NEWFOUND LAKE
2019 SAMPLING HIGHLIGHTS
Hemlock Brook Subwatershed
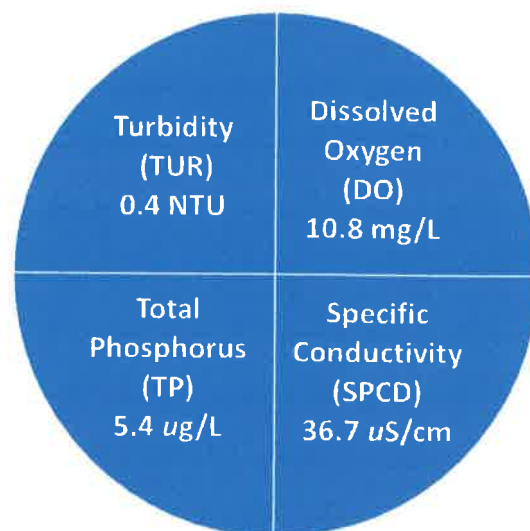
Blue = Excellent

Yellow = Fair

Red = Poor

Light Gray = No Data

| Turbidity (TUR) 0.4 NTU | Dissolved Oxygen (DO) 10.8 mg/L |
| Total Phosphorus (TP) 5.4 ug/L | Specific Conductivity (SPCD) 36.7 uS/cm |

Figure 1. Hemlock Brook Subwatershed Average Water Quality (2019)

Table 1. 2019 Hemlock Brook Subwatershed Seasonal Average Water Quality Measurements.

Parameter	Assessment Criteria					Hemlock Brook Subwatershed Average (range)	Hemlock Brook Subwatershed Classification
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: 0.3 – 0.5)	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	6.8 standard units (range: 6.6 – 7.8)	Optimal range for 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			10.8 mg/L (range: 8.3 – 13.3)	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	36.7 uS/cm (range: 24.1 – 49.3)	Normal
Total * Phosphorus (ug/L)	< 10 ug/L Ideal	11 – 25 Average		26.0 – 50.0 More than desirable	> 51 Excessive	5.4 ug/L (range: 4.8 – 5.9)	Ideal

* 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. 2019 Hemlock 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 Oxgyen (mg/L)	Average pH (standard units)
HB H01	0.4	36.7	5.4	10.8	6.8

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

Hemlock Brook Subwatershed Highlights

The Hemlock Brook subwatershed is the sixth largest stream drainage network that feeds into Newfound Lake. The 895-acre Hemlock Brook subwatershed is monitored with one active sampling location positioned at the intersection of Hemlock Brook and Route 3A. The single Hemlock Brook sampling location was selected to characterize the overall water quality within the Hemlock Brook subwatershed.

The 2019 Hemlock Brook water quality measurements generally indicate high water quality. A comparison between the 2019 and the 2011-2018 average specific conductivity data indicates the 2019 measurement was lower than the 2011-2018 average (Figure 2).

The 2019 average turbidity (suspended soil and other particles) level and the average total phosphorus (nutrient) concentration were low in the Hemlock Brook subwatershed (Figure 3).

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

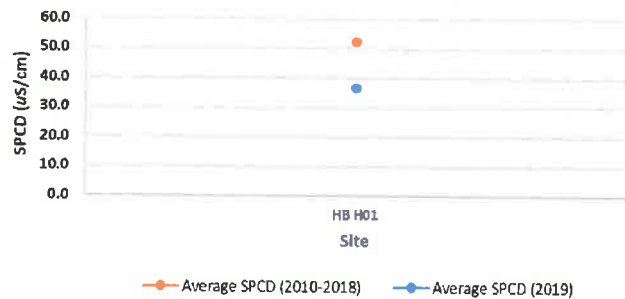Figure 2. Hemlock Brook Subwatershed Specific Conductivity

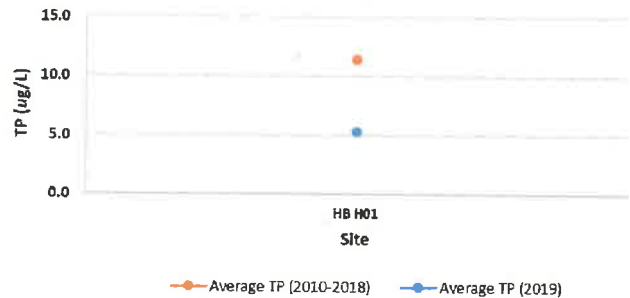
Figure 3. Hemlock Brook Subwatershed Total Phosphorus

Table 3. Comparison of Seasonal Average Water Quality by Subwatershed (2019)

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	2.2	159.6	9.3	12.2	6.4
Cockermouth River	0.5	39.9	4.9	11.8	6.4
Dick Brown Brook	0.9	40.2	7.7	10.5	6.6
Fowler River	0.6	29.3	7.7	10.9	6.3
Georges Brook	0.5	39.0	6.8	10.8	6.4
Hemlock Brook	0.4	36.7	5.4	10.8	6.8
Whittemore Brook	0.3	26.9	5.0	11.0	6.6
Tilton Brook	0.4	107.3	7.5	11.1	6.7

* 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.

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

Figure 4.
2019 Sampling Highlights - Hemlock Brook Subwatershed
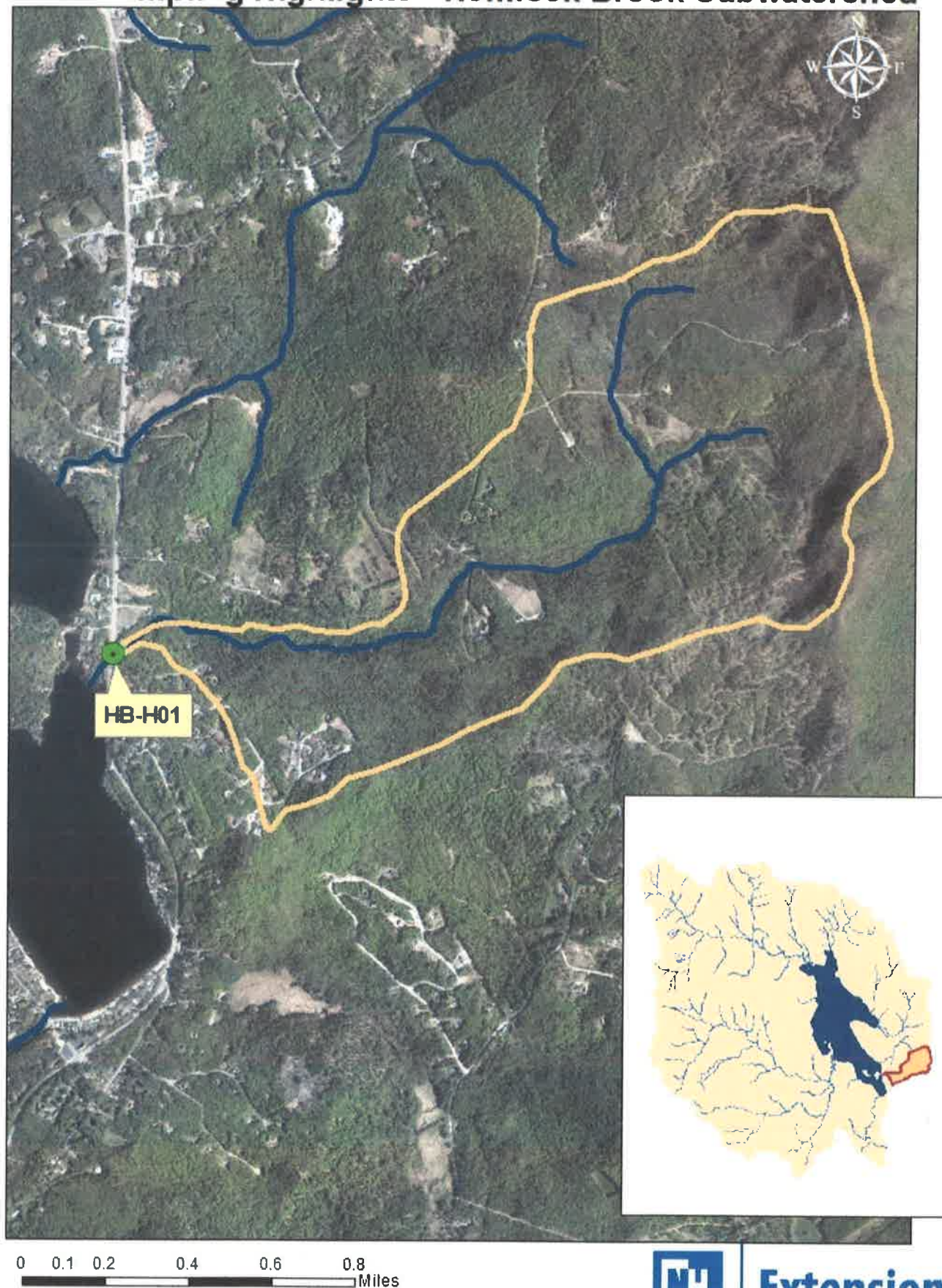
HB-H01

