

List of Subjects in 47 CFR Part 73

Radio Broadcasting.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

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DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17**

RIN 1018-AF35

Endangered and Threatened Wildlife and Plants: Proposed Threatened Status for the Mountain Plover**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The Fish and Wildlife Service (Service) proposes to list the mountain plover (*Charadrius montanus*) as a threatened species pursuant to the Endangered Species Act (Act) of 1973. The mountain plover is a bird of shortgrass prairie and shrub-steppe landscapes at both breeding and wintering locales. Breeding occurs in the Rocky Mountain States from Canada south to Mexico with most breeding birds occurring in Montana and Colorado. Most wintering birds occur on grasslands or similar landscapes in California; fewer wintering birds occur in Arizona, Texas, and Mexico. Breeding Bird Survey trends analyzed for the period 1966 through 1996 document a continuous decline of 2.7 percent annually for this species, the highest of all endemic grassland species. Between 1966 and 1991, the continental population of the mountain plover declined an estimated 63 percent. The current total population is estimated to be between 8,000 and 10,000 individuals. Conversion of grassland habitat, agricultural practices, management of domestic livestock, and decline of native herbivores are factors that likely have contributed to the mountain plover's decline. Pesticides may be a factor contributing to the decline of mountain plovers, but their effects are not completely understood.

DATES: We must receive comments from all interested parties by April 19, 1999. We must receive requests for public hearings by April 2, 1999.

ADDRESSES: Send comments and materials concerning this proposal to the Assistant Field Supervisor, U.S. Fish and Wildlife Service, 764 Horizon

Drive, South Annex A, Grand Junction, Colorado 81506-3946. We will make comments and materials we receive available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT:

Robert Leachman at the above address, telephone 970/243-2778; facsimile 970/245-6933.

SUPPLEMENTARY INFORMATION:**Background**

The mountain plover (*Charadrius montanus*) was described by John K. Townsend in 1837 from specimens collected near the Sweetwater River, Fremont County, Wyoming (Coues 1874, cited in Laun 1957). This species was originally named the Rocky Mountain plover because the first specimens were taken within sight of those mountains (Oberholser 1974). The mountain plover has since been known by several different scientific names, as well as other common names. The species name *Charadrius montanus* was formally adopted by the Committee on Classification and Nomenclature of the American Ornithological Union in 1983 (R. Banks, National Biological Service, pers. comm., 1994). There are no subspecies (Oberholser 1974).

The mountain plover is a small bird (about 17.5 centimeters (cm)) (7 inches (in)), about the size of a killdeer (*Charadrius vociferus*). It is light brown above with a lighter colored breast, but lacks the contrasting dark breastbelt common to many other plovers. During the breeding season it has a white forehead and a dark line between the beak and eye, which contrasts with the dark crown. Mountain plovers are insectivorous, with beetles, grasshoppers, crickets, and ants their principal food items (Stoner 1941, Baldwin 1971, and Rosenberg et al. 1991, Knopf 1998).

The mountain plover is associated with shortgrass and shrub-steppe landscapes throughout its breeding and wintering range. Historically, on the breeding range, it occurred on nearly denuded prairie dog towns (Knowles et al. 1982, Olson-Edge and Edge 1987) and in areas of major bison concentrations (Knopf 1997). Many consider nesting mountain plovers to be strongly associated with prairie dog towns (Tyler 1968, Knowles et al. 1982, Knowles and Knowles 1984, Shackford 1991, Samson and Knopf 1994, Knopf 1996b). All of the endemic grassland birds evolved within a grassland mosaic of lightly, moderately, and heavily grazed areas, and mountain plovers are considered to be strongly associated

with sites of heaviest grazing pressure, to the point of excessive surface disturbance (Knopf and Miller 1994, Knopf 1996b). Currently, the mountain plover is also attracted to man-made landscapes (e.g., sod farms, cultivated fields) that mimic the natural habitat associations, or sites with grassland characteristics (alkali flats, other agricultural lands).

Nesting mountain plovers are reported in some of the Rocky Mountain and Great Plains States from Canada south to Texas, and possibly in Mexico. Most mountain plovers breed in Colorado and Montana; breeding also occurs in Wyoming, New Mexico, Arizona, Nebraska, Utah, Kansas, Oklahoma, and Texas. Breeding is suspected in Mexico and historic nesting records occur from Canada. Nesting habitat in Canada is restricted to southeastern Alberta and southwestern Saskatchewan. Breeding adults, nests, and chicks have been observed on cultivated lands in Colorado, Kansas, Nebraska, Oklahoma, and Wyoming. Most mountain plovers winter in California where they are found on grasslands or landscapes resembling grasslands, and cultivated fields; many fewer wintering plovers are reported from Arizona, Texas, and Mexico.

The mountain plover is one of nine bird species endemic to the North American grasslands (Knopf 1996a). Endemic grassland birds have declined more rapidly than other species in North America, and the mountain plover's decline is greater than that of the other grassland endemics (Knopf 1994; Sauer et al. 1997). Unlike other plovers, mountain plovers are rarely found near water.

Habitat Characteristics

Mountain plovers evolved on grasslands that were inhabited by large numbers of nomadic grazing ungulates such as bison (*Bison bison*), elk (*Cervus elaphus*), pronghorn (*Antilocapra americana*), and burrowing mammals such as kangaroo rats (*Dipodomys* sp.), prairie dogs (*Cynomys* sp.), and badgers (*Taxidea taxus*) (Knopf 1996a). The herbivores dominated the grassland landscape at both breeding and wintering sites, and their grazing, wallowing, and burrowing activities created and maintained a mosaic of vegetation and bare ground to which mountain plovers became adapted (Dobkin 1994, Knopf 1996a).

Short vegetation, bare ground, and a flat topography are now recognized as habitat-defining characteristics at both breeding and wintering locales (Graul 1975, Knopf and Miller 1994, Knopf and Rupert 1995). Mountain plovers nesting

sites are dominated by short vegetation and bare ground, often with manure piles or rocks nearby. Mountain plovers historically nested on black-tailed prairie dog (*Cynomys ludovicianus*) towns (Flowers 1985, Godbey 1992, Kantrud and Kologiski 1982, Knowles et al. 1982, Knowles and Knowles 1993) or other areas heavily grazed by prairie herbivores.

Currently, in addition to nesting on prairie dog towns, mountain plovers show a strong affiliation for sites that are heavily grazed by domestic livestock (e.g. near stock watering tanks), and also attempt breeding on fallow and cultivated fields which mimic natural habitats (Knopf 1996b). In California, many of the preferred wintering sites are grazed by domestic livestock, or are within giant kangaroo rat (*Dipodomys ingens*) precincts or California ground squirrel (*Spermophilus beecheyi*) colonies (Knopf and Rupert 1995). Wintering mountain plovers in Mexico are almost entirely associated with prairie dog towns (N. Kaufman, U.S. Fish and Wildlife Service, *in litt.*, 1998). Since mountain plovers are usually associated with sites that are modified by grazing and digging mammals, Knopf and Miller (1994) suggested classifying the mountain plover as a species more closely associated with disturbed prairie sites, rather than pristine prairie landscapes.

Bison and elk are now functionally extirpated from all mountain plover breeding habitat, and numbers of pronghorn are greatly reduced. Similarly, prairie dog and/or kangaroo rat numbers are greatly reduced on mountain plover breeding and wintering sites. Now, the primary grazer on both breeding and wintering habitat is domestic livestock, although prairie dogs and/or giant kangaroo rats influence habitat locally at a few sites. Current domestic livestock grazing management emphasizes rotating the animals in time and space among allotments within fenced pastures (Dobkin 1994, Knopf 1996c). Currently accepted domestic livestock grazing management may cause grasses to become more dense and uniform in height, decrease the amount of bare ground, increase the abundance of shrubs, and reduce the frequency and effects of fire (Knopf and Rupert *in press*, Dobkin 1994). Therefore, some types of domestic livestock grazing management techniques do not result in the same habitat characteristics as those created by the native herbivores, with which the mountain plover evolved.

Life History

Mountain plovers arrive on their breeding grounds by late March. The nest is a simple scrape on the ground which is lined with organic debris (Graul 1975). Nests typically occur in areas with vegetation less than 10 cm (4 in) in height, with at least 30 percent bare ground, and with a conspicuous object such as a manure pile, clump of forbs, or rock nearby (Graul 1975, Knopf and Miller 1994, Olson and Edge 1985, Knowles and Knowles 1998). Although short vegetation, bare ground, and an object are characteristic of nest sites, the presence of some taller vegetation to shade chicks and adults also has been reported as necessary (Shackford and Leslie 1995a). Nest sites occur on ground with less than 5 percent slope, which is usually heavily grazed by domestic livestock and/or prairie dogs (Graul 1973, Kantrud and Kologiski 1982, Knowles and Knowles 1998). Vegetation at nest sites throughout the breeding range is variable, but usually dominated by needle-and-thread (*Stipa comata*), blue gramma (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), plains prickly pear cactus (*Opuntia polyacantha*), June grass (*Koeleria cristata*), and sagebrush (*Artemisia* sp.) (Graul 1975, Parrish 1988, Day 1994, Knowles and Knowles 1998).

On the Colorado breeding grounds, flocks of mountain plovers begin to form as early as mid-June prior to migration to wintering habitat. The flocks increase in size until mid-August, and then depart for the wintering grounds between August and October (Graul 1975). Mountain plovers begin to arrive on wintering grounds in California by September, but do not appear in large numbers until November (Jurek 1973; Knopf and Rupert 1995). Two mountain plovers that were color banded in Colorado in 1992 were seen in the San Joaquin Valley of California the same year, representing the first direct link between breeding and wintering habitat for the species (Knopf and Rupert 1995). A mountain plover banded as a chick in Phillips County, Montana, in 1995, was seen in the Sulphur Springs Valley of Arizona on January 1, 1998, supporting other indications that the fall migration to wintering habitat is less direct than migration to breeding grounds (F. Knopf, USGS-Biological Resources Division, pers. comm. 1998, Knopf and Rupert 1995).

Historically, the mountain plover has been reported from a variety of habitats during the wintering period, including grasslands and agricultural fields in California (Tyler 1916; Grinnell et al.

1918; Belding 1879 *in* Grinnell et al. 1918; Preston 1981 *in* Moore et al. 1990; Werschkull et al. 1984 *in* Moore et al. 1990). More recently, mountain plovers are reported from natural, noncultivated sites such as alkali sink scrub, valley sink scrub, alkali playa, and annual grasslands (S. Fitton, Bureau of Land Management (BLM), *in litt.*, 1992, Knopf and Rupert 1995) in the Central Valley. Although cultivated land is used by wintering mountain plovers and is more abundant than noncultivated land, Knopf and Rupert (1995) found that mountain plovers preferred alkali flats, burned grasslands, and grazed annual grasslands to cultivated sites. Grazing on such grassland sites was usually by domestic livestock or burrowing mammals (Knopf and Rupert 1995).

Mountain plovers are gregarious on their wintering habitat. Flock size averages from about 20 to 180 individuals, increasing in size as spring migration approaches (Knopf and Rupert 1995). Flocks with up to 1,100 individuals have been reported from the San Joaquin Valley and Imperial Valley (B. Radke, Service, *in litt.* 1992, Knopf and Rupert 1995). Mountain plovers begin leaving wintering areas by mid-March and may make a nonstop migration to breeding grounds (Knopf and Rupert 1995). In general, mountain plovers spend about 4 months on breeding grounds, 5 months on wintering habitat, and the remaining time mostly in their fall migration (Knopf and Rupert 1996).

Breeding Distribution and Abundance

As discussed by Knopf (1996), the continental breeding range of the mountain plover has been reduced from its historical extent, especially in the eastern portion of the range. The mountain plover was formerly common in western and central Kansas (Goss 1891), and reported as numerous between Fort Supply, Oklahoma and Dodge City, Kansas (McCauley 1877). The species is considered to have been historically numerous in Colorado (Bailey and Niedrach 1965) and Wyoming (Knight 1902). Mountain plovers formerly occupied western South Dakota (South Dakota Ornithologist's Union 1991) and Nebraska (Knopf 1996), and there is one known breeding reference in North Dakota (Roosevelt 1885). They may have bred in northern Mexico in 1901 (Sanford et al. 1924).

Colorado

Mountain plovers have been studied more intensively in Weld County than any other location throughout their range. Graul and Webster (1976)

considered Weld County the breeding stronghold for the mountain plover, a conclusion widely referenced by subsequent authors (e.g., Knopf and Rupert 1996). Inventories completed by the Colorado Bird Atlas Partnership from 1987 through 1995 reported mountain plovers from 8 percent of the survey blocks inventoried in eastern Colorado, and the number of mountain plover sightings in some survey blocks was nearly equal to or greater than those reported from Weld County (H. Kingery, Colorado Bird Atlas Partnership, pers. comm., 1994, *in litt.*, 1998). Kingery (*in litt.*, 1997) estimated that about 7,000 mountain plovers breed in Colorado, and that about 1,500 of those breed in Weld County.

Shackford and Leslie (1995b) reported mountain plovers seen on cultivated fields in 14 counties in eastern Colorado from 1992 through 1995, with most birds seen in Kiowa County. Adult mountain plovers also occur on cultivated fields in Las Animas County within the boundary of the Comanche National Grassland in southeast Colorado (J. Cline, U.S. Forest Service, *in litt.*, 1994). Breeding mountain plovers also have been reported from southeast Colorado by other researchers (Chase and Loeffler 1978; Nelson 1993; R. Estelle, no affiliation, *in litt.*, 1994). Carter et al. (1996) detected mountain plovers at very low densities in 10 Colorado Counties; mountain plovers were most numerous in Kiowa and Park Counties. The Colorado Natural Heritage Program conducted mountain plover surveys in Park County in 1994, 1995, and 1997 (Pague and Pague 1994, Sherman et al. 1996, Hanson 1997). About 1,000 mountain plovers were estimated in Park County in 1995, and these surveys also disclosed the vulnerability of some breeding sites to ongoing and potential urbanization (Sherman et al. 1996). Additionally, Service biologists have observed adults in Moffat County in July (R. Leachman, Service, pers. comm., 1998).

The Bird Atlas Partnership survey (H. Kingery, *in litt.*, 1998) and the inventory of cultivated fields (Shackford and Leslie 1995b) mentioned above resulted in observations of breeding behavior and relative abundance, not estimates of density or productivity. Knopf (1996) reported densities of breeding birds on the Pawnee National Grassland (Weld County) as ranging between 2.0 and 4.7 birds/square kilometer (km) between 1990 and 1994. In 1995, the Pawnee National Grassland experienced exceptionally wet, cold weather through June and few birds were found there during the breeding season (Knopf 1996). Sherman et al. (1996) estimated

1.32 birds/square km in Park County during 1995.

Estimates of nest success and productivity in Colorado are available from studies on prairie habitat in Weld County and cultivated lands in southeast Colorado. Nest success on the Pawnee National Grassland in Weld County was highly variable among years. Percentage of nests where at least one egg hatched varied from 26 percent (Knopf and Rupert 1996) to 65 percent (Graul 1975). Mountain plovers in Weld County fledged an estimated 1.4 young/nest during 1969–1974 (Graul 1975) and also in 1992, suggesting that breeding success in Weld County did not change much in nearly 30 years (Miller and Knopf 1993). McCaffery et al. (1984) estimated a brood size of about 1.3 chicks/adult in Weld County just prior to fledging. Knopf (1996) hypothesized that reported low fledging rates were attributable to drought, which affects the food supply and simultaneously increases predation pressures. The only other estimate of productivity in Colorado is from mountain plovers on cultivated fields in southeast Colorado, southwest Kansas, and northwest Oklahoma where Shackford and Leslie (1995a) estimated 34 percent of nests were successful and 47 percent of chicks that hatched also fledged. In comparison, on the Pawnee National Grassland, an estimated 50 percent of nests were successful and 47 percent of chicks that hatched also fledged (Miller and Knopf 1993). Further studies are needed to determine if average productivity and recruitment on cultivated land differs significantly from native grassland. In Weld County 60 to 70 percent of the mountain plover habitat occurs on the Pawnee National Grassland (F. Knopf, *in litt.* 1991). We therefore believe that areas within Weld County will be important to any future conservation efforts because mountain plovers have shown an affinity for this locale, independent studies over a 30 year period have confirmed successful reproduction, and the extensive Federal ownership improves opportunities for habitat maintenance and protection.

Recent reports of the mountain plover being more widely distributed in Colorado than previously known has led to some speculation that the population in Colorado is stable or improving. Pulliam (1988) expressed caution that basing a species' conservation needs on where it is most common rather than where it is most productive may lead to errors. Although additional sightings of mountain plovers in Colorado are encouraging, some of these sightings have occurred on cultivated lands. We know of no productivity estimates that

are available to compare production on these cultivated areas with production estimated from historic breeding sites.

Montana

Breeding habitat for mountain plovers in Montana is usually characterized by grasslands and shrublands consisting commonly of needle-and-thread, blue grama, June grass, saltbush (*Atriplex gardneri*), and prickly pear cactus. Most breeding sites are grazed by domestic livestock or prairie dogs, and the largest number of breeding mountain plovers in Montana is found on a large complex of black-tailed prairie dog towns in Phillips and Blaine Counties (Knowles and Knowles 1998). The prairie dog towns occur on the Charles M. Russell National Wildlife Refuge, Fort Belknap Indian Reservation, BLM, State school lands, and private lands. Mountain plovers in these two Counties number fewer than 2,000 individuals, and are considered the second major breeding population for the species (Knopf and Miller 1994, Knowles and Knowles 1996, S. Dinsmore, Service, pers. comm., 1998).

Mountain plovers also breed on land administered by the BLM in Valley County (Little Beaver Creek), and on private land in Wheatland and Golden Valley Counties near the Little Belt and Big Snowy Mountains (Knowles and Knowles 1998). Surveys through 1997 now also confirm breeding mountain plovers in Big Horn, Broadwater, Carbon, Carter, Fergus, Jefferson, Hill, Madison, Musselshell, Petroleum, Rosebud, Toole, Treasure, and Teton Counties (Knowles and Knowles 1996, 1998; J. Grensten, BLM, pers. comm., 1998).

Only one mountain plover was located during a search of cultivated fields in 17 counties in Montana in 1995, and mountain plovers appear to use cultivated fields only for foraging and territorial display; nesting has not been observed in cultivated fields in Montana (C. Knowles, Fauna West, pers. comm., 1998). Shackford and Leslie (1995b) hypothesized that more frequent disturbance of fields, a shorter growing season, and more clayey soils in Montana compared to Colorado (Knowles pers. comm., 1998) may explain the fact that fewer birds are sighted nesting on cultivated fields.

With the exception of the population in Phillips and Blaine Counties, mountain plovers total less than 800 individuals at the other 8 locations. Therefore, Knowles and Knowles (1996) estimate fewer than 2,800 mountain plovers in Montana. Selected prairie-dog towns at the Charles M. Russell National Wildlife Refuge in Montana

yielded density estimates of 6.8 and 5.8 birds/square km in 1991 and 1992, respectively. The spring of 1995 was very wet in Montana, and densities in this area were reported at 1.3 birds/square km in that year (Knopf 1996).

Wyoming

The mountain plover is classified as common in Wyoming, with breeding known or suspected in 20 of 28 blocks of latitude/longitude. Six blocks in the southeast corner of the State make up the primary breeding range (Oakleaf et al. 1982). From 1992 to 1997, nesting was confirmed on the Thunder Basin National Grassland in northeast Wyoming with nearly all nests found on black-tailed prairie dog towns (Bartosiak 1992; M. Edwards, Forest Service, *in litt.*, 1994; T. Byer, Forest Service, *in litt.*, 1997). Based on 1997 survey data, about 150 mountain plovers occur on the Grassland (T. Byer, *in litt.*, 1997). Recently, Thunder Basin National Grassland acquired an adjacent parcel of privately-owned rangeland, which together with existing property forms a management unit that has been identified as the next potential site for black-footed ferret reintroduction. In addition, the current Forest Management Plan for Thunder Basin is being revised and the new plan will identify increased acreage to be managed specifically for prairie wildlife, such as prairie dogs and mountain plovers (M. Lockhart, U. S. Fish and Wildlife Service, pers. comm., 1998).

From 1979 to 1992, nesting was confirmed at the Antelope Coal Mine in the southern Powder River Basin. Reported breeding densities of 0.9 to 2.4 birds/square km are lower than those reported for Wyoming prior to 1965 and at other breeding sites in Montana and Colorado (Oelklaus 1989, Parrish 1988, M. Edwards, *in litt.*, 1994). Mountain plovers throughout the southern Powder River Basin are generally thought to be widely scattered at low densities, with a few areas of local concentrations (Oelklaus 1989). Knopf (*in litt.*, 1991) found mountain plovers on the Laramie Plains, on the Chapman Bench north of Cody, and in the vicinity of Shirley Basin. One nest and some adults were located on cultivated lands in Laramie County (Shackford and Leslie 1995b). Mountain plovers also breed in shrub-steppe habitat in southwest Wyoming (Oakleaf et al. 1982). Recent survey efforts in Wyoming have not been as intensive as those in Montana or Colorado. In 1991, Knopf (*in litt.*, 1991) estimated fewer than 1,500 mountain plovers nesting in Wyoming.

New Mexico

Historic reports from New Mexico indicate that mountain plovers numbered from several individuals (1968 to 1977 data) to 150 in a single flock in July 1937 (Hubbard 1978). Sager (1996) conducted mountain plover surveys in 1995 and found 152 breeding adults and 26 juveniles at 35 sites in 11 counties north of 34 degrees latitude. His search was primarily confined to areas north of 34 degrees latitude. However, one adult was located in Hidalgo County during 4 days of survey effort south of 34 degrees, suggesting that occasional breeding may occur in the southern parts of the State (Sager 1996). Migrating mountain plovers were also sighted in Valencia, Colfax, Union, and Torrance Counties, with most of these seen on turf farms at Moriarty and Los Lunas (Sager 1996). The recent surveys in New Mexico imply that additional searching may yield more mountain plovers (S. Williams III, New Mexico Department of Game and Fish, *in litt.*, 1997).

Oklahoma

Few breeding mountain plovers were found in Oklahoma native shortgrass prairie and prairie dog towns in 1986. The few plovers found, combined with the discovery of one mountain plover nest on a maize field, stimulated additional surveys of cultivated fields in Oklahoma (Shackford 1991). In Cimarron County in the panhandle of Oklahoma, Shackford (1991) found that during the nesting seasons of 1986–1990, 60 percent of mountain plovers observed were in native grassland and 40 percent were in cultivated fields. Ten of the 15 birds observed in native grassland were on prairie-dog towns. Annual counts of mountain plovers on cultivated fields from 1990 through 1995 have ranged from 3 to 428 (Shackford and Leslie 1995b).

Other Breeding Areas

In Utah, the only site known to have breeding mountain plovers is in Duchesne County, south of Myton, in the Uintah Basin. Counts of breeding mountain plovers in this area from 1992 through 1997 have ranged from 7 to 29, and broods have been found in each year except 1992 (T. Dabbs, BLM, *in litt.*, 1997). Counts of breeding mountain plovers on cultivated lands in western Kansas from 1992 through 1995 have ranged from 52 (6 counties searched) to 114 (4 counties searched) (Shackford and Leslie 1995b). Surveys of cultivated fields and rangelands within the boundary of the Cimarron National Grassland in Kansas also have been

conducted. Counts on the Grassland in 1994, 1996, and 1997 ranged from 1 to 13, and most of the sightings were on plowed fields (J. Chynoweth, Forest Service, *in litt.*, 1997).

Three pairs of mountain plovers were reported near Fort Davis, Texas, in 1992 (K. Brian, Davis Mountain State Park, pers. comm., 1992), but more recent breeding in Texas cannot be confirmed due to lack of permission to access private land (P. Horner, Texas Parks and Wildlife Department, *in litt.*, 1997). An adult incubating three eggs was found near Springerville, Apache County, Arizona, in May 1996 (T. Corderly, U.S. Fish and Wildlife Service, pers. comm., 1998). A nesting mountain plover was found in western Nebraska in 1990 (F. Knopf, *in litt.*, 1990), and two mountain plover nests were found in a fallow field in the same vicinity in 1997 (W. Jobman, Service, *in litt.*, 1997). Seventeen mountain plovers were counted on 10 cultivated fields in western Nebraska in 1992 and 1995 (Shackford and Leslie 1995b). The most recent nesting record in Canada is one nest in southeastern Alberta in 1990 (C. Wershler, Sweetgrass Consultants Limited, pers. comm., 1992). Mountain plover breeding behavior was observed in 1998 in Nuevo Leon, Mexico, but additional surveys are needed to confirm nests and broods (F. Knopf, *in litt.*, 1998). The Service is not aware of any breeding records from other locations.

Winter Distribution

Historically, mountain plovers have been observed during the winter in California, Arizona, Texas, and Nevada; the California coastal islands of San Clemente Island, Santa Rosa Island; and the Farallon Islands (Strecker 1912; Swarth 1914; Alcorn 1946; Jurek 1973; Jorgensen and Ferguson 1984; Garrett and Dunn 1981; B. Deuel, American Birds Editor, *in litt.*, 1992). In Mexico, wintering mountain plovers have been sighted in Baja, California, as well as north-central and northeastern Mexico, specifically in Chihuahua, Coahuila, Sonora, Nuevo Leon, and San Luis Potosi (Russell and Lamm 1978; A. Garza de Leon, The Bird Galley, *in litt.*, 1990; L. Stenzel, Point Reyes Bird Observatory, *in litt.*, 1992; R. Estelle, pers. comm., 1998). Currently, the majority of mountain plovers appear to winter in California, with fewer reported from Texas, Arizona, and Mexico.

The only published scientific study of mountain plovers on their wintering habitat documented movement patterns, habitat preferences, and winter survival rates in the San Joaquin Valley and

Carrizo Plain Natural Area of California (Knopf and Rupert 1995). Due to the lack of published information on wintering birds, we examined Christmas Bird Count data, notes of California sightings compiled from American Birds, National Wildlife Refuge records, BLM surveys, and other information (J. Lowe, Cornell Laboratory of Ornithology, *in litt.*, 1989; B. Deuel, *in litt.*, 1992).

California

In California, mountain plovers are most frequently reported and found in the greatest numbers in two general locations—(1) in the Central Valley south of Sacramento and west of U.S. Highway 99, and (2) the Imperial Valley in southern California. Throughout these areas, sightings occur on agricultural fields and noncultivated sites; noncultivated sites are preferred habitat (Knopf and Rupert 1995). Within the Central Valley, flocks of up to 1,100 birds have been seen recently in Tulare County (Knopf and Rupert 1995). The Carrizo Plain Natural Area in San Luis Obispo County also is recognized as an important wintering site, with wintering birds reliably reported from the west side of the Carrizo Plain Natural Area since 1971 (S. Fitton, *in litt.*, 1992). The Sacramento Valley portion of the Central Valley also provides wintering habitat for flocks of mountain plovers within Solano and Yolo Counties. During the 1998 census, 230 and 187 mountain plovers were observed within each of these counties, respectively (K. Hunting, California Department of Fish and Game, *in litt.*, 1998).

About 2,000 mountain plovers were counted on agricultural fields in the Imperial Valley in 1994 (B. Barnes, National Audubon Society, *in litt.*, 1994). At other locations in southern California, birds have been seen at Harper Dry Lake, Antelope Valley, San Jacinto Lake Wildlife Area, and the Tijuana River Valley (K. Garrett, no affiliation, pers. comm., 1989; G. Cardiff, no affiliation, pers. comm., 1992; T. Paulek, California Department of Fish and Game, pers. comm., 1992; E. Copper, unaffiliated, *in litt.*, 1992). Mountain plovers are considered extirpated (extinct) from Orange County (B. Harper, U.S. Fish and Wildlife Service, *in litt.*, 1990).

Arizona, Texas, Nevada and Mexico

Wintering mountain plovers also are reported from other areas, but in much lower numbers than are reported from California. From 1983 to 1991, a total of 30 to 180 mountain plovers were reported from southeastern Arizona (J. Witzeman, Audubon Society, pers.

comm., 1992). In Texas, up to 130 mountain plovers were reported from Guadalupe, San Patricio, and Williamson Counties (G. Lasley, Regional Editor American Birds, pers. comm., 1992). Mountain plovers also have been sighted throughout the year in Texas in Val Verde, Nueces, Kleburg, Aransas, Tom Green, Concho, and Schleicher Counties (P. Horner, *in litt.*, 1997), and at Laguna Atascosa National Wildlife Refuge (L. Laack, U.S. Fish and Wildlife Service, *in litt.*, 1992). In Nevada, several mountain plovers were collected in the Lahontan Valley in 1940, with a few observed there in the 1990's (Alcorn 1946; F. Knopf, pers. comm., 1995). In January 1992, 148 mountain plovers were counted at the north end of Laguna Figueroa, Baja California, Mexico (L. Stenzel, *in litt.*, 1992). About 150 mountain plovers were seen on a prairie dog town in San Luis Potosi, Mexico, in January 1998 (R. Estelle, pers. comm., 1998).

Total Mountain Plover Population Abundance and Trend Estimates

Historically, breeding mountain plovers were reported as locally rare to abundant, and widely distributed in the Great Plains region from Canada south to Texas (Coues 1878, Knight 1902, McCafferty 1930, Bailey and Neidrach 1965). On wintering grounds in California, as many as 10,000 mountain plovers were repeatedly counted in the San Joaquin Valley during the 1960's (J. Engler, U.S. Fish and Wildlife Service, *in litt.*, 1992). In January 1994, 3,346 mountain plovers were counted during a simultaneous survey of 17 sites throughout California (B. Barnes, *in litt.*, 1994). A similar coordinated survey in California in January 1998 counted 2,179 (Hunting, *in litt.*, 1998).

We present the above estimates of mountain plover relative density and abundance rangewide and within each state to give the reader an indication of the variability in information reported in published literature and other references. The estimates of abundance provided for each State or area are usually from different researchers, from different times, and using different techniques. Therefore, the estimates should not be considered comparable to one another, nor necessarily additive. Knopf (1996b) estimated the total 1995 North American population to be between 8,000 and 10,000 birds. He arrived at this estimate beginning with a one day winter count of 3,346 mountain plovers at all known historical sites in California, assuming that at least one-half of all mountain plovers in California were missed by that count, and adding an estimated

1,000—3,000 birds that winter in Texas and Mexico.

Knopf (1994) reported that between 1966 and 1991, continental populations of the mountain plover declined an estimated 63 percent. Breeding Bird Survey trend analysis completed for the period 1966 through 1996 yields an estimated annual rate of decline of 2.7 percent ($P = 0.02$, 95 percent confidence intervals -4.7 , -0.6 ; Sauer et al. 1997). Knopf and Rupert (*in press*) hypothesized that reduced productivity as a result of tillage on cultivated lands used for nesting may explain the annual rate of decline of this species. The mountain plover's decline is considered a major conservation concern (Knopf 1994, 1996b).

Previous Federal Action

On December 30, 1982, we designated the mountain plover as a category 2 candidate species, meaning that more information was necessary to determine whether the species status is declining, stable, or improving (47 FR 58458). In 1990, we prepared a status report on the mountain plover suggesting that Federal listing may have been warranted (Leachman and Osmundson 1990). We elevated the mountain plover to a category 1 candidate species in the November 15, 1994 Animal Candidate Notice of Review (59 FR 58982). At that time, category 1 candidate species were defined as those species for which we had sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list. In 1996, we redefined candidate species and eliminated category 2 and 3 candidate designations (61 FR 64481). Candidate species were defined using the old category 1 definition. The mountain plover retained its candidate species designation as reported in the September 19, 1997, Review of Plant and Animal Taxa (62 FR 49398). On July 7, 1997, we received a petition to list the mountain plover as threatened from Jasper Carlton of the Biodiversity Legal Foundation. The Service responded by notifying the petitioners that petitions for candidate species are considered second petitions, because candidate species are species for which we have already decided that listing may be warranted. Therefore, no 90-day finding was required for Biodiversity Legal Foundation's petition.

Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the

Act set forth the procedures for adding species to the Federal lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to the mountain plover (*Charadrius montanus*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range.

As discussed below, mountain plover habitat is threatened by the conversion of grasslands to croplands and urban uses, domestic livestock management, and other land uses (e.g., prairie dog control, mineral development) throughout mountain plover breeding and wintering range.

Historical Conversion of Grassland in Breeding Range

Conversion of grassland to cropland within the breeding range of the mountain plover has been extensive, with about 32 percent of the grasslands in the Great Plains now converted (Laycock 1987, Knopf and Rupert *in press*). Approximately 20 percent of Wyoming's and 80 percent of Texas' shortgrass prairie has been lost (comparable data not available for each State, Samson and Knopf 1994, Knopf and Samson 1997). The demand for agricultural development at the turn of century stimulated grassland conversion to croplands at both breeding and wintering locales. Conversions continued in later years to meet demands during World Wars I and II. In the 1940s, some additional land was plowed to take advantage of favorable precipitation and high wheat prices after World War II (Laycock 1987). Under the Soil Bank Act of 1956, participating farms withdrew cropland from production for 3–10 years. At the peak of the program in 1961, 14.1 million acres (ac) in the Great Plains were planted to grasses. Laycock (1987) suggests that observations show that almost all of this area was plowed again beginning in the early 1970s, along with previously unbroken grassland. Thus, the Soil Bank Program of 1956 was successful as a wildlife habitat conservation measure only in the short term. Later, during the Russian wheat sale of 1972 and authorization and implementation of Federal water projects in California's Central Valley, conversions of grassland continued (see Moore et al. 1990, Williams 1992). During the 1970s and 1980s, an estimated 572,000 ac (228,800 ha) and 15,000 ac (6,000 ha) of previously unbroken grassland were plowed in Colorado and Kansas (Laycock 1987).

Simultaneously, domestic livestock replaced native ungulates as the primary grazer at both breeding and wintering locations, and livestock management practices that encouraged vegetative uniformity were adopted (see Knopf 1996c, and Knopf and Rupert *in press*).

Current Conversion of Grassland in Breeding Range

We investigated recent loss of native rangeland within the breeding range of the mountain plover using the National Resources Inventory (NRI) of the U. S. Department of Agriculture Natural Resources Conservation Service (NRCS). The NRI is a comprehensive database of natural resource information on non-federal lands of the United States that focuses on soil, water, and related resources. Although the survey is now repeated every five years, the earliest NRI data is available from 1982 (U.S. Department of Agriculture Soil Conservation Service 1994). The 1992 NRI Summary Report provided estimates of change in rangeland acreage, 1982–1992, for each state. Rangeland was defined as a land cover/use category that includes land on which the climax or potential plant cover is composed principally of native grasses, grass-like plants, forbs, or shrubs suitable for grazing, and introduced forage species that are managed like rangeland. We believe that this cover type would most likely represent the vegetative elements required by breeding mountain plovers.

Colorado, Montana, and Wyoming are the three States with the majority of breeding mountain plovers; some breed in Kansas, Nebraska, and Oklahoma. Using areas inventoried by Knowles and Knowles (1998) and Shackford and Leslie (1995b), we compared the change in rangeland that has occurred in their inventory areas between 1982 and 1992. With the exception of Phillips and Blaine counties, Knowles and Knowles (1998) report more mountain plovers from Broadwater, Golden Valley, Jefferson, Madison, Valley, and wheatland counties than other locations in Montana. The counties inventoried by Shackford and Leslie (1995b) closely describe the area commonly reported as the mountain plover breeding range in Colorado, Kansas, Nebraska, Oklahoma, and Wyoming. We believe the 30 counties in the six states which we selected for review of NRI data are a good representation of areas either currently or historically occupied by mountain plovers.

Data were not available for all of the selected Montana counties. From 1982 to 1992, the amount of rangeland in the selected counties of Wyoming decreased

25,300 ac, in Colorado 466,200 ac, in Nebraska, 18,400 ac, in Kansas, 30,700 ac, and in Oklahoma 33,000 acres. These decreases occurred because of conversion to a variety of landuses, including cropland, developed land, and other rural lands (U. S. Department of Agriculture Soil Conservation Service 1994). These data suggest that the conversion of grasslands remains a significant threat to the species. Given the fact that mountain plovers are endemic to grasslands, we believe that a similar proportion of mountain plover habitat was likely lost during that time period. In fact, the conversion of grasslands to cropland is reported by many authors as a cause for the decline of mountain plovers and their habitat (e.g., Graul and Webster 1976, Fauna West 1991, Knopf and Rupert *in press*).

Mountain plovers are known to breed on private grasslands near the Little Belt and Big Snowy mountains in Montana, on private lands within the boundary of the Pawnee National Grassland in Colorado, and in other areas that could be converted to croplands (Knowles and Knowles 1993, Knopf and Rupert *in press*). Three mountain plover nest sites on grasslands in central Montana were converted to cropland in 1995 under a farm plan approved by the Natural Resources Conservation Service, and grassland conversion is occurring at other locations in Montana (Knowles and Knowles 1996, 1998).

Cultivated Areas in Breeding Range as Potential Population Sinks

A direct loss of habitat is not the only effect of grassland conversion in the breeding range. Conversion may not only destroy existing mountain plover breeding sites (see Knowles and Knowles 1996b, 1998) and eliminate the opportunity to manage grasslands to provide future nesting sites (e.g., through burning and grazing), it also may create habitats that attract breeding mountain plovers which would then be exposed to the tilling of cultivated fields to control weeds. This tilling can destroy mountain plover nests, eggs, and chicks (Shackford and Leslie 1995a,b; Knopf 1996b; Knopf and Rupert *in press*).

In the last 25 years, Great Plains' farms have become larger and new crops have become economically feasible. Many farmers now plant extensive areas to sunflowers and millet, as well as winter and spring wheat. Fields may remain fallow until early May, after most mountain plovers have started nesting. Many nests are then destroyed by farm equipment when the fields are planted in May. Mountain plovers may reneest on these fields, but then likely

abandon nests as the grain crop becomes too tall to allow plovers to scan their surroundings for predators (Knopf 1996b). In other instances, fallow fields may not be planted, but may be tilled periodically to control weeds.

During the nesting season of 1995, Shackford and Leslie (1995b) searched 999 km around cultivated fields in 68 counties of eight States. They observed 54 mountain plovers on a total of 29 cultivated fields in 13 counties in five of the eight States: Colorado, Montana, Nebraska, Oklahoma, and Wyoming. The majority of plovers observed on cultivated fields were in the southern portion of the range (53 of 54 birds): Laramie County, Wyoming (19 birds), southwestern Nebraska (13), and eastern Colorado (17). Shackford and Leslie (1995b) concluded that fewer birds are found nesting in cultivated fields in northern latitudes because upland crops are sparse in Montana and Wyoming, there is a shorter growing season, and spring wheat planted in northern latitudes is disturbed more frequently than the winter wheat planted in the south. The short intervals between disturbances for spring wheat would not normally allow enough time for breeding, nesting, and young rearing.

In 1993 and 1994, 48 percent of nests located on cultivated fields in Colorado, Oklahoma, and Kansas were destroyed by tilling (Shackford and Leslie 1995a). Although the long-term effect of tilling on mountain plover productivity and abundance is not known, cultivated lands may represent a reproductive "sink" (Knopf 1996b; Knopf and Rupert *in press*). Pulliam (1988) described a reproductive sink as habitat where reproduction of a species is less than mortality, so that immigration from more productive habitats (i.e., "sources") is needed to maintain the species' presence at the sink. Sinks are habitats where breeding efforts are misrepresented as recruitment into the population, but where the mortality actually causes a population decline. We concur with Knopf and Rupert (*in press*) that the source-sink dynamics (as described by Pulliam (1988)) are likely operating on the grassland-cultivated sites used by mountain plovers in Colorado, Kansas, and Oklahoma.

Many grasslands are not suitable breeding habitat, and therefore, are not used by mountain plovers. However, conversion of these grasslands also can be considered detrimental because such conversion may create locally acceptable habitat (Knopf and Rupert *in press*) on which mountain plovers are then exposed to tilling (i.e., creation of sink habitat, see above). Consequently, grassland conversion may be considered

a threat to mountain plover conservation whether or not the grasslands are presently suitable breeding habitat, particularly when conversions are proposed within the southern portion of the bird's breeding range.

Grasslands in the breeding range also are being converted to urban uses. Nationwide, between 1982 and 1992, a 14 million ac (5,600,000 ha) increase in developed land came in part from conversion of 2 million ac of rangeland (U.S. Department of Agriculture Soil Conservation Service 1994). In Park County, Colorado, which may support about 1,000 mountain plovers, the number of residential building permits has tripled between 1991 and 1997 in areas of the County known to have breeding habitat (Hanson 1997; G. Nichols, Park County, Colorado, *in litt.* 1998).

Historical Conversion of Grassland in Winter Range

In the early 1900s, a great number of mountain plovers were reported on wintering areas in California on both grasslands and agricultural lands (Grinnell et al. 1918). Prior to extensive human development, grasslands occupied about 8,900,000 hectares (ha) (22 million ac) throughout California, with about 20 percent occurring in the San Joaquin Valley (Dasmann 1965 and Burcham 1982 cited in Moore et al. 1990). During agricultural development, extensive conversion of natural habitats occurred and proportionately more grasslands were converted than any other cover type (Ewing et al. 1988, Moore et al. 1990). The amount and variety of mountain plover habitat has been significantly reduced throughout the Central Valley and in southern California. To more fully evaluate the degree of mountain plover habitat conversion that has occurred, we reviewed the habitat inventories completed for other declining terrestrial species in the San Joaquin Valley. While the San Joaquin Valley encompasses only the southern portion of the Central Valley, we believe the trend there is representative of wintering habitat degradation elsewhere.

