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greater prairie-chickens

Who Needs The Razorback Sucker?

by Gray and Duvall

The last word in ignorance is the man who says of an animal or plant: What good is it? If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.

Aldo Leopold, *Round River*, 1953

Perhaps it's part of human nature to tinker . . . to constantly make "repairs" and "adjustments" with no real understanding of the long-term consequences. But in spite of Leopold's logic back in 1953, irreplaceable parts of the keenly balanced biological system — of which we are a part — are disappearing with increasing regularity in the 1990s.

The arguments for species preservation are familiar to most people: diversity, ecosystem balance, interrelated food webs, aesthetics, ethical considerations, and as-yet-undiscovered agricultural, medical and scientific benefits. Thus far, these logical arguments have convinced only part of the human population. While most people support the concept of species preservation, many back away when they think they must choose between human progress and species survival. These people believe that human survival is more important than (and independent of) the survival of animals, plants and ecosystem balance.

Although the process of extinction is a natural evolutionary phenomenon, human tinkering is pushing many species to extinction at an accelerated rate. In order to preserve threatened and endangered species in the 1990s, those who care must overcome powerful arguments and forge new understandings in the areas of biology, economics, sociology, and ethics. In fact, a completely new kind of consciousness may be required before people will equate species preservation with their own survival.

Today's work will determine how the human species will handle new kinds of threats — just around the corner — to species preservation and ecosystem balance.

Colorado Endangered Species

Gray wolf
Grizzly bear
Black-footed ferret
River otter
Wolverine
Lynx
American peregrine falcon
Least tern
Bald eagle
Whooping crane
Greater sandhill crane
Greater prairie-chicken
Plains sharp-tailed grouse
Colorado squawfish
Humpback chub
Bonytail
Razorback sucker

Endangered species are native wildlife whose prospects for survival within the state are in jeopardy.

Re-Creating the Extinct Sucker

The newest threat to species preservation may be arriving in the form of genetic engineering and computer-simulated artificial reality or "virtual reality."

Genetic engineers, for example, are heading toward the re-creation of living animals from preserved cellular material. Some might argue, "Why bother preserving or recovering any species, when we can make ourselves a razorback sucker whenever we want one?"

At the same time, virtual reality appears to offer a convenient way to re-create total environments — complete with sights, sounds, and moving parts. Some proponents of virtual reality believe that razorback suckers and the entire river environment can soon be re-created at will through computer simulation. And since humans will be able to create their own reality, some may wonder why we should worry about preserving either species or ecosystems.

The ethical and ecological considerations related to these new technologies demand that humans organize their priorities in relation to species preservation today!



razorback sucker

Creating a New Consciousness

Today and for most of written history, human civilization has been based on a model of domination that puts all humans above animals. That kind of hierarchical thinking sets up a philosophical mindset that transcends the human family, permeates society, and determines the way humans think about biological systems. As long as most humans consider themselves superior to and dominant over all other living organisms, it will be difficult for them to seriously consider preserving animal species.

The new consciousness, crucial to improving the human relationship with our natural environment, must eliminate the concept of

domination and replace it with partnership or mutually supportive thinking. Looking at ecosystem and species survival from a partnership perspective, it's obvious that all parts are equally necessary for the survival of the whole.

Only partnership thinking will enable all humans to know that re-creating an extinct razorback sucker will not serve the function of a bottom-feeding fish population in maintaining a healthy river ecosystem. Only a new consciousness will let people see that a simulated version of the rain forest will not create oxygen for a world of breathing organisms.

Changing consciousness. That's why we must work to safeguard the razorback sucker and all other species living on Earth today.

Threatened species are not in immediate jeopardy of extinction but exist in such small numbers in Colorado, or are so extremely restricted throughout their range, that they may become endangered.

Colorado Threatened Species

Lesser prairie-chicken
Arctic peregrine falcon
Wood frog
Greenback cutthroat trout
Arkansas darter
Piping plover

Extirpated species no longer exist in the wild on historical habitat, but exist elsewhere. Evidence indicates grizzly bears, gray wolves and black-footed ferrets are in effect extirpated from Colorado.

