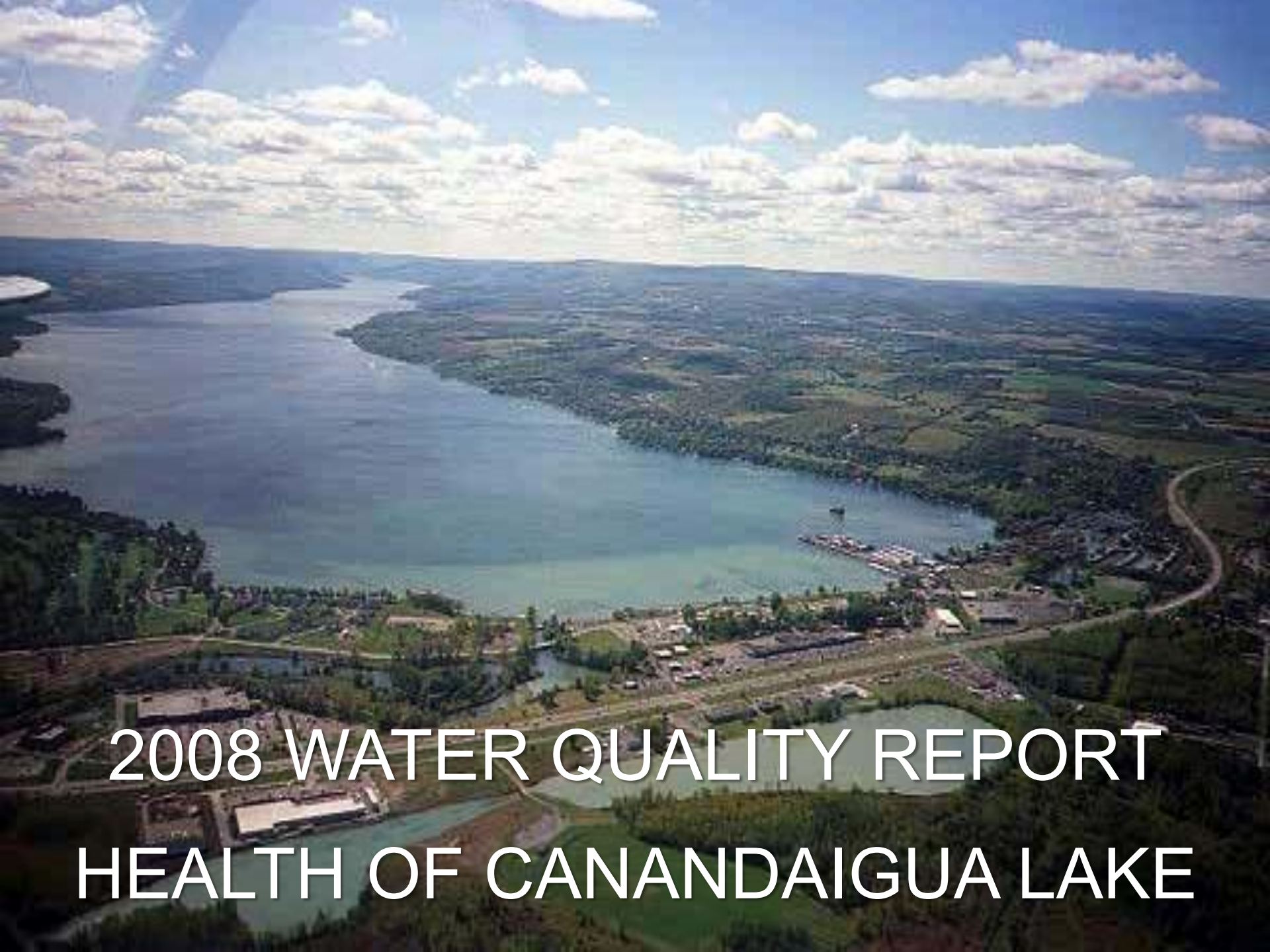


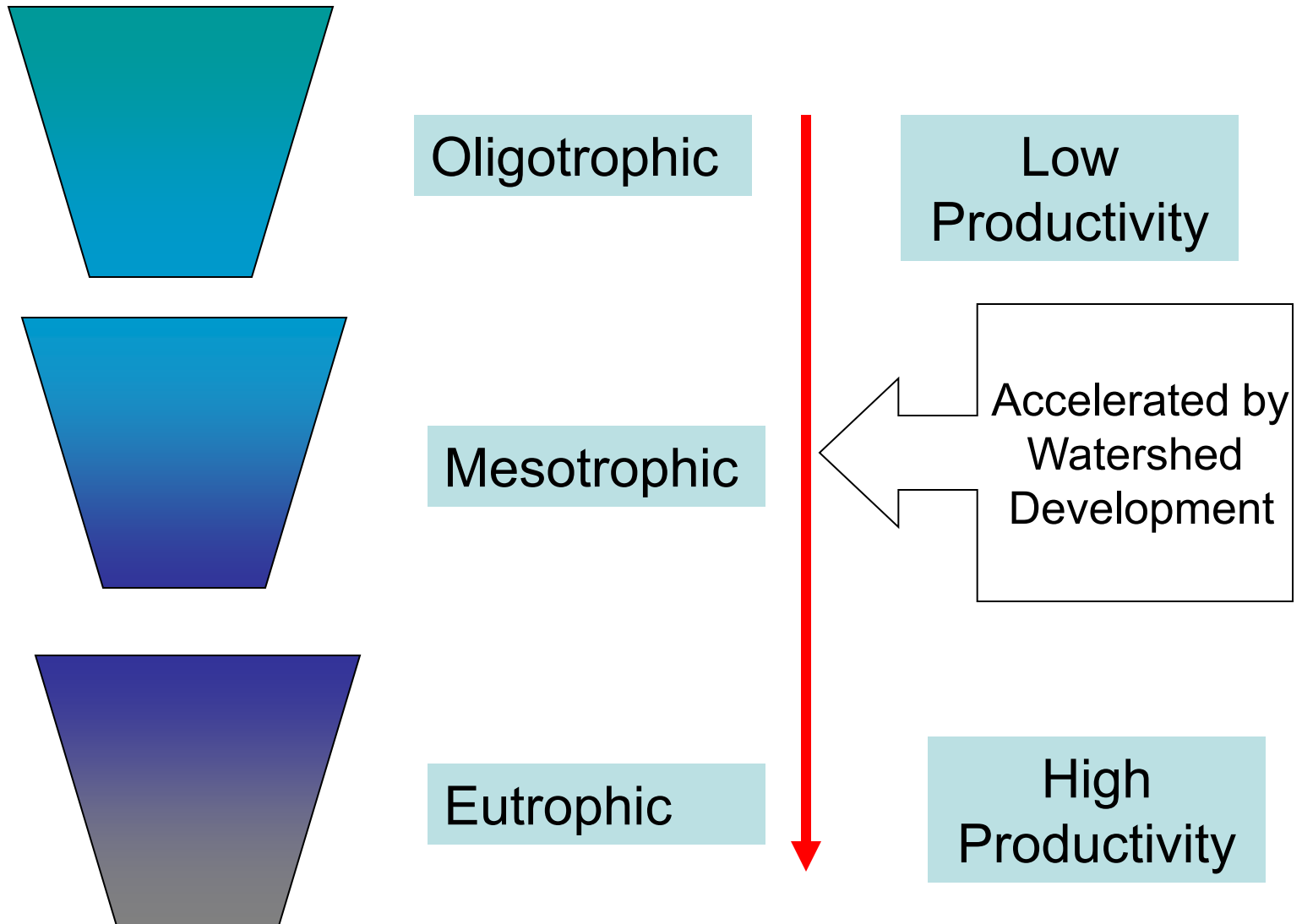
An aerial photograph of Canandaigua Lake, showing the lake's shoreline, surrounding greenery, and a small town. A rainbow is visible in the upper left corner of the sky. The text "2008 WATER QUALITY REPORT" and "HEALTH OF CANANDAIGUA LAKE" is overlaid in white at the bottom.

