

Colorado's Wildlife Company

COLORADO DIVISION OF WILDLIFE

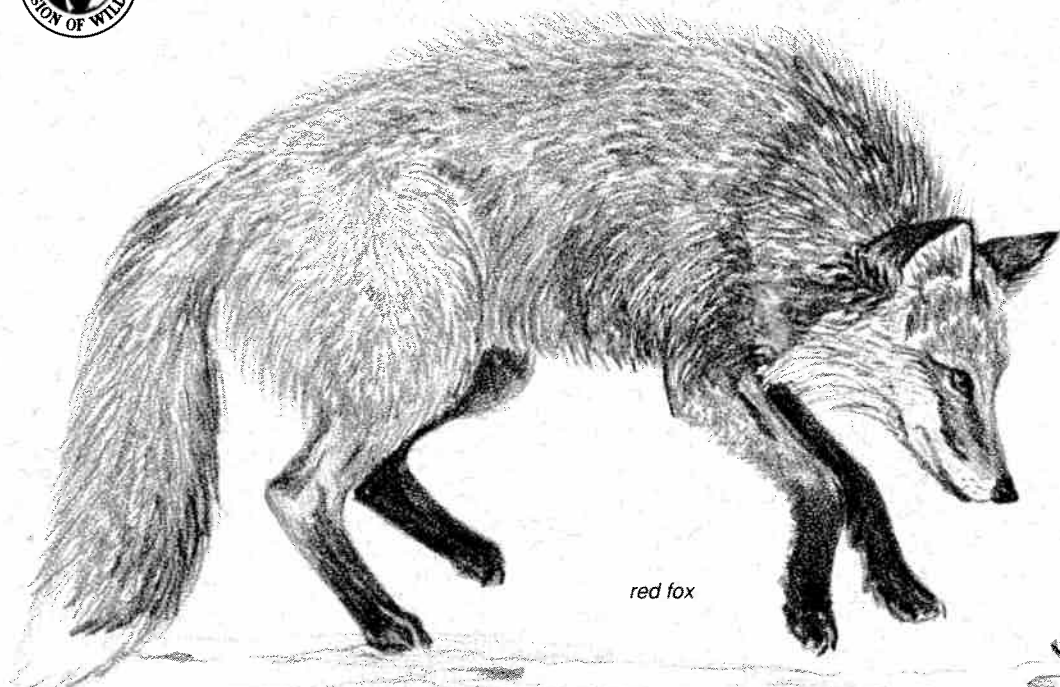


Nongame and Endangered
Wildlife Program



Watchable Wildlife Program

Colorado Predators



red fox

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Watching The Watchers

By Mary Taylor Gray

A fox moves like a red shadow through the frosted grass of a snowy meadow. A movement in the grass attracts its attention. The fox makes a darting grab and comes up with a long-tailed mouse in its jaws.

On wings that span eight feet, a bald eagle soars over a lake, searching the water for prey. Suddenly the great, white-headed bird drops down, plucks a fish from the water with its talons, and climbs back into the sky.

Watching a predator at work is a thrill. Because they stalk other animals, many predators are by nature stealthy and secretive. They are, themselves, watchers. Predators do not feed in groups in open meadows, and few exhibit behavior that attracts attention to themselves as do bugling elk or noisy, territorial songbirds.

This means viewing predators takes more work, knowledge and luck on your part.

That bushy-tailed red shadow, the **red fox**, is a common carnivore well-adapted to life near humans; and one that is not particularly secretive in habit. Foxes hunt by day and night, especially in the winter when prey is harder to find. Watch for them in meadows and open woodlands, along streams, and in open spaces in urban and suburban areas statewide. Winter is a wonderful time to watch for foxes and their tracks, snow-captured records of the hunt.

On a quiet Colorado evening listen for the howling of the song-dog, the voice of the American West. Intelligent, adaptable hunters, **coyotes** live literally everywhere — on farms and ranch lands, in mountain meadows and parks, in urban and suburban open spaces, even on airport runways. Watch for these pricked-eared, bushy-tailed canids trotting in the open or poised on a high spot. On the hunt for small mammals, a coyote pauses, listening and looking at the ground intently. Hearing the scratching and rustling of a mouse beneath the grass or snow, the hunter rears and pounces, pinning the hapless rodent with its forepaws. Often left

on trails and paths, coyote scat is a frequent sign of coyotes in the neighborhood. It is dog-like, but usually drier and contains hair, berries and plant material.

Birds of prey are highly visible predators. Red-tailed, rough-legged, ferruginous and Swainson's hawks, American kestrels, and prairie falcons are common roadside raptors. You're liable to see them sitting atop telephone poles or wires, or soaring slowly on thermal wind currents above fields and meadows. Kestrels sometimes hover in the air watching for prey on the ground. Red-tailed hawks circle lazily on the thermals. Ferruginous are winter hawks and accomplished prairie dog hunters. A common marshland resident, the harrier, flies low over the ground, its wings held up at a "V". It not only looks but listens for prey on the ground; a dish-shaped ruff around its face helps it gather sound, similar to the facial disks of an owl.

There's something about a **bald eagle**, with its snowy white head, hooked beak and fierce-looking "eagle eyes," that seems the essence of wildness. While a handful nest in Colorado, hundreds of bald eagles winter in Colorado from October to May, inhabiting areas near open water. They often patrol lakes for injured waterfowl during hunting season.

Colorado's other eagle, the **golden**, is a

bald eagle

black crappie

year-round resident and hunter of open areas near canyons and rocky habitat.

A large shape wings silently past you at night — the consummate night hunter, a **great horned owl**. Great horned owls are common statewide; in the evening you may hear the owl's characteristic *hoo-oo-oo* call. Watch for their large, cylindrical shapes on tree limbs close to the trunk. They're especially easy to see in winter when the trees are bare. Great horned owls are early nesters; they've usually moved into an old magpie or hawk nest and are sitting on eggs by February. You'll know a favorite roost by the accumulation of digestive

pellets on the ground below (owls and hawks expel the undigestible hair and bones of their prey in matted, compact pellets).

But what about the big hunters, the ones we most associate with the term "predator?" The notoriety of **black bears and mountain lions** is due to their size and reputation (deserved or otherwise) rather than visibility. Few of us have likely seen a bear or lion in the wild. These animals' secretive habits make them elusive to wildlife watchers, and going out in search of bears and lions is not the best idea. Though these large predators usually avoid humans, if followed and cornered they may attack in self-defense.

Instead of trying to see bears and lions, enjoy seeking their sign. Tracks are exciting to find and fun to decipher. Although you're unlikely to find bear tracks in the winter, their track is quite distinctive. Bears walk on the soles of their feet (plantigrade) like humans; their hind prints are shaped like a human's, with a long flat sole and five toes in front. The pad of the front paw print is smaller than the hind, and wedge-shaped. Lions leave a four-toed print (digitigrade) like a domestic cat, though obviously much bigger. Watch for tracks at watering places, along trails and little-used backcountry roads, and in soft ground, loose dirt and snow.

Scat is another clue. Despite their formidable size, strength and impressive teeth and claws, black bears are omnivores. As much as 90 percent of their diet is plant material. Black bear scat is a thick, blunt-ended cord commonly full of vegetation and insects. In fall, when bears eat lots of berries, the scat is soft and dark; in summer, it may resemble horse manure — drier and greener from eating more green vegetation. Lion scat resembles a domestic cat's, but much larger. It contains hair and is often very dark or whitish, both indicators that the animal is eating animal flesh. Lions also make scrapes — piles of dirt and vegetation to cover their feces — similar to the scratchings of a domestic cat. Scrapes are often found in low areas between rock outcroppings or land features, natural areas for animal crossings. Part of the function of scrapes may be territorial marking.

