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Western Colorado Field Supervisor
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RE: Comments on the Mountain Plover Proposal for Listing under the Endangered Species Act and Proposed Special 4(d) Rule

Dear Mr. Leachman,

Pursuant to the settlement agreement reached between the U.S. Fish and Wildlife Service (the Service) and the Center for Native Ecosystems et al. in re: Center for Native Ecosystems v. Norton, Civil Act. No. 02-Z-348, I, Steven C. Forrest, submit these comments as the peer reviewer selected by Plaintiffs with respect to the proposed Endangered Species Act listing and special 4(d) rule for the Mountain Plover (*Charadrius montanus*) (hereinafter "Plover") published in the Federal Register on December 5, 2002 (67 Federal Register 72396-72407).

I base my review on the following criteria:

1. Whether new information considered by the Service, in my opinion, constitutes "best available scientific and commercial data";
2. Whether it was reasonable for the Service to reach the conclusions that it did from the new data;
3. Whether any new information is cause for a change in the Service's original determination;
4. Whether there are critical issues the Service failed to consider.

Original Basis for the Proposed Listing

The Service originally proposed listing the Plover as Threatened pursuant to the Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.) on February 16, 1999 (64 Federal Register 7587-7501). The decision to list at that time was based on the following information:

- 1) Annual declines of breeding birds of 2.7% from 1966 to 1996 based on surveys conducted by the U.S. Geological Survey (BBS surveys);

- 2) Continental declines of the total plover population from 63% from 1966 to 1991 based on extrapolation from counts on winter habitat;
- 3) Total population estimates of 8,000-10,000 individuals in 1995 based on extrapolation of winter counts.

The Service reviewed site-specific population trends for a number of "hotspots" in the breeding and wintering range. These included:

- 1) The "breeding stronghold" in Weld County, CO;
- 2) Kiowa County, CO;
- 3) Park County, CO;
- 4) Phillips and Blaine Counties, MT; and
- 5) Thunder Basin Grassland, WY;

In addition, wintering "hotspots" included the Imperial Valley, CA and the southern Central Valley, CA.

The following threats were identified consistent with the ESA's criteria:

- 1) loss of habitat, in the form of historic and continuing loss of breeding and wintering habitat; negative impacts from rangeland management; declines in burrowing mammals; oil, gas, and coal bed methane development;
- 2) inadequacy of regulatory mechanisms;
- 3) other natural or man-made factors, including life history characteristics, such as loose colonial breeding and site fidelity, which make the species more vulnerable to anthropogenic impacts and potential extirpation of isolated populations; grasshopper control; and use of pesticides.

With respect to population declines, the Service cited a number of authorities that pointed to tillage on cultivated lands as a key factor affecting population declines. These included:

1. Knopf and Rupert (in press): "...reduced productivity as a result of tillage on cultivated lands used for nesting may explain the annual rate of decline of this species." 64 Fed. Reg. 7591.
2. Knowles: "...nesting has not been observed in cultivated fields in Montana" *Id.* at 7589.
3. Knopf, Shackford and Leslie: "...tilling can destroy mountain plover nests, eggs, and chicks." *Id.* at 7592.

Most importantly, the Service agreed with several authorities how cultivated land adjacent to intact grassland habitat acts as a population "sink," drawing birds into ostensibly attractive habitat that is subsequently disturbed through agricultural activities. 64 Fed Reg. 7593.

The Service's original rule was independently peer reviewed at the time it was promulgated in 1999, and the results reflected in the publication of a new proposal in 2002 incorporating the views of reviewers at that time. 67 Fed. Reg. 72400. I will therefore not address the conclusions of the Service reached through the original rule, only to note that based on the criteria above, the Service's conclusion to list the Plover was supported by the data and analysis presented at the time.

The New Information

The Service reopened the comment period on its proposal to list the plover in 2002. 67 Federal Register 72396-72407 (2002). The new information included, among other data, updated information on the following:

- 1) Information that confirmed a continental population of between 8,000 and 10,000 individuals (No change);
- 2) "Precipitous" declines in the "breeding stronghold" in Weld County, CO, from an estimated 1280 to >100;
- 3) Declines in the estimated population in Phillips and Blaine Counties, MT, from 2,000 to 700;
- 4) An increase in the estimate of the total population in Park County, CO, from 1000 to 1500-2,000;
- 5) No new information on Kiowa County, CO;
- 6) Decline on Thunder Basin, WY, from 150 to 20;
- 7) Identification of new breeding habitat in Wyoming, New Mexico, and Mexico.