2008 WATER QUALITY REPORT HEALTH OF CANANDAIGUA LAKE

How do we determine lake health?

- Multiple Scientific Measurements
 - Lake clarity
 - Lake nutrients
 - Lake productivity
- Modeling Trophic State or Condition

Lake Eutrophication



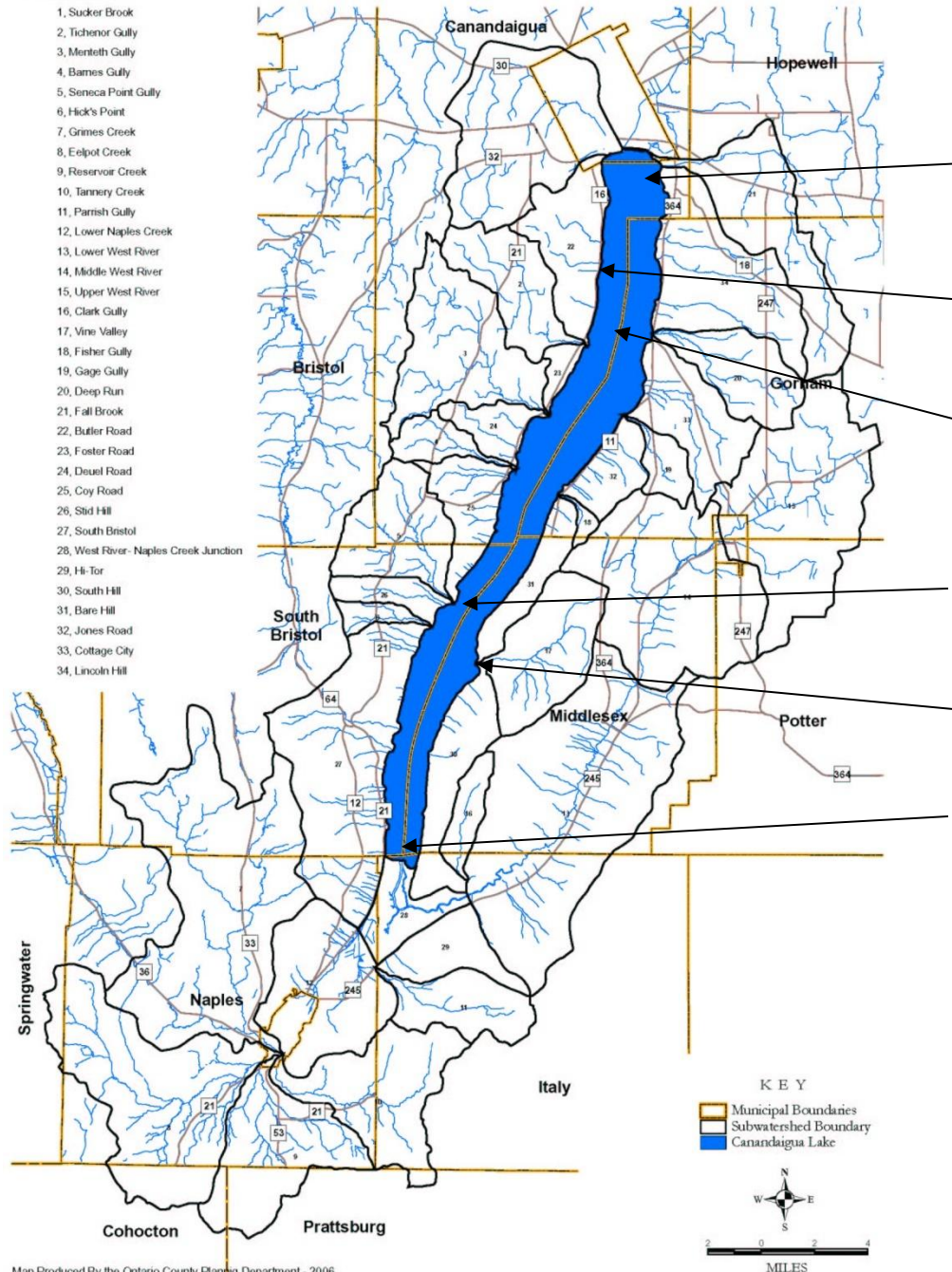
Lake Sampling and Monitoring Program

- Data taken in the last week of the month, April through November
- Water quality profile from the surface to maximum depth of 60 meters
- Nutrient grab samples at 2, 25 and 50 meters below the surface
- Chlorophyll *a* samples from six locations, integrated through the photic zone

