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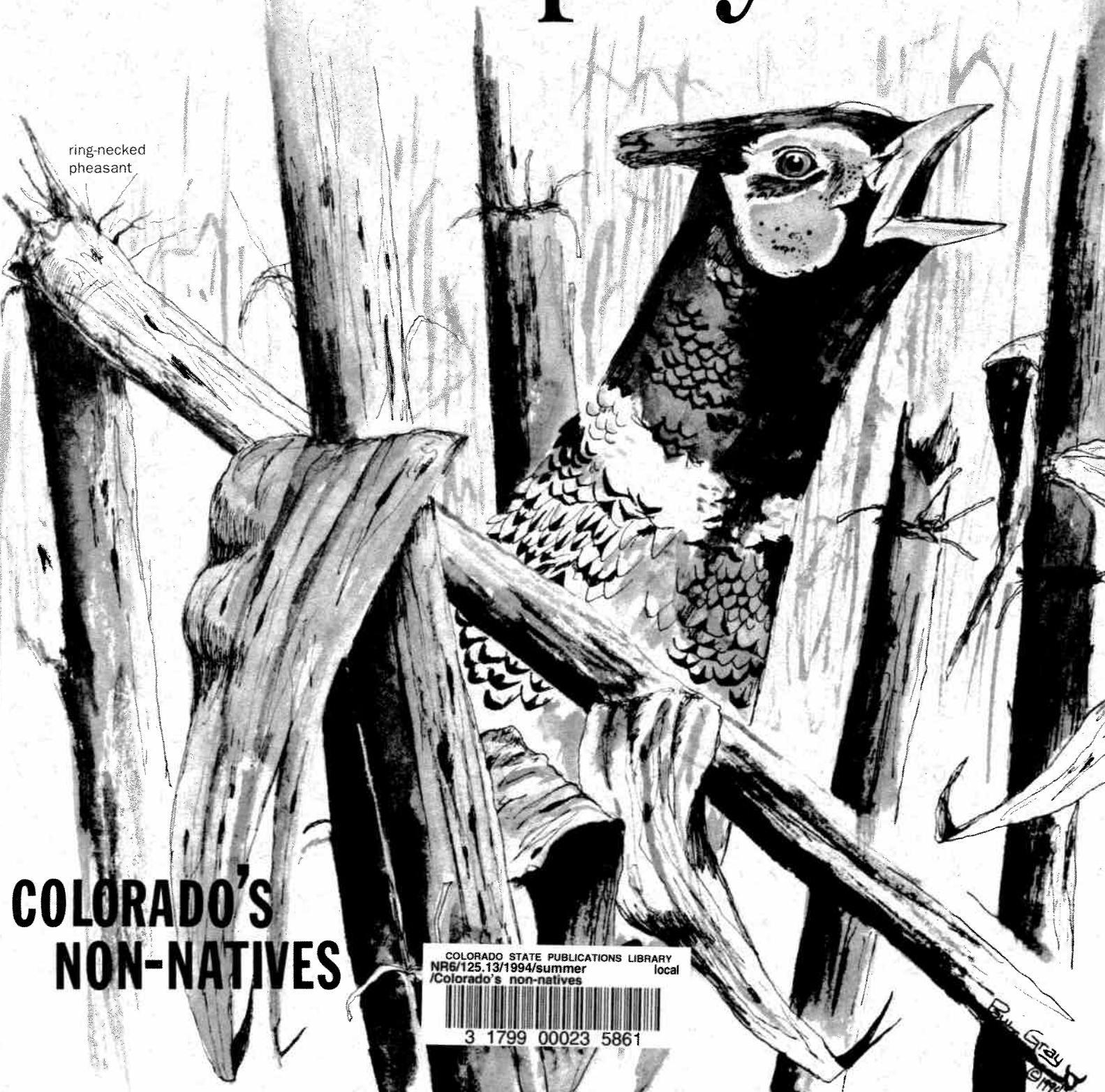
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1994 SUMMER COMPENDIUM OF WILDLIFE APPRECIATION



