

NEWFOUND LAKE

2015 SAMPLING HIGHLIGHTS

Tilton Brook Subwatershed



Refer to the Newfound Lake Watershed Assessment (2013) for additional information,

<https://drive.google.com/file/d/0B3ZgrJ7Tv9sZRTJwaVk3S2IHMFf/view?pli=1>

Blue = Excellent

Yellow = Fair

Red = Poor

Light Gray = No Data

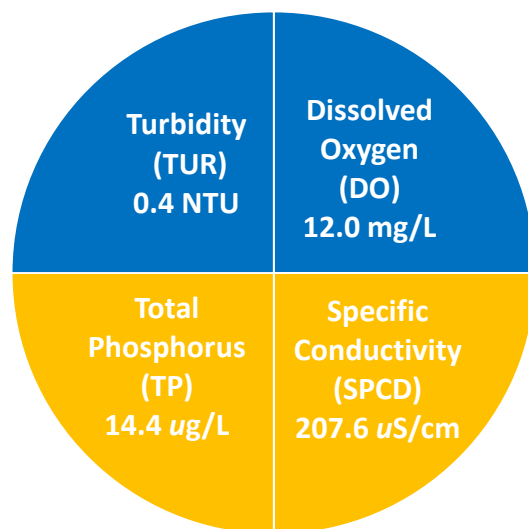


Figure 1. Tilton Brook Subwatershed Average Water Quality (2015)

Table 1. 2015 Tilton Brook Subwatershed Seasonal Average Water Quality Measurements.

Parameter	Assessment Criteria					Tilton Brook Subwatershed Average (range)	Tilton Brook Subwatershed Classification
	< 0 - 5.0 Desirable	6 - 10 Low Impact	11 - 50 Moderate impact	51 - 100 Moderate - high impact	> 101 High impact		
Turbidity * (NTU)	< 0 - 5.0 Desirable	6 - 10 Low Impact	11 - 50 Moderate impact	51 - 100 Moderate - high impact	> 101 High impact	0.4 NTU (range: < 0.2 - 0.6)	Desirable
pH (standard units)	< 5.5 suboptimal for successful fish growth and reproduction		5.5 - 6.5 sufficient for successful fish growth and reproduction		6.5 - 8.5 optimal range for fish growth and reproduction	6.3 standard units (range: 6.1 - 6.5)	Sufficient for successful fish growth and reproduction
Dissolved Oxygen (mg/L)	< 5 Suboptimal for successful brook trout growth and survival			> 5 Typically sufficient for successful brook trout growth and survival		12.0 mg/L (range: 9.9 - 14.1)	Typically sufficient for successful brook trout growth and survival
Specific * Conductivity (uS/cm)	0 - 100 Normal	101 - 200 Low Impact	201 - 500 Moderate Impact	> 501 High Impact		207.6 uS/cm (range: 39.7 - 562.0)	Moderate Impact
Total * Phosphorus (ug/L)	< 10 ug/L Ideal	11 - 25 Average	26.0 - 50.0 More than desirable	> 51 Excessive		14.4 ug/L (range: 6.0 - 29.4)	Average

* Water quality assessment criteria are provided by the New Hampshire Department of Environmental Services for general guidance only. Natural variations among rivers and streams will occur and should be considered when interpreting the water quality data.

Table 2. 2015 Tilton Brook Subwatershed Seasonal Average Water Quality Inter-comparison among Sampling Stations.

Site ID *	Average Turbidity (NTU)	Average Specific Conductivity (uS/cm)	Average Total Phosphorus (ug/L)	Average Dissolved Oxygen (mg/L)	Average pH (standard units)
TB H02	0.4	207.6	14.4	12.0	6.3

* Refer to Figure 4 for a map of the sampling locations.

Tilton Brook Subwatershed Highlights

The Tilton Brook subwatershed is the seventh largest stream drainage network that feeds into Newfound Lake. The 786-acre Tilton Brook subwatershed is monitored with one active sampling location positioned at the intersection of Tilton Brook and Route 3A. The single Tilton Brook sampling location was selected to characterize the overall water quality within the Tilton Brook subwatershed.

The 2015 Tilton Brook water quality measurements generally indicate moderate to high water quality. A comparison between the 2015 and the 2011-2014 average specific conductivity data indicates the 2015 measurements were elevated relative to the historical values (Figure 2). Low stream-flow conditions during the 2015 sampling season coincided with increased specific conductivity measurements that likely reflect the concentration of salts into reduced water volumes. The pattern of elevated 2015 specific conductivity measurements, relative to the 2011-2014 measurements, was common among the majority of the Newfound Lake tributary inlets.

The 2015 average turbidity (suspended soil and other particles) levels were low while the average total phosphorus (nutrient) concentrations were moderate in the Tilton Brook subwatershed (Figure 3).

Dissolved oxygen concentrations remained sufficient to support successful fish growth and reproduction.

