

Connectivity and Man-made Small Dams Policy

Policy No: 21-01

Policy Title: Connectivity and Man-made Small Dams

Policy Statement: Freshwater Conservation Canada believes that small man-made dams that no longer have a functional purpose should be removed to improve the health of the watershed.

Principles Applied:

- Watershed connectivity should be re-established where it naturally occurred except where issues of invasive or non-native species need to be addressed in which case small dam or online pond removal may be reconsidered;
- Dams and online ponds fundamentally alter ecological form and functions of rivers (alter stream temperatures, store nutrients and sediments, reduce oxygen in water, allow production of pathogens, capture sediments needed downstream);
- Small dams have a 50-100 year life span and after that, deteriorate, often fail and become a human liability;
- The costs of rebuilding a small dam are usually under-estimated while the costs of removal are overestimated;
- Greater climate variability will place additional strain on the integrity of both old dams, online ponds and their associated watersheds;
- Headwater dams and online ponds change the nature of a river and should be considered first for removal.

Policy Rationale and Considerations:

With many thousands of small dams (<4m) (Environment Canada), not including many online ponds, across Canada, the impact on watershed ecosystems is almost incalculable. Human built dams and online ponds affect a river by altering thermal regimes and interrupting the flows of water, nutrients, sediment and organisms

within a river system and its tributaries. Improving connectivity through the removal of old, obsolete small dams promotes the physical health and sustainability of watersheds, their rivers and the species and communities they support. The challenge of small dam removal includes social, cultural, regulatory, ecological and economic issues. Some of these issues may relate to the spread of invasive species. The economic need for most small and old dams has passed. The modification, rationalization and/or removal of small dams and online ponds is of importance to Freshwater Conservation Canada's Mandate and National Conservation Agenda.

Objectives of Policy Statement:

Freshwater Conservation Canada believes that loss of connectivity and thermal pollution are two of the biggest problems facing streams in general and coldwater streams in particular. The careful removal or mitigation of obsolete small online dams and ponds, where assessed to be in the best interests of the watershed, is essential to help our watersheds better cope with greater climate variability and to increase resilience of watersheds to handle higher temperatures and greater variability in flows.

Implications to Organization:

Small dam or online pond removal or mitigation is a time consuming and costly activity that can take several years of preparation and approval for several days of actual work. However, it is an extremely important action for helping improve the health of our watersheds. The social concerns and required permits are often the greatest impediment to removal. The National organization has expertise and should lead removal projects identified by chapters and partners where funding support can be obtained. Most chapters should not lead but can support this type of initiative.

Delivery:

This policy is supported by a background paper and assessment/implementation guides can be prepared on dam removal and mitigation that can be made available for chapters and partners that wish to become more knowledgeable and work through the process of determining best options for small dam and online pond removal or mitigation.

Effective Date: February 25, 2021

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