# Colorado's Wildlife Company

ring-necked pheasant



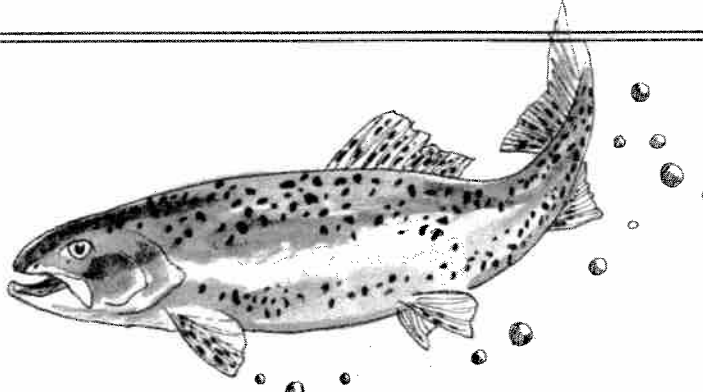
## COLORADO'S NON-NATIVES

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Bill Gray  
1994



# BALANCING ACT: Living with non-native wildlife while preserving natives




rainbow trout

**I**magine Colorado without ring-necked pheasants, rainbow trout or fox squirrels. We take these familiar animals for granted as part of our state's wildlife, yet they are all species not originally native to Colorado. The ring-necked pheasant, for example, is a Chinese bird introduced to the U.S. in the last century as a game bird. The fox squirrel is an animal of eastern woodlands. The treeless Great Plains acted as a barrier to them, but as settlers planted trees across the middle of the country, and as riverways became forested due to changes in water flow patterns, fox squirrels began to move west (some were intentionally released in Colorado). Rainbow trout are a West Coast species first introduced to Colorado in 1882 as a sport fish.

So what is "native wildlife"? The statutory definition includes "those species and subspecies of wildlife which have originated naturally either presently or historically in Colorado... Those which have been introduced into the wild in Colorado by the Division... (and) Those which have been classified as native wildlife by the Commission." By law, then, ring-necked pheasants, northern pike, bullfrogs, starlings and mountain goats (which were introduced in the 1940s) join elk, chipmunks, bullsnakes and meadowlarks as native wildlife.

Despite these statutory definitions, when we talk about natives, we usually mean animals that were here before European settlement. Thus, we don't usually include wildlife like fox squirrels, whose westward migration was made possible by human changes to the landscape.

Non-native wildlife, often referred to as exotic, are a mixed blessing. On the plus side, many introduced species have great recreational value. Colorado isn't rich in native sport-quality fish. Those familiar trout that give anglers such delight – rainbows, lake trout, brookies, brown trout – are all non-native fish introduced specifically as sport fish. Mountain goats are an addition welcomed by both hunters and wildlife watchers. Many non-natives are better able to take advantage of and adapt to changed and



disturbed habitats resulting from human expansion, giving us a way to maintain some wildlife in these altered places.

But some exotic species have brought along a new set of problems (see "Gone Awry"). They often threaten the survival of native plants and animals. Some become residential and agricultural pests. Often exotics can better exploit resources; they compete with the natives and "win." They impact some native species through direct predation, competition for resources, changes to habitat and hybridization with natives. Predation by northern pike on round-tailed chub could be contributing to the chub's suspected decline. At certain times of year, some fox squirrels move into foothills pine forests occupied by native Abert's squirrels where, University of Colorado researchers suspect, they out-compete the native squirrels for resources. A University of California study indicates bullfrog tadpoles may alter pond habitat (perhaps through chemicals they secrete) in ways detrimental to native frogs. And as eastern bluejays have expanded their range into Colorado, aided by the foresting of the Great Plains, they are beginning to interbreed with our native Steller's jays.

