MANAGING THE BIG

Why it makes sense to conserve all of Montana's 636 fish and wildlife species.

BY TOM DICKSON

On August 22, 2005, along a large, reed-ringed marsh just a few miles south of Canada and west of North Dakota, two Montana State University fish and wildlife undergrads discovered an animal no one had ever before documented in Montana.

Jenny Flesch and Ashley Beyer, both 21, were helping conduct a small-mammal survey. Funded by Montana Fish, Wildlife & Parks, the survey was the first of its kind in the state's northeastern region. Dressed in jeans, boots, and T-shirts and armed with data forms, a Palm Pilot, a GPS receiver, and peanut butter bait, the pair waded through shoulder-high bulrushes. Their task was to check the contents of small traps they'd set the previous day.

Like two other field crews taking part in small-animal surveys elsewhere in Montana that summer, Flesch and Beyer worked eight days on and six days off. They lived in a small trailer they parked in local campgrounds or next to barns of accommodating ranchers.

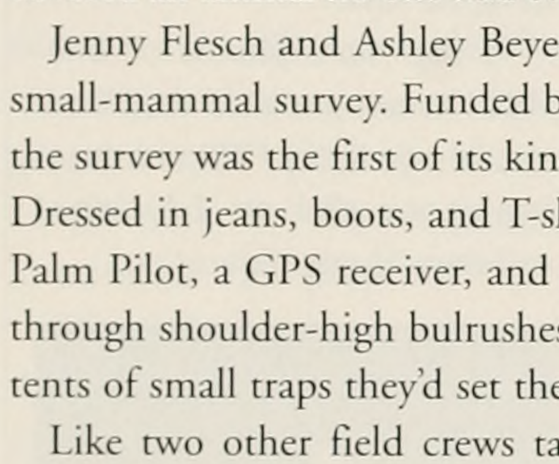
That day the wildlife technicians were mainly finding meadow voles, a thumb-sized, mouselike species eaten by weasels, raptors, and coyotes. Then Beyer lifted a trap holding a larger mammal about the size of a Snickers bar, with a stubby tail and a pointed snout. She looked at her partner. Though they'd been identifying small mammals for the previous two months, neither had ever before seen such a creature.

"What is it?" Flesch asked.

"Maybe it's a northern short-tailed shrew."

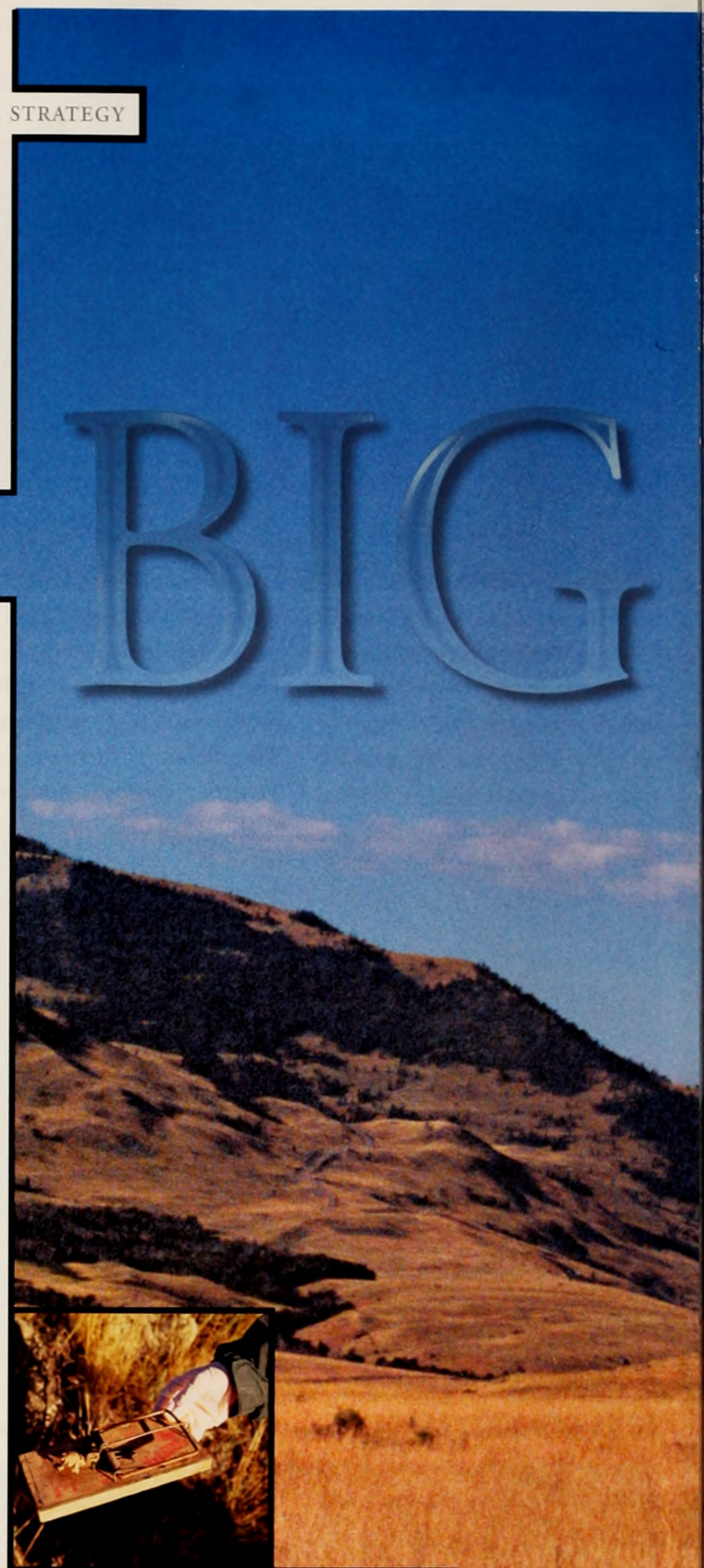
"Yeah, I think it might be. Look at its tail. This is really cool."

