BACKGROUNDER

Parks Canada Conservation Results in the Rocky Mountain National Parks

Restoring Important Ecosystem Processes:

Fish Culverts:

- In 2005/06, biologists assessed 600 culverts that cross under main roads and connect potential fish habitat in the seven mountain national parks. The results showed that more than two thirds of these culverts could be fully or partially blocking fish movement.
- Parks Canada invested $954,000 to improve water culvert design to improve fish movement and restore habitat connections to improve the health of aquatic ecosystems in Banff, Jasper, Yoho, Kootenay, Mt. Revelstoke, Glacier and Waterton Lakes national parks. Culvert restorations are important because they reestablish fish access to important habitats for spawning, rearing, feeding and overwintering.
- The four year Restoring and Reconnecting Our Waters Action on the Ground project aims to complete detailed plans for the top 20 culvert restoration priorities in the seven mountain national parks.
- To date, restoration work is complete on several culverts in Kootenay National Park including those at Nixon, Sinclair, Km 54, Bubbling Spring, Vermilion and Dolly Varden. Work is also completed on culverts at Cottonwood, Cabin and Pyramid creeks. In addition, as part of the Trans-Canada Highway Twinning Project, every highway culvert from Castle Junction to Lake Louise was upgraded or replaced.

Highway Mitigation Work, Parks Canada's International Leadership:

Trans-Canada Highway Twinning Project, Banff National Park

- Thirty years ago, the Trans-Canada Highway twinning project was initiated by Parks Canada to make roads safer for motorists and animals, improve the flow of goods and services on Canada's national highway, and to facilitate wildlife movement and re-connect vital habitat in Banff National Park.
- Parks Canada is a global leader in road ecology and has supported monitoring of wildlife crossing structures in Banff National Park every year since 1996, the longest year-round highway wildlife monitoring program in the world. As a significant partner in and the largest funder of Trans-Canada Highway wildlife monitoring and research, Parks Canada recently contributed $1 million to support a long-term collaborative wildlife research project based in Banff National Park.
- In light of this innovative thinking, today Banff National Park is home to more than 84 kilometres of highway fencing and 44 wildlife crossing structures, helping to reduce wildlife-vehicle collisions in Banff National Park by more than 80% for all animals, and more than 96% for elk and deer alone. Since 1996, large animals – including grizzly bears, cougars and lynx – have safely crossed the Trans-Canada Highway in Banff National Park more than 200,000 times via a wildlife overpass or underpass.

Highway 93 South, Kootenay National Park

- Inspired by the success of the Trans-Canada Highway twinning project in Banff National Park, Parks Canada is now moving forward with highway wildlife improvements in British Columbia's Kootenay National Park along Highway 93 South. The objectives of this project are to improve wildlife connectivity while making the road safer for motorists and animals alike. The construction of three kilometres of wildlife enclosure fencing along a road kill "hotspot" and at least one animal underpass are key components of this project.

The Bow Valley Parkway (Action Plan):

- On November 30, 2011, Parks Canada announced a suite of enhanced protection, visitor experience, and educational actions along the Bow Valley Parkway in Banff National Park, including a mandatory, seasonal, evening travel restriction of a17-kilometre segment at the east end of the parkway. The mandatory travel restriction is part of a larger action plan to ensure the ecologically and culturally rich Bow Valley Parkway area is a world-class setting for visitors to learn about and experience the park, and as a safe and secure environment for wildlife.
- The Bow Valley Parkway traverses some of the best wildlife habitat in Banff National Park – a rich mix of wet floodplain meadows and thickets, aspen forests, dry grassy slopes and ancient Douglas fir stands. This part of the Bow Valley lies in the montane eco-region, a small but vital part of the park that supports the majority of wildlife species and provides critical habitat for large carnivores including wolves, cougars and grizzly bears.

Invasive Species Management:

- To reduce invasive species Parks Canada staff use a variety of methods, including hand-pulling, cutting, digging and spraying. Native seeds are sown at disturbed sites to assist with their recovery.
- Parks Canada team members and volunteers participate in non-native plant (such as Canada thistle and the ox-eye daisy) removal in many of Canada's mountain national parks.
- At the 2010 Knapweed Rodeo in Waterton Lakes National Park, 57 volunteers contributed 419 weed-pulling hours and filled 86 large Knapweed-filled garbage bags. These efforts prevented an estimated 10 million Knapweed seeds from spreading throughout the Blakiston Fan.
- That same year, a weed crew spent 444 person-days pulling an incredible 7,600 kg of invasive non-native plants in the Jasper townsite, along park roadways and in wilderness areas.

Railway Mitigation:

- Since the 1980s, Parks Canada's actions have greatly reduced human-caused wildlife mortality in the mountain parks, including the installation of leading-edge wildlife crossing structures, highway fencing, reduced speed zones, waste management and roadside visitor education. A variety of educational programs are

also in place to help reduce human-wildlife conflicts in park townsites, campgrounds and other areas.