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

Extension

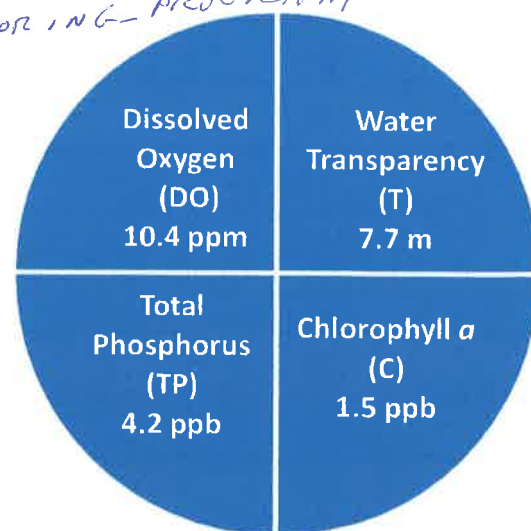# NEWFOUND LAKE

2019 SAMPLING HIGHLIGHTS

Station - Deep 1

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

Dissolved Oxygen (DO) 10.4 ppm	Water Transparency (T) 7.7 m
Total Phosphorus (TP) 4.2 ppb	Chlorophyll *a* (C) 1.5 ppb

Figure 1. Station Deep 1 Water Quality (2019)

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

Table 1. 2019 Station Deep 1 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Deep 1 Average (range)	Station Deep 1 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	7.7 meters (range: 6.5 – 8.4)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.5 ppb (range: 1.1 – 2.1)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	4.2 ppb (range: 3.5 – 4.8)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	10.4 ppm (range: 10.1 – 10.5)	Oligotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 12.5 and 31.0 meters in the bottom water layer.

Table 2. 2019 Station Deep 1 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Deep 1 Average (range)	Station Deep 1 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	11.4 color units (range: 7.6 – 14.8)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.8 ppm (range: 3.3 – 4.1)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			6.9 standard units (range: 6.8 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		39.8 uS/cm (range: 39.5 – 40.0)	Characteristic of minimally impacted NH lakes

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.

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

LONG TERM WATER QUALITY

Site Deep 1 is the most centrally located of the Newfound Lake sampling locations (Figure 4) and provides the best representation of the overall condition of Newfound Lake. The condition of site Deep 1 is a reflection of the various inputs that enter the lake through the drainages to the north and many points to the east and west of Newfound Lake. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
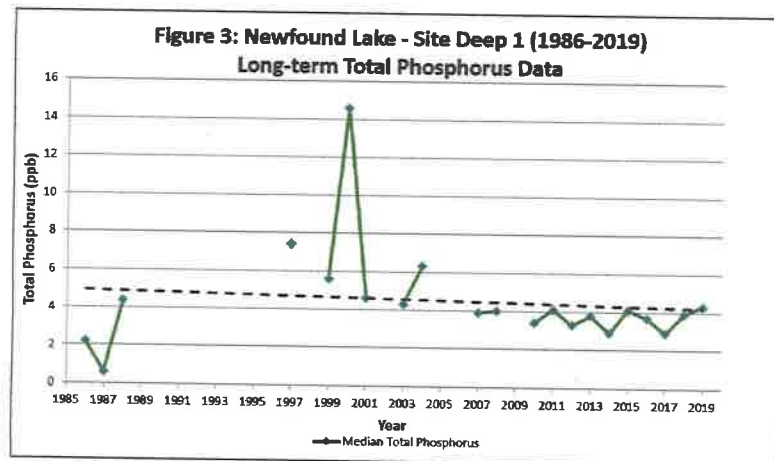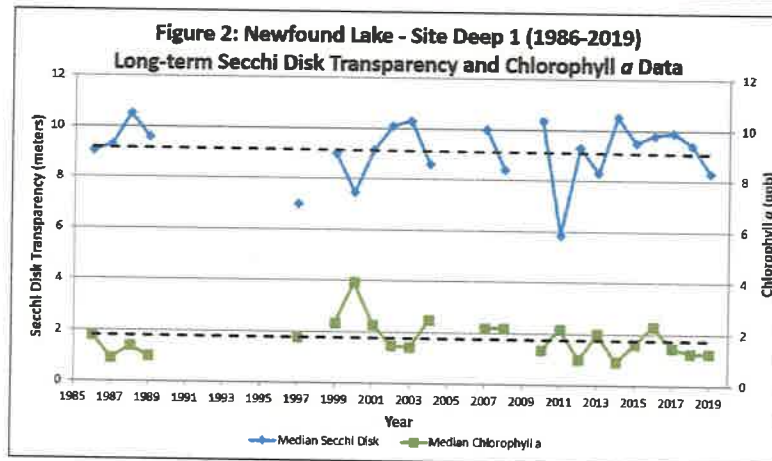
WATER CLARITY: The site Deep 1 Lake water clarity data do not display a trend over the twenty-three years of sampling (1986–2019).

CHLOROPHYLL: The site Deep 1 Lake chlorophyll *a* data display do not display a trend over the twenty-three years of sampling (1986–2019).

COLOR: The site Deep 1 color data display a trend of increasing color concentrations over the twenty years of sampling (1988–2019).

TOTAL PHOSPHORUS: The site Deep 1 total phosphorus concentrations do not display a trend over the past twenty-one years of sampling (1986-2019).

In summary, site Deep 1 and Newfound Lake continue to show excellent water quality conditions. One should be aware that water quality data have not been collected on an annual basis and that data gaps among years exist (Figure 2 and 3).
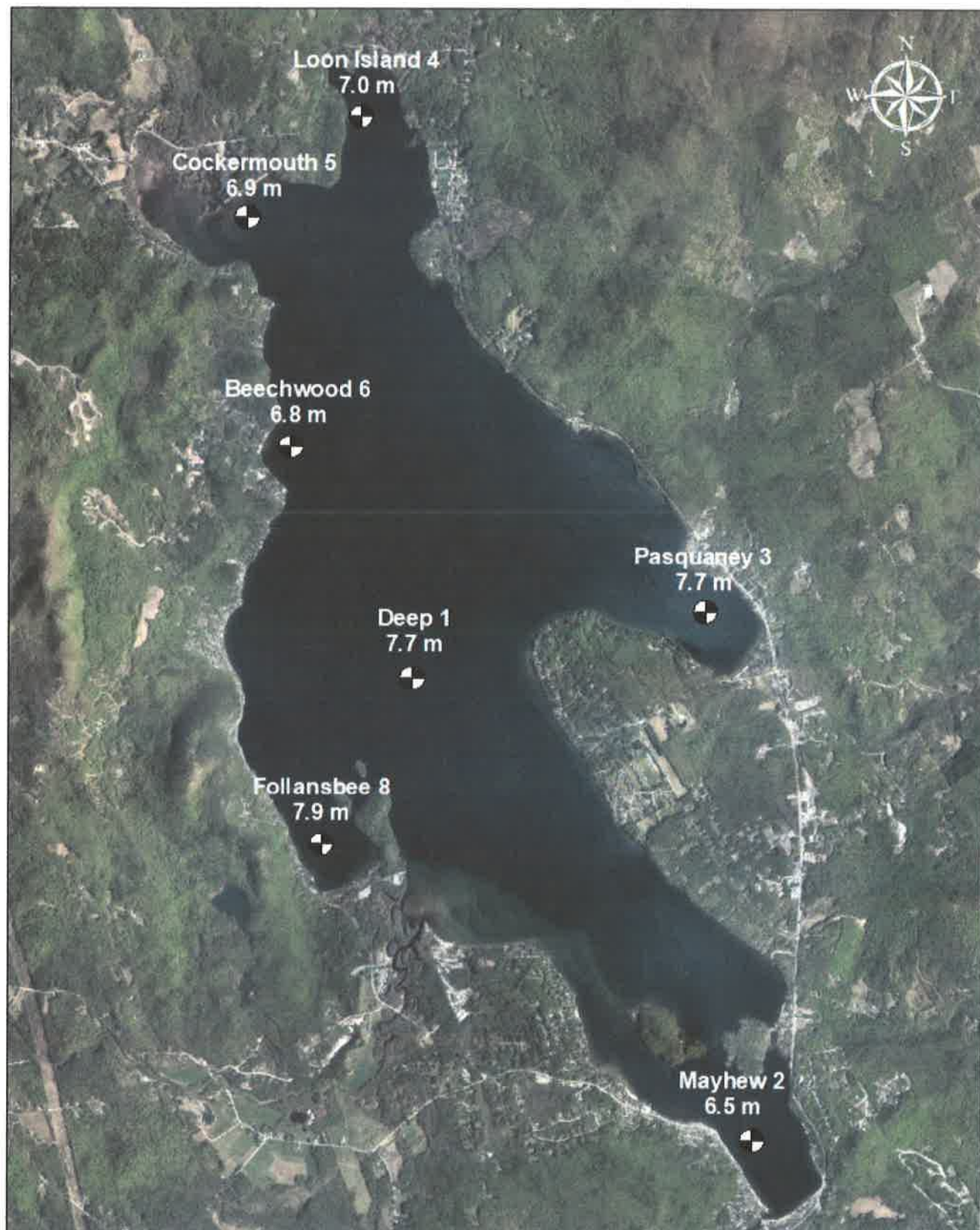

Figure 2: Newfound Lake - Site Deep 1 (1986-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Deep 1 (1986-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1986 and 2019 at site Deep 1. These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth. Note: due to difficulties in accessing the deep site and personnel limitations, there are years when site Deep 1 was not sampled between 1986 and 2019. Median trend graphs are developed using median annual values to minimize the impact of outlier data.

Figure 4. Newfound Lake
Bristol, Alexandria, Bridgewater & Hebron, NH
2019 Deep sampling sites with seasonal average water clarity

Loon Island 4
7.0 m

Cockermouth 5
6.9 m

Beechwood 6
6.8 m

Pasquaney 3
7.7 m

Deep 1
7.7 m

Follansbee 8
7.9 m

Mayhew 2
6.5 m

0   0.5   1   1.5   2   Miles

Extension

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

NEWFOUND LAKE
2019 SAMPLING HIGHLIGHTS
Station - Mayhew 2

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic
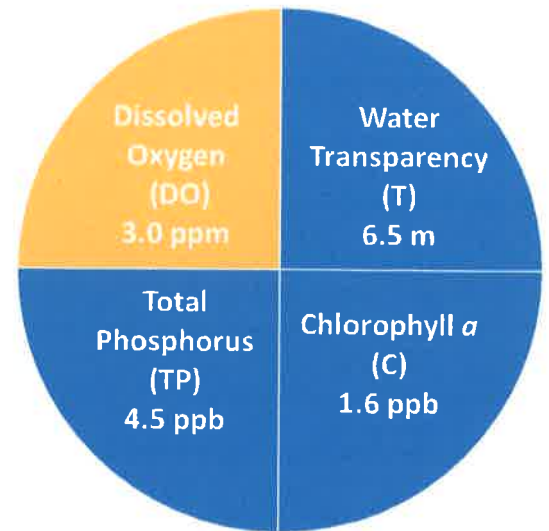
Red = Poor = Eutrophic

Light Gray = No Data

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

Figure 1. Station Mayhew 2 Water Quality (2019)

Table 1. 2019 Station Mayhew 2 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Mayhew 2 Average (range)	Station Mayhew 2 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	6.5 meters (range: 5.7 – 7.0)	Oligotrophic
Chlorophyll a [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.6 ppb (range: 1.0 – 2.7)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	4.5 ppb (range: 3.7 – 5.1)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	3.0 ppm (range: 1.6 – 4.7)	Mesotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 10.5 and 17.3 meters in the bottom water layer.

Table 2. 2019 Station Mayhew 2 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Mayhew 2 Average (range)	Station Mayhew 2 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	12.4 color units (range: 9.0 – 14.8)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.8 ppm (range: 3.7 – 3.9)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			6.9 standard units (range: 6.9 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.3 uS/cm (range: 39.4 – 41.1)	Characteristic of minimally impacted NH lakes

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.

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

LONG TERM WATER QUALITY

Site Mayhew 2 is located in the most southerly basin (Figure 4) that is characterized by dense first-tier lakeshore development. The condition of Site Mayhew 2 is a reflection of the nearby lakeshore development, as well as, the various inputs that enter the lake through the drainages to the north of Mayhew Island. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
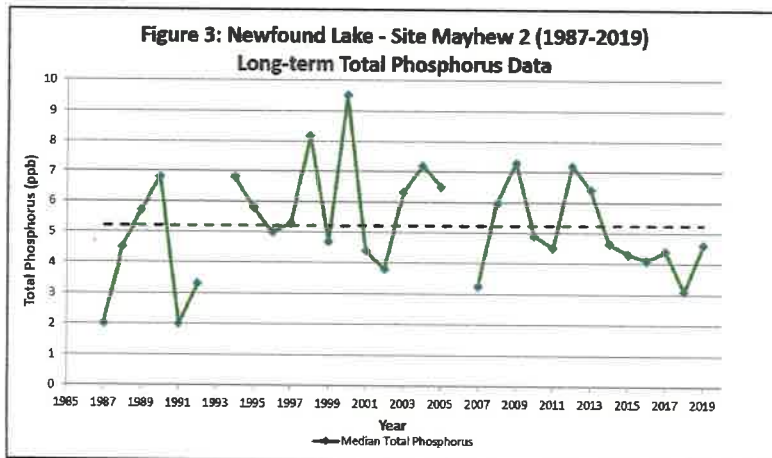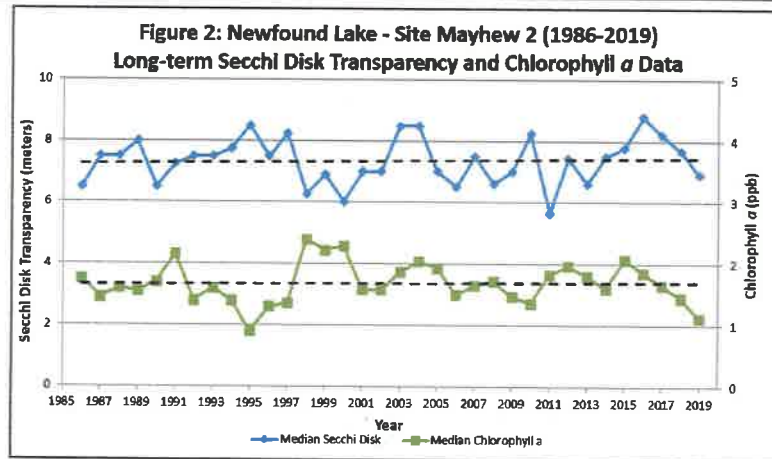
WATER CLARITY: The site Mayhew 2 water clarity data do not display a trend over the past thirty-four years of sampling (1986–2019).

CHLOROPHYLL: The site Mayhew 2 chlorophyll *a* data do not display a trend over the thirty-four years of sampling (1986–2019).

COLOR: The site Mayhew 2 color data display a trend of decreasing color concentrations over the thirty-three years of sampling (1987–2019).

TOTAL PHOSPHORUS: The site Mayhew 2 total phosphorus concentrations do not display a trend over the past thirty-one years of sampling (1987-2019).

In summary, site Mayhew 2 continues to show good water quality conditions. However, the Mayhew sampling location has consistently exhibited some of the shallower water transparency measurements collected among the Newfound Lake sampling locations. The Mayhew dissolved oxygen concentrations are also lower than those measured at the other Newfound Lake sampling locations. One should be aware that the total phosphorus data have not been collected on an annual basis and that data gaps exist among years (Figure 3).

Figure 2: Newfound Lake - Site Mayhew 2 (1986-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Mayhew 2 (1987-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1986 and 2019 at site Mayhew 2. These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth. Note: due to personnel limitations and budgetary constraints, there are years between 1986 and 2019 when incomplete data were collected at site Mayhew 2. Median trend graphs are developed using median annual values to minimize the impact of outlier data.

NEWFOUND LAKE
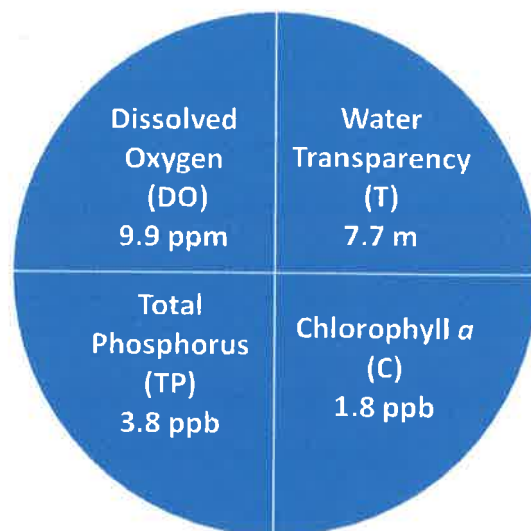## 2019 SAMPLING HIGHLIGHTS
Station - Pasquaney 3

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

| Dissolved Oxygen (DO) 9.9 ppm | Water Transparency (T) 7.7 m |
| Total Phosphorus (TP) 3.8 ppb | Chlorophyll *a* (C) 1.8 ppb |

Figure 1. Station Pasquaney 3 Water Quality (2019)

Table 1. 2019 Station Pasquaney 3 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Pasquaney 3 Average (range)	Station Pasquaney 3 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 – 4.0	< 2.5	7.7 meters (range: 6.7 – 9.0)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.8 ppb (range: 1.7 – 2.0)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	3.8 ppb (range: 3.6 – 4.0)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	< 2.0	9.9 ppm (range: 9.7 – 10.0)	Oligotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 12.5 and 15.0 meters in the bottom water layer.

Table 2. 2019 Station Pasquaney 3 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Pasquaney 3 Average (range)	Station Pasquaney 3 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	12.4 color units (range: 9.9 – 15.8)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.8 ppm (range: 3.7 – 3.9)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			6.9 standard units (range: 6.9 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.0 uS/cm (range: 39.6 – 40.5)	Characteristic of minimally impacted NH lakes

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.

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- o http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf

LONG TERM WATER QUALITY

Site Pasquaney 3 is located in an easterly bay (Figure 4) that receives water input from Dick Brown Brook, Whittemore Brook and other shoreline and upstream sources. The condition of site Pasquaney 3 is a reflection of the nearby lakeshore development, as well as, the various inputs that enter the lake through the stream inlets. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
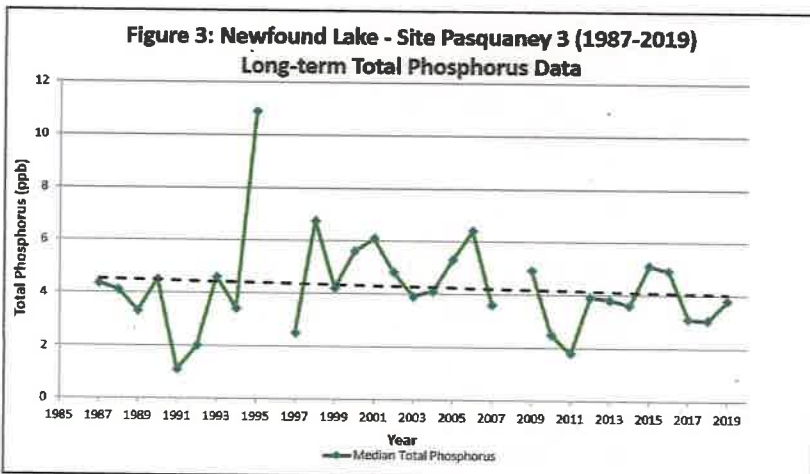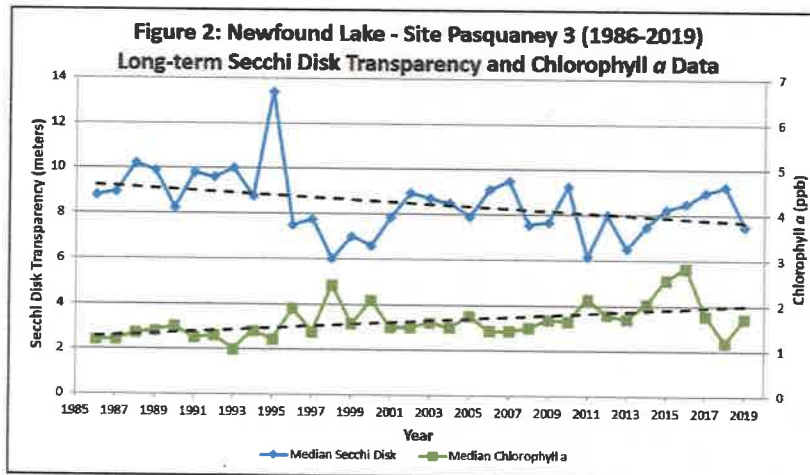
WATER CLARITY: The site Pasquaney 3 water clarity display a trend of decreasing water clarity over the past thirty-four years of sampling (1986–2019).

