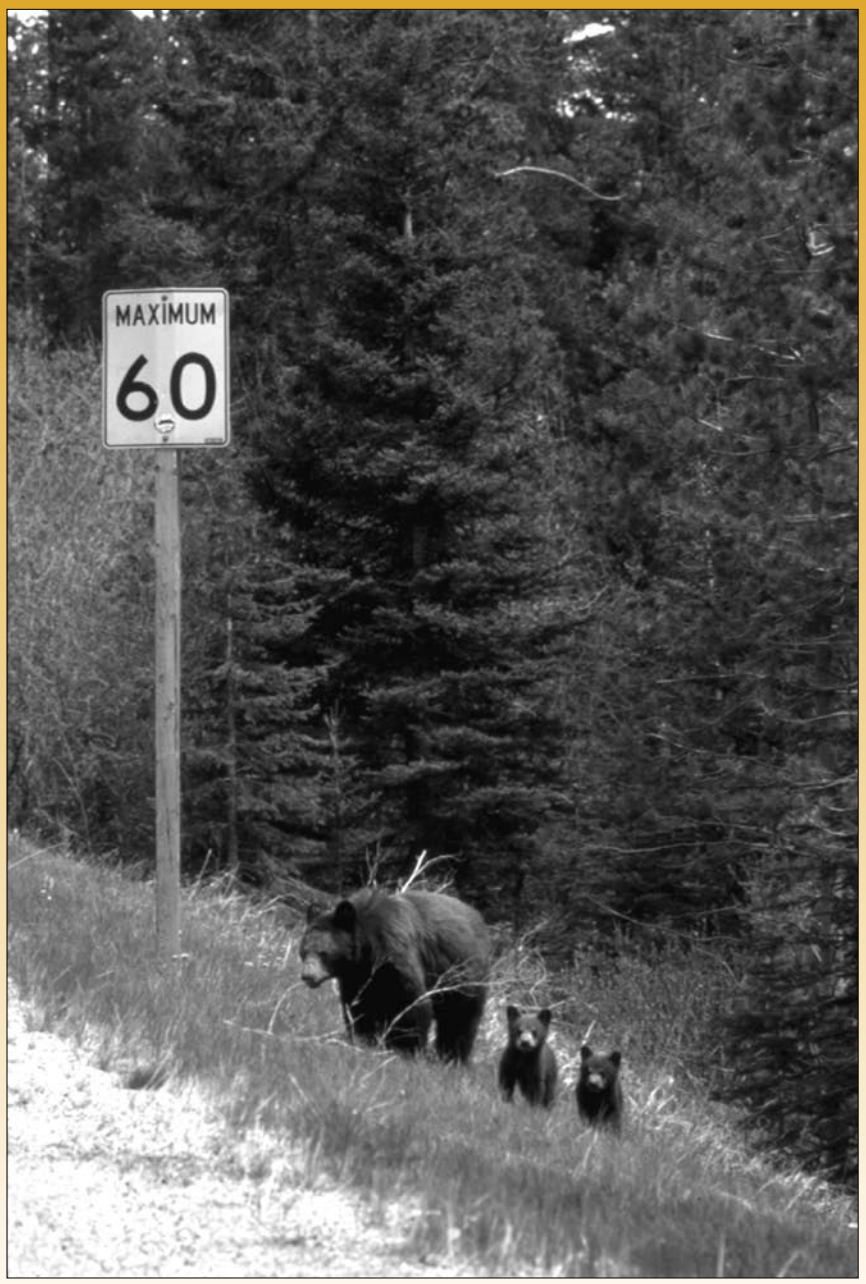


Providing Safe Road Crossings for Wildlife

Guide to Transportation Planning and Projects in the U.S. Northern Rockies

American Wildlands

July 2005

Cover photo: Black bear and cubs, by Reno Sommerhalder.

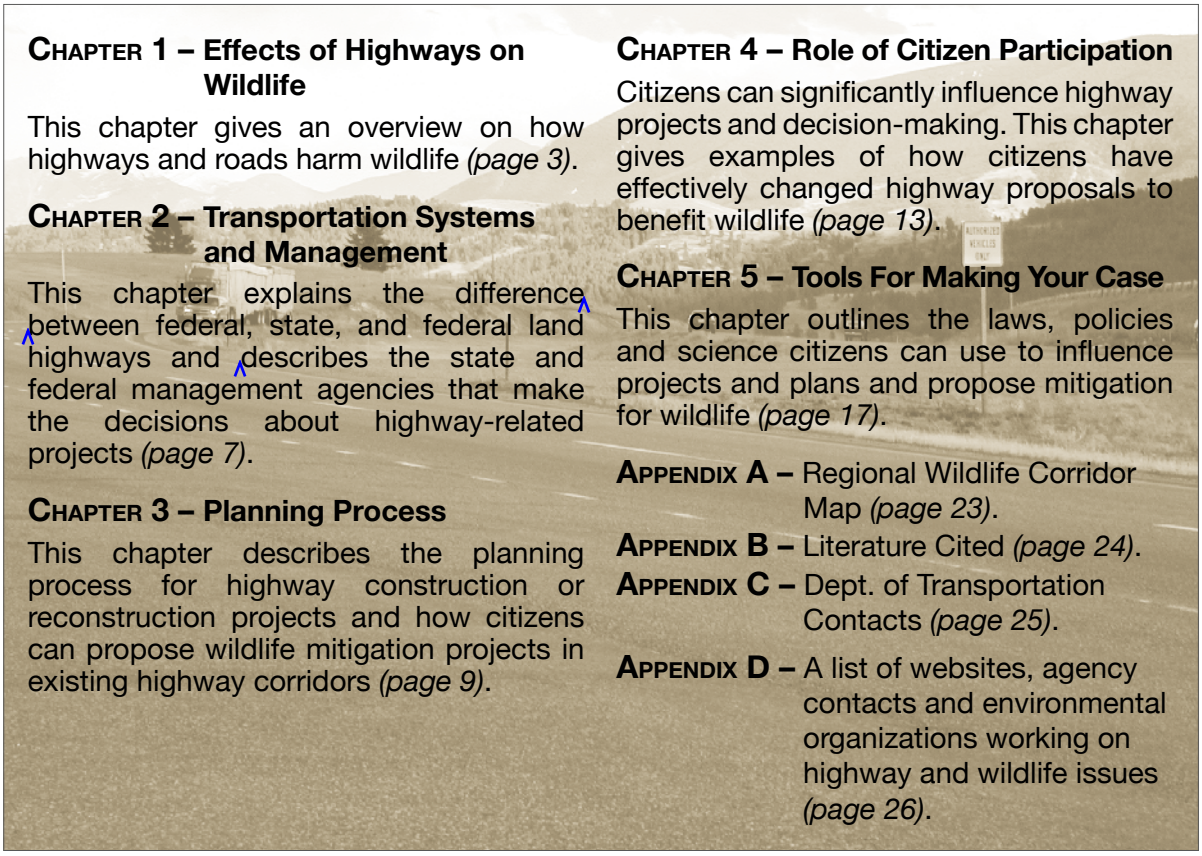
Introduction

Highways and rural roads are some of the greatest barriers to wildlife movement and can have significant, negative effects on wildlife and their habitat. Roads can fragment and reduce wildlife habitat as well as prevent historic animal movement. Additionally, more than a million birds, reptiles, mammals and amphibians are killed every year by vehicles on America's nearly 4 million miles of public road.

Every summer, thousands of miles of public road and highway are built, widened, patched or reconstructed. How these projects are constructed can determine how much they affect wildlife. Jersey barriers, vegetation along roadways, fences, traffic volume and crossing structures such as wildlife overpasses or fish passages can determine if the roadway creates or destroys wildlife connectivity.

Citizens can have a tremendous influence on the transportation planning process by ensuring that wildlife and habitat issues are considered and addressed. In the last 20 years, citizen activists have learned about forest and grazing issues and have fundamentally changed and improved public lands management and decision-making. Many highway projects receive no citizen participation and wildlife issues are never raised. There is an immediate and unique opportunity for citizens to participate in transportation planning and greatly contribute to improved wildlife management and mitigation.

