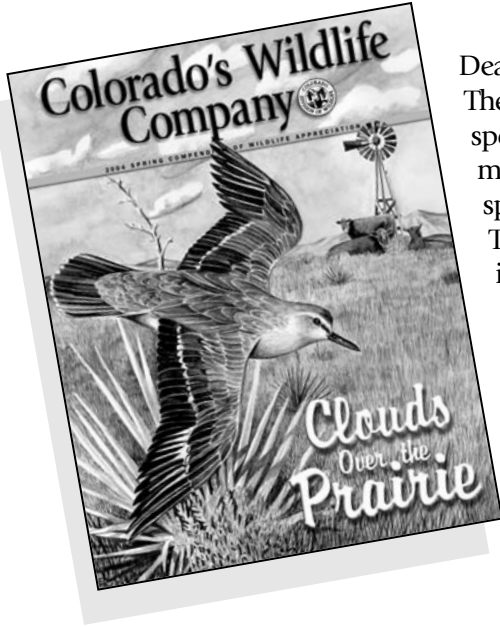


Educator's Guide



Dear Educator:

The goal of the Conservation Plan for Grassland Species (at www.wildlife.state.co.us/species_cons/Grasslands_Species_Conservation/conservationplan.asp) is to maintain healthy populations of black-tailed prairie dogs and associated prairie species—including mountain plover, burrowing owl, ferruginous hawk, and swift fox. The plan offers many ideas and actions to help these species. One of these strategies is the Mountain Plover Nest Clearing Project, which is the focus of a game found on pages 2 and 3. A short research project concerning the “listing” of species by the state and/or federal government is also included to help students understand the broader significance of the conservation plan. *Colorado's Wildlife Company* and this publication are both available at our Web site: www.wildlife.state.co.us/colo_wild_co/homepg/cwcindex.htm. If you have comments or suggestions for this publication, I would love to hear from you. Just contact me at wendy.hanophy@state.co.us.

Enjoy planning for plovers and others!
Wendy Hanophy



Help is Just a Phone Call Away

SCIENCE

Mountain plovers, a species of special concern in Colorado, appear to have declined in numbers throughout North America—about 2.7 percent each year. That may not seem like a big deal, but it is! For example, if there were a breeding population of 1,000 mountain plovers one year, the following year there would be just 973 birds breeding. At least three-fourths of all mountain plovers nest in Colorado so their nesting success here is critical.

A simple phone call can increase nest success for the mountain plover on tilled agricultural fields in Colorado. The Mountain Plover Nest Clearing Project, which is part of the Colorado Division of Wildlife's

Conservation Plan for Grassland Species, encourages landowners to call toll free—1-877-475-6837—before tilling their fields. Biologists then survey the field and mark mountain plover nests so landowners can avoid them.

Mountain plovers are sandy-brown, about eight to 9.5 inches in height, have long legs, a white wing stripe and wing linings, and a black band near the tail tip. A black bar on the front of their heads and an unmarked white breast distinguish mountain plovers from all other North American plovers. In winter, adults and young birds have a plain white face, making their dark eyes and black beak stand out. Breeding adults have a black face stripe that extends from the black bill to the eye.

Plovers eat lots of beetles, along with grasshoppers, spiders, crickets, and ants. Plovers are attracted to barren ground but tolerate areas with very short vegetation, usually less than three inches high.

They will sometimes leave an area if the vegetation grows any taller than that.

In a typical year, mountain plovers arrive on breeding grounds in Colorado about the middle of March. Males set up territories and begin courting displays to attract a mate, eventually scratching a simple depression in barren ground, a scrape nest, for the pair. Plovers breed from mid-April to mid-July. After laying a clutch (set) of three eggs, females usually leave the first nest to the males and go on to a second scrape where they lay another set of three eggs. This means it is possible for a pair of plovers to have six young each year. If the first clutch is lost before mid-June, the plovers may re-nest.

Ground nesters like plovers are vulnerable to lots of things—predators, cultivating machines, severe weather, lack of food, or disturbance due to oil and gas exploration, water well development, and other similar activities. Young plovers fledge in June and July, mature in August, and migrate to wintering grounds in southern California, and southern Texas into northern Mexico by the end of September. Changes on wintering grounds can also determine if birds survive to breed the following year.



Plovers prefer to nest on flat, nearly barren ground.

Photo by Fritz Knopf

It's Not Over for the Plover

This game is designed to help you understand the challenges mountain plovers must surmount to maintain their populations, and to demonstrate how one simple phone call can make all the difference to plover nesting success.

