site 5 conductivity and chloride levels in May were slightly greater than the state medians however not above a level of concern. Conductivity and chloride levels generally increased from upstream (Site 4) to downstream (Site1). Historical trend analysis indicates stable conductivity levels since 2002, however levels have been increasing since 2011.
- **Total Phosphorus:** Phosphorus levels were slightly elevated at Sites 1, 2 and 5 in May and the turbidity of the samples was also slightly elevated. Field data note pollen and organic matter on the water's surface which likely impacted phosphorus and turbidity. Site 1 and 2 phosphorus levels decreased to within a low to average range in August. Sites 3 and 4 phosphorus levels were low in May and phosphorus levels at Site 3 increased to elevated levels in August likely due to a beaver dam and the sample being collected downstream of the normal site. Site 5 phosphorus levels were slightly above average for that site in May. The 2016 average phosphorus level increased sharply from 2015, as did the turbidity, during drought conditions. Historical trend analysis indicates relatively stable phosphorus levels with moderate variability between years.
- **Turbidity:** Turbidity levels at Sites 1, 2, 3, and 5 were elevated in May, but low at Site 4. Field data note pollen and organic matter on the water's surface at all sites in May. Sites 4 and 5 note erosion from boat ramps that may be contributing to turbidity. Turbidity decreased in August at all stations except for Site 3 where it increased slightly. Average turbidity levels were slightly elevated and increased sharply from 2015. Historical trend analysis indicates relatively stable turbidity levels since 2002.
- **pH:** pH levels remained stable from May to August at Sites 1, 2 and 3. Site 5 pH levels increased slightly from 2015. Site 4 pH levels were approximately neutral (good) in May and then decreased in August but remained within the desirable range. Average pH levels increased from 2015 and pH levels at all stations were within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable pH levels with moderate variability between years and after a declining pH trend from 2002 to 2009, average pH levels have improved and remained within the range of 6.5-8.0 units.
- **Recommended Actions:** Conductivity levels are within an average range for NH waters. Chloride levels do indicate slight impacts from road salting during winter months, however levels are much less than the state chronic chloride standard of 230 mg/L. Water quality is generally stable at all stations and within low to average ranges for New Hampshire lakes. Beaver dams continue to cause problems under the bridge and any dam removal should occur with care to limit turbidity and sediment flow downstream. Boat ramp erosion is noticeable at Sites 4 and 5 and it is encouraged to investigate stormwater management options to prevent erosion of sediments into the river at these sites. DES' "NH Homeowner's Guide to Stormwater Management" is a good resource. Keep up the great work!

Station Name	Table 1. 2016 Average Water Quality Data for SNAKE RIVER				
	Chloride mg/l	Cond. uS/cm	Total P ug/l	Turb. ntu	pH
Site 1	14	80.90	12	1.08	6.64
Site 2	13	76.70	12	1.32	6.59
Site 3	15	83.25	13	1.65	6.74
Site 4	13	72.80	8	0.86	6.81
Site 5 (Kodiak Launch)	13	78.50	13	2.29	6.68

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: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis