Committee on Ecology and Transportation Newsletter

Transportation Research Board Committee ADC30 Summer 2009

Notes from the Chair

Tom Linkous, Chair

Ecology and Transportation Committee members and friends, summer is rapidly fading and it is almost time for ICOET. I hope you are among the lucky people who will be there. Be sure to read Alex Levy's short article and join in finding the best papers for presentation at the January TRB Annual Meeting. We need everyone's help with this! One of our goals as a committee is to provide liaison between ICOET and TRB and bringing some of the best ecological research and innovative solutions for ecological-transportation problems back to TRB to reach a more focused transportation audience.

An important committee topic is rotation. This will be our third year as a committee and the TRB approach to keeping committees fresh requires rotation of about 1/3 of members on a triennial basis. If you are a member who has not been active and don't anticipate being able to make meetings over the next few years please let me know and I will put your name on the rotation list. If you are a friend and have the desire to become a member provide your contact information and indicate your desire to serve on the committee. Appointments are for 3 years and are renewable for a maximum of three terms or 9 years.

Another important note on ICOET: The Committee on Ecology and Transportation will be meeting on Tuesday evening (Sept 15) from 7:00 to 10:00 PM. Please try to make this meeting if you are at ICOET. As always friends are welcome.

An Investigation into the Use of Road Drainage Structures by Wildlife in Maryland

By Bill Branch, Maryland State Highway Administration

In the late Spring of 2008, the Maryland State Highway Administration approved a two year research proposal by the University of Maryland Center for Environmental Studies to investigate the use of highway drainage structures by wildlife. The purpose of this research is to provide documentary evidence of whether current drainage structures are providing (and at what frequency) a means of passage for the safe movements of animals. Three hundred structures ranging in size from 4 feet to 20 feet in cross section were randomly selected for the study. All geographic regions of Maryland are represented in the random sample. Road systems being studied include limited access divided interstate systems as well as primary and secondary state roads with variable traffic volumes.

The need for this information is particularly helpful given the current economic climate and increased focus on environmental stewardship in road design. Many transportation system projects rely on the expansion of existing corridors rather than the construction of new systems in undeveloped environments. Thus the ability to provide wildlife passage for expansion projects may be limited to the extension or modification of existing drainage structures. For those projects on new locations, information is needed on the most cost effective solutions that will allow for wildlife movements while reducing incidents of highway related animal mortality (i.e. what is currently working and under what circumstances).

After the first year of data collection it is becoming apparent that a wide array of wildlife species are finding existing structures usable. As this research continues and concludes it may provide the basis for a more educated discussion on wildlife passage mitigation issues as well as suggestions on future more focused research. We at Maryland SHA are considering a follow on project at a reduced number of sites where we have road mortalities documented near a usable structure. This would involve the placement of wildlife fencing along the road to encourage use of the existing structure rather than allowing for opportunistic crossings to be an option. The results of this phase of research may help to document the effectiveness of under passage and fencing as a combination tool that can increase highway safety while providing habitat corridor linkages.

New Report Published: Measuring the Reliability of Animal Detection Systems in a Test-Bed

By M.P. Huijser, Western Transportation Institute

Animal–vehicle collisions affect human safety, property, and wildlife, and the number of animal–vehicle collisions has been increasing in many regions across North America. For this project Animal detection systems are a relatively new mitigation measure aimed at reducing animal–vehicle collisions. Animal detection systems detect large ungulates (e.g., deer, elk, moose, or pronghorn) as they approach the road. When an animal is detected, signs are activated warning drivers that large animals may be on or near the road at that time. Previous research has shown that, depending on road and weather conditions, the warning signs can cause drivers to reduce their speed. Warning signs may also result in more alert drivers, which can lead to a substantial reduction in stopping distance. Finally, research has shown that animal detection systems can reduce ungulate–vehicle collisions substantially. However, since the effectiveness of the systems depends on driver response, reliable systems are essential. Reliability data and norms are rare or non-existent though.

The test bed consists of animal detection systems, an enclosure for horses and llamas, infrared video cameras, and a remote office. The detection zones and detection lines were marked with cones to be able to record the position of the animals (Photo: Marcel Huijser, WTI/MSU).

We measured the reliability of nine different systems from five different manufacturers at the TRANSCEND cold region rural transportation research facility near Lewistown, Montana. The systems were to detect horses and llamas that roamed in an enclosure. Data loggers recorded the date and time of each detection for each system. The animal movements were also recorded by six infrared cameras with a date and time stamp. By analyzing the images and the detection data, researchers were able to evaluate the system for a variety of reliability parameters.

