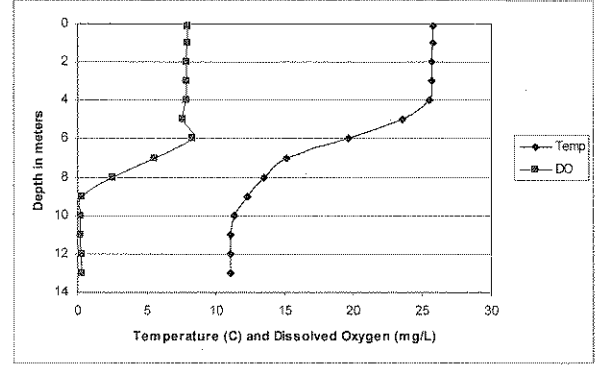


#### OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- ♣ **CHLOROPHYLL-A:** Average chlorophyll levels were low and well below the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity average for most NH lakes. Russell Pond experienced slightly elevated conductivity, but decreased downstream in Russell Inlet before entering the lake.
- ♣ **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- ♣ **TOTAL PHOSPHORUS:** Phosphorus levels in the hypolimnion (lower water layer) and Russell Pond were slightly elevated, however phosphorus levels decreased downstream in Russell Inlet. Historical trend analysis indicates epilimnetic (upper water layer) phosphorus levels have remained relatively stable since monitoring began.
- ♣ **TRANSPARENCY:** Average lake transparency was better than the NH lake median value. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- ♣ **TURBIDITY:** Slightly elevated turbidities in the hypolimnion and Russell Pond could have contributed to slightly elevated phosphorus levels.
- ♣ **pH:** pH decreased to undesirable levels in the hypolimnion.
- ♣ **RECOMMENDED ACTIONS:** Continue monitoring Russell Pond for potential impacts to water quality downstream. Conduct in-lake and tributary chloride monitoring to assess potential road salting impacts.

#### 2012 Dissolved Oxygen & Temperature Profile



Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	NVS	VS	ntu	
Billings Inlet			60.5	3	6			0.43	7.03
Billings Pond			41.8		7			0.94	6.3
Brown Inlet			61.0	2	6			0.72	7.03
Bum Carter Cove			61.6		6			0.53	7.15
Deep Epilimnion	7.15	2.25	60.1		6	5.93	6.92	0.46	6.96
Deep Hypolimnion			64.6		13			2.26	6.28
Deep Metalimnion			59.7		8			0.8	6.79
North Shore Trib			63.9		10			0.57	6.69
Outlet			60.7		6			0.45	6.8
Russell Inle			61.3	0	7			0.54	6.77
Russell Pond			106.2		14			2.23	6.66

**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

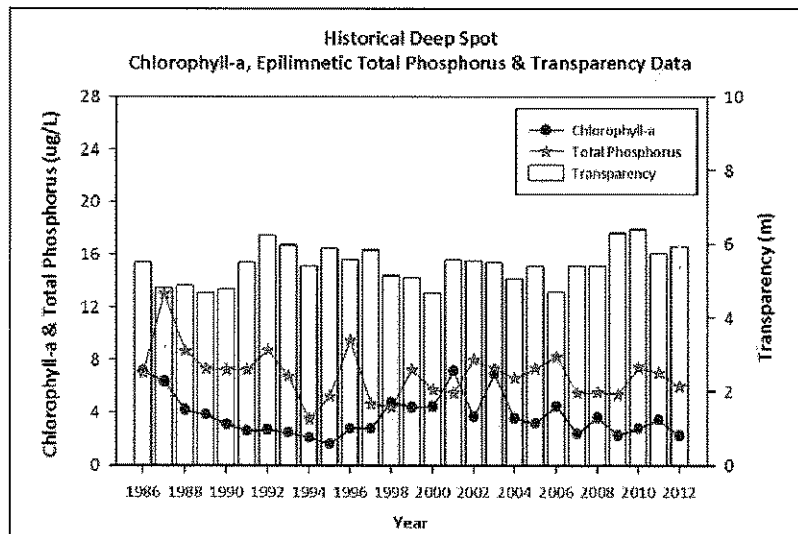
- Chloride: < 230 mg/L (chronic)
- E. coli: > 88 cts/100 mL – public beach
- E. coli: > 406 cts/100 mL – surface waters
- Turbidity: > 10 NTU above natural level
- pH: 6.5-8.0 (unless naturally occurring)

**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<sup>3</sup>
- Conductivity: 40.0 uS/cm
- Chloride: 4 mg/L
- Total Phosphorus: 12 ug/L
- Transparency: 3.2 m
- pH: 6.6

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuating since 2000.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.



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