The Service identified continuing threats to Plover habitat. These include:

1. Conversion of habitat to cropland. FWS provided data that grassland conversion to tilled land is ongoing in the breeding range of the plover, though the direct impacts could not be stated with certainty, except that Knowles and Knowles (2001) identified specific instances in Blaine County, Montana, one of the Service-identified plover "strongholds," where abandonment of breeding locations due to recent tillage of adjacent grasslands was observed.

Other evidence that conversion to cropland is harming Plovers includes Knowles and Knowles (2001) report that lands in crop agriculture represented 34% of the landscape at their study sites in Montana in 1991 and increased to 47% by 1999. In addition, all or portions of 24 sites with active Plover use were converted to crop production from 1991 to 1999, and only one Plover was subsequently observed at those sites (Knowles and Knowles 2001). I would also note that Connor et al. (2001) include rangeland losses for Colorado and Montana within the range of the Plover of from 1-5% in Colorado from 1982-1997 and as much as 10% in Montana. This is consistent with a general trend of habitat loss within grasslands in North America generally. Hill County, Montana, for example, is typical of many areas with cropland production containing rangeland that can be converted to marginal cropland. Range and pastureland declined there by 13% from 1982-1987 (Connor et al. 2001).

2. Conversion of habitat to municipal development. The Service also described conversion of Plover habitat to municipal developments in South Park, CO, one of the largest remaining strongholds given the Service's data. 67 Federal Register 72396, 72401.

3. Coal-bed methane development. The Service notes gas development and coal bed methane projects in Wyoming threaten known or potential Plover nesting habitat and considers these land uses to be a potential threat to breeding Plovers (67 Federal Register 72396, 72402). This is consistent with threats to plovers noted by others from road development attendant to full CBM field development (e.g., Knowles and Knowles 2001: "...[v]ehicle impacts may be a significant mortality factor for young broods traveling on gravel roads."), wastewater disposal, excavation of storage pits, human disturbance (e.g., Dinsmore 2001, egg overheating) and other potential habitat disturbances.

4. Decline of burrowing mammals. The Service notes that additional new information strengthens the relationship between prairie dogs and plovers (see also, Dinsmore 2001), and that ongoing declines in prairie dogs are supported by additional recent evidence. 67 Fed Reg. 72402. This is consistent with additional information supplied to the Service in support of a petition to list the black-tailed prairie dog (Id.) and a more recent petition to list the white-tailed prairie dog. The Service states that prairie dog declines are ongoing, but suggests that plague may be more significant than poisoning at the present time. I do not know of evidence that would support this last statement, although it may be correct. The amount of poison applied by APHIS/ADC in 2000 was 679 gas cartridges, 92,545 aluminum phosphide tablets, and 9100 kg of zinc phosphide-treated bait (U.S. Department of Agriculture 2001). Using average recommended application rates (4 grams of zinc phosphide/burrow entrance (Tietjen 1976), 2-4 tablets/burrow for aluminum phosphide (U.S. Department of Agriculture 1994) and 1 gas cartridge/burrow), WS poisoned about 2,300,000 burrow entrances/year from 1990-2000. Density of burrow entrances varies from place to place depending on prairie dog density, with a range of 50-150 burrows/ha (Forrest et al. 1985). WS-based poisoning thus involved about 15,000-46,000 ha/year during the 1990s. In 2001, following the U.S. Fish and Wildlife's determination that the black-tailed prairie dog is "warranted but precluded" from listing pursuant to the ESA (U.S. Fish and Wildlife Service 2001), federal poisoning declined to 1,019 gas cartridges per year, 86,118 tablets per year, and 6,400 kg of oats per year (U.S. Department of Agriculture 2001), about a 20-30% decrease. However, the data only represents one year, insufficient to suggest a trend in reduction of poisoning, and does not account at all for any privately-conducted poisoning.

5. Restricted Winter Range. The Service notes continued susceptibility of degradation of wintering habitat from urbanization and changes in agricultural practices. This is consistent with comments provided by attendees at a public hearing held in February, 2003 (U.S. Fish and Wildlife Service 2003). The comments about economic susceptibility of sheep industry and land use changes suggest that this artificially maintained habitat is susceptible to a number of potential risk factors that could severely impact habitat suitability in the short term. California wintering grounds are essential to the Plover's conservation, as Christmas Bird Counts in California comprised some 85% of nationwide counts and 95% of all birds counted during the period from 1980-1997 (Hunting et al., in press). Land use practices in the future will dictate the success of wintering plovers in this valley (Wunder and Knopf, in press).

