

Small populations of grizzly bears in the U.S.–Canada Transborder Region: Introduction to the workshop proceedings

Papers in this supplement were presented at the Border Bears Workshop “*Small populations of grizzly bears in the U.S.–Canada Transborder Region: How can we work together to enhance recovery?*” in Sandpoint, Idaho, USA on 2–4 December 2002. The workshop was initiated by The National Wildlife Federation, which organized the workshop along with representatives from the U.S. Fish and Wildlife Service, the U.S. Forest Service, Idaho Department of Fish and Game, and the University of Calgary. The workshop was attended by >200 people, including U.S. and Canadian residents, agency biologists, university scientists and students, public officials, representatives from timber and other industry groups, and representatives from conservation organizations.

The workshop was held in conjunction with the winter meeting of the Interagency Grizzly Bear Committee (IGBC). The IGBC is the organization of state, provincial, and federal land and resource management agencies that developed and is charged with implementing recovery plans for grizzly bears (*Ursus arctos*) in the U.S. south of Canada. The IGBC has 5 subcommittees, each charged with the recovery of grizzly bears in an area: the Greater Yellowstone Ecosystem (GYE), Northern Continental Divide Ecosystem (NCDE), the Bitterroot Ecosystem (BE), the North Cascades Ecosystem (NCE), and the combined Cabinet–Yaak (CYE) and Selkirk (SE) ecosystems. By holding their winter meeting in one of the areas that was the focus of the workshop, the IGBC exposed itself to a different set of voices than it typically hears during meetings in the GYE or NCDE. We believe the IGBC, residents, and local officials benefited from exchanges during the workshop and during the following IGBC meeting.

This workshop focused on the endangered grizzly bear populations in the CYE, SE, and NCE recovery areas on both sides of the U.S.–Canada border (hereafter “transborder” populations). Grizzly bear populations in these areas are small and largely isolated from larger neighboring populations. There is no verified permanent population of grizzly bears on the U.S. side in the NCE. The population on the British Columbia, Canada, side of the NCE, is considered the most endangered grizzly population in Canada (McLellan and Banci 1999). The CYE population is potentially a stepping stone for natural dispersal into the BE (where grizzly bears were exterminated by the 1940s) by grizzly bears from pop-

ulations to the north or east. Since grizzly bears were listed as threatened under the U.S. Endangered Species Act (ESA; 16 U.S. Code 1531–1544) in 1975, recovery efforts in these areas (USFWS 1993) have not increased populations, although these efforts have succeeded, so far, in avoiding extinction of these small and vulnerable populations. In 1999, grizzly bears in the Cabinet–Yaak and Selkirks were reclassified as warranted for listing as endangered under the U.S. ESA (U.S. Fish and Wildlife Service 1999).

Workshop organizers attempted to identify the most important topics that needed to be addressed to improve the status of these populations and invited experts in these areas to speak on these topics. The organizers also advertised for papers and a number of non-invited papers were received and presented. The papers in this volume were accepted following peer review.

Public outreach sessions

In addition to technical presentations, the workshop included 3 sessions intended to augment communication and understanding between persons making technical presentations and local officials, organizations, and members of the public interested in or concerned about grizzly bears in the transborder populations. The first of these sessions was an evening slide show titled “Living with giants: Bears and people on Kodiak Island, Alaska” by L. Van Daele (Alaska Department of Fish and Game, Kodiak, Alaska, USA). This session illustrated how rural people, much like those in the communities in the transborder region, have learned to live with and benefit from an extremely high density bear population in Alaska.

The other 2 public outreach sessions were facilitated by S. Munther (Munther Mediation Resources, Missoula, Montana, USA). The first of these included 20 residents, officials, community leaders, businesspersons, and environmentalists, all from the transborder regions, selected by conference organizers to discuss their concerns and interests in grizzly recovery efforts. These participants prepared reports on topics of interest or concern to them, and representatives chosen by session participants submitted oral reports to the IGBC during their meeting following the workshop. A summary of these reports is available from S. Miller.