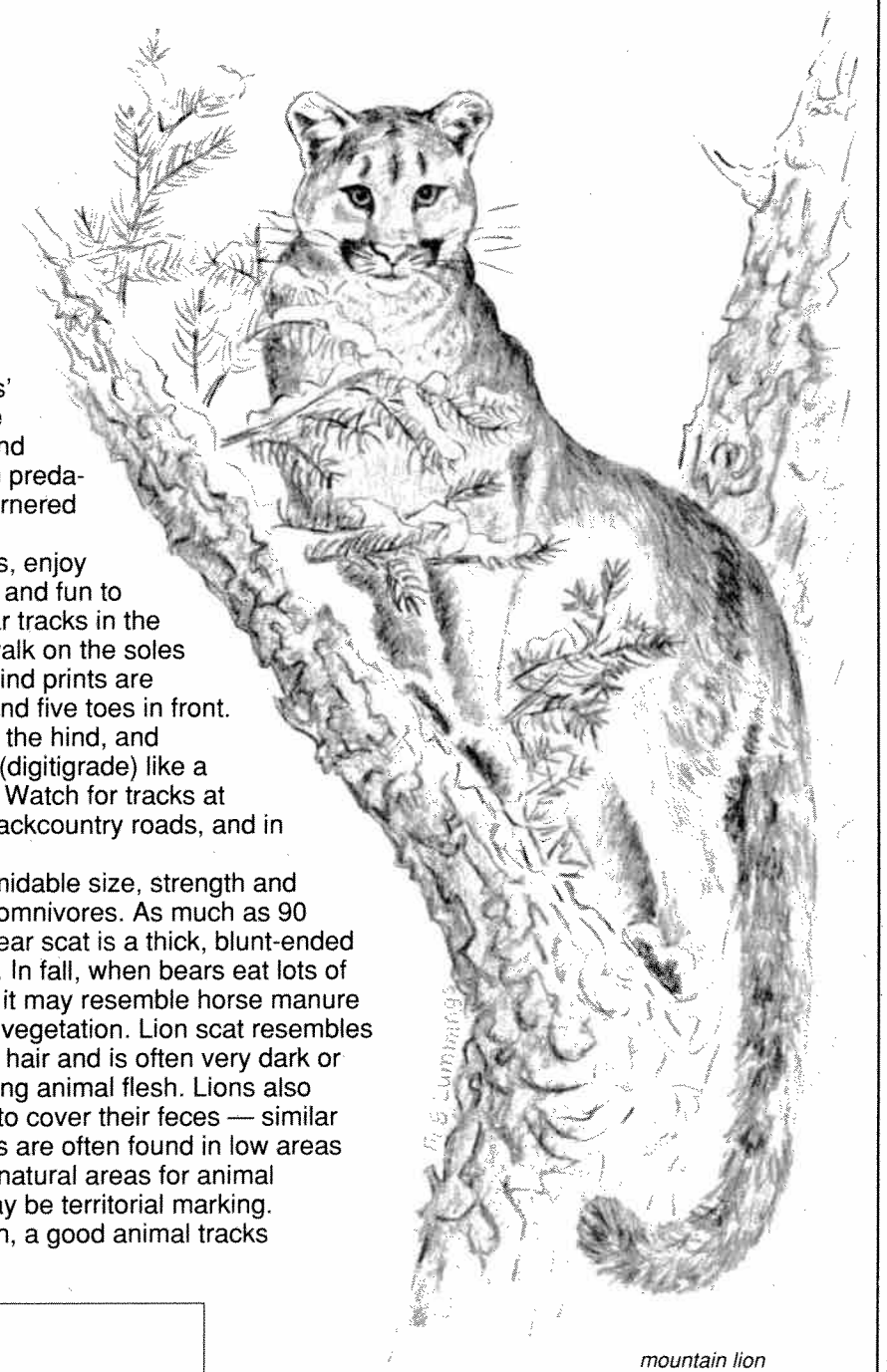
For detailed information on animal sign, a good animal tracks guide is invaluable.

Wildlife Non-Watching

As wildlife watchers, we sometimes have a responsibility for "non-watching." Particularly with secretive creatures like predators, we need to remember that if our interest disturbs or distresses the animals, if in our search we end up pursuing and harassing (even unintentionally), we need to back off. Respect wildlife's habits and needs. Don't aggressively try to find them, becoming a pursuer rather than a watcher. Instead, develop your senses and watching skills so you're open to viewing opportunities when they arise. Thrill to the knowledge of wildlife in the neighborhood and the evidence of their presence without always having to see animals. You, as a watcher, have as much responsibility for stewardship of our wildlife as do hunters and professional wildlife managers.

Correction

In our last issue, *Creatures of the Night*, we said, bats "emit ten to two hundred high-pitched pulses per minute." That should have been "per second!" Thanks to Joseph Hall, Grand Junction.



mountain lion

Tools Of The Trade

By Mary Taylor Gray

Predators use an array of adaptive "tools" to aid them in the pursuit and capture of prey.

Vision

Vision reaches a high degree of refinement in raptors, hence the term "hawk-eyed." The eyes occupy more space in the head than any other organ and weigh more than the brain. Raptors have two sensitive focal points, or fovea, on their retinas (humans have one) and about 1 million (compared to 200,000 in humans) visual cells for each square millimeter of the fovea. The eyes are located forward in the head, increasing binocular vision (both eyes contributing to one image) and improving judgement of distances and depth perception.

Raptors' long-distance vision is also remarkable. A flattened lens set far from the retina produces a magnified image, a type of telescopic vision. Peregrine falcons have been shown to recognize sitting doves 3000 feet away and notice a white handkerchief at a distance of 5100 feet.

