Update on the health of the lake

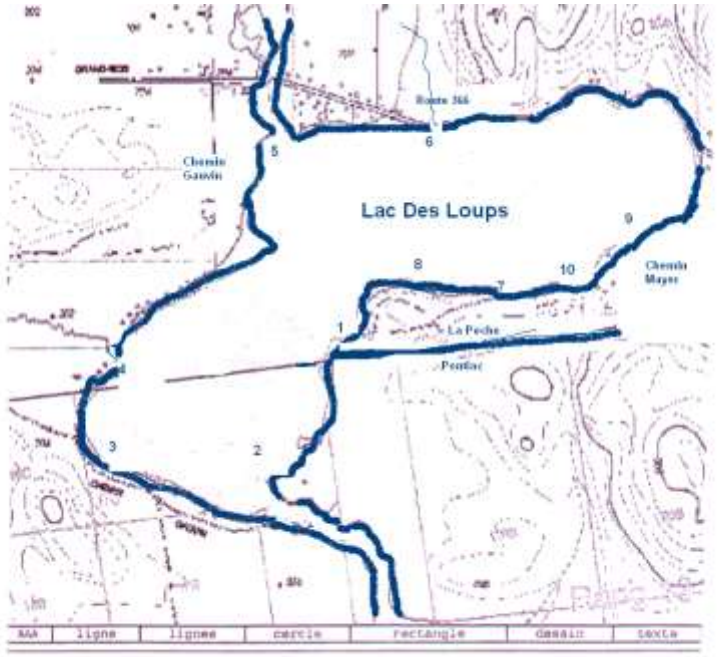
ALDL 2023

What are we checking and why?

- **Warer quality for swimming**:
  - Bacterial contamination?
- **Premature aging of the lake:**
  - Oligotrophic (young lake)?
  - Mesotrophic (in between)?
  - Eutrophic (old lake)?
- **Invassive species:**
  - Water milfoil ?
  - Others?
- **Contacts** with the RSVL and other lake associations in the region
- **Thank you to our volunteers!**

Water quality for swimming (bacterias) (thanks to our volunteers!)

E. coli/100 ml*	Categorie	Water quality
0 - 20	A	Excellent
21 - 100	B	Good
101 - 199	C	Acceptable
200 and +	D	Not recommended



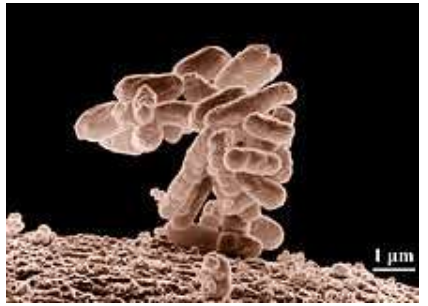
***Note: For drinking water, the number of E. coli that can be counted must be 0!**

The last 5 years: results

Site	5-year average	Cases per category				Comments
		A 0-20	B 21-100	C 101-199	D 200 +	
1	33 (B)	7	8	1	0	Good water quality; 1 case close to the limit of acceptability (189) in August 2022;
2	5 (A)	15	1	0	0	Water quality consistently excellent
3	3 (A)	16	0	0	0	Water quality consistently excellent
4	133 (C)	2	6	6	2	Qualité acceptable – water quality was level D: not recommended for swimming : 630 (Agust 2022) and 430 (June 2021).
5	141 (C)	4	9	2	1	Wayer quality acceptable – 1 case of dangerously high e.coli levels (1500) in August 2022. If we disregard this one case, average water quality would have been in category B (good).
6	7 (A)	15	1	0	0	Water quality consistently excellent
7	2 (A)	16	0	0	0	Water quality consistently excellent
8	3 (A)	16	0	0	0	Water quality consistently excellent
9	3 (A)	16	0	0	0	Water quality consistently excellent
10	3 (A)	16	0	0	0	Water quality consistently excellent