Comments on the new data in relation to the proposed listing

Whether new information considered by the Service constitutes "best available scientific and commercial data"

The Service has provided substantial new information. I am not aware of additional sources on population trends or threats to plovers that the Service has not considered.

Whether it was reasonable for the Service to reach the conclusions that it did from the new data

The new information supplied by the Service, in the aggregate, supports the Service's original decision to list. While the Service has identified additional nesting habitat, for the most part these nesting populations occur in small, isolated situations. While these new records are not insignificant insofar as they represent important population genetic outliers and opportunities to retain regional distribution of the Plover, their contribution numerically does not alter the general trend that plovers are declining and at risk. Arguably, identification of additional isolated and small populations of plovers only lends further evidence of the fragility of overall population stability over time. It is well documented that fragmentation and small population size expose isolated groups to rapid local extinction through random demographic and environmental events (Brussard and Gilpin 1989; Miller et al. 1996). Knowles and Knowles (1999) describe how range restriction has resulted in concentration of Plovers in fewer locations—86% of Plovers observed over 8 years are now restricted to just 3 locations.

Whether any new information is cause for a change in the Service's original determination;

The new information does not provide a basis for changing the Service's original determination.

Whether there are critical issues the Service failed to consider.

In my opinion, the Service's proposed listing is supported by the data. The Service could consider the following, although the conclusion reached would not be changed because the following either further support the Service's result or provide no additional information that would change the result:

1. Prairie dog shooting. Prairie dog shooting is ongoing throughout the plover breeding range. The impacts to prairie dogs are suppression of populations and potential incidental take of plovers. Consideration of this impact would support the Service's decision to list.
2. Prairie dog distribution. Several states have completed prairie dog inventories since promulgation of the original rule (B. Luce, pers. comm.). Notably, Colorado has produced an aerial estimate that would suggest substantially more prairie dogs than previously believed to exist in the state. This estimate has not been verified on the ground, however, and moreover, even if further study verifies the occurrence of larger numbers of prairie dogs, plovers have not been documented in larger numbers as a result. Neither the trend data nor the threat analysis would be changed by consideration of this information.

The Special Rule

The Service's proposal also provides for a special rule under Section 4(d) of the Endangered Species Act (16 U.S.C. § 1533(d)) to exempt farming practices from the prohibitions of the Act until December 31, 2004 in Colorado, Kansas, Nebraska, Oklahoma, and Laramie and Goshen Counties in Wyoming (See 67 Federal Register 72396, 72397). Specifically, Plovers would not be protected from crop agriculture and consequent harms to Plover nests, eggs, and individuals.

It is not clear from the proposed rule why a blanket exemption over 5 states is necessary to complete the research project described in the rule. The Service has provided adequate information that points to grassland tillage as a threat to continued population persistence, has posited a reasonable hypothesis for how tillage on cropland adjacent to grasslands works as a population sink, and has documented destruction of nests from tillage. The Service could accomplish the objective of preserving the research activities by simply issuing incidental take permits specific to those landowners or researchers involved in the study. The Service's rationale that providing a blanket exemption would invite greater participation in developing mitigation on private lands could easily be flipped to argue that the incentive for participation in developing mitigation has been removed by such a broad exemption.

Moreover, while the research will undoubtedly provide important new information, the Service will ultimately have to develop a regulatory framework involving the tools it describes in the rule. It might be more productive to allow the research to proceed under permissible take provisions but also begin to design management regimes now. The 3 year delay postpones development of management solutions for plovers on private lands over a substantial portion of the plover's breeding range, including the largest documented existing "stronghold" in Park County, CO. The Service should attempt to narrowly tailor the exemption and provide for more immediate interim steps to mitigate take on private lands prior to completion of the research.

The Service should strike reference to CCAA's at 67 Fed Reg. 72405—CCAA's would only be relevant if the Service or others are developing strategies to avoid listing within the time frame of this listing package. It seems unlikely that CCAA's could be developed in the time frame proposed by the Service for its decision, and therefore these are not relevant in this case.

Conclusion

New information provided by the Service supports the Service's original decision to list. The Service's proposed 4(d) rule should be more narrowly tailored and the Service should provide interim guidance for conservation of plovers on private lands prior to completion of the research given the ongoing population status and continuing threats.

Thank you for the opportunity to comment.

Sincerely,

Steve Forrest

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