A reduced muzzle and large eyes located forward in the skull indicate the importance of vision for bobcats, mountain lions and lynxes. With two eyes located on a basically flat face, these cats can focus on one object and give the brain images from two slightly different perspectives. This stereoscopic vision helps in depth perception, essential to a predator that leaps upon moving prey. The large size of the eye, pupil and lens increases the amount of light gathered and the size of the image produced on the retina; this improves night vision. (For a further discussion of night vision, see *Colorado's Wildlife Company*, 1991 fall compendium.) In the bright light of day, the "cat's eye" pupil contracts to a vertical slit to protect the sensitive eyes.

Claws & Talons

Unlike dogs and most clawed animals, the claws of cats are not used in walking. Retractable claws are specialized tools for hunting and grasping prey. An elastic ligament holds the claw in a sheath on the toe. Extended, the curved claw rotates down in an arc; the harder a prey animal struggles, the more tightly the sharp, curved claws grip it. Claws can inflict great damage, increasing trauma to the prey and aiding in killing.

Similarly, talons are the main prey-capturing tool of raptors. As the foot closes, the prey is impaled by four curved claws at once. Bald eagles and osprey use their talons to pluck fish from the water. The osprey's technique is particularly dramatic — these fish-eagles fly over the water's surface, slashing explosively at a fish in the water. A rough, scaly surface on their feet helps them hold their slippery prey. Equally impressive, peregrine falcons swoop on their flying targets at speeds of over 100 miles per hour, striking with open talons that rip into the prey and knock it senseless. The falcon then swoops back around and grabs the falling bird out of the air before it hits the ground.

Teeth

The teeth of predators are adapted for inflicting damage and tearing flesh. Canine teeth, missing in herbivores such as rodents and deer, are pronounced in carnivores and used for piercing, tearing and grasping prey. The dagger-like canine teeth of cats increase trauma to their prey, aiding the kill. Even the pointed teeth of the tiny shrew reflect its role as a hunter, differing from the gnawing incisors and flat molars of rodents. Many mammalian meat-eaters have a large, carnassial molar adapted for shearing flesh.

The backward-curving fangs of rattlesnakes pierce deeply into a prey animal and hang on, injecting venom. Unlike regular teeth, true fangs are grooved to transfer venom and, with the exception of one lizard genus, are found only in snakes. The rattler's fangs fold back against the roof of the mouth; special fang muscles bring the fangs forward and erect when the mouth opens preparatory to striking.

Fish-eating ducks, such as mergansers, have tooth-like serrations along their bills that allow them to hold on to their slippery prey. This adaptation is a return to a function lost by their reptilian ancestors with the evolution of toothless beaks. Though raptors lack teeth, their sharp, hooked beaks tear flesh very effectively.

Body Design

To leap on and kill a full-grown deer, mountain lions need great killing power; they are extremely strong for their weight (adult male lions average 150 pounds, adult females 100 pounds). The heavy musculature of the shoulders and hindquarters helps the lion attack explosively with great power and enables it to run in bursts of speed over short distances. The muscles of the head and neck provide tremendous jaw strength and stabilize the cat for delivering its powerful killing bite to the back of the neck.

River otters are superbly adapted as aquatic hunters — torpedo body shape, oily, waterproof coat, rudder-like tail, webbed feet, and ears and nostrils that close like watertight doors when the otter dives.

Behavioral adaptations

Some canids have evolved cooperative hunting techniques to increase success. Packs of wolves can bring down large prey, such as adult moose, that an individual wolf could not. Several pack members draw the prey's attention, while others move in and attack the animal's rear. Pairs of coyotes have been observed working in relays chasing jackrabbits to exhaustion.

Hunting territories, aggressively defended from competitors, allow predators to preserve resources in a particular area for themselves, increasing their chances of hunting success. Familiarity with a hunting territory also increases the hunter's success and lessens the time and energy spent searching for prey. A large pack of wolves may defend a home range as large as 540 square miles.

DOW - Working For Wildlife

Report: Lynx

In the winter of 1973-74, a lynx was trapped illegally near the Vail Ski Area. That was the last confirmed sighting of a lynx in Colorado. In 1989, again in the Vail area, private biologists and Division of Wildlife (DOW) District Wildlife Managers, Bill Andree and Bill Heicher, found the first positively identified lynx tracks in the state. Today this secretive cat is listed as an endangered species in Colorado. Being few in number, nocturnal, and preferring habitat inhospitable to humans, the lynx continues to challenge DOW personnel in their attempts to provide protection.