- While trains are now the leading cause in human-caused grizzly bear mortality in Banff and Yoho national parks, there is renewed optimism for reducing the risks to grizzly bears and other animals in the park that regularly travel along the railway.
- In October 2010, Canadian Pacific and Parks Canada announced a joint action plan, including Canadian Pacific's establishment of a $1-million research fund to be administered cooperatively with Parks Canada. Over the course of the next four years, strategic investments will be made to fund research on the root causes of bear-train collisions. The research fund will also be used to develop and test promising new approaches aimed at reducing grizzly bear mortality on the rail line through Banff and Yoho national parks.
- In the coming weeks, Parks Canada and Canadian Pacific will announce the first round of research funding and projects stemming from the Joint Action Plan. Projects will be tested and supported by robust monitoring to determine effectiveness and work will begin in spring 2012, pending approval of animal care protocols.

Devon Lakes Restoration Project:

- Since 2002, Parks Canada and the University of Alberta have collaborated on a research and restoration program to eliminate Brook trout from Lower and Middle Devon Lakes, as well as the upper 4 km of the Clearwater River, and to restore aquatic invertebrates within the lake ecosystem.
- 5,163 non-native Brook trout were successfully removed from the Devon Lakes system (this was something many deemed 'impossible' to achieve). Removal by netting and electro-fishing represents a significant scientific achievement never before accomplished. Non-native fish removal was completed without the use of chemicals or dewatering.
- Early monitoring results indicate invertebrate populations within the lakes are returning to their natural state. This project illustrates the importance of learning from, and correcting, past mistakes.

Prescribed Fire:

- Parks Canada is a world leader in fire management. Pioneered in Banff National Park, the reintroduction of fire to mountain park landscapes has reduced the risk of catastrophic wildfire and improved forest health by increasing biodiversity and variation in the number of plants and animals.
- Since 1983, in Banff National Park alone, 83 prescribed burns have taken place, restoring fire to more than 25,000 hectares, with a goal of restoring 50% of the long-term fire cycle. Prescribed fires makes forests in national parks less susceptible to insect infestations such as by the mountain pine beetle.
- Action on the Ground funding – an $8.45 million project was implemented to restore diverse plant and forest communities and reduce the spread of mountain pine beetle through the use of prescribed burn programs in Banff, Jasper, Yoho and Kootenay national parks

Action to protect Iconic Species:

Consultation on Plains Bison Re-introduction in Banff National Park:

The first priority for national parks is to restore and maintain healthy ecosystems for the benefit of Canadians now and into the future, that's why we are consulting with stakeholders, First Nations and Canadians regarding the potential re-introduction of bison to Banff National Park.

- The 2010 Banff National Park Management Plan commits Parks Canada to reintroduce the extirpated plains bison to the park. Considerable public support for bison reintroduction and media attention were received during park management plan consultations.

Other bison-related leadership:

- Elk Island National Park has played a key role in the conservation of both plains bison and wood bison since 1907. Some of the world's last plains bison were brought to the park and the species began its recovery from the brink of extinction. Through the years, the park has provided 778 plains bison, and 668 wood bison to conservation initiatives around the world. In Canada, relocations have been made in British Columbia, Alberta, Saskatchewan, Manitoba, Northwest Territories and the Yukon. Internationally, the Park has supported the relocation of bison to Russia, and to Alaska and Montana in the U.S.

Wolverine Research:

- Some of the $1 million of contribution funding provided by Parks Canada for Trans-Canada Highway research has focussed on studying wolverine populations, their genetic diversity, and how wildlife crossing structures play a role in their long-term movement and survival. Research from this study will help us gain insights into how roads affect wolverine genetic diversity and movement and will also shed light on wildlife crossing structure design preferences for wolverines in North America.
- Information about wolverines and crossing structures are virtually unknown, so it was a significant event in November 2011 in Banff National Park when a wolverine was observed via remote camera using a wildlife overpass for the very first time.
- In order to better understand the dispersal of this illusive species, Mount Revelstoke and Glacier national parks are piloting a wolverine DNA project to learn about the genetic exchange of wolverines across the Trans-Canada Highway and Canadian Pacific rail line in Glacier National Park. The results from the wolverine study, along with earlier data, will be used to determine future wolverine habitat and connectivity protection actions.

Grizzly Bears:

- Great strides have been made to ensure healthy grizzly populations in Banff National Park. Examples include, world-renowned crossing structures and highway fencing, electric fencing at the Lake Louise campground, bear-proof garbage bins, an extensive public education program that includes roving Bear Guardians on secondary park roads, realignment of trails and a relocation of a backcountry campground in the Lake Louise area (ensuring grizzly access to important habitat while allowing visitors to recreate), seasonal group hiking requirements in Lake Louise, and on the Minnewanka Lakeshore Trail and securing wildlife corridors (reclamation of the old Wheeler House site and removal of facilities in the Cascade Wildlife Corridor).

