Volunteer Lake Assessment Program Individual Lake Reports

EASTMAN POND, GRANTHAM, NH

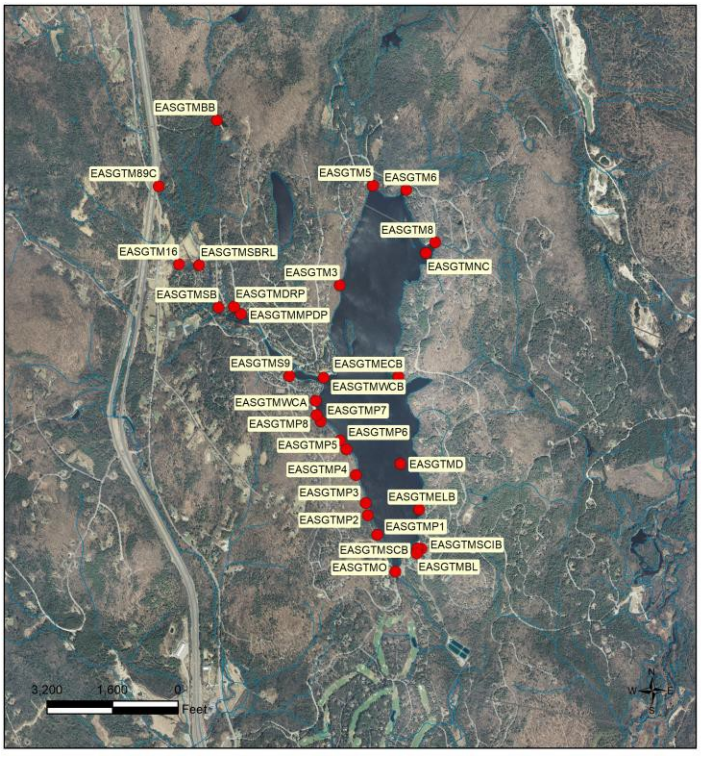
MORPHOMETRIC DATA | **TROPHIC CLASSIFICATION** | **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	4,907	**Max. Depth (m):**	9.2	**Flushing Rate (yr^{-1}):**	2.1	**Year**	**Trophic class**	
Surface Area (Ac.):	335	**Mean Depth (m):**	3	**P Retention Coef:**	0.61	1999	MESOTROPHIC	
Shore Length (m):	4,000	**Volume (m^3):**	4,066,500	**Elevation (ft):**	1095	2009	MESOTROPHIC	

The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at NHDES' Water Quality Assessment Website.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	Data exceed water quality standards or thresholds for a given parameter by a small margin.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.
	Oxygen, Dissolved	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; however more data are necessary to fully assess the parameter.
	Dissolved oxygen satura	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; however more data are necessary to fully assess the parameter.
	Chlorophyll-a	Slightly Bad	Data exceed water quality standards or thresholds for a given parameter by a small margin.
Primary Contact Recreation	Escherichia coli	Very Good	All sampling data meet water quality standards or thresholds for this parameter.
	Chlorophyll-a	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.



EASTMAN POND
GRANTHAM
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
EASGTM5	STROING BROOK
EASGTM6	NORTHEAST BROOK
EASGTM3	ANDERSON POND BROOK
EASGTM8	NORTH COVE BEACH
EASGTMD	DEEP SPOT
EASGTMO	EASTMAN BROOK OUTLET
EASGTMSB	STONEY BROOK
EASGTMSCIB	S COVER INNER HARBOR BCH
EASGTMECB	EAST COVE BEACH
EASGTMNC	NORTH COVE
EASGTMSCB	SOUTH COVE BEACH
EASGTMSBRL	STONEY BK AT ROBIN LANE
EASGTM16	UNNAMED TO STONY BK
EASGTM89C	I89 CULVERT
EASGTMWCA	WEST COVE A BEACH
EASGTMWCB	WEST COVE B BEACH
EASGTMELB	EAST LAKE BEACH
EASGTMP1	PIPE 1
EASGTMP2	PIPE 2
EASGTMP3	PIPE 3
EASGTMP4	PIPE 4
EASGTMP5	PIPE 5
EASGTMP6	PIPE 6
EASGTMP7	PIPE 7
EASGTMP8	PIPE 8
EASGTMS9	STREAM 9
EASGTMMPDP	MILL POND DEEP SPOT
EASGTMDRP	DRAINAGE POND
EASGTMBL	BOAT LAUNCH
EASGTMBB	BUTTERNUT BROOK