CANANDAIGUA LAKE - SUBWATERSHED & DIRECT DRAINAGE BASINS

Subwatersheds

- 1, Sucker Brook
- 2, Tichenor Gully
- 3, Monteth Gully
- 4, Barnes Gully
- 5, Seneca Point Gully
- 6, Hick's Point
- 7, Grimes Creek
- 8, Eelpot Creek
- 9, Reservoir Creek
- 10, Tannery Creek
- 11, Parrish Gully
- 12, Lower Naples Creek
- 13, Lower West River
- 14, Middle West River
- 15, Upper West River
- 16, Clark Gully
- 17, Vine Valley
- 18, Fisher Gully
- 19, Gage Gully
- 20, Deep Run
- 21, Fall Brook
- 22, Butler Road
- 23, Foster Road
- 24, Deuel Road
- 25, Coy Road
- 26, Stid Hill
- 27, South Bristol
- 28, West River- Naples Creek Junction
- 29, Hi-Tor
- 30, South Hill
- 31, Bare Hill
- 32, Jones Road
- 33, Cottage City
- 34, Lincoln Hill



Fallbrook (FB)

Hope Point (HP)

Deep Run (DR) mid- lake

Seneca Point (SP) mid-lake

Vine Valley (VV)

West River (WR)

In-situ monitoring

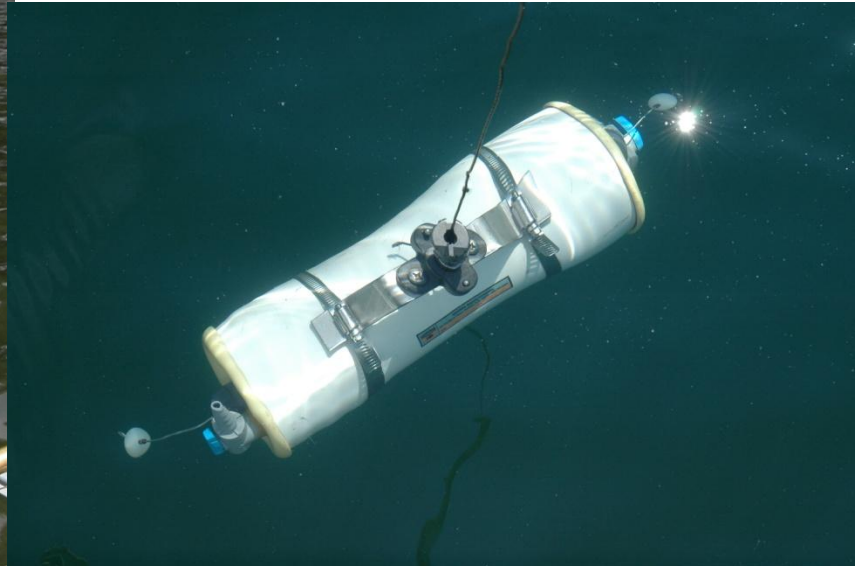
- YSI water quality profile of temperature, dissolved oxygen, conductivity and pH. These parameters provide an assessment of lake health.
- Lake clarity by secchi disk reading of water transparency



