

PRESERVING THE BOW RIVER

*a key corridor for fish in the
yellowstone to yukon region*



Bow River Valley in Banff by Matt Blank

THE TRUTH ABOUT THE BOW RIVER

The Bow River is one of Alberta's best-known rivers. Flowing from the mountains of Banff National Park, through Calgary and into the prairies, it is a source of drinking water for thousands of people, provides many opportunities for recreation, and generates hydroelectricity for Calgary's homes and businesses. While many people assume the River to be healthy, unfortunately, it is not. The upper Bow River watershed, including the Cascade, Kananaskis and Spray Rivers, is one of the most human-impacted river systems in the entire Yellowstone to Yukon region.

The Bow River starts its journey as a clean, freshwater source. However, before it exits Banff National Park, long before it enters Calgary, it is an ecosystem stressed by hydroelectric dams, culverts that are impassable to fish, introduced non-native fish, water withdrawals and pollution. The pressures and demands on the river are increasing every year. Within Banff National Park, 41.5 percent of running waters in the Bow watershed are now regulated, obstructed or altered by human hands. Outside the Park, the Kananaskis and Spray Rivers are similarly impacted. Past river management practices have damaged water quality and reduced habitat and connectivity for fish within the Bow River watershed. It is now urgent that all river users better understand our impacts on the Bow and take steps to improve the health of the river.



West slope cutthroat trout by Jim Cummins/USFWS

FISH NEED CORRIDORS TOO

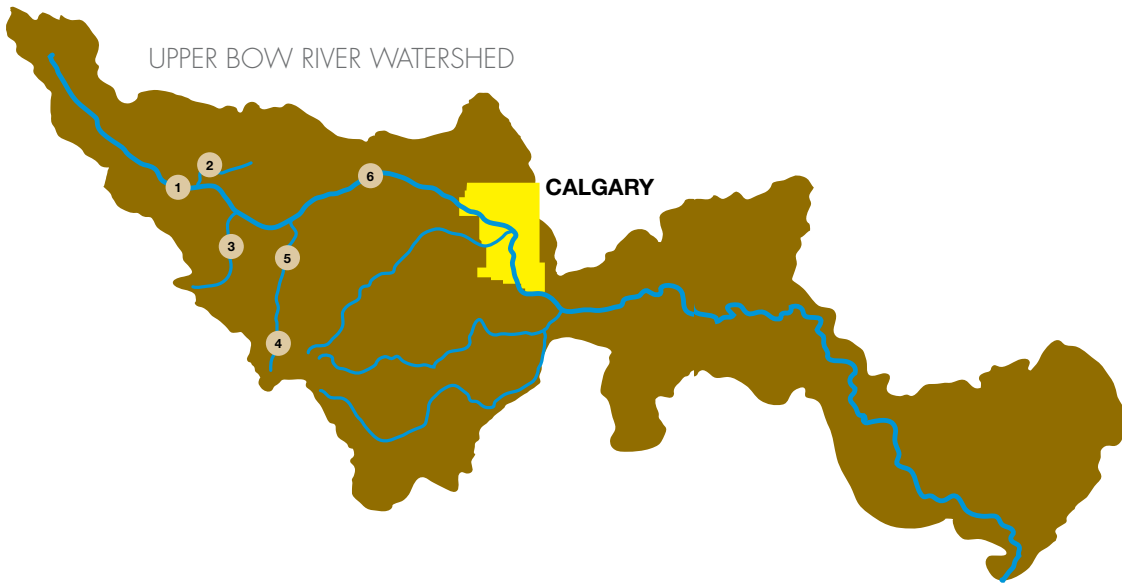
Many people know that large animals like bears and wolves need to travel long distances to meet their biological needs (primarily food and mates). Strategies like wildlife overpasses sometimes are needed to make sure that wildlife can move across the landscape. Fish are no different. They also need to be able to travel up and down streams and rivers to find the right conditions needed to feed or reproduce.

The Yellowstone to Yukon Conservation Initiative (Y2Y) is developing a strategy to identify and preserve the habitat and movement opportunities of key fish species within the region. To launch this work, a study was undertaken for Y2Y by Montana State University's Western Transportation Institute. The study's goal was to assess and understand human-caused changes to the upper Bow River watershed and to assist river managers in their efforts to reverse these impacts.