The percentage of false positives (i.e., a detection is reported by a system but there is no large animal present in the detection zone) and the average number of false positives per hour was relatively low for all systems (≤1%; ≤0.10/hr). The percentage of false negatives (i.e., an animal is present in the detection zone but a system failed to detect it) and the average number of false negatives per hour was highly variable (0–31%; 0–1.61/h) (all types of false negatives combined). The percentage of intrusions (i.e., animal movements across the detection line) that were detected varied between 73 and 100 percent. Five of the nine systems met suggested minimum reliability norms that were based on interviews with three stakeholder groups: employees of transportation agencies, employees of natural resource management agencies, and the traveling public. We suggest that current and future detection systems should have their reliability investigated in a controlled setting, such as the test-bed, before they are installed along a real road and expose drivers to the warning signs.

The full citation for the report is :Huijser, M.P., T.D. Holland, M. Blank, M.C. Greenwood, P.T. McGowen, B. Hubbard, S. Wang. 2009. The Comparison of Animal Detection Systems in a Test-Bed: A Quantitative Comparison of System Reliability and Experiences with Operation and Maintenance. Final report. FHWA/MT-09-002/5048. Western Transportation Institute – Montana State University, Bozeman, MT, USA. It is Available from the internet at: http://www.coe.montana.edu/wti/wwwshare/Report%20FHWAMT-09-002%205048/

Session Summary: Partnerships toward Ecological and Cultural Sustainability

Applications of Peer-to-Peer Information Sharing Technologies to Advance Individual Organizational Missions While Adapting to Changing Budgets and Climates

By: Joe Burns, National Transportation Ecology Program Leader, U.S. Forest Service

The Ecology and Transportation Committee was one of several sponsors of a lively session at the 2009 Annual Meeting. Led by Joseph Burns, National Transportation Ecology Program Leader, U.S. Forest Service and Shari Schaftlein, Team Leader - Project Development and Environmental Review, FHWA, attendees discussed the application of peer-to-peer information technology (P2P technology) such as webinars, wikis and data warehouses as a means to continue information exchange in the face of declining budgets. The session included brief case studies by representatives of 3 different federal agency who were leading separate nation-wide initiatives that require close coordination with other agency and stakeholder interests.

Discussions identified the range of peer to peer information sharing technologies currently being used, the advantages and weaknesses of specific technologies, opportunities to increase the effectiveness of P2P technologies, with a goal to form a focus group of interested session participants to advance a research problem statement and possibly advance a subsequent peer exchange to advance P2P technologies.

Advantages of a peer-to-peer information sharing technology include:

- Simultaneous consideration of multiple transportation planning issues.
- Joint project planning to ensure coordinated efforts and reduced conflict, duplication of efforts and project timeframes.
- Better optimization of all transportation planning values through an integrated mitigation strategy.
- Cost-sharing of mitigation projects to ensure cost-effective implementation.
- Enhanced communication with reduction of travel.
- More effective engagement of the public's limited time, attention and involvement.

Following are a few brief bullets of key points garnered from the session:

- There was relative agreement of the increasing need to use P2P technology to do our job effectively.
- Some of the technological challenges involved data security issues.
- Shareware/software that can be shared easily and do not have proprietary encumbrances was important
- Some publicly available applications such as Google have limited value to government agencies who may be forbidden or prevented from accessing these sites.
- There were legal concerns by some which call into question private organizations may own "public data" entered by government agencies.
- Development and maintenance of the technologies is time consuming and may require additional investment of time and resources that compete with projects with a short turn around.
- One participant noted that knowledge is power and cultural shifts in how information is managed may need to occur within some agencies or individuals.
- Portals which connect different P2P applications or websites seem to offer great promise but that improvements may be needed to gain untapped potential.

Volunteers agreed to meet after the session through email to discuss next steps which could include:

- The development of research problem statement to advance P2P technology
- A formal or informal agreement to develop a portal that links multiple federal agency initiatives and the development of recommendations based on lessons learned.

