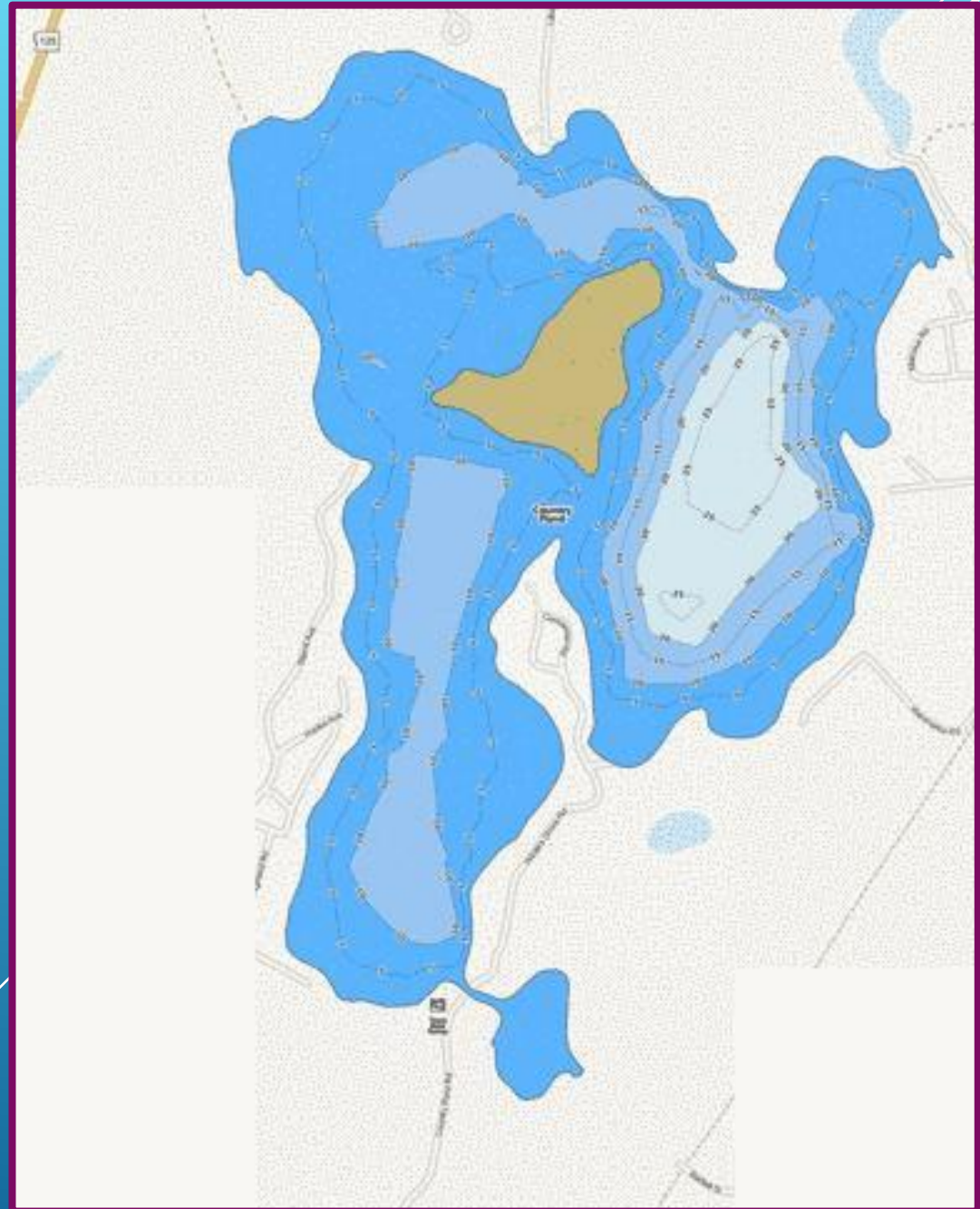# COUNTRY POND

2019
VOLUNTARY LAKE ASSESSMENT PROGRAM (VLAP) SUMMARY

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CAVEATS ABOUT THE DATA

➢ The *generalizations* are from the state annual report;

➢ This is a "snapshot in time". **To understand a trend you need 10 years of data**.

➢ The first year (2018) we sampled four months (June – September).