The women had reason to be excited. The northern short-tailed shrew, also called the big short-tailed shrew, is common in the north-central United States and



WILLIAM LEONARD

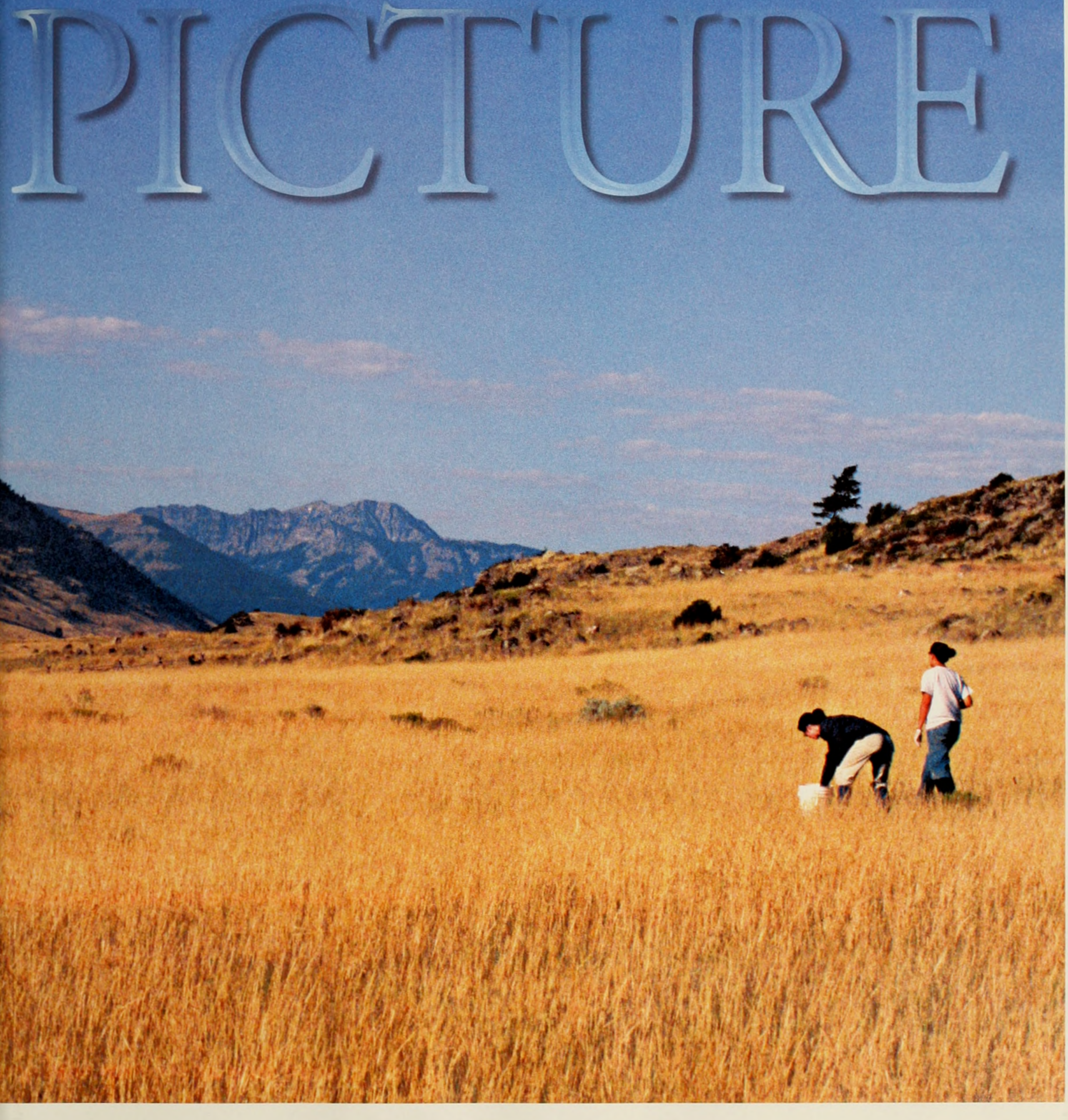
Northern short-tailed shrew



DOME MOUNTAIN WMA SMALL-GAME SURVEY BY TOM DICKSON

CRITTER COUNTERS On FWP land near Gardiner, two wildlife technicians check traps set the previous day for small mammals—species rarely surveyed by FWP—and record their findings in hand-held computers. In 2005, coworkers conducting a similar survey in northeastern Montana discovered a species never before recorded in the state (left).

PICTURE



south-central Canada. Previous records showed its western range ending in the western Dakotas, not Montana.

Flesch hurried to the truck and phoned her supervisor, Ryan Rauscher, FWP's native species wildlife biologist in Glasgow. After asking them to describe the shrew, he said he was almost positive they had captured a northern shorttail.

Within days of the subsequent verification, FWP issued a press release announcing the remarkable discovery. The technicians were thrilled. "Here we are, two college students," says Flesch, "and we've been able to do something important for wildlife management, something that could really help give exposure to Montana's nongame species."

Not too long ago, undergrads like Flesch and Beyer likely would have been waiting tables during summer break, not conducting groundbreaking wildlife surveys. That's because FWP and other state conservation agencies nationwide had few funds to monitor anything besides elk, deer, trout, and a handful of other game species.

"The big issue has always been money," says Bill Geer, previously chief of Utah's Wildlife Division and now with the Theodore Roosevelt Conservation Partnership. The national hunting and conservation advocacy organization is helping states publicize their efforts to broaden the scope of fish and wildlife management.

Geer says conservation agencies have long recognized their responsibility and mission to conserve all species.

"Managing game animals has been easy, because you have hunting and fishing license dollars to use," says Geer. "But where is the money for conserving all the hundreds of other species supposed to come from?"

The SWG era

