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pulse

The Northern Great Plains

Restoring Our American Heritage

WWF

pulse

the heart of conservation

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INSIDE BACK COVER: Pronghorn migration © Joe Riis/joeriis.com

BACK COVER: Bison herd, South Dakota © Joel Sartore/joelsartore.com

FROM THE PRESIDENT

Stories That Need to Be Told

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Start a conversation about the power and value of nature in our lives.

I've always believed in the power of a good story.

I also believe that our work requires us to transport people to the places we cherish, and inspire them to help conserve these places before they're lost. And one of the best ways to get them there is through a story.

Conservation boasts reams of scientific studies, policy statements and white papers—bedrock tools of our trade. But it's rare that a scientific description has what Daniel Burnham termed "the power to stir men's blood." Still, here at WWF we do have an unfair advantage.

That advantage comes when we wed undeniable science with the raw beauty of places like the Northern Great Plains or the Himalayas. It also comes in the legends and stories of the human communities whose lives are intertwined with these places. And none of them need embellishment to be inspiring—they simply need to be told.

A story I've always found enthralling comes from the Northern Great Plains, where WWF is working with ranchers and indigenous groups to keep the grasslands intact and restore the mighty bison to its historic range. According to Lakota legend, it was the American bison who coaxed humanity out of the ground and into the sunshine, with the promise that people would be fed and clothed with the flesh and fur of the bison. And that's precisely what happened in large part with the communities in the American West—people hunted the bison for food, comfort and shelter.

One of my favorite storytellers is someone I've never met—John Muir, widely considered the father of America's national parks. Muir harnessed the power of words to convince Congress that wild, remote places most people had never seen should be saved as national parks.

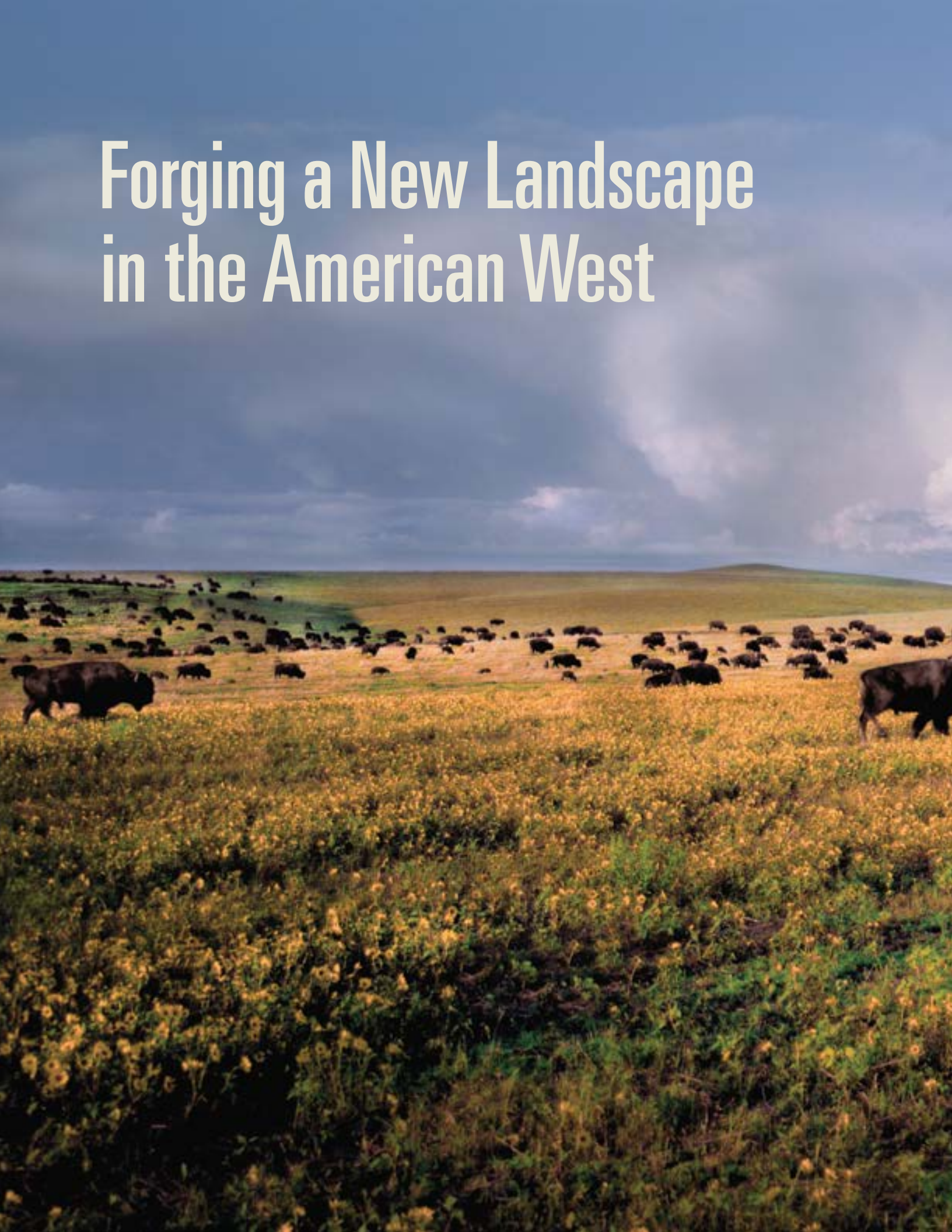
"Here everything is hospitable and kind, as if planned for your pleasure, ministering to every want of body and soul," he wrote of Yosemite. "The whole wilderness in unity and interrelation is alive and familiar…the very stones seem talkative, familiar, brotherly."

WWF will always bring our smartest science and most innovative technology to bear as we seek to create a future in which nature and humanity flourish together. But we will also need to knit them into stories that resonate and motivate us and others to act. Stories entertain us, comfort us, captivate and transport us. They make the unknowable accessible and the unreal seem possible. And through the burgeoning power of social media, our stories can be told and shared around the world.

As Muir wrote, "One day's exposure to the mountains is better than a cartload of books." So get out there—revel in this glorious world we share. And when you come back, be sure to tell others all about it. If we share the stories of our experiences in nature, we can start a conversation about the power and value of nature in our lives, and help illuminate the manifold ways each of us can help save what we cherish. It all begins with a story.