Lake Clarity by Secchi Disk



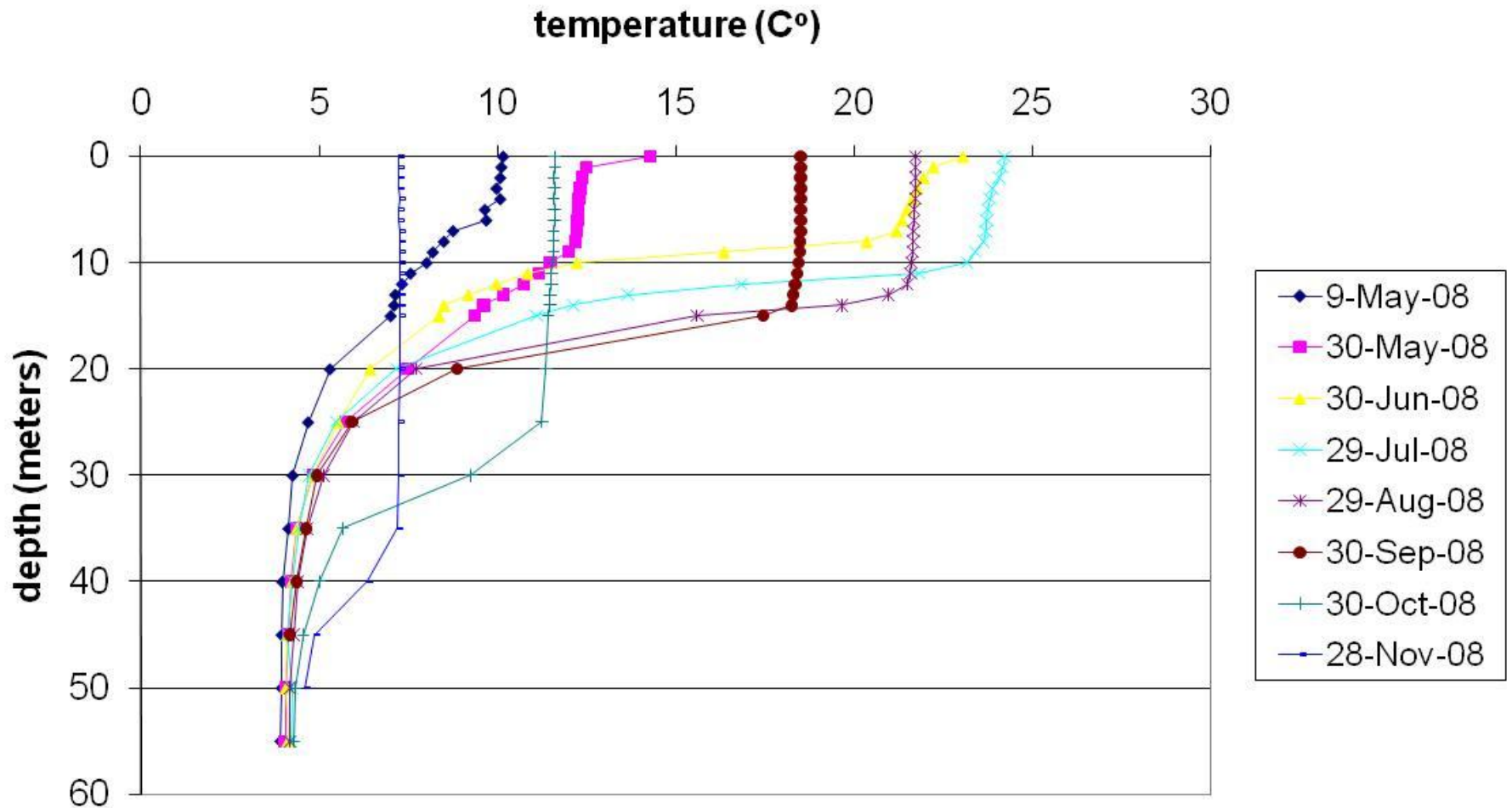
Van Dorn Sampler for Nutrient Grabs



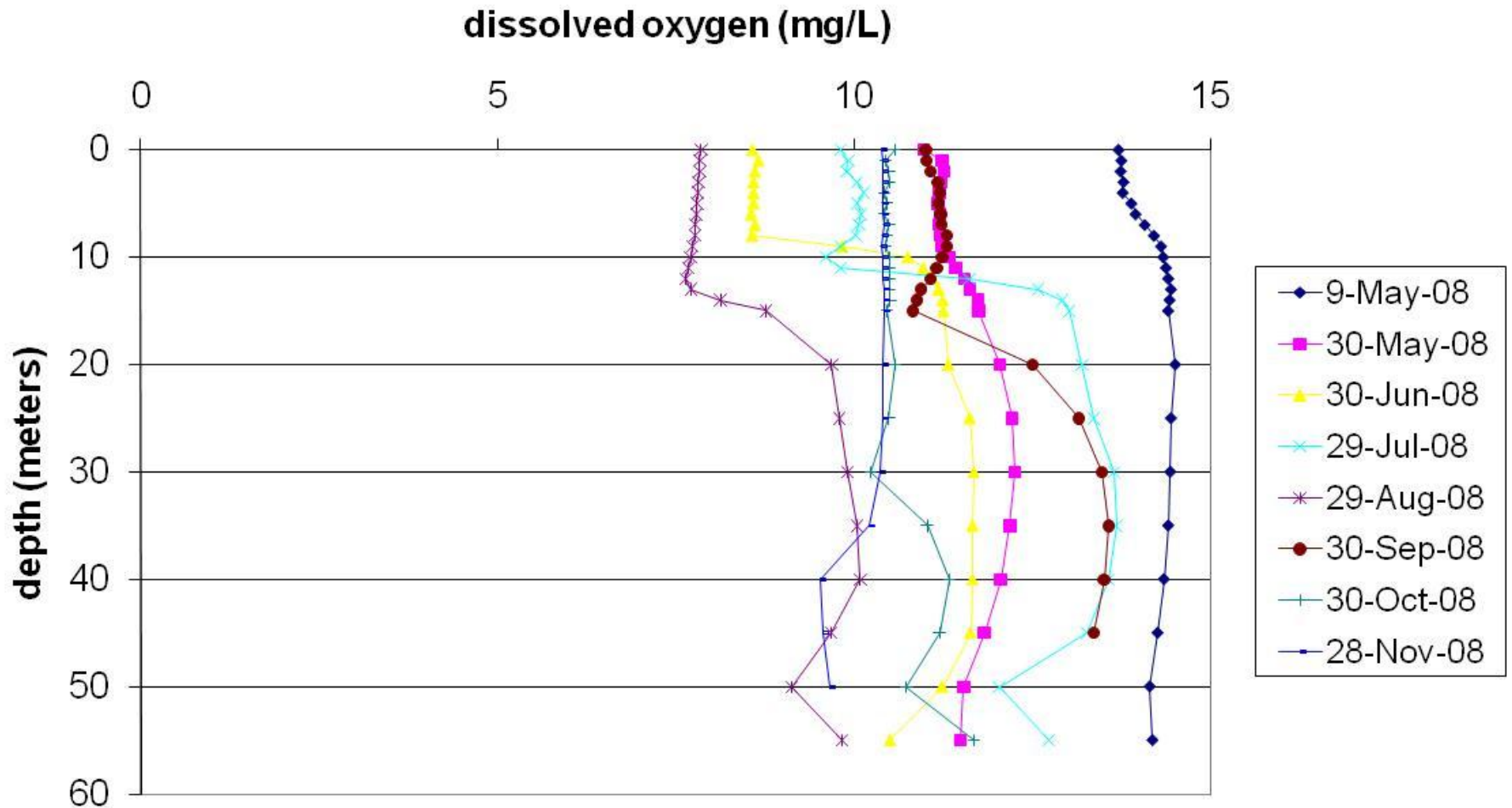
Follow-up Lab Analysis

- Nutrients – amount of total phosphorus, the limiting factor supporting aquatic plant growth and, therefore, an indirect measure of lake primary productivity
- Chlorophyll “a” – an estimate of algal abundance and, therefore, a direct measure of lake primary productivity

