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Please note that these proceedings are not a peer-reviewed publication. The research presented herein is a compilation of the technical papers and posters selected for presentation at the 2011 International Conference on Ecology and Transportation. Presentations were selected by the ICOET 2011 Program Committee based on a set of criteria that included relevance to the conference theme and applicability of research results. Presentations included in this document may be in full paper or abstract format. Contact information for the authors is provided where possible to encourage further networking among conference participants and other professionals about current research applications and best practices in the transportation/ecology field.

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USE OF WILDLIFE CROSSING STRUCTURES ON US HIGHWAY 93 ON THE FLATHEAD INDIAN RESERVATION IN MONTANA

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ABSTRACT

In the 1990s, Montana Department of Transportation (MDT) proposed an expansion of U.S. Highway 93, in an area entirely within the Flathead Indian Reservation (FIR), home to the Confederated Salish and Kootenai Tribes (CSKT). In December 2000, the CSKT, MDT, and Federal Highway Administration (FHWA) signed a memorandum of agreement that enabled its expansion. It included wildlife mitigation measures to both mitigate impacts to wildlife and natural processes associated with the widening of US93 as well as to address the safety of the traveling public.

Mitigation measures include 41 fish and wildlife-crossing structures, including 40 underpasses and one overpass, wildlife fencing, jumpouts, and wildlife crossing guards across 56 miles of highway. Crossing structures were placed in areas that have a history of wildlife crossings and wildlife mortality, and/or locations where the surrounding landscape and land use was best suited for the crossing structures.

Research is underway to determine the effectiveness of the mitigation (see www.mdt.mt.gov/research/projects/env/wildlife_crossing.shtml). Between May 2008 and December 2009, eleven underpasses were monitored for wildlife use. Wildlife use of the structures was substantial with 3,000 deer crossings, 1,500 coyote crossings, 300 bobcat crossings, 200 raccoon crossings, and 200 black bear crossings. Other species that used the crossings include mountain lion, elk, grizzly bear, moose, badger, river otter, muskrat, beaver, skunk, rabbit, and various bird species. For the wildlife mitigation measures to be considered successful, goals have been set by the CSKT, MDT, and FHWA, and more data need to be collected and analyzed before the researchers can conclude whether the mitigation measures have indeed reached those goals.

BIOGRAPHICAL SKETCHES

Marcel P. Huijser was the terrestrial principle investigator for the I-70 Eco-Logical Project. He received his M.S. in population ecology (1992) and his Ph.D. in road ecology (2000) at Wageningen University in Wageningen, The Netherlands. He studied plant-herbivore interactions in wetlands for the Dutch Ministry of Transport, Public Works and Water Management (1992-1995), hedgehog traffic victims and mitigation strategies in an anthropogenic landscape for the Dutch Society for the Study and Conservation of Mammals (1995-1999), and multifunctional land use issues on agricultural lands for the Research Institute for Animal Husbandry at Wageningen University and Research Centre (1999-2002). Currently Marcel works on wildlife-transportation issues for the Western Transportation Institute at Montana State University (2002-present) and he is a member of the Transportation Research Board (TRB) Committee on Ecology and Transportation. Marcel Huijser received his M.S. in population ecology (1992) and his Ph.D. in road ecology (2000) at Wageningen University in Wageningen, The Netherlands. He studied plant-herbivore interactions in wetlands for the Dutch Ministry of Transport, Public Works and Water Management (1992-1995), hedgehog traffic victims and mitigation strategies in an anthropogenic landscape for the Dutch Society for the Study and Conservation of Mammals (1995-1999), and multifunctional land use issues on agricultural lands for the Research Institute for Animal Husbandry at Wageningen University and Research Centre (1999-2002). Currently Marcel works on wildlife-transportation issues for the Western Transportation Institute at Montana State University (2002-present) and he is a member of the Transportation Research Board (TRB) Committee on Ecology and Transportation.

Tiffany Allen received a MSc in ecology at Montana State University in Bozeman, MT in 2011, a BSc in fish and wildlife management from Montana State University in Bozeman, MT in 2006, and a BM in music theory from Furman University in Greenville, SC in 2004.

Whisper Camel is a current wildlife biologist in the CSKT Wildlife Program working closely with Western Transportation Institute in the wildlife crossing monitoring effort.

Kylie Paul is the Outreach Coordinator of the People's Way Partnership, a partnership linking a research institute, tribal biologists, and a nonprofit organization in order to effectively communicate the conservation value of wildlife crossing structures along U.S. Highway 93 (US93) on the Flathead Indian Reservation. She also works as an environmental scientist at Ecosystem Research Group where she focuses on wildlife biology and policy. Additionally, she serves on the board of the Ninemile Wildlife Workgroup, a regional group focusing on wildlife connectivity issues near Missoula, MT. She completed her Master's degree at the University of Montana, assessing the ability of a citizen science program to represent wildlife activity along a highway in Crowsnest Pass, Alberta.

Patrick B. Basting, Missoula District Biologist, Montana Department of Transportation, received his B.S. in Forestry at the University of Montana in 1987. For the past 20 years Pat has been a district biologist with the Montana Department of Transportation. In the mid-late 90's he wrote and submitted the first wetland mitigation banking prospectus in Montana to the Corps of Engineers, worked on several stream and river restoration projects, and has been involved in various aspects of stream (new to Montana – COE Stream Mitigation Requirements) and wetland mitigation. When Pat transferred into the Missoula District in the summer of 2000, wildlife connectivity issues were beginning to gain momentum and recognition. Since that time Pat has been heavily involved in the entire spectrum of transportation/wildlife issues working on placement, design, construction and/or monitoring of over 100 wildlife crossings in western Montana, inter-acting with agency and citizen wildlife groups, sponsoring and chairing multiple road ecology related research projects, and served as a panel member for transportation segment of the Western Governors Associations 'Crucial Habitats and Corridors Initiative'. Pat has also co-authored a paper "Measuring the Success of Wildlife Linkage Efforts" for the 2007 ICOET Conference and Co-authored chapter in the recent book "Safe Passages: Highways, Wildlife and Habitat Connectivity" Island Press – 2010.

*An image of this poster, number **CRB-P62**, is included in the Appendix of the proceedings.*