➢ In 2019 we sampled five months (May – September).

➢ For 2020, and all future years, we plan to continue sampling May – September.

FIRST THINGS FIRST

Special thanks to:

- **Newton Conservation Commission** for generous financial support of sample analyses;

- **Kingston Conservation Commission** for loaning us sampling equipment for 2018 and 2019, for generous financial support of sample analyses, and most notably the purchase of CPLA's own Kemmerer Bottle (*very* expensive sampling device) for 2020;

- **NH Dept. of Environmental Services** for providing technical support;

- Most important – my fellow **VLAP volunteers**: Tobi Howell, and Sean Murray, plus Bill Cashin *in particular* for not only providing his boat for sampling, but also for making two pieces of our VLAP equipment.
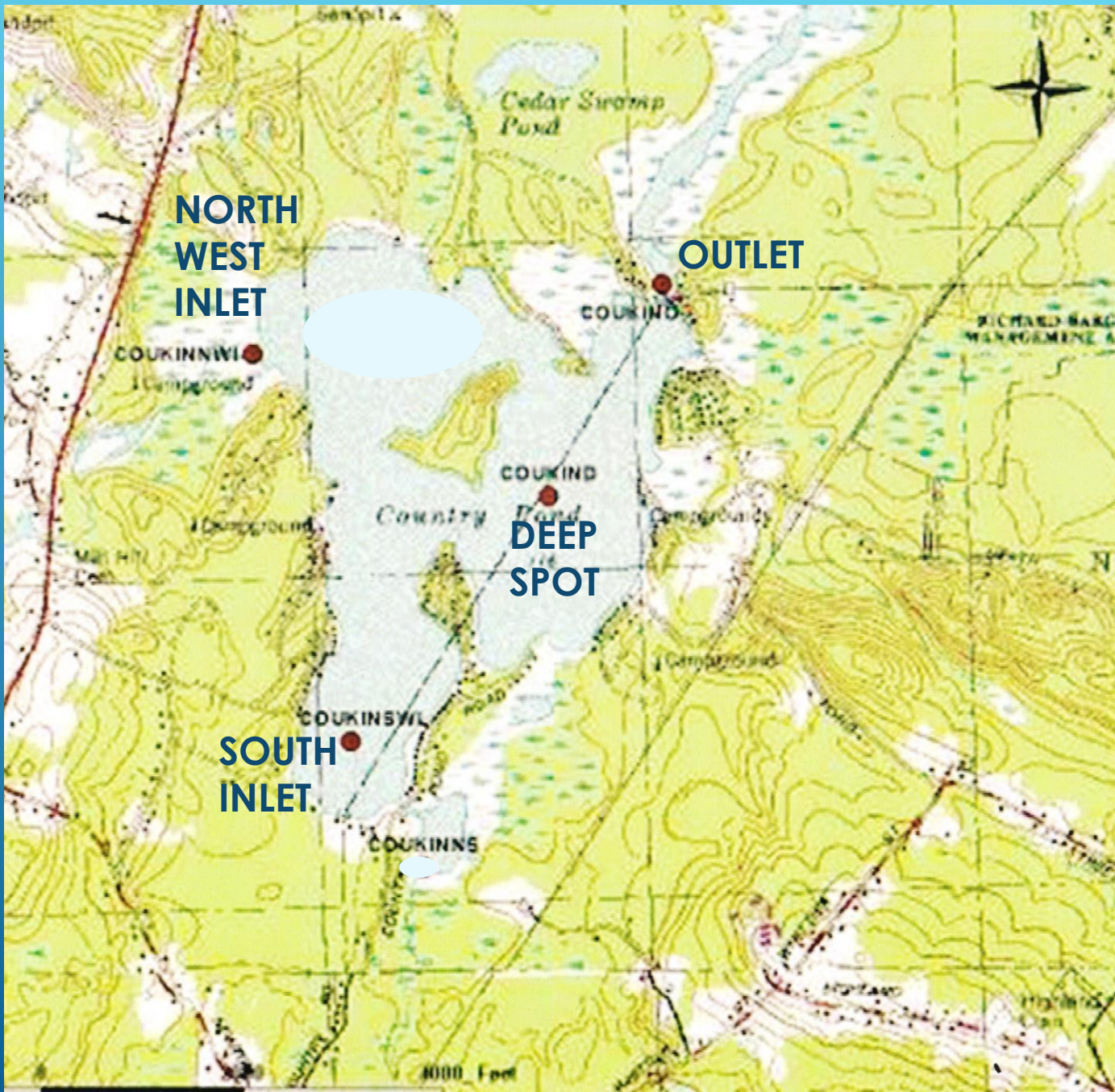
Per NH DES, we sample at four locations: the Outlet, two inlets(North West and South), and the "Deep Spot".