Carter S. Roberts
President & CEO

Forging a New Landscape in the American West



This is a story of scale. The Northern Great Plains ecoregion spans more than 180 million acres and crosses five U.S. states and two Canadian provinces. As large as California and Nevada combined, this short- and mixed-grass prairie is one of only four remaining intact temperate grasslands in the world. It is home to a diverse range of animals and plants, including bison, elk, pronghorn antelope, bighorn sheep, grouse, and black-footed ferrets. Once so abundant they left Lewis and Clark awestruck, these species today are in dire need of conservation. WWF is working closely with scientists, government agencies, ranchers, Native Americans, land trusts, and local communities to protect and restore these species and the land they inhabit.

TOM DILLON
Senior Vice President, Field Programs, WWF

JEFF NELSON
Deputy Director, Northern Great Plains Program, WWF

MARTHA KAUFFMAN
Managing Director, Northern Great Plains Program, WWF

MARTHA KAUFFMAN: Some people call this landscape Big Sky Country or the Wild West. It makes them think of cowboys, sagebrush and a vast rolling prairie, all of which it has. The Northern Great Plains is indeed "home on the range, where the deer and the antelope play"—a place where some of America's most iconic species can still be found. In addition to those renowned pronghorn antelope, which are the second-fastest mammal in the world, the Northern Great Plains is also home to bison, North America's largest land mammal. The bison is a symbol of historical significance, and it continues to be extremely important to the culture, spirituality and economy of the Plains Indians.

TOM DILLON: When I met Rosalie Little Thunder, a longtime advocate for Native American communities and bison, she explained the Lakota people's belief that they sprang from the buffalo; that the massive animal is deeply connected to who they are.

JEFF NELSON: In addition to the Lakota's legends, many of the great stories about the Northern Great Plains came from Lewis and Clark, who, with invaluable assistance from Native Americans, explored the region at the turn of the 19th century. Lewis and Clark wrote about many of the indigenous plants and animals, including the grizzly bear.

TOM: Other stories came from Daniel Boone, who was in his 70s, feeling old, and already the most famous American frontiersman when he got to the Plains. He had seen the wildlife begin to disappear

in Kentucky, where he spent many of his earlier years as an explorer. When he saw the great herds of bison on the Plains, however, he was ecstatic and wrote that it renewed his will to live.

JEFF: Today, bison and several of the large predators Daniel Boone saw back in the 1800s have been lost or, like the grizzlies, pushed up into the mountains. As settlement expanded, both the beaver and the bison were largely wiped out for commercial use. Native Americans were confined to reservations and, as their primary food supply—the bison—was nearly eliminated, they became more dependent on the government to feed their families. The bison's disappearance also affected the food chain, because animals such as wolves relied on it for food.

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PREVIOUS SPREAD
A herd of bison grazes in South Dakota. Bison need vast stretches of intact prairie in order to thrive.

TOP Pronghorn fording a river in Wyoming. Pronghorn migrations can span 300–400 miles.

ABOVE LEFT Often found among prairie dog colonies, burrowing owls are highly sensitive to ground disruptions from oil and gas development.

ABOVE RIGHT Prairie dog colonies foster many species of wildlife, including owls, black-footed ferrets, and ferruginous hawks.

People who settled on the Plains had to be fiercely independent and self-reliant. They converted vast tracts of open grasslands into the organized patterns we see today—land used for ranching and farming that kept out species that threatened or competed with their operations. As fences were erected and roads built, migratory animals' movements were affected. People also plowed a lot of the area in an attempt to grow crops, only to reseed the space with exotic nonnative species to hold the soil. These areas suffered a huge loss of biodiversity.

MARTHA: But in the areas of remaining intact grassland, many species can still be found. There are more than 220 bird species and 160 butterfly species. Almost 1,600 species of grasses, sedges and wildflowers grow in the mixed-grass prairie.

And so much growth is happening underground, where the roots of some plants reach 20 feet deep. It's pretty amazing. Prairie dogs create intricate, underground burrows that provide habitat for animals such as black-footed ferrets, burrowing owls, rattlesnakes and badgers, and swift fox use the burrow system for breeding. There's an entire sub-surface world down there.

TOM: Some of those prairie dog towns covered thousands of acres and ran for miles, but only 2% of them are left today.

MARTHA: The Plains also hosts a rich array of birds. Some, like the sage grouse, sharp-tailed grouse, and greater and lesser prairie chickens, display fascinating mating dances that are culturally important to the Plains Indians.

There are also a lot of migratory birds in the Plains. People who live along the coast see shorebirds, including avocets, long-billed curlews, marbled godwits and upland sandpipers, but don't realize that these birds are going to the grasslands to nest. Our grasslands are critical to these species' survival.

Other important pathways for wildlife are found in the large river systems that cut through the ecoregion, such as the Missouri and Yellowstone rivers and their tributaries. Animals find cover

and forage in the vegetation that grows along these waterways—plants like the tall cottonwood trees, box elder trees, and willows and shrubs that you don't find in the more arid and open prairie.

JEFF: Then you have the small streams that wind throughout the Great Plains. Because the region is arid, some of these streams may be dry for several years, receding to a series of small pools, only to flow again following a heavy thunderstorm or during rapid spring melt.

TOM: You really can't talk about the Northern Great Plains without talking about water, which, despite these large river systems, is really pretty scarce. The aridness of the region is what has preserved it, in a sense.

JEFF: Today, what's left of the Great Plains' natural state is the northwest portion, which has the driest climate and therefore a very small amount of organic matter in the soil. As such, this area is better suited for grazing than for farming. Further east, where soils formed under more productive grass and there's more rain, most grassland has been broken up for cropping.

TOM: The northern grasslands are the largest intact ecosystem in the United States and one of just a few grasslands of such size anywhere on the planet. We need these large-scale tracts in order to conserve all the attributes of an ecosystem together. Even though there's been a huge loss of wildlife, all the original features of the landscape are still there, so there's potential for restoration. It's a great story of hope. I mean, we have more than 128 million acres of largely intact habitat to work with.

MARTHA: It's a huge chunk of land.