Results

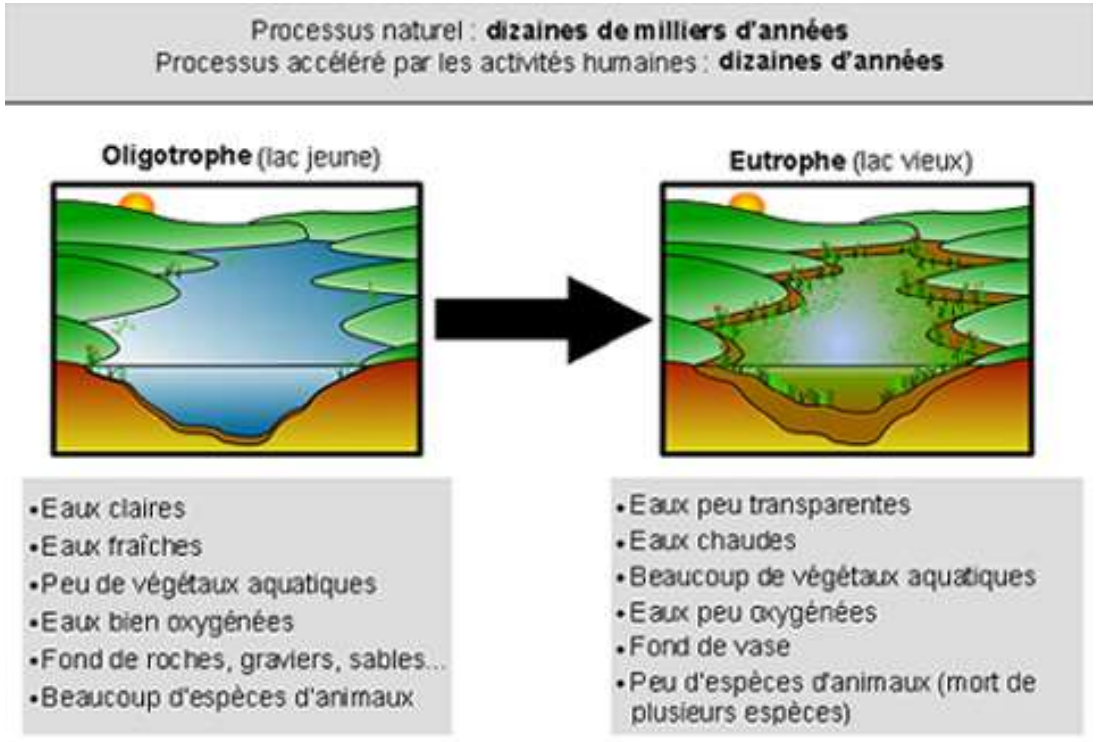
- 7 sites out of 10 always ranked « A » (excellent)
- Site 1: average B (good) with one case close to the limit
- Sites 4 and 5 (the two streams entering the lake): to watch closely:
  - average C (acceptable) with 3 cases exceeding the limit, including a case at site 5 with extremely high e. coli levels in 2022