Grasslands in the San Joaquin Valley have been nearly extirpated, with less than 60,700 ha (150,000 ac) in the San Joaquin Valley floor remaining unaffected by cultivation or urbanization (Service 1997). Consequently, habitats preferred by mountain plovers have been reduced to less than 4 percent of their historical abundance (Knopf and Rupert 1995, Anderson et al. 1991). Research in the San Joaquin Valley documents that

wintering mountain plovers prefer Valley sink scrub and grasslands over any of the more common cultivated land (Anderson et al. 1991; Knopf and Rupert 1995). However, the sink scrub and grasslands occupy no more than about 26,400 ha (66,000 ac) of the San Joaquin Valley (Anderson et al. 1991). Mountain plovers in the San Joaquin Valley are dependent on these core areas of uncultivated lands for early winter survival, and further loss of these areas would be detrimental to the species (Knopf and Rupert 1995). Apparently due to the scarcity of uncultivated wintering habitat, mountain plovers use croplands created by annual cultivation as alternate foraging areas (Knopf and Rupert 1995). Such use may give the appearance that conversion to cropland is benign. However, mountain plovers may not benefit in the long term because the cultivated lands are commonly treated with pesticides and may become urbanized (American Farmland Trust 1989, Moore et al. 1990, Knopf 1996b). Most of the remaining undeveloped lands in the San Joaquin Valley are primarily in the foothills of the Valley, and are lands that have less potential for agricultural production (Moore et al. 1990, Service 1997). While the Carrizo Plain Natural Area contiguous to the west side of the Valley is recognized as a regular wintering area, only about 10 percent of its 102,792 ha (254,000 ac) has vegetation and topography suitable for mountain plovers (U.S. BLM 1995, S. Fitton, *in litt.*, 1992).

Effects of Range Management on Mountain Plover Habitat

Historically, mountain plover habitat at both breeding and wintering sites was a byproduct of the nomadic behavior of bison, elk, and pronghorn, and the fossorial (digging) behavior of numerous rodents. Today prairie dogs and kangaroo rat numbers have been reduced on a significant portion of their former range, and the grazing effects of the dominant herbivore (domestic livestock) are usually closely managed by rotating the livestock within fenced pasture allotments. Current range management practices for domestic livestock, together with extensive eradication of prairie dogs and other burrowing rodents, has adversely affected mountain plover habitat, as detailed below.

Some current domestic livestock grazing management emphasizes a uniform grass cover to minimize grassland and soil disturbance (Knopf and Rupert *in press*), whereas the landscape created by the native herbivores was a mosaic of grasses, forbs, and bare ground that could

change frequently in time and location. The shift to livestock grazing strategies that favor uniform cover is believed to be partly responsible for the decline of mountain plovers in Oklahoma and Canada (Flowers 1985, Wershler 1989). Mountain plovers are no longer reported from the Lewis Ranch in central Montana since elimination of grazing there in 1993 (Knowles and Knowles 1998). Mountain plovers on the Pawnee National Grassland are closely associated with heavily-grazed sites. Therefore, in order to prevent deterioration of existing mountain plover breeding habitat, the Forest Service has deferred implementation of new grazing management plans that would have reduced stocking rates (Forest Service 1994b). However, similar attention to the vegetative requirements of mountain plovers is not in place throughout their breeding range. The decline in the cattle and sheep industry has caused additional rangeland to be converted to cropland, which is believed to have eliminated some of the mountain plover habitat in Montana (Fauna west 1991, Knowles and Knowles 1998).

Range management projects to improve forage conditions for domestic livestock are conducted on public and private lands throughout the range of the mountain plover. Examples of these projects include "pitting" to increase moisture retention in the soil, introduction of exotic grass species such as crested wheatgrass, watershed improvement projects, and fire suppression (Graul 1980, Fauna west 1991, Knowles and Knowles 1993). These activities enhance the development of taller vegetation and have eliminated suitable mountain plover nesting habitats in Montana and Colorado (Graul and Webster 1976, Knowles and Knowles 1993).

Effects of the Decline of Burrowing Mammals on Mountain Plover Habitat

The decline of the mountain plover is partially due to the decline of prairie dogs in plover breeding range and the decline of small burrowing mammals in plover winter range (Knowles et al. 1982; Fitton, *in litt.*, 1992, Knopf 1994).

Breeding Range

Mountain plovers occur within prairie dog towns in Colorado, Montana, Wyoming, and Oklahoma (Knowles et al. 1982; Flowers 1985; Shackford 1991; Godbey 1992; Nelson 1993; Edwards, *in litt.*, 1994; T. Byer, *in litt.*, 1997; S. Dinsmore, pers. comm., 1998). Active prairie dog towns in Montana have shorter vegetation and more abundant mountain plover food, and therefore are

better foraging sites than adjacent sites without prairie dogs (Olson 1985). In Phillips County, Montana, mountain plovers were found to selectively use only those active prairie dog towns that also were grazed by cattle; mountain plovers were not seen on inactive or ungrazed prairie dog towns (Knowles et al. 1982). Most of the mountain plover nests found on survey transects in Phillips County during the past 6 years were located on prairie dog towns (S. Dinsmore, pers. comm., 1998). The largest population of mountain plovers in Montana occurs on prairie dog colonies, and between 1992 and 1996, prairie dog occupation of these colonies was reduced by as much as 80 percent as a result of sylvatic plague (J. Grensten, pers. comm., 1998). Mountain plover numbers along prairie dog transect routes within the area affected by plague declined from 80 in 1991 to 19 in 1997, but increased to 27 in 1998 following some recovery of the prairie dog population (S. Dinsmore pers. comm. 1998). We believe that the best information available indicates that mountain plovers in Phillips County are dependent on the activities of prairie dogs. Because mountain plovers breeding in Montana represent a significant part of the species total population, eradication of prairie dogs in Montana would not only be detrimental to local conservation of plovers (Knowles and Knowles 1998), but also could impact their viability range-wide.

In Wyoming, prairie dogs on the Thunder Basin National Grassland effectively maintain the vegetative characteristics required by mountain plovers. To maintain these characteristics in the absence of prairie dogs, more intensive grazing by domestic livestock or native ungulates, or burning, would have to be conducted (T. Byer, pers. comm., 1998). The importance of prairie dogs to mountain plover habitat on the Pawnee National Grassland in Colorado was recently recognized following a significant reduction in habitat caused by record rainfall there in 1995. Prairie dogs on the Grassland have been effective in maintaining the vegetative structure suitable for nesting mountain plovers, while the vegetation at similar sites without prairie dogs is now too tall or dense to be suitable habitat for mountain plovers.

Prairie dog abundance and distribution has been reduced by up to 98 percent across the species range due to concerted efforts aimed at eradication of prairie dogs, extensive habitat reduction and fragmentation, and sylvatic plague (Marsh 1984, Whicker

and Detling 1993, Miller et al. 1994, W. Gill, Service, *in litt.* 1995).

Prairie dog control continues to occur on private and public lands throughout the mountain plover's breeding range. Prairie dog conservation efforts now being implemented at black-footed ferret recovery sites in southeastern Wyoming (56 FR 41473) and north-central Montana (59 FR 42696) will prevent prairie dog control from threatening the success of the ferret recovery efforts. Mountain plovers at these sites will be incidentally protected by these efforts, but similar strategies are not in place throughout the species range. Outbreaks of sylvatic plague continue to occur, and no measures are available to effectively prevent or minimize the negative effect of plague on prairie dog populations.

Prairie dog towns also are threatened by land use conversion (Knowles and Knowles 1993). Further loss of prairie dog towns within the current breeding range of the mountain plover would be detrimental to plover conservation. Conversely, the conservation of the mountain plover can be enhanced by implementing strategies to increase the distribution and abundance of prairie dogs on breeding habitat.

Wintering Range

Some wintering habitat in California continues to be maintained in suitable conditions by the activities of giant kangaroo rats and California ground squirrels (Knopf and Rupert 1995). We estimate that the federally listed giant kangaroo rat occupies less than about 2 percent of its former range due primarily to conversion of grassland habitat to agriculture and urbanization, and secondarily to other incidental human activities and control of California ground squirrels (52 FR 283). Further loss of giant kangaroo rat colonies within the current winter range would be detrimental to plover conservation. Conversely, the conservation of the mountain plover can be enhanced by implementing strategies to increase the distribution and abundance of giant kangaroo rats on wintering habitats.

Oil, Gas, and Mineral Development in Mountain Plover Breeding Habitat

Oil and gas leasing and development commonly occur throughout the breeding range of the mountain plover. Ongoing development of natural gas resources in southwest Wyoming now exceeds the rate of development projected 3 years ago, and the volume of natural gas suspected to occur could make the rate of development the highest in the Nation (R. Amidon, BLM, pers. comm., 1998). Oil and gas

development requires construction of individual well pads, access roads, travel corridors, and pipelines (Brockway 1992). Roads present a direct hazard for a variety of reasons.

Mountain plovers nest on nearly level ground (often near roads), adults and chicks often feed on or near roads, and roads may be used as travel corridors by mountain plovers, all of which make plovers susceptible to being killed by vehicles (McCafferty 1930, Laun 1957, Godbey 1992, Knowles and Knowles 1996). Chicks and adults are vulnerable to stress caused by human disturbance, and chicks require shading by adults to avoid heat (Graul 1975). Because adults may abandon chicks during distraction displays (Graul 1975), any human activity that elicits distraction displays is likely to increase the vulnerability of chicks to stress. Thus, development of oil and gas resources could adversely affect mountain plover habitat or cause the death of individuals (Brockway 1992).

Mineral resources found within the range of the mountain plover include coal, uranium-vanadium, bentonite, and hard rock minerals. Many of these resources occur on public lands and are commonly mined using surface mining techniques. Up to 25 percent of the mountain plover habitat at the Antelope Coal Mine in Converse County, Wyoming, has been affected by mining disturbance in the past (K. Edwards, *in litt.*, 1994), but mountain plover sightings at the coal mine have remained fairly stable in recent years, and the habitat impacts may not have affected population levels (B. Postovit, Powder River Eagle Surveys, pers. comm., 1998). However, other surface coal mining is proposed in Wyoming that may impact mountain plovers or their habitat (M. Jennings, U.S. Fish and Wildlife Service, *in litt.*, 1998).

B. Overutilization for Commercial, Recreational, Scientific Educational Purposes

Prior to the passage of the Migratory Bird Treaty Act in 1916, mountain plovers were commercially hunted for food. There is no recent evidence that mountain plovers are overutilized for any purpose.

C. Disease or Predation

Disease-related factors are not known to be a problem to the species. Mountain plovers are most vulnerable to terrestrial and avian predators as eggs and chicks, and are only rarely killed as adults. Potential avian and terrestrial predators include the prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanjus ludovicianus*), swift fox (*Vulpes velox*),

ground squirrels (*Spermophilus* sp.), and coyote (*Canis latrans*) (Graul 1975). Nest predation at the Pawnee National Grassland has ranged between 15 to 74 percent from 1969 to 1994 (Graul 1975, Miller and Knopf 1993, Knopf and Rupert 1996). A high rate of nest predation by swift fox at the Pawnee National Grassland in 1993 and 1994 may have been due to temporarily reduced prey resources, and is not believed to be a factor in the long-term decline of the mountain plover population (Knopf and Rupert 1996).