TOM: We sometimes call it the American Serengeti. The Northern Great Plains once held the second-largest congregation of large mammals in the world, and it's possible to bring that population back to large landscapes in South Dakota, Montana and other parts of the region.

Even though the area faces a lot of threats, they're not as overwhelming here as they are in other grasslands, such as those found in Mongolia or Argentina. But threats still exist and are growing.

MARTHA: When we got involved with the grasslands about 12 years ago, we analyzed the biggest threats at that time. Since then, the types of threats to the Plains have changed, and they're significantly greater today. For example, we have problems with oil and gas development that weren't an issue before.

JEFF: What happened is that technology has improved sufficiently to allow for oil and gas extraction from shale formations, whereas previously it was not economically viable. That new process, called fracking, involves fracturing shale by injecting it with a high-pressure mixture of water and chemicals to release oil and gas held in the rock. Unlike more traditional oil and gas wells, which can produce for 30 years, fracking wells need to be re-fracked regularly to sustain production. Because this results in a lot more activity around each well, the landscape is fragmented and wildlife is disturbed.

Fracking and horizontal drilling have created an economic boom for parts of the Great Plains. Since it's relatively new technology, we don't yet know all the implications—but we can see that in North Dakota, where it's centered, there are problems caused by road building, with truck traffic in areas that were once undisturbed, and with fragmentation of what is left of the native

TOP LEFT Herding cattle in Montana.

TOP RIGHT Diverse mixed grass prairie offers ideal habitat for the swift fox.

RIGHT In dry landscapes, rivers like the Missouri are vital channels for both life-giving water and regional commerce.

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grasslands. There are large parts of Eastern Montana and Wyoming and parts of South Dakota likely to be impacted by oil and gas development as well.

Local communities—lots of people—are really concerned about the effect all the drilling will have on water quality and quantity, because the area is so arid.

MARTHA: It's really overwhelming. The drilling of one well takes 1 to 5 million gallons of water, and some areas have already seen their water quality decline.

JEFF: Thousands more wells are planned. We just completed a spatial analysis, so we now know exactly where oil development is likely to occur in the next decade, who owns the land, and where development overlays the habitat of sensitive species. We're getting this information into the hands of local decision makers and working to ensure that the most important habitat on public land is protected through resource management plans.

MARTHA: Some species, such as the sage grouse, are just plain sensitive to any disturbance. Imagine that you grew up in a place that didn't have any vertical structures, so you are used to being able to see any predator that might come along. If someone put vertical structures into your relatively flat landscape, those structures might become perches for raptors.

So these birds don't like the tall vertical structures, the fragmentation of the roads, or the noise and the vibrations of the trucks that come with energy development. In fact, sage grouse are candidates for the endangered species list right now.

TOM: We're also watching the effects that wind power development is having on habitat, because some birds are really sensitive to all the turbines

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ABOVE A woman showcases traditional garb during the annual Crow Fair in Billings, Montana.

OPPOSITE Species as diverse as bison, black-footed ferrets, and avocets share a landscape increasingly impacted by energy development (pictured) and other pressures.


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in high-quality wind production areas. Bats are particularly susceptible to direct strikes by the rotating blades.

JEFF: We participated in a study that identified the areas of the Great Plains that are least problematic, because we want to continue to develop alternative sources of energy, such as wind, to reduce carbon emissions in order to slow or reverse climate change.

MARTHA: For the Great Plains, climate change is really about climate variability. I'll give you an example.

Two years ago, we had eight or nine feet of snow in the Plains, which made the migration of the Canadian pronghorns extremely difficult—they have long, skinny legs and can't travel well through the snow. In addition, the snow that winter made it impossible for the pronghorns to forage, so they kept moving south.

They went to the Missouri River, which was frozen, and crossed it and found food. But when they wanted to return home, the ice had melted. In that section of the river there is also a dam, so the river had become a mile-wide lake that the pronghorn couldn't cross. Just a fraction of the animals made it back to their fawning grounds that spring. The population subsequently declined by 70 to 90%—all because of the unusually high snowfall.

JEFF: As the variability in weather increases and you get dramatically bad winters or really dry summers, it's just going to put more pressure on these systems and the animals that live in them.

MARTHA: It's affecting the people, too.

TOM: WWF is designing sustainable solutions to combat all these threats. We're partnering with local communities, which will be responsible for ensuring long-term sustainability. In the Northern Great Plains, that means the tribes, who share many of our values. They have been there for thousands of years and will remain there as stewards of the land.

We want to make sure that everything we do is respectful and supportive of the tribes' vision for wildlife and that it helps them with their economic, environmental, and institutional sustainability.

That is true for the ranching communities too. Together, these two groups own nearly 85% of the remaining grasslands.

JEFF: Our vision for nature is that it should serve as a basis for economic growth. Ranching has been the sole economic driver in the Northern Great Plains for a very long time, but there are alternatives.

TOM: We see tourism as an important incentive and part of the future of this region. Once restored, the Northern Great Plains could become a magnet for people who want to experience and better understand our American heritage. But to make this happen, all levels of government need to see nature-based tourism and conservation as a part of the fabric of a healthy state and a healthy fiscal environment.

MARTHA: We've developed a mix of strategies to achieve this. Ranching partners are great, because ranching supports habitat for 80 to 90% of the species, including elk, deer, pronghorn and many kinds of birds. But ranching doesn't help all species, such as those that have not traditionally been compatible with cattle production, including bison, wolves and prairie dogs.

So we're proactively creating places for these species on both private and public land. For example, our partnerships with the tribes—even though most reservations raise cattle for beef, the tribes have a strong cultural tie to native wildlife and a desire to restore it.

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TOM: There's often a misunderstanding that we're trying to return bison to all parts of the Northern Great Plains. But that's unrealistic. We want to designate several large landscapes where at least a thousand bison can exist, because that's what a herd needs to remain viable. That's actually only a small percentage of the Northern Great Plains.

JEFF: In addition to tribal land, park-managed public land is a good option for bison preservation, because park management tends to embrace biodiversity. But cattle ranchers often lease Forest Service or Bureau of Land Management land under lifetime contract leases, so such public land is used primarily for beef production.

When you look at what's left then for bison and prairie dogs, the opportunity is largely on public lands like parks and refuges or tribal lands where there's interest. A growing number of private interests also see value in restoring some species.