The second public outreach session provided an opportunity for interaction with a panel of scientists

speaking during the technical sessions, wildlife managers from state and federal agencies, and community leaders. This session included an opportunity for questions and statements from all workshop participants.

Demographic issues

Demographic issues confronting the small grizzly populations in the transborder region are examined in 3 papers from these proceedings. Wakkinen and Kasworm (2004) evaluate demographic data collected during their 19 years of field studies of the Selkirk and Cabinet–Yaak populations. W. Wakkinen is the Idaho Department of Fish and Game biologist working on grizzlies in the Selkirks and is based in Bonners Ferry. W. Kasworm is the U.S. Fish and Wildlife Service biologist working on grizzly recovery in the Cabinet–Yaak population and is based in Libby, Montana. Their analysis of demographic data presents the best available science (wide confidence intervals are unavoidable when working with the small sample sizes available for these endangered populations).

The importance of grizzly bear mortality caused by humans is explored in a model developed by Mattson and Merrill (2004). Their model uses empirical data on locations of bear observations from researchers studying the Cabinet–Yaak population to evaluate the current and projected importance of human-caused bear mortality as a constraint to grizzly bear population growth in this area.

A future paper will include simulations completed subsequent to the workshop. Proctor et al. (2004) evaluate the relative demographic utility of various management strategies in recovering very small populations of grizzly bears. These authors conclude that a full range of strategies must be employed to achieve recovery and prevent extinction in the near term. These strategies include population augmentation, reductions in human-caused mortality, and linkage with other grizzly populations.

Habitat issues

Early pioneering work by McLellan and Shackleton (1988) and Mace et al. (1996, 1999) demonstrated the importance of roads in reducing grizzly bear density. Following up on this work, Summerfield et al. (2004) examine trends in road density in grizzly bear habitat in the Selkirk and Cabinet–Yaak populations. These authors are U.S. Forest Service biologists with, collectively, 48 years of experience in the National Forests where grizzly bears in these recovery areas live. These authors conclude that under current Forest Service plans, road density has declined in recent years in these 2

ecosystems. They suggest that these reductions in road density may have played an important role in avoiding extinction of these populations so far.

The importance of highways in fragmenting grizzly bear habitat was convincingly demonstrated with innovative studies using DNA analyses to illustrate barriers posed by high-use roads in limiting flow of genetic material between subpopulations (Proctor 2003). For the Border Bears Workshop, Proctor et al. (2004) reviewed these studies and expanded them with simulation studies illustrating the range of demographic impacts caused by such fragmentation.

The process of extinction of small grizzly populations follows a pattern of isolation, habitat shrinkage, and excessive human-caused mortality (Servheen 1990, 1999; USFWS 1993, Mattson and Merrill 2002). Singleton et al. (2004) use geoprocessing technology to identify potential linkage zones in the North Cascades of northwestern Washington State in the U.S. and southwestern British Columbia in Canada. These authors believe that reducing fragmentation of grizzly bear populations in these areas will be most profitable to recovery after grizzly bears are restored to the NCE. Parallel results for the SE, CYE, NCDE, and BE were presented by Servheen et al. (2003).

Management and human dimensions

Grizzly bear recovery cannot be separated from the social and political environment where the bears must survive. Grizzly bears represent both perceived and real economic and physical threats to some interests and perceived and real advantages and benefits to others. Any successful recovery effort must recognize and deal with this reality. In a democracy, solutions that work for bears but ignore the concerns of people living in bear habitat have little chance of success.

Early studies on the effects of roads on grizzly bear populations occurred in U.S.–Canada transborder areas near the grizzly populations that were the focus of this workshop. Mace et al. (1996, 1999) conducted the first of these studies on the U.S. side of the border. Mace (2004) presents the history of the first systematic effort to implement these scientific findings and documents the problems encountered on the interface between science and the political–human dimensions of this issue.