D. The Inadequacy of Existing Regulatory Mechanisms

Protecting the mountain plover and its habitat is complicated because its breeding and wintering habitats occur over a wide geographic area, which includes private and public land, and numerous State and Federal authorities. Federal laws that provide protection of mountain plovers include the Federal Land Policy and Management Act, Federal Onshore Oil and Gas Leasing Reform Act, Endangered Species Act, Fish and Wildlife Coordination Act, Federal Agriculture Improvement and Reform Act of 1996, and Migratory Bird Treaty Act. To various degrees, these laws address Federal candidate species, migratory birds, or declining species when evaluating potential effects of federally authorized, funded, or permitted actions. Further, some Federal agencies have adopted policies requiring consideration of declining species during project review, to ensure that Federal actions do not cause a trend toward Federal listing. However, the effectiveness of these existing Federal regulations and policies are highly variable and may not be sufficient to reverse the species' decline throughout its range.

The Forest Service has adopted an interim mountain plover management strategy for oil and gas activities on the Pawnee National Grassland because of the potential impact these activities would have on the species (U.S. Forest Service 1994). The BLM has adopted the same strategy for oil and gas activities under its administration at the same location (U.S. BLM 1994). Spatial buffers to protect mountain plovers have also been adopted on Forest Service and Bureau lands in Colorado, Wyoming, and Utah (M. Ball, Forest Service, *in litt.*, 1997; T. Byer, *in litt.*, 1997; T. Dabbs, *in litt.*, 1997). However, many of the mineral resources occur as split estate ownership, where the surface is owned by the Federal government but the subsurface minerals are owned by private parties. Strategies adopted by Federal agencies to protect mountain

plovers are not as effective on split estate lands because the Federal Government has less regulatory authority over private surface activities. In southwest Wyoming the "checkerboard" pattern of alternating private and public land (Federal and State sections) also reduces the effectiveness of Federal plover conservation measures.

Land exchange or disposal by Federal agencies may also involve mountain plover habitat. For example, land exchanges on the Thunder Basin National Grassland in Wyoming have resulted in transfer of known nesting habitat to private ownership, as well as transfer of nesting habitat on private land to Forest Service ownership (T. Byer, pers. comm., 1998). In Colorado, the BLM has identified numerous parcels of public land that are available for exchange or disposal to the public, including parcels in Park County known to be mountain plover habitat (L. Deike, BLM, *in litt.*, 1997). Disposal of these lands requires review by the BLM, yet the candidate status of the mountain plover may not be effective as a mechanism to retain all breeding sites in public ownership (E. Brekke, BLM, pers. comm., 1998). While federal ownership of mountain plover habitat is not necessary to insure conservation, retaining known habitat in federal ownership reduces the burden of conservation on private landowners.

The mountain plover is now classified as endangered in Canada, threatened in Nebraska, a "species of special interest or concern" in Montana, Oklahoma, and California, and designated a "species in need of conservation" in Kansas (Wershler and Wallis 1986; Flath 1984; E. Hunt, California Department of Fish and Game, *in litt.*, 1990; Nebraska Game and Parks Commission 1992; Oklahoma Department of Wildlife Conservation 1992; Kansas Department of Wildlife and Parks 1992). The mountain plover is currently believed to be extirpated from North Dakota and South Dakota (Faanes and Stewart 1982). Only California and Nebraska have laws requiring evaluation of State-listed species through a consultation process. States other than those identified above have not given the mountain plover any special designation. In 1995, Colorado, Kansas, Montana, Nebraska, New Mexico, Oklahoma, and Wyoming, designated the mountain plover as a "species of management concern" under the Partners in Flight Program (Service, *in litt.*, 1995). It is not known if the bird has any official designation in Mexico.

State listing can encourage State agencies to use existing authorities to achieve recovery, stimulate research,

and allow redirection of priorities within State natural resource departments. However, without measures to protect the species' habitat, such State laws are generally inadequate to ensure conservation of the species.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Natural Factors Affecting Nesting

Mountain plover nests are often found grouped in localized areas, which suggests a loose colonialism during the breeding season (Graul 1975). Results of studies conducted in Colorado and Montana suggest a high degree of site fidelity in mountain plovers, with both males and females returning to nest within several hundred meters of the previous year's nest site, and banded chicks returning as adults the following year to nest at their natal areas (Graul 1973, Knopf 1996b).

The mountain plover's narrow range of habitat requirements combined with its site fidelity increases its vulnerability to impacts at traditional breeding locales. Although mountain plovers or their habitat may be affected by localized climatic events (Graul 1973, 1975), we do not believe such events have contributed to the historic decline of the species. However, a declining mountain plover population combined with high site fidelity characteristics may increase their vulnerability to such events in the future. For example, the Pawnee National Grassland received 30 cm (12 in) of rainfall in one month during the spring of 1995 (Ball, *in litt.* 1997) which caused vegetation growth in 1995 that averaged 30 cm (12 in) in height, thereby eliminating mountain plover nest site characteristics. Independent surveys determined that mountain plover abundance on the Pawnee National Grassland has declined by as much as 90 percent compared to the pre-1995 surveys (Ball, *in litt.*, 1997; F. Knopf, *in litt.*, 1997). In 1998, mountain plovers were not observed at their traditional nesting sites on the Pawnee National Grassland, suggesting that the deteriorated habitat conditions have caused mountain plovers to abandon much of this area (F. Knopf, *in litt.*, 1998). Similarly, researchers witnessed the destruction of all nests and chicks in a given area during a single flash flood event in 1997 in central Montana (C. Knowles, pers. comm., 1998). Therefore, climatic events that render areas unsuitable for nesting may mean that birds who return to that area for nesting must expend additional time and energy locating a suitable alternative area. This search may result

in a decreased reproductive success for that year. The long-term effect of such naturally occurring catastrophes on mountain plover viability is not known, but populations at low abundance are more vulnerable to extirpation by such events. Naturally occurring events can increase the risk of extirpation at local breeding sites.

Manmade Factors Affecting Nesting

In addition to loss of habitat, human disturbance during the nesting period may directly impact mountain plovers due to their sensitivity to stress (Wershler and Wallis 1986). Mountain plover chicks less than 2 weeks old may die in 15 minutes if shade is not available on days when the temperature exceeds 27° C (81° F) (Graul 1975). Adults have been known to abandon eggs after being disturbed on the nest, and adults also may die from stress (Graul 1975). Consequently, any human activity that significantly modifies behavior by adults will not only increase the exposure of chicks to natural elements, but also will increase the vulnerability of adults to stress-related mortality.

Grasshoppers that occur throughout the breeding range of the mountain plover can reach population levels considered a threat to agriculture, and stimulate grasshopper control measures. Although cooperative grasshopper control programs between the Animal and Plant Health Inspection Service (APHIS) and private land owners have been abandoned, federally-subsidized control can be implemented if a severe grasshopper outbreak occurs and congressional funding is provided (L. McEwen, Colorado State University, pers. comm., 1998). Grasshopper control methods can reduce the abundance of grasshoppers by more than 90 percent, as well as reduce the abundance of nontarget insects (Fair et al. 1995). Although control is designed to reduce rather than eradicate grasshoppers, mountain plover productivity may be influenced by a reduction in prey abundance (Animal and Plant Health Inspection Service 1987, Graul 1973, Knopf 1996b, Knopf and Rupert 1996).

In addition, mountain plovers are at risk from increased metabolism of DDE residues if their foraging behavior is altered to compensate for this reduced insect abundance (U.S. Environmental Protection Agency (EPA) 1975, Fair et al. 1995). Grasshopper control subsidized by APHIS is designed to minimize impacts to wildlife species; however, due to the reduction in Federal programs to control grasshopper infestations, private landowners may choose control methods that increase

the contaminant risk to mountain plovers. Therefore, grasshopper control on breeding habitat is considered a potential threat to mountain plovers.

Manmade Factors—Wintering

In California, pesticides are applied to cultivated fields during the 5 months that mountain plovers occupy these wintering habitats (Knopf 1996b). Birds are exposed to pesticides by adsorption through the skin, preening, ingestion, and inhalation (Driver et al. 1991). To investigate the potential threat of pesticides to mountain plovers, adults were collected from wintering habitats and eggs were collected from breeding habitats (F. Knopf, *in litt.*, 1991). The adults and eggs were analyzed for concentration of organochlorines (hydrocarbon pesticides), selenium, and heavy metals. Forty whole-body samples of adults from the San Joaquin Valley had residues of DDE (a principal environmental metabolite of DDT) ranging from near 1 to 10 parts per million (L. Carlson, Service, *in litt.*, 1992; A. Archuleta, Service, pers. comm., 1995). Twenty-two of the 54 eggs collected in Colorado and Montana had DDE residues similar to those found in the wintering birds.

Although these DDE residues in eggs do not appear detrimental to mountain plover reproduction, residues found in adults may cause death to some individuals if they are mobilized to the brain (U.S. Environmental Protection Agency 1975). While average selenium concentrations found in samples from winter habitats are below thresholds that would cause concern for population level effects, individual mountain plovers may be at risk in some locations (J. Skorupa, Service, pers. comm., 1993; A. Archuleta, pers. comm., 1995). Heavy metal concentrations were within acceptable thresholds (A. Archuleta, pers. comm., 1995).

We have confirmed that the field application of 27 pesticides is responsible for killing numerous species of birds throughout the Nation (R. Smith, U.S. Fish and Wildlife Service, *in litt.*, 1992). Diazinon, dimethoate, mevinphos, and chlorpyrifos are included on this list of 27 pesticides, and are commonly applied to a variety of agricultural crops in Imperial County and the Central Valley of California from November through February (California Department of Pesticide Regulation, *in litt.*, 1998). Ten other pesticides identified by the Service (R. Smith, *in litt.*, 1992) as toxic to birds also are used in Imperial County and the Central Valley, but primarily during times when mountain plovers are absent. Studies conducted in the San

Joaquin Valley, California, to determine exposure of mountain plovers to organophosphates and carbamates were inconclusive. Cholinesterase activity levels of mountain plovers from the exposed site were consistently higher than those at the reference site, yet significant cholinesterase inhibition was not detected in any mountain plover (W. Iko, USGS-Biological Resources Division, *in litt.*, 1997).