TOM: As part of a WWF program that looks at the commodities that have the greatest impact on our planet, we're working with ranchers to try to make beef production a more sustainable business. We helped create the Global Roundtable for Sustainable Beef, which connects scientists and conservationists with local, regional and global leaders in the beef industry to develop best

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management practices that will benefit species of concern here and around the world. We're just beginning to identify ranchers to help us further develop this program.

JEFF: In Nebraska's Sand Hills, we are helping Calamus Outfitters make its family-run cattle operation more sustainable. We're also helping Calamus use conservation and ecotourism to boost profitability.

ABOVE Once prevalent across the plains, elk are now found primarily in mountainous regions of the West.

OPPOSITE LEFT Beacons to pioneers and generations of Americans, Courthouse Rock and Jail Rock help anchor western Nebraska's landscape.

LEFT Wood's rose flowers bloom at the edge of northeast Montana's American Prairie Reserve.

"Many of the great stories about the Northern Great Plains came from Lewis and Clark, who, with invaluable assistance from Native Americans, explored the region at the turn of the 19th century."

JEFF NELSON

In this case, the parents of the family ran the beef operation, and their grown children wanted to return home to live on the land with their own families, but the beef operation alone couldn't support them all.

So the son started a program to hunt deer and turkey, and the daughter began horseback-riding and ecotourism tours. We worked with the entire family to create biodiversity goals and a grazing management plan in order to maximize the number of plant and animal species the ranch supports. We also helped them and their neighbors obtain equipment to remove invasive species, such as cedar trees, which are a problem for the prairie chickens. Today, the family is opening up the prairie and restoring endangered plants such as blowout penstemon. Calamus Outfitters is Nebraska's first designated Important Bird Area on private land and hosts a booming bird-watching business.

MARTHA: We took the father and daughter to Namibia, where they got the idea to run tours of their ranch from a jeep outfitted like the ones they saw on African safaris. The daughter learned a lot about the flora and fauna on their land in Nebraska, and has become a really good African-style safari guide.

JEFF: And now this operation is able to support three families instead of one.

MARTHA: WWF is also working with partners to create large areas just for wildlife. WWF and American Prairie Reserve share a vision of creating a 3.5 million-acre wildlife preserve in Montana. That's 1.5 times the size of Yellowstone National Park. American Prairie Reserve is buying land next to a 1 million-acre wildlife refuge, restoring wildlife there and opening the land for public access. With APR, we helped bring the first bison back and are working together to restore native grasses, streams and prairie dogs—the full complement of wildlife.

In South Dakota, we're working with the Oglala Lakota's Pine Ridge Reservation and Badlands National Park to restore bison to land slated to become America's first tribal national park. WWF is developing a feasibility study to help us fully understand the costs and management required to restore bison to the area. By doing this we're supporting the reservation's and the park's vision for the future of their land.

JEFF: Sometimes the tribes and ranchers work together on solutions, as was the case with Dan and Jill O'Brien of Wild Idea Buffalo in South Dakota. When they converted their business from raising cattle to raising bison, they hired Native Americans from Pine Ridge Reservation to harvest and process the animals. The bison live their whole lives on the open grasslands and are harvested respectfully. Each harvest day begins with a ceremony to pray to the animals' souls.

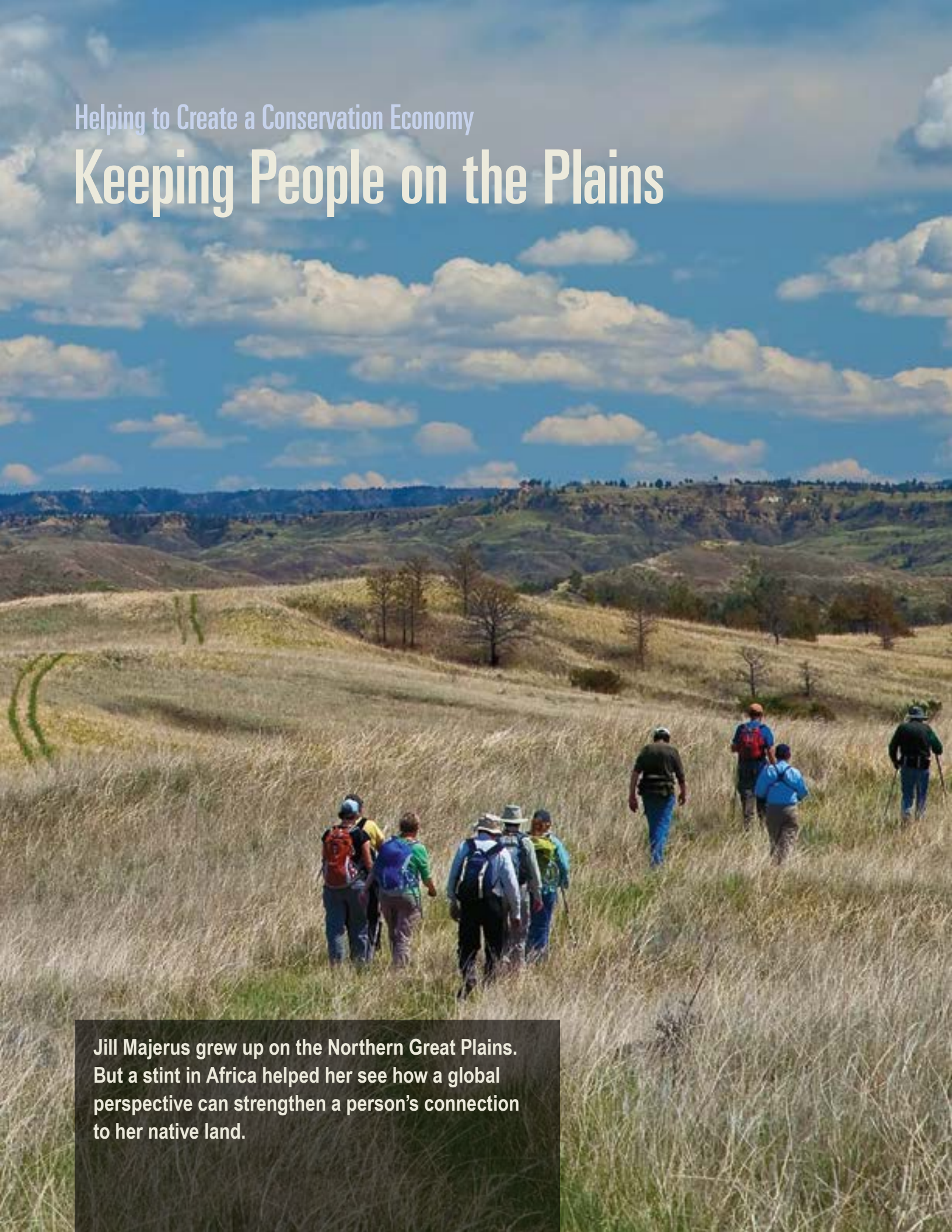
TOM: Not all Americans think about it, but we can learn so much just by talking with people from other parts of the world and applying what we learn from them to our lives here at home. This is as true for grasslands as for any of the other globally important systems in which we work.

