

Updates

New Study Calls for Reduction in Road Density in Grizzly Bear Range

It has been known for a long time that roads and motorized access have a strong negative effect on grizzly bears, and a newly-released report adds more fuel to the fire. The report, *Vehicle traffic shapes grizzly bear behaviour on a multiple-use landscape*, by Northrup et al was published in the *Journal of Applied Ecology* in August 2012.

Roads are known to lead to higher grizzly mortality rates through a number of mechanisms. A 1998 study of grizzly mortality in the Alberta Central Rockies Ecosystem found that 89 percent of human-caused mortalities occurred within 500 metres of a road on provincial lands, and in National Parks 100 percent of human-caused mortalities were within 200 metres of a road or trail (Benn 1998). Animals may be killed directly on roads, but more importantly roads bring people into direct contact with bears, and bears die through hunting, poaching, mistaken identity or the creation of “problem” bears. Compounding the problem, roads may actually attract bears, by providing ample food opportunities and easier movement corridors, but those bears are more likely to die there. To put it simply, more roads mean more dead grizzlies.

The Northrup et al study area consisted of 3,000-km² of grizzly bear range from the U.S. border north to Highway 3, including Waterton Lakes National Park and the Castle. Traffic rates were measured using remote traffic counters and trail cameras, and the effect on bear behaviour was measured on 14 grizzlies fitted with global positioning system (GPS) radio collars. Within this study area 2,273 km of roads were measured, at a density of 0.73 km/km² (or 21 percent higher than the maximum 0.6 km/km² recommended for core grizzly range in the province’s 2008 grizzly recovery plan). Traffic volumes were classified as “low” (fewer than 20 vehicles per day), “medium” (20-100 vehicles per day), or “high” (more than 100 vehicles per day)

The effects of traffic volumes on grizzly bear behaviour were clear. “Roads cause functional habitat loss, alter movement patterns and can become ecological traps for wildlife.” Bear behaviour was affected in a number of

different ways, including:

- Avoidance of roads receiving moderate traffic and strong avoidance of high use roads at all times.
- Selection for areas near low traffic roads over higher-use roads.
- Increased night-time use of areas near roads and movement across roads during the night when traffic was low.
- Increased likelihood of bears crossing low traffic roads compared to higher-use roads.

An additional effect of high levels of motorized access in the forested public lands to the west of the study area is the possibility of bears being displaced onto private lands to the east, where mortality risks may be higher: “In addition, bears selected private agricultural land, which had lower traffic levels, but higher road density, over multi-use public land.” This would seem to corroborate the findings of groups such as the Drywood Yarrow Conservation Partnership, which have been recording increased numbers of grizzly sightings on private land (see earlier article on page 5 of this issue).

Scientific studies are, of course, only part of the picture. Where it all falls down is that science seems to play only a small part in land management decisions in Alberta. Studies take place and recommendations are made, but these rarely seem to result in any positive changes to management practices. The province’s 2008 grizzly recovery plan, for example, was clear that “human use of access... is one of the primary threats to grizzly bear persistence,” but in the intervening years, progress to reduce that access has been minimal.

The new Northrup et al report is also clear that changes are needed. “Future management plans should employ a multi-pronged approach aimed at limiting both road density and traffic in core habitats,” the authors emphasize. “Access management will be critical in such plans and is an important tool for conserving threatened wildlife populations.” Let’s hope that the provincial government is ready to start listening this time.

- Nigel Douglas