



2021 Impact Report



CELEBRATING 30 YEARS

**Wildlands Network's mission is to reconnect,
restore and rewild North America so that
life—in all its diversity—can thrive.**





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Celebrating 30 Years of Wildlands Network

Wildlands Network has always dreamed big: envisioning a future for North America where the diversity of life that calls this continent home can thrive and coexist in abundance.

Founded in 1991, our small but mighty team has successfully created and championed large-scale conservation and supported policies across the continent. Throughout our 30 years, we have seen measurable gains in protected lands and wildlife habitat connection. Our success has ushered in a new era of conservation and a community of partners who continue pushing landscape-level connectivity forward.

Across North America, students study our founding principles developed by Michael Soulé, John Terborough, Reed Noss and the many other pioneers of conservation science. Their visionary concept of “Wildways” and “Wildlands Network Designs” still inform our programs and strategy.

Because of the pioneering ideas of our founders, legislators in Canada, the United States and Mexico debate how to incorporate biodiversity protection, wildlife connectivity and corridor restoration into land and wildlife management. Landowners, ranchers, county planners and transportation engineers have adopted practices and programs designed to protect and restore wildlife habitat for moving and migrating wildlife.

Today, as we collectively face the twin crises of biodiversity loss and climate change, we must continue to build upon our founding principles to create a lasting future for our natural world.

In celebration of our 30th anniversary, I’m proud to highlight our most recent successes and progress toward our continental vision. I’m also excited to elevate some of the people and entities that have contributed to our achievements over the years.

Thank you for being a part of our network—we could not have done it without you.

For the Wild,
Katie



Katie Davis
Executive Director

Where We Work

Seattle, WA

Portland, OR

Sacramento, CA

Salt Lake City, UT

Escalante, UT

Farmington, NM

Santa Fe, NM

Tucson, AZ

Cananea, SON

Hermosillo, SON

Guadalajara, JAL

Mexico City, CDMX

Skaneateles, NY

Washington, D.C.

Durham, NC

Boone, NC
Asheville, NC



The Western Wildway

We mitigate the effects of climate change, border walls, and roadways that threaten to segment our continent's spine. These obstacles leave jaguars and Mexican wolves stranded, without access to their historic ranges.



The Pacific Wildway

We protect wildlife movement corridors across the Pacific for wide-ranging mountain lions, gray wolves, and wolverines facing devastating effects of climate change and expanding human development.



The Eastern Wildway

We address the serious hurdles arising from constant human development and the formidable pressure this puts on wildlife, from the black bear to one of the most endangered mammals in the world, the red wolf.



The Pacific Wildway

Linking British Columbia in the north and Baja California Sur in the south, the Pacific Wildway is a vision of connected wildlife habitat across the coasts, mountains, grasslands and deserts of the Pacific coastal region of North America.

Our goal is to restore and sustain populations of mountain lions, gray wolves, wolverines and the web of life on which they depend—all of which are facing the devastating effects of climate change and expanding human development.



444,029

Acres of wildlife habitat analyzed for climate resiliency and connectivity potential



5

Policy experts on staff in the Pacific Wildway



\$545,000+

Dollars raised for the Oregon Conservation & Recreation Fund



Our Impact in the Pacific



Climate-Informed Wildlife Corridor Mapping

In partnership with Dr. Josh Lawler at the University of Washington, we created the **first-ever regional Climate Connectivity Map** for the Pacific Wildway, identifying climate-resilient landscapes and habitat connections. Our Pacific climate connectivity map informs our crossing projects on Interstate 5 and Highway 395.



The map also provides important information for our position as a stakeholder organization for the Oregon Connectivity Assessment and Mapping Project which was formed because of our support of the Oregon Wildlife Corridors Bill.

Elevating Oregon Conservation Projects and Partnerships



Our Climate Connectivity Map confirmed that the Klamath-Siskiyou region's mountain ranges and watersheds are critically important to sustain continental biodiversity. Now, we're using this **climate change-driven approach to restore connectivity across major highways and landscapes** that will be used by migrating animals in the decades to come.

In 2019, we supported and informed the creation of the Oregon Conservation & Recreation Fund (OCRF), and in 2020, helped raise **nearly half a million dollars** for the program. The OCRF has since funded 37 projects that have resulted in community-driven habitat restoration across Oregon.

Advocating for Wildlife

California's mountain lions face an uncertain future as their home ranges and corridors vanish under roads, development and climate change. We are partnering with local organizations throughout California to identify solutions to **ensure healthy, diverse populations**.

We're catalyzing a shift in how state agencies manage habitat and infrastructure to sustain biodiversity. Meanwhile, to ensure a future for wolverines, we are holding the U.S. Fish and Wildlife Services' feet to fire to list them as endangered. A robust and extensive recovery plan with ample habitat protection is necessary to allow these magnificent animals to thrive.



Data-driven Transportation Management



In California, our Climate Connectivity Map revealed numerous hurdles for wildlife in the form of busy highways. We're working to resolve two major pinch points for mountain lions—the proposed high-speed rail corridor through Tehachapi Pass and Highway 395 in the Eastern Sierra. Right now, we are designing data collection methods to **inform wildlife crossing structures**.

Further north in Washington's Whatcom County, we're working with the planning office to safeguard climate-connectivity hotspots. This collaboration will prioritize wildlife habitat for preservation as the city of Bellingham grows and more people visit treasured protected places such as Mount Baker National Recreation Area and the upper portion of North Cascades National Park.

The Western Wildway

Providing for all wildlife in and beyond the jagged expanse of the Rockies, the Western Wildway stretches from the Yukon Peninsula to Sierra Madre Occidental, the once and future home to a diversity of connected wolf, bear and jaguar populations.

Our goal is to mitigate the effects of climate change, border walls and roadways that threaten to segment our continent's spine. These obstacles leave animals stranded, without access to their historic ranges and the breeding populations necessary for genetic resiliency and climate adaptation.