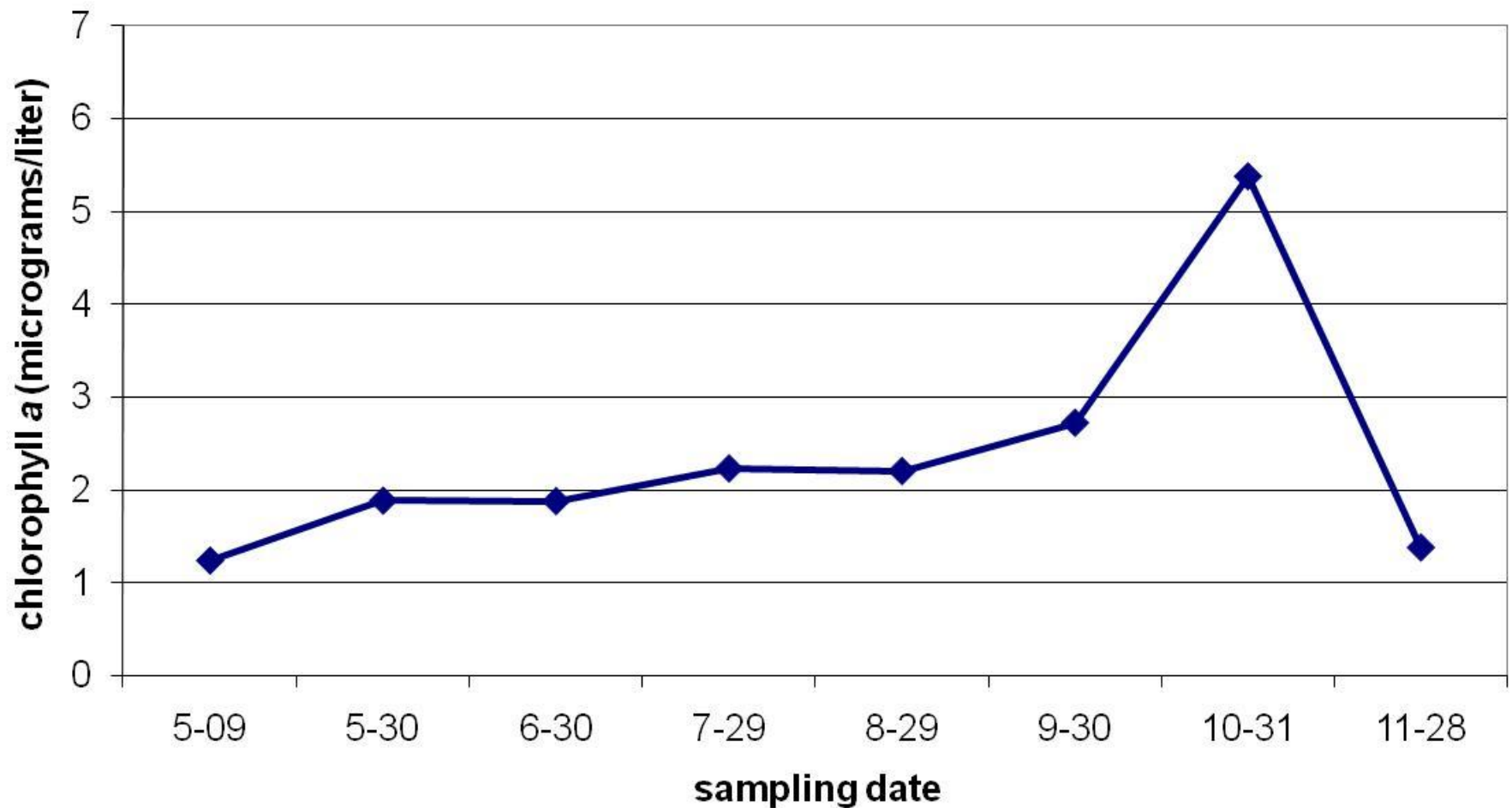
Deep Run Profile



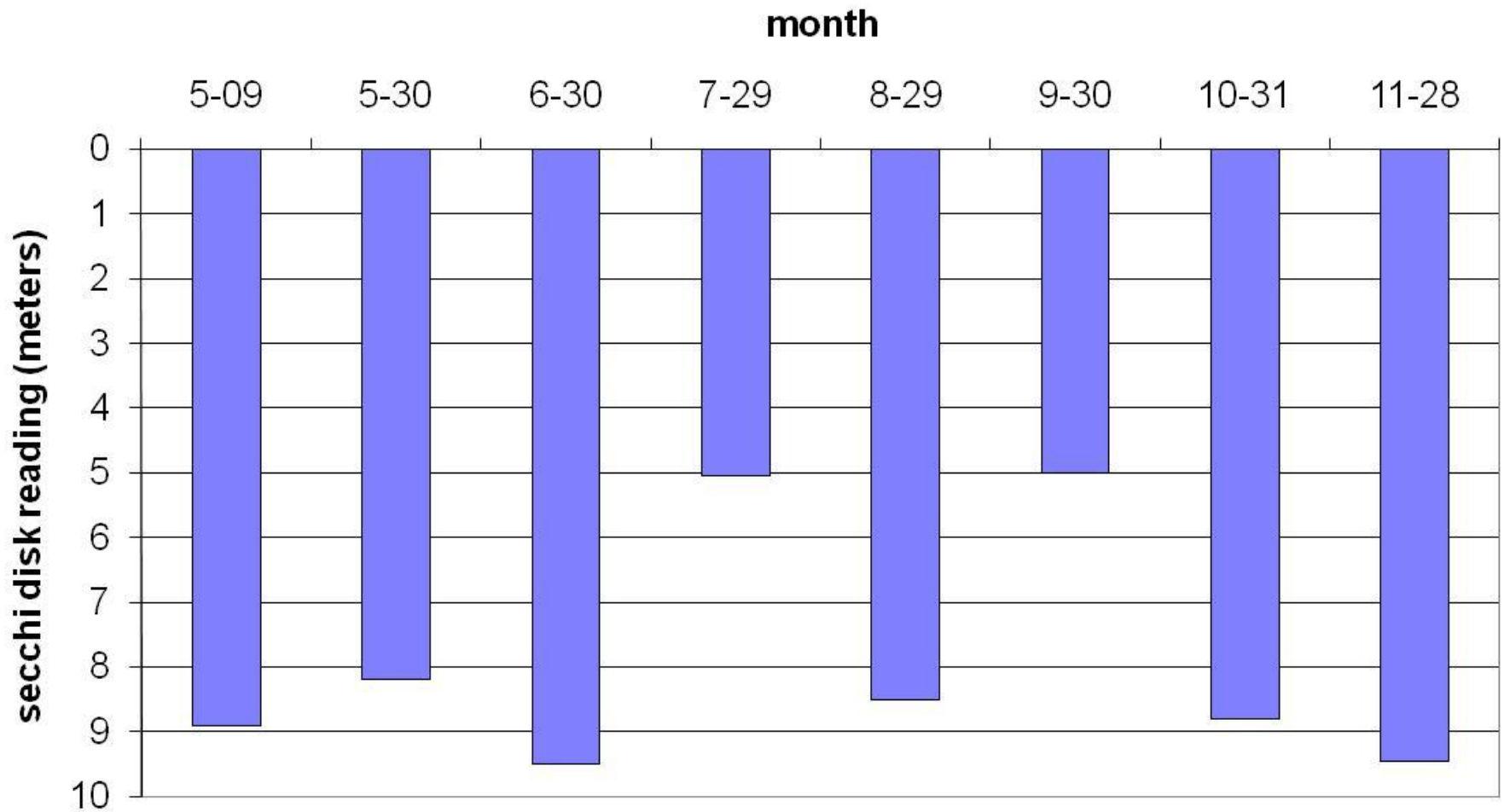