Conclusion

In summary, threats to mountain plovers occur at both breeding and wintering locales. Conversion of rangeland to croplands has been significant on breeding habitat with about 30 percent of rangeland in the Great Plains now converted to crops. The cultivated lands now interspersed with prairie in the southern part of the plover's breeding range are hypothesized to represent a reproductive sink, which may significantly impact maintenance of a viable population. Similarly in the San Joaquin Valley, a significant wintering area, only 60,700 ha (150,000 ac) of the valley bottom remain currently uncultivated, and less than half of that may qualify as preferred habitat. Throughout the breeding range, bison are functionally extinct, prairie dogs have been considerably reduced, and current domestic livestock grazing management does not always promote the vegetative and bare ground structure required by mountain plovers. Similarly, the native herbivores that once maintained wintering habitats in California are either functionally or virtually extirpated. Oil and gas development occurs on core breeding sites on the Pawnee National Grassland, and is presently developing rapidly in southwest Wyoming. Rangeland grasshopper control may impact mountain plover productivity on breeding habitat, and mountain plovers are exposed to pesticide use while on wintering habitat.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the mountain plover in determining to issue this proposed rule. The present distribution and abundance of mountain plovers is at risk given the potential for these impacts to continue. Federal listing under authority of the Act is the only mechanism we can presently identify that ensures protection to the mountain plover throughout its life cycle and throughout its range, on both public and private lands. Therefore, based on this evaluation, the preferred action is to list the mountain plover

(*Charadrius montanus*) as a threatened species. While not in immediate danger of extinction, we believe the mountain plover is likely to become an endangered species in the foreseeable future unless measures are taken to reverse the decline resulting from the above described threats.

Critical Habitat

Critical habitat is defined in section 3(5)(a) of the Act as: (I) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection and; (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. The term "conservation" as defined in section 3(3) of the Act means "to use and the use of all methods and procedures necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary," i.e., the species is recovered and can be removed from the list of endangered and threatened species.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) the species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. We find that designation of critical habitat for the plover is not prudent because there would be no additional benefit to the species beyond that conferred by listing it as threatened. The reasons for this conclusion, including the factors considered in weighing the potential benefits against the risks of designation, are provided below.

Potential benefits of critical habitat designation derive from section 7(a)(2) of the Act, which requires Federal agencies, in consultation with us, to ensure that their actions are not likely to jeopardize the continued existence of listed species or to result in the destruction or adverse modification of

critical habitat of such species. Critical habitat, by definition, applies only to Federal agency actions. The 50 CFR 402.02 defines "jeopardize the continued existence of" as meaning to engage in an action that would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. "Destruction or adverse modification" of critical habitat is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical. Thus, in the section 7(a)(2) consultation process, the jeopardy analysis focuses on potential effects on the species' populations, whereas the destruction or adverse modification analysis focuses on the value of habitat to the species. However, both jeopardizing the continued existence of a species and adversely modifying critical habitat have similar standards and similar thresholds for violation of section 7 of the Act. Biological opinions that conclude that a Federal agency action is likely to adversely modify critical habitat but is not likely to jeopardize the continued existence of the species for which critical habitat has been designated are extremely rare historically; none have been issued in recent years.

The mountain plover's distribution and biology are particularly relevant to the not prudent determination, as it relates to the section 7 consultation process discussed above. The mountain plover is a neotropical migratory bird found in 11 different States in the western and southwestern United States and Mexico. It occupies grasslands or sites with grassland characteristics, including manmade landscapes such as sod farms and cultivated fields, and areas heavily grazed by cattle. Mountain plovers commonly occur on public lands at both breeding and wintering locales. The best-documented mountain plover breeding areas include lands managed by either the BLM or Forest Service in Montana and Colorado. Breeding and wintering mountain plovers occur on other Federal lands in each of these States, as well as in Wyoming, Utah, New Mexico, and California. The habitat in the other locations may be managed by the above agencies, or in a few cases by the

Service or the Department of Defense. In addition to their occurrence on Federal lands, mountain plovers also occur on private lands which may be enrolled in Federal programs that support commodity production. Federally sponsored activities on private land will receive the benefit of section 7 consultation, regardless of whether or not critical habitat is designated.

As stated above, the mountain plover is a migratory bird that has a wide distribution throughout its breeding and winter range. While mountain plovers demonstrate a degree of fidelity to breeding locations, specific nest site locations can vary from year to year depending on availability of essential habitat elements. Studies of mountain plovers on winter habitat in California have shown that winter site fidelity is poorly developed, and flocks of birds may travel over 55 km (33 miles (mi)) between alternate foraging sites. Further, the mountain plover demonstrates an affinity for sites with a mosaic of short vegetation and bare ground. These attributes are subject to change annually in proportion and distribution due to either natural (e.g., fire, succession, seasonal precipitation) or human-caused (e.g., grazing intensity, range management) events. It would be impractical to designate specific geographic locations as critical habitat when the essential elements of that habitat may shift temporally and spatially across the landscape.

Designation of critical habitat may provide a minor benefit in that it may assist in securing funding or acquiring land for conservation. In some cases, the designation of critical habitat may provide some benefits to a species by identifying areas important to the species' conservation, including habitat that is not presently occupied and that may require restoration efforts to support recovery. In some cases, the designation of critical habitat serves to notify Federal agencies of the presence of a listed species on land they administer. However, in this case, the Service, the BLM, and the Forest Service are all aware of the presence of the mountain plover on their lands, and in some cases currently perform affirmative management actions for this species.

Listing of the mountain plover as a threatened species also publicizes the present vulnerability of this species. Any designation of critical habitat for this species could reasonably be expected to increase the potential threat of vandalism or intentional destruction of the species habitat. In light of the vulnerability of this species to vandalism, the intentional destruction

of its habitat (for example tilling nests, tilling grassland habitat), or disturbance caused by birders, the designation of critical habitat and the publication of maps providing locations and descriptions, as required for the designation of critical habitat, would reasonably be expected to increase the degree of threat to the species and its habitat, increase the difficulties of law enforcement, and further contribute to the decline of the mountain plover.

Therefore, because the mountain plover is widely distributed on Federal lands and also may occur on private lands enrolled in Federal programs, the designation of critical habitat would provide little additional benefit beyond that provided by the jeopardy standard under section 7 regulations. In addition, the mountain plover's affinity for habitat elements that are likely to change frequently at both breeding and wintering locales strongly suggest that the biological value of any critical habitat designation would be short lived. Lastly, designation brings about the potential for an increased risk of intentional destruction of birds or their habitat. Consequently, we have determined that the designation of critical habitat for the United States population of the mountain plover is not prudent.

Available Conservation Measures

Potential conservation measures to reverse the declining trend for this species might include incentives to landowners to leave some cultivated areas unplanted until plover eggs have hatched, grazing plans for native range that encourage high grazing intensity in plover nesting areas, haying and grazing on existing Conservation Reserve Program tracts to manage for the grass height and density required by nesting plovers, and seeding criteria for new Conservation Reserve Program tracts that would encourage establishment of native shortgrass prairie species in preference to taller grasses. The Service is initiating discussions with the Natural Resources Conservation Service to explore ways, such as the Conservation Reserve Enhancement Program, that these measures might be implemented on private land.

Conservation measures provided to a species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and leads to the implementation of conservation actions by Federal, State, County, and private agencies, groups, and individuals. The Act provides for

possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Such actions are initiated by us following listing. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Endangered Species Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer informally with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(1) provides that all Federal agencies shall utilize their authorities in furtherance of the purpose of the Act by carrying out programs for the conservation of species listed pursuant to the Act. Further, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us. Consequently, Federal listing will cause all Federal agencies to consider mountain plover conservation needs during their review of activities they may fund, authorize, or carry out.

Section 10(a)(2)(A) of the Act allows for the incidental taking of federally listed species on private lands, where no Federal agency action exists, provided the applicant adopts a habitat conservation plan (HCP) to minimize the degree of take while furthering the conservation of the species. We anticipate that HCPs will be requested should the mountain plover become a federally listed species. We encourage and will participate in the development of HCPs to ensure that mountain plovers can be conserved throughout their range while authorizing incidental take associated with otherwise lawful activities. We believe that habitat modification techniques shown to be effective for the mountain plover can be incorporated into HCPs that may be implemented at breeding or wintering locales.

A unique Memorandum of Agreement (MOA) was signed in 1995 by the Secretary of the Department of the Interior and the Governor of Colorado. The purpose of the MOA is to address the conservation needs of declining species in Colorado, with a goal of preventing their decline to a point at which Federal listing could be needed. The mountain plover is mentioned specifically in this MOA, and a work group now exists to address its needs. We have participated diligently with the work group to pursue the goals of the MOA and believe that the MOA can be an effective vehicle to promote and implement mountain plover conservation actions in Colorado, and perhaps encourage similar conservation actions in adjoining States.

Mountain plovers occur on lands administered by the Service, Forest Service, BLM, and other agencies. For all public lands where mountain plovers occur, the Act would require the appropriate land management agency to evaluate potential impacts to mountain plovers that may result from activities they fund, authorize, or carry out. The Act requires consultation under section 7 of the Act for activities on private lands, including tribal lands, that may impact the survival and recovery of the mountain plover, if such activities are funded, authorized, or permitted by Federal agencies. The Federal agencies that may be involved as a result of this proposed rule include the Service, BLM, Forest Service, APHIS, Bureau of Indian Affairs, Natural Resources Conservation Service, Farm Services Agency, Department of Defense, Department of Energy, Department of Justice, and the EPA.

Federal agency actions that may require conference and/or consultation as described in the preceding paragraphs include:

(1) Removing, thinning or altering vegetation. Mountain plover nest sites have short vegetation, while taller vegetation may be required by chicks for shade and hiding cover;

(2) Modifying topography and soils at breeding sites. Mountain plover nest sites are on land with less than 5 percent slope, and usually have at least 30 percent bare ground. Any activity that alters one of these characteristics would likely be detrimental;

(3) Domestic livestock grazing management. The current state of knowledge indicates that domestic livestock grazing intensity influences the quality of mountain plover habitat. Review of grazing management proposals would be necessary to determine their compatibility with the mountain plover and its habitat. Those

proposals that adversely affect a species or its habitat (e.g., altering vegetative structure or composition that destroys suitable habitat characteristics) would require reasonable and prudent alternatives or reasonable and prudent measures to minimize incidental take;

(4) Controlling burrowing rodents. Prairie dogs, giant kangaroo rats, and California ground squirrels are known to create suitable conditions for mountain plovers;

(5) Conversion of untilled grassland to tilled land. While mountain plovers are found on grasslands, they are attracted to cultivated lands for foraging opportunities and nesting, which makes them vulnerable to effects from tilling and pesticide application. Therefore, cultivated lands are likely a reproductive sink. Therefore, Federal programs that encourage conversion of grasslands to cultivated land could be detrimental to the conservation of the mountain plover;

(6) Human activities near nesting mountain plovers. Federal proposals or permits for activities that would create disturbance during the nesting period could interfere with normal nesting behavior and result in the death of eggs, chicks and/or adults;

(7) Registration of pesticides. We have documented that numerous pesticides are toxic to birds during field application and some of these pesticides are used while mountain plovers occupy breeding and wintering habitats;

(8) Oil, gas, or mineral development on known nesting or wintering habitat. The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife. The prohibitions, codified at 50 CFR 17.21 and 17.31, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any such species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and conservation agencies.