- As the Joint Action Plan with Canadian Pacific unfolds, Parks Canada will develop and test, with third parties, promising new approaches aimed at reducing grizzly bear mortality on the rail line through Banff and Yoho national parks.

Whitebark Pine restoration:

- These slow-growing, long-living trees plays a vital role in Waterton Lakes' ecosystem as they help stabilise steep slopes, influence the rate of snow melt and provide food, cover and shelter for many wildlife species in sub-alpine ecosystems.
- Threats to the Whitebark pine include white pine blister (an invasive, non-native fungus), mountain pine beetle and removal of fire from the landscape. Loss of these trees would radically change the Rocky Mountain sub-alpine system as we know it.
- To ensure this valuable tree species remains on the landscape for years to come, seeds were collected from pine cones. Special cages were fastened around the cones to protect them from birds and squirrels until the mature cones can be retrieved.
- Most of the seeds collected will be used to grow seedlings for use in restoration projects.
- To date, thanks to the help of visitors and volunteers, more than 2,800 Whitebark pine seeds were collected. More than 2,500 of these seeds have already been planted.

The Banff Springs Snail:

- The Banff Springs snail is endangered in Banff National Park. This mollusc lives in six natural hotsprings along the slopes of Sulphur Mountain and is found nowhere else on Earth. No bigger than a lemon seed, the snail made history in 1997, when it became the first mollusc to be designated/listed as threatened by the Committee on the Status of Endangered Wildlife in Canada. Banff National Park authored the first endangered species recovery plan in Canada under the *Species at Risk Act*.
- Due to natural changes in water temperature and dissolved mineral composition, snail numbers can fluctuate dramatically throughout the year. In 2010, the Kidney Springs population went from a high of 4,024 individuals in May, to 37 snails in July. Fluctuating snail populations and water levels at the thermal springs are considered normal. However, Parks Canada is devising an emergency and recovery and maintenance program should snail populations fall to untenable levels as a result of human impacts.
- Parks Canada has increased the profile of the snail at local, regional and national levels through extensive engagement with staff, residents and visitors from around the world, helping people connect with species at risk. Parks Canada's ongoing Research and Recovery Program has increased knowledge and understanding of snail ecology and thermal spring ecosystems, and built awareness and support for the Banff Springs Snail recovery.
- As part of the Cave and Basin Renewal Project, Parks Canada has developed a turbidity monitoring program because construction activities have the potential to affect thermal water properties and therefore alter the critical habitat of the endangered Banff Springs Snail.

Cutthroat Trout:

- Westslope cutthroat trout are native to the mountain national parks. This species is declining significantly throughout its range in British Columbia, and was recently listed as a species of Special Concern under Canada's *Species at Risk Act*.

- In Yoho, the species appears to be locally extirpated in its historic range. However, as a result of past stocking in areas outside their historic range, they occur in lakes in the O'Hara Valley.
- An education campaign was launched in 2008 to encourage voluntary catch and release of cutthroat trout in Lake O'Hara to ensure healthy future populations. In 2009, the Westslope cutthroat trout possession limit in all of Yoho National Park was lowered to zero from two fish to protect this pure, localized population.
- A DNA inventory in Kootenay National Park showed that cutthroat trout are largely occupying traditional habitat, with the exception of lakes.
- Hybridization with rainbow trout is one of the most pressing threats facing the species. Hybridization has been found in all areas, with the exception of the north end of the park (Kootenay). Future restoration of cutthroat trout to Olive Lake is under consideration.

Caribou:

- The Parks Canada Conservation Strategy for Southern Mountain Caribou in Canada's National Parks will guide conservation actions in Banff, Jasper, Mount Revelstoke and Glacier National Parks. Throughout this strategy, Parks Canada is exploring methods to reverse the decline of Woodland caribou using a range of measures. These include seasonal trail and area closures, and managing the density of alternative prey species for caribou predators. Current research and ongoing monitoring are contributing to the sound science used to identify important caribou habitat on national park lands and identify potential conservation actions.
- To maintain a healthy population of Southern Mountain Woodland caribou on the landscape, Parks Canada, the Government of British Columbia and the Calgary Zoo have agreed to work collaboratively on a caribou captive breeding program as part of the *Conservation Strategy for Southern Mountain Caribou in Canada's National Parks*.
- The goal of the program is to build a source population that could be used to supplement several small herds in Jasper National Park, British Columbia and potentially Mount Revelstoke and Glacier national parks. Animals from this program could also be reintroduced into Banff National Park, where the only known resident herd was destroyed by an avalanche in spring 2009.
- The investment to support the caribou recovery plan for Jasper, Banff, Glacier and Mount Revelstoke national parks is $4.5 million (Action on the Ground funding).

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