

HOUSES' IMPACTS EXTEND INTO FOREST



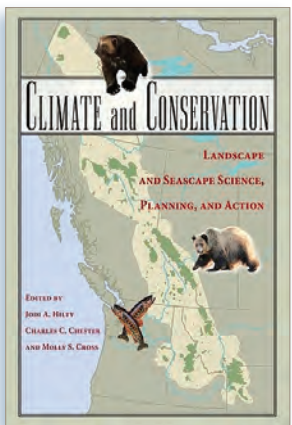
Bird species such as the scarlet tanager prefer unbroken forests with no houses.

Efforts to minimize the ecological impact of development often focus on such strategies as limiting the extent of physical disturbance—cutting trees around a home in the eastern forest, for example. These changes alone may not be adequate to minimize impacts on wildlife, according to a newly-published study by WCS staff working in the Adirondack Park. WCS researchers, Drs. Michale Glennon and Heidi Kretser, found that the impacts from development affect the bird community up to 200 meters away from a single rural (exurban) residence. This creates an “ecological impact zone” of roughly 30 acres, even if the physical footprint of the house and its lawn are quite small. The study is published in Landscape and Urban Planning.

NEW BOOK ON CLIMATE AND CONSERVATION

In their new book, “Climate and Conservation: Landscape and Seascape Science, Planning, and Action,” (Island Press, 2012) WCS scientists Dr. Jodi Hilty and Dr. Molly Cross, and Dr. Charles Chester of Tufts and Brandeis University, present case

studies from around the world of leading-edge projects focused on climate change adaptation—regional-scale endeavors where scientists, managers, and practitioners are working to protect biodiversity by protecting landscapes and seascapes in response to threats posed by climate change. The book frames the issues and takes a systematic look at planning for climate change adaptation, featuring nineteen case studies in every part of the world, including landscapes and seascapes from equatorial, temperate, montane, polar, and marine and freshwater regions. Climate and Conservation informs readers of how a diverse set of conservation actors have been responding to climate change at a scale that matches the problem, and is an essential contribution for anyone involved with large-scale biodiversity conservation. You can find the book at Island Press [islandpress.org/ip/books/book/islandpress/C/bo8451899.html](http://islandpress.org/ip/books/book/islandpress/C/bo8451899.html)



Island Press

**SAVE THE DATE!** The 2013 **American Bison Society (ABS) Conference and Workshop** will be held in Big Sky, Montana, September 17-19. The theme of the meeting is “Shared stewardship: models of bison restoration in North America.” For more information, please visit [americanbisonsocietyonline.org/ABSM Meetings.aspx](http://americanbisonsocietyonline.org/ABSM Meetings.aspx)

SAVING WILDLIFE AND WILD PLACES WORLDWIDE

The Wildlife Conservation Society saves wildlife and wild places. We do so through careful science, international conservation, education, and the management of the world's largest system of urban wildlife parks, led by the flagship Bronx Zoo. Together, these activities change attitudes towards nature and help people imagine wildlife and humans living in harmony. WCS is committed to this work because we believe it essential to the integrity of life on Earth.



WCS © Steve Zack

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NORTH AMERICA PROGRAM NEWSLETTER

SPRING 2013

NOTES FROM THE FIELD

New highway overpasses safeguards wildlife and motorists

The Wildlife Conservation Society (WCS) announced the successful use of newly constructed safe passages for thousands of migrating pronghorn that cross U.S. Highway 191 near Trapper's Point, Wyoming. In October 2012, while watching 100 pronghorn antelope crossing the newly-completed overpass structure that spans the highway in just 15 minutes, Jeff Burrell, Northern Rockies Program Coordinator at WCS commented, “As conservationists, it seems sometimes that we are spending our time trying to keep things from getting worse. Today was different. While the structures are only necessary because of a human-created problem, at least humans came together and designed a solution ... and one that if today is any indication, will work better than we hoped.”

Data collected by WCS, the Wyoming Cooperative Fish and Wildlife Research Unit, and the Wyoming Game and Fish Department were pivotal in determining the best locations of the highway crossing structures that were completed in the fall of 2012 as part of an effort for the Wyoming Department of Transportation (WYDOT) to protect motorists and provide safe passage for migrating pronghorn and other wildlife in the Greater Yellowstone Ecosystem. The new overpass at Trapper's Point is one of eight safe passages constructed by WYDOT along a 13-mile stretch of highway that will accommodate not only pronghorn, but also mule deer, moose, elk and other animals. In



Jeff Burrell © WCS

Pronghorn locate and use newly-constructed highway overpasses that safeguard wildlife and motorists on US 191 at Trapper's Point, Wyoming (Fall 2012).

addition, eight-foot high barrier fencing has been placed along the highway to channel the animals to the crossing points.

“Early monitoring results from October 1 to December 15, 2012 documented that nearly 9,000 big game animals have successfully used the overpasses and underpasses,” stated John Eddins, District 3 Engineer with the WYDOT. “Over 2,000 pronghorn antelope and 1,000 mule deer crossed the overpass located at Trapper's Point...the estimated 80 percent reduction in wildlife-vehicle collisions this project promises may hold true.” It is estimated that this project will save approximately \$27.9 million in wildlife losses, vehicle damages, and injury to property or people over the next 50 years. This project was named Wyoming Engineer Society's 2012 President's Project of the Year.

