

Loch Lomond - Three Sites Data - 2025

Lake County Lake Lovers Project - 12 Lakes across Lake County taking measurements April-October with Xylem ProDSS & Photometer Data every 2 weeks, instead of 10 years (e.g., Temp, DO, ORP, pH, TDS, Phosphate, Chlorophyll-a, Phycocyanin, Conductivity, Salinity) Data profiles from water's surface to sediment at every 1'-2' provides a deeper view of a lake dynamics

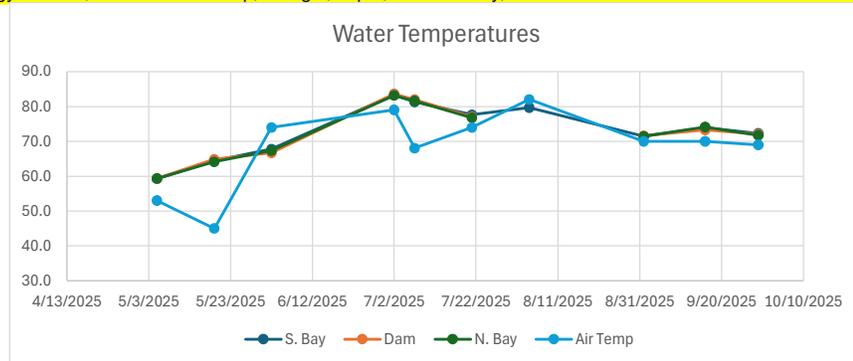


Scan to access LCLL Data >>>
(Open "MASTER Kor..." file first)

Water Temperature & Air Temperature

- Water Temperature measure the Kinetic Energy of water; varies with air temp, sunlight, depth, water density, seasonal stratifications & turnovers
- Above 30°C (88°F) can be stressful to fish at ~3' depths

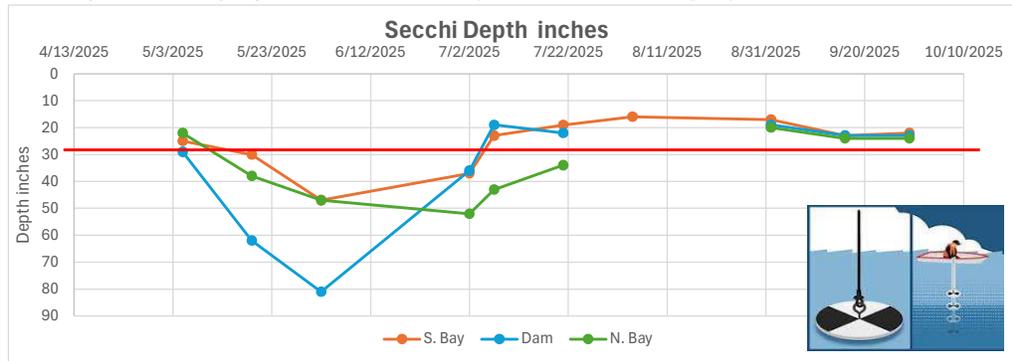
Date	S. Bay	Dam	N. Bay	Air Temp
5/5/2025	59.2	59.3	59.3	53.0
5/19/2025	64.5	64.8	64.1	45.0
6/2/2025	67.8	66.7	67.3	74.0
7/2/2025	83.3	83.6	83.1	79.0
7/7/2025	81.3	81.9	81.6	68.0
7/21/2025	77.6	77.1	76.8	74.0
8/4/2025	79.7			82.0
9/1/2025	71.4	71.6	71.4	70.0
9/16/2025	73.9	73.3	74.1	70.0
9/29/2025	72.3	72.0	71.7	69.0
Year Avg	73.1	72.3	72.2	68.4



Secchi Depths

- Secchi depths measures transparency or clarity of water affected by suspended & dissolved substances like algae, sediments, & organic matter
- Greater depths allow photosynthesis to reach further into the water column. Secchi depths change seasonally.
- <3 feet Secchi depth suggests high nutrient levels (P & N); <1 foot may have lethally low DO - low photosynthesis
- <24" Hypereutrophic/Impaired; 20'-80" Eutrophic/Moderately Impaired; 80"-150" Mesotrophic/Balanced; >150" Oligotrophic
- Lake County Median = 3.1' or 37"

Date	S. Bay	Dam	N. Bay
5/5/2025	25	29	22
5/19/2025	30	62	38
6/2/2025	47	81	47
7/2/2025	37	36	52
7/7/2025	23	19	43
7/21/2025	19	22	34
8/4/2025	16		
9/1/2025	17	19	20
9/16/2025	23	23	24
9/29/2025	22	23	24
Year Avera	25.9	34.9	33.8