For decades biologists, fish and wildlife agencies, and citizen conservationists hoped nongame funding would come from Washington, D.C. After decades of seeing their hopes raised then dashed (see "Waiting for the Dough," page 10), nongame wildlife proponents finally convinced Congress to pass what became known as the State Wildlife Grants (SWG) Program. The initiative provides federal money for states to develop broad-based, comprehensive fish and wildlife programs that address all species.

Since 2001, FWP has received roughly $1 million per year in SWG funds. As required by federal legislation, that money has been matched with private donations, state agency dollars, and in-kind services, bringing the total to $2 million annually. Though just a fraction of the roughly $70 million the department gets each year from license fees and federal funds for game management, the new money dwarfs any previous nongame funding.

To make sure SWG funds are used effectively, Congress required each state to draft a comprehensive assessment of fish and wildlife species and their habitats. Montana finished its comprehensive fish and wildlife conservation strategy in 2005. The 700-page document lists the status and known distribution of every single Montana vertebrate, from the Shira moose to the fathead minnow.

The conservation strategy then goes on to identify roughly 60 "Tier 1" fish and wildlife species, such as the elegant long-billed curlew and the monstrous paddlefish. These animals are either federally listed or are declining in number so quickly they could soon become endangered. The strategy document also identifies critical habitats—aspen galleries, mixed shrub grasslands, wetlands—where Tier 1 species live.

Landowners, hunters, anglers, conservationists, and other citizens reviewed the draft strategy last summer during statewide public meetings. Then FWP submitted the final document to the U.S. Fish and Wildlife Service. Approval is expected sometime in early 2006. Recently, FWP officials met with an advisory committee of other agencies' staff, citizens, stockgrower representatives, and members of conservation groups to decide which Tier 1 species and critical habitats the department should concentrate on managing over the next few years.

Taking a step back

While preparing their comprehensive assessments, FWP and many other states' conservation agencies took a long, hard look at how they manage fish and wildlife.

"What we've been doing is taking a step back and looking at the entire suite of 600-plus vertebrate species in Montana," says Chris Smith, FWP chief of staff. "Our mis-

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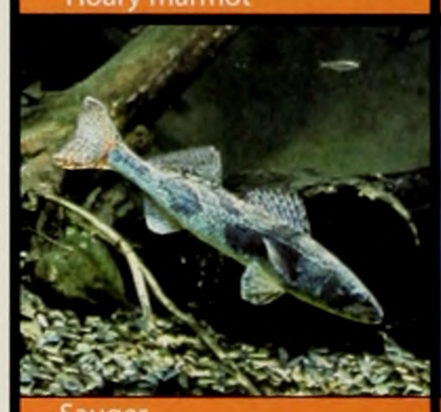
Tom Dickson is editor of Montana Outdoors.