10,000+

Photos of wildlife captured moving within the Sky Islands of the U.S. and Mexico



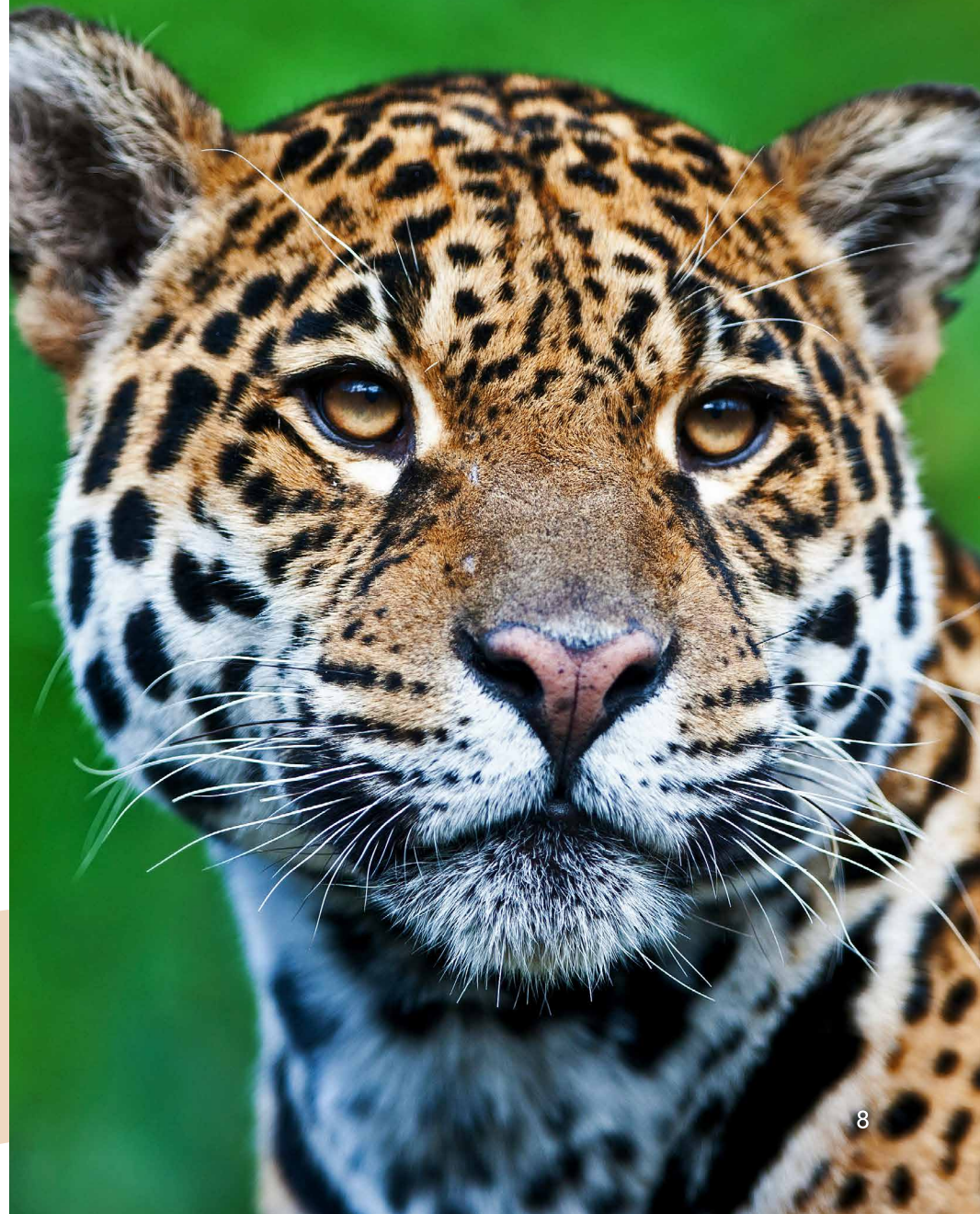
9

Priority sites identified for establishing jaguar corridors connecting Mexico and the U.S.



339

Miles of wildlife habitat surveyed along the U.S.-Mexico border



Our Impact in the West



Linking Jaguar Habitat Through Collaboration

We serve as primary coordinator and project manager for the **Borderlands Linkages Initiative**, a multi-organizational partnership. We strategically collaborate with Northern Jaguar Project, who designed a state-wide camera research protocol. Additional partners include Profauna, Rancho El Aribabi, Sky Island Alliance and Nature and Culture International who will place cameras on their land or on private and communal lands identified as likely habitat in Sonora.



Safer Passage Across Human Barriers



The border wall, roadways, and railroads turn natural corridors into gauntlets of deadly obstacles. Wildlife such as jaguars and Mexican gray wolves depend on these now dangerous routes to survive. Sadly, **Mexico's Highway 2 alone kills 2,000 wild lives each year.**

We're providing years of field camera data captured on I-10 in New Mexico and Hwy 2 in Sonora to inform infrastructure policy on both sides of the wall. In Mexico, the Sonoran Congress unanimously mandated that all future road projects must consider wildlife crossings.

Based on our research, the **New Mexico Wildlife Corridors Action Plan** included research on I-10 as one of 10 priority safe passage projects. Because this interstate bisects the Peloncillo Mountains, this is essential to the recovery of jaguars, as well as the transnational movements of Mexican wolves.

Informing Land Management with Clear Data

Jaguars once roamed as far north as the Grand Canyon. But by the early twentieth century, the last of their breeding populations in the U.S. were wiped out. Along with other scientists, we published a study in *Oryx*—The International Journal of Conservation that identified habitat that could **support more than 150 jaguars in the U.S.** The USFWS left room in their jaguar recovery plan for revisions, and our work may result in a recovery zone 27 times larger than it is now.



In Utah, we created the **Utah Wildlife Connectivity Working Group**, a collective of state, federal, tribal, nonprofit and land management experts. This follows our successful push for a state resolution in support of wildlife corridors and is breaking the mold for conservation action in Utah. It's our best shot to restore and protect wildlife habitat state-wide.

Protecting Ecosystems Across the Southern Border



When the border wall cut through the San Bernardino National Wildlife Refuge, the largest wetlands in the Sky Islands of Arizona and New Mexico, wildlife largely disappeared. Mexican wolves, jaguars and other wildlife know no political boundaries, and now any animals larger than four inches wide can no longer roam across this landscape.

We created the **first publicly available border wall StoryMap** highlighting priority restoration areas. This resource continues to win congressional allies in support of restoring core habitats and corridors.

The Eastern Wildway

Originating in Nova Scotia and New Brunswick, Canada, the Eastern Wildway span encompasses New England, the entire Appalachian mountain range across to coastal eastern United States, ending in Florida.

We are advocating for its globally significant biodiversity and building conservation communities in the East. Our focus areas include I-40 in the Pigeon River Gorge of western North Carolina and East Tennessee, central and coastal North Carolina, and the Northern Appalachian-Acadia ecoregion into Canada.



50

Percent of land across the Eastern seaboard falls within the Eastern Wildway



200,000+

Photos of wildlife captured in the red wolf recovery area



300,000

GPS data points for elk movement captured in the Smoky Mountains of TN and NC



Our Impact in the East



Partnering to Realize our Vision of Connectivity in the East

Our Eastern Wildway map envisions a connected network of large natural areas that span the entire Eastern Seaboard and would provide habitat for all native species.