We have a truly global perspective. The conservation work we do all around the world informs our work here, just as our work here informs our work in other countries.

The Northern Great Plains needs to be a flagship for this country and for WWF to show what we can do as Americans—that we're not only concerned with what others are doing but we're actively engaged in doing this work here at home. If Americans are going to be leaders on environmental and conservation issues, this is absolutely essential. ■

Helping to Create a Conservation Economy

Keeping People on the Plains



Jill Majerus grew up on the Northern Great Plains. But a stint in Africa helped her see how a global perspective can strengthen a person's connection to her native land.

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FROM THE FIELD by Jill Majerus

My passion for the Northern Great Plains runs deep. As a child growing up in Montana, I loved the mountains and prairies where my family worked for generations as homesteaders, farmers, railroaders, and politicians. It's where I learned to listen to the way the wind blows through the grass, from a howling fright to a soft whisper.

There is an old legend the Lakota like to tell, about how man and buffalo raced around the Black Hills of South Dakota to determine which was superior to the other—the two-legged or the four-legged beings. The Lakota knew they could not outrun the buffalo, so they recruited the magpie to race on their behalf. The magpie was clever and rode upon the back of the buffalo until just before the finish line. Then the bird took flight to cross the line first. And that, they say, is how the Lakota came to earn the respect of the buffalo—and how the order of the universe was established.

I have listened to this and many other stories as I have gotten to know the people of the Lakota Nation on the Pine Ridge Indian Reservation in southwest South Dakota, through my job as ecotourism and conservation program officer for WWF. Getting to know the Native Americans on this reservation has been a critical component of my work helping tribal and private land managers benefit economically from habitat and wildlife restoration.

To work with the Lakota, you must understand their complex relationship with the buffalo, or bison. The bison are life to the Lakota, both spiritually and physically. They have relied upon them for food, for hides to make their homes, for the bones with which they made weapons and toys. Their culture and spiritual rites are intricately tied to the buffalo, and have been for hundreds of years.

Jill Majerus

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Today, I am helping to show them how protecting the buffalo and growing their herd can also bring economic gains to the reservation.

The buffalo need land on which to graze—lots of it, if they are to reach our shared goal of at least 1,000 animals in one location, the minimum recommended to genetically sustain a herd. That's why WWF is working in support of the creation of a new tribal national park in the southern end of what is currently Badlands National Park: to provide an opportunity for the Lakota to restore bison to this area and to develop a history center where they can tell their story to

"Because the landscape of the Northern Great Plains feels like home to me, being able to help local landowners preserve these spaces is one of the most satisfying parts of my job." JILL MAJERUS

© ALAN J. BARTELS

tourists. Such a place would become an important source of pride to the Lakota, as well as a source of revenue, and would be a means of preserving the habitat and wildlife of the Northern Great Plains for generations to come.

Right now I'm helping the Lakota develop a bison management plan for their tribal herds and conduct a feasibility study for herd expansion, particularly for the future tribal national park. While it may take three to five years for legislation to create the park, we can start taking action now toward improved landscape management. Critical resources needed in the interim include additional fencing, water access improvements, additional infrastructure, and staffing to establish the bison herd and manage it to national park standards. It's a long-term effort.

My experiences with the Lakota confirm something I learned a long time ago as a Peace Corps volunteer in Senegal: The key to successful conservation work is to make sure that preserving wildlife and habitat is also good for local communities, and to help those communities

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PREVIOUS SPREAD Visitors hike in the Burnt Lodge area of Montana's American Prairie Reserve.

ABOVE In Badlands National Park, South Dakota, a young bison holds his ground.

TOP LEFT A couple "tanks" on Nebraska's Calamus River. Tourism, including "tanking," is providing new sources of income for ranchers and others in the Northern Great Plains.

TOP RIGHT Two sharp-tailed grouse "dance" to attract a female. The birds are increasingly recognized as iconic denizens of the prairie.

OPPOSITE A signing ceremony signals commitment to the joint Lakota-U.S. creation of a new tribal national park in South Dakota.

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© EASTCOTT MOMATIUK/GETTY IMAGES

realize economic benefits by sustaining their land and natural resources.

That often means ecotourism, which is my area of expertise. Because the landscape of the Northern Great Plains feels like home to me, being able to help local landowners preserve these spaces is one of the most satisfying parts of my job.

I got to do this recently, with a ranching family in Nebraska. WWF had been working with the rancher and his wife on land preservation issues. Their son and daughter, who live with their families on the ranch, were already demonstrating that ecotourism can support families while preserving habitat for native bird populations, such as the greater prairie chicken and the sharp-tailed grouse. Through their ecotourism business, Calamus Outfitters, they offered lodging, float trips on the creek, and horseback riding.

WWF took members of this family—along with several other conservation-minded landowning families and the Lakota's tribal biologist—to Namibia to see how private landowners there were working cooperatively with their neighbors to advance conservation and benefit the communities through ecotourism.

The family came home inspired to adapt what they saw in Namibia to the context of the Great Plains, and WWF helped them do it. The family worked out an agreement to share access to their neighbors' land, and added jeep tours through the Sand Hills to their ecotourism offerings.