The goal is to gather data over the years to get a better understanding of the water quality in Country Pond.

STATE'S 2019 SUMMARY TABLE

Designated Use	Parameter	Category	Comments
Aquatic Life	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small margin.
	Oxygen, Dissolved	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Dissolved oxygen satura	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

COUNTRY POND - TASKER DAY CAMP BEACH	Escherichia coli	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
COUNTRY POND - LONE TREE SCOUT RESV. BEACH	Escherichia coli	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
COUNTRY POND - TOWN BEACH	Escherichia coli	Very Good	All sampling data meet water quality standards or thresholds for this parameter.
COUNTRY POND - TASKER DAY CAMP BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
COUNTRY POND - LONE TREE SCOUT RESV. BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
COUNTRY POND - TOWN BEACH	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).

The category for each parameter at every location
was the same in 2019 as it was in 2018

TRANSPARENCY

This is a measure of water clarity, and is affected by the amount of algae, color, and particulate matter within a lake. In 2019 average we could see the Secchi-disk was 2.0 meters (~6'); slightly less than 2018. A depth of 2-4.5 meters is considered good.

Although levels were better than in previous years, they were slightly worse than the state average.

CHLOROPHYLL-A

This is measured to estimate amount of algal growth in a lake system. *Chlorophyll levels were stable and low from May through July, increased in August, and then decreased in September. Average chlorophyll level increased slightly from 2018 and was less than the state median and the threshold for mesotrophic lakes.*

CONDUCTIVITY/CHLORIDE

Conductivity measures the ability of water to carry an electrical current. Elevated conductivity and chloride may indicate pollution from such sources as road salting, septic systems, or lawn/agriculture runoff.

Conductivity and chloride levels were elevated and much greater than the state medians at all three depths at the Deep Spot, as well as the two inlets and the outlet.

DES notes that epilimnetic (uppermost layer) conductivity levels have increased greatly since 2006.

TOTAL PHOSPHORUS (TP)

In lakes, TP determines the amount of algal growth that can occur. Too much phosphorus can lead to excessive algal and cyanobacteria populations. Sources around a lake typically include septic systems, animal waste, lawn fertilizer, erosion from roads and construction sites, and a small amount from wetlands.

Phosphorus levels were higher than last year. They exceeded the target of **0.012 mg/l** *(12 ug/l) in most locations for most sampling events.*

TOTAL PHOSPHORUS	5/21/2019	6/23/2019	7/14/2019	8/18/2019	9/15/2019
	mg/L	mg/L	mg/L	mg/L	mg/L
DEEP SPOT - EPI	0.017	0.016	0.012	0.014	0.015
DEEP SPOT - META	0.013	0.014	0.016	0.017	0.015
DEEP SPOT - HYPO	0.019	0.026	0.032	0.035	0.037
SOUTH INLET	0.016	0.016	0.016	0.013	0.013
NW INLET	0.016	0.020	0.016	0.012	0.012
OUTLET	0.014	0.013	0.014	0.014	0.011

DES Summary and Recommended Actions:

Phosphorus, chlorophyll, transparency (clarity), and pH levels were better than measured in the past. But, deep water phosphorus levels may mean that phosphorus is being released from the pond bottom (sediment) to the water column of the pond. This can lead to excess algae/cyanobacteria growth. **If you see for any cyanobacteria surface scums or blooms, notify DES immediately**.

Conductivity levels are higher than measured in the past. The use of road salt in the winter has caused increases in conductivity and chloride levels in surface waters. Encourage local road agents and private winter maintenance companies to use less de-icers. See also UNH Technology Transfer Center's Green SnowPro Certification Program.

Thanks for listening!

Any questions?