Deep Run Profile



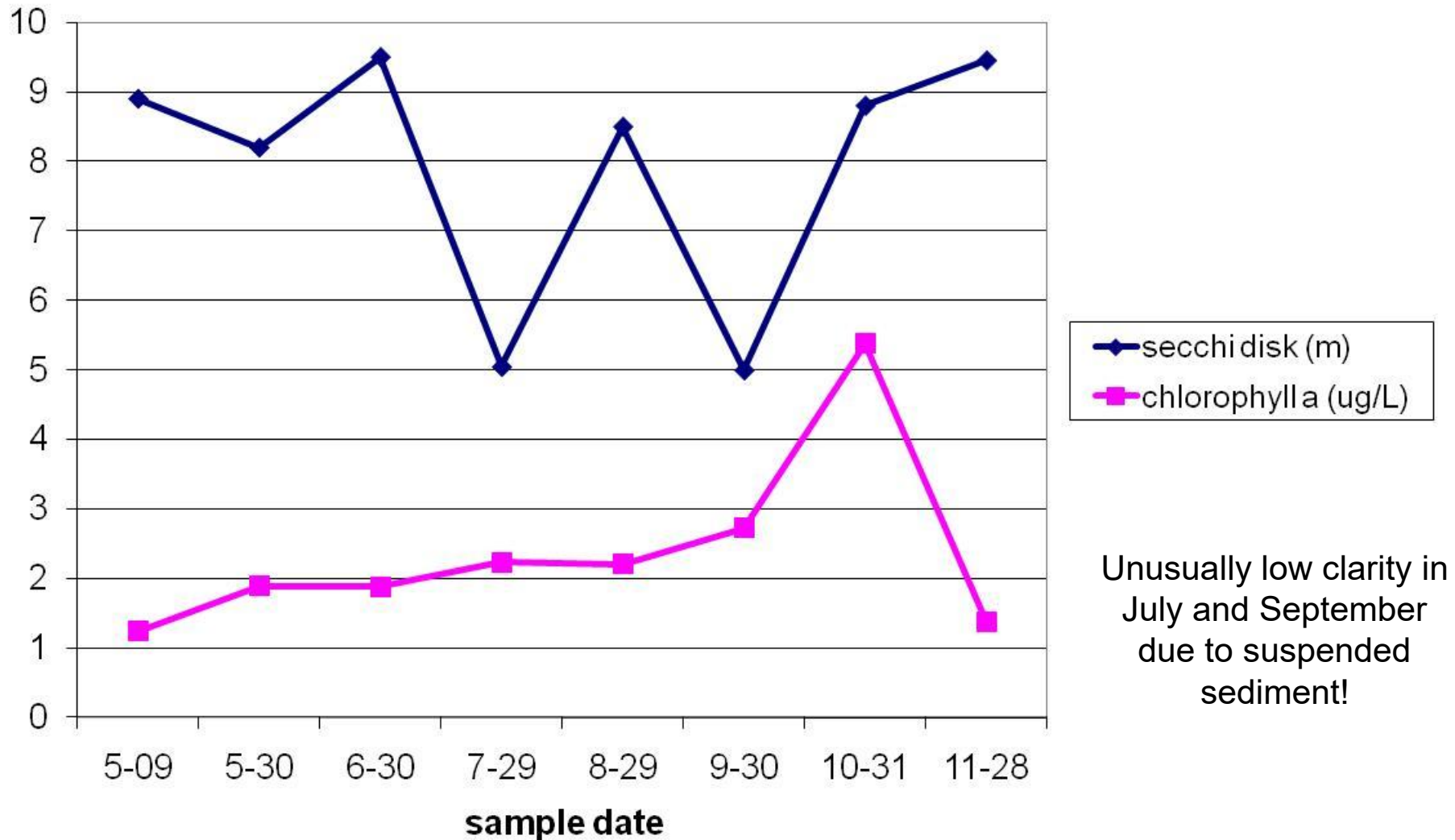
Mean Algal Abundance (2008)



