Wildlife Crossings: Successful Projects and Recent Advances

Wildlife Connections Symposium Oct 2008

Patricia Cramer
Research Assistant Professor in Wildland Resources Dept. and Utah Transportation Center at Utah State University

Photo credit: P. Cramer USU & UDOT
Mule deer buck at site of future wildlife crossing, I-70, Utah

Photo credit: P. Cramer USU & UDOT
Overview

1. Characteristics of Successful Projects
2. Top Wildlife Crossing Projects
3. Everyday Opportunities for Wildlife Crossings

Photo credit: S. Zahner, Caltrans
Characteristics of Successful Projects

- Team work over years
- Adaptability
- Based on Science
- Helped multiple species cross the road
- The crossings and fences are maintained

Photo credit: K Foresman, MDT & MSU
Team work

Leave no Engineer inside
Adaptive Management was used in Arizona along SR 260 outside of Payson. Different elk crossing designs resulted in knowledge of what worked best, adapted rest of project. Elk had higher repel rate to steep walled crossing. Based on Science. Note: About 90% of factors that make a crossing successful relate to its placement on the landscape. Have to know where wildlife prefer to move.

Alberta’s Banff National Park. The “crown jewel” of wildlife crossing systems, in large part because of decades of research.
Tools of Science
Cameras to determine wildlife usage of crossings and areas of interest
Tracking

Photo credits: P. Cramer, USU
Tools of Science

Mapping of animal-vehicle collisions & carcass data to determine hotspots

Wires to snag hair & then examine DNA

Tracking devices to determine where wildlife travel across the landscape and if they use crossings

Photo credit: T. Clevenger, WTI

Map courtesy of UDOT

Photo credit: B. Boarman, USGS
Help Multiple species cross under/over the road

Montana US 93, North and South of Missoula
Corrugated Steel culverts and installed shelves help multiple species get under road

Photo credit: K. Foresman, UM

Photo credit: W. Camel, FSKT
Maintenance is CRITICAL to crossing success

Photo credit: P. Cramer, USU
Wildlife Crossings In North America

T = Terrestrial crossings
A = Aquatic crossings

November 2007
NCHRP 25-27
P. Cramer
Top Wildlife Crossings Projects

Arizona’s SR 260 & Tonto National Forest Wildlife Passages

17 Passages over 28 km
AZ DOT, AZ Game and Fish, Tonto National Forest, US Federal Highways

Scientifically one of the best studies of wildlife use of passages and reduction of wildlife-vehicle collisions by Dodd, Gagnon, Schweinsburg and company

Photo courtesy: K. Morgan, AZ Game and Fish
Alberta’s Banff National Park & Trans Canada Highway Over 24 underpasses and 2 overpasses, over 85,000 wildlife passages documented, and counting

Photo credit: B. Leeson, CNP

Photo credit: T. Clevenger, WTI

Photo credit: T. Clevenger, WTI
Florida’s I-75 ‘Alligator Alley’
Wildlife & panther crossings
Over 24 underpasses, used by mammals, birds, fish, amphibians, and reptiles

Photo credits: Florida DOT
Montana’s US 93 Over 55 Wildlife Crossings, the most mitigated for wildlife road in North America

Photo credit: W. Camel, FSKT
Everyday Opportunities For Wildlife Crossings

Stony River Passage Before and After

TH 1 Lake County, Minnesota

Culvert and Bridge Replacements

Photo courtesy of J. Alcott, P. Leete, MNDOT
Every Day Opportunities
Bridge & Culvert Replacements for Aquatic Species

Before

After

Trail Creek, Idaho

Photos courtesy of Z. Funkhonser, ITD
Everyday Opportunities

Extended Bridges

Rice Creek, SR 20, Palatka, Florida extended bridge for black bear

Photo credit: P. Cramer
Every Day Opportunities

Retrofit Bridges

New Mexico
Tijeras Canyon
under I-40
Retrofit of existing bridge to provide soil path & slope

Photo credit: M. Watson, NM G&F
Everyday Opportunities

Culvert additions

Blanding’s turtle fencing and guiding metal walls, Valentine NWR, Nebraska

Small Mammal Shelves added to culvert, Montana, US 93

Photo credit: J. Lang, UMN
Everyday Opportunities

Portland’s Turtle crossing

Photos courtesy of L. Devroy, Port of Portland
Website with Guidelines for Wildlife Passages

www.wildlifeandroads.org

Photo credit: D. Spencer
Never doubt that a small group of committed individuals can change the world. Indeed that is the only thing that ever has.

Margaret Mead