Created with input from hundreds of scientists, partners and agencies, it is a landmark achievement that is guiding **habitat connectivity restoration projects** across numerous states and provinces. Taken together, these coordinated actions will ensure a climate-resilient future for humans and wildlife.



Supplied the Science and Policy Leadership for the “Coolest Bill Ever”



Virginia has the third largest state-maintained highway system in the U.S. with tens of thousands of wildlife-vehicle collisions. These preventable accidents cost more than half a billion dollars and cause hundreds of human injuries each year. In collaboration with our coalition partners, we stewarded a bill **to improve roadways for wildlife and motorists.**

With strong bipartisan support, Virginia became one of the first states to adopt a comprehensive program to identify wildlife corridors and address barriers to natural wildlife movement. No wonder Virginia State Senator Marsden called this piece of legislation the **“coolest bill ever!”**

Informing Wildlife Crossings in the “Bear Death Zone”

A winding stretch of Interstate 40 runs through the Pigeon River Gorge, separating Great Smoky Mountains National Park from neighboring national forests. The interstate accounts for **dozens of black bear deaths annually**—so many that biologists refer to it ominously as the “bear death zone.”



After two years of collecting data through road mortality surveys, GPS tracking of reintroduced elk herds, and images from roadside field cameras, we’ve developed a list of wildlife mortality hotspots for transportation and wildlife officials to address. Now, we’re informing the design of mitigation structures and supporting the effort to fund construction.

Paving the Way for Red Wolf Recovery

Once roaming from New York to Texas, red wolves have seen their habitat shrink to a refuge in North Carolina where the wild **population numbers less than 15.**



Since 2015, we’ve collected field images in wildlife refuges within the red wolf recovery area. In collaboration with landowners, we’ve added additional images to contribute to our robust dataset. With these data, we are establishing how red wolves benefit this biodiverse ecosystem. Our recently released film, ***Red Wolves’ Last Stronghold***, outlines the culmination of our findings to date.

U.S. Policy

Moving U.S. Wildlife Policies Forward

Wildlife policy in the United States is built on a history of exploitation. Plants and animals were perceived by government agencies and leaders to be important only if useful to humans, and a hurdle to widespread development of the country. No wonder that current law and regulation is wholly inadequate to address the twin crises of biodiversity loss and climate change.

Wildlands Network is leading efforts to change government action and policy—at the state, federal and local level. We're collaborating with agency partners to develop new mandates and funding to support comprehensive biodiversity and habitat protection.

Armed with data from our own field research and the expertise of scientists, land managers and indigenous community leaders, we're focused on new laws and regulations that will **protect key species, wildlife movement, and vital habitats**. Only with this approach can we ensure a nationwide shift in management that will reverse extinction trends and create a future where all can thrive.

Securing \$350 Million for Wildlife Crossings

More than a million wild lives are lost on America's roads each year, taking a staggering toll on the country's biodiversity. The devastation doesn't end with wildlife. Annually, **these collisions cost U.S. drivers more than \$8 billion**, inflict over 26,000 injuries, and tragically end over 200 human lives.

Because of our leadership, the infrastructure package that recently passed Congress contains \$350 million in federal funding for a Wildlife Crossings Pilot Program. This is a game-changer for wildlife. For the first time in U.S. history, there will be dedicated federal funding for wildlife crossings! From North Carolina to New Hampshire and New Mexico to California, all 50 states will have access to desperately needed funds for projects to reduce wildlife-vehicle collisions. This is a significant step toward addressing the biodiversity crisis at the national level.

Pushing for Federal Leadership to Protect Corridors

Since 2016, we have led the coalition **elevating the Wildlife Corridors Conservation Act** to the center of the national conservation policy agenda. After our success in passing the bill with bipartisan support in the House of Representatives in 2020 and 2021, we now are working to pass a similar bipartisan bill in the Senate. This bold, innovative and popular legislation has spurred the Biden Administration to incorporate wildlife corridors as a priority for the President's America the Beautiful Initiative to conserve 30% of the United States by 2030.

With targeted media campaigns and educational outreach, we are also pressing for the Biden Administration to adopt a Wildlife Corridor Action Plan that would identify and protect a national system of designated wildlife corridors across the U.S.



92

Members of our
Connectivity Policy Coalition



70

Percent decline in
biodiversity since 1970



1/5

Species at risk of extinction

Mexico Policy

Ending Mining in Mexico's Natural Protected Areas

Hardrock mining can spell doom for a region's biodiversity, even under heavily regulated conditions. The mining industry in Mexico lacks even basic oversight. In fact, even within the country's Natural Protected Areas (NPAs), mining is legal and done with little government attention.

With no legal structure to prevent mining, **all current and future NPAs are at risk** to the industry's catastrophic impact on wildlife, watersheds, groundwater and local communities.

Bolstering Support for NPA Protection

For two years, we've provided coalition partners with strategic communication tools to spread awareness, and when requested, we've given officials nonpartisan, scientific data about mining effects on NPAs. In addition, Mexico's Secretary of the Environment, María Luisa Albores, convened a working group where we've had the chance to serve as technical advisors.

The results are promising: Congressional interest in preserving NPAs is higher than ever before. With a 407 out of 500 majority, the Chamber of Deputies passed a ruling **to prohibit most NPA mining activities**, and the senate introduced five bills to ban new claims and projects within NPAs.

We're invested in both the health of Mexico's ecosystems and the health of the coalitions and partnerships that are necessary to sustain conservation action and pressure government officials to take action.



2 & 7
Coalitions & member groups defending Mexico's protected areas



3,432
Road ecology workshop attendees



2,700,000
Acres we're securing legal protections for in two NPAs



Empowering Bold Conservation

We're honored to have served as the fiscal sponsor for several organizations who've carried forth our vision large-scale, connected corridors for wildlife within particular regions and communities. Here are a handful of the organizations we've supported in their early days, with whom we still closely collaborate.



The **New Mexico Wilderness Alliance** is dedicated to the protection, restoration, and continued enjoyment of New Mexico's wildlands and wilderness areas. The organization builds diverse coalitions to protect public lands in New Mexico through administrative protection, federal wilderness designation and ongoing stewardship.