As we learn from these situations, our perspective is changing. Over the last 150 years, we have done what seemed desirable at the time, but our understanding of how natural systems work was and is rudimentary. We now know that bringing in anything new can have a host of ramifications. When we consider introducing new species – as domestic pets or for recreation, management or other purposes – we're trying to first evaluate as much as possible their potential impact on existing habitat and wildlife before we "tinker" with the natural order. In keeping with that, Colorado does not allow into the state many exotic species of deer, swine, antelope, sheep and goats, which might be imported for commercial hunting ranches, out of fear they might hybridize with our wildlife, out-compete them for habitat and introduce exotic diseases.

Today we must live with the creatures we've

brought here, whether intentionally or otherwise. We can't get rid of all the non-native species, and we don't want to. What we must do is balance their existence with preserving our native species.

So why do we care so much about preserving native species? If a brook trout is a good sport fish that does well in Colorado waters, why worry about saving greenback cutthroat trout, just because they're native? Valuing native species, both animal and plant, entails a shift in traditional outlooks on natural resources to include scientific, environmental and aesthetic reasons. It's no longer acceptable or logical to ignore a species because we don't see a use for it. Ecosystems, with all their components, evolved to work in complex ways we frequently don't understand. Realizing how little we know, we're learning to balance our use of natural resources with environmental considerations.

Native wildlife evolved with and are adapted to the natural environment of Colorado. As such they are very good indicators of environmental health and quality, and how much we're changing Colorado. Preserving native species maintains a healthy ecosystem and natural diversity. "To keep every cog and wheel is the first precaution of intelligent tinkering," wrote Aldo Leopold in *Round River*. ~~Once we start to tinker, we may lose some pieces (native species), making a ripple that spreads through the system and eventually affects us.~~

Finally, a major reason we value native wildlife is an intangible one. Native wildlife are a part of our natural heritage; they're a part of the beauty and richness of our state. They're like the hometown team. Why do you support the Broncos? Why do you root for Team USA in the Olympics? You probably don't have a personal connection to any of the athletes, yet in an emotional and spiritual way, they are a part of you. Rooting for the Miami Dolphins, or the French Olympic team, just wouldn't be the same. By the same token, if all the elk disappeared and we replaced them with zebras, it just wouldn't be Colorado, would it?

## Gone Awry

Unfortunately, many ill-conceived past actions concerning wildlife, both in Colorado and nationwide, have resulted in far-reaching, and at times devastating, impacts to native wildlife and natural communities. Here are a few examples of exotic wildlife gone awry...

**Common carp** This European species was brought to the U.S. with high hopes for its use as a food fish, but the public would have none of it. When no market developed, carp were released into waterways. Now carp are found throughout the U.S. and Canada (they were introduced to Colorado in 1879). Carp have virtually taken over some waterways, eating up all the food and crowding out native species. In terms of biomass, carp can overwhelm native species in Colorado waters.

**Mysis shrimp** These crustaceans were released in Colorado's cold water lakes and reservoirs in the early 1970s to provide prey for kokanee salmon, also an introduced species. But the shrimp are adept at predator avoidance, living in deep water during the day, coming up only at night when the kokanee, which are mid-water to surface fish, couldn't see them. Not only were they rarely eaten by the salmon, the shrimp dined heavily on large zooplankton, a mainstay food of kokanee, and out-competed the fish for this food. Kokanee populations crashed in some western states; growth at some sites went to zero. Introduction of *mysis* shrimp ended up ruining the fishery it was meant to enhance.

**Northern pike** It was thought natural reproduction by northern pike would be insignificant in the Colorado cold water lakes where they were stocked. Biologists expected these aggressive predators would feed on undesirable sucker species, enhancing habitat for trout. But the pike fooled everyone; they did reproduce, became self-sustaining and began to feed on the trout once sucker populations were reduced!

**European starlings** From its own point of view, the starling is a great success story. In 1890, 100 European starlings were released in New York City, beginning an overwhelming expansion by a non-native wildlife species. Starlings reached Colorado in 1937, and roosting flocks of more than 100,000 birds have been recorded here. Starlings are very aggressive, taking nest sites from bluebirds, woodpeckers and other birds, and out-competing them for resources. Today there are perhaps 200 million starlings in the U.S.