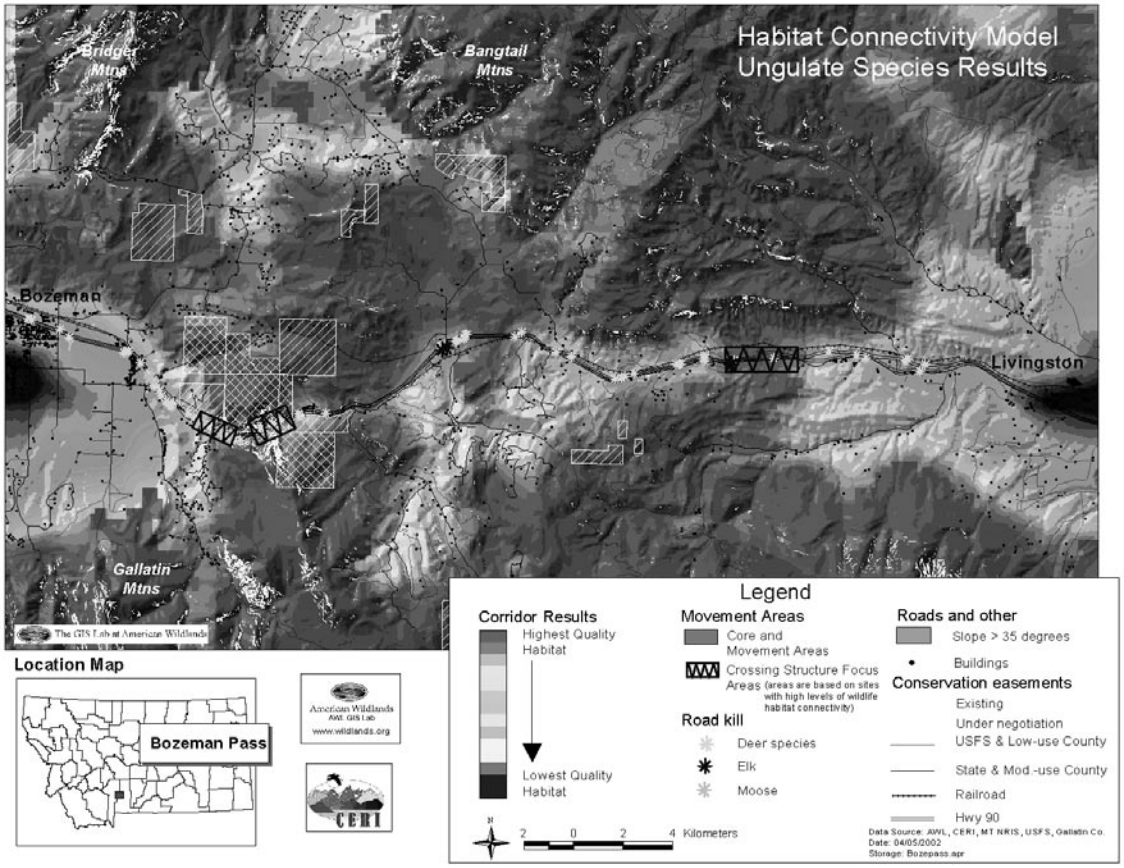
By the time a highway project is under construction, it is too late to participate in the project's design or development. Yet this is the time that most people learn about proposed construction, reconstruction or maintenance. This guide explains the transportation planning process in Montana, Idaho and Wyoming and the relevant laws, policies and science citizens can use to influence transportation decision-making. Although the information is regional in nature, much can be applied outside of the Northern Rockies. The guide is laid out in the following sections:



CHAPTER 1
Effects of Highways on Wildlife

There are more than 140,000 miles of paved road in the Northern Rocky Mountain states of Montana, Idaho and Wyoming. Human population continues to increase, spurring road-dependent community growth and sprawl, further developing the Northern Rockies' once pristine landscape. The effects of highways and roads in Montana, Idaho and Wyoming spread well beyond the actual roadways; in fact, it is estimated that 4 million miles of road affect 15 to 20 percent of the U.S. landmass. Effects on wildlife from highways and roads are significant; for example, more than 1 million vertebrates are killed on U.S. highways every ~~day~~, according to Second Nature, a publication about nature and transportation by ~~the~~ Defenders of Wildlife and Surface Transportation Policy Project. Other effects include habitat loss; fragmentation; air, water, soil and noise pollution; and invasive species.

Road kill: Vehicle-wildlife collisions are the number one way that humans kill wildlife in the United States. For example, on one section of Interstate 90 in the Bozeman Pass area, a natural wildlife corridor for animals moving between the Gallatin and Bridger Mountains of Montana, researchers documented 127 mammal deaths due to vehicle-wildlife collisions in two years. Carnivores are particularly susceptible to highway mortality because of their large home ranges, low biological productivity and the enormous areas required to sustain populations and individuals, according to Bill Ruediger, former Ecology Program Leader for Highways at the U.S. Forest Service. In 2004, two male wolves were killed on I-90, and a mature female grizzly bear was killed on U.S. Highway 93 as the animals attempted to cross these Montana highways. Vehicle-wildlife collisions are responsible for human deaths and injuries, as well. In 2001, vehicle-wildlife collisions were responsible for an estimated 29,000 human injuries and 177 human fatalities, according to Second Nature. The insurance industry estimates



This map shows the movement areas and incidence of road kill (for unglulate species only) in the Bozeman Pass section of Interstate 90.

that the annual cost to society for these fatalities and injuries is $200 million, according to the Federal Highway Administration.

Habitat Loss: Direct habitat loss is the most significant threat to endangered species. Forest carnivores and wide-ranging wildlife species are particularly at risk to the increasing network of roads in the region. Grizzly bears, wolves, wolverines, lynx, fishers, moose and elk all need to move across large landscapes for sustenance. Grizzly bears now occupy less than 1 percent of their former range in the U.S. and only two robust populations remain of the Canada lynx. Up to 48 acres of habitat is lost with the construction of one mile of Interstate highway, according to Second Nature. Subdivisions, stores and other human development often accompany new roads and road improvements, further displacing wildlife from their habitat.

Fragmentation: Highways divide landscapes into smaller pieces, removing portions of home ranges or forcing wildlife to cross busy stretches of roadway. Fragmented landscapes divide wildlife populations into smaller, isolated segments. Smaller populations are less stable, and over time, face extinction from predators or natural causes. They may also be more susceptible to inbreeding and genetic defects.

This moose is one of more than 1 million vertebrates killed on U.S. highways every ~~day~~ . Photo by Reno Sommerhalder.

A serious conservation issue is facing rare carnivores (grizzly bear, *Ursus arctos*; gray wolf, *Canis lupus*; wolverine, *Gulo gulo*; lynx, *Lynx Canadensis*; fisher, *Martes pennanti*) is the effects of highways. Carnivores are vulnerable to highways because of their large space requirements, which require them to cross busy roads frequently. Several carnivores also produce young only infrequently, which can contribute to the specie's extirpation. Highways are habitat and ecosystem issues. Highways affect carnivores by creating serious habitat fragmentation, increasing direct and indirect mortality, habitat loss, displacement and avoidance and associated human development. The effects of highways on carnivores are permanent and severe. **Rare carnivores face serious threats or eventual extirpation in the lower 48 states and southern Canada if highway issues are not addressed and solved.**

Another highway casualty: a black bear. Photo by Ernie Kroeger.

From "Rare Carnivores and Highways – Moving Into the 21st Century," by Bill Ruediger, Endangered Species Program Coordinator for the U.S. Forest Service. Published in the proceedings from the International Conference on Wildlife Ecology and Transportation in 1998.

CHAPTER 2
Transportation Systems and Management

Virtually all urban and rural roads are built and maintained by government — county, state and federal. Exceptions include private subdivision roads, logging roads on private forestlands, driveways and ranch roads. The federal government began to oversee the nation's system of unimproved and improved roads in 1916, when the U.S. Congress created the Federal-Aid Highway Program. This law specified that states serve as recipients of federal funds subject to various conditions. States continue to be the major operational managers of major roads in the federal highway partnership, although local officials in counties and municipalities have played a stronger role since the early 1960s.

Agencies Involved with Transportation Management

Department of Transportation. The Department of Transportation (DOT) was established by an Act of Congress on October 15, 1966 to *"serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future."* The Department consists of several organizations, including the Office of the Secretary (OST), which oversees the formulation of national transportation policy and promotes intermodal transportation, the use of a highway corridor by trains, buses, and other forms of transport. Other responsibilities range from negotiation and implementation of international transportation agreements, assuring the fitness of U.S. airlines, enforcing airline consumer protection regulations, issuing regulations to prevent alcohol and illegal drug misuse in transportation systems and preparing transportation legislation.

The DOT is working with Congress to pass a new federal highway bill called the Transportation Equity Act (TEA), in 2005. The last multi-year transportation bill, TEA-21, began to address and provide funding for wildlife habitat connectivity. Conservationists are working to strengthen the provisions for wildlife conservation and connectivity in the TEA bill, particularly for wildlife crossing structures and integrating environmental issues in planning.

Other organizations included under the DOT umbrella are the Federal Aviation Administration, Federal Railroad Administration and the Federal Highway Administration (FHWA).

The Federal Highway Administration. FHWA is a national program that provides expertise, resources and information on the nation's highway system and its intermodal connections. The FHWA coordinates highway transportation programs in cooperation with states and other partners to enhance the country's safety, economic vitality, quality of life and the environment. The FHWA also manages a comprehensive research, development and technology program.

The FHWA is a part of the DOT and is headquartered in Washington, D.C., with field offices across the U.S. The FHWA performs its mission through two main programs:

The Trans-Canada Highway near Banff. Photo by Tony Clevenger. ***THIS PHOTO IS NOT PRINT-QUALITY RESOLUTION.***

1.) ***The Federal-Aid Highway Program*** provides financial assistance to the states to construct and improve the National Highway System, urban and rural roads and bridges. The program provides funds for general improvements and development of safe highways and roads.

2.) ***The Federal Lands Highway Program*** provides access to and within national forests, national parks, Indian reservations and other public lands by preparing plans, letting contracts, supervising construction facilities and conducting bridge inspections and surveys. To support these programs, FHWA conducts and manages a research, development and technology program. Because public lands often contain the habitat strongholds for wildlife, the Federal Lands Highway Program is particularly important for wildlife persistence and recovery. Responsibility for maintaining those routes could be national parks, counties, the Bureau of Indian Affairs or state DOTs.

States continue to be the major operational managers of major roads in the federal highway partnership, although local officials in counties and municipalities have played a stronger role since the early 1960s.

State Department of Transportations Each state Department of Transportation (DOT) is primarily responsible for the following duties: Planning and design, contract administration, materials design and testing, property acquisition, fiscal programming and cost accounting, enforcement of vehicle weight and dimension laws and the Outdoor Advertising Control Act, management of the state motor pool, highway, bridge and rest area maintenance, public transportation and rail programs and planning general aviation airport planning and highway traffic safety. State DOTs address multiple transportation issues. Highway issues are coordinated with the Federal Highway Administration, which functions as the federal link on road and highway issues within the Department of Transportation.

State DOTs have jurisdiction and perform maintenance on national highway system, interstate, primary system roads, paved secondary system roads, and some urban routes. These routes are eligible for federal aid funding. State laws suballocate federal aid funding by determining which road classifications receive specific portions of the federal money.

Counties. County governments maintain much of the remainder of the nation's roads, including unpaved secondary roads and urban routes. Counties also make recommendations to state DOTs through the county transportation plan (if they have one) or by commenting on DOT planning documents.

Cities. Large, metropolitan areas with populations exceeding 50,000 may have a Metropolitan Planning Organization (MPO), which are governed by elected officials.

Metropolitan The MPO prioritizes projects to be funded for construction as part of a Metropolitan Transportation Improvement Program (MTIP). Cities with MPOs in the Northern Rockies include Billings, Great Falls, Missoula, Boise, Idaho Falls, Pocatello, Cheyenne, and Casper.

A deer fatalitiy on Interstate 90 at Bozeman Pass. Photo by Jolene Adams.

CHAPTER 3
The Planning Process

The planning process for roads and highways is two-staged. Citizens have an opportunity to propose projects and an opportunity to participate in the decision-making process for projects and plans that are already being considered. The planning process is dependent on what type of road is at issue. For example, a citizen concerned about an issue on an unpaved secondary route maintained by their country would want to work with their county government. If the issue was about a paved road or highway, they would probably want to coordinate with their state DOT. And if the road or highway was on public land, they would contact that land management agency or the Federal Highway Administration. (A list of possible contact people in the Northern Rockies is located in Appendix A of this document).

Proposing Projects

Conservationists can propose wildlife-related projects at the city, county or state level.

- **Cities and Counties**: If a route is on the city or county road system, citizens can contact their city or county commissioners to propose projects. If a commission is willing to nominate your project, it may be added to the city or county transportation plan or addressed on an annual basis with the state DOT. In Montana, for example, counties prioritize projects with Montana Department of Transportation through the Choosing By Advantage program.

In the Northern Rockies, counties can also propose specific projects for wildlife mitigation through the CTEP program. Through the state DOT, counties receive funding (corresponding to population levels) for Community Transportation Enhancement Program (CTEP) projects. CTEP projects are transportation related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of the intermodal transportation system. One of the new categories for CTEP funding includes mitigation of water pollution due to highway runoff or reduction of vehicle-caused wildlife mortality while maintaining habitat connectivity. Possible projects that might fit this category include: research for highway crossing structures, culvert highway crossings for fish or wildlife, or signs identifying wildlife crossing or corridor areas. Contact the Grants Administrator for your county for more information about the CTEP program.

Citizens have an opportunity to propose projects and an opportunity to participate in the decision-making process for projects and plans that are already being considered.

In Wyoming, $5 million is set aside annually for transportation enhancements. Half of the money is allotted in conjunction with highway projects; the other half awarded by grants to Transportation Enhancement Activities Local

Culverts provide a wildlife corridor under Interstate 90 at Bozeman Pass. American Wildlands photo.

Questions to ask about proposed highway projects:

- Are threatened or endangered species present?
- Are there any impaired streams or lakes listed by the state?
- Where are the blocks of secure wildlife habitat that animals are likely to move among?
- Are there any existing bridges or culverts being used by animals to cross the highway?
- Is road-kill data available? Does it identify any hotspots?
- Do culverts and bridges allow for fish passage?
- Are there any sources of persistent erosion?
- Will wetlands be developed?

(TEAL) projects, which receive approximately $2.5 million annually. Applicants for TEAL grants apply directly to WYDOT rather than to counties.