CHLOROPHYLL: The site Pasquaney 3 chlorophyll *a* data display a trend of increasing chlorophyll *a* concentrations over the thirty-four years of sampling (1986–2019).

COLOR: The site Pasquaney 3 color data display a trend of increasing color concentrations over the thirty-three years of sampling (1987–2019).

TOTAL PHOSPHORUS: The site Pasquaney 3 total phosphorus concentrations do not display a trend over the past thirty-one years of sampling (1987-2019).

In summary, site Pasquaney 3 continues to show good water quality conditions. However, there are some indications of a slight decrease in the site Pasquaney 3 Lake water quality. The long-term water clarity has decreased while the chlorophyll *a* concentrations have increased. On the other hand, the long-term total phosphorus (nutrient) data do not display a trend. One should be aware that total phosphorus data have not been collected on an annual basis and that data gaps exist among years (Figure 3).

Figure 2: Newfound Lake - Site Pasquaney 3 (1986-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Pasquaney 3 (1987-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1986 and 2019 at site Pasquaney 3. **These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth.** Note: due to personnel limitations and budgetary constraints, there are years between 1986 and 2019 when incomplete data were collected at site Pasquaney 3. Median trend graphs are developed using median annual values to minimize the impact of outlier data.

NEWFOUND LAKE

2019 SAMPLING HIGHLIGHTS

Station – Loon Island 4

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

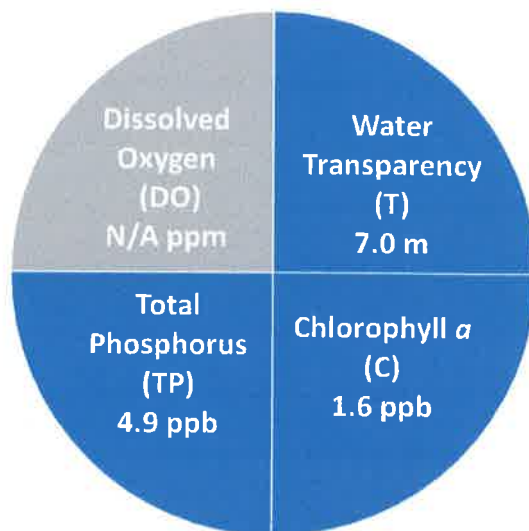Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

Figure 1. Station Loon Island 4 Water Quality (2019)

Dissolved Oxygen (DO) N/A ppm | Water Transparency (T) 7.0 m

Total Phosphorus (TP) 4.9 ppb | Chlorophyll *a* (C) 1.6 ppb

Table 1. 2019 Station Loon Island 4 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Loon Island 4 Average (range)	Station Loon Island 4 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	7.0 meters (range: 7.6 – 10.7)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.6 ppb (range: 1.1 – 2.2)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	4.9 ppb (range: 3.9 – 7.2)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	No Data	Not Assessed

Table 2. 2019 Station Loon Island 4 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Loon Island 4 Average (range)	Station Loon Island 4 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	14.5 color units (range: 9.2 – 22.8)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.9 ppm (range: 3.8 – 4.0)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			7.0 standard units (range: 7.0 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.4 uS/cm (range: 40.0 – 40.7)	Characteristic of minimally impacted NH lakes

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.

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

LONG TERM WATER QUALITY

Site Loon Island 4 is located in the most northerly section of Newfound Lake (Figure 4). The condition of site Loon Island 4 is a reflection of the nearby lakeshore development, as well as, the various inputs that enter the lake through local stream channels that include Georges Brook. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
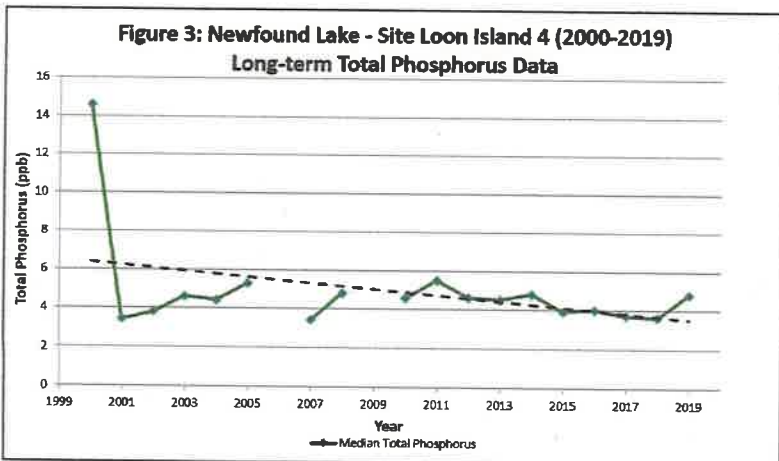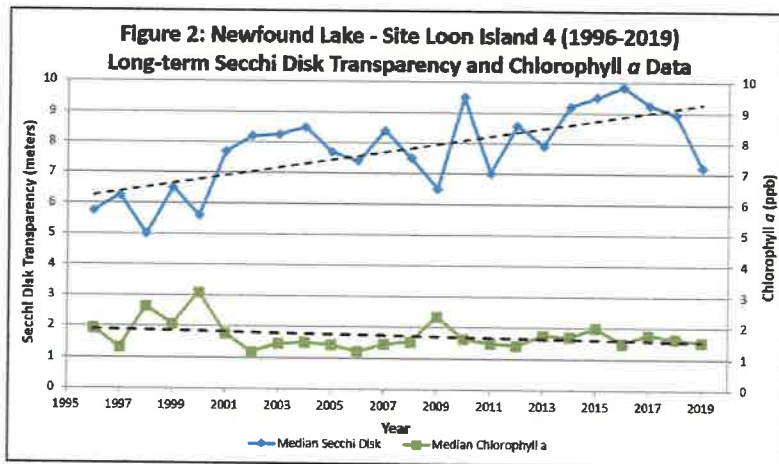
WATER CLARITY: The site Loon Island 4 water clarity display a trend of increasing water clarity over the past twenty-four years of sampling (1996–2019).

CHLOROPHYLL: The site Loon Island 4 chlorophyll *a* data display a trend of decreasing chlorophyll *a* concentrations over the twenty-four years of sampling (1996–2019).

COLOR: The site Loon Island 4 color data display a trend of decreasing color concentrations over the twenty-three years of sampling (1996–2019).

TOTAL PHOSPHORUS: The site Loon Island 4 total phosphorus concentrations have decreased over the past eighteen years of sampling (2000-2019).

In summary, the site Loon Island 4 continues to display excellent water quality. The long-term water clarity has increased while the chlorophyll *a* and total phosphorus (nutrient) concentrations have decreased. One should be aware that total phosphorus data have not been collected on an annual basis and that data gaps exist among years (Figure 3).