Common loon


USFWS


Hoary marmot


Coeur d'Alene salamander

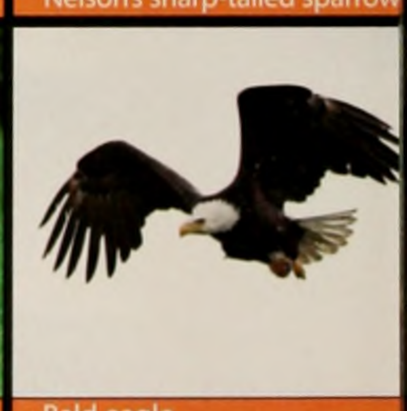

Sauger


Western pearlshell


Milksnake


Nelson's sharp-tailed sparrow


Gray wolf


Bald eagle

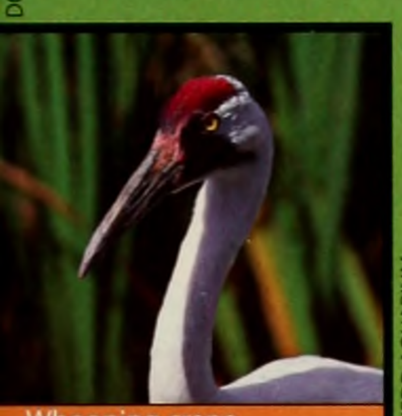

Interior least tern


Snapping turtle

Spiny softshell

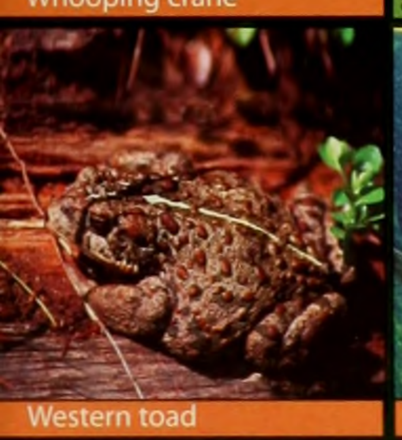
MASLOWSKI PHOTO

DONALD M JONES



Whooping crane

SHEDD AQUARIUM
DAN GUSTAFSON
GARY LEPPART



Western toad

Paddlefish

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Bull trout

Townsend's big-eared bat

Piping plover

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Canada lynx

Olive-sided flycatcher

Burbot

Meadow jumping mouse

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MASLOWSKI PHOTO

GREAT AND SMALL CREATURES Over the past two years, scientists assessed the status and health of Montana's 636 fish and wildlife species. They then identified the 60 species, many shown here, most in need of conservation, such as through habitat protection and restoration. Funding to assess and manage these species comes from the State Wildlife Grants Program.

sion is to conserve and manage Montana's wildlife—*all* its wildlife. But our focus over the past century has been almost exclusively on game species—specifically big game—and more recently, on a few threatened or endangered species."

One of the first things agency officials did with the new SWG money was begin several sorely needed surveys of fish and wildlife species never before monitored in Montana. Crews seined and electroshocked prairie streams in the state's eastern half and found blue suckers, sicklefin chubs, shorthead redhorse, and other species in waters previously considered devoid of fish. Crews monitoring reptile and amphibian populations discovered that leopard frogs no longer show up west of the Continental Divide. Working with the Montana Natural Heritage Program (See "Lewis and Clark with Palm Pilots," page 13), other crews surveyed sagebrushlands, grasslands, and wetlands in search of rare wildlife such as black terns and blue-gray gnatcatchers.

"The first step in managing game or nongame wildlife is to find out which species are out there, how abundant they are, and where they live," says Rauscher, the native species biologist. "Without that information, we could waste time and resources on species that appear to be disappearing but actually are doing well. Meanwhile, we'd miss helping other species or populations that are declining to the point where it's too late."

Looking at the big picture

As part of its comprehensive conservation strategy, FWP is also broadening its habitat focus to take in entire geographic areas in need of conservation.

"Instead of just looking at one elk habitat here and one grizzly bear habitat there," says Smith, "we're taking a step back and looking at entire landscapes that support many different game and nongame species, and then figuring out how best to conserve them."

Taking a landscape approach to managing fish and wildlife is nothing new. Anglers know that dams and logging practices many miles away can affect fishing in local waters. Duck hunters have long understood the need to consider both waterfowl breeding and wintering habitat that stretches thousands of miles across North America.

"Montana hunters and FWP have been working together to manage game animals this way for decades," says Smith. "Fifty years ago, biologists identified critical winter range and, with the support and leadership of hunters, we secured that habitat. This landscape approach is the same habitat model we've always followed, the same one we used to develop Habitat Montana."