Under certain circumstances, permits may be issued to carry out otherwise prohibited activities involving threatened wildlife species. Regulations governing permits are codified at 50 CFR 17.32. Such permits are available for scientific purposes, enhancement of propagation or survival of the species,

educational purposes, zoological exhibition, incidental take in connection with otherwise lawful activities, and/or other special purposes consistent with the purposes of the Act. Requests for copies of the regulations regarding listed wildlife and inquiries about prohibitions and permits may be addressed to the Permits Branch, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225-0207 (telephone 303/275-2370; facsimile 303/275-2371).

We adopted a policy on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable, at the time a species is proposed for listing, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of the listing on proposed and ongoing activities within a species' range. We believe that the actions listed below would probably not result in a violation of section 9:

(1) Activities authorized, funded, or carried out by Federal agencies (e.g., grazing management, agricultural conversions, range management, rodent control, mineral development, oil and gas development, road construction, human recreation, and pesticide application) when such activity is conducted in accordance with any reasonable and prudent measures given by us in accordance with section 7 of the Act;

(2) Within the breeding range, normal farming practices on cultivated lands, prescribed burns, and construction/maintenance activities (e.g., fences, power lines, pipelines, and utility lines) conducted when mountain plovers are not present on breeding habitat. The period when activities would not impact mountain plovers may vary at specific locations, but would usually fall between August 10 and April 1;

(3) Within the wintering range, normal winter farming practices on sod farms and tilled cropland;

(4) Casual, dispersed human activities on foot or horseback at breeding and wintering habitats (e.g., waterfowl hunting, bird watching, sightseeing, photography, camping, and hiking);

(5) Normal, routine domestic livestock grazing, herding, and inspecting, including maintenance of livestock improvement structures; and

(6) Application of pesticides in accordance with label restrictions or County Bulletins that have resulted from Endangered Species Act consultation.

We believe that the actions listed below might potentially result in a violation of section 9; however, possible

violations are not limited to these actions alone:

- (1) Unauthorized collecting or handling of the species;
- (2) The unauthorized destruction of mountain plovers including adults, nests, eggs, and/or young by any human activity, or any human activity resulting in actual death or injury to the species by significantly modifying essential behavioral patterns (e.g., breeding, feeding, sheltering). Examples of human activities may include discing or tilling on cultivated land during the breeding season; land leveling, conversion of grassland to cropland, road construction, water development, range management, mineral development, or off-highway vehicle use, in any season on non-cultivated lands that serve as nesting habitat;
- (3) Application of pesticides in violation of County Bulletins or label restrictions; and
- (4) Interstate or foreign commerce (commerce across State or international boundaries) and import/export (as discussed earlier in this section) without having obtained a threatened species permit. Permits to conduct these activities are available for purposes of scientific research and enhancement of propagation or survival of the species.

Questions regarding whether specific activities, such as changes in land use, will constitute a violation of section 9 should be directed to the Assistant Field Supervisor (see **ADDRESSES** section).

The prohibition against intentional and unintentional "take" of listed species applies to all landowners regardless of whether or not their lands are within critical habitat (see 16 U.S.C. 1538(a)(1), 1532(1a), and 50 CFR 17.3). Section 10(a)(1)(B) authorizes us to issue permits for the taking of listed species incidental to otherwise lawful activities such as agriculture, surface mining, and urban development. Incidental take permits must be supported by an HCP that identifies conservation measures that the permittee agrees to implement to conserve the species, usually on the permittee's lands. For example, no-till practices that leave tall stubble may successfully cause plovers to avoid cropland. On fallow ground, the type of farm implement used and the timing of the use may be significant in producing more plovers. These and other techniques to avoid plovers or produce plovers can be examined by producers in the development of an HCP. A key element in our review of an HCP is a determination of the plan's effect upon the long-term conservation of the species. We would approve an HCP, and issue a section 10(a)(1)(B) permit, if the

plan would minimize and mitigate the impacts of the taking and would not appreciably reduce the likelihood of the survival and recovery of that species in the wild.

Public Comments Solicited

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited.

We are seeking comments particularly concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the mountain plover;
- (2) The location of any additional breeding, wintering, or migration sites, including areas in Mexico and Canada;
- (3) Additional information concerning mountain plover distribution, population size and/or population trend;
- (4) Information regarding current or planned land uses, and their possible beneficial or negative impact to the mountain plover or its habitat (e.g., agricultural conversions, oil and gas development, land exchanges, range management, habitat conservation plans, conservation easements);
- (5) Information regarding mountain plovers on their wintering habitats (e.g., preferential use of natural versus agricultural habitats, habitat distribution and abundance, daily routines, night roosts, site fidelity, population abundance);
- (6) Additional biological or physical elements that best describe mountain plover habitat, that could be considered essential for the conservation of the mountain plover (e.g., burrowing rodent colonies, vegetation, food, topography);
- (7) Information relative to mountain plover distribution and productivity on cultivated lands, shortgrass prairie, and shrub-steppe habitats;
- (8) Alternative farming practices that will reduce or eliminate the take of mountain plovers;
- (9) Other management strategies that will conserve the species throughout its range; and
- (10) Information regarding the benefits of critical habitat designation.

Final promulgation of the regulations on this species will take into consideration the comments and any additional information received by us. Such communications may lead to a final regulation that differs from this proposal.

The Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal in the **Federal Register**. Such requests must be made in writing and addressed to the Assistant Field Supervisor (see **ADDRESSES** section).

Executive Order 12866 requires each agency to write regulations that are easy to understand. We invite your comments on how to make this rule easier to understand including answers to questions such as the following: (1) Are the requirements in the rule clearly stated? (2) Does the rule contain technical language or jargon that interferes with its clarity? (3) Does the format of the rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Would the rule be easier to understand if it were divided into more (but shorter) sections? (5) Is the description of the rule in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the rule? What else could we do to make the rule easier to understand?

Send a copy of any comments that concern how we could make this rule easier to understand to: Office of Regulatory Affairs, Department of the Interior, room 7229, 1849 C Street, NW, Washington, DC 20240. You may also e-mail the comments to this address: Execsec@ios.doi.gov.

National Environmental Policy Act

We have determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared concerning regulations adopted pursuant to section 4(a) of the Act of 1973, as amended. A notice outlining our reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

Required Determinations

This rule does not contain any new collections of information other than those already approved under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned Office of Management and Budget clearance number 1018-0094. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information, unless it displays a currently valid control number. For additional information concerning permit and associated requirements for threatened species, see 50 CFR 17.32.

References Cited

A complete list of all references cited herein, as well as others, is available upon request from the Assistant Field Supervisor (see ADDRESSES section).

Author. The primary author of this proposed rule is Robert Leachman (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and

recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend 50 CFR Part 17, as set forth below:

PART 17—[AMENDED]

1. The authority citation for Part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1554; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

2. Amend § 17.11(h) by adding the following, in alphabetical order under “BIRDS” to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
BIRDS							
* Plover, mountain	* <i>Charadrius montanus.</i>	* U.S.A. (western)	* Entire	* T	* 	NA	* NA
*	*	*	*	*	*		*

Dated: December 23, 1998.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

[FR Doc. 99–3628 Filed 2–12–99; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 648

[Docket No. 981223319-8319-01; I.D. 112598B]

RIN 0648–AJ44

Fisheries of the Northeastern United States; Northeast Multispecies and Monkfish Fisheries; Monkfish Fishery Management Plan

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS proposes regulations to implement the Monkfish Fishery Management Plan (FMP). The FMP proposes an overfishing definition and a 10-year rebuilding schedule to meet the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and implementation of the following measures: Target total allowable catch levels (TACs) for each of two management areas; limited access; effort limits through days-at-sea (DAS) allocations; trip limits and incidental

harvest allowances; minimum size and mesh limits; gear restrictions; spawning season closures; a framework adjustment process; permitting and reporting requirements; and other measures for administration and enforcement. The intended effect of this rule is to stop overfishing and rebuild the monkfish stock.

DATES: Comments on the proposed rule must be received on or before March 26, 1999.

ADDRESSES: Comments should be sent to Jon C. Rittgers, Acting Regional Administrator, NMFS, Northeast Regional Office, One Blackburn Drive, Gloucester, MA 01930. Mark the outside of the envelope “Comments on Monkfish FMP.”

Comments regarding the collection-of-information requirements contained in this proposed rule should be sent to the Acting Regional Administrator and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Washington, DC 20503 (Attention: NOAA Desk Officer).

Copies of the FMP, its Regulatory Impact Review (RIR) and the Initial Regulatory Flexibility Analysis (IRFA) contained within the RIR, and the Final Environmental Impact Statement (FEIS) are available from Paul J. Howard, Executive Director, New England Fishery Management Council (NEFMC), Suntaug Office Park, 5 Broadway (US Rte. 1), Saugus, MA 01906–1036.

FOR FURTHER INFORMATION CONTACT: E. Martin Jaffe, Fishery Policy Analyst, 978–281–9272.

SUPPLEMENTARY INFORMATION: In its report of March 1997, the 23rd Northeast Regional Stock Assessment

Workshop (23rd SAW) concluded that monkfish is overfished. On September 30, 1997, NMFS submitted to the New England and Mid-Atlantic Fishery Management Councils (Councils) the Report on the Status of the Fisheries of the United States, prepared pursuant to section 304 of the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act (SFA) on October 11, 1996. This report identified 76 overfished stocks, including monkfish, as well as 10 stocks that were approaching an overfished condition. Each Council was notified that it is required to develop measures to end overfishing and rebuild stocks that are overfished within its geographical area of authority. The purpose of this proposed action is to initiate management of monkfish (*Lophius americanus*) pursuant to the Magnuson-Stevens Act.

Development of an FMP actually began in 1991, when the NEFMC and the Mid-Atlantic Fishery Management Council (MAFMC) each requested approval to develop a management plan for monkfish. The Administrator, Northeast Region, NMFS (Regional Administrator), suggested that the NEFMC and MAFMC convene a joint committee to evaluate prospects for managing this fishery. That committee found that there were sufficient reasons for concern, including the recent declines in survey indices, the declining size of landed monkfish, the potential for shifts in effort due to management restrictions on other species, evidence of an expanding directed fishery, and a rapidly growing market for monkfish tails and livers.