Figure 2: Newfound Lake - Site Loon Island 4 (1996-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Loon Island 4 (2000-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1996 and 2019 at site Loon Island 4. **These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth.** Note: due to personnel limitations and budgetary constraints, there are years between 1996 and 2019 when incomplete data were collected at site Loon Island 4. Median trend graphs are developed using median annual values to minimize the impact of outlier data.

NEWFOUND LAKE
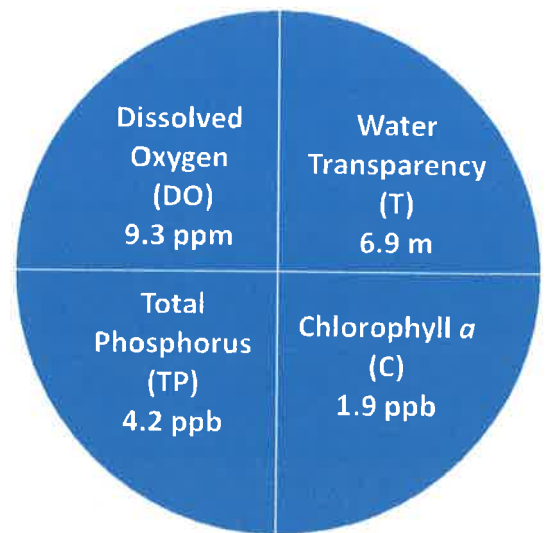## 2019 SAMPLING HIGHLIGHTS
Station – Cockermouth 5

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

Dissolved Oxygen (DO) 9.3 ppm	Water Transparency (T) 6.9 m
Total Phosphorus (TP) 4.2 ppb	Chlorophyll *a* (C) 1.9 ppb

Figure 1. Station Cockermouth 5 Water Quality (2019)

Table 1. 2019 Station Cockermouth 5 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Cockermouth 5 Average (range)	Station Cockermouth 5 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 – 4.0	< 2.5	6.9 meters (range: 1.2 – 10.9)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.9 ppb (range: 1.1 – 3.0)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	4.2 ppb (range: 3.6 – 4.8)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	9.3 ppm (range: 9.2 – 9.3)	Oligotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 13.5 and 14.5 meters in the bottom water layer.

Table 2. 2019 Station Cockermouth 5 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Cockermouth 5 Average (range)	Station Cockermouth 5 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	16.4 color units (range: 6.6 – 23.0)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.9 ppm (range: 3.3 – 4.3)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			6.9 standard units (range: 6.9 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.2 uS/cm (range: 39.6 – 40.6)	Characteristic of minimally impacted NH lakes

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.

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LONG TERM WATER QUALITY

Site Cockermouth 5 is located near the Cockermouth River in the northwesterly section of Newfound Lake (Figure 4). The condition of Site Cockermouth 5 is influenced by the Cockermouth River drainage as well as other local near-shore and upstream sources. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
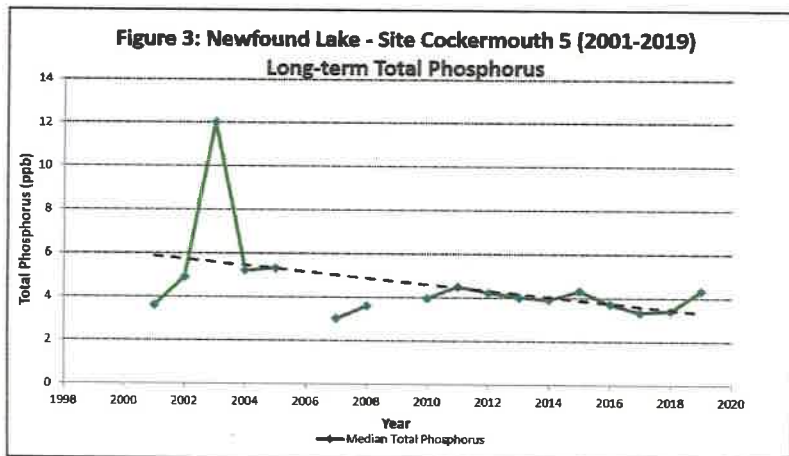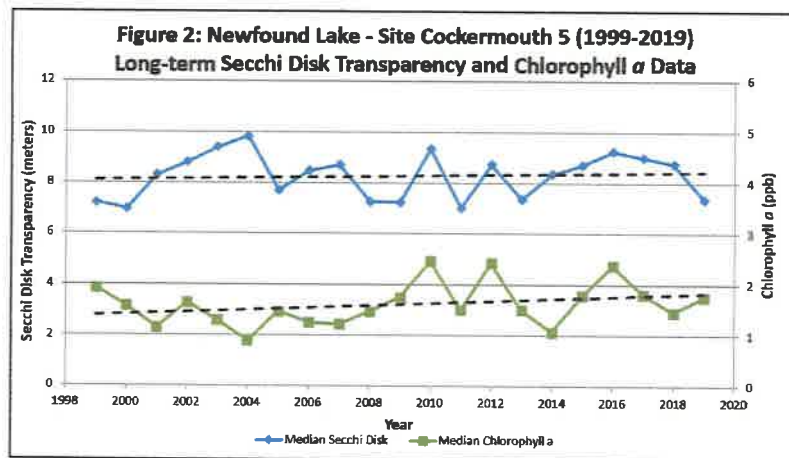
WATER CLARITY: The site Cockermouth 5 water clarity data do not display a trend a over the past twenty-one years of sampling (1999–2019).

CHLOROPHYLL: The site Cockermouth 5 chlorophyll *a* data display a trend of increasing chlorophyll *a* concentrations over the twenty-one years of sampling (1999–2019).

COLOR: The site Cockermouth 5 color data do not display a trend over the past nineteen years of sampling (2000–2019).

TOTAL PHOSPHORUS: The site Cockermouth 5 total phosphorus concentrations display a trend of decreasing total phosphorus concentrations over the seventeen years of sampling (2001-2019).

In summary, the site Cockermouth 5 continues to display good water quality. The long-term water clarity data do not display a trend while the chlorophyll *a* concentrations have increased and the total phosphorus concentrations have decreased. One should be aware that total phosphorus data have not been collected on an annual basis and that data gaps exist among years (Figure 3).

Figure 2: Newfound Lake - Site Cockermouth 5 (1999-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Cockermouth 5 (2001-2019) Long-term Total Phosphorus

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1999 and 2019 at site Cockermouth 5. **These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth.** Note: due to personnel limitations and budgetary constraints, there are years between 1999 and 2019 when incomplete data were collected at site Cockermouth 5. Median trend graphs are developed using median annual values to minimize the impact of outlier data.