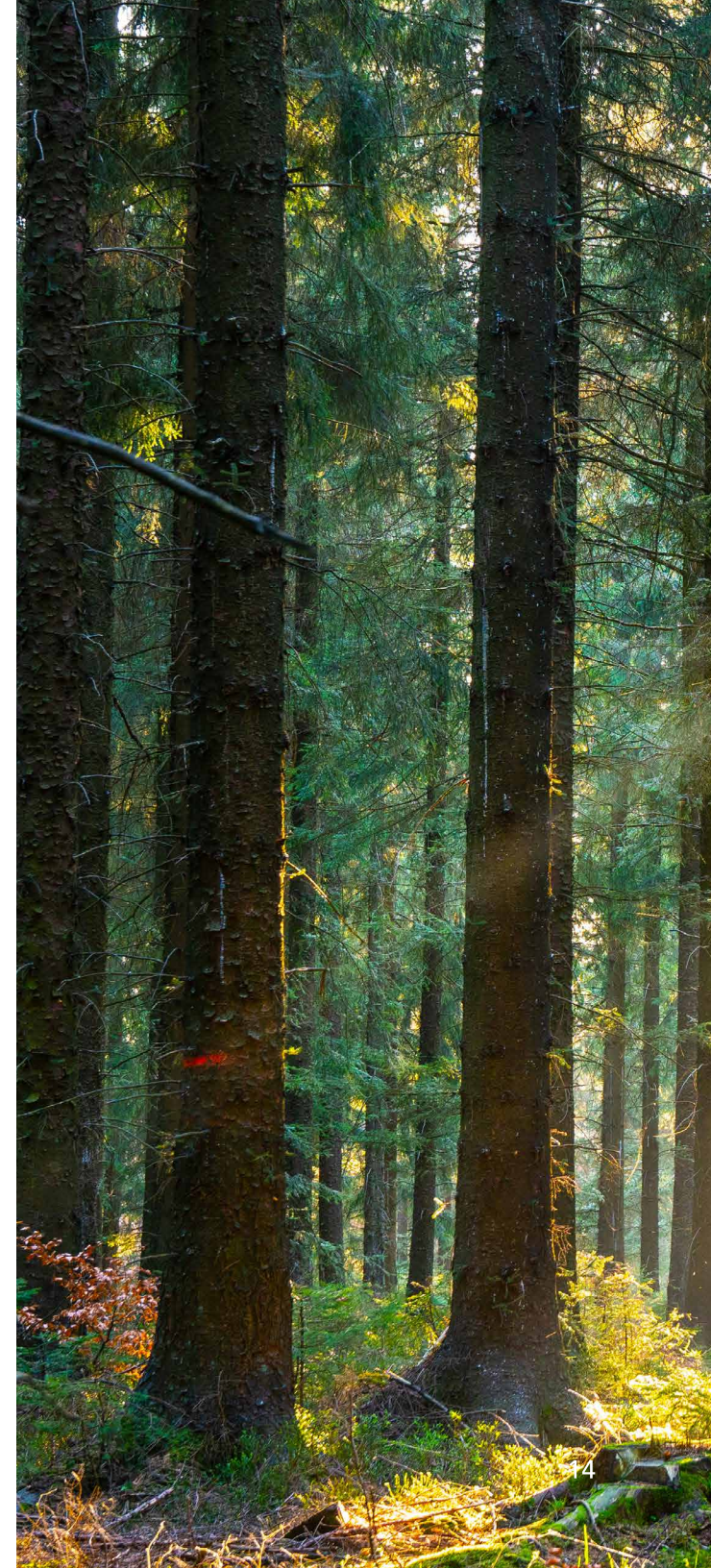
Sageland Collaborative (formerly Wild Utah Project) provides sound science and data-driven strategies to facilitate conservation goals in the state of Utah. Sageland addresses and prevents roadblocks to effective conservation by ensuring natural resource managers and decision-makers have reliable data to keep wildlife and lands healthy.

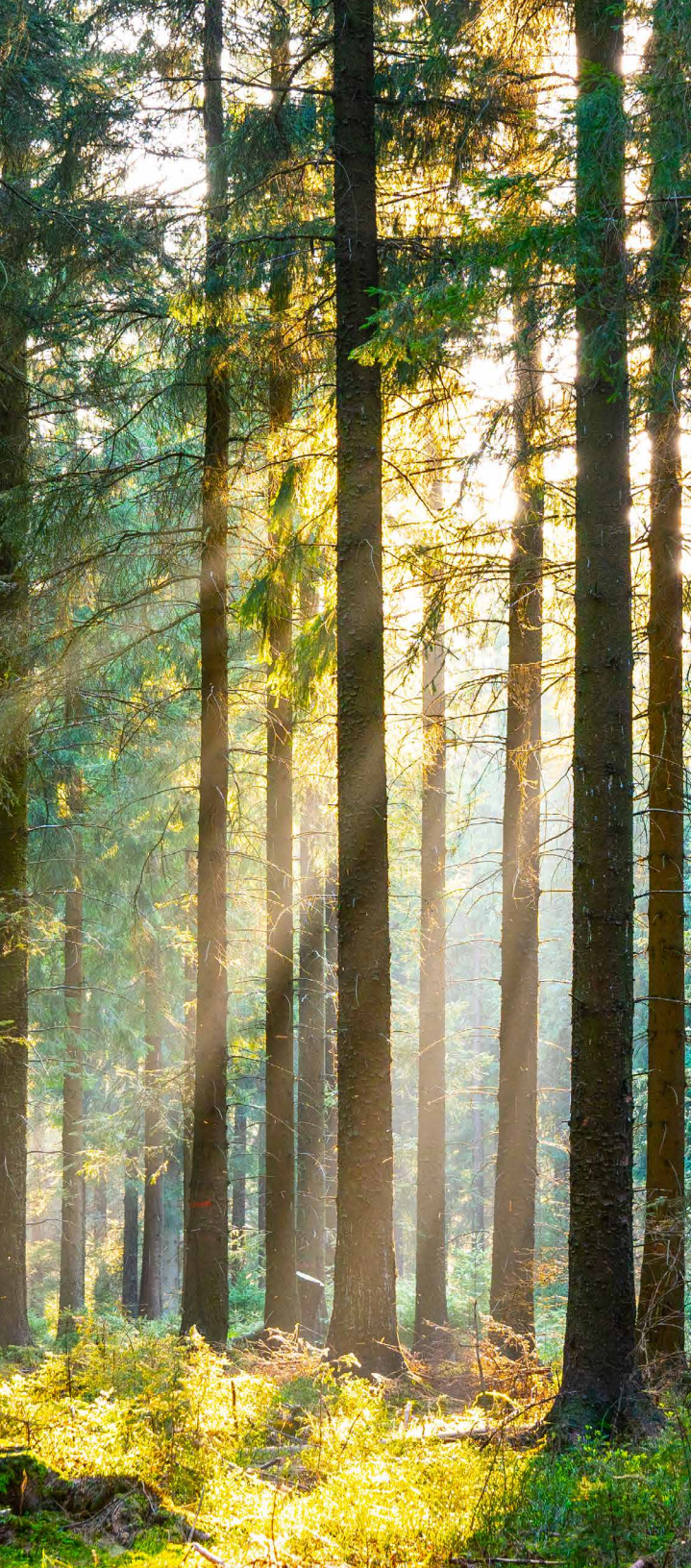


Yellowstone to Yukon Initiative (Y2Y) supports people, wildlife, and natural systems in the region between the Greater Yellowstone Ecosystem and Canada's Yukon Territory. Y2Y sets the context for regional conservation work by providing the vision for a landscape, and brings partners together to achieve collective progress as a network.