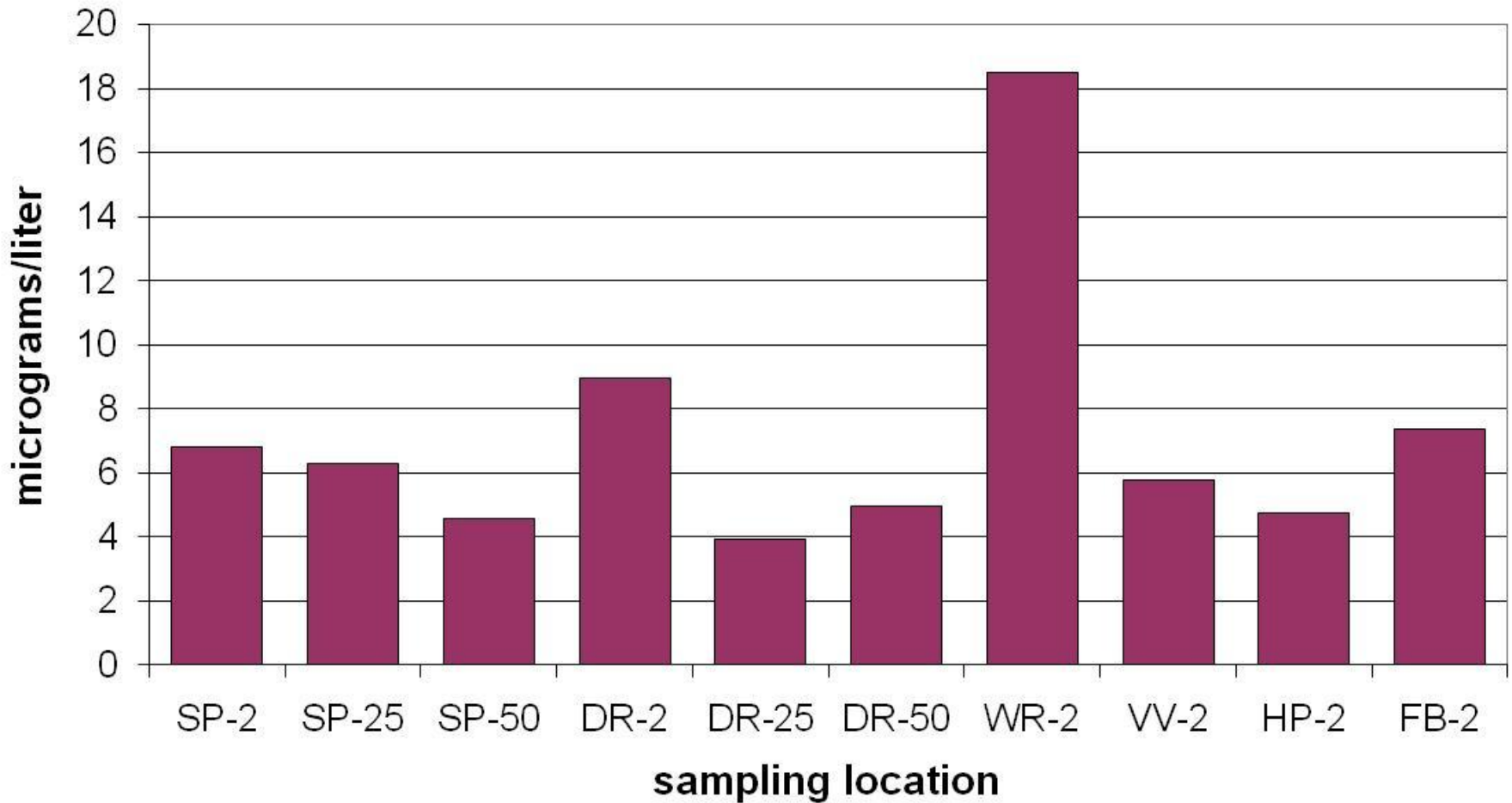
Lake Clarity (2008)



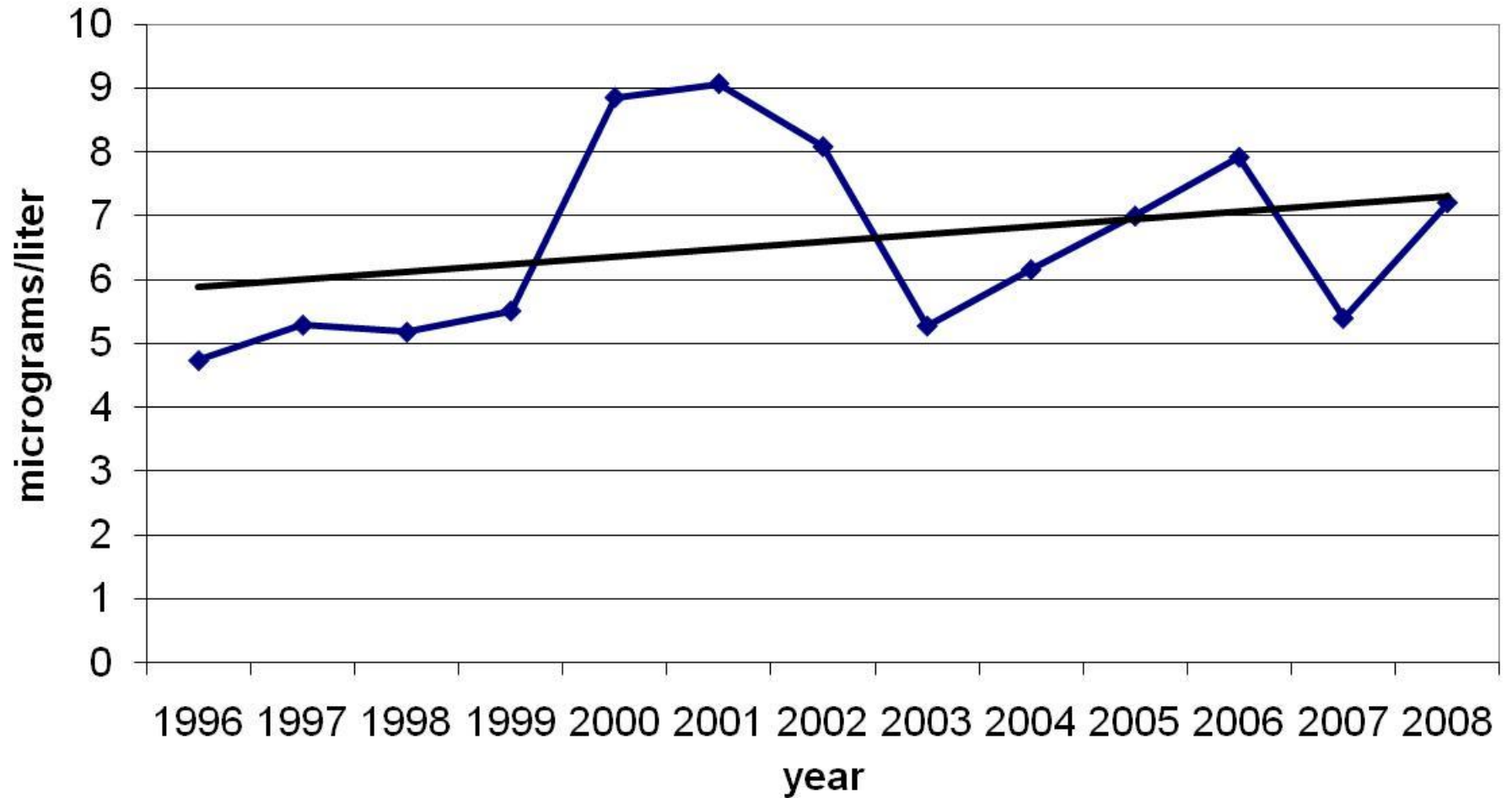
Water Quality Trends (2008)