Wildlife Monitoring of the U.S. Highway 17 Underpass in Chesapeake, Virginia

By: Bridget Donaldson, Research Scientist, Virginia Transportation Research Council

In November 2005, the Virginia Department of Transportation (VDOT) realigned and widened more than 10 miles of U.S. Highway 17 in Chesapeake, Virginia in order to accommodate growing traffic volume and to increase safety. Through extensive coordination with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and technical experts in the region, measures were designed to minimize impacts to the area's natural resources and the neighboring Great Dismal Swamp National Wildlife Refuge (GDSNWR). This 111,000 acre refuge is home to a variety of wildlife, including one of the largest black bear populations on the east coast. A previous study of genetic statistics of bears at GDSNWR compared to bear populations further south suggested that the bear population at the refuge is isolated to some degree, potentially due to geography and encroaching urban development. Highway 17 crosses an important riparian corridor, which is one of the last remaining corridors connecting the refuge to other patches of black bear habitat along the eastern coast of the U.S. Animal-vehicle collisions were frequent along the original U.S. Highway 17, including multiple bear deaths in the last several years before its closing.

The primary mitigation for this project included the construction of two parallel bridges, 984 ft long (or wide, from the animal's perspective) and approximately 8 ft high that span a wetland within the riparian corridor. Two dry berms (each 25 ft wide) were constructed on the wetland beneath both ends of the bridges to serve as wildlife crossings, and nearly 2 miles of 10 ft high fencing extends from the underpass to help guide wildlife toward the underpass and prevent them from entering the roadway. This $4.2 million project was designated as a 2004 Exemplary Ecosystem Initiative by the Federal Highway Administration (FHWA) for protecting wildlife and preserving the ecosystem along the GDSNWR.

Virginia Transportation Research Council conducted a 29-month monitoring effort (November 2005 – April 2008), with the help of students from Virginia Wesleyan College, designed to determine (1) whether the underpass is successful at facilitating wildlife passage, and (2) whether wildlife crossing frequency increases over successive years. The moni-

■ See **WILDLIFE,** Page 5

Photographs (black bear, bobcat, and white-tailed deer) captured by remote cameras in the U.S. Highway 17 underpass

■ **WILDLIFE** from page 4

toring study documented 550 crossings by at least 12 species. Cameras documented 13 bear crossings during the second year following underpass construction. If a similar bear crossing frequency continues in subsequent years, it is expected to be more than sufficient to satisfy the dispersal and reproductive needs that will help prevent isolation from bear populations further south. Deer crossings peaked in the fall and spring, corresponding with periods of increased movement associated with feeding and mating activities, but there were no significant seasonal or monthly differences in any species' crossings throughout the monitoring period. This may be attributed to the fact that the monitoring period included only two to three seasons. Additional years of monitoring may be required to determine whether species' use increases over time and whether seasonal or monthly patterns exist in crossing frequencies.

Results suggest that the underpass is not only successful at connecting important wildlife habitat, but, as deer represented 30 percent of the crossings, the underpass also reduces the risk of large animal collisions. Given the significant effort and cost put forth for this mitigation, the information gained from this project can assist with decisions regarding future investments in underpass mitigation projects. The value of successful wildlife underpasses increases over time in terms of its ecological significance (i.e. facilitating wildlife movement and conserving important habitat); benefits to drivers from a reduction in animal-vehicle collisions; and cost savings to VDOT in carcass removal and disposal expenses.

For further information or for a copy of the full report, contact Bridget Donaldson: Bridget.Donaldson@VDOT.Virginia.gov, Phone: 434-293-1922, Fax: 434-293-1990

The Effects of Highways and Highway Construction Activities on Valley Elderberry Longhorn Beetle Habitat

By: Harold G. Hunt , Division of Research and Innovation, Office of Materials and Infrastructure, Caltrans

Introduction

Caltrans strives to improve mobility for people and goods in California while preserving valuable natural resources. Roads can fragment natural habitat and limit the movement of organisms. Further, vehicular traffic and activities, such as road construction, can generate pollutants, light and noise or vibrations.

Of particular concern in the Central Valley are the effects of roads on the Federally-threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Threats to its survival and recovery include actions harming the beetle either indirectly, by impacting its host shrub, blue elderberry (*Sambucus mexicana*), or directly, through death, or disturbance of vital processes such as feeding or reproduction. Little is known about the actual effects of the highways on the beetle, leading to mitigation that is sometimes expensive and of unknown conservation effectiveness. Caltrans sponsored research by Theresa Talley and Marcel Holyoak of the University of California, Davis to help understand how the highway system impacts the beetle and how to reduce these impacts in a cost effective manner.

The research consisted of two parts: First, how does proximity to highways or highway construction activities affect beetle occupancy and its host shrubs? And, second, how does trimming elderberries affect beetle occupancy and its host shrubs? In the proximity work the researchers emphasized the effects of particulates, pollutants, and noise. The trimming work was an augmentation of an already ongoing effort.