Not all species will benefit from the landscape management approach. For instance, the Coeur d'Alene salamander in northwestern Montana lives only in the mist spray of waterfalls. "So in a case like that, we'd need to conserve those specific habitats if we are

WAITING FOR THE DOUGH

Strong interest in conserving nongame species in the United States goes back more than a century. But public funding to conserve those species only recently arrived.

In the late 1800s, the National Audubon Society was formed to protect herons, egrets, and other "plume" birds being killed to adorn women's hats. The new conservation group then pushed for passage of the Lacey Act of 1900, which banned interstate shipments of illegally killed wildlife.

The subsequent 20th-century wildlife conservation movement focused mainly on elk, deer, waterfowl, trout, and other game animals. In 1937, the Federal Aid in Wildlife Restoration (a.k.a. Pittman-Robertson) Act earmarked federal excise taxes on rifles, shotguns, and ammunition to state wildlife agencies for habitat acquisition and research. Game fish management got a similar funding boost in 1950 with passage of the Federal Aid in Sport Fish Restoration (a.k.a. Dingell-Johnson) Act, which returns excise taxes on fishing equipment to the states.

By the 1960s, conservationists were again focusing on dwindling numbers of whooping cranes, peregrine falcons, and other nongame bird species, as well as predators such as gray wolves and Canada lynx. In 1973, Congress passed the Endangered Species Act, which created a procedure for listing species as threatened or endangered and required state and federal agencies to develop recovery plans.

Over the next three decades, the ESA provided federal funds to Montana and other states to monitor, study, and conserve the habitat of species such as the bull trout and black-tailed ferret that were considered at risk of disappearing. Meanwhile, hunters and anglers continued to fund game species management.

What was missing, however, was a funding source for managing songbirds, small mammals, reptiles, amphibians, and hundreds of other animals—the species that fell in the large gap between game and endangered.

Beginning in 1980, conservationists raised their hopes that financial help was forthcoming. The Forsythe-Chaffee Act passed that year promoted the conservation of nongame fish and wildlife. The celebration was short-lived, however, because the act was never funded.

Determined to find a funding source with broad-based support, the International Association of Fish and Wildlife Agencies created the Teaming with Wildlife Initiative in the mid-1990s. This team of 3,000-plus scientists and wildlife conservation group leaders developed a funding plan based on establishing a federal excise on backpacks, birdseed, and other outdoors items. It was modeled on programs previously established for hunting and fishing gear to provide funds for game fish and wildlife management.

Though many retailers and manufacturers supported the resulting Conservation and Reinvestment Act (CARA) proposal, enough resisted to prevent the legislation from passing.

ANDY LONG

Black-footed ferret

to help that specific salamander," says T.O. Smith, who was hired to coordinate FWP's comprehensive conservation strategy. "But that is what we mean by 'comprehensive.' We're developing customized conservation strategies for tiny microhabitats and entire grassland ecosystems, depending on what various fish and wildlife species need."

Seeing the connections

If FWP is broadening its focus to include more species, does that mean the department will spend less time on traditional game animals such as elk, walleyes, and mule deer?

Not at all, says Chris Smith. "As always, game species will be our primary focus."

What will be different, he explains, is that FWP will now be able to pay more attention to other critters. "We'll have federal funds to conserve habitat for, say, the black-backed woodpecker or the pygmy rabbit, which would in turn benefit elk and mule deer that use those same habitats," he says.

Smith also points out that seemingly insignificant nongame wildlife species often have proven, practical benefits to highly valued game species.

"These little-known fish and wildlife species are like the bearings in a truck engine," says Smith. "We might not see them, but if they aren't there, the engine simply won't run."

One exam-

WHERE WILDLIFE LIVE Montana's new conservation strategy also identifies critical native plant communities, or habitats. A plant community is a group of plants, such as those in a wetland, that form recognizable units that repeat over space and time. Plant communities are often named for their characteristic environmental feature. Many plant communities, such as the foothill grasslands along the upper Yellowstone River, are being degraded by roads, housing, and invasive plants.


Mountain streams


Sagebrush and salt flats


Grassland complexes


Mixed broadleaf forests


Mixed shrub and grasslands


Wetlands

HABITAT PHOTOS COURTESY CARL HEILMAN

"That was a frustrating time," says Mike Aderhold, a recently retired FWP regional supervisor who has studied national efforts to fund nongame wildlife management. "Many people could see that it made no sense to wait until an animal gets in trouble before spending time and money on it. They were saying, 'Let's figure out how all species are doing now, how land use affects them, and how we might adjust our land stewardship to keep them from becoming endangered.' So it's not like no one understood the concept. It was just that there continued to be no money to do it."