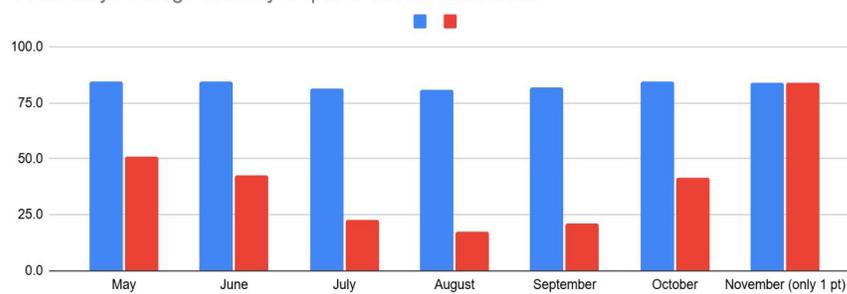


Loch Lomond Lake Data 1999-2025

Scan to access LLPOA 1999-2025 data



South Bay Average Monthly Depth & Secchi 1999-2025



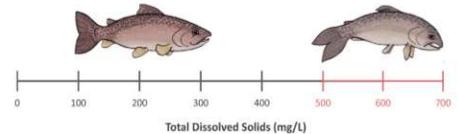
pH

- pH measures Hydrogen ion [H⁺] concentration: <7 is acidic, 7 is neutral, >7 is basic
- Lk Cty Median = 8.31 (@3')
- pH < 6 may produce stunted, reduced, or absent fish populations
- <6.5 is impaired
- 6.5 to 8.0 ideal range for aquatic organisms;
- >9.0 is impaired (basic); contributes to formation of HABs cyanobacteria
- >9.0 Hypereutrophic; 7.5-8.5 Eutrophic; 6.5-8.0 Mesotrophic
- Mid-day measures may be higher by 1.5 pH units

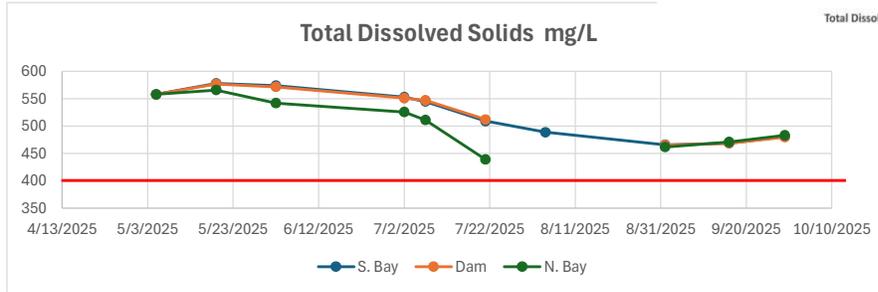


Total Dissolved Solids (TDS)

- TDS are anions & cations dissolved in water, including Na⁺, Ca⁺², SO₄⁻², PO₄⁻³, & other dissolved chemicals.
- Lk Cty Median = 454 mg/L @3' **17-30 Unpolluted, 50-250 Healthy, >400 Polluted**
- >400 Hypereutrophic; 250-400 Eutrophic; 25-250 Mesotrophic, <25 Oligotrophic



Date	S. Bay	Dam	N. Bay	at ~3' depths
5/5/2025	558	558	558	
5/19/2025	578	577	566	
6/2/2025	574	572	542	
7/2/2025	553	551	526	
7/7/2025	545	547	511	
7/21/2025	509	512	439	
8/4/2025	489			
9/1/2025	466	465	462	
9/16/2025	469	469	471	
9/29/2025	481	480	483	
Year Average	522	526	506	



Trophic State Index (TSI)

- TSI measures the Biological Productivity or amount of algal & plankton biomass
- Numerical scale 0-100 - higher being productive (eutrophic), and lower less productive (oligotrophic).
- TSI uses various measurements – Secchi Depth, Chlorophyll-a, Total Phosphorus, Total Nitrogen
- TSI – Secchi Depth is most widely used measure (fyi - our TSI-Chl & TSI-P are approximations)

Trophic State	
Hypereutrophic	70-100
Eutrophic	50-69.99
Mesotrophic	40-49.99
Oligotrophic	<40

South Bay

Date	TSI-Secchi	TSI-Chlorophyll-a @5' negative Chl-a values made zero	TSI-Phosphorus @3'
5/5/2025	67	51	41
5/19/2025	64	0	44
6/2/2025	57	0	41
7/2/2025	61	28	53
7/7/2025	68	49	41
7/21/2025	70	44	41
8/4/2025	73	56	41
9/1/2025	72	0	41
9/16/2025	68	0	54
9/29/2025	68	0	41

Trophic State Index vs Date



Hypereutrophic	Eutrophic	Mesotrophic	Oligotrophic
Chlorophyll >40 µg/L Phosphorus >100 µg/L Nitrogen >1500 µg/L Clarity <3 feet	Chlorophyll 7-40 µg/L Phosphorus 25-100 µg/L Nitrogen 600-1500 µg/L Clarity 3-8 feet	Chlorophyll 3-7 µg/L Phosphorus 15-25 µg/L Nitrogen 400-600 µg/L Clarity 8-13 feet	Chlorophyll <3 µg/L Phosphorus <15 µg/L Nitrogen <400 µg/L Clarity >13 feet

Loch Lomond

75 acre, shallow, impoundment lake

Eutrophic and sometimes Hypereutrophic with respect to Secchi depth clarity & excess nutrients like Phosphorus

Hypereutrophic and Polluted with respect to Total Dissolved Solids

Recommendations from Lake County Health Dept - Environmental Services: (2015; recent conversations; new report ~ 2025)

Increase submerged aquatic plants to take up more available phosphorus and reduce algae blooms

Chemical Spray once early spring to control invasives; **Mow** top 1 foot of plants through summer

Reduce nutrient runoff into the lake by using **native plants in Buffer strips & Rain Gardens**

Reduce Cl⁻ by supporting wise use of road salt in the watershed

Monitor for nutrients, sediment, and erosion

Reduce or eradicate common carp

Become familiar with the appearance of harmful algal blooms and report any blooms

Develop an Aquatic Plant Management Plan (APMP) that targets the reduction of invasive species and promotes native plant diversity

Educate on ways to reduce the spread of Aquatic Invasive Species

Questions? Send to Gerry - I'll try to find answers

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