

## **ENVIRONMENTAL IMPERATIVES AND THE ENGINEERING INTERFACE: HOW TO MAKE HARD DECISIONS**

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### **Abstract**

Parks Canada has been engaged in upgrading the Trans-Canada Highway in Banff National Park since 1979. A severe wildlife/vehicle collision problem existed and was predicted to worsen unless mitigation measures were employed. Permission to twin the highway from two lanes to four lanes was granted in phases, subject to exceptional environmental protection measures. Forty-five kilometers of highway have been twinned with 2.4-m-high fences and 24 large crossing structures. Parks Canada now is planning a 33-km continuance of the highway twinning project, with a 12-km segment presently under construction. Innovative environmental protection measures, based on the successes of earlier initiatives, are being employed.

The most obvious of these measures have been fences and wildlife crossing structures to safeguard the rich assembly of wildlife resident or transient in the Bow River Valley. Valued ecosystem components include 12 species of large, highly transient Rocky Mountain wildlife, all subject to habitat fragmentation and vehicle collision. The species include protected native fish, Harlequin ducks, and a rich biodiversity in a high profile World Heritage Site. Parks Canada has a legal duty to maintain or restore ecological integrity in such undertakings.

Research, planning, and design have high visibility in the presence of a motivated public who vigorously express divisive viewpoints. This presentation will explain:

- How new designs respond to scientific imperatives
- Science and social lessons learned
- How to manage the confrontation of rhetoric and reality
- How the future looks different than the past

**Biographical Sketches:** Martin Jalkotzy is a Senior Wildlife Ecologist with Golder Associates in Calgary, Alberta. Martin will be the senior reviewer and will provide on-going strategic direction throughout the project. He has authored or co-authored nine refereed publications and over 40 technical reports and papers and has filled the role of technical and quality assurance editor for several environmental assessments. During his 27 years as a wildlife biologist, he has specialized in the effects of human development on wildlife. He recently acted in a senior role during Golder's environmental assessment of twinning the Trans-Canada Highway from Castle Junction to the Continental Divide, which included a review of the effects of the project on grizzly bears, black bears, harlequin ducks, and boreal toads. Over the last two years, he coordinated a review of the cumulative effects of development on the Castle Carbondale region of southwestern Alberta. He was an invited wildlife specialist on the East Kootenay wildlife winter-range committee, which included the assessment of the effects of development on moose, elk, bighorn sheep, mountain goats, and caribou. He completed an exhaustive review of the effects of linear corridors on wildlife, which included an examination of the effects of recreational development. His species-specific research in Banff National Park examined the effects of front and backcountry recreational use on habitat effectiveness for grizzly bears. Most projects involved the application of GIS to deal with spatially complex issues. His experience integrating GIS into complex projects will be an asset to this project.

Dr. Bruce Leeson has lived and worked in the Rocky Mountains since 1969. After graduating from Montana State University in 1972, Bruce took a position as an environmental scientist with Parks Canada, where he has since worked, primarily in the National Parks of western and northern Canada, most of them World Heritage Sites. Bruce's work has focussed on environmental planning, impact assessment, and stewardship issues inherent in managing protected areas. Bruce has worked on highways and wildlife issues since 1972, with responsibility for the environmental-planning elements of the Trans-Canada Highway through Banff National Park. Forty-seven km of highway have now been twinned and fenced with 23 wildlife-crossing structures. Positive results for wildlife and people have been exceptional. Dr. Leeson recently was Director of Environmental Affairs for the 2002 Kananaskis G8 Summit. Although Bruce has returned to his position as Senior Environmental Assessment Scientist for Parks Canada—Western, his involvement with G8 continues as Senior Environmental Advisor to undertake the Kananaskis G8 Environmental Legacy projects to enhance wildlife-habitat connectivity.