Also in cooperation with their neighbors, they acted to protect native birds by clearing cedars in which large predatory birds perched, waiting to kill the likes of prairie chickens and grouse. This also created more grasslands for the ranchers' cattle and helped restore the land to its native state. These efforts were so successful in restoring prairie chicken populations that today the ranch hosts the official Nebraska Prairie Chicken Festival—a boon to the entire community.

Through cooperative ventures with their neighbors, they were able to combine conservation and ecotourism to help sustain their three families on the ranch and benefit the community as well.

And that's what I love most about my work: helping people realize that economic development doesn't have to be just about making more money. It can be about improving the quality of life for everyone in the community, while becoming better stewards of the land. ■

Jill Majerus *is an ecotourism and conservation specialist with WWF-Northern Great Plains.*

Sea turtle, North Sulawesi, Indonesia

Global Action

We are strategically focusing on conserving critical places and species while also working to reduce humanity's ecological footprint. Here are some highlights of WWF's recent successes made possible by your support.

SPECIES

PARTNERING TO BUILD PACIFIC SEA TURTLE HATCHERIES

Sea turtle eggs in the Solomon Islands are in constant jeopardy from predators such as monitor lizards and dogs, from local residents who harvest the eggs both for sale and home consumption, and from high tides and waves. WWF has been a longtime sponsor of the Tetepare Descendants Association (TDA), a group of local islanders who sustainably manage their land and marine resources. Last year, TDA constructed turtle hatcheries on four beaches on Tetepare and Rendova islands. Turtle monitors will move some of the turtle eggs from the beach to the hatcheries to protect them from threats.

WWF helps TDA monitor coral reefs, patrol no-take zones in the ocean, and monitor endangered sea turtles and their nests. In addition to monitoring turtles and other wildlife, TDA operates a sustainable tourism venture on Tetepare, the largest uninhabited island in the South Pacific. WWF's support helps local residents lead their own protection efforts, instilling a lasting conservation ethic in the community.

CALLING FOR ACTION TO HELP SAVE ELEPHANTS

For the first time in history, the Thai government publicly declared it will put an end to the trade of ivory in Thailand. Prime Minister Yingluck Shinawatra made the announcement at the opening of the Convention on the International Trade in Endangered Species of Fauna and Flora (CITES) hosted in Bangkok this March. Her statement came after WWF presented her with a petition, supported by champions like actor and WWF board member Leonardo DiCaprio, urging Thailand to ban its ivory trade. The petition had been signed by nearly 1.6 million people around the world.

African elephant, Kenya

© MARTIN HARVEY/WWF-CANON

Currently, Thailand allows the sale of ivory from domestic elephants, which makes it easy for criminals to sell illegally poached ivory alongside legal ivory. Ending ivory trade in Thailand—currently the world's largest unregulated ivory market—will help stem a global poaching crisis that is contributing to the slaughter of tens of thousands of elephants each year and fueling global wildlife crime.

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REINTRODUCING BLACKBUCK TO THE WILD IN NEPAL

Threatened by habitat fragmentation, disease, and inbreeding, the only surviving wild population of blackbuck in Nepal is in a precarious place. That makes establishing other viable wild blackbuck populations an important biodiversity goal. This was the impetus behind the translocation of 22 blackbucks from the Nepalgunj Zoo to Suklaphanta Wildlife Reserve. The 18 females and six males are now living in a predator-proof fenced area where they are adapting to the wild.

The translocation was a joint effort among Nepal's Department of National Parks and Wildlife Conservation, the National Trust for Nature Conservation, and Hariyo Ban—a program launched by WWF, CARE, and local organizations to address climate change and biodiversity threats. Translocating the blackbuck to Suklaphanta will help establish a larger area and better habitat for the species. The USAID-funded Hariyo Ban program will also introduce eight additional blackbuck from the Central Zoo and the existing wild population in order to increase the genetic diversity of this new population.

Monarch butterflies, Mexico

© EDWARD PARKER/WWF-CANON

PRESERVING THE MONARCH BUTTERFLY MIGRATION

The sight of monarch butterflies congregating in the forests of central Mexico to hibernate for five months is one of nature's most spectacular phenomena. They are the only butterflies to make such an epic migration—traveling between 1,200 and 3,000 miles from summer breeding areas in Canada and the northern United States to hibernation colonies in Mexico. The monarchs rely on the Mexican forests' specific microclimate, which shelters these delicate travelers from harsh winter conditions.

But these forests are also home to agrarian communities struggling with poverty and limited economic opportunities. They too rely on the forest resources. To ensure the well-being of these communities as well as the winter habitat of the butterflies, WWF has established alternative income-generating ventures projects—including sustainable mushroom and tree nurseries. WWF complements these efforts with on-the-ground reforestation and with building local capacity through opportunities to work as tourist guides. We also help support the tourism infrastructure in conjunction with funds from the Ministry of Tourism.

To evaluate the butterfly population's status, WWF surveys the forest covered by monarch butterflies and conducts satellite monitoring

to document illegal logging. The combination of on-the-ground research and community initiatives is vital to the long-term success of our monarch conservation work.

INVESTING IN TRAINING TO PROTECT GORILLAS

Because they inhabit some of the densest and most remote rain forests in Africa, the exact number of western lowland gorillas is not known. But scientists do know that their numbers have declined by more than 60% in the last 20 to 25 years. WWF continues to be engaged in the fight to keep these rare animals from disappearing from the wild.

WWF's Education for Nature program recently provided a professional development grant to Saturnin Régis Ibata, a GIS database manager at the Lésio-Louna Gorilla Reserve in the Democratic Republic of Congo. The grant allowed him to attend a GIS course geared to conservation planners at the Smithsonian Conservation Biology Institute in Virginia. The training provided him with new skills that have improved his data analysis and understanding of the dynamics of the animal population—skills that will ultimately contribute to better management of the reserve.

CLIMATE

EARTH HOUR CITY CHALLENGE RECOGNIZES U.S. CITIES

After spirited competition from finalists in Chicago, Cincinnati, and San Francisco during WWF's Earth Hour City Challenge, San Francisco was named the 2013 U.S. Earth Hour City Capital. Nearly 30 cities participated in the year-long challenge, which recognized cities actively preparing for increasingly extreme weather and promoting renewable energy. WWF and global management consultancy Accenture chose the finalists for their concrete actions to transition their communities toward a climate-friendly future.