Extinct species no longer exist on earth. Two Colorado species which became extinct within historical times are the Carolina parakeet and the yellowfin cutthroat trout.



wolverine based on a photograph by Charles G. Summers, Jr.

Razorback Sucker - Like other native Colorado River fish, the razorback sucker declined as a result of damming and water diversions that lowered water temperatures, blocked migration to spawning grounds and flooded or dried out habitat. Razorback suckers inhabit the muddy backwaters and tributaries of the Colorado River. Wonderfully adapted to life in the murky depths, suckers use their lips to pluck worms and invertebrates from the bottom, helping recycle nutrients from sediments. Once widespread in the Colorado River system, razorback suckers are now found only in small numbers in the Yampa, Colorado and Gunnison rivers.

Wolverine - The scientific name for this large member of the weasel family, *Gulo gulo*, translates as "gluttonous glutton." Wolverines have a broad diet including live prey and berries, but they seem to prefer carrion. It's likely that wolverines were never common in Colorado, because we are on the southern edge of wolverine range. However, many of those in the state were killed when they ate poisoned baits and carcasses set out for coyotes. Wolverines are known for their ferocious temperament. They will drive other predators, even bears and mountain lions, from a kill. Wolverines inhabit dense mountain forests. Colorado has the habitat, but it's uncertain whether any still live in our state.

Least Tern - This smallest of North American terns has long, tapering wings and a forked tail. Channelization and irrigation practices in Colorado destroyed the river sandbars and sandy shore areas originally inhabited by these graceful birds. And because terns nest on sandy beaches, recreational use of their nesting grounds further disrupted their breeding success. Although terns nests are frequently flooded out by fluctuating water levels on irrigation reservoirs, that is where least terns are found in Colorado today.

Piping Plover - Populations of these little shore-birds with the piping call, cousins of the killdeer, have declined in Colorado because of habitat alteration and destruction of nesting sites. Similar to the least tern, piping plover habitat has been altered with channelization and modification of seasonal river flow. Diversion of peak flow (which would have scoured river sand bars and made sandy nesting areas available to the plovers) allows encroachment of vegetation and destruction of nesting sites. Plovers now nest on the sandy beaches of irrigation reservoirs that are exposed when water levels are low. Unfortunately, in high water years the birds may return to previous nesting grounds to find their habitat unavailable.

Colorado Success Stories

By Mary Taylor Gray

Bald Eagles

The U.S. Fish and Wildlife Service may downlist bald eagles from endangered to threatened in the birds' northern range within the lower forty-eight states; that would include Colorado.

The bald eagle population declined severely in the continental United States due to eggshell thinning from DDT poisoning, human disturbance of nests, and loss of water-associated habitat. Fewer than 1,500 breeding pairs were estimated outside of Alaska in 1982.

With the banning of DDT in 1972, bald eagle populations have recovered significantly. Some 22,000 bald eagles now live in the forty-eight states and Canada. About 550 - 700 bald eagles winter in Colorado, and we have ten known nesting pairs.

Peregrine Falcons

By 1975, peregrine falcons were close to extinction. Extirpated east of the Mississippi River and in Idaho, Wyoming and Montana, only forty-seven known pairs were left in the west. Like bald eagles, peregrines were badly affected by DDT accumulation that made their eggshells so thin they broke easily.

An aggressive national program to save the species, including the introduction of captive-hatched chicks into wild nests, has increased the number of pairs nationally to 474. American peregrine falcons are being considered for downlisting from endangered to threatened, and Arctic peregrines may be taken off the threatened list for populations west of the Mississippi.

Colorado's nesting peregrine falcon population has increased from a low of four pairs in 1979 to fifty-eight pairs in 1991.

But the peregrine story isn't over. The migrant birds that comprise the falcons' prey base spend the winter in Central and South America. The continued use of DDT in many of these countries may mean that more threats to peregrines loom in the future.