The lynx population that roams freely across the northern states and Canada has been studied extensively, but little is known about lynx living in Colorado. The high desert plains of south central Wyoming tend to isolate the Colorado population, located on the southern edge of lynx range, and most experts believe that lynx were never abundant in our state.

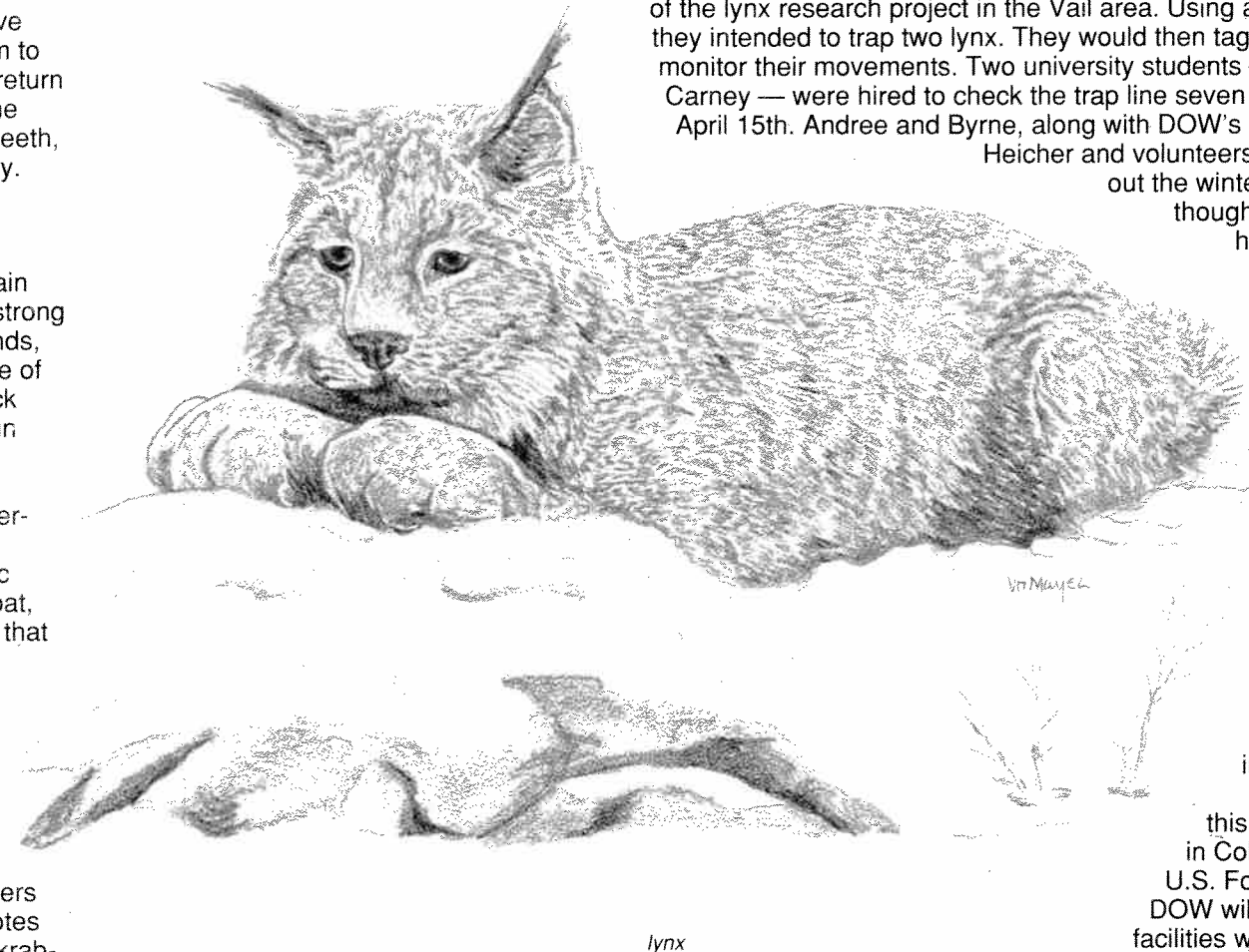
Based on northern lynx research, it is well-known that lynx are highly dependent on the snowshoe hare — their primary prey species. In lieu of actual lynx data, DOW biologists have been protecting snowshoe hare habitat as a best effort to protect the lynx in Colorado. Now they hope to learn more about the lynx itself.