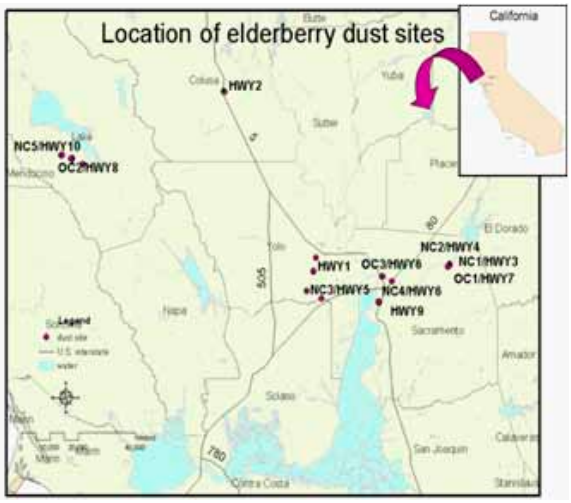
Research Methods

For the proximity study, sites were selected along highways throughout the northern Central Valley and near Clear Lake. Field surveys were conducted during 2006, 2007, and 2008.

Elderberry condition was measured, counts of recent and old beetle holes were made, and background sediment deposition rates were measured. Noise levels were measured by Caltrans during May 2007. One hundred leaflets were collected from each shrub for laboratory analysis. The resulting data were statistically analyzed. Power analysis was used to test the statistical power of each comparison to confirm that non-significant results were real and not due to a lack of sufficient replication.

■ See **HIGHWAYS,** Page 6

■ **HIGHWAYS** from page 5



For the trimming study, pruning (removing 50% ≤ 2.5-cm diameter branches from each shrub), and topping (removing the top 1 m of a shrub or clump of shrubs) were examined. Research took place along the American River Parkway in Sacramento, CA. In each experiment, elderberry survival, growth and condition were measured. The effects of pruning on plant nutrition were estimated, and the effects of pruning on plant defense chemical production were tested. The recovery of beetle habitat was assessed by recording the number and maximum diameter of replacement branches. To assess the effects of trimming on beetle occupancy, each shrub was searched for the presence and abundance of new beetle exit holes. The resulting data were statistically analyzed.

Research Results

The beetle occurred along roadsides and in highway post-construction sites at occupancy rates similar to non-highways sites in the northern Central Valley, illustrating that these areas can serve as habitat for this threatened species. The presence of exit holes in most sites, the lack of detectable increases in dust and most foliar toxins with proximity to roads, and the similar noise levels at the highway sites in this study suggest that these elements may not occur at high enough levels in the roadside habitats examined to exclude the beetle. Often, however, only large effects were detectable in this study due to low replication. Larger-scale and/or controlled experimental studies are needed to test specific effects on the fitness and survival of beetle and elderberry individuals.

Trimming (pruning and topping) did not impact numbers of beetles in elderberry shrubs and clumps of shrubs. There were no detected changes in the condition of elderberry shrubs. The only negative effect of trimming observed was a temporary loss of habitat in the form of the cut stems,

but these stems generally regrew within 3-4 years. The trimming analyses were conducted with reasonable sample sizes for detecting the effects of pruning and topping on both beetles and elderberry.

Management Suggestions

Based on the research results, the largest risk of highways and highway-associated activities to existing roadside beetle populations is likely from the direct effects of construction activities (noise, dust, movement) on adults or exposed larvae and eggs, so projects should continue to be performed outside of beetle emergence season (March to June). Weather conditions can interact with effects of highways or construction activities. For example, dust accumulations during times of drought may further stress shrubs, leading to reduced host quality or death. Weather such as humidity and wind may also affect the amount and direction of airborne particulates. Thus, the research team suggests that mitigation actions such as occasional rinsing of elderberry to remove dust and toxins, and wetting or covering of loose sediments and/or limited ground cover removal should be considered during dry and/or windy periods.

Further Reading

Talley, Theresa S. and Marcel Holyoak. 2009. The effects of highways and highway construction activities on valley elderberry longhorn beetle habitat. Final Report FHWA/CA09-0925. California Department of Transportation, Division of Research and Innovation, Office of Materials and Infrastructure, Sacramento CA.