American White Pelicans

Shooting and eggshell thinning from DDT poisoning, as well as disruption of nesting habitat from the draining or development of lakes and reservoirs, are the main causes of decline nationally for American white pelicans. Once listed as threatened in Colorado, pelicans were taken off the Colorado list in 1985.

Never historically abundant in Colorado, the only known pelican nest site was deteriorating rapidly in the mid-seventies. Efforts to stabilize that site were successful. Pelicans now nest at Riverside and Antero reservoirs, with a possible third



river otter

Keep Your Eyes Peeled

By Mary Taylor Gray

They may be rare, but several species that are threatened or endangered are still highly watchable.

River Otters

Once extirpated from Colorado, otters have been returned through a diligent reintroduction program. Watch for otters along the Dolores River and in the vicinity of Shadow Mountain Reservoir outside the western boundary of Rocky Mountain National Park. You may see them along the shore or swimming in the water.

Greater Prairie-Chickens

The most significant Colorado population of greater prairie-chickens is in Yuma County. From mid-March to May these ground-dwelling birds can be viewed performing their courtship dance on leks, or "dancing grounds." All leks are on private land, and access must be arranged through the northeast region of the DOW. (303)484-2836. You may see individual birds while driving county roads.

Lesser Prairie-Chickens

A viewing blind at a lesser prairie-chicken lek on the Comanche National Grassland near Campo is open to the public. Best viewing time is from one half hour before sunrise until 9 a.m., early March through mid-May. Arrive at the lek well before dawn. If the blind is unavailable, remain in your car to avoid flushing the birds. The birds also display in the evening, but not as dramatically. For a brochure with map and further information write to the Comanche National Grassland, USFS, P.O. Box 127, Springfield, Co. 81073; telephone (719)523-6591.

Sandhill Cranes

Throughout March, the Monte Vista National Wildlife Refuge and surrounding agricultural fields in the San Luis Valley are an important staging ground for up to 20,000 migrating greater sandhill cranes. You may see a few whooping cranes in the sandhill flock. (The sandhill crane breeding population is endangered in Colorado; whooping cranes are endangered in Colorado and nationally.) The Monte Vista Chamber of Commerce sponsors the annual Monte Vista Crane Festival. For information call (719) 852-4382.

Greenback Cutthroat Trout

These handsome green trout with the crimson throats are best viewed during spawning. Watch for them in June in Rocky Mountain National Park at the Bear Lake



adult and chick peregrine falcons

nest site in North Park. The construction of reservoirs has created habitat for pelicans in Colorado.

Greater Prairie-Chickens

Greater prairie-chickens are being considered for downlisting in Colorado from endangered to threatened. The population has rebounded and may be as high as 10,000 birds, concentrated primarily in Yuma County. For further information on the decline and recovery of these birds see "Report: Greater Prairie-Chickens," *Colorado Wildlife Company* 1991 Summer Compendium.

Greenback Cutthroat Trout

Greenback cutthroat trout have vanished from nearly 99 percent of their original range. Quality trout stream habitat has been lost due to metropolitan, industrial and mining pollution of water; logging; water diversion projects; livestock overgrazing; and competition from introduced species such as brown, brook and rainbow trout — all significant factors in the decline of this native cold water fish.

Stream improvement programs and the release to the wild of hatchery-reared greenback cutthroat trout have increased populations. The fish is being considered for downlisting in Colorado from endangered to threatened.

Although twenty stable populations between the South Platte and Arkansas rivers have been established (accomplishing the recovery goal), additional populations in the southern part of this range need to be established before downlisting the species.

inlet stream or from the boardwalks through the Hidden Valley/Beaver Ponds area. A population is also visible at Fort Carson, in the down range training area. A permit is required, so stop at the visitor center for permit and viewing information. Spawning is earlier at this lower elevation, so plan to visit in April and May.

