Teapot Lake – What’s Old and What’s New

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Overview

• Meromictic Lakes
• Teapot Lake
• Research History
• Challenges and Opportunities
• Moving Forward
Types of Lakes

- Holomictic
- Meromictic
- Stratification:
  - Thermal
  - Chemical
  - Biological

Circulation in a Holomictic Lake
Unique

- 100 identified in North America (1985)
- 12 identified in Canada, including:
  - Pink Lake in Gatineau Park, Quebec
  - McKay Lake in Ottawa
  - Little Round Lake, south of Ottawa
  - Crawford Lake, Milton
  - Van Nostrand Lake, east of Aurora
Useful

- Climate research
  - trends over 100s of years
  - Changes to both ecosystem and sedimentology
- Archaeology
  - First Nation influence – corn cultivation
  - Introduction of plants from Europe
  - Clearing of forests in 1800s

\[
\text{low temperature} + \text{low oxygen} = \text{great preservation}
\]
Teapot Lake

- Purchased by TRCA in 1979
- NE corner of Heart Lake Conservation Area
- “Brown” water lake in a region high in calcium
- Part of the provincially significant Heart Lake Wetland Complex
Research History

- Research by Dr. Joseph Rigler (U of T):
  - 1960 - 1973
  - Botany (primarily diatoms and Daphnia)
- Initiated process to protect Teapot Lake
- Recommended acquisition by TRCA
Research History

- Piston Sampling: 2004 (Dr. Jock McAndrews, UofT)
Research History

• Monitoring by TRCA: 2004-2005
  • pH
  • Conductivity
  • Total dissolved solids
  • Dissolved Oxygen
Research History

- Geophysical profiling (Ground Penetrating Radar): 20040
Research History

• Carleton University (Dr. Tim Patterson)
  • Melissa Watchorn - M.Sc. (2008) *The paleolimnology of Haynes Lake, and Teapot Lake, Ontario: Documenting anthropogenic disturbances within Canada's largest City*
  • *Multiple other research projects currently underway*
    • Chemistry
    • Groundwater influences
Challenges and Opportunities

• **Challenges:**
  - Urban growth
  - Highway 410 construction
  - Mayfield Road widening

• **Opportunities**
  - Funding for monitoring (Peel)
  - Heart Lake Master Plan
Moving Forward

- **Monitoring**
  - Groundwater levels
  - Water chemistry
  - Biological

- **Research**
  - Carleton University

- **Action**
  - Heart Lake Master Plan implementation
Thank You!

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