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Environmental Effects of Dust Suppressant Chemicals on Roadside Plant and Animal Communities in National Wildlife Refuges: Project Update June 2009

By: B.K. Williams, E.E. Little, and S.E. Finger, U.S. Geological Survey, Columbia, MO

Dust from unpaved roads creates human health concerns in the form of inhalable particulate matter, road hazards due to reduced visibility, and compromised road surface durability through the loss of fine particles. Over 400 products in six major categories are commercially available for use as dust suppressants; however, many of these products are poorly characterized and lack reliable toxicity and environmental fate data. Because these products may be applied to roadways in sensitive habitats and enter roadside ecosystems, we completed an initial toxicity assessment of eight commercial dust suppressants representing four suppressant categories (organic petroleum, organic non-petroleum, synthetic polymer emulsion, and electrochemical). Each product was tested in its original form, as well as an aged form exposed to 200-700 nm ultraviolet (UV) radiation for 48 hours prior to testing. Our objectives were to 1) determine the toxicity of dust suppressant products in water to a representative vertebrate (rainbow trout-*Oncorhynchus mykiss*) and 2) compare sensitivity of test organisms to aged and unaged products. In general, synthetic polymers were the product class exhibiting the lowest toxicity to rainbow trout, with 96-h LC50s greater than 1,000 mg/L. The two most toxic products—one enzyme-based (electrochemical class) and one modified from soybean oil (organic non-petroleum class)—were approximately two orders of magnitude more toxic (96-h LC50s 10-25 mg/L), a result not anticipated from Material Safety Data Sheet (MSDS) or other product information. Results from UV-aged exposures were generally consistent with those from unaged dust suppressants, with the exception of one organic petroleum product. In this case, UV aging enhanced toxicity to rainbow trout nearly four-fold. These results underscore the need for more extensive ecotoxicological testing of dust suppressants, as well as the necessity of considering potential toxicity resulting from product degradation.

Whereas previous studies evaluated the toxicity of unaged and aged parent products in water (simulating the entry of products into aquatic habitats through overspray during initial application), tests currently underway will determine the toxicity to rainbow trout of dust suppressant products aged on soil substrates and then physically weathered (as would be the case as a treated road bed degrades over time, allowing soil particles and associated weathered product to wash into roadside habitats). Products will be applied to a homogenized soil mixture at the manufacturer's recommended rate and at two times the recommended rate in a manner simulating recommended road bed preparation. Fish will be exposed to an elutriate prepared from the cured soil treatments.

At the completion of these studies, 3-4 of the least toxic products will be evaluated for potential use on wildlife refuge lands. These tests will use a wider range of aquatic and terrestrial species, potentially including such organisms as duckweed, crayfish, midge, amphipods, earthworms and ryegrass, and are expected to continue through April 2010.

Potential study sites are being considered for field tests tentatively scheduled to begin Fall 2009. Site selection criteria include 1) sufficient road lengths to allow replicated applications of three different products, 2) no history of dust suppressant treatment, 3) light to moderate traffic, 4) a relatively uniform vegetation community, and 5) location within convenient travel distance. Pre- and post-treatment assessments of roadside community composition will be conducted, in addition to collection of treated road materials and adjacent soils. Collected materials will be used for soil characterizations and in laboratory toxicity tests to confirm the results of 2009 substrate tests. In-situ tests of potential toxicity will also be conducted following field applications, using caged aquatic and terrestrial organisms and seedling transplants. The field studies will be conducted through 2012.

Random thoughts on Mutualism

By Alex Levy, Arcadis US Inc.

Mutualism (myū'chū-ə-lĭz'əm)
(noun): An association between organisms of different species in which each member benefits.
See also: TRB Ecology & Transportation Committee (ADC30)
International Conference on Ecology & Transportation

It is the mission of the TRB Ecology and Transportation Committee to stimulate research and communicate the results of recent and ongoing research to and throughout the transportation community; engage in research, planning, evaluation, education and outreach associated with sound ecological principals and designs; and integrate ecologically sound principles into transportation planning, decision-making, and design. Similarly, it is the mission of the International Conference on Ecology and Transportation (ICOET) to identify and share quality research applications and best management practices that address wildlife, habitat, and ecosystem issues related to the delivery of surface transportation systems. ICOET is the primary forum for an international gathering of the foremost experts in the field of transportation development, related scientific study, and administrative processes that can enhance both the project development process and the ecological sustainability of transportation systems.

Together, TRB Ecology and Transportation Committee and ICOET provide the surface transportation and conservation communities with a fountainhead of technical knowledge, innovation, and applied research from which to explore and improve the quality and value of transportation and resource conservation. As in years past, this September - at the biennial gathering that is ICOET - attending Members and Friends of the Ecology and Transportation Committee are asked to undertake a reconnaissance to seek-out those oral and poster presentations that merit invitation and iteration at a conference session during the 2010 TRB Annual Meeting in Washington, DC.