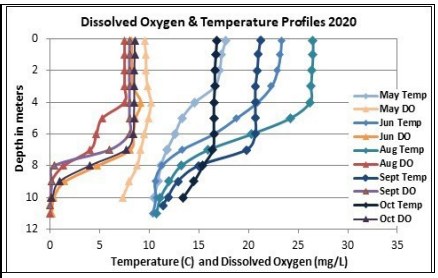
Source: The data layers are derived from NHDES data and are under constant revision. NHDES is not responsible for the use or interpretation of this information. Not intended for legal use.NHDES Watershed Management Bureau Date: 2/23/2021

Volunteer Lake Assessment Program Individual Lake Reports
Eastman Pond, Grantham
2020 Data Summary

Recommended Actions: Great job sampling in 2020! Drought conditions did not negatively impact lake or tributary water quality and likely contributed to the improved water clarity (transparency). The improving nutrient levels, algal growth and viewscope transparency are encouraging and we hope to see this continue. Elevated conductivity and chloride levels continue to be a concern. Keep up the great work on enhanced monitoring activities to better understand these conditions. Excellent work to update the Watershed Management Plan and work can begin to implement plan recommendations. Encourage shoreline property owners to become certified LakeSmart through NHLAKES lake-friendly living program www.nhlakes.org/lakesmart/. Keep up the great work!

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

- **Chlorophyll-a:** Chlorophyll levels fluctuated within a low range and were lowest in June and highest in May. Average chlorophyll level decreased slightly from 2019 and was less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Deep spot and tributary conductivity levels fluctuated between slightly elevated and elevated levels and remained much greater than the state medians. Chloride levels exceeded the state chronic chloride standard in Tamara Bk. and Pipe 7 in March, and approached the chronic chloride standard in Stoney Bk., Stoney at Robin Ln., Mill Pond Dam, Lyons Bk., and Grass Pond. Consult your monthly data reports for March sampling results. Historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) conductivity levels since monitoring began.
- **Color:** Apparent color measured at the deep spot indicates the water ranged from lightly tea in the epilimnion to moderately tea colored in the metalimnion (middle water layer) to highly tea colored in the hypolimnion (lower water layer). Tributary water color was generally within the highly tea colored, or dark brown, range.
- **E. coli:** E. coli levels at all stations were less than the state standard for public beaches. Consult your 2019 monthly data summaries for results.
- **Total Phosphorus:** Epilimnetic, Metalimnetic, Outlet, and Stoney Brook phosphorus levels fluctuated within a low range. Average epilimnetic phosphorus level increased slightly from 2019 but remained much less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Hypolimnetic phosphorus levels were elevated in August and September and the turbidity of the samples was also elevated indicating the release and formation of dissolved organic compounds under anoxic (no dissolved oxygen) conditions. Mill Pond Dam, Northeast Bk., Stoney Bk. at Robin Ln., Stroing Bk., and Grass Pond phosphorus levels fluctuated within a moderate to slightly elevated range and were higher during low flows when samples contained low to moderate levels of organic matter and/or sediment.
- **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope fluctuated within a high (good) range and was lowest (worse) in October and highest (best) in September. Average NVS transparency increased (improved) from 2019 and was higher (better) than the state median. Historical trend analysis indicates relatively stable NVS transparency levels since monitoring began and increasing (improving) VS transparency levels since 2006.
- **Turbidity:** Epilimnetic, Metalimnetic, Outlet, and Northeast Bk. turbidity levels fluctuated within a low to moderate range. Hypolimnetic and tributary turbidity levels were generally elevated in August and September when water levels and flows were low due to drought conditions.
- **pH:** Deep spot and tributary pH levels, with the exception of Stroing Bk., were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began. Stroing Bk. pH levels were slightly less than desirable.



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)

Table 1. 2020 Average Water Quality Data for EASTMAN POND - GRANTHAM

Station Name	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
							NVS	VS		
Epilimnion	9.04	2.79	54	34	210.4	6	4.38	4.74	0.84	7.12
Metalimnion			41	47	203.6	7			1.38	6.75
Hypolimnion			58	167	204.9	15			7.75	6.58
Eastman Brook Outlet			56	35	208.2	6			0.70	7.09
Mill Pond Dam			108	135	403.9	16			4.15	6.89
Northeast Brook			46	60	191	13			0.97	6.96
Stoney Bk at Robin Ln.			139	70	499.5	17			2.90	7.02
Stoney Brook			163	70	603.3	6			2.44	7.46
Stroing Brook			69	155	241.3	20			2.36	6.32
Grass Pond			134	307	493.3	19			11.90	6.72

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.5 mg/L
Chlorophyll-a: 4.39 ug/L
Conductivity: 42.3 uS/cm
Chloride: 5 mg/L
Total Phosphorus: 11 ug/L
Transparency: 3.3 m
pH: 6.6

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Worsening	Data significantly increasing.	Chlorophyll-a	Improving	Data significantly decreasing.
pH (epilimnion)	Stable	Trend not significant; data show low variability.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.