Primm and Wilson (2004) present an approach toward building public support for establishing and maintaining linkage zones in grizzly bear habitat. These authors are working on community outreach projects in the GYE and NCDE grizzly bear recovery areas. Their prescription for such efforts acknowledges the vital importance

of involving local communities in the initial stages of planning for linkage zones.

M. Austin, currently the Chair of the North Cascades Ecosystem Subcommittee of the IGBC, is also the provincial biologist in charge of grizzly bear planning efforts in British Columbia. For these proceedings, Austin (2004) reviews past and current grizzly bear planning efforts in British Columbia and evaluates the strengths and weaknesses of these efforts, which include outreach to interested and affected communities. Augmentation of the endangered population north of the U.S.–Canada border is a part of this recovery effort, and the efforts to implement this are pertinent to similar efforts in the transborder region further east (southeastern British Columbia, southwestern Alberta, northern Idaho, and northwestern Montana).

Because grizzly bear recovery efforts are typically confronted with suspicion and fear based on misinformation, information and educational efforts are part of any successful recovery efforts. Morgan et al. (2004) describe their ongoing effort to replace misinformation with correct information in the NCE of Washington state. It is too early to evaluate their program's success in changing attitudes toward grizzly bear recovery in this area, but it is clear that recovery cannot occur without such efforts.

Other factors

Other pertinent topics were discussed at the workshop, but papers on these topics were not available for these proceedings. Especially noteworthy among these: L. Waits (University of Idaho, Moscow, Idaho, USA) reviewed the evidence for genetic problems caused by constraints characteristic of small populations of animals in a number of taxa. Some elements discussed in this presentation are included in Proctor et al. (2004). C. Servheen (U.S. Fish and Wildlife Service, Missoula, Montana, USA) and coauthors reviewed the persistence and extinction patterns of small populations of grizzly (brown) bears around the world; they concluded that some small populations of grizzly bears persist longer than population viability models suggest they should, and managers of such populations should not despair. An expanded version of this paper was featured at the 15th International Conference for Bear Research and Management (San Diego, California, USA, February 2004). B. McLellan (British Columbia Forest Service, Revelstoke, British Columbia, Canada) presented the results of his previously published research on the pattern of grizzly bear dispersal. McLellan and Hovey

(2001) concluded that for natural augmentation to occur, corridors between populations must be wide enough for male bears to live in for up to a year with little risk of being killed. M. Johnson (Defenders of Wildlife, Missoula, Montana, USA) presented their program for compensating livestock owners for losses incurred by wolf (*Canis lupus*) and grizzly bear predation. Depredation losses to grizzly bears are infrequent in the transborder region, but this presentation demonstrated Defender's commitment to address economic concerns of residents.

Summary

Successful recovery of grizzly bears in the small and endangered populations along the U.S.–Canada border requires simultaneous application of a suite of management strategies detailed in Proctor et al. (2004). Portions of this manuscript dealing with management strategies for grizzly recovery were developed after the workshop in an effort by conference organizers to provide a template for future efforts.

The management strategies in Proctor et al. (2004) are well known and include such techniques as population augmentation, habitat protection, linkage zone management, mortality reduction, improved sanitation, and greater community outreach. Wildlife managers have used similar tools for decades in efforts to rebuild populations of many wildlife species. However, so far managers have not simultaneously implemented these techniques to rebuild transborder grizzly bear populations in the nearly 30 years that have elapsed since these populations were listed under the ESA. This lack of success is largely a result of a lack of funding to accomplish these important management tasks. We have the tools, knowledge, and personnel to successfully address the problems facing these small populations of grizzly bears. A scientific rationale and a plan of action for management success will be presented in Proctor et al. (2004). An adequate funding commitment by responsible agencies, particularly the U.S. Fish and Wildlife Service, is necessary to prevent the extinction of these populations.

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