To play this game, each pair of students needs one nickel, one dime, six pennies, and one die. The goal of this game is to reach the last square (START/END) with one surviving bird besides the original pair. Returning with two additional birds is great, returning with three is excellent!

Rule One: Two students represent a pair of plovers. One student is a female plover and uses the dime as a game piece to move around the board; the other student uses a nickel to represent the male.

Rule Two: Each student starts the game with three pennies which represent three "eggs/chicks/birds", the young they can raise during the year.

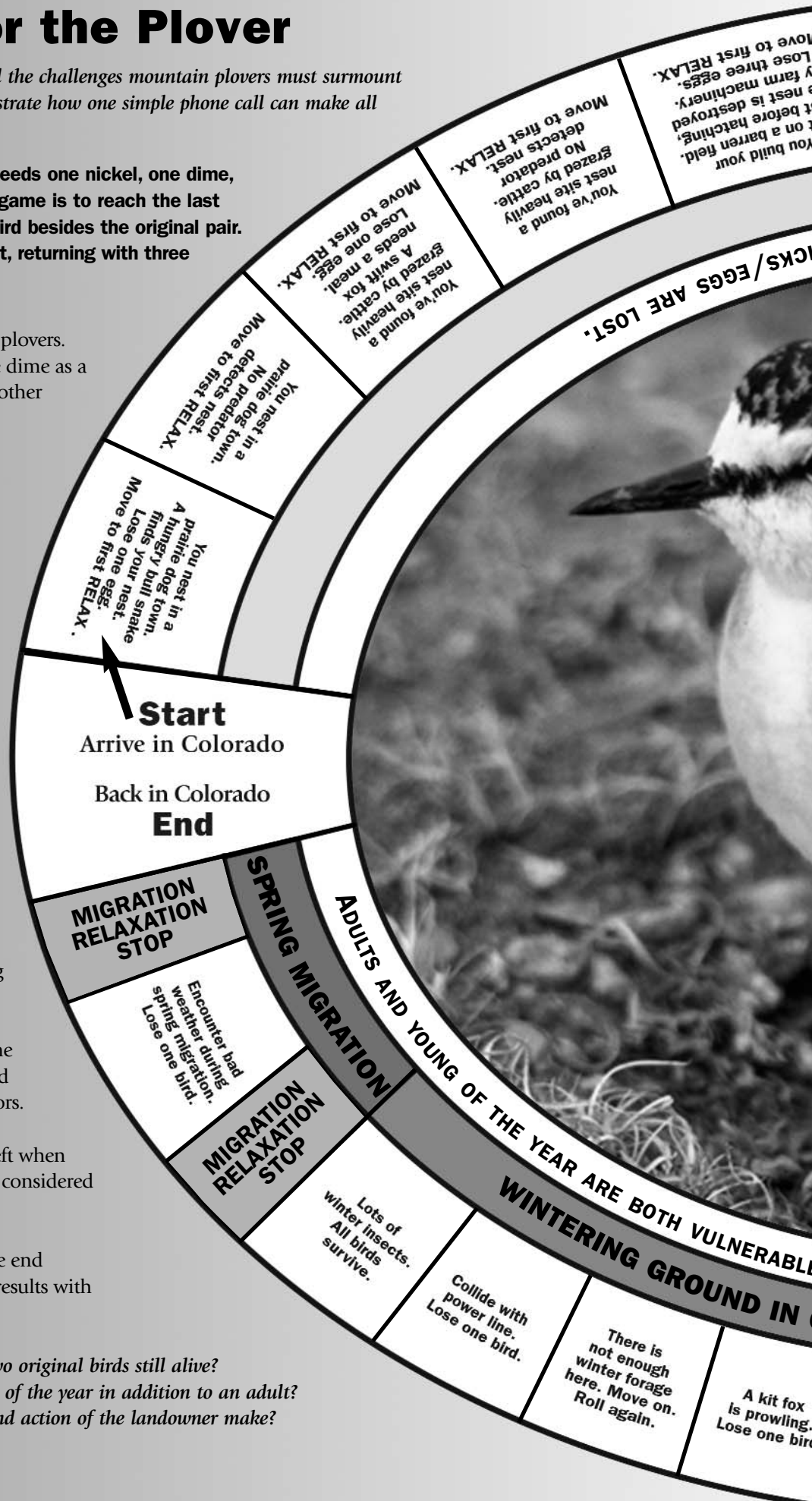
Rule Three: The male plover rolls the die first, and moves independently of the female. On the pairs' second turn, the female will roll the die.