Peregrine Falcons

The Echo Park Campground in Dinosaur National Monument is a good place to see these endangered birds of prey. Inquire at the Harper's Corner visitor center for particulars. Peregrines can also be seen at the Black Canyon of the Gunnison National Monument, Mesa Verde National Park, around the Animas City Mountain outside of Durango, and from the Morrison Hogback Hawk Watch site west of Denver.

The Dolores River Canyon

The Dolores River Canyon is located near the towns of Cahone, Dolores and Dove Creek, Colorado. It offers excellent opportunities for wildlife viewing in ponderosa pine and pinon/juniper habitat and in large meadows broken by riparian areas along the river. Wildlife can be seen by car in some areas; most is accessible only by foot, four-wheel drive, horse, or mountain bike.

In spring, watch for deer, elk, wild turkeys, and an array of meadow and woodland songbirds. River otters, endangered in Colorado, have been reintroduced to the Dolores; watch for them in the river and along the bank. Bears and sign of bobcats and mountain lions may be seen in summer. Brown, rainbow, and Snake River cutthroat trout, and numerous nongame fish species are visible in pools. You can see bald eagles in winter, peregrine falcons in summer and golden eagles year-round. Watch for wild turkeys moving to and from the river in morning and evening. A herd of desert bighorn sheep inhabits the steep lower section. Beaver dams and ponds can be seen along the river.

(Adapted from the *Colorado Wildlife Viewing Guide*, a guide to 110 wildlife viewing sites statewide. Available in summer of 1992 for \$6.95 from the Colorado Wildlife Heritage Foundation, 6060 Broadway, Denver, Co. 80216, [303] 291-7212.)

Bringing Back The Predators

by André Duvall, Wildlife Biologist, NE Region

Populations of endangered predators are not recovered overnight, even with complete protection by state and federal laws. Studies on these secretive mammals — their habitat needs, social and biological characteristics, ability to successfully undergo the stress of capture, handling, and other reintroduction efforts — are giving biologists more information about what it takes to recover predator populations.

Endangered mammals like the river otter, grizzly bear, wolf, lynx, wolverine and black-footed ferret exhibit narrow tolerances in meeting their biological needs and habitat requirements. They depend absolutely on a healthy and vitally functioning ecosystem for survival. For that reason, alone, they are all extremely vulnerable to human interference.

These endangered mammals need relatively large habitats to maintain healthy populations. As "top predators," or animals at the highest level of the feeding hierarchy, they must rely on a limited number of prey species for their survival. Room to roam, adequate prey base, varied and available escape routes, cover, and places to successfully reproduce and rear young, are all absolute necessities for successful predator populations.

Colorado Division of Wildlife (DOW) efforts to recover river otter populations provide a prime example of the difficulties encountered in bringing back a predator species.

Tom Beck is a DOW wildlife researcher working on river otter reintroductions in the Dolores River drainage in southwest Colorado. Beck says, "Our primary problem is getting the otters to stay in the area where they are released. In order to thrive, otters must have unpolluted water, and they need enough water to allow them to travel safely."

According to Beck, "A day after the otters are released, you can find them 15 miles down, or up, the river." While otters can travel overland great distances, they are more vulnerable to predation and more likely to be killed by dogs, automobiles, and accidents when on land. They can survive best where there's enough water for safe travel, even during low water periods.