Thanks to joint funding from Vail Associates, Adam's Rib Recreation Area, Christie Lodge, the United States Forest Service, the Colorado Trapper's Association, and DOW, research on lynx in Colorado has been initiated. Designed to learn about the status of the lynx population in Colorado, its habitat preference and selection, and the size and location of the cat's home range, this research is important to the DOW Nongame and Endangered Wildlife Program's work in protecting the lynx. It will also form an essential portion of the environmental impact statement required before Vail and Adam's Rib ski areas can expand into likely lynx habitat.

Last winter Bill Andree and DOW biologist Gene Byrne headed up the first phase of the lynx research project in the Vail area. Using a trap line of humane foot snares, they intended to trap two lynx. They would then tag, radio collar, and release them to monitor their movements. Two university students — Chuck Anderson, Jr., and Ian Carney — were hired to check the trap line seven days a week from January 15th to April 15th. Andree and Byrne, along with DOW's Craig Wescoatt, Larry Green, Bill Heicher and volunteers, helped cover the trap line throughout the winter. Nary a cat was caught, and although possible lynx tracks were found, heavy snowfall made accurate tracking impossible.

Convinced that the elusive lynx are somewhere in the Vail area, Andree and Byrne have changed their strategy for the winter of 1991/92. They have eliminated the winter trap line and broadened the study area. Instead of limiting their observations to a trap line route, they will search for lynx sign in likely habitat throughout the study area. Then, during the summer of 1992, humane traps will be located in areas of concentrated lynx activity.

The information gained from this research will help DOW protect lynx in Colorado. Working closely with the U.S. Forest Service and the ski areas, DOW will ensure that ski runs, lifts, and facilities will be designed and located to minimize negative impacts upon the lynx.



lynx

Will Wolves And Grizzlies Ever

Tiny Killers

By Mary Taylor Gray

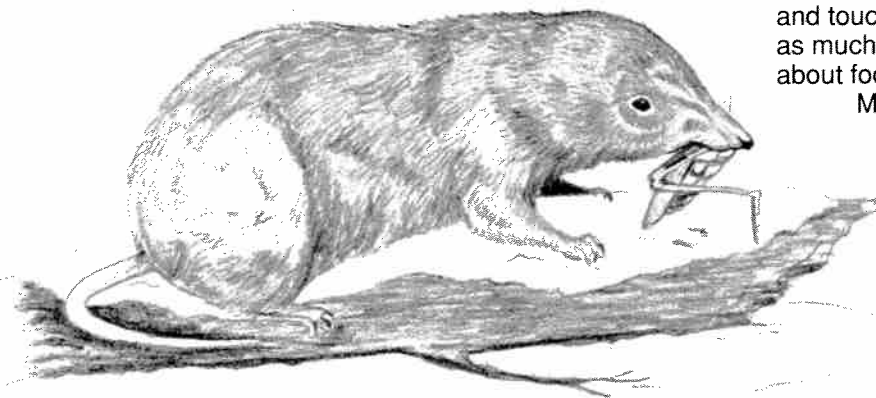
While lions, coyotes and bears dominate our image of predators, perhaps the most ferocious hunter in Colorado is a tiny creature no more than a few inches long and weighing just a few ounces — the shrew.

Shrews have a tremendously high metabolism — a raging furnace they must constantly feed. They patrol continuously for prey, attacking fiercely without hesitation, then devouring their prey immediately. Shrews eat several times their body weight each day. After feeding they pause for brief naps, awakening to continue their search for food.