Western Landowners Alliance (WLA) advances policies and practices that sustain working lands, connected landscapes, and native species. WLA provides a collective voice, a peer network and a shared knowledge base for landowners striving to keep the land whole and healthy. They envision a future in which private and leased public lands in the West are resilient to stressors, healthy, and biologically diverse, and provide for prosperous rural livelihoods and critical ecological services.





Catalyzing an Inclusive Culture at Wildlands Network

Without the shared knowledge and participation of all people and communities across North America, we cannot accomplish our mission. Landscapes and wildlife populations **thrive with diversity and opportunity**. Our organization and the communities we serve are no exception.

In 2020, Wildlands Network Board of Directors officially adopted a statement guiding our organization's Justice, Equity, Diversity, and Inclusion. Since that time, representatives from the staff and board have collaboratively developed a framework for actions towards five ambitious goals.

Our Goals



Our staff, board members, partners, and supporters' demographics **reflect the multiculturalism** of the human communities of North America



Individuals within our organization **adopt and promote justice, equity, diversity, and inclusion**, in their work



Our fiscal and administrative management **reflects our ethos** and is evaluated regularly



All of our programs and projects take an **inclusive community-driven approach** designed to maximize biodiversity



Our organization is **North America-Centric** and aware of cultures, laws and approaches to conservation in Canada, the United States and Mexico

Board & Staff

Board of Directors

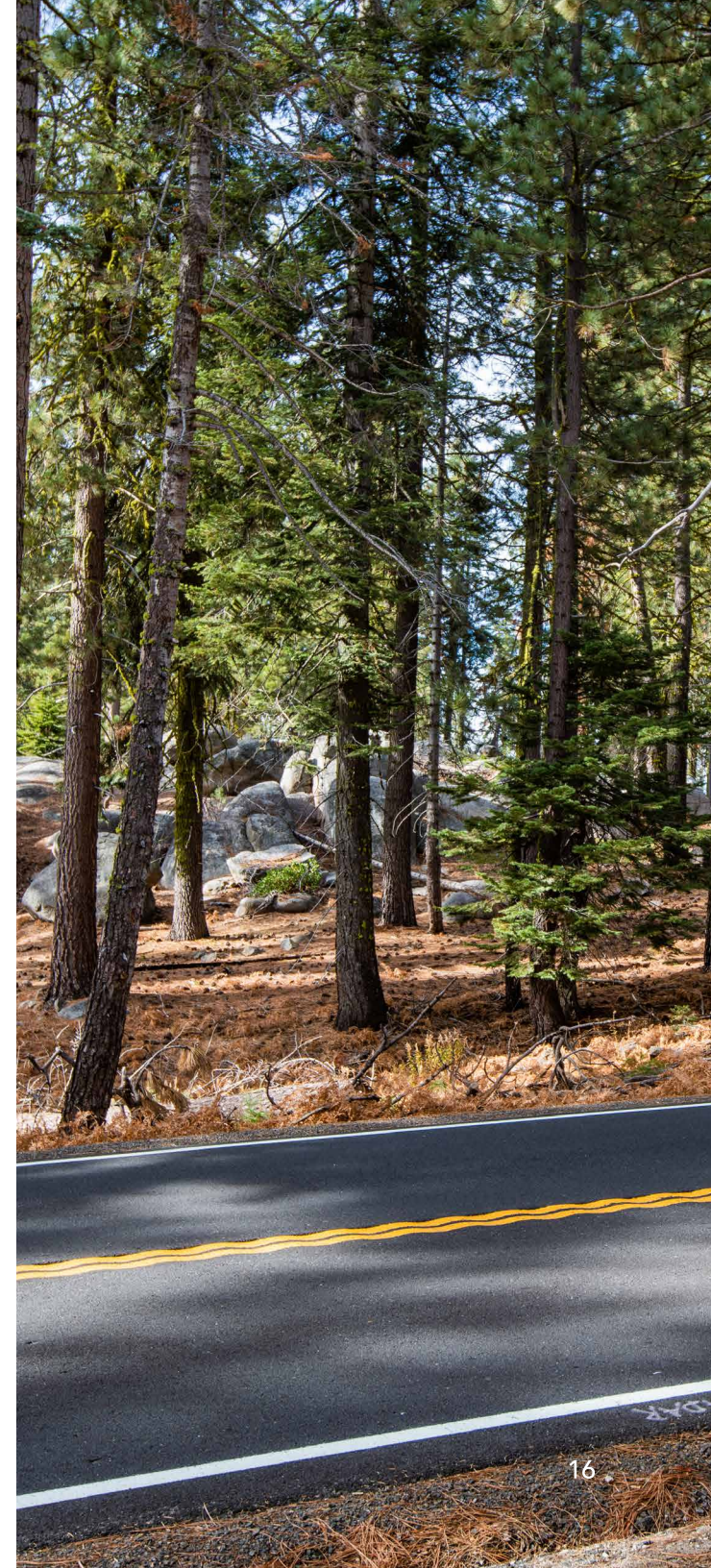
Wendy Francis , <i>Board President</i>	David Steen , <i>Secretary</i>	Abbey Camaclang
Fred Koontz , <i>Vice President</i>	Karen Beazley	Fernando Ochoa
Steve Olson , <i>Past President</i>	Danielle Droitsch	Rosh Patel
Chris Pupke , <i>Treasurer</i>	Diana Hadley	Conrad Reining

Leadership Team

Katie Davis , <i>Executive Director</i>	Jessica Walz Schafer , <i>Pacific Program Director</i>
Greg Costello , <i>Conservation Director</i>	Kim Howes , <i>Development Director</i>
Danielle Fisher , <i>Communications Manager</i>	Michael Dax , <i>Western Program Director</i>
Christine Laporte , <i>Eastern Wildway Director</i>	Ron Sutherland , <i>Chief Scientist</i>
Juan Carlos Bravo , <i>Mexico Program Director</i>	Susan Holmes , <i>U.S. Federal Policy Director</i>
Gina Chacón , <i>Mexico Program Policy Coordinator</i>	Taylor Thurman , <i>Operations Manager</i>

