



# Ontario Rivers Alliance

By Linda Heron, Chair

Ivanhoe River, Photo by Mark Clement

[www.OntarioRiversAlliance.ca](http://www.OntarioRiversAlliance.ca)

# About ORA

- Ontario Rivers Alliance (ORA)
- Not-for-Profit
- A mission to
  - Protect, conserve & restore Ontario rivers
  - Stand up for Ontario rivers
  - Speak with a strong united voice
  - Use a BIG picture perspective
  - Collaborate & build alliances
  - Share information, strategies & tools
  - Influence legislation & policy



# What are ORA's Successes?



# Climate Change

- A future of Climate uncertainty:
  - Increasing frequency & magnitude of extreme rain events
  - Less snow & more rain in winter
  - Each degree of temperature rise can increase air's water capacity by 7%
  - Toronto Climate Model predicts:
    - Projected average winter temperature increase by 5.7 degrees Celsius
    - Projected average summer temperature increase by 3.8 degrees Celsius
- Communities & infrastructure must be climate resilient
- Infrastructure planning must take climate change into account
  - Failure of an upstream dam can lead to cascading failure of downstream infrastructure
  - Look beyond a 1:100 year storm to a 1:1000 year flood event
- KGS Group failed to consider climate change in dam's viability or economics



## Howson Dam at Capacity – 24 June 2017

- June 2017 flood event = 411 cms (Water Survey of Canada)
- 1:100 year flood event = 442 cms (BM Ross Study)



Healthy Rivers - Healthy Communities



Gorrie Dam failure – June 2017



Gorrie Dam failure – 1974

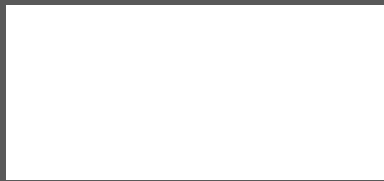






Photo by Sherwin Watson-Leung, CVC

Melville Dam failure, Credit River - June 2017

# Implications & Benefits of Naturalization

- Decommission the Dam - \$436,000
  - Improvements to:
    - Water Quality & Temperature
    - Sediment transport
    - Aquatic habitat & health
    - Connectivity
    - Fishery
    - Tourism - boating & fishing
  - Increased resilience to Climate Change
  - Closely aligns with the Township of North Huron's Strategic Plan
    - Meets fiscal, safety & environmental objectives
  - No future operation/maintenance or associated costs
  - Reduces risk of upstream & downstream flooding



# Implications & Benefits of Naturalization

- Public life & property loss is significantly reduced & safety is addressed
- Short & long-term liability to the Township is significantly reduced
- Healthy & safe natural environment
  - Sediment & nutrients freely move downstream
  - Reinstates natural processes
  - Cooler & deeper natural channel
  - Improved habitat for Species at Risk & fishery
- Fish passage
- Park vista – opportunity to extend & improve the Wingham Flats Ecological Park
- Regulators/agencies would be in full support of naturalization
  - Availability of Federal & Provincial funding for habitat restoration
  - Local agencies would participate in a dam removal project
- ORA & other key partners may assist in funding & naturalization process





Howson Dam – North Maitland River

# Implications & Benefits of Rehab/Replace

- Dam Rehabilitation - Between \$2,869,000 and \$4,581,000
  - Would extend life but not match design life of a rebuilt structure
  - KGS Group rated Howson Dam “Hazard Potential High” & reported
    - Concrete is not suitable for repairs or rehabilitation
    - Most sections of 3 cores were rubble or heavily fractured
    - Intact core samples couldn't be retrieved over most of coring length
- Dam Replacement - New concrete overflow weir - \$6,209,000
  - KGS Group did not consider life-cycle costs in their report
    - Constrained budgets make it tempting to think short-term
    - Comparisons & long-term decision making must include life-cycle costs
  - Life-cycle cost Assessment:
    - Ongoing dam operation, maintenance and capital costs
    - Risk of liability
    - End-of-life costs – retirement
    - Riverside Dam - \$5.4M - life-cycle costs were \$30,000/year for 100 years = \$3,000,000
    - Howson Dam - \$35,000/year for expected life of structure (100 years) = \$3,500,000



# Implications & Benefits of Rehab/Replace

- Uncertainty of increasing Climate effects
  - 1:100 year flood return is insufficient
- Increased risk of flooding & dam failure
- Risks will Increase over the dam's life
- Public safety – loss of life and property at risk over the short & long-term
- Liability issues
- Degraded water quality
- Financing costs??
- Escalating costs & burden on taxpayers
- Seasonal recreational reservoir
- Tourism





Thank you!