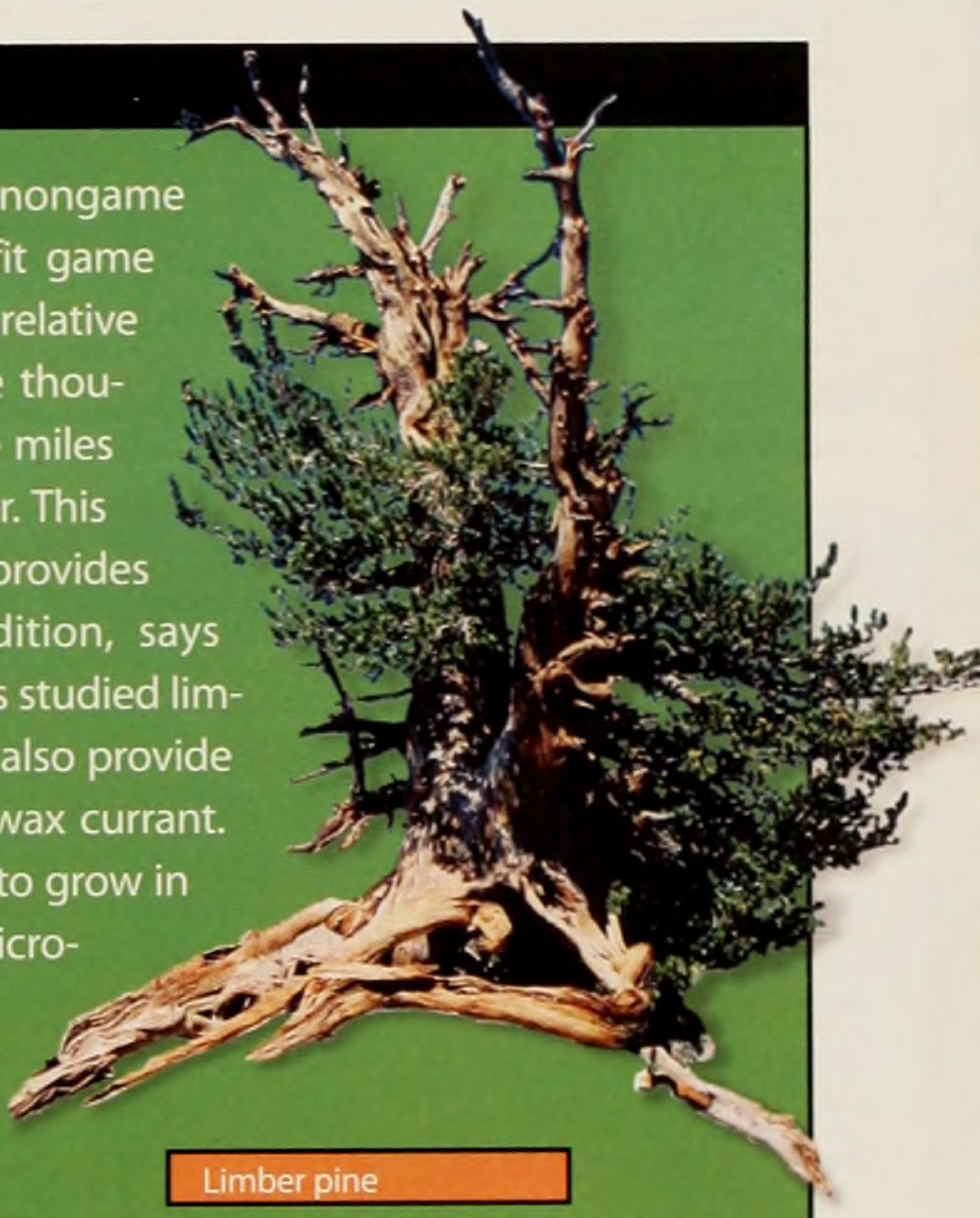
The Teaming with Wildlife and CARA efforts were not wasted, however. In 2001, conservationists finally convinced Congress to pass what became known as the State Wildlife Grants (SWG) Program. The initiative provides federal money to states to develop a broad-based, comprehensive wildlife plan that addresses all species and manages them on a landscape scale.

"The main argument that ensured passage of SWG was an economic one," says Aderhold. "The states and the federal government understood that by broadening the scope of wildlife management, they could avoid the massive expense and problems that come from having to recover species after they've declined to the point where they become threatened or endangered." ■

THE BIRD AND THE BUCK

ANOTHER REASON TO VALUE and conserve nongame wildlife species is that so many of them benefit game species. Take the Clark's nutcracker for example. A relative of the gray jay, the Clark's nutcracker will cache thousands of limber pine seeds across several square miles of the Rocky Mountain Front during late summer. This disperses the hardy, low-growing conifer, which provides essential winter cover for mule deer. In addition, says Dr. Dayna Baumeister, a Helena ecologist who has studied limber pine on the Rocky Mountain Front, the trees also provide shade and wind protection for Douglas-fir and wax currant. These two mule deer habitat species are unable to grow in the harsh mountain environment without the microclimates provided by limber pine.