Staff

Alex Vanko , <i>GIS Specialist</i>	Liz Hillard , <i>Wildlife Scientist</i>
Aaron Facka , <i>Senior Wildlife Biologist</i>	Makensie Brown , <i>Digital Media Specialist</i>
Beatriz Olivera , <i>NOSSA Coordinator</i>	Mari Galloway , <i>California Program Manager</i>
Carlos Castillo , <i>Senior Conservation Specialist</i>	Meg Naumann , <i>International Major Gifts Officer</i>
Cecilia Aguilar , <i>Mexico Program Road Ecologist</i>	Mirna Manteca , <i>Road Ecology Coordinator</i>
Ed Marx , <i>Northeast Wildlands Ambassador</i>	Myles Traphagen , <i>Borderlands Program Coordinator</i>
Erin Sito , <i>U.S. Policy Associate</i>	Nikki Robinson , <i>North Carolina Project Manager</i>
José Miguel Gabutti , <i>Assistant Road Ecologist</i>	Samantha Thomas , <i>Development Manager</i>
Jude Solorio Diaz , <i>Administrative Assistant</i>	Tracey Butcher , <i>Senior Major Gifts Officer</i>
Lindsay Martindale , <i>Colorado Plateau Project Manager</i>	Zach Schwartz , <i>Oregon Program Manager</i>

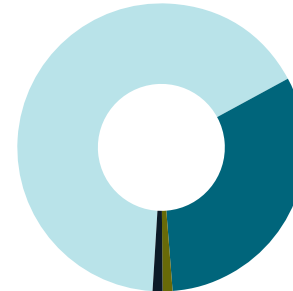




2020 Finances

Revenue

Foundation Grants	\$1,599,906
Individual Donations	\$754,567
Investment Income	\$594
Other Income	\$2,228
Total Revenue	\$2,357,295



Foundation Grants 67%
Individual Donations 32%
Investment Income <1%
Other Income <1%

Expenses

Programs	\$1,364,158
Administration	\$260,566
Fundraising	\$251,558
* Funds carried into 2021	\$481,013
Total Expenses	\$1,876,282



Programs 73%
Administration 14%
Fundraising 13%

Full 990 and audit are available at wildlandsnetwork.org/our-impact. Due to the Covid-19 pandemic, \$481,013 was carried forward into 2021 for program activities. The majority of funds go directly to conservation programs. It costs our organization \$11 to raise \$100.

Our Current Fiscal Sponsorships

Safe Passage Fund Coalition is a collaboration of six organizations that raise private funding for wildlife-vehicle-collision mitigation in the Pigeon River Gorge in the southern Appalachians.

The Lobos of the Southwest Coalition is a diverse group of passionate Mexican wolf advocates who champion the recovery of the species across the Southwest United States.

Remembering our Founder Michael Soulé

Our Wildlands Network founder, Michael E. Soulé, known as the 'Father of Conservation Biology', passed away in June 2020 at the age of 84. An inspiration to scientists and conservationists around the globe, Michael's vision continues to be central to our mission today. Here, former Wildlands Network board member John Davis reflects on memories of Michael.

Immortalizing Michael Soulé

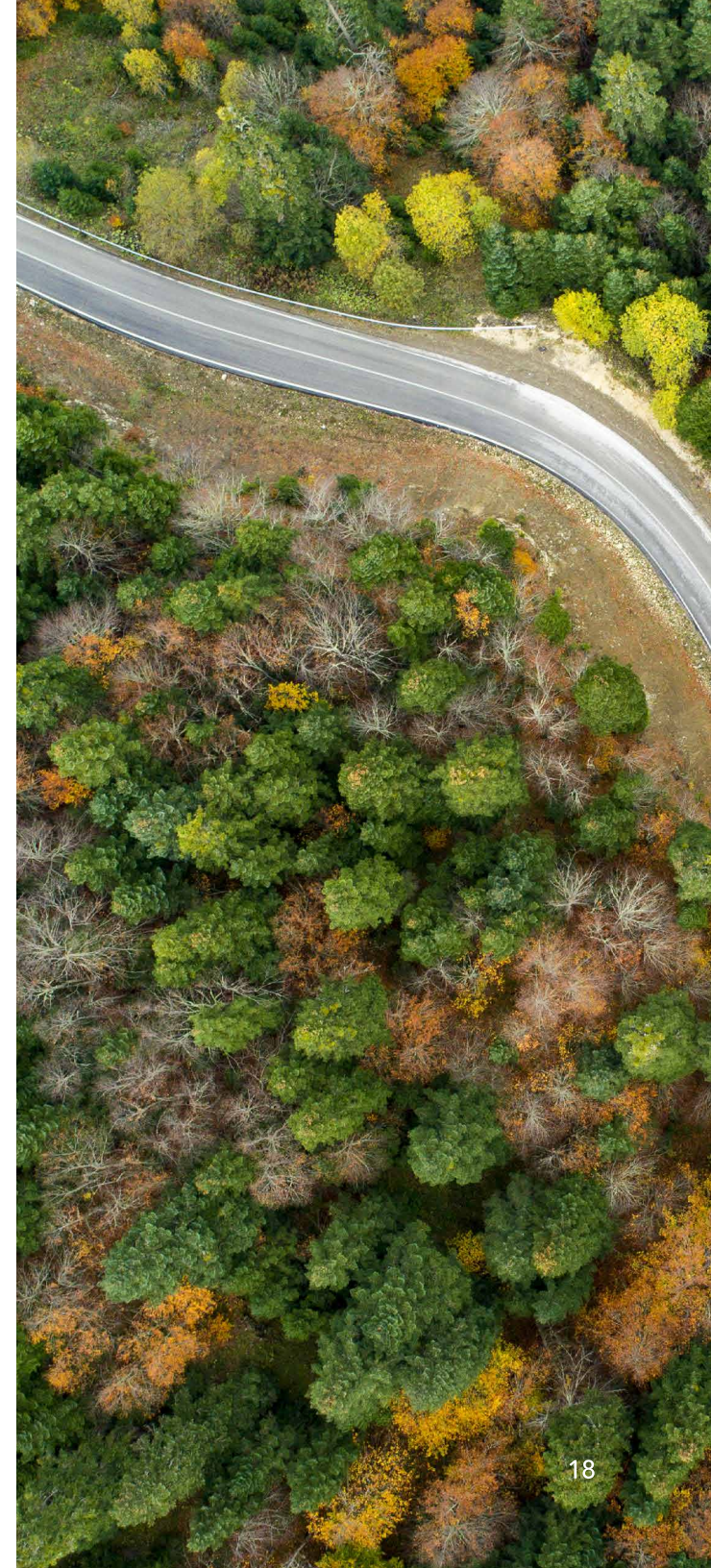
The first time I met Michael Soulé, he was the dean of conservation biology. The second time, he was a frog.