San Francisco already supplies 100% of its municipal power from renewable sources and is one of the first U.S. cities to require all city departments to produce climate action plans. Such actions are part of a growing movement. The city of Chicago has paved 55 acres of its alleyways with permeable pavement that allows water from heavy rainfall to seep into the ground. Tucson has a team assessing how to reduce the city's vulnerability to increased drought, water scarcity, and extreme heat. And Miami is collaborating with Miami-Dade County to map areas at greatest risk of inundation from sea level rise.

DRILLING IN THE ARCTIC

WWF welcomed Royal Dutch Shell's February announcement that it would abandon plans to drill for oil and gas in Alaska's Beaufort and Chukchi seas this year.

© JOHN STOREY/WWF-US

Earth Hour, San Francisco

The decision provided WWF with additional time to advocate for prohibiting offshore drilling in the Arctic's harsh environment. If drilling is allowed in the future, WWF will work with government and industry leaders in the U.S. and across the Arctic countries to develop guidelines for when, where, and how to drill, as well as how to respond to an oil spill. WWF also advocates for our nation to move toward a clean, renewable energy future—rather than relying on offshore oil and gas—in order to address climate change.

The need for WWF to have a strong voice on this issue was driven home in March, when a new government assessment of offshore oil and gas development in the Arctic in 2012 fell short of acknowledging that offshore drilling cannot currently be conducted safely in the Arctic and should not be allowed. Although the U.S. Department of the Interior report called on Shell to provide a detailed plan addressing all contingencies before it can resume operations in the Arctic, Interior Secretary Ken Salazar said that the Obama administration is still willing to give a green light to future drilling.

WIND ENERGY POTENTIAL ON THE NORTHERN GREAT PLAINS

Wind energy holds great promise for reducing carbon emissions while increasing energy independence and bolstering economic development. Winds across the Northern Great Plains are strong and consistent, making the Plains an ideal place to develop this resource. But because wind energy has a larger land footprint per gigawatt than most other forms of energy production—as well as potential adverse effects on wildlife, such as habitat loss and fragmentation—it is vital that it is developed appropriately. The Northern Great Plains is one of the planet's last remaining temperate grasslands and is home to hundreds of species—some endangered.

This year, WWF collaborated with The Nature Conservancy to identify areas in the Northern Great Plains where wind development would have a low impact on wildlife. The researchers estimate that the potential wind energy available across the Northern Great Plains in these already disturbed areas would actually exceed goals for wind energy development. By guiding wind development away from large, intact habitats that are wildlife priority areas, the study will help us achieve important biodiversity and emissions goals.

Wind farm, Judith Gap, Montana

INSPIRING CORPORATE CLIMATE LEADERSHIP IN CHINA

For 14 years, companies participating in WWF's Climate Savers program have been proving that cutting carbon emissions and spurring economic growth can go hand in hand. With WWF support, the 30 Climate Savers companies have slashed carbon emissions by more than 100 million metric tons since the program's inception. This January, Yingli Green Energy Holding Company Limited, one of the world's largest manufacturers of solar photovoltaic panels, became the first Chinese company to join Climate Savers.

By the end of 2015, at least 4% of the electricity that Yingli consumes will come from renewable sources—specifically solar photovoltaic.

Huimeki Communal Reserve, Peru

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Yingli also committed to a number of aggressive carbon emissions reduction targets, including an emissions reduction of 13% per megawatt of photovoltaic panel produced by the company compared to 2010 levels. Yingli already uses solar energy and will continue to increase its use of renewable energy by installing more solar generation capacity. WWF works with all Climate Savers companies to set new industry-leading emissions reduction targets and develop plans to achieve those targets and monitor progress.

PEOPLE

EMPOWERING ETHNIC GROUPS IN THE AMAZON

The Peruvian Amazon—a region that includes Peru, Colombia, and Ecuador—harbors spectacular natural diversity as well as 30 different indigenous communities belonging to the Kichwa, Huitoto, and Secoya groups. Leaders from the main ethnic groups attended a meeting in October at which Peru's prime minister and minister of environment announced the official establishment of the 1.5 million-acre Gueppi Reserved Zone as a protected area. The newly protected area borders protected areas in both Ecuador and Colombia and will complete a tri-national wildlife corridor in the Putumayo River Basin.

Through our Putumayo Tres Fronteras Project, WWF has been working with indigenous groups and government officials to encourage greater involvement of local communities in obtaining land tenure rights, territorial security, and strengthened capacity for sustainable resource management in the region. As a tri-national initiative that has actively engaged indigenous groups, the program is a model for the integrated management of other cross-border conservation efforts in the Amazon.

FOSTERING SUSTAINABLE AGRICULTURE IN MOZAMBIQUE

The traditional method of farming in coastal communities in northern Mozambique involves slashing and burning forests—a technique that devastates forests and usually produces only a short-term agricultural gain. Typically, the burned soil is only usable for two

years before soil quality deteriorates. Nevertheless, increasing food demands from a growing population mean slash-and-burn agriculture continues to expand, putting more and more pressure on rare coastal forests and other natural systems. The result is a blow both to biodiversity and to local communities' health and well-being.

Curbing these destructive agricultural techniques while strengthening livelihoods in the Primeiras and Segundas archipelago was the impetus behind the Primeiras & Segundas Livelihoods Program, launched by CARE and WWF in 2008. As part of the program, WWF provides technical and financial support to establish Farmer Field Schools that teach sustainable agriculture techniques, such as field rotation and plowing and mulching. Farmers learn through participation and observation under the guidance of agricultural extension agents, and then decide for themselves which farming techniques and plant varieties are most beneficial to them. The program has been enthusiastically embraced by the farmers, who are now able to grow greater quantities of more nutritious food.

HELPING PEOPLE TRACK THE STATUS OF PARKS AND PROTECTED AREAS

The struggle to safeguard wild lands continues even after a park or protected area has been created. In fact, WWF social scientists have identified a global trend in which protected areas come under pressure from industrial, governmental, or community interests. This trend, known as PADDD (Protected Area Downgrading, Downsizing, and Degazettement), includes protected areas that get their legal status lowered (downgraded), that lose a section of their land (downsized), or that are eliminated completely (degazettement). Now, a new WWF website gives people the ability to contribute their knowledge of PADDD and help build a global dataset on the trend.