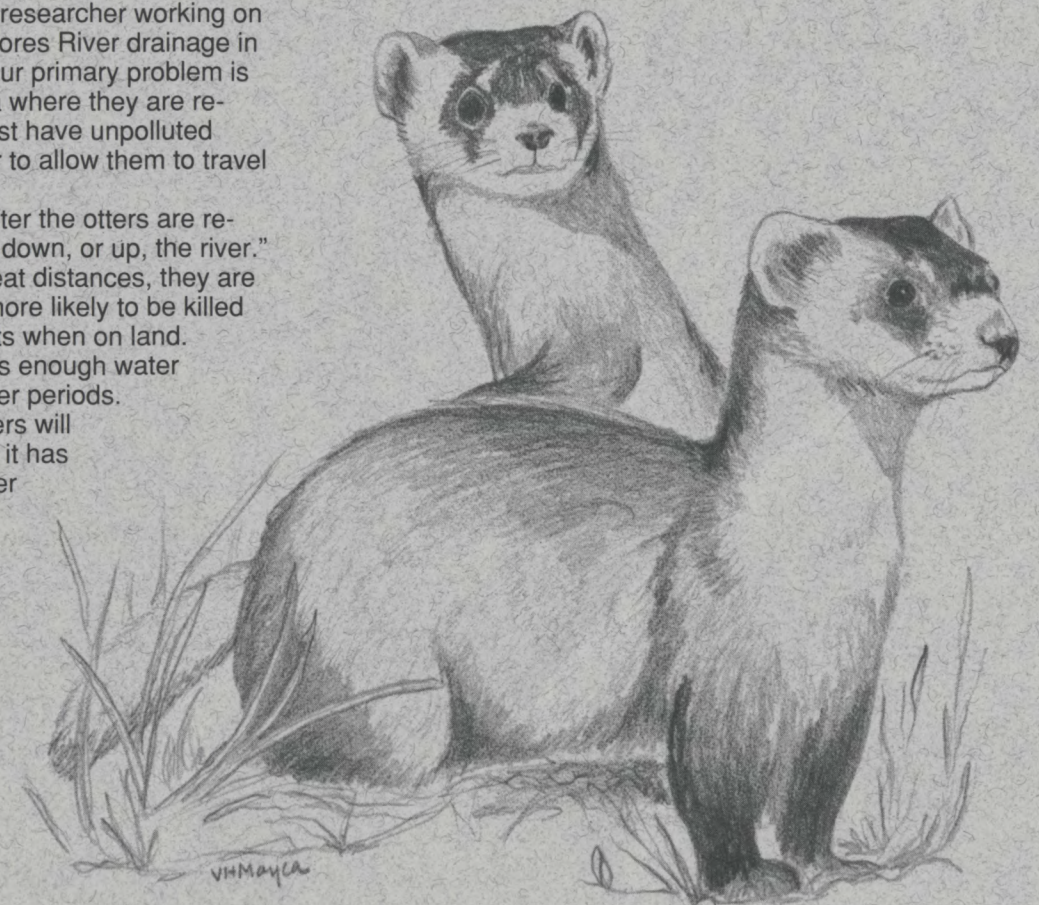
Beck also explained that otters will remain in a particular habitat only if it has a sufficient prey base of fish. If water levels do not support enough fish, otters have no choice but to travel elsewhere.

Otters, like most predators, need protection from humans and their influences. Areas proposed for otter reintroduction, according to Beck, must be made as free as possible from lethal trapping methods, particularly conibear trapping for beaver control. Otters also need good bank cover to be successful, says

Beck. He has discovered that otherwise good stretches of river will not be used by otters if the willows or other vegetation have been cleared off by spraying, burning, or overgrazing.

Otters exemplify the difficulties encountered in recovering endangered predators. Whether otter, wolf, grizzly, lynx, wolverine or black-footed ferret, population recovery depends on a narrow range of requirements that must be met for survival. Fortunately, many of these requirements still exist in Colorado. We have some clean, free-flowing rivers left for otters. Several of the larger undisturbed tracts of forest ecosystems might be able to sustain healthy populations of wolves and grizzlies. We have plenty of habitat in the higher forested mountain areas to provide home to the lynx and wolverine. And Colorado has an immense prairie area, much of it in government ownership, capable of holding the prairie dog resource so vital to the black-footed ferret's survival.

What these endangered mammals need, most of all, is the good will and financial support of the people of Colorado. Every one of these endangered mammals disappeared from Colorado due to human activity. Only humans can be tolerant enough of these species' needs and farsighted enough to bring them back.



black-footed ferret

DOW Working For Wildlife

Report: Amphibians

"What really worries biologists is that significant numbers of animal populations are declining even in pristine, protected areas. The fact that mollusks and amphibians — animals that have survived on Earth since the time of the dinosaurs — are now dying out, is of primary concern to biologists." (Colorado's Wildlife Company, Summer 1990.)

