The State of Wildlife Crossings in the West

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Take Home Messages

Where are we in the field of wildlife crossings?
Where are we headed?
Potential problems
Research needs on the horizon

Photo credit: P. Cramer & MDT
The State of the Practice & Science of Wildlife Crossings in the Western U.S.
What is a Wildlife Crossing?
Wildlife Crossings were made explicitly for wildlife and placed with wildlife exclusion fencing.
Types of Underpasses

Culverts

Photo credit: S. Rosa

Photo credit: P. Cramer

Photo credit: R. Kalfki

Photo credit: K. Forsman
Types of Underpasses

Montana US 93 Bridge

Bridges

California SR 56 Gonzalez Canyon, San Diego
California Escape Ramp – Worked with private landowner in helping black tailed deer escape fenced ranch

Photo credit: P. Cramer
Wildlife Guards
How We Study Wildlife Crossings

Cameras placed at both entrances to bridge or culvert
National Academies - NCHRP Research on Wildlife Passages in North America

Over 750 terrestrial crossings in U.S.
Over 170 terrestrial in Canada

Over 800 crossings total in US & Canada

Over 200,000 aquatic in each country

Photo credit: K. Morgan
Arizona

Was Number 1 Western State for Number of Crossings, now Number 2

Over 60 terrestrial wildlife crossings

Number 1 State for Wildlife & Roads Research
AZ GPS MOVEMENT STUDIES - HIGHWAYS

10 Projects
7 Species
>500 animals
>3,000,000 GPS Locations

Ongoing projects
Jeff Gagnon AZGF Slide
STATE ROUTE 260 PROJECT
Wildlife Underpasses
17 complete
Native Tribes & Counties Create Mitigation

Tahona O’Dum Tribe installed tortoise fencing

Pima County created 1st Bird Crossing
Arizona Game & Fish and AZDOT worked together to research Desert Bighorn, then provided 3 overpasses.
About 27 Wildlife Crossings

Also installing them on BLM land with Energy Extraction
Determining Wildlife Use of Wildlife Crossing Structures Under Different Scenarios
Open, wide bridges are very successful in Utah, in passing mule deer.

Photo credit: P. Cramer
Utah Study of Culvert Lengths and Mule Deer

Graph created by M. Schwender
Culvert Length Recommendation: Under 120 ft

- 20% repel rate
- 120 feet
Elk are the Problem Child

In over 4 years of monitoring over 24 sites, over 1 million pictures, and only recorded 40 elk passages, all but 2 were bulls

Photo credit: P. Cramer & UDWR
Potential Problems

Crossings provide connectivity for who?

Additional cameras placed outside entrance to learn of species NOT using the crossing but present
Designs that Don’t Work

This culvert is 280+ long
None of the deer that approached the entrance used it.
Number 1 Western State, over 80 Wildlife Crossings

US 93 has over 75 wildlife crossings
Wildlife Overpass, US 93N Evaro, MT

Wildlife Overpass

Photo credit: P. Cramer
Montana DOT Study, P. Cramer PI

Determine Wildlife Use and Efficacy of 19 Wildlife Crossings on US 93
US 93 Wildlife Crossings Research
Approximately 10 crossings, over 12 more planned or in construction
Evaluate Existing Structures for Wildlife Permeability and Create Retrofit Evaluation
Evaluate existing structures for their ability to pass different kinds of terrestrial wildlife

- Roadway characteristics
- Landscape characteristics
- Passage characteristics

Can the structure be modified to facilitate use by the target species at the site?

A Developing Trend - Retrofits
Crossing Geeks Apply Retrofit Evaluation
Oppotunities To Improve Permeability

Bridge & Culverts replacement

Determine how to integrate wildlife needs in retrofit and replacement projects

Bridge on Highway 6, Washington
Approximately 12 crossings
Just getting started
Goal is to re-establish mule deer migrations under US 97, and to move a diversity of wildlife species under the road.
Lava Butte Escape Ramp - working
Approximately 10 crossings
Past week, lots of media buzz to get more done
Idaho Dept. of Game and Fish Study, P. Cramer, Co-PI

Impact of I-84 on the Sublett Mule Deer Herd
Wyoming
US 30 Nugget Canyon

Mule Deer using
Concrete Box Culvert,
US 30 Nugget Canyon
Wyoming

Photo credit: H. Sawyer

Photo credit: West, Inc & WYDOT
Nevada’s US 93 Overpass

2-Lane Overpass
$1.8 million built in 2010

Photo credits: L. Bellis, NVDOT
Where We are Headed
Retrofits

Improve existing structures for wildlife movement

Minnesota DOT installed path in rip rap
Retrofits

I-80 Mountain Dell Reservoir Exit Bridge

Photo credit: P. Cramer
Planning – Include Connectivity Plans

But Remembering that the green lines on the map are our hypotheses
Thelma’s Amazing Journey over 30 km each way out and back
All Western States working together to map wildlife crucial habitat and linkages across state lines in a consistent manner
Wildlife Is Part of Doing Business

Wyoming

Utah

Arizona

Oregon
Monitor wildlife reactions to structures, roads, wildlife guards

We use camera traps (remote trail cameras) in utility boxes, placed near the entrances to culverts & bridges
Research Needs on the Horizon
GPS Relocation Data – 37 Pronghorn
U.S. Highway 89 – >121,000 Locations!!
Error 5-10m

3836 locs w/in 500m

Hwy 89 Pronghorn Study Area
Pronghorn locations from 1/2007 - 12/2008
37 Animals
121,000 Locations

Jeff Gagnon AZGF Slide
Research Need – What Else is Out There?

Who does not benefit from crossings?
Elk at I-70 "Long Box Culvert" MP 6
Continue to Monitor All Structures

Animals Nearby but not at crossing

Smaller Animals need connectivity perhaps even more so
Reestablish Migratory Routes

Example: Oregon’s Lava Butte Crossings were constructed to reestablish mule deer migratory routes.
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

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