That first meeting was the founding of North American Wilderness Recovery, from which Wildlands Network and The Rewilding Institute evolved. Michael was a giant among giants at that inaugural meeting; and I listened in awe as he and other wilderness leaders explained how North American wildlife could be saved and restored. They outlined the basic approach of rewilding North America: designating large core wild areas, reconnecting them via wildlife corridors, and restoring keystone species, particularly the large carnivores who keep ecosystems healthy.

A year or so after that founding meeting, I drove cross-country to rendezvous in the Sonoran Desert with the Wildlands Network board and staff. Around the campfire one songful desert night—coyotes ululating, owls hooting nearby—the stories grew wilder and wilder. My clearest memory from that distant campfire is everyone rolling in laughter as Michael hopped around, imitating and telling us of some rare frog he'd found on a research trip years prior. I'll never forget the twinkle in his eyes and the mischievously warm smile as he hopped past.

Immortality is best achieved, I trust Michael would agree, through permanent protection of wildlands and their wild denizens. I propose we honor and immortalize Michael Soulé by finishing the Spine of the Continent (Western) Wildway. Like Frodo and Hayduke, Michael lives.

Wild spaces in North America will embody Michael's goodness forever.





The words of our late founder Michael Soulé continue to inspire people across North America and beyond. Here we share one of his foremost essays, published in 2009, reflecting on the value of wildlands connectivity.

Nature's Aspirin

Science and Tenacity Can Still Heal the World

by Michael E. Soulé

Realistic Pessimism

Modern science arrived late to the field of nature conservation. It wasn't until the nineties that conservation organizations, including zoos and game and fish agencies, acknowledged the latest biological knowledge and began to hire young, idealistic scientists. Why was science tardy to the party? My guess is fear. People and institutions generally fear what they don't understand, and nearly all conservation agencies and organizations were still stuck in the past.

But some of us biologists "had a dream." We were certain that conservation organizations could be more successful in staunching the accelerating loss of species if they were better informed about recent, revolutionary advances in rapidly developing fields like evolutionary biology, population genetics, island biogeography, population dynamics, taxonomy and animal behavior. Several of us helped set the stage by organizing some small conferences and workshops between 1978 and 1987. It wasn't long until we decided to start a new, applied scientific discipline called Conservation Biology. Call us impertinent, but we were sure that the conservation establishment needed our enlightenment.

Did we succeed? It depends on the metric. Scores of universities now offer degrees in conservation

biology, and thousands of conservation biologists are currently employed by government agencies, conservation NGOs, universities, and foundations around the world. In addition, the international Society for Conservation Biology, which was founded in 1986, became the fastest growing scientific organization in the world, its membership peaking at about 10,000. The paradigm proffered by conservation biology—and the associated lexicon—is now embedded in the grantmaking strategies of all major foundations, new government land management initiatives, and some tenets of the field have even worked their way into the climate legislation currently in front of the Congress.

It may not be a coincidence that conservation made huge strides, at least for a while. The big groups, like The Nature Conservancy, the World Wildlife Fund and Conservation International, have spent hundreds of millions of dollars to protect nature around the globe. In Australia, for instance, where I work with the Wilderness Society, there have been huge successes; broad scale land clearing in Queensland and New South Wales has been halted, and forests are much more secure.

These are major accomplishments. Our optimism was born out by official UN statistics on the creation of new national parks. But there is a little problem.

The gains of the recent decades are disappearing as we speak—like barrier islands during a hurricane. Some of these losses have been documented by a cadre of globe-slogging conservation biologists who audit national parks in developing nations. These brave scouts have received death threats for suggesting that a growing proportion of these parks are “paper parks” because they exist only in official documents. On the ground these parks never really existed or are rapidly failing.

Sadly, many dissipative processes are at work, chipping away at much of the conservation estate, including some parks and reserves in developed nations like the U.S. What’s happening? A big part of the problem is that poorly paid officials in many countries are easily bribed and they typically turn a blind eye toward illegal grazing, mining and logging enterprises. In addition, well-armed drug traffickers intimidate and murder park officers who try to protect biodiversity.

Conservation laws are rarely enforced in the Third World, and conservation agencies in these countries can’t afford arms, vehicles, uniforms, fuel and communications equipment for enforcement. One consequence is that vast areas in the tropics have become “silent forests” stripped of their edible birds and mammals.

In addition, populist politicians in poor nations are easily pressured into supporting new human settlements in protected areas, this policy being the newest safety valve for relieving the misery felt by millions of hungry, poor, landless people. Finally, climate change aggravates this pressure, and by itself will produce millions more ecological refugees in coming decades. Even in North America there are many social and economic drivers that are

degrading wild places; among them are population growth (the fastest in the developed world), the recession driven demand for jobs, and an insatiable hunger for cheap energy.

Thus nature’s safety nets are unraveling. Increasingly, species and ecosystems lack adequate “health care,” making them more vulnerable to the wounds inflicted by population growth, new technologies, globalization of markets, climate change, and systemic ecosystem degradation.

“The continental scale is where truly exhilarating visions for nature protection are possible.”

- Michael Soulé

Notwithstanding much chatter about sustainability and how poverty alleviation will reduce the pressure on biodiversity, the human footprint continues its crushing spread. Contrary to the popular myth, higher incomes and more education just increase the burden on a weakening ecological infrastructure, as second homes and greater numbers of motorized recreational toys infiltrate wildlands.

Most people are unaware of the cumulative effects of human progress.

William Butler Yeats could have been pondering a biological apocalypse when writing the closing lines of the “Second Coming,”

And what rough beast, its hour come ‘round at last, Slouches towards Bethlehem to be born?

Rational Optimism

But I am optimistic. Why? Because there is a simple, cheap solution for treating many of nature’s wounds and for stanching the hemorrhaging of biodiversity, at least in nations where environmental laws exist and scofflaws are punished. I refer to this remedy as “Nature’s Aspirin.”