PADDDtracker.org is a global crowdsourcing tool that collects, maps, and shares PADDD data. Information from the website will help conservationists and planners better understand PADDD and inform policy debates and conservation strategies. PADDD incidents have long occurred under the radar. This new interactive website will raise awareness and encourage dialogue about the pros and cons of the practice. Tracking the status of parks around the world is a monumental task, but the simplicity of PADDDtracker.org makes it possible for anyone, anywhere, to contribute what they know.

Tuna fish *(Thunnus)*

© MARK CARWARDINE/NATUREPL.COM/WWF-CANON

MARKETS

PROMOTING SUSTAINABLE FISHING IN FIJI

Technical support from WWF has helped the Fiji Albacore Tuna Longline Fishery become the first in Fiji to achieve Marine Stewardship Council (MSC) certification. This fishery is also the first tuna *longline* fishery in the world to be MSC certified. WWF was actively involved in the 18-month certification assessment process, which was conducted by an independent third-party certifier. The fishery has pledged to meet eight conditions to bring the fishery up to international compliance with MSC certification, including establishing harvest control rules and other best management practices. This move will continue to promote the future health of tuna stocks in the region and bring major benefits to the fishing industry.

WWF works with other organizations and the fishing

industry to transform tuna fishing into a sustainable business, particularly through MSC certification. WWF helped found the Marine Stewardship Council, and today we encourage retailers to source from MSC-certified fisheries while we continue working to raise consumer awareness about sustainably caught tuna.

CERTIFYING FORESTS IN SOUTHERN CHILE

The second-largest forest company in Chile, Forestal Mininco S.A. (CMP Forestry Division), received Forest Stewardship Council (FSC) certification in December 2012 for 1,622,835 acres in Southern Chile—now the largest FSC-certified area in the country. The certification came after years of work by the company to bring its operations in the region into compliance with FSC standards. WWF supported Mininco during the process by mapping converted forests, providing training workshops to local stakeholders, and participating in the main audit.

Mininco's efforts to protect native forest on its land help to conserve biodiversity and maintain ecosystem integrity across more than 361,000 acres of forest, including approximately 270,000 acres of high value for conservation forest. As one of the largest industrial sectors in the world, the pulp and paper industry has an enormous influence on global forests. Mininco's certification provides an example for others in the industry of how responsible plantation management can bring benefits to forests, local economies, and people.

WWF will continue to monitor Mininco's progress, provide technical support, engage stakeholders, and evaluate the impacts of the work.

RALLYING PUBLIC ACTION TO SAVE TIGER FORESTS

One year after WWF launched our TP campaign to save the tiger forests in Sumatra, Indonesia, Asia Pulp and Paper (APP) announced it would cease tropical forest clearance pending assessment of conservation values and carbon stocks. APP's commitments are in line with calls WWF has been making on the company for years. WWF's TP campaign asked 20 U.S. grocery chains believed to be the top buyers of Paseo brand toilet paper—made from APP-supplied fiber—to remove Paseo from their shelves.

APP and its affiliates have pulped more than 5 million acres of natural forest in Sumatra—the only place in the world where tigers, elephants and orangutans coexist. Since 1985, more than half of Sumatra's natural forests—an area greater in size than the state of Virginia—have been lost due to conversion to pulp plantations for tissue and paper. WWF welcomes APP's announcement but will remain vigilant through independent monitoring and the Eyes on the Forest coalition. ■

Sumatran tiger, Indonesia

A Life's Work

A childhood steeped in nature evolved into a lifetime dedicated to conservation.

Brenda Davis has shared her dedication with WWF in numerous ways, and today she chairs our Northern Great Plains advisory committee.

When she was just a young girl, Brenda and her family followed her biologist father to outposts on the California coast and then to the wilds of Alaska for 10 years. From her earliest memories of camping, fishing and hiking with family, to her academic studies and a career that spanned both the public and private sector, Brenda has always been driven by her love of nature.

Carrying those early adventures with her, Brenda went on to earn a Ph.D. in ecology at the University of California, Berkeley. Her career began on Capitol Hill, where she worked as an environmental analyst for the Senate Committee on the Budget. While there, she worked with conservation champion Senator Ed Muskie and eventually rose to senior staff status on the committee. She got to know WWF while serving in the cabinet of New Jersey Governor Thomas Kean, a former member of WWF's board. Her work there helped lay the groundwork for a federal wetlands policy.

Switching gears, she moved to the corporate world at Johnson & Johnson, where she stayed for 15 years. Her mark on the company's corporate responsibility programs was profound. She is the one who initiated Johnson & Johnson's partnership with WWF, which endures to this day.

"I've been focused my whole life on conservation," she says. "And I am proudest of what I have been able to accomplish throughout my career to help save the planet. My mantra at Johnson & Johnson was that human health depends on the health of the planet—a mantra which aligns well with WWF's vision. While I was there, I think we developed some of the finest sustainability programs in the industry."

At the same time, she was sharing her experience with WWF—as a board member for nine years, as chair of the Audit Committee, as treasurer, and as a member of the National Council. Her multifaceted contributions to WWF stem from her keen understanding of science, government, and the corporate world. Brenda particularly admires WWF's pioneering market transformation work, which she believes is creating pathways for real change for major corporations and consumers.

"WWF's scientific capacity, coupled with its capacity to engage government, business, and multinational partners at the highest level is unmatched," she says. "And it is essential to the organization's credibility and effectiveness."

While Brenda clearly sees the practical and human reasons for protecting nature, her dedication also comes from a scientist's deep fascination with the planet's diversity. That respect still motivates her today: Though retired, she continues her advocacy for nature worldwide through her volunteer service with WWF and with several boards.

"I do this because I believe that, when given the chance, people can appreciate the gift we've been given in nature and can live in harmony with it," she says. "It is an enormously important way for me to spend my time." ■

About WWF

For more than 50 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by 1.2 million members in the United States and more than 5 million supporters globally. WWF's unique way of working combines global reach with a foundation in science, involves action at every level from local to global, and ensures the delivery of innovative solutions that meet the needs of both people and nature. Visit worldwildlife.org to learn more.

worldwildlife.org/pulse

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