NEWFOUND LAKE

2019 SAMPLING HIGHLIGHTS

Station – Beechwood 6

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

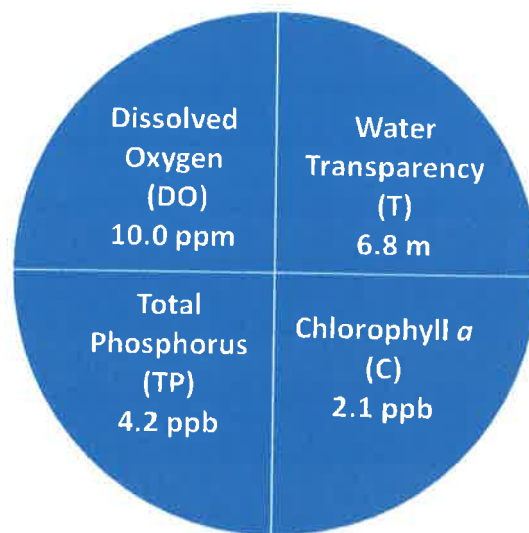| Dissolved Oxygen (DO) 10.0 ppm	Water Transparency (T) 6.8 m
Total Phosphorus (TP) 4.2 ppb	Chlorophyll *a* (C) 2.1 ppb

Figure 1. Station Beechwood 6 Water Quality (2019)

Table 1. 2019 Station Beechwood 6 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Beechwood 6 Average (range)	Station Beechwood 6 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	6.8 meters (range: 2.0 – 9.8)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	2.1 ppb (range: 0.9 – 4.0)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	4.2 ppb (range: 3.6 – 4.7)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	10.0 ppm (range: 9.8 – 10.0)	Oligotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 12.5 and 15.5 meters in the bottom water layer.

Table 2. 2019 Station Beechwood 6 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Beechwood 6 Average (range)	Station Beechwood 6 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	18.1 color units (range: 9.3 – 26.7)	Slightly colored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.9 ppm (range: 3.4 – 4.1)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			7.0 standard units (range: 6.9 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.1 uS/cm (range: 40.0 – 40.2)	Characteristic of minimally impacted NH lakes

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.

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LONG TERM WATER QUALITY

Site Beechwood 6 is located along the westerly shoreline of Newfound Lake (Figure 4). The condition of Site Beechwood 6 is a reflection of the various nearshore and upstream sources in close proximity to the sampling site. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
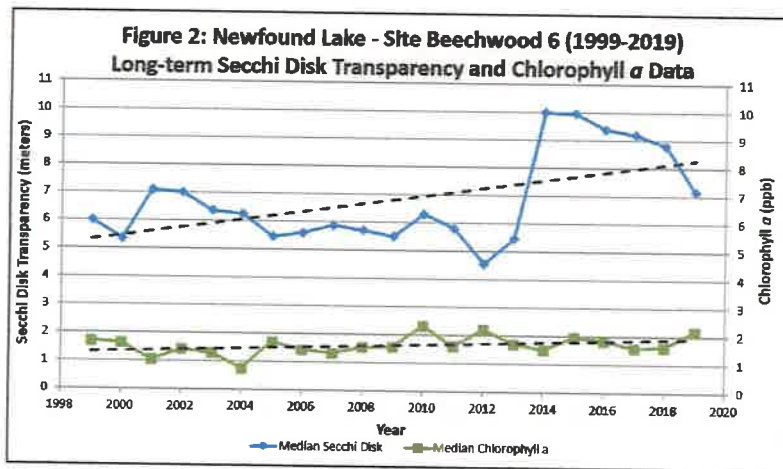
WATER CLARITY: The site Beechwood 6 water clarity data display an increasing water clarity trend over the past twenty-one years of sampling (1999–2019). However, when the atypically high 2014 through 2019 water clarity data points are removed, a decreasing water clarity trend is evident between 1999 and 2013.

CHLOROPHYLL: The site Beechwood 6 chlorophyll *a* data display a trend of increasing chlorophyll *a* concentrations over the twenty-one years of sampling (1999–2019).

COLOR: The site Beechwood 6 color data do not display a trend over the twenty-one years of sampling (1999–2019).

TOTAL PHOSPHORUS: The site Beechwood 6 total phosphorus concentrations do not display a trend over the eighteen years of sampling (2001-2019).

In summary, the site Beechwood 6 continues to display good water quality. However, the trend of increasing chlorophyll concentrations over the past twenty-one years and a trend of decreasing water clarity between 1999 and 2013 suggest this site remains susceptible to water quality problems. On the other hand, the long-term total phosphorus (nutrient) data do not display a trend. One should be aware that total phosphorus data have not been collected on an annual basis and that data gaps exist among years (Figure 3).


Figure 2: Newfound Lake - Site Beechwood 6 (1999-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Beechwood 6 (1999-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 1999 and 2019 at site Beechwood 6. These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth. Note: due to personnel limitations and budgetary constraints, there are years between 1999 and 2019 when incomplete data were collected at site Beechwood 6. Median trend graphs are developed using median annual values to minimize the impact of outlier data.
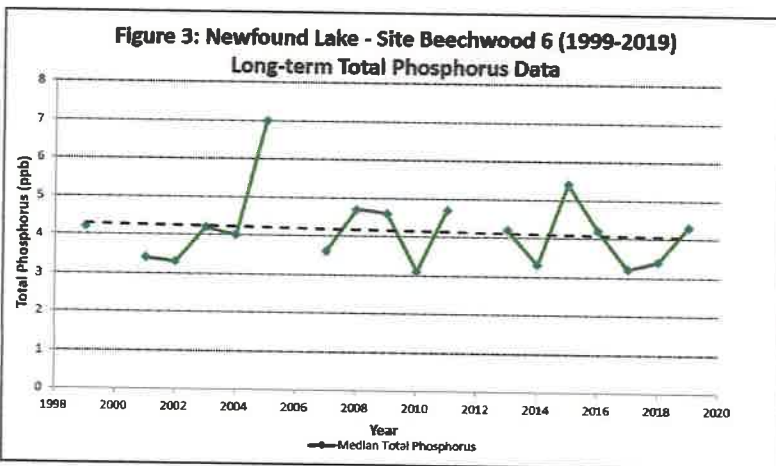
NEWFOUND LAKE
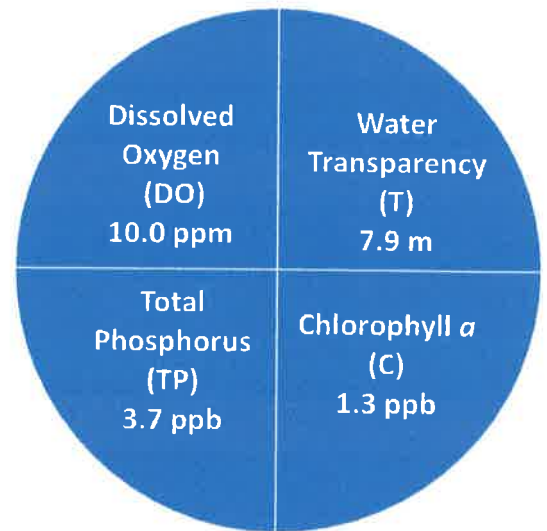## 2019 SAMPLING HIGHLIGHTS
Station – Follansbee 8

Blue = Excellent = Oligotrophic

Yellow = Fair = Mesotrophic

Red = Poor = Eutrophic

Light Gray = No Data

Water quality data displayed in Tables 1, 2 and 3 are surface water measurements with the exception of the dissolved oxygen data that were collected in the bottom water layer.