Figure 2. Tilton Brook Subwatershed Specific Conductivity



Figure 3. Tilton Brook Subwatershed Total Phosphorus

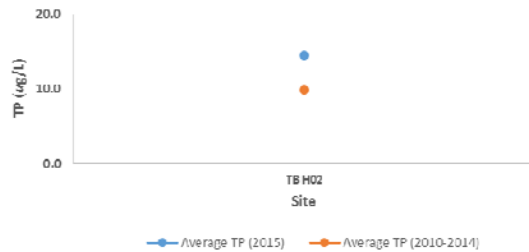


Table 3. Comparison of Seasonal Average Water Quality by Subwatershed (2015)

Subwatershed	Average * Turbidity (NTU)	Average * Specific Conductivity (uS/cm)	Average * Total Phosphorus (ug/L)	Average * Dissolved Oxygen (mg/L)	Average * pH (Standard Units)
Black Brook	2.0	247.6	18.5	12.1	6.0
Cockermouth River	0.5	40.9	9.0	12.3	6.0
Dick Brown Brook	0.6	35.7	12.2	11.6	6.2
Folwer River	0.6	52.7	12.5	12.1	5.6
Georges Brook	0.6	48.1	12.0	11.9	5.7
Hemlock Brook	0.4	84.6	15.3	11.7	6.2
Whittemore Brook	0.3	54.1	13.1	12.1	6.0
Tiltton Brook	0.4	207.6	14.4	12.0	6.3

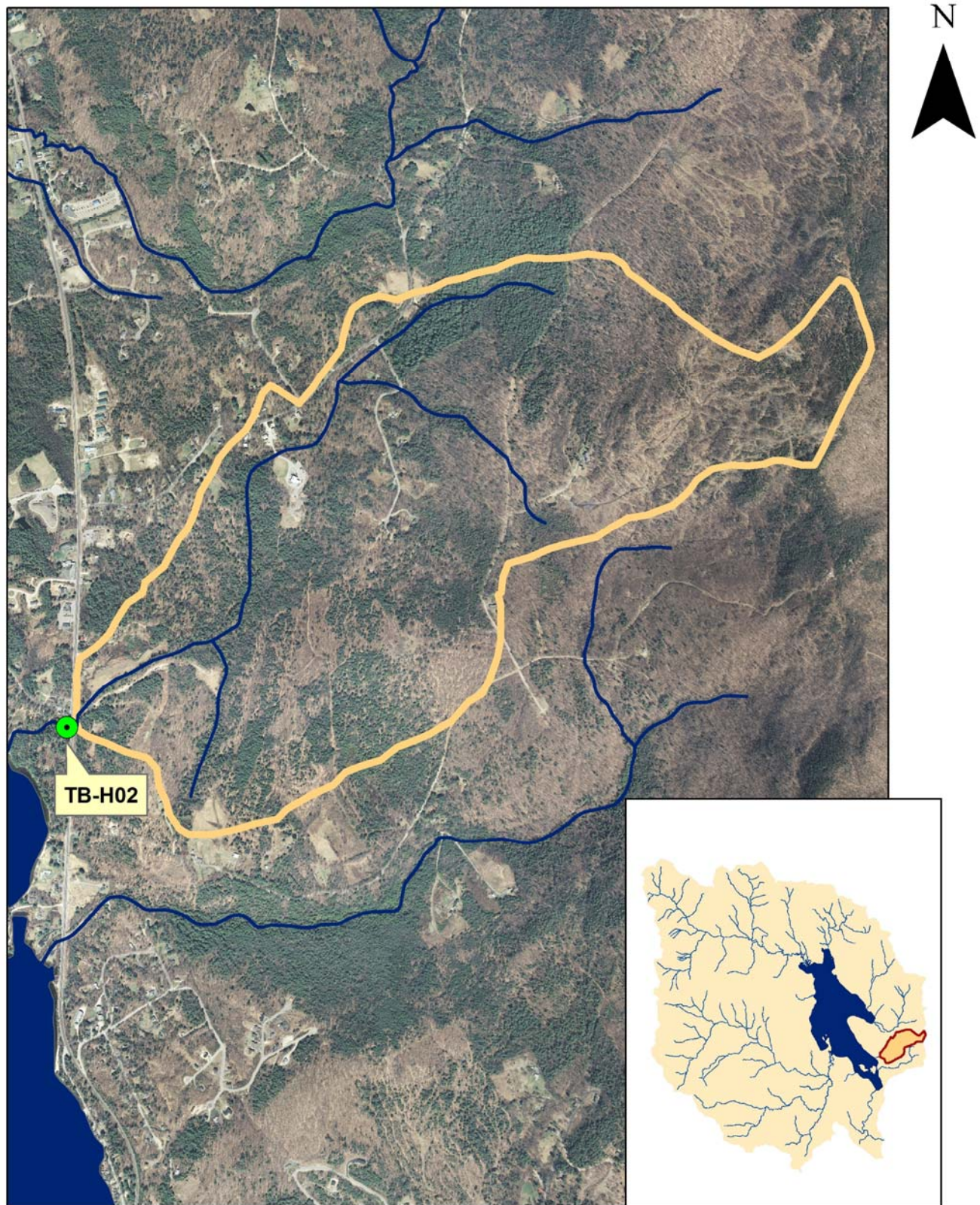
* The displayed water quality results are average values for all sampling locations within the respective subwatersheds.

Recommendations for Property Owners:

Implement Best Management Practices within the Newfound Lake watershed to minimize the adverse impacts of polluted runoff and erosion into the lake. Refer to “Landscaping at the Water’s Edge: An Ecological Approach” and “New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home” for more information on how to reduce nutrient loading caused by overland run-off.

- http://extension.unh.edu/resources/files/Resource004159_Rep5940.pdf
- <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf>

Figure 4.
2015 Sampling Highlights - Tilton Brook Subwatershed



0 0.1 0.2 0.4 0.6 0.8 Miles

Aerial Orthophoto Source: NH GRANIT
Site location GPS coordinates collected by the UNH Center for Freshwater Biology



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