E. Coli de wikipedia

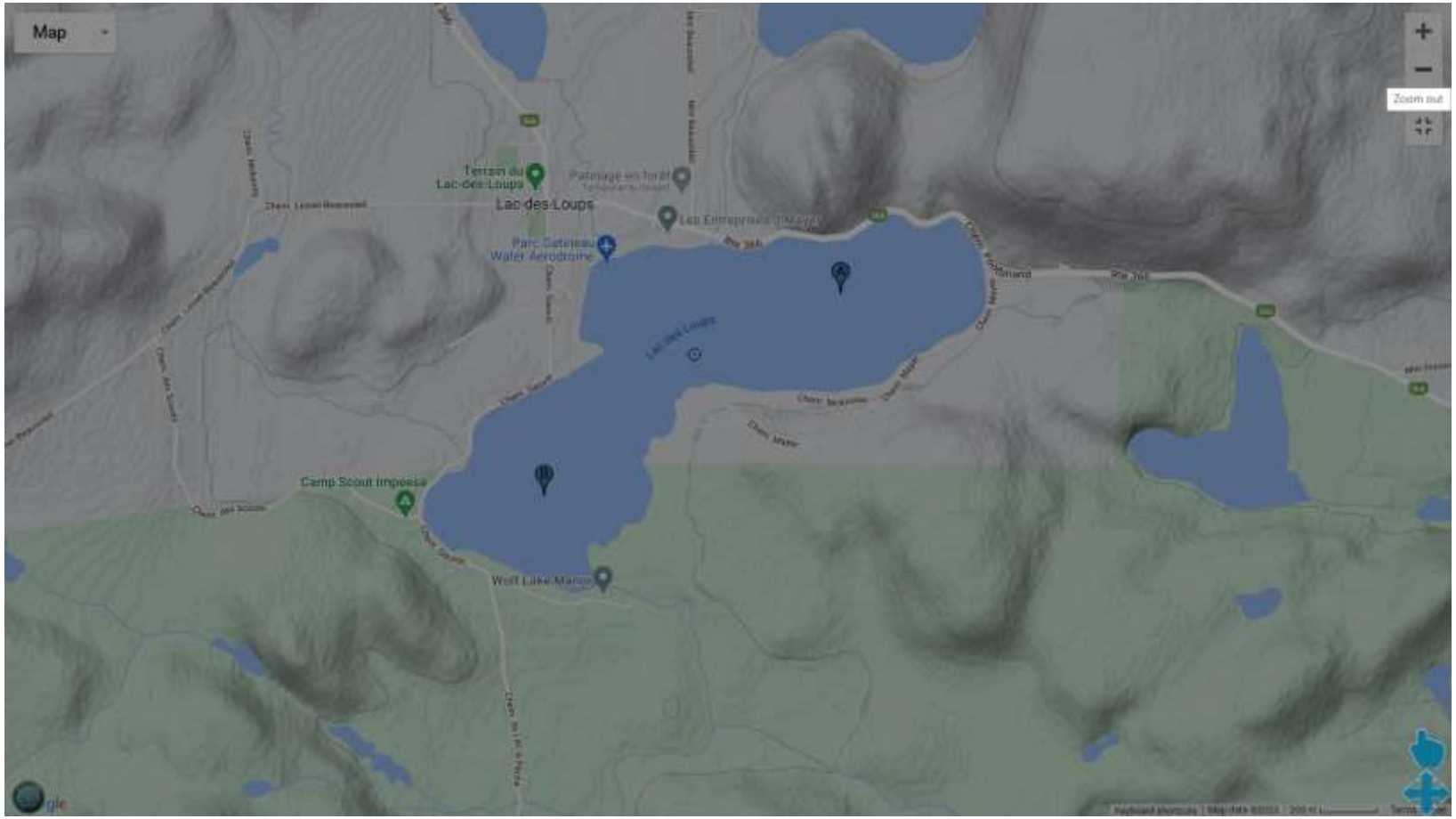
How do we monitor premature aging of the lake?

- Annual measurments of transparency of the water
- Tests for total phosphorous, chlorophyll *a*, and dissolved organic carbon should be done for 2-3 consecutive years (with intervals of 5 years)
  - 2022 and 2023
- Annual observations of cyanobacteria
- Quantity of aquatic plants



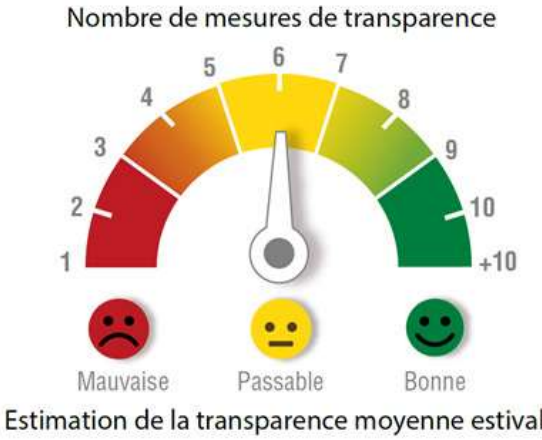
https://www.rappel.qc.ca/publications/informations-techniques/lac/eutrophisation.html