Dissolved Oxygen (DO) 10.0 ppm	Water Transparency (T) 7.9 m
Total Phosphorus (TP) 3.7 ppb	Chlorophyll *a* (C) 1.3 ppb

Figure 1. Station Follansbee 8 Water Quality (2019)

Table 1. 2019 Station Follansbee 8 Seasonal Averages and NH DES Aquatic Life Nutrient Criteria[1]

Parameter	Oligotrophic "Excellent"	Mesotrophic "Fair"	Eutrophic "Poor"	Station Follansbee 8 Average (range)	Station Follansbee 8 Classification
Water Clarity (meters)	4.0 – 7.0	2.5 - 4.0	< 2.5	7.9 meters (range: 6.7 – 8.5)	Oligotrophic
Chlorophyll *a* [1] (ppb)	< 3.3	> 3.3 – 5.0	> 5.0 – 11.0	1.3 ppb (range: 0.8 – 2.1)	Oligotrophic
Total Phosphorus [1] (ppb)	< 8.0	> 8.0 – 12.0	> 12.0 – 28.0	3.7 ppb (range: 3.4 – 4.0)	Oligotrophic
Dissolved Oxygen (ppm)	5.0 – 7.0	2.0 – 5.0	<2.0	10.0 ppm (range: 9.9 – 10.1)	Oligotrophic

* Dissolved oxygen concentrations measured on 8/15/19 between 12.0 and 16.0 meters in the bottom water layer.

Table 2. 2019 Station Follansbee 8 Seasonal Average Accessory Water Quality Measurements.

Parameter	Assessment Criteria					Station Follansbee 8 Average (range)	Station Follansbee 8 Classification
Color (color units)	< 10 uncolored	10 – 20 slightly colored	20 – 40 lightly tea colored	40 – 80 tea colored	> 80 highly colored	9.6 color units (range: 5.7 –14.0)	Uncolored
Alkalinity (ppm)	< 0.0 acidified	0.1 – 2.0 extremely vulnerable	2.1 – 10 moderately vulnerable	10.1 – 25.0 low vulnerability	> 25.0 not vulnerable	3.8 ppm (range: 3.3 – 4.2)	Moderately vulnerable
pH (std units)	< 5.5 suboptimal for successful growth and reproduction		6.5 – 9.0 optimal range for fish growth and reproduction			7.0 standard units (range: 7.0 – 7.0)	Optimal range for fish growth and reproduction
Specific Conductivity (uS/cm)	< 50 uS/cm Characteristic of minimally impacted NH lakes		50-100 uS/cm Lakes with some human influence	> 100 uS/cm Characteristic of lakes experiencing human disturbances		40.4 uS/cm (range: 39.6 – 41.8)	Characteristic of minimally impacted NH lakes

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.

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- o http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-11.pdf

LONG TERM WATER QUALITY

Site Follansbee 8 is located in a westerly basin near Wellington State Park (Figure 4). The condition of site Follansbee 8 is best reflected by activities along Wellington State Beach, local nearshore development and inputs that enter the lake through local stream inlets. Further review of water quality measurements at the other Newfound Lake sampling locations will provide a better assessment of more localized pollutant inputs that impact the other sampling locations (refer to the 2019 summary data contained in Table 3).
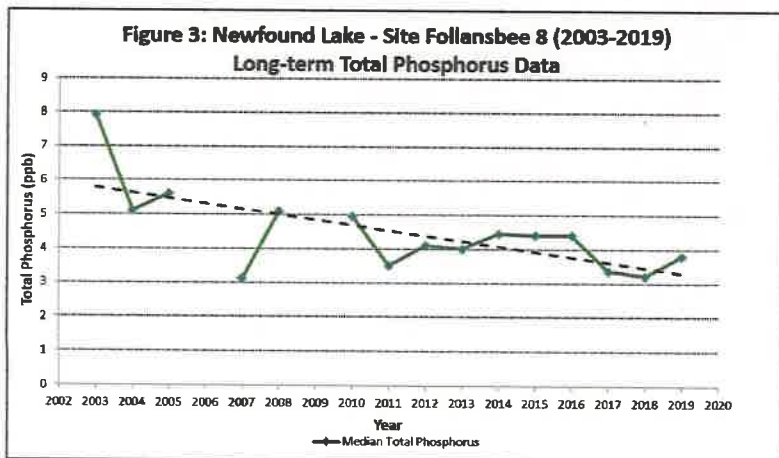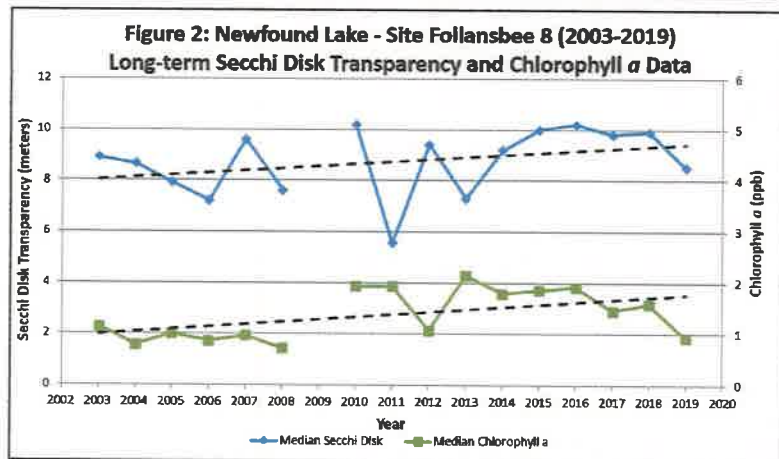
WATER CLARITY: The site Follansbee 8 water clarity display an increasing trend over the sixteen years of sampling (2003–2019).

CHLOROPHYLL: The site Follansbee 8 chlorophyll *a* data display a trend of increasing chlorophyll *a* concentrations over the sixteen years of sampling (2003–2019).

COLOR: The site Follansbee 8 color data display a trend of decreasing color concentrations over the sixteen years of sampling (2003–2019).

TOTAL PHOSPHORUS: The site Follansbee 8 total phosphorus concentrations display a trend of decreasing total phosphorus concentrations over the past fifteen years of sampling (2003-2019).

In summary, the site Follansbee 8 continues to display good water quality. The water clarity data display a trend of increasing water clarity while the chlorophyll *a* concentrations have increased and the total phosphorus (nutrient) concentrations have decreased. One should be aware that data have not been collected on an annual basis and that data gaps among years exist (Figure 2 and 3).

Figure 2: Newfound Lake - Site Follansbee 8 (2003-2019) Long-term Secchi Disk Transparency and Chlorophyll *a* Data

Figure 3: Newfound Lake - Site Follansbee 8 (2003-2019) Long-term Total Phosphorus Data

Table 3. Seasonal Average Water Quality by Sampling Location (2019)

Site	Average Secchi Disk Transparency (meters)	Average Chlorophyll *a* (ppb)	Average Total Phosphorus (ppb)	Average Dissolved Oxygen (ppm)
Deep 1	7.7	1.5	4.2	10.4
Mayhew 2	6.5	1.6	4.5	3.0
Pasquaney 3	7.7	1.8	3.8	9.9
Loon Island 4	7.0	1.6	4.9	XXXX
Cockermouth 5	6.9	1.9	4.2	9.3
Beechwood 6	6.8	2.1	4.2	10.0
Follansbee 8	7.9	1.3	3.7	10.0

XXXX indicates site is too shallow to collect comparable oxygen data.

Figures 2 and 3. Changes in the Newfound Lake water clarity (Secchi Disk depth), chlorophyll *a* and total phosphorus concentrations measured between 2003 and 2019 at site Follansbee 8. **These data indicate the relationship between plant growth and water clarity. Total phosphorus data are also displayed and are oftentimes correlated with the amount of plant growth.** Note: due to personnel limitations and budgetary constraints, there are years between 2003 and 2019 when incomplete data were collected at site Follansbee 8. Median trend graphs are developed using median annual values to minimize the impact of outlier data.