Friends and Members of the Ecology and Transportation Committee are simply asked to listen carefully to what you see and hear at ICOET. When a subject and its presenter(s) catch your attention:

1. Consider its relevance to the 2010 TRB Annual Meeting theme: Investing in Our Transportation Future – BOLD Ideas to Meet BIG Challenges;
2. Approach the presenter/author about their willingness/ability to attend the annual meeting: January 10-14, 2010;
3. Volunteer what you've seen/heard with 2010 Annual Meeting Program Coordinator, Alex Levy and/or Committee Chair, Tom Linkous; or
4. Be prepared to answer the question: "What did you see, hear, or like at ICOET?"

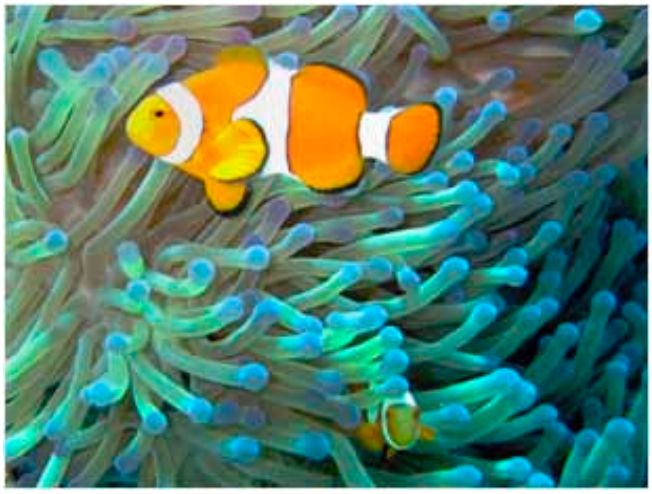

Photo: Jan Derk

TransWild Alliance Grows as Challenges Increase for Wildlife Habitat Connectivity

By Becky Beard and Trisha White, Defenders of Wildlife

Transportation and Wildlife

Conservation advocates have been struggling with the impacts of poorly planned highways for decades. Yet this issue is still new to the field of conservation, and many organizations have had difficulty learning and navigating the complicated world of transportation. With limited resources—staff, time and money—organizations have needed to partner with each other to affect change on Capitol Hill and on the ground. Through these continuing partnerships, an informal alliance was developed in 2005 among conservation organizations striving to influence transportation projects and policy and to reduce the impacts of highways on wildlife and natural resources. In 2007, the TransWild Alliance was officially established, and the creation of a website facilitated increased communication among members.

All TransWild Alliance members are non-profit non-governmental organizations who work on wildlife/transportation issues and conflicts at some level. Member groups lend each another support on individual and collaborative projects, share ideas, send up red flags about potentially harmful projects and legislation, and work together on issues of regional significance. Members receive the support of conservation allies from around North America, as well as road ecology updates and important contact information. Members' work is highlighted in TransWild Alliance publications and on the TransWild Alliance website at www.TransWildAlliance.org. The website also features an extensive road ecology resource library, blog, advocacy toolbox, photo gallery, events calendar, and news section.

A Little Goes a Long Way

In 2008, the TransWild Alliance hosted its first mini-grant program, offering small one-time grants to assist non-governmental conservation advocacy organizations with projects, actions or activities that seek to reduce the impacts of highways on wildlife. A selection committee reviewed several applications from across North America and chose twelve groups to receive $2,500 each. Winning projects ranged from a public education campaign aimed at reducing wildlife-vehicle collisions in British Columbia, to the development of a regional habitat conservation plan in Arizona, to a stream crossing study in Massachusetts. "Having support from leaders and advocates across the nation puts our local project onto a much bigger stage," said Chris Slesar of the Monkton Conservation Commission, grant recipients for an amphibian tunnel project in Vermont. "This grant gives us a major stamp of legitimacy and helps us leverage other funding." A total of $30,000 was awarded to twelve grant recipients. The mini-grant program continued in 2009, allowing ten more organizations to further their project goals with $2,500 each. Applications will be sought for a new round of grants in early 2010.