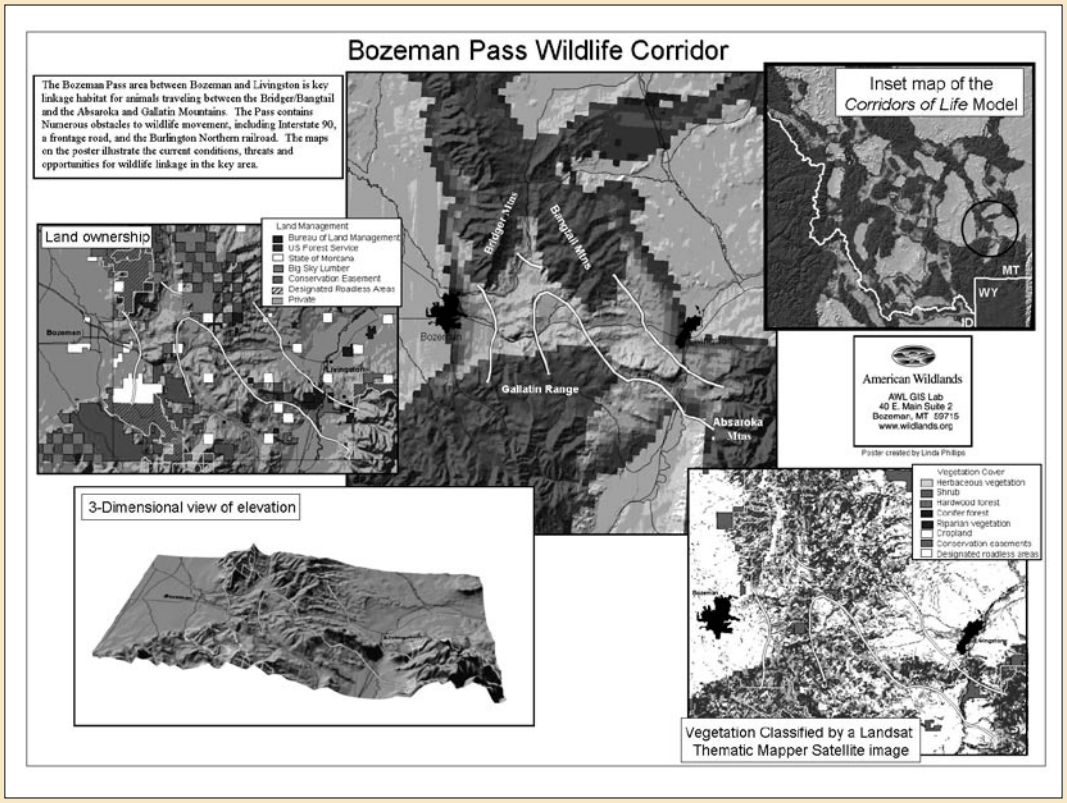
- **Statewide Transportation Improvement Program:** The state Departments of Transportation produce annual Statewide Transportation Improvement Program (STIP) lists of proposed projects. The STIP generally covers 3-6 years worth of transportation projects. The first STIP comes out in draft form.

For the Montana Draft STIP, commenters are first asked to provide recommendations on projects that they would like to see included on the list. Comments are also accepted on the draft list for 45 days. Tentative construction projects are planned out for 8 years. Proposals are more likely to be considered if they can become design options in an area where a project is planned within the next eight years.

In the Idaho Draft STIP, citizens are asked to comment on the proposed projects recommended or not recommended for inclusion in the final document. The comment period runs for 30 days.

In Wyoming, the draft STIP comes out each year in June and is generally available for comment until it is formally adopted in September. WYDOT conducts numerous public meetings and encourages participation from city and country governments.

An elk ~~utilizes~~ a highway overpass in Banff National Park, Canada. Photo by Reno Sommerhalder.



Several broad-scale ecological studies can help identify key areas of wildlife/highway conflict. American Wildlands has mapped potential wildlife corridors in the Northern Rocky Mountains (see **www.wildlands.org/corridor/spdrweb.html**). Troy Merrill and Dave Mattson have mapped habitat suitability for grizzly bears in the Greater Yellowstone Ecosystem (contact NRDC for a copy at 406-222-9561). Reed Noss mapped biodiversity hotspots in the Greater Yellowstone Ecosystem (contact Greater Yellowstone Coalition for a copy at 406-586-1593). Chris Servheen has completed an "Identification and Management of Linkage Zones for Grizzly Bears Between the Large Blocks of Public Land in the Northern Rocky Mountains" (note: mapping connections to and from the Greater Yellowstone Ecosystem are not included in this report. Contact Chris Servheen for a copy at 406-329-3223). The Interagency Grizzly Bear Committee determined high priority linkage zones on highways in the Northern Rockies. A copy is available at **www.fs.fed.us/r1/wildlife/igbc/Linkage/map.pdf**. These maps and reports may help citizens identify and prioritize some of the most important highway stretches for wide-ranging wildlife species.

Projects listed in these areas can pose both a threat to wildlife movement across highways) and an opportunity for wildlife mitigation such as crossing structures for activists working on wildlife issues. Threats to wildlife include upgrading roads from gravel to pavement or from two lanes to three or four lanes, new road construction, road widening, placement of Jersey or Texas barriers and removal of roadside vegetation. In proposed project areas, there are opportunities for citizens to advocate for connectivity research, wildlife underpasses or overpasses, removal of fences/barriers and bridge extensions (to include uplands for wildlife movement).

Participating in Projects

The place to look for project listings are in the state DOT's finalized STIP. After changes in draft STIPs are completed, projects are listed, and often mapped, in a Final STIP. The Final STIP contains a list of the planned construction and preliminary engineering programs for 3-6 years. If any of the proposed projects are located in an ecologically important area, it is possible to call the DOT District Engineer or Planning Department to get put on the mailing list for the NEPA process for that project. Citizens can participate by mail or by attending project meetings. Generally, the state DOT will hold public meetings or hearings about projects in their STIP.

Projects must conform to the National Environmental Policy Act (NEPA). NEPA provides for environmental analysis of activities involving federal agencies and requires the agencies to solicit public input in planning these activities. The analysis documents may be one of the following types:

- **Categorical Exclusion (CE)** — This category of actions does not require environmental review because the action does not individually or cumulatively have a significant effect on the human environment. A CE is followed by a Decision Memo (DM), which states what the agency plans to do and why.

- **Environmental Analysis (EA)** — The environmental analysis for activities found not to have a significant effect on the human environment. It typically provides several alternatives and attempts to gauge the environmental consequences of each. An EA is followed by a Decision Notice (DN) and a Finding of No Significant Impact (FONSI), which states that the chosen action will have no significant effect on the existing environment.

- **Environmental Impact Statement (EIS)** — An EIS is required by NEPA for any activity with a "significant impact on the human environment." This is the most rigorous level of environmental analysis. It typically provides several alternatives and attempts to gauge the environmental consequences of each. It is first prepared in draft form (DEIS) with a public review/comment period. The final (FEIS) is accompanied by a Record of Decision (ROD), which selects between the range of alternatives and explains what the agency plans to do and why.

CHAPTER 4
Role of Public Participation

Non-profit organizations and citizens can significantly influence highway projects and decision-making. Public participation is crucial at all stages of the process. For many years, the Departments of Transportation had very little public oversight. In the last several years, concerned citizens, parents of school children, bicyclists and conservation groups, among others, have pressured the DOT to address safety and environmental concerns. This increased public participation resulted in great gains for wildlife and human safety. The following examples demonstrate how individual citizens, an Indian tribe and non-profit conservation groups used a variety of tools and approaches to successfully influence highway projects.

Citizen-led efforts

In Bozeman, Montana, commuters on Interstate 90, which bisects a critical wildlife corridor, collected road-kill data for two years. Citizen volunteers worked with independent scientist Lance Craighead to install and maintain sand-filled track beds in likely wildlife crossing locations. The track beds identified which animals were using existing crossing structures such as railroad underpasses, bridges and culverts. Their efforts helped pinpoint the best location for wildlife mitigation, resulting in a fencing project to a railroad underpass, which allows wildlife to move under the busy interstate.

Similarly, citizens in and around Sandpoint, Idaho, teamed with the U.S. Forest Service for several years to track road-kill hotspots. They regularly drove through critical wildlife linkage habitat and noted road-kill locations. They also walked below and beyond the road to identify animals that were hit and walked away from the road before dying. Their efforts helped identify the best locations for crossing structures near MacArthur Lake and resulted in a planned bridge replacement, which will provide safe wildlife passage under the highway.

Citizen participation in the Highway 93 expansion project in the Bitterroot Valley of southwestern Montana is an example of how one person can achieve great milestones. In this case, Jackie Corday fought for approval and funding for two major wildlife crossing structures. Construction will begin in late 2005 or 2006 *(see inset on page 14)*.

~~Citizen v~~olunteers help install sand-filled track beds in likely wildlife crossing locations under Interstate 90 near Bozeman, Montana. American Wildlands photos.