WCS Associate Conservation Scientist Jon Beckmann said, “This truly was a collaborative effort that brought together many groups with many areas of expertise to accomplish a worthy goal that benefits both wildlife and people. Congratulations to WYDOT for committing the resources to this project and seeing it through successfully.” Prior to this historical effort, WCS worked with partners including Grand Teton National Park (GTNP) and Bridger-Teton National Forest to bring about federal designation of an approximately 93-mile (150 km) migration of pronghorn between wintering grounds in the Upper Green River Basin and summering grounds in GTNP—a migration corridor known

as the “Path of the Pronghorn,” the first and only federally designated migration corridor in the United States.

PATH OF THE PRONGHORN



Jeff Burrell © WCS

Pronghorn wait for traffic on US 191 at Trapper's Point, Wyoming.





## IF YOU CAN CUT DOWN A TREE IN THE FOREST, CAN WILDLIFE HEAR IT?

The Wildlife Conservation Society (WCS) developed a new tool to model how noise travels through landscapes and affects species and ecosystems—an important factor in land and wildlife management decisions when deciding where to locate new roads or recreational trails. The tool, called SPreAD-GIS, uses spatial data layers to predict how sound spreads from a source through the surrounding landscape and the extent to which vegetation, terrain, weather conditions, and background sound levels modifies the noise. By determining how sound propagates, this tool can forecast potential impacts to wildlife. Such impacts include, reducing habitat quality, altering the geographic distribution of species, disrupting animal communication, and causing stress.



Great Horned Owl

WCS Scientist, Sarah Reed said, “Species that are less tolerant of noise can be put at a disadvantage and ultimately this may result in a loss in biodiversity. By predicting what the effects of sound will be on a bird or mammal species in advance, we can more adequately balance our land-use planning decisions with conservation considerations.” Reed and colleagues are currently using SPreAD-GIS and field measurements of motor vehicle noise to forecast the area affected for bird and mammal communities in the Sierra National Forest in California.

Hundreds of users in more than 25 countries have downloaded the model and used it for diverse education, research, and management applications, including modeling potential noise propagation from roads, recreational activity, heavy equipment, residential development, and natural resource extraction. Reed added, “Most existing tools are used to understand noise in human-dominated environments and don’t incorporate factors affecting noise propagation in natural systems. This tool is free and relatively user-friendly for the average desktop GIS user, and comes at a time when ecologists are just beginning to understand the critical role that sound disturbances play in affecting wildlife.”

Reed started the SPreAD-GIS project as a scientist with The Wilderness Society (TWS) and completed it as a Smith Conservation Research Fellow and WCS employee. The tool is described in the November print edition of the journal, *Environmental Modeling & Software*. Authors include, Sarah E. Reed of the Wildlife Conservation Society and Colorado State University, Jennifer L. Boggs, formerly of TWS, and Jacob P. Mann.

## CONSERVATION OF IMPORTANT ARCTIC WETLANDS AND CORRIDORS FOR CARIBOU AND MIGRATORY BIRDS

The Wildlife Conservation Society (WCS) lauded the U.S. Department of the Interior’s issuance of a Record of Decision enacting the final management plan for the National Petroleum Reserve-Alaska (NPR-A) that balances wildlife conservation and energy development in the biggest public landscape in the country. The Integrated Activity Plan and Final Environmental Impact Statement (Final IAP/EIS), issued in December 2012 by the Bureau of Land Management (BLM), is the first comprehensive land management plan ever developed for the NPR-A and requires multi-stakeholder input on management issues and possible future development. WCS applauds this decision as a way of ensuring that wildlife in the NPR-A will benefit from a development approach that balances conservation interests and responsible oil and gas leasing.

Over a decade of conservation science by WCS in this region has shown that the NPR-A provides habitat and nesting grounds for millions of migratory birds and calving grounds for two of Alaska’s largest and most important caribou herds. By protecting coastal plain habitat around Teshekpuk Lake and the foothills around the Utukok uplands, the plan ensures the protection from development of the most important Arctic wetlands and migratory corridors for caribou and migratory birds. “We’ve found that special places like Teshekpuk Lake are important to local wildlife populations and to migratory species from around the world. Today’s announcement from the U.S. government is one of global proportions,” said WCS President and CEO Cristián Samper in December.



Balancing conservation interests and responsible oil and gas leasing in the National Petroleum Reserve-Alaska will benefit wildlife, including caribou and migratory birds.

WCS data has helped to inform BLM decision-making throughout its assessment process. WCS submitted comments on Draft Environmental Impact Statements and held a Congressional briefing on NPR-A in the U.S. Capitol that featured WCS conservation scientists, Steve Zack and Joe Liebezeit.