**Norway rats & house mice** They probably first arrived in the holds of ships from Europe – four-legged immigrants that spread phenomenally throughout the U.S. Today the populations of Norway

European starlings

## Welcome Non-Natives

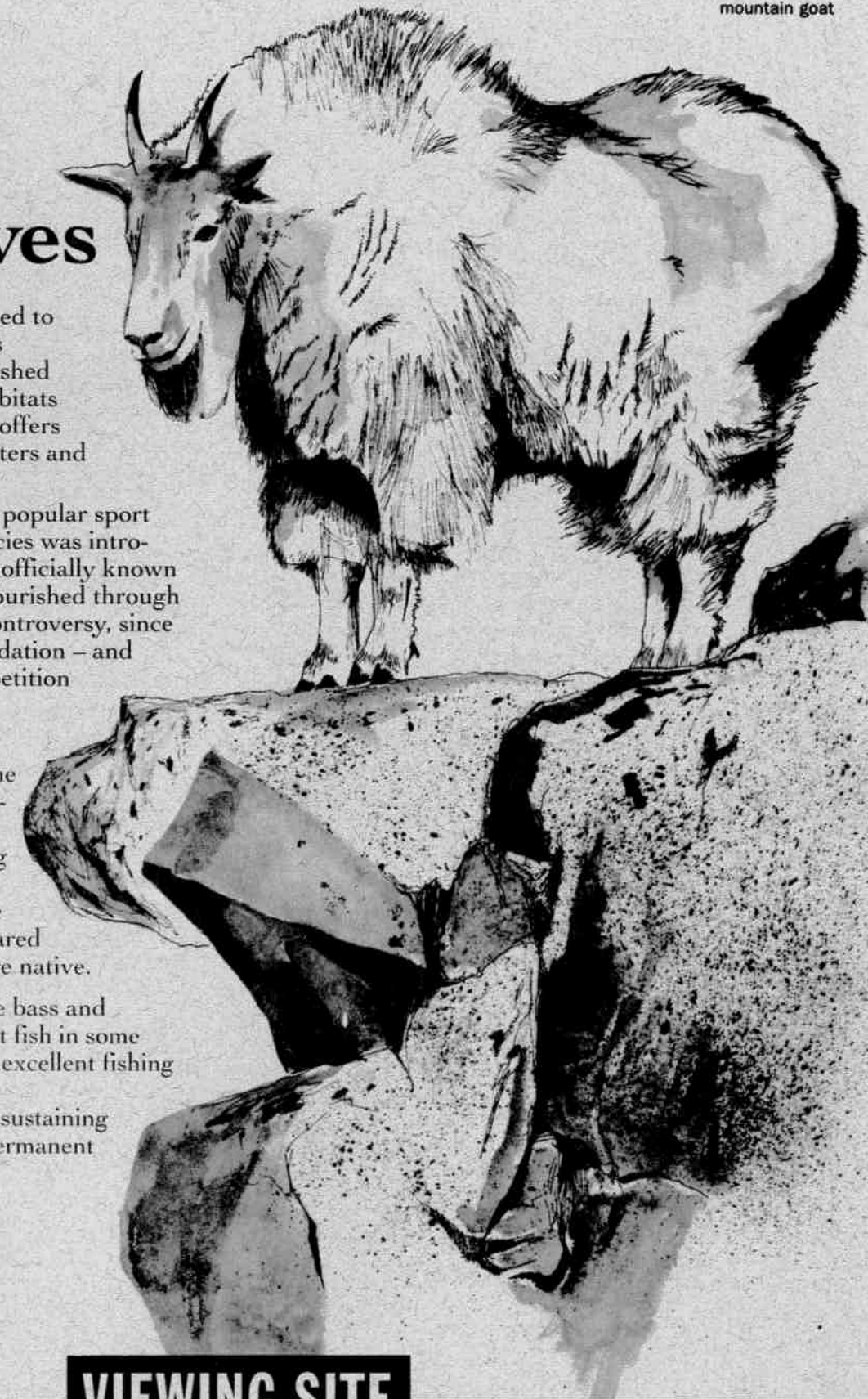
**Ring-necked pheasant** Introduced to Colorado in 1894 as a gamebird, this handsome native of China has flourished in stubblefields and other altered habitats not well suited for native species. It offers good recreation for upland bird hunters and is a joy to wildlife watchers.