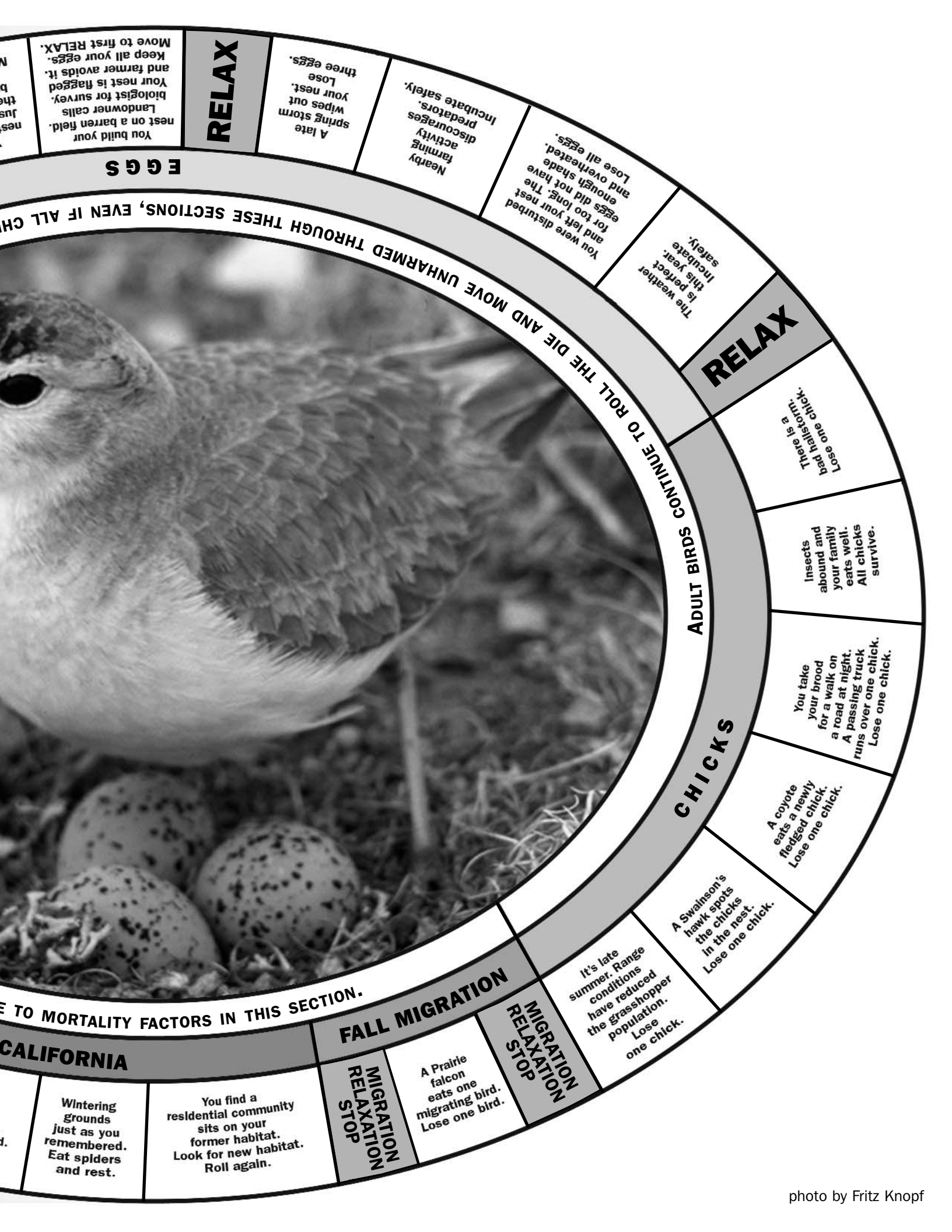
Rule Four: Until the adult breeding pair reaches the "fall migration" portion of the game board, only eggs/chicks are vulnerable. If the adult male or female loses all of his/her tokens before this spot, he/she continues to roll the die and move his/her game piece. In reality, adult birds are vulnerable to mortality factors (things that result in death) year round, but since this game concerns nesting success during the spring and summer months, adults will be spared from harm. From the "fall migration" squares through the remainder of the game, both adult birds and young of the year risk death by various factors.