## SAFE HAVENS AND SAFE PASSAGES KEY TO CONSERVING WILDLIFE IN SOUTHERN CANADIAN ROCKIES

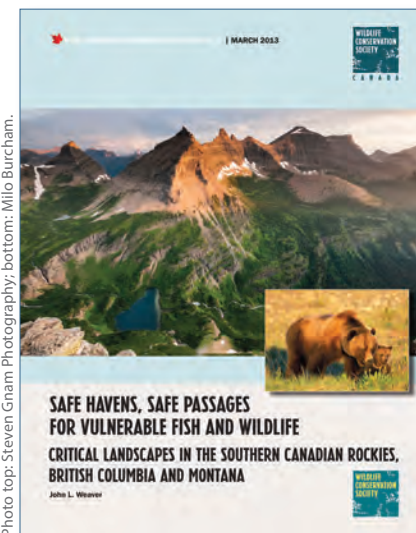


Photo top: Steven Gnam Photography; bottom: Milo Burcham.

A new report from the Wildlife Conservation Society Canada (WCS Canada) creates a conservation strategy that will promote wildlife resiliency in the Southern Canadian Rockies (SCR) to future impacts of climate change and road use. In the report entitled, “Safe Havens, Safe Passages for Vulnerable Fish and Wildlife: Critical Landscapes in the Southern Canadian Rockies British Columbia and Montana,” WCS Conserva-

tion Scientist, John Weaver, notes that wildlife will need ‘room to roam’ to adapt to the impacts of climate change. Complicating those climate-related transitions are major highways and an expansive network of forest roads that have fragmented the SCR landscape. “Providing ‘safe havens’ of secure and diverse habitats and ‘safe passages’ across the highways are climate-smart strategies,” says Weaver.

To that end, Weaver assessed 16,978 square kilometres (6,632 square miles) of SCR land for conservation value based upon the needs of six iconic species—bull trout, westslope cutthroat trout, grizzly bears, wolverines, mountain goats, and bighorn sheep, five of which, Weaver ranked as highly vulnerable to projected changes—and the current and future challenges facing those species. Weaver recommends a portfolio of conservation lands, including a “Southern Canadian Rockies Wildlife Management Area” (WMA) that would conserve 66% of key habitats on 54% of its land base, while allowing for other responsible land uses. The trans-border Flathead River basin, adjacent to Waterton Lakes-Glacier National International Peace Parks, also merits conservation consideration, says Weaver, due to its remarkable biological diversity. He endorses a new National or Provincial Park on the B.C. side and wilderness areas on the Montana side.

Weaver also identifies safe passages to facilitate wildlife movements, including nine suitable crossing locations along busy Highway 3 in British Columbia and 16 mountain passes that provide important wildlife connectivity across the Continental Divide between Alberta and British Columbia. “This report will help inform discussions and decisions about land and resource management in the Southern Canadian Rockies of British Columbia and Montana,” said Weaver. “These spectacular landscapes provide some of the best remaining strongholds for a suite of vulnerable fish and wildlife. Protecting designated lands for conservation will help ensure that this rich diversity of fish and wildlife will be enjoyed by future generations.”

## ADAPTING TO A CHANGING CLIMATE BRINGS NEW CHALLENGES TO WILDLIFE AND CONSERVATIONISTS ALIKE

Despite lacking the familiar physical characteristics of a beaver, Jeff Burrell, Northern Rockies Program Coordinator, does his best to act like one to help grizzly bears adapt to a changing climate. As temperatures rise and high elevation food resources for grizzly bears decline, these bruins are beginning to move through and forage closer to the human-wildland interface. Burrell and his team have identified riparian and wetland areas with minimal potential for human conflict that can help guide bears safely through key linkage zones between large habitat patches. Like many riparian areas in Montana, those selected for this project are so degraded they cannot support a beaver population. In their absence, Burrell mimics beavers by building debris jams to raise the water table to encourage willow regeneration and stands to spread, bringing other deciduous plants along with them. This abundant vegetation will provide necessary cover and resources, allowing grizzly bears to move safely through these areas. Burrell’s team is focusing on these restoration efforts to create corridors between the Salmon-Selway and Greater Yellowstone ecosystems that will genetically interconnect grizzly bears across the northern Rockies for the first time in more than a century.

While creating corridors and re-connecting species populations is an ingrained ethos of conservation, factoring climate change considerations into on-the-ground actions is a still-emerging field; a field in which WCS is a national leader. The climate change science and planning workshops of Dr. Molly Cross and Dr. Erika Rowland are helping the conservation community to move from climate change planning activities to taking on-the-ground actions that facilitate wildlife and ecosystems in adapting to changing conditions.

Thanks to this strong leadership, the Doris Duke Charitable Foundation established the Climate Adaptation Fund and entrusted management responsibilities to WCS. The Fund supports projects like Burrell’s as well as that of other non-profit organizations working to advance on-the-ground climate adaptation actions across the country. Established in 2011 to jumpstart new on-the-ground implementation efforts, the WCS Climate Adaptation Fund has supported 17 projects thus far.



Natural debris placed in streams mimics the effect of beaver dams by slowing runoff and raising water levels to help restore riparian vegetation that can provide cover and resources for wildlife.