WWF-Canada’s Freshwater Program
From Watershed Reports to Atlantic Datastream

WWF-Canada
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Canada mapped by rivers, lakes and streams

Most important resource
Health Metrics

• Hydrology Metric
  – Composite of annual, monthly, LT and ST trends
  – Pre vs. Post Dam analysis

• Fish Metric
  – Presence/absence of a decline of in native species richness over time

• Benthic Macro-invertebrate Metric
  – Family-level Hilsenhoff Biotic Index

• Water Quality Metric
  – Proportion of exceedances of WQ guidelines
Overall health

110 of 167 sub-watersheds are data deficient.
Key threats to freshwater ecosystems

- Pollution
- Habitat loss
- Over allocation/water use
- Habitat fragmentation
- Alteration to flows
- Invasive species
- Climate change
Overall threat

53 of 167 sub-watersheds exhibit high or very high levels of stress.
Analysis

We cannot rate the overall health of the Great Lakes watershed due to lack of available data in five of the eight sub-watersheds.

Overall, flow in the rivers of the Great Lakes watershed is "fair", with sub-watersheds scoring either "fair" or "good". Changes in long-term monthly flow, an indicator we assess for flow, showed "very poor" results for all but one sub-watershed.

Overall water quality is also "fair", with sub-watersheds scoring either "fair" or "moderate" However, water quality scores for
Key learnings

• Modernizing freshwater management:
  – Collection of data
    • Lack of community-based monitoring/citizen science
    • Uneven coverage and representation
    • Models, hubs and scaling up
  – Analysis of data
    • Inconsistent protocols
    • Inconsistent guidelines
    • Diversity of partners, varied reliability levels
    • Issue of scale
    • Timeliness of reporting
    • Standardization
  – Sharing data
  – Data Currency
STREAM (Sequencing The River for Environmental Assessment and Monitoring)

**Benthic indicator**

**Issues**
- Data deficiency
- Lack of community involvement

**Solutions**
- Increase capacity
- Standardized protocol
- Open and accessible data
Thank you

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