Maine Audubon, a 2008 mini-grant recipient, met with state environmental and transportation agencies to discuss how animal movement is currently addressed in Maine and what legislative changes are needed. They used the funding to promote road ecology and generate support for related state legislation at a variety of events, as well as to organize presentations towards incorporating wildlife corridors into transportation/land use planning in Maine. Maine Audubon introduced state legislation as part of a coalition of groups interested in addressing the interface between transportation, climate change, wildlife, and land use. This major legislative initiative was the Maine Climate and Energy Planning Act, or LD 1333, and was sponsored by the Maine Speaker of the House. The proposed Act would give decision-makers the tools they need to consider climate change impacts in land use planning, and would maintain and repair roads and stream crossings to allow streams to flow more naturally and wildlife to access connected cores of habitat. This summer, LD 1333 was passed to help sustain Maine's native aquatic species by requiring adequately sized culverts for safe passage under roadways.

www.maineaudubon.org/conserve/roads/roads_home.shtml

The Center for Native Ecosystems (CNE) received a mini-grant in 2008 for their Habitat Connectivity Campaign, which focuses on outreach and education to generate public support for habitat linkages and transportation mitigation. CNE's I-70 Safe Passages Project involves training citizen scientists to aid in data collection during spring migration, and outreach efforts with mountain communities. Their contract with the Colorado Department of Transportation will allow CNE to provide ecological mitigation recommendations for the eventual I-70 expansion project. I-70 Wildlife Watch, an interactive website, will allow motorists to record wildlife and roadkill sightings to gain a broader picture of where wildlife is attempting to cross the interstate. This public outreach tool will help to build community support for the ecological mitigation strategies of the I-70 Safe Passages Project. CNE has also participated in a numerous public events to discuss the concept of habitat connectivity from both a Southern and Northern Rockies perspective, and has presented their GIS mapping and analysis techniques used to incorporate wildlife corridor data into land use and transportation planning efforts in the Rocky Mountain region.

http://nativeecosystems.org/campaigns/habitat-connectivity

American Wildlands (AWL), a 2009 mini-grant recipient, is currently working on an analysis of the intersection between wildlife linkages and highway-wildlife interaction concentration areas to determine western Montana highway mitigation priorities. As part of their Safe Passages Program, this analysis is designed to (1) enable AWL and other organizations (including state and federal agencies) to prioritize wildlife mitigation on highways based on wildlife linkages, and (2) to determine opportunities for collaborative highway wildlife mitigation efforts due to a highway safety component and land ownership patterns. The anticipated outcome of AWL's project is increased connectivity for wildlife across areas with high animal-vehicle collision rates. The TransWild Alliance mini-grant will enable them to finalize highway mitigation priorities based on assessment results, ensure delivery of GIS data products, and fully distribute the assessment report methods and results to state and federal agencies and to the public.

www.wildlands.org/programs/safepassages/internalassessment

TEA Time

Transportation, land use, and development patterns have had a detrimental effect on our natural resources and wildlife populations by consuming and fragmenting habitat, and disturbing wildlife movement corridors. Congress can address these issues in the upcoming reauthorization of SAFETEA-LU by making decisions regarding the planning, design, and retrofitting of our transportation infrastructure and conservation network, which will affect how well these systems adapt to change in the future. Though climate change will wreak havoc on our infrastructure and ecosystems, the TransWild Alliance strongly supports state and regional infrastructure inventories and habitat connectivity analyses, which can identify opportunities to preserve or restore essential corridors via wildlife crossings, expanded culverts, viaducts, and elevated roadways. These measures to assist wildlife adaptation should be considered during climate change planning for transportation agencies.

Though Section 6001 of SAFETEA-LU requires transportation planners to consult with natural resource planners, state and federal resource agencies need ongoing training and support to complete the mapping of conservation plans that are essential to successfully integrate conservation and transportation planning. These agencies should work together to audit transportation work plans, searching for obvious conflicts or confluence with conservation and connectivity plans. The TransWild Alliance proposes that projects found to have positive benefits for conservation could be moved forward in the work plan and given a higher funding match ratio. Additionally, bridges to be replaced and rehabilitated present an opportunity for agencies to incorporate design modifications that reestablish or improve habitat connectivity. Using habitat connectivity plans, the National Bridge Inspection Standards program should include a thorough assessment of each bridge's ecological impacts and opportunities, including its effect on wildlife, habitat and movement. Where appropriate, bridges should be extended to span uplands that provide habitat and a movement corridor for terrestrial wildlife. This type of retrofitting project could easily be funded through Activity 11 of the Transportation Enhancements program, though Activity 11 language must be upgraded to include all wildlife, both terrestrial and aquatic species, in order to ensure fish passage project eligibility.