**Rainbow trout** Perhaps the most popular sport fish in the state, this West Coast species was introduced in 1882 and until 1994 was unofficially known as the state fish. The rainbow has flourished through most of the state but isn't without controversy, since it affects amphibians – by direct predation – and native cutthroat trout through competition for habitat and hybridization.

**Mountain goats** To hunters and wildlife watchers, goats are a welcome addition to Colorado. They're a challenging big game animal and wildlife watchers ranked goats seventh among Colorado wildlife in desirability of being viewed. In March 1995, the Colorado Wildlife Commission declared by resolution that mountain goats are native.

**Wipers** This sterile hybrid of white bass and striped bass was introduced as a sport fish in some eastern Colorado reservoirs. It offers excellent fishing recreation and since it is non-reproducing, can't establish self-sustaining populations which might become a permanent nuisance.

mountain goat



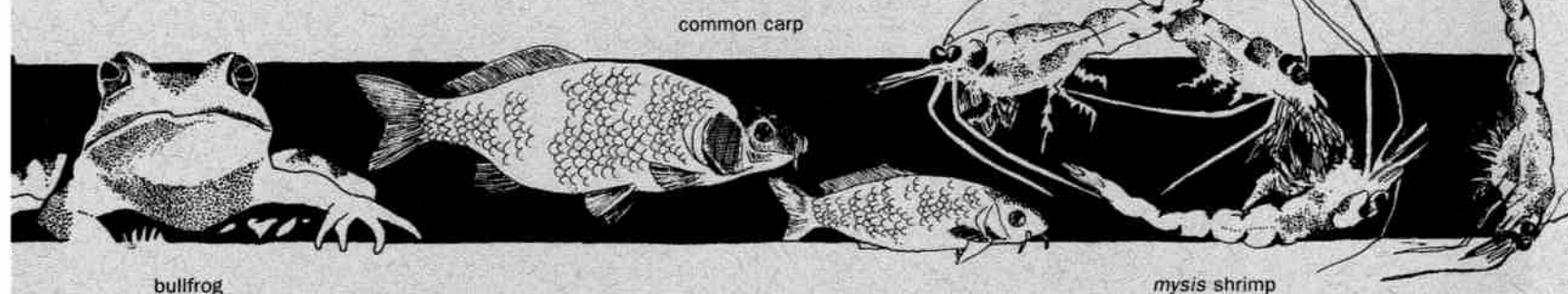
### VIEWING SITE

## Bonny Reservoir/ South Republican River

**DESCRIPTION:** A large complex of habitats including plains grassland, reservoir, agricultural land and excellent cottonwood/willow lowland riparian areas around the reservoir and along the river. Some

phenomenally throughout the U.S. Today the populations of Norway rats and house mice in the U.S. are probably in the billions. They are major agricultural and residential pests, and transmit both human and animal diseases.

**Bullfrogs** Bullfrogs found their way to Colorado both accidentally and on purpose. They were introduced by the DOW intentionally—as game animals (for their tasty froglegs)—and inadvertently, when their tadpoles were gathered and released along with introduced sport fish. Unlike native frogs, bullfrog larvae are present year-round. That means they eat year-round—food that's needed by native amphibian larvae come spring. There is some evidence bullfrog tadpoles may change habitat biochemically in ways that harm native species, as well as eating the eggs of other frog species. Adult bullfrogs also prey on adult leopard frogs.



common carp

bullfrog

mysis shrimp

## DOW WORKING FOR WILDLIFE

### YOUR GOCO DOLLARS AT WORK

The Great Outdoors Colorado Board allocated \$1.5 million of Great Outdoors Colorado money to the Division of Wildlife for 1994. The money is earmarked for 19 different projects throughout the state, which are grouped under the categories of Ecosystem Health and Wildlife-based Education. Here are thumbnail sketches of some of them...