YELLOWSTONE TO YUKON
CONSERVATION INITIATIVE

UPPER BOW RIVER WATERSHED



MAP LEGEND

- 1 Bow River in Banff
- 2 Cascade River
- 3 Spray River
- 4 Upper Kananaskis Lakes
- 5 Barrier Reservoir
- 6 Ghost Reservoir

CHALLENGES FOR FISH IN THE BOW RIVER

The study examined westslope cutthroat trout and bull trout populations, which are among the original fish inhabitants of the upper Bow system. The changes highlighted by the study are shocking. These fish were once abundant throughout the upper Bow River watershed; today their numbers are greatly reduced. They are now found solely in headwater streams and alpine lakes. Native trout in the upper Bow River have abandoned more than half of their original territory.

The health of native fish is an indicator of the health of the river itself. When native fish are in decline, the health of the Bow River is compromised. By focusing research and restoration efforts on projects that will allow bull and westslope cutthroat trout to return to stretches of the Bow and its tributaries that they once occupied, Y2Y hopes that the health of the entire Bow River ecosystem will be improved.

CAUSES OF FISH DECLINES

The primary factors causing native trout to retreat from their original habitat in the Bow River include:

- barriers to fish movement created by railroad and highway infrastructure (especially poorly-designed culverts) as well as hydroelectric dams
- competition from stocked non-native fish, such as rainbow, brown, brook and lake trout
- water withdrawals by ski resorts for artificial snow-making
- pollution from road de-icing chemicals and
- the effects of global warming.



Highway culvert impassable to fish by Matt Blank

WHAT IS Y2Y?

The Yellowstone to Yukon Conservation Initiative is a non-profit organization working to ensure that human use of the mountainous region from Yellowstone National Park to the central Yukon occurs in ways that will allow wildlife to flourish for centuries to come. Y2Y helps to ready the landscape for the wildlife migrations that will be a necessary response to climate change. Y2Y works with dozens of partners to ensure that land uses and management practices are compatible with the needs of wildlife, including fish.



Bow Watershed by Matt Blank

RESTORING THE HEALTH OF THE BOW

Y2Y believes that a high priority is to increase the ability of fish to migrate by replacing ineffective rail- and road-crossing culverts. Equally important are changes to current dam operations in the Cascade, Spray, and Kananaskis River systems to stabilize stream flows and restore fish movements. In addition, Y2Y recommends the restoration of native fish populations through removal of stocked non-native species in certain locations.

Further research into the Bow River's health is needed to help inform management and restoration actions. This should include (1) continued monitoring of water quality and fish populations, (2) further examination of the effects of water removal, dams, and winter highway maintenance, and (3) a review of the impacts of angling. In addition, an understanding of possible scenarios relating to climate change is important in the Bow River system.

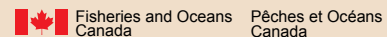
A healthy Bow River means a sustainable water source for humans, fish, and wildlife in the Bow Valley. Y2Y will undertake more research and facilitate future efforts to restore the river. To learn more and obtain a copy of Y2Y's Bow River aquatics study, visit www.y2y.net.

WHAT YOU CAN DO

- Conserve energy in your home to reduce the impact of hydroelectric dams on fish habitat. Check out your options at www.onesimpleact.alberta.ca/docs/ACT_Save_Energy.pdf
- Volunteer for organizations working to restore fish habitat in the Bow Watershed. Contact Trout Unlimited Canada at www.tucanada.ca.
- Find out more about the health of the Bow River from WaterMatters (www.water-matters.org) and the Bow River Basin Council (www.brbc.ab.ca).
- Volunteer to be contacted by Y2Y for future river restoration projects by visiting www.y2y.net.
- Support Y2Y's efforts to help restore native fish populations in the upper Bow River. Visit www.y2y.net and click on the Donate Now button.
- Learn more by downloading a full copy of Y2Y's Bow River study from www.y2y.net.

Y2Y wishes to thank the following organizations for their assistance with the Bow River aquatics study: Western Transportation Institute, Parks Canada, Alberta Fish and Wildlife, and Bow Headwaters Chapter of Trout Unlimited Canada. Much of the information about impacts to fish habitat in the upper Bow River is available because Parks Canada has undertaken a systematic survey of culverts within the National Park and is working to restore fish movements.

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The contents of this brochure are the sole responsibility of the Yellowstone to Yukon Conservation Initiative and may not reflect the opinions of supporting organizations.

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