Wildlife-vehicle collisions now comprise 1 in 20 of all reported motor vehicle crashes. Since systematically collected wildlife-vehicle collision data will help identify and prioritize mitigation measures and locations, FHWA should develop and implement a standardized methodology for acquiring, sharing, and analyzing these data. Other recommendations by the TransWild Alliance are in regard to public lands: (1) transportation funding on public lands should be 100 percent eligible for maintenance, habitat connectivity restoration efforts, and alternative transportation; and (2) transportation agencies should be provided with sufficient resources to implement integrated roadside vegetation management programs as the standard for public rights-of-way.

Finally, the TransWild Alliance recommends that essential transportation research on the impacts of roads on wildlife and developing mitigation measures be supported and fully funded.

TransWild Alliance Member Organizations

Alaska Transportation Priorities Project
American Wildlands
BC Conservation, Wildlife Collision Prevention Program
Berkshire Environmental Action Team
Center for Native Ecosystems
Coalition for Sonoran Desert Protection
Conservation Northwest
Defenders of Wildlife
Desert Watch
Hells Canyon Preservation Council
Humane Society of the United States
I-90 Wildlife Bridges Coalition
Keeping Track
Lewis Creek Association
Maine Audubon
Miistakis Institute
Nature Conservancy
Nevada Wilderness Project
Ninemile Wildlife Workgroup
Round River
Sky Island Alliance
SOS Glenshire
Southern Rockies Ecosystem Project
The Wilderness Society
Tijeras Canyon Safe Passage Coalition
Two Countries, One Forest
UTSB Research
Virginians for Appropriate Roads
Western Environmental Law Center
Western Wildlife Conservancy
Wildlands Network
Wild Things Unlimited
Yellowstone to Yukon Conservation Initiative

If you represent a non-profit NGO that shares the concerns and works on similar issues as the TransWild Alliance, please contact Trisha White at trisha@TransWildAlliance.org

2009 International Conference on Ecology and Transportation
Adapting to Change
September 13-17, 2009 • Duluth, Minnesota

Several hundred of the world's foremost experts in ecology and transportation, representing more than 16 countries, will meet together in Duluth, Minnesota, this September for the 2009 International Conference on Ecology and Transportation (ICOET). The conference will be held September 13-17 at the Duluth Entertainment Convention Center in Minnesota's historic port city on scenic Lake Superior. The Minnesota Department of Transportation will serve as host state agency for the five-day event.

ICOET is a multi-discipline professional conference to identify and share quality research applications and best management practices that address wildlife, habitat, and ecosystem issues related to the delivery of surface transportation systems. Held every two years since 2001, the international forum brings together experts in transportation planning and design, related scientific study, and administrative processes that enhance both the development and ecological sustainability of transportation projects. ICOET addresses current impacts, issues and, most importantly, solutions to transportation and ecological concerns.

The 2009 conference in Duluth will feature more than 120 research paper and poster presentations in its technical program. Nearly 200 research abstracts from over 20 countries, a record number for ICOET, were submitted for consideration by the conference program committee. The previously successful 2007 conference in Lithe Rock, Arkansas, drew over 350 participants. Presenters and attendees confirmed for 2009 will represent more than 16 countries including the US, Australia, Brazil, Canada, France, India, Ireland, Israel, Mexico, the Netherlands, Portugal, the People's Republic of China, Sweden, Switzerland, Taiwan, and Wales.

Six new countries, including Mexico and the People's Republic of China, are presenting research at ICOET for the first time. Another first for this years conference will be a presentation by Native American participants from Minnesota's Fond du Lac Band of Lake Superior Chippewa. The participation of the international community at ICOET greatly enriches the body of research generated by the conference and provides a vital global perspective on both the state of the art and state of the practice in addressing ecological issues associated with transportation infrastructure.

"Adapting to Change" is the timely theme of the 2009 conference program. Now more than ever, our transportation systems and ecosystems need to be addressed in the contexts of global climate change, shifts in funding and priorities, and evolving environmental and transportation policies. The interaction between transportation infrastructure and natural systems requires increasingly interdisciplinary, integrated approaches to planning, building, maintaining and monitoring the health of these systems. ICOET 2009 will focus on the challenges being faced, and solutions being found, as we adapt to emerging changes in ecology and transportation.

The Federal Highway Administration is an official sponsor of ICOET, along with the USDA Forest Service, US Fish and Wildlife Service, US Environmental Protection Agency, several state departments of transportation, universities, businesses, and nonprofit organizations. The Center for Transportation and the Environment at North Carolina State University is a co-sponsor and lead organizer of ICOET.

For more information on ICOET, visit the conference website at www.icoet.net.

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