Deepest parts of the lake



Measurements of water transparency:

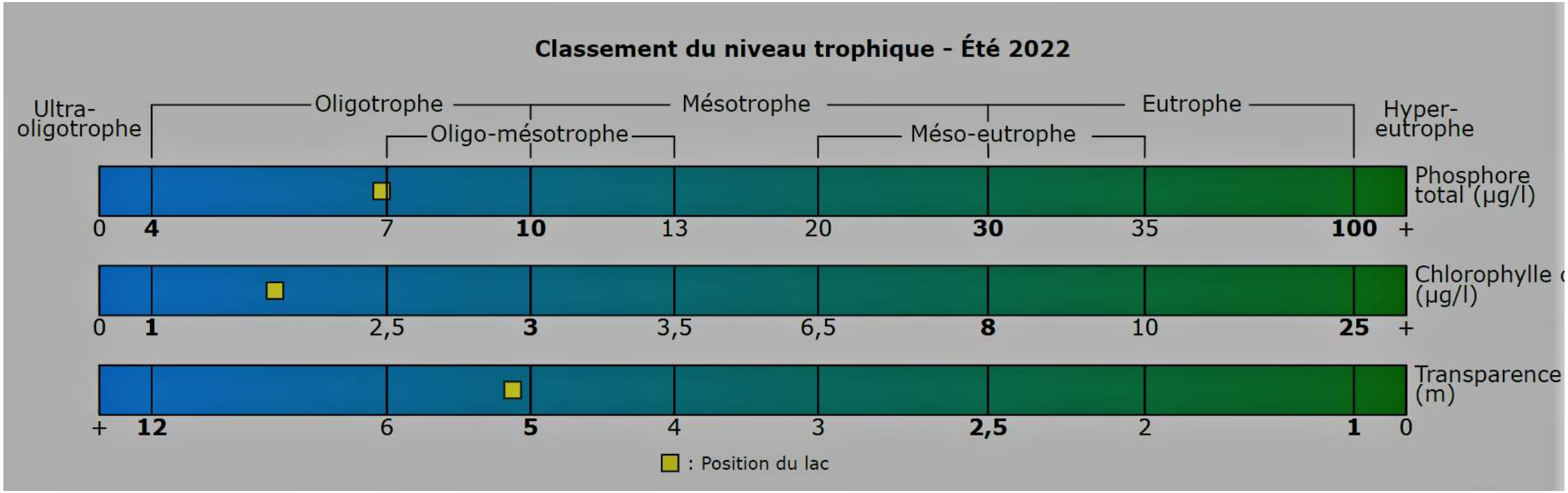
- Required on an annual basis by the RSVL
- Should be measured approximatly twice a month from June to October at the two deepest ponts of the lake
- Averages for 2022:
  - Station A (north) = 5.1 m
  - station B (south)= 4 m



Estimation de la transparence moyenne estivale

Trophic level of DL in 2022

- Nutrients: : Oligotrophic at the deepest point
- Water clarity: Oligo-mésotrophic



Cyanobacterias:
Still present but discreet!

- In 2003: LDL = « a paradise for cyanobacterias »
- 2010: present all over the lake
- Since then: small blooms in Oct. and Nov.
- **If you see an algal bloom, please contact the lake association**

Water mylfoil: still with us!

- No formal surveys since 2019
- Based on general observations, water milfoil is present with other aquatic plants in the lake, but the large single-species colonies of milfoil seem to be less conspicuous.
- A survey is planned for September 2023 – **volunteers welcome!** ☺
- Reminder: **clean your boats!** We want to avoid sharing our water milfoil with other lakes and importing any new invasive species!