**DEVELOPING A BIOLOGICAL CONSERVATION DATA SYSTEM.** A centralized database will share information about threatened, endangered and sensitive wildlife among private, local, state and federal partners, providing information needed to set priorities for conservation of Colorado's natural diversity.

**PLAINS SHARP-TAILED GROUSE RECOVERY.** There are probably less than 100 plains sharp-tailed grouse left in Colorado. This project will develop a reintroduction action plan, including habitat improvement and transplanting of birds.

**COMPLETE THE RECOVERY OF COLORADO GREENBACK CUTTHROAT TROUT.** This will sustain efforts to restore the greenback cutthroat trout in its historical range and remove this species from the federal list of threatened species.

**NATIVE AQUATIC SPECIES MANAGEMENT FACILITY.** This facility will allow native aquatic wildlife to be reared for research and recovery, as well as public viewing and education.

**STATEWIDE INVENTORY OF AMPHIBIANS AND REPTILES.** The inventory will collect information on the distribution, abundance and population trends of our state's reptiles and amphibians for use in their conservation.

**WATCHABLE WILDLIFE IN PARKS.** This project will promote wildlife viewing and build educational facilities and interpretive kiosks concerning wildlife in numerous Colorado state parks.

**WINDY GAP WATCHABLE WILDLIFE SITE.** This wildlife viewing site will include highway access, a parking area, restrooms, picnic shelter, kiosk, 1/2-mile handicapped accessible trail, interpretive signs, four viewing stations and native-vegetation landscaping.

**MT. EVANS EDUCATION COOPERATIVE.** A broad-scope plan to develop wildlife viewing on Mt. Evans and offer wildlife interpretation and education for the public.

**WATCHABLE WILDLIFE FAMILY WORKSHOPS.** Called *Face to Face*, these workshops will teach observation skills to help people better enjoy wildlife viewing.

**DURANGO WILDLIFE CENTER NATURE TRAIL.** This project will build an 8-station, self-guided trail at the Durango Hatchery with informational kiosks and educational activities.

and excellent cottonwood/willow lowland riparian areas around the reservoir and along the river. Some remnants of native prairie exist.

**VIEWING INFORMATION:** Extensive bird checklist of 287 species. Good place to see eastern birds during spring migration. South shore wildlife area noted as a viewing site for migrant birds, especially smaller passerines. Songbirds in woodlands near Wagonwheel Campground. Look for strutting wild turkeys in spring at Foster Grove Campground. White pelicans and wading birds at water's edge. Good opportunity to see wood duck and young in spring and summer. Watch for beaver and muskrat, as well as turkey vultures roosting on powerlines in the west end. Wintering bald eagles on the lake and good winter waterfowl viewing. Migrant snow geese visible mid-October to mid-November and month of March, sandhill cranes month of October at the southwest corner of the lake. Other migrants of interest include loons, egrets, herons, white-faced ibis, black terns, tundra swans, white-fronted and snow geese, red-headed and red-bellied woodpeckers, eastern bluebirds, orchard orioles and eastern screech-owls. White-tailed deer year-round in corn and hay fields.

**NOTE:** The Republican River drainage includes the only streams containing plains orangethroat darters. The males turn brilliant blue and orange during spring spawning.