Mean Total Phosphorus (2008)



Mean Total Phosphorus



Tributary Sampling and Monitoring Program



West River during storm event in Canandaigua Lake Watershed

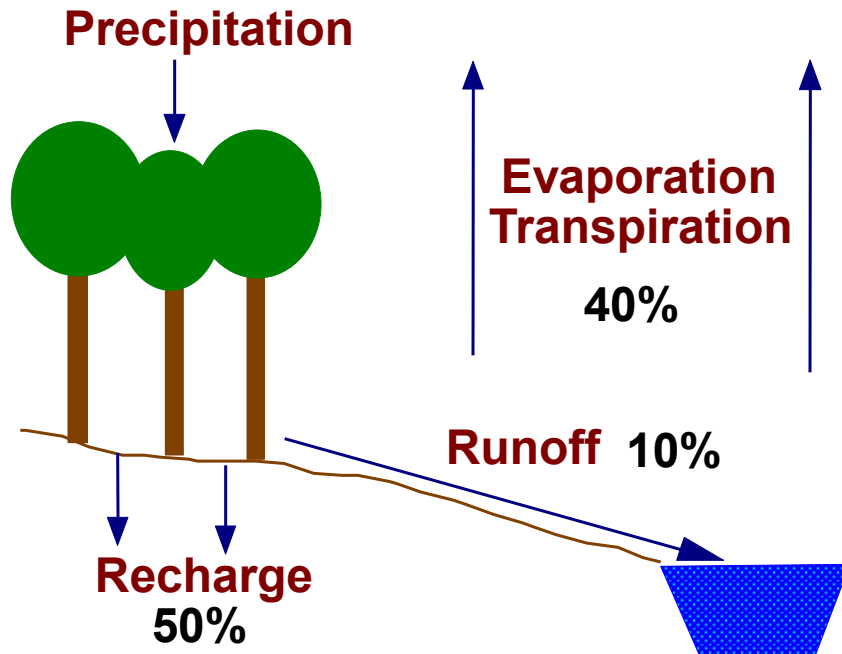
Water Quality Challenges

- Balance between
 - Lake protection as a drinking water resource
 - Recreational uses of lake
 - Watershed development activities
 - Habitat management for wildlife
 - Tourism and economic growth
 - and more!

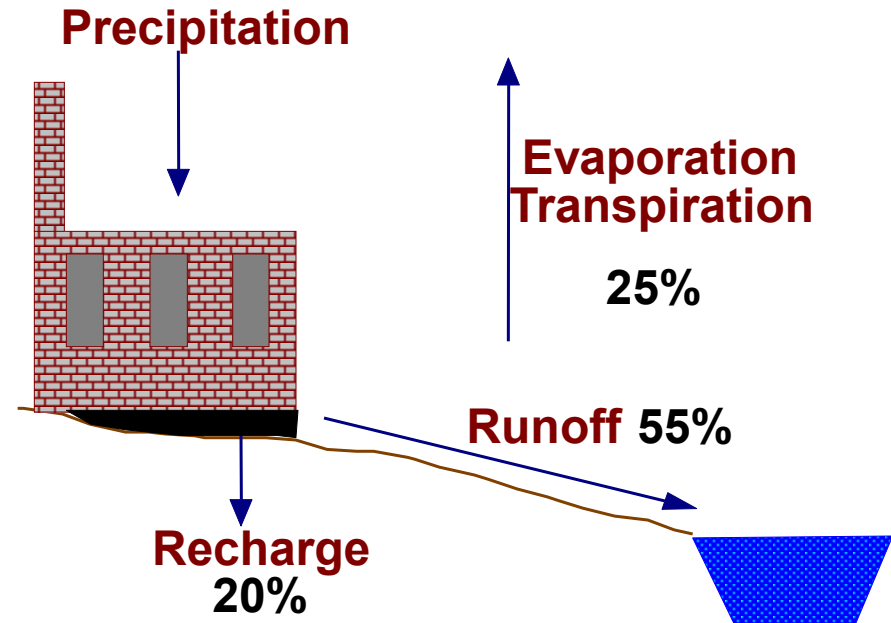
Stormwater runoff is a natural part of the hydrologic cycle ... however, as land is developed, runoff increases.

RESULT- erosion, pollutant transport, loss of aquatic habitat and property damages.

Undeveloped Conditions

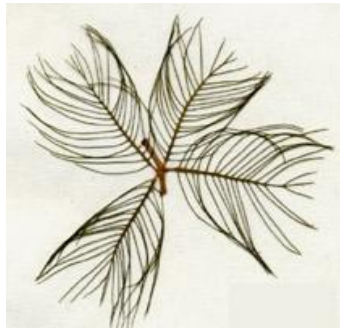


Highly Developed Conditions



Erosion/sediment and Stormwater Regulations

- Strict enforcement of existing laws.
 - especially critical near municipal intakes.
 - important for protection of fish spawning and viability of aquatic food webs.
 - may help prevent establishment/expansion of invasive, nuisance aquatic vegetation like Eurasian milfoil and curly-leaf pondweed.



Erosion/sediment and Stormwater Regulations

- Consider adoption of updated standards in local laws that are at least as strict as New York State standards. This recognizes the need to protect Canandaigua Lake's function as a drinking water reservoir and high quality recreational area.
 - increase monetary amount of penalties.
 - expand ability to issue stop work orders.

Cooperative Actions

- Continue the Agricultural Environmental Management Program (Ontario County SWCD and the Agricultural Program Committee).
- Pursue adoption of timber harvesting laws, coupled with educational programs for the local forestry industry.

Public Education

- Educate watershed residents about the relationship between land use activities and water quality, with a special emphasis on the reduction of phosphorus.
- Controlling phosphorus is the KEY STEP in minimizing cultural eutrophication.

Questions?