Colorado Division of Wildlife biologists, district wildlife managers, and researchers are working in cooperation with other biologists and natural resource agencies to monitor the status of amphibians in Colorado. Although the news looks good for wood frogs (listed as threatened in Colorado), the boreal toad may be in trouble.

Biologist Ken Kehmier explained that wood frog research is being carried out through the work of two complementary teams in two separate geographical areas of northeastern Colorado.

District wildlife managers, Jim Jackson and Howard Speer, have located ponds with healthy breeding populations of wood frogs in the Laramie River/Upper Cameron Pass area. Last year, Jackson and Speer transplanted wood frog egg mats from five breeding ponds to five new ponds of suitable habitat.

Adult wood frogs return to the pond from which they hatched in order to breed the following year. In late May or early June of 1992, Jackson and Speer will return to the new ponds to judge

the success of their work. If they find wood frogs in the new ponds, they will have taken a giant step toward increasing the distribution of wood frogs in Colorado.

At the same time, DOW's Jim Ringleman is conducting research on migrating duck populations in the pothole/kettle lake region of the Mount Zirkel Wilderness. While Ringleman and his crew keep tabs on duck production, they also are looking for wood frogs. Through this work, Kehmier says DOW has learned about ponds containing wood frog populations that they didn't know about before.

Further expanding upon the benefits of cooperative effort, Ringleman is mapping the vegetation of each pond in his research area, and he is making those maps available to the wood frog team. Kehmier explains that if moving egg mats is found to be successful in the Cameron Pass area, they will use Ringleman's pond vegetation maps to identify likely transplant sites in the Zirkels.

Kehmier is optimistic about the wood frog. Comparing current populations and distribution to historical levels, he believes the wood frog is holding its own. "I think the wood frog may be better off than we first suspected."

Not too long ago, hikers would never fail to see boreal toads on Colorado trails. Now they are hard to find. Under consideration by the U.S. Fish and Wildlife Service for threatened or endangered listing, boreal toads are a concern to Ken Kehmier. So, while everyone is looking for wood frogs and checking duck production, they are also keeping an eye peeled for boreal toads.

People are working together to check historical habitats, look for new habitats, and learn why amphibians — one the most ancient populations on Earth — appear to be on the decline.

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Calling All Parts

Taxpayers Needed: Don't forget the Endangered Wildlife Check Off when you do those Colorado tax forms! You can donate all or part of your refund, or you can designate an amount independent of your refund, to help Colorado wildlife.

Volunteers Needed: The Colorado Bird Observatory needs help with the Breeding Bird Atlas. For an opportunity in birding and field work that will help Colorado birds, call Hugh Kingery at 333-0161.

Teachers Needed: A new video about Colorado's threatened and endangered animals, "Wildlife in Danger," is now available from Colorado Wildlife Heritage Foundation. Approximately 1/2 hour in length and \$17.95 in cost, call Anna (291-7212) or Diana (291-7479) for your copy now. Allow 4 - 6 weeks for delivery.

Letters Needed: Authorization of the Federal Endangered Species Act expires in 1992. Congress will be holding reauthorization hearings sometime in the future. The Act will be facing some tough opposition. For additional information on the Endangered Species Act reauthorization, contact the Colorado Wildlife Federation, 7475 Dakin, Suite 137, Denver 80221, (303) 429-4500.



greater sandhill cranes



You can make your thoughts or concerns about the Act known by contacting your Senator:

Hank Brown
2228 N. Cascade #106
Colorado Springs, CO 80903
(719) 634-6071

Tim Wirth
1129 Pennsylvania
Denver, CO 80203
(303) 866-1900

Or contact the Representative from your Congressional Districts: David Skaggs, Pat Schroeder, Wayne Allard, Ben Nighthorse Campbell, Dan Schaeffer, or Joel Hefley.

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