(Excerpted from the *Colorado Wildlife Viewing Guide*, available for \$6.95 from the Colorado Wildlife Heritage Foundation, 6060 Broadway, Denver, CO 80216. (303) 291-7212)

*On your next outing, you're likely to see both native and non-native wildlife. Take a moment to stop and ask yourself, "Is this a native Colorado species?"*



## Other Non-Natives

SPECIES	ARRIVED IN COLORADO	HOW/WHY IT CAME HERE
House sparrow	1895	Introduced to New York from Europe in 1850; spread naturally across the U.S.
European rudd	1992	Released inadvertently in bait; now established in Colorado waters.
Chukar	1930s	Asian species released as a game bird.
Fox squirrel	1908 (?)	Natural migration from the east; intentional release in urban areas.
Cattle egret	1964	This invading African species reached South America by natural migration in 1880 and continues to expand its range.

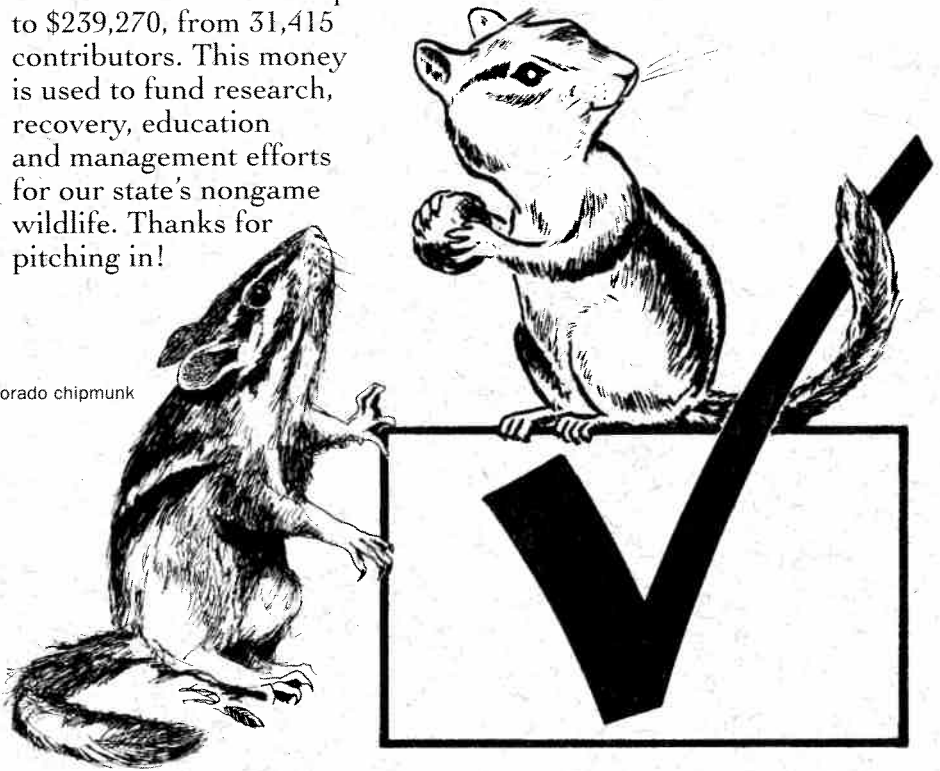
# Native Cutthroat Named State Fish

As a boost for native wildlife, this past March the State Legislature officially designated the greenback cutthroat trout the State Fish of Colorado. This native species replaces the rainbow trout, a West Coast transplant, which wildlife officials unofficially designated "state fish" 40 years ago. The greenback trout has weathered a hard course (as chronicled in past issues of this publication) and, after an intensive recovery effort by state and federal biologists, will likely be removed from the state list of threatened species in the next few years. Swim On Greenback Cutthroat!

# 1993 Checkoff Update

Thanks again, Colorado, for doing your bit to help Colorado wildlife! Early totals are in and, with 70% of tax forms processed, your contributions to the Nongame Checkoff on the 1993 State Income Tax Form add up to \$239,270, from 31,415 contributors. This money is used to fund research, recovery, education and management efforts for our state's nongame wildlife. Thanks for pitching in!

Colorado chipmunk



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