



Otsego Lake Water Quality Data

May 3, 2011



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Data were collected using a YSI Series 6 Multiparameter sonde.

TEMPERATURE & DISSOLVED OXYGEN PROFILES

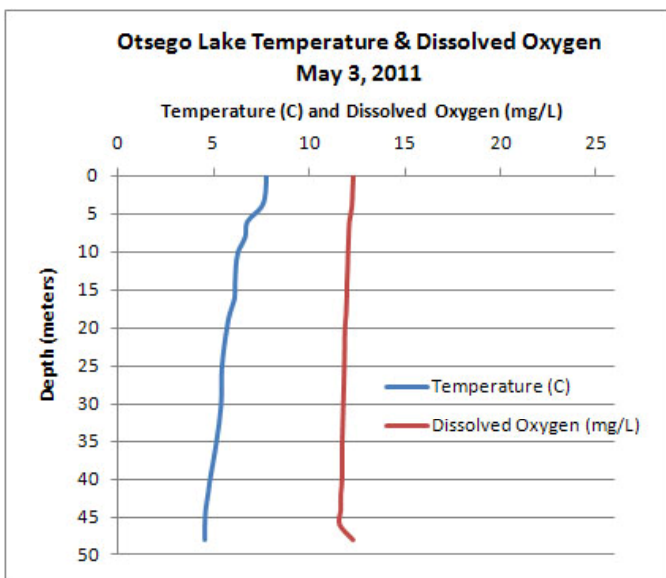
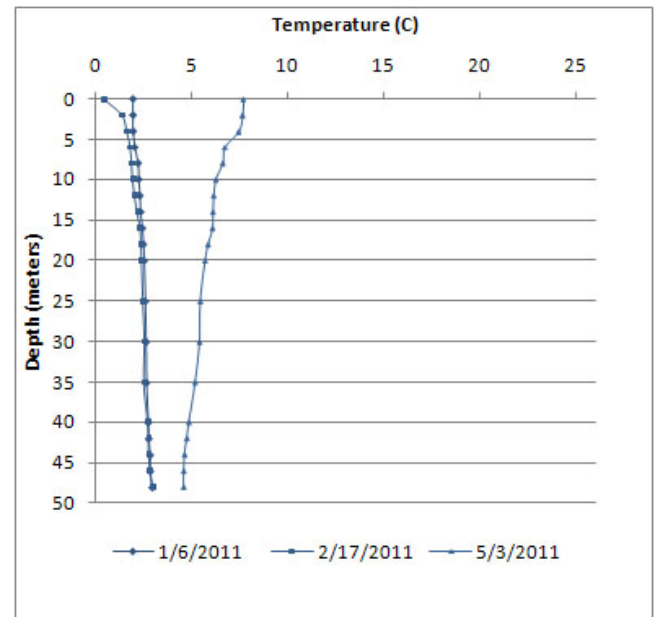
| Depth | | Temp | | Dissolved Oxygen mg/L |
|-------|-------|------|------|-----------------------|
| m | ft | °C | °F | |
| 0 | 0 | 7.72 | 45.9 | 12.33 |
| 2 | 6.5 | 7.68 | 45.8 | 12.29 |
| 4 | 13.1 | 7.48 | 45.5 | 12.25 |
| 6 | 19.7 | 6.74 | 44.1 | 12.12 |
| 8 | 26.2 | 6.63 | 43.9 | 12.08 |
| 10 | 32.8 | 6.26 | 43.3 | 12.05 |
| 12 | 39.4 | 6.15 | 43.1 | 12.03 |
| 14 | 45.9 | 6.11 | 43.0 | 11.99 |
| 16 | 52.5 | 6.09 | 43.0 | 11.98 |
| 18 | 59.0 | 5.85 | 42.5 | 11.95 |
| 20 | 65.6 | 5.69 | 42.2 | 11.89 |
| 25 | 82.0 | 5.44 | 41.8 | 11.85 |
| 30 | 98.4 | 5.40 | 41.7 | 11.80 |
| 35 | 114.8 | 5.16 | 41.3 | 11.74 |
| 40 | 131.2 | 4.83 | 40.7 | 11.73 |
| 42 | 137.8 | 4.72 | 40.5 | 11.66 |
| 44 | 144.4 | 4.60 | 40.3 | 11.66 |
| 46 | 150.9 | 4.56 | 40.2 | 11.60 |
| 48 | 157.5 | 4.56 | 40.2 | 12.31 |

Early Stages of Stratification

-Surface waters warming
-Deep water remains cold

-Oxygen concentration is largely dependent on temperature, but water can become "supersaturated" as algal activity begins to increase, producing oxygen as a by-product.

Temperature profiles over the course of the year show transitions between seasonal thermal stratification regimes. Layers develop through the spring and summer as the surface waters are warmed and mixed by sun and wind, while the water below remains cold and therefore is more dense. These layers provide different habitat conditions in the open water (off-shore) areas of the lake. Ice cover was completely melted by 12 April; mixing, or turnover, occurred after that point, but before the next sampling event on 3 May, at which point the surface temperature had begun to increase slightly compared to the entire water column. The length of time required for full stratification to develop varies from year to year with weather patterns. As of 3 May, the surface to 4m had warmed to 7.7°C, while the deeper water remained cold.



Dissolved oxygen concentrations

Currently, turn-over has finished and oxygen is distributed throughout the water column. The surface waters are "supersaturated" with dissolved oxygen, at more than 12 mg/L, as a result of algal photosynthesis during the daylight hours. The slight increase in oxygen concentration with depth is related to water temperature; cold water can hold more oxygen than warm water.

Oxygen that is distributed through the water column during spring turn-over serves as the reservoir for the hypolimnion until late in the fall. As the growing season progresses, oxygen in the deeper waters is consumed primarily by bacterial decomposition of dead algal cells and to a small degree by organisms living in the bottom waters. Lake trout are sensitive to oxygen availability and may become stressed when concentrations fall below 6 mg/L.