"It's pretty well understood that without the Clark's nutcracker, there'd be far fewer limber pines, Doug-fir, and wax currants along the Front," Baumeister says.


Limber pine

And without limber pines and their associated vegetation, there'd be fewer mule deer.

"Those conifers are critical thermal cover," says Gary Olson, FWP wildlife biologist in Conrad. "Up here along the Front, you'll often find mule deer and elk beds on the lee side of limber pine and Douglas-fir stands."


Clark's nutcracker


Wax currant


Mule deer


Douglas-fir

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TOP TIER SPECIES

Montana's 60 "Tier 1" species, identified as being in greatest need of conservation:

Fish

White sturgeon	*Acipenser transmontanus*
Pallid sturgeon	*Scaphirhynchus albus*
Paddlefish	*Polyodon spathula*
Short-nosed gar	*Lepisosteus platostomus*
Yellowstone cutthroat trout	*Oncorhynchus clarki bouvieri*
Westlsope cutthroat trout	*Oncorhynchus clarki lewisi*
Columbia Basin redband trout	*Oncorhynchus mykiss gairdneri*
Bull trout	*Salvelinus confluentus*
Lake trout	*Salvelinus namaycush*
Arctic grayling	*Thymallus arcticus*
Sturgeon chub	*Hybopsis gelida*
Sicklefin chub	*Hybopsis meeki*
Pearl dace	*Semotilus margarita*
Blue sucker	*Cycleptus elongatus*
Trout-perch	*Percopsis omiscomaycus*
Burbot	*Lota lota*
Sauger	*Stizostedion canadense*

Amphibians

Coeur d'Alene salamander	*Plethodon idahoensis*
Western toad	*Bufo boreas*
Northern leopard frog	*Rana pipiens*

Invertebrates

Western pearlshell	*Margaritifera falcata*

Reptiles

Snapping turtle	*Chelydra serpentina*
Spiny softshell	*Trionix spiniferus*
Western hog-nosed snake	*Heterodon nasicus*
Milksnake	*Lampropeltis triangulum*
Smooth greensnake	*Liochlorophis vernalis*

Birds

Common loon	*Gavia immer*
Trumpeter swan	*Cygnus buccinator*
Harlequin duck	*Histrionicus histrionicus*
Bald eagle	*Haliaeetus leucocephalus*
Greater sage grouse	*Centrocercus urophasianus*
Columbia sharp-tailed grouse	*Tympanuchus phasianellus columbianus*
Yellow rail	*Coturnicops noveboracensis*
Whooping crane	*Grus americana*
Piping plover	*Charadrius melodus*
Mountain plover	*Charadrius montanus*
Long-billed curlew	*Numenius americanus*
Interior least tern	*Sterna antillarum athalassos*
Black tern	*Chlidonias niger*
Flammulated owl	*Otus flameolus*
Burrowing owl	*Speotyto cunicularia*
Black-backed woodpecker	*Picoides arcticus*
Olive-sided flycatcher	*Contopus cooperi*
Sedge wren	*Cistothorus platensis*
Nelson's sharp-tailed sparrow	*Ammodramus nelsoni*

Mammals

Spotted bat	*Euderma maculatum*
Townsend's big-eared bat	*Corynorhinus townsendii*
Pallid bat	*Antrozous pallidus*
Pygmy rabbit	*Brachylagus idahoensis*
Hoary marmot	*Marmota caligata*
Black-tailed prairie dog	*Cynomys ludovicianus*
White-tailed prairie dog	*Cynomys leucurus*
Great Basin pocket mouse	*Perognathus parvus*
Northern bog lemming	*Synaptomys borealis*
Meadow jumping mouse	*Zapus hudsonius*
Gray wolf	*Canis lupus*
Grizzly bear	*Ursus arctos horribilis*
Black-footed ferret	*Mustela nigripes*
Canada lynx	*Felis lynx*
American bison	*Bos bison*

ple of connections among game and nongame wildlife: When rodent population cycles are up, coyotes have more available prey and don't go after newborn deer.

The links between small fish and big fish are just as important. "You can't just look at a game fish species like the sauger in isolation," says Brad Schmitz, FWP fisheries manager in Miles City. "A sauger is connected to forage species such as the western plains minnow, which is connected to the water, which is connected to the farmers who use the water to irrigate sugar beets, and so on. Everything is connected, which is why this comprehensive approach makes so much sense."

John Muir may have said it best a century ago. "When we try to pick out anything by itself," the famous naturalist wrote, "we find it hitched to everything else in the universe."

Paying attention to nongame species also helps Montana maintain control over its wildlife. "Some ranchers are afraid we'll come out and find a rare species on their land and they'll have this mess on their hands," says Rauscher. "But it's just the opposite. National groups have already petitioned the U.S. Fish and Wildlife Service to list species like the sage grouse as federally threatened. If our surveys show that those species are doing well and are found in many areas, then it's easier for Montana to stave off federal ESA listing, remove species from petition lists, and maintain state control."