Why aspirin? Aspirin is arguably the oldest and best miracle drug, and we desperately need a miracle drug for nature. In every decade it seems that researchers find a new use for aspirin: aspirin is an anti-inflammatory; an analgesic, an anti-pyretic, an anti-coagulant, a prophylaxis and an emergency treatment for heart attacks. Recently aspirin was shown to help prevent colon cancer. I’m not proposing aerial applications of aspirin on wildlands, but it probably wouldn’t hurt.

So, what is Nature’s Aspirin? Here is a hint. It bears the same name, function and purpose as an intervention used by psychologists to treat depression and loneliness. It is connection. Human beings are happier, healthier and live longer when they are well and comfortably embedded in social networks and organizations—such as clubs and churches.

So how does connection—or connectivity—make biodiversity ‘happy?’ First, nothing wounds nature more than being sliced and diced. The landscape cleavers include pipelines, highways, suburban sprawl, roads created by ATVs, over-grazing by livestock, and the habitat destruction caused by the extraction of fossil fuel and minerals.



Severed, isolated parts of nature, like severed limbs, are dysfunctional, and reconnecting the recently isolated parts of ecosystems is clearly the treatment of choice. This is why mitigating habitat fragmentation is among the top priorities of conservationists.

How can we maintain ecological connectivity (the technical term is 'landscape permeability')? We do this in several ways. It begins with knowing a little about the four varieties of animal movement; these are foraging, migration, breeding and dispersal. For example, a female wolf may forage many miles in search of ungulate prey.

The next winter she may travel to her favorite birthing den in a distant mountain range. Later, her young may disperse hundreds of miles when seeking a place to live and mate.

Conservation professionals have to consider these diverse needs when they set out to restore landscape links that were broken by development. If the barrier to movement is a highway, then the solution might be a vegetated overpass. If the obstacle is a new subdivision that isolates a colony of prairie dogs or a population of quail, then the cure might be fence removal or creating a dog- and cat-free green belt. In some places volunteer conservationists help amphibians cross roads during the breeding season by funneling them into culverts with drift fences or putting up road signs that read "When it Rains, Regard the Frogs." These are small scale, or local-scale examples.

At the regional scale, organizations are working together to identify what a functional network of connected conservation areas should look like, and that usually requires planning that is not subject to political boundaries like state or county lines. Some places within the region will need to become new

parks, while other places will need to be protected as wildlife linkages for dispersing and migrating animals.

The continental scale is where truly exhilarating visions for nature protection are possible. Imagine if activities at the local level to remove fences and build wildlife overpasses were part of regional scale campaigns to create large parks and linkages, and if these regional scale campaigns were then linked together in a continuous chain along the Rocky Mountain range from Mexico to Alaska, a "great American wildlife corridor."

In coming decades, climate change may become a major cause of species extinction. Here, too, Nature's Aspirin is key because it is the most economical way to help wild creatures adapt. As climate belts shift overseas and continents, animals and plants will have to move long distances or perish from drought, floods, or heat waves. We won't need to carry them on our backs or in trucks if we restore severed landscape connections.

Finally, Nature's Aspirin is essential for the recovery of key "disappeared" ecological actors—keystone species. A keystone species is a plant or animal whose presence helps maintain the diversity and resilience of ecosystems. Just as a well-equipped and fully staffed medical facility is key to the health and well-being of a human community, so does the health of a natural community depend on the persistence of key players.

The best-known keystone species are large and ferocious, like lions and wolves, but termites, ants, and prairie dogs are also keystones. The removal of such keystone species triggers the unraveling of ecological communities—an ecological cascade, just as the yanking of keystone in an arch causes the arch to collapse.

When the wolf was exterminated in Yellowstone National Park in the early 20th century, the result, decades later, was the virtual disappearance of diverse ecosystems such as beaver wetlands and riparian woodlands in areas where hungry elk populations exploded and over-browsed the vegetation.

Landscape connectivity counteracts such ecological dissolution, by allowing dispersal and migration of keystone species over large areas, restoring ecological diversity and resilience to the lands and waters. It is our job to support the repatriation of missing keystone species, including large predators. The most efficient, economical means for doing this is by restoring ecological connectivity, often in the form of ecological corridors. The point is that Nature's Aspirin lets nature heal herself, greatly reducing the need for human interference and "management:'

In summary, the integrity of ecosystems in North America and in many other parts of the planet requires the restoration of connectivity. At the risk of oversimplification, nature protection without nature connection is similar to sky diving without a parachute; the exhilaration ends suddenly and disastrously. Fortunately, though, connectivity's stock is rising at all levels of government and there is cautious hope among nature advocates for a biodiversity comeback.

Subjective Pessimism

I write this while on a wilderness whitewater trip in Desolation and Gray Canyons on the Green River in Utah. The main canyon inspires awe, but the smaller side canyons invite more contemplative exploration. These narrow slots pull us upward, eventually surrounding us with walls of red sandstone. Cretaceous fossils and Tertiary shales challenge our climbing skills and dignify small beings like wildflowers and beetles. Bighorn sheep

look down with suspicion from the overhanging cliffs and rimrock. This is mountain lion country, and cat tracks punctuate the muddy banks of creeks, and bone-filled caves on the canyon walls testify to the hunting prowess of these powerful cats. Beauty and fierceness mingle here.

Lizards are my favorites. Every boulder in the arroyo seems to be a perch for bobbing and hunting. Side-blotched Lizards bask on privileged rocks in the arroyo, spaced 20 feet apart to minimize territorial spats. Less abundant Spiny lizards, the heavyweight in these parts, wait for the unwary cricket. Nervous Tiger Whiptails flow and sprint around and under the boulders, sniffing out termites in the leaf litter. Acts of midget violence abound.

It is quiet. The longer we linger in these canyons, the quieter and happier we become, but I wonder how long such wild places will persist. Will my two-year old granddaughter be able to find sanctuary here in 50 years, as my hiking partner and I do today? Will the future flora and fauna be as stunning and self-willed? Will this place remain wild, beautiful and fierce?

Our struggle against the desecration of nature is epochal. Conservationists are determined to restore vigor to the world. We may fail. It is likely. But we must not give up, because nothing like our planet's magnificent plants and animals will evolve again. The evolution of new species larger than shrimp and sparrows is finished as long as human beings maintain their hegemonic grip on Earth's lands and waters. There is no return.

Our new dream is a dream of freedom; freedom for all creatures to roam, find refuge, and adapt to a rapidly changing world. The most economical means to achieve this dream is restoring networks of movement passageways. Nature's Aspirin must be prescribed. 🐾

“Our success has ushered in a new era of conservation and a community of partners who continue pushing landscape-level connectivity forward.”

- Katie Davis, Executive Director





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