Citizen Effort Results in Million Dollar Crossing Structure

By Jackie Corday

In 1998, I attended a Citizen Advisory Committee (CAC) meeting for the Highway 93 4-lane expansion project for the Bitterroot Valley. The CAC consisted of representatives of Ravalli & Missoula County Commissioners, Montana Department of Transportation (MDOT) representatives and a citizen appointed to represent each community throughout the Bitterroot Valley. I believe that forming a CAC was something that the highway project's Environmental Impact Statement recommended.

At one of those meetings, the moderator noted that there were other focus groups that needed to be formed to address issues such as right-of-way/access, design between towns and wildlife crossings. She asked people to volunteer to chair these focus groups. No one spoke up when she got chairing the wildlife focus group so, I volunteered. Once I did that, several people at the meeting expressed interest becoming members of the group.

The focus group's main activity was to organize field trips with MDOT engineers and biologists, state biologists and engineers from the private contractor responsible for designing the highway. We met in the field to discuss each of the four highway segments being reconstructed. During each field trip we examined where wildlife crossings and culverts for wetlands connections should be installed. We also addressed the need for security cover near the crossings and encouraged replacement of riparian vegetation.

It was very helpful to have everyone together to exhange ideas, and the engineers could answer questions about the feasibility/possibility of certain locations and structures. Where the wildlife crossing would go was basically dictated by the topography or elevation of the highway, vegetated ravines where present (corridors), what the nearby land uses were and were likely to be, the distance to the floodplain/river on the east side of the highway and road-kill data.

As a follow up to each field trip, I prepared a letter to the MDOT district administrator that listed everything our group determined was needed. The district administrator wrote back and identified what he agreed with, which was typically everything, until I asked for two bridges in the Bass Creek area that would cost $1.3 million. This was more than his budget would allow, so I had to search for other ways to fund the bridges. After asking a lot of questions, I asked County Commissioner Barbara Evans if she had any ideas for this type of funding. She asked me to prepare a letter explaining the need for the bridges that she would send under her signature to several agency heads.

The recipients did not offer any assistance, so Barbara brought up the project with U.S. Sen. Max Baucus on her annual trip to Washington, D.C., to lobby for particular projects she wanted in Missoula County. Sen. Baucus is on the Senate Transportation Finance Committee, and his office assistant took special interest in the project and made sure it was on the final list of projects for consideration. I had asked for $1.4 million, an additional $100,000 over the bridge cost estimate to fund revegetating the area. Ultimately, $1 million was approved, so we chose the more important of the two bridge locations for one longer bridge. It is currently in the final design stage.

In summary, I think that citizens can make a big difference by getting involved early in the design process. Local knowledge of wildlife movement can be instrumental in where structures should go as well as what type and size, based on what species are crossing the highway and how often. It also helps tremendously if the MDOT biologist, project engineers and district manager have an interest and care about the wildlife crossing issue. We were fortunate to be working with MDOT staffers who were very interested and concerned about this issue.

Tribal efforts

As autonomous governments, Indian tribes are in a unique position to negotiate for wildlife mitigation. The Montana Department of Transportation had plans to expand lanes and increase traffic on Highway 93 through the Flathead Indian Reservation. To protect cultural and wildlife values, the tribes insisted that the highway be reconstructed with "a spirit of place" and they limited expansion and greatly reduced the effects to wildlife and aquatic species with more than 40 crossing structures.

Conservation Group Efforts

Conservation groups around the country are teaming up with state and federal transportation and wildlife managers to identify critical wildlife movement corridors along highways. In some cases their efforts may result in fish and wildlife mitigation on specific highway projects. In larger planning areas, they often form coalitions and address the major issues facing wildlife movement across large landscapes that include public and private lands to resolve highway issues.

Conservation Groups Achieve Bridge Replacements and Wildlife Crossing Study on Idaho Highway Project

Two conservation groups, American Wildlands and the Greater Yellowstone Coalition, jointly lobbied for wildlife and fisheries mitigation on U.S. Highway 20, which runs through critical fish and wildlife habitat from the Montana-Idaho border south to Ashton, Idaho. US

Wildlife Crossing Overview

By Dale Becker, Salish-Kootenai Tribal biologist

Vehicle-caused wildlife mortality and wildlife habitat fragmentation were significant issues throughout the planning process for the reconstruction of U. S. Highway 93 on the Flathead Indian Reservation. The Tribes had expressed concerns related to these issues from the start of consideration of the reconstruction project in the early 1990s and had documented important areas of wildlife crossing and mortalities along the Highway 93 corridor. Species of concern in these locations included white-tailed deer, mule deer, elk, black bears, grizzly bears and a variety of other mammals.

The Memorandum of Agreement between the Confederated Salish and Kootenai Tribes (Tribes), the Montana Department of Transportation (MDOT) and the Federal Highways Administration (FHWA), signed in December 2000, contained a section related to wildlife issues, specific locations for the construction of 42 wildlife crossing structures and some basic design specifications for each site. Four of these proposed structures were later dropped and one additional structure was added. The design firms contracted by MDOT are currently finalizing designs for the various segments of the highway.

The wildlife crossings are currently designed to provide habitat connectivity and movement opportunities for a diverse complement of species ranging from small mammals to ungulates and carnivores. One over-crossing and 39 large under-crossing structures are currently in design. Three of the under-crossings are large bridges which will span riparian habitat and the existing cover that it provides for wildlife. In addition, a revegetation plan will provide for maintaining existing trees, shrubs and other cover in some areas and will direct the reestablishment of cover at other sites.

The agreement reached between the three governments signifies a new way of considering wildlife and other natural resource issues in highway construction that respects and accommodates wildlife and its ecological needs. This project can be used as a case study in planning other highway construction projects elsewhere and attempting to address wildlife issues such as vehicle-caused mortality and habitat fragmentation and connectivity.

This highway underpass shows the strategic placement of an engineered wildlife crossing. Photo by Scott Jackson. **THIS PHOTO IS NOT PRINT-QUALITY RESOLUTION.**

20 traverses key wildlife linkage habitat along the Continental Divide at Raynolds and Targhee passes and parallels short stretches of the Henry's Fork of the Snake River, one of the premiere dry-fly fishing streams in America. Their efforts resulted in the Idaho Department of Transportation's (ITD) district-wide wildlife connectivity study and the replacement of two bridges to allow passage of Yellowstone cutthroat trout.

Unlike other public land agencies, ITD was not accustomed to significant conservation oversight or public comment. The conservation groups sent alerts to their members living in the area and flooded ITD with of pro-conservation public comment. They repeatedly called and met with ITD staff to promote and track wildlife and fisheries issues. They organized a field trip to potential wildlife crossings with the ITD biologist and noted grizzly bear biologist Lance Craighead. Additionally, they encouraged state and federal agency biologists to participate in the planning process and address connectivity issues. These efforts brought aquatic and wildlife connectivity issues to the forefront of the planning process and helped drive the highway plan. This ITD district is currently completing a wildlife connectivity study throughout its planning area.

Wildlife Crossings in the Central Cascades of Washington

The I-90 Wildlife Bridges Coalition was formed in 2004 in response to Washington Department of Transportation plans to widen 15 miles of I-90 from four to six lanes east of Snoqualmie Pass. Deteriorated pavement, congestion, substandard curves, exposure to avalanches and collisions with wildlife pose risks to safety and reduce transportation efficiency. The same stretch of freeway bisects an area that U.S. Forest Service biologists have long recognized as a critical connective link in the north-south movement of wildlife in the Cascade Range. Washington State citizens and the U.S. Congress have recently invested more than $72 million in protecting wildlife corridors in the area.

The coalition is working with a multi-agency team of biologists and hydrologists to review options. Recommendations include bridges and other structures that will allow wildlife passage at strategic locations, greatly improving wildlife connections while making vehicle travel safer and more efficient. The coalition's mission is to advocate for high-quality wildlife passage in this project, while educating the public on wildlife and transportation project issues.

The project has drawn national attention due to its unique characteristics of public investment and location. The objective of the coalition is to balance the economic and ecological needs of the Cascades Mountain Range. The coalition brings together a wide range of conservation and animal-protection organizations to advocate for these wildlife crossings. Simultaneously, they are reaching out to communities and organizations with related concerns, such as AAA, Freight Mobility Strategic Investment Board, local wineries, Washington Truckers Association and transportation planners.