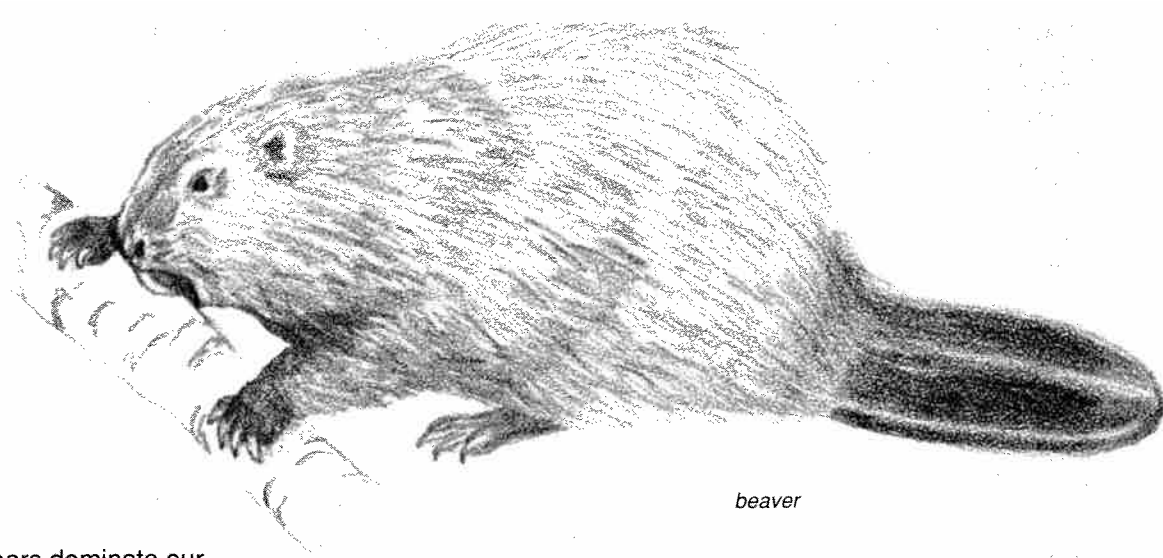
With pointed nose and small, brownish body, shrews are often mistaken for rodents, but they belong to the order Insectivora — insect-eaters. Shrews have the canines and pointed teeth of a meat-eater, not the gnawing and grinding teeth of an herbivore. They eat not only insects, worms, and grubs, but also attack and kill deer mice — animals several times their size. Shrews usually live near water, inhabiting burrows and runways along streams, lakes and waterways and under damp leaf litter and detritus, though they are also found in grassland and drier habitats. There are nine species of shrew in Colorado.

The shrew's vision is poor, but scent is important in locating prey. Running along dark tunnels and burrows in search of a meal, shrews use echolocation to orient, emitting a high-pitched twittering. They also use their tactile whiskers to feel their way.

Beyond their ferocity, shrews have a secret weapon to help them bring down prey. All shrews have poison in their saliva to some degree. This toxin acts on the prey animal's nervous system, causing paralysis of the hind legs, labored breathing, and eventual death. 🐾



least shrew



beaver

Winning Thoughts

about Beavers and Humans

The following essayists are winners of the contest presented in *Colorado's Wildlife Company*, 1991 Summer Compendium

Beavers and humans are able to profoundly change their own habitat. Beavers make changes that improve the quality of their habitat and ensure their long-term survival. Are humans doing the same thing?

"Both beavers and humans alter their environment to benefit themselves and satisfy their needs and wants. In some instances both of these creatures, by doing what they believe is helping themselves, in reality are endangering the environment, their species, and the rest of the animal kingdom. . . . I believe that humans are not necessarily changing their environment in such a way that insures their long-term survival. Many people are fooled by the illusion of quickly gained assets."

Travis Kopp, Lakewood

"What we are up against when we call for keeping and healing the earth is that our culture has been destroying the basis for moral thought and action. In our pride and self-centeredness, we believe that we can have it all and have it now; that everything we can do, we should do; that we have all knowledge and understand everything; that all we see and touch belongs to us. Environmental education is at least as much about humility, faithfulness, and integrity as it is about food chains, ecosystems, and endangered species."

Martie McNeil, Fort Collins 🐾 🐾

By Mary Taylor Gray

They're symbols of wildness, yet there have been no confirmed sightings of wolf nor grizzly bear in Colorado for many years. With discussions of returning wolves to Yellowstone and recovering grizzly populations in other parts of the west, will these large predators be returned to our state?

Official Position - As of September 1989, the Colorado Wildlife Commission (policy-makers for the Division of Wildlife) opposes reintroduction of wolves and grizzly bears to Colorado because these species would be in conflict with livestock, human welfare and wildlife resources. If reintroduction of these species to Colorado is ever included in a national recovery plan, the Commission might review its position.

Grizzly Bears - The San Juan Mountains of Colorado were included as a prospective reintroduction site in a draft of the U.S. Fish and Wildlife Service's grizzly bear recovery plan. If included in the final recovery plan (due in 1992), the next step, given available funding, would be to evaluate whether the San Juans are truly suitable for grizzlies through an extensive habitat analysis. These studies would take 3 - 5 years. If the area is deemed suitable, a plan for reintroduction would be formulated. Currently, livestock interests and other groups firmly oppose returning this large predator to the state. Even if approved, the logistics of grizzly reintroduction are formidable. The many roadblocks mean that the return of the grizzly bear to Colorado is a distant and uncertain possibility.

Wolves - Rocky Mountain National Park is frequently mentioned as a prospective release site for wolves. "The National Park Service is focusing on discussions of wolf releases in Yellowstone National Park," said biologist Dave Stevens with Rocky Mountain National Park. "If Yellowstone should go, we might see something happen in Colorado, but there are currently no plans to release wolves in Rocky Mountain National Park." Nothing would be done anyway, Stevens added,

unless the Wildlife Commission changes its present position on wolves.