Adds Chris Smith: "The surveys we're doing end up producing the opposite of what we'd see in the past, which is a headline reading 'Another Species Disappearing.' Now, like with the northern short-tailed shrew, we're seeing headlines saying, 'New Species Discovered.' It's a whole different approach."

Keen observers

The approach may be different, but public interest in Montana's full gamut of wildlife species remains unchanged. Early Native Americans in this region highly valued all animals, great and small. Lewis and Clark marveled at every new creature they came upon while crisscrossing the region. In 1928, a contributor to *Montana Wild Life* magazine wrote, "The true sportsman is a keen observer of nature's wonderful creations [and] a sincere advocate for the conservation of nature's useful creations and their welfare."

Craig Sharpe, executive director of the Montana Wildlife Federation, believes such sentiments remain strong among Montana hunters, anglers, and the thousands of other residents interested in wildlife. "More and more people are starting to see the big picture," Sharpe says. His organization so strongly supports the comprehensive management approach that it recently hired a communications specialist to help FWP spread the word about SWG projects.

The information will likely find a receptive audience. A 2005 FWP survey found that most Montanans want the department to do more for nongame wildlife. That does not surprise Flesch, the undergrad who helped find the northern short-tailed shrew last summer.

"It was amazing how people perked up when they heard we were doing a small-mammal survey," she says. "At a ranch south of Glasgow, the rancher came up to us and said we should set our traps over there and we'd catch 'kangaroo mice' [Ord's kangaroo rats]. We thought his place was too far north for kangaroo rats, but he was right. That rancher had noticed those jumping 'mice,' and he was interested in sharing his observations with us. We met people like that all the time."

To learn more about the Montana Comprehensive Fish and Wildlife Conservation Strategy, go to fwp.mt.gov/wildthings/cfwcs.

SPECIES DISTRIBUTION MAPS

A valuable product of ongoing nongame wildlife inventories is a series of state and county species distribution maps. The map of the American badger, for example, shows the species lives throughout Montana. The northern bog lemming map, however, shows just a few locations in the state's northwestern region. "The maps do two important things," says FWP native species biologist Ryan Rauscher. "If a species is widely distributed, it shows that the department and landowners are doing a good job of habitat stewardship. But if a species only shows up in a few spots, that tells us where to focus our efforts and begin working with landowners and other agencies to conserve what habitat remains."

BULLS AND BUNNIES Using new State Wildlife Grants, FWP will be able to protect habitats such as shrub grasslands needed by pygmy rabbits (right) and other nongame wildlife. That, in turn, will benefit game species such as elk that use those same native plant communities.

Elk

NICK FUCCI

Pygmy rabbit

KEITH LAZELLE

LEWIS AND CLARK WITH PALM PILOTS

TO PRODUCE A COMPREHENSIVE conservation strategy, FWP relied heavily on the Montana Natural Heritage Program (MTNHP).

Based in Helena, the heritage program is a sort of modern-day Corps of Discovery. Two centuries ago, Lewis and Clark crisscrossed the region looking for and recording the locations of new plant and animal species. Today MTNHP ecologists, botanists, and zoologists do the same. But instead of inking the information on parchment and sending it to Washington, D.C., heritage program staff members enter the data into computers and then provide detailed, multilayered maps on the Internet to the public.

Begun in the mid-1980s, the MTNHP gathers information on Montana native plants, wildlife, and habitats, focusing most on those species in greatest need of conservation. It then compiles databases and maps of that information for use by public agencies, private business, community groups, and individual citizens.

"Sometimes a plant or animal is considered 'rare' only because there's a lack of information showing that in fact it's not," says Sue Crispin, MTNHP director. As an example, she tells of an uncommon thistle found in 2005 in the Helena National Forest. The discovery put the skids on a planned land exchange between the U.S. Forest Service and a private landowner. "But then our botanist identified several new populations of the long-styled thistle elsewhere in Montana, showing that, overall, its status is secure, and clearing the way for the exchange to go forward," she says. "It was a win-win situation for all involved—including the plant."

Highway departments and mining and timber companies use the heritage program's maps to see if planned developments will harm sensitive wildlife, such as mountain plovers or long-billed curlews. "Having this information in the planning stages of projects helps avoid costly delays and conflicts, and lessens damage to wildlife and habitat," Crispin says.

The MTNHP is located at the State Library in Helena and is part of the library's Natural Resource Information System. Each state, as well as many Canadian provinces and Latin American countries, has a natural heritage program. They all pool data to help conserve resources that move across state and international boundaries, such as grizzly bears and migrating neo-tropical warblers.

For more information, visit the natural heritage program website at: mtnhp.org.

JACKIE POOLE

RARE? After a MTNHP botanist found that the long-styled thistle (above) was more common than thought, a land swap was able to proceed.