The coalition uses numerous means to increase public acceptance of wildlife connectivity, including brochures, video and educational materials: a statewide education effort and contest among elementary schools on wildlife crossings that results in a poster ad display; a weekend conference of transportation and conservation specialists to discuss wildlife crossings focusing on this project's design; radio public service announcements; tabling at regional events to create public awareness of the project and its mission; and activating a large number of people to comment on the Draft Environmental Impact Statement.

CHAPTER 5
Tools for Making Your Case:
Laws and Regulations to Influence Projects and Plans

When looking at the record of court challenges to transportation projects, three federal laws are most widely used: the **Department of Transportation Act, Section** 4(f), the **National Environmental Policy Act** (NEPA) and the **Endangered Species Act** (ESA). The trend in highway litigation demonstrates the difficulty of winning on wildlife-related issues, because the burden of proving harm to wildlife is on the plaintiff. Most of the current legislative victories are from procedural errors, rather than from substantive arguments about wildlife.

DEPARTMENT OF TRANSPORTATION ACT, Section 4(f)

Sec. 771.135 Section 4(f) (49 U.S.C. 303)

This section is included to preserve public lands, parklands, waterfowl and wildlife refuges and significant historic sites.

"(a) (1) The Administration may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

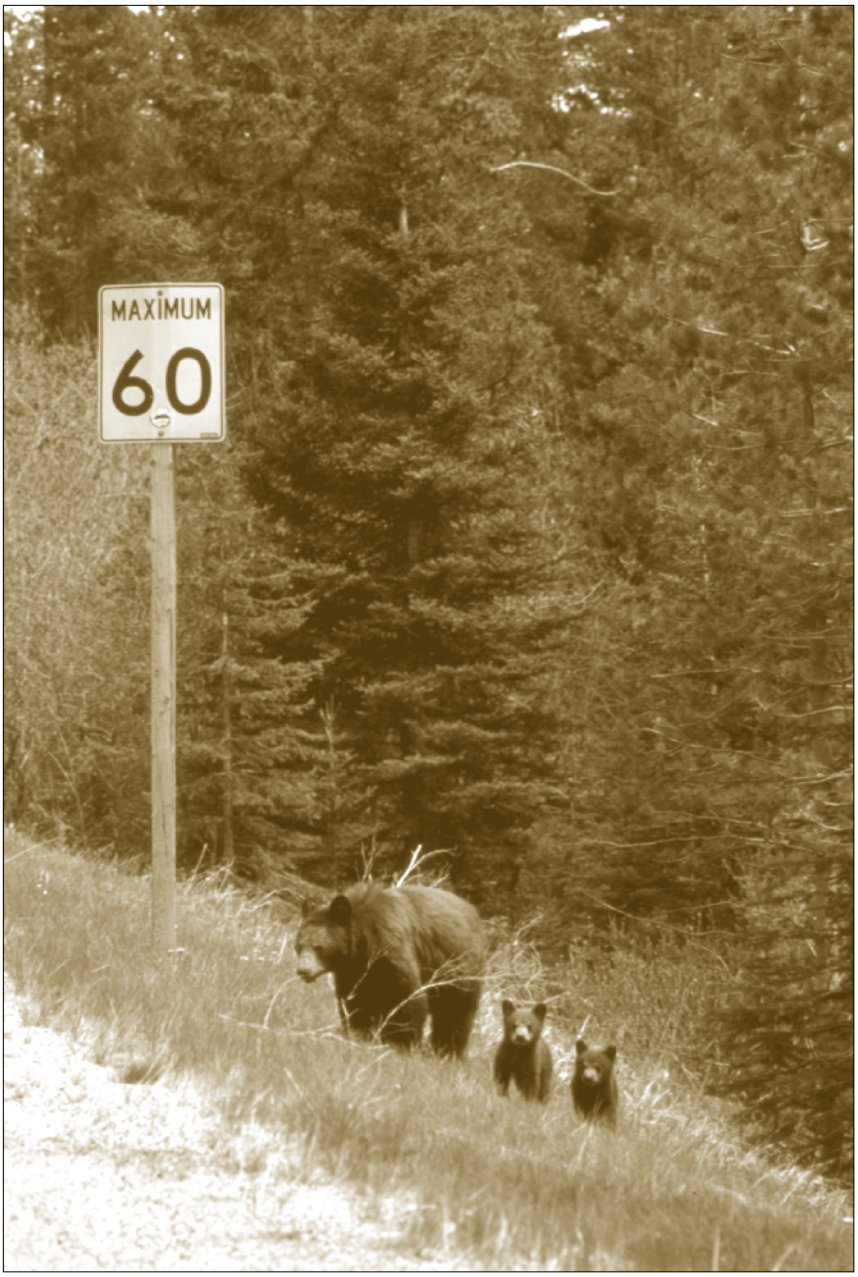
(i) There is no feasible and prudent alternative to the use of land from the property; and

(ii) The action includes all possible planning to minimize harm to the property resulting from such use."

Citizens to Preserve Overton Park v. Volpe, 1971

The U.S. Supreme Court held that under section 4(f) of the Department of Transportation Act, the DOT could not fund road construction through a

A lynx ~~gets caught in the headlinghts on a night trail crossing~~. Photo by Tony Clevenger.



Black bear and cubs. Photo by Reno Sommerhalder.

park unless the avoidance alternatives presented unique problems or truly unusual factors.

Stop H-3 Ass'n v. Dole, 1984

4(j) win: In Hawaii, a no-build alternative could not be dismissed as imprudent without further showing truly unusual circumstances. The court determined that an avoidance alternative needed to be realistic; the DOT alternative required dislocating 31 residences and a church at a cost of $42 million. The court refused to allow road construction on parkland even where the avoidance alternatives were more expensive and less efficient.

Alaska Center for the Environment v. Armbrister, (Whittier Road case), 1996

4(j) loss and narrowing: The Ninth Circuit Court of Appeals upheld the Federal Highway Administration's decision to build a road and reject improved rail service to a small, isolated town despite the fact that the train would be less damaging to the environment than the road would be. Courts have carved out an exception to the Overton Park standard by dismissing alternatives that do not meet the agency's stated purpose and need for a project. Purpose and need statements are being drafted very narrowly now and only one plaintiff has prevailed in a section 4(f) case since 1985.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA)

(40 CFR 1500.1)

NEPA requires all federal agencies to prepare information on the environmental impacts of major actions and to include those impacts in decision-making. NEPA is only procedural. For example, it doesn't prohibit contaminating water; it just requires that the contamination be fully assessed. Further:

a. NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.

b. The information must be high quality. NEPA requires that agencies ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements. (They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions relied upon in the statement. 40 C.F.R. 1502.24).

c. NEPA is specific in requiring agencies to consider the cumulative effects of each alternative under consideration (40 CFR 1502.16, 1508.8, and 1508.25(a)(2) and (c)). Cumulative effects refer to the direct and indirect effects of all past, present and reasonably foreseeable future actions.

Save the Yaak Committee v. Block (Sec. of Agriculture), 1988

Save the Yaak won with a connected-actions argument. In the 1960s, road construction began in five sections. One section began in 1982 without preparation of an EA. The appeals court determined that the Forest Service failed to comply with NEPA and was required to consider connected and cumulative actions.

Other wins based on insufficient NEPA compliance:

- ***Sierra Club v. U.S. DOT (1997)*** — The EIS was insufficient, and the plaintiffs proved harm.

- ***Sierra Club v. U.S. Dept. of Energy, 2002*** — The Sierra Club appealed a federal court dismissal about the issuance of a road easement. The Department of Energy failed to issue an EIS before granting a road easement (NEPA) and failed to consult with U.S. Fish and Wildlife Service (ESA). The lower court erred in dismissing these claims for "lack of ripeness."

Loss on cumulative effects: ***Friends of the Bitterroot v. U.S. DOT (1999)*** — Argued that FEIS did not consider growth-inducing cumulative effects and neglected air quality study.