The High Cost of Recovery

Even if there were no opposition to wolf and grizzly reintroduction in Colorado, another major obstacle exists: limited dollars. The grizzly habitat survey in Colorado, if conducted, would cost an estimated \$95,000 a year, for 3 to 5 years. This doesn't include costs for the actual reintroduction. The total estimated cost of grizzly bear recovery nationwide through the year 2010 is \$26 million.

The expense of reintroducing such large animals raises the question: Could that money be better used to recover other, "less costly" species? In Colorado, for example, money is needed to study burrowing owls, Mexican spotted owls, white-faced ibis, spotted bat, kit fox, most reptiles and amphibians, and many other species about which too little is known to even determine if populations are declining.

Bald eagles, wolves, grizzly bears, peregrine falcons — they're all intriguing, "high-profile" animals. But they're also all at the top of the food web. Considering ecosystem dynamics and the dependence of predators on those species below them in the scheme of energy transfer, would dollars be better spent on species of the lower trophic levels — snails, clams, insects, reptiles and amphibians, even plants? They may not be "sexy," the sight of them may not give us a thrill or bring tears to our eyes, but they are the species upon which the other animals — the wolves and eagles and bears — ultimately depend. If those at the base of the pyramid disappear, efforts to preserve animals at the top won't matter anyway.

Deciding where to spend limited endangered species recovery money, which animals deserve attention and which ones should wait, is not an easy task. If it were up to you, how would you decide where to spend the money? 🐾

Colorado's Wildlife Company

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Keep Your Eyes Peeled

Bald Eagle

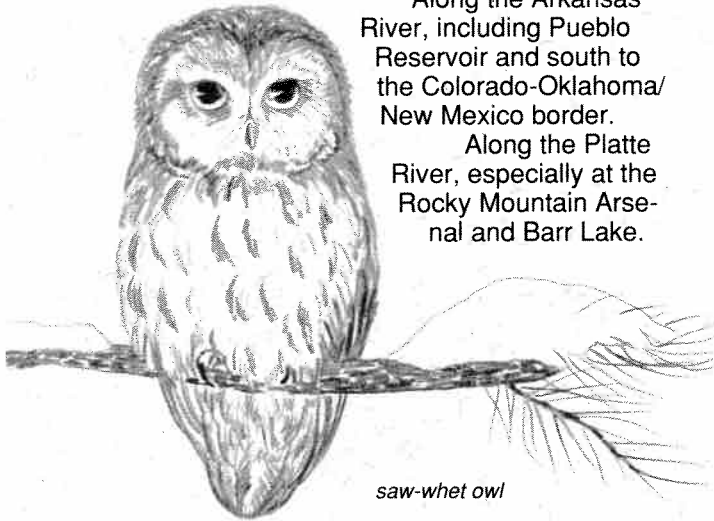
Along the Rio Grande River in the San Luis Valley (highest concentration of wintering bald eagles in the state)

- Alamosa and Monte Vista National Wildlife refuges
- Rio Grande State Wildlife Area

Along the Colorado River from Rifle to Grand Junction

Along the Arkansas River, including Pueblo Reservoir and south to the Colorado-Oklahoma/New Mexico border.

Along the Platte River, especially at the Rocky Mountain Arsenal and Barr Lake.



saw-whet owl

Red Fox

Look for fox in large open areas, including cemeteries in large metropolitan areas, during mornings and evenings.

Coyote

You can see them hunting almost anywhere in the state during the morning and evening hours. Look sharp in large meadows and fields near rural areas. They tend to patrol roads more during the winter months.

- Arapaho National Wildlife Refuge in North Park
- Rocky Mountain National Park

Tax Time Can Be Fun

Yes. Tax time can be fun if you take the bull by the horns and show your tax form who's boss. Show it you mean business when YOU decide where your money is going.

It's easy. It's satisfying. And anyone can do it. Tell your friends and loved ones.

Simply check the box adjacent to the Nongame and Endangered Wildlife Fund. Then write in the amount of money that YOU decide to direct toward management of Colorado's nongame and endangered wildlife. It can be part of your refund, or it can be an amount you add to your tax payment. And it's even tax deductible!

Either way, your tax form will quickly learn that you know how to put your money where you want it. And Colorado's wildlife will thank you for taking assertive action and whipping your tax form into shape. Thank you.

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