If the adult male or female has no tokens left when he/she lands on a "death" square, he/she is considered dead and is out of the game.

Rule Five: Play stops when players reach the end or die. Student pairs should compare their results with other student pairs.

*How many pairs ended the game with the two original birds still alive?
How many had one or more surviving young of the year in addition to an adult?
What difference does the original nest site and action of the landowner make?*





EGGS

You build your nest on a barren field. Landowner calls biologist for survey. Your nest is flagged and farmer avoids it. Keep all your eggs. Move to first RELAX.

RELAX

A late spring storm wipes out your nest. Lose three eggs.

Nearby farming activity discourages predators. Incubate safely.

You were disturbed and left your nest for too long. The eggs did not have enough shade and overheated. Lose all eggs.

The weather is perfect this year. Incubate safely.

RELAX

There is a bad hailstorm. Lose one chick.

Insects abound and your family eats well. All chicks survive.

You take your brood for a walk on a road at night. A passing truck runs over one chick. Lose one chick.

A coyote eats a newly fledged chick. Lose one chick.

A Swainson's hawk spots the chicks in the nest. Lose one chick.

It's late summer. Range conditions have reduced the grasshopper population. Lose one chick.

FALL MIGRATION

MIGRATION RELAXATION STOP

A Prairie falcon eats one migrating bird. Lose one bird.

CALIFORNIA

Wintering grounds just as you remembered. Eat spiders and rest.

You find a residential community sits on your former habitat. Look for new habitat. Roll again.

MIGRATION RELAXATION STOP

What's My Status

SCIENCE AND CIVIC EDUCATION

Sometimes status is not a good thing. A wildlife species with endangered status is in immediate risk of becoming extinct in all or a large portion of its range. Threatened species are not in immediate peril of extinction, but are vulnerable because they exist in small numbers or in such a limited range that they may become endangered.

Threatened or endangered species have certain legal protections which impact both public and private land use. A species can be listed as threatened or endangered by either the State of Colorado or the federal government, or both. The federal classification is

made by the Secretary of the U.S. Department of the Interior and the species is then managed by the U.S. Fish and Wildlife Service. The Colorado Wildlife Commission is responsible for state listings. Management plans for these species are the responsibility of the Colorado Division of Wildlife.

Both the state and federal government also maintain a list of species that may be at risk of becoming threatened or endangered. At the state level, this is the list of "species of special concern." At the federal level, these species are often "candidate species" for possible listing.

The Conservation Plan for Grassland Species is designed to prevent species of special concern from declining into threatened or endangered status. Also, the plan outlines strategies to recover threatened and endangered species so that eventually they can be removed from the lists. The plan can be found at www.wildlife.state.co.us/species_cons/Grasslands_Species_Conservation/conservationplan.asp. Many of the species are mentioned in this Spring 2004 edition of *Colorado's Wildlife Company*, "Clouds Over the Prairie."

Wildlife Status — Colorado and Federal

In addition to reading "Clouds Over the Prairie," you can check the Colorado Division of Wildlife Web site (www.wildlife.state.co.us/species_cons/list.asp) and the Federal Register Web site (www.fwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2002_register&docid=02-14963-filed) for help filling in the blanks in the chart below.

For Colorado Status, possibilities include ENDANGERED, THREATENED, SPECIAL CONCERN, or NONE.

For Federal Status, choices are ENDANGERED, THREATENED, CANDIDATE, or NONE.

Species	Colorado Status (C)	Federal Status (F)
1 – Mountain Plover		
2 – Burrowing Owl		
3 – Long-billed Curlew		
4 – Lark bunting		
5 – Plains Sharp-Tailed Grouse		
6 – Ferruginous Hawk		
7 – Black-tailed Prairie Dog		
8 – Swift Fox		
9 – Massasauga		
10 – Suckermouth minnow		
11 – Plains minnow		
12 – Arkansas darter		
13 – Southern redbelly dace		
14 – Northern redbelly dace		
15 – Common shiner		

ANSWERS: 1—c: special concern, f: candidate • 2—c: threatened, f: none • 3—c: special concern, f: none • 4—c: none, f: none • 5—c: endangered, f: none • 6—c: special concern, f: none • 7—c: special concern, f: candidate • 8—c: special concern, f: none • 9—c: special concern, f: candidate • 10—c: endangered, f: none • 11—c: endangered, f: none • 12—c: threatened, f: candidate • 13—c: endangered, f: none, 14—c: endangered, f: none • 15—c: threatened, f: none