Loss on inadequate wildlife surveys: ***New River Valley Greens v. U.S. DOT (1997)*** — Environmental groups failed to support their claim that inadequate wildlife surveys were used in developing the FEIS.

ENDANGERED SPECIES ACT OF 1973 (ESA)

(16 USC 1531)

The purpose of the ESA is to provide a means whereby the ecosystem upon which endangered species and threatened species depend may be conserved [and] to provide a program for the conservation of such species. Congress has provided further direction to federal agencies to use all methods and procedures necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary. 16 U.S.C. §1532(3). The ESA not only prohibits federal agencies from taking actions that are likely to jeopardize the existence of endangered and threatened species, but also requires that they shall seek to conserve endangered species and threatened species. 16 U.S.C. §1531(c)(1); 1536(a)(2).

a. Section 7(a)(2) of the ESA requires all federal agencies to ensure that actions it authorizes are not likely to jeopardize the continued existence of threatened species. The procedural mechanism for ensuring the protection of listed species is formal consultation with the U.S. Fish and Wildlife Service (FWS). As the Ninth Circuit Court of Appeals held in Thomas v. Peterson, 753 F.2d 754, 764 (9th Cir. 1985): The ESA's procedural requirements call for a systematic determination of the effects of a federal project on endangered species. If a project is allowed to proceed without substantial compliance with those procedural requirements, there can be no assurance that a violation of the ESA substantive provisions will not result. Section 7(a)(2) of the Act also requires the Forest Service to initiate formal consultation with the FWS if the proposed action is likely to result in the destruction or adverse modification of a listed species' critical habitat. 16 U.S.C. 1536(a)(4).

The trend in highway litigation demonstrates the difficulty of winning on wildlife-related issues, because the burden of proving harm to wildlife is on the plaintiff.

b. Section 9 of the Endangered Species Act makes it unlawful for any person to take any endangered or threatened species. The Act provided further clarification of this prohibition: "Except as provided in sections 1535(g)(2) and 1539 of this title, with respect to any endangered species of fish or wildlife listed pursuant to section 1533 of this title, it is unlawful for any person subject to the jurisdiction of the United States to take any such [endangered or threatened] species within the United States or the territorial sea of the United States." 16 U.S.C. s 1538(a)(1).

c. The ESA does contain a provision that allows for the incidental take of an endangered species. However, this taking must be incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. 16 U.S.C. §1539(a)(1)(B). This permit is granted by the Secretary of the Interior only after he/she determines that (1) such exceptions were applied for in good faith, (2) if granted and exercised will not operate to the disadvantage of such endangered species and, (3) will be consistent with the purposes and policy [of the Endangered Species Act]. 16 U.S.C. §1539(d). This means that any federal agency's, or a citizen's action that results in a take (as defined above), is illegal unless the person or agency has obtained an incidental take permit from the secretary of Interior.

National Wildlife Federation v. William T. Coleman, U.S. Sec. of Transportation, 1976

The National Wildlife Federation fought construction of 5.7 miles of Interstate 10 in Jackson County, Mississippi, to preserve critical habitat for the Mississippi Sandhill Crane. The court determined that the requirements of Section 7 of the ESA were not complied with.

Sierra Club v. U.S. Army Corps of Engineers, 2002

The Sierra Club sued the Corps and the Florida Department of Transportation (FDOT) to halt construction of the Suncoast Parkway, a 41.6-mile, four-lane toll road that allegedly failed to comply with the procedural requirements of Section 7 of the ESA for the Florida panther and three kinds of plants. The District Court and Appeals courts found for the Corps and the FDOT.

CLEAN WATER ACT (FEDERAL WATER POLLUTION ACT), *as amended*

(33 U.S.C. 1251 to 1376)

In 1972, Congress passed the Clean Water Act (CWA) to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" and to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." Primary authority for the implementation and enforcement of the CWA now rests with the U.S. Environmental Protection Agency (EPA). In addition to the measures authorized before 1972, the Act authorizes water-quality programs, requires federal effluent limitations and state water-quality standards, requires permits for the discharge of pollutants into navigable waters and provides enforcement. Provisions have also been added to address water-quality problems in specific regions and specific waterways. The CWA requires state water-quality standards to include an antidegredation policy, which mandates a specific standard of protection for each of three different categories of water — all of the nation's water, high quality waters, and Outstanding National Resource Waters.

Important for wildlife protections are the provisions requiring permits to dispose of dredged and fill materials into navigable waters. Section 404 permits, which apply to many wetlands, are issued by the Army Corps of Engineers under guidelines developed by the EPA.

LAND AND WATER CONSERVATION FUND ACT OF 1965

(16 U.S.C. 460)

This Act regulates admission and special-recreation user fees at certain areas and establishes a fund to subsidize state and federal acquisition of lands and waters for recreation and conservation. The purposes of the Act are to assist in preserving, developing and assuring accessibility to outdoor recreation resources and to strengthen the health and vitality of U.S. citizens by providing funds and authorizing federal assistance to states in planning, acquiring and developing land and water areas and facilities, and by providing funds for federal acquisition and development of lands and other areas.

EMERGENCY WETLANDS RESOURCES ACT OF 1986

(16 U.S.C. 3921 to 3931)

The purpose of the Act is to promote wetlands conservation for the public benefit and to help fulfill international obligations in various migratory bird treaties and conventions. The Act authorizes the purchase of wetlands from Land and Water Conservation Fund monies. The Act also requires the secretary of the Interior to establish a National Wetlands Priority Conservation Plan, requires the states to include wetlands in their Comprehensive Outdoor Recreation Plans, and transfers funds from import duties on arms and ammunition to the Migratory Bird Conservation Fund.

RIVERS AND HARBORS ACT OF 1899

(33 U.S.C. 401 et seq.)

The Act places federal investigations and improvements of rivers, harbors and other waterways under the jurisdiction of the Department of the Army, under the direction of the Secretary of the Army and under the supervision of the Chief of Engineers. It also requires that all investigations and improvements include due regard for wildlife conservation. As enacted in 1938, the Act authorized more than 50 individual water projects.

49 U.S.C. 303, Protection of wildlife and waterfowl refuges

Policy on lands, wildlife and waterfowl refuges and historic sites:

(a) It is the policy of the United States government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges and historic sites.

(b) The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.

(c) The Secretary may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of public land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of an historic site of national, state, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if (1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

This ~~highway~~ overpass in Banff National Park, Canada, was designed for use by wolverines. Photo by Reno Sommerhalder.

23 U.S.C. 109(h), Economic, social, and environmental effects of highways

Not later than July 1, 1972, the Secretary, after consultation with appropriate federal and state officials, shall submit to Congress, and not later than 90 days after such submission, promulgate guidelines designed to assure that possible adverse economic, social, and environmental effects relating to any proposed project on any federal-aid system have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest, taking into consideration the need for fast, safe and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects and the following: (1) air, noise, and water pollution; (2) destruction or disruption of man-made and natural resources, aesthetic values, community cohesion and the availability of public facilities and services; (3) adverse employment effects, and tax and property values losses; (4) injurious displacement of people, businesses and farms; and (5) disruption of desirable community and regional growth. Such guidelines shall apply to all proposed projects with respect to which plans, specifications, and estimates are approved by the Secretary after the issuance of such guidelines.

49 U.S.C. 5324(b), Economic, social, and environmental effects of transit

Economic, *Social* and *Environmental Interests* — (1) In carrying out section 5301(e) of this title, the Secretary of Transportation shall cooperate and consult with the Secretaries of Agriculture, Health and Human Services, Housing and Urban Development, and the Interior and the Council on *Environmental* Quality on each project that may have a substantial impact on the environment. (2) In carrying out section 5309 of this title, the Secretary of Transportation shall review each transcript of a hearing submitted under section 5323(b) of this title to establish that an adequate opportunity to present views was given to all parties with a significant ***economic***, ***social***, or ***environmental*** interest and that the project application includes a statement regarding:

(A) the ***environmental*** impact of the proposal;

(B) adverse ***environmental effects*** that cannot be avoided;

(C) alternatives to the proposal; and

(D) irreversible and irretrievable impacts on the environment.

