Assessing Water Quality Effects of the Taum Sauk Hydroelectric Facility Reservoir Breach and Evaluating Recovery and Restoration Efforts

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Upper Reservoir
On December 14, 2005 the largest UN-natural disaster in Missouri history occurred:

- At 5:12 a.m. gauges showed the reservoir pumped full to a depth of 90 ft.

- At 5:24 a.m. the same gauges showed a water level of 20 ft.
View from the top of the scour channel
Monitoring focused on three major areas:

- **Physicochemical**
  - Monitoring of pH, conductivity, dissolved oxygen, temperature, turbidity and total suspended solids along an ~30 mile reach of river
• Sediment
• Biological monitoring
  – Assess immediate impacts to aquatic life, specifically benthic macroinvertebrates
  – Habitat assessment
  – Assess recovery of communities as restoration efforts progress
AmerenUE - East Fork Black River
December 19-21, 2005

Total Number Individuals +1

q1
min
median
max
q3

Site #1  Site #2  Site #3  Site #4  Site #5  Site #6
EF Black River Spring Taxa Richness

Year

Taxa Richness


Sampled as Reference

Reservoir Breach December 2005

Channel Restoration Project

Taxa Richness

Full

Partial
Macroinvertebrate Stream Condition Index

• An aggregation of the four primary metrics
  • Taxa Richness, EPT Taxa, Biotic Index, Shannon Diversity Index

• MSCI scores range from 4 to 20

• Based on comparison with the Reference Condition

• Assessment of supportability of aquatic life
EF Black River Fall MSCI Scores

MSCI Score vs Year

- 1999
- 2000
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012

MSCI Score

Reference:

- MSCI Score
- Full
- Partial
Division of Environmental Quality Director: Leanne Tippett Mosby

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