Executive Order 13112 (64 FR 6183), Invasive Species

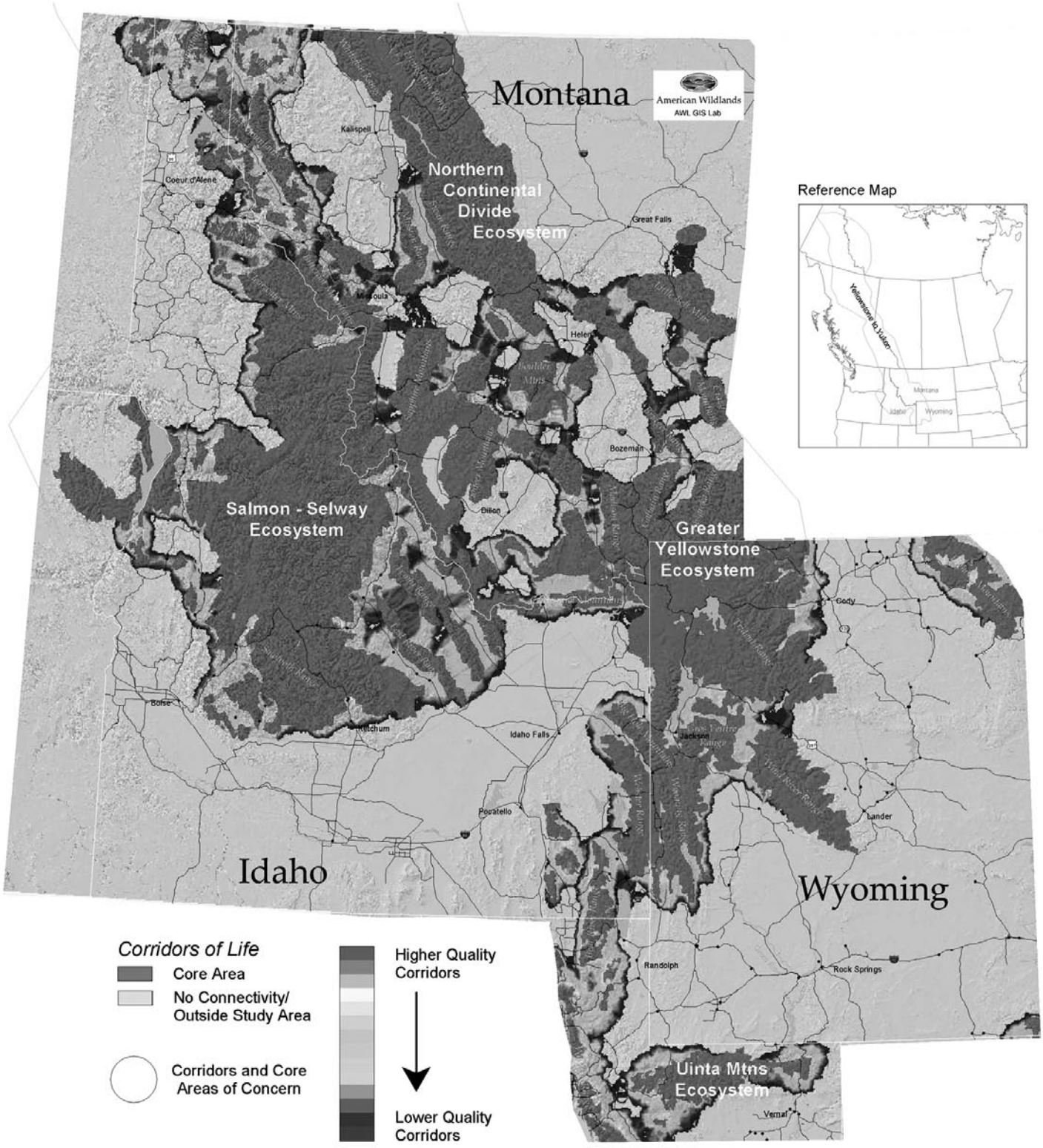
This Executive Order prevents "the introduction of invasive species and provides for their control to minimize the economic, ecological, and human health impacts that invasive species cause..."

Executive Order 11990 (42 FR 26961), Protection of wetlands

This Order was created to "avoid to the extent possible the long- and short-term adverse effects associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative..."

APPENDIX A

American Wildlands Regional Wildlife Corridor Map



APPENDIX B

Sources for scientific studies about the effects of roads on wildlife

A literature collection of effects of highways on wildlife populations has been compiled by Wildlands Center for Preventing Roads, which has a searchable bibliography on their website (**www.wildlandscpr.org/databases/bibliographicdatabase.htm**)

The Natural Resources Defense Council has a full report of *"End of the Road: The Adverse Ecological Impacts of Roads and Logging: A Compilation of Independently Reviewed Research"* (1999) by Ayesha Ercelawn that can be accessed at **www.nrdc.org/land/forests/roads/eotrinx.asp**

"The Ecological Effects of Roads" by Dr. Reed Noss is available at **www.eco-action.org/dt/roads.html**

Anthony Clevenger's literature collection about the effects of highways on wildlife populations is available at **www.cmiae.org/biblio.html**

Scott Jackson's overview of transportation impacts on wildlife is available at **www.cmiae.org/biblio.html**

Appendix C
Department of Transportation contacts in the Northern Rockies

Montana Department of Transportation

Gary Larson, contact for information about the Statewide Transportation Improvement Program (STIP), (406) 444-6110

Jean Riley, Environmental Engineering Manager, 444-9456

Sandy Strail, Operations Manager in Transportation Planning Division, (406) 444-7692

Charity Watt-Levis, Public Relations Specialist, (406) 444-7205

Idaho Transportation Department

Gary Sanderson, Planning Services Manager, (208) 334-8211

Mark McNees, contact for information about the Statewide Transportation Improvement Program (STIP), (208) 334- 8272

Jeff Stratten, Public Information Officer, (208) 334-8005

Dennis Clark, Environmental Section Manager, (208) 334-8203

Wyoming Department of Transportation

Debbie Eccli, Planning Program Supervisor, contact for information about the Statewide Transportation Improvement Program (STIP), (307) 777-4183

Lisa Murphy, Public Information Officer, (307) 777-4010

Tim Stark, Environmental Services Manager, (307) 777-4379

Federal Highways Administration

Idaho — **Stephen Moreno**, Division Administrator, (208) 334-1843

Montana — **Janice Weingart Brown**, Division Administrator, (406) 449-5302

Wyoming — **Philip Miller**, Division Administrator, (307) 772-2101

Appendix D
Wildlife and transportation resources

Department of Transportation, **www.dot.gov**

Keeping it Simple: Easy Ways to Help Wildlife Along Roads, DOT, **www.fhwa.dot.gov/environment/wildlifeprotection/index.cfm**

Federal Highway Administration, **www.fhwa.dot.gov**

Critter Crossings: Linking Habitats and Reducing Roadkill, **www.fhwa.dot.gov/environment/wildlifecrossings/**

American Wildlands, **www.wildlands.org**

Defenders of Wildlife, Habitat and Highways Program, **www.defenders.org/habitat/highways/**

Wildlands Center for Preventing Roads, **www.wildlandscpr.org**

Western Transportation Institute, **www.coe.montana.edu/wti/**

The Center for Transportation and the Environment, **www.cte.tv/**

The Volpe Center, **www.volpe.dot.gov**

Banff National Park, Highway and Wildlife research, **www.pc.gc.ca/pn-np/ab/banff/docs/routes/chap3/sec4/routes3d_e.asp**

Wildlife Crossings Toolkit, **www.wildlifecrossings.info/**

International Conference on Ecology and Transportation, **www.icoet.net/links.html**

Second Nature: Improving Transportation Without Putting Nature Second, Patricia White and Michelle Ernst, Defenders of Wildlife and Surface Transportation Policy Project. (Contact **www.defenders.org** for a copy).

American Wildlands
40 East Main Street, Suite 2
Bozeman, Montana 59715