



October 11, 2002

Lois Webster Fund Committee of the Audubon Society of Greater Denver
9308 So. Platte Canyon Rd
Littleton, CO 80128

Dear Committee:

In 2002, we initiated a study with the primary goal of estimating survival rates of Mountain Plover chicks on agriculture croplands and observe how different private, agricultural practices affect chick survival. The Greater Denver Audubon Society provided financial support for 25 new and 8 refurbished radio transmitters in order to achieve this goal. The drought conditions in 2002 inhibited us from being able to observe the impact of agricultural practices on chick survival because very few fields were tilled and/or planted. However, we were still able to estimate chick survival and examine movement patterns and utilization of habitats by adults to raise young.

We concentrated our efforts in Weld County, Colorado where a total of 62 nests were found on private, agricultural lands. A total 34 nests (51%) successfully hatched young and we were able to place 26 radio transmitters on adults. Radio transmitters were placed on adults at or near eggs hatching. The radio transmitters weighed approximately 2.2 grams and were placed on adults by attaching the transmitter underneath the mantle feathers on the back using a 5 minute epoxy. This technique allows the radio transmitters to eventually drop off during the molting season, July and August. The average life of the radio transmitters is 56 days, but we had several that lasted much longer. Radio transmitted adults were checked almost daily to determine status of young and habitat location until: 1) signals were lost and/or 2) individuals migrated.

The 26 transmitters that were on birds were spread among different crop types and rangeland types. A total of 18 transmitters were placed on adults using crop fields and 8 using rangeland.

There were a total of 56 eggs that hatched out of 26 nests that were being monitored. Many of these nests had 2-3 egg clutches and a few of these nests that were transmitted never hatched due to predation or abandonment. The total number of chicks that made it to fledge size (approximately 5 weeks post-hatch) was nine. There was one additional chick that is unknown due to the transmitter dropping off the adult. The chick was only about a week from being fully fledged. The number of chicks surviving to fledge size was only slightly

higher on cropland vs. rangeland. This number could change if there was an even number of transmitters placed on both habitat types. The number of Mountain Plover chicks that successful fledged on cropland was six and rangeland was three.

The low survival rate observed on the Mountain Plover chicks was primarily due to predation. Some of the predators observed in the area that are the most likely culprits is the swift fox, coyote, golden eagles, northern harriers, badgers, and prairie falcons. Some of the other incidences that caused chick mortality were vehicles on county roads and over exposure to heat. A few chicks were salvaged after being ran over on county roads and one chick was found dead next to the nest during the day after temperatures reached close to the high 90's. We also had one incident on a prairie dog town where an adult transmitter bird was found dead after being killed by a prairie falcon. The chicks had just hatched and they were missing. There were large egg fragments in the nest which is unusual since the adult generally takes the fragments away from the nest as the eggs are hatching. This would indicate that the adult was killed as the eggs were hatching or close to the time of hatch.

The data collected to understand shifts of adults to raise chicks will be analyzed using spatial statistics in the future. A general observation indicated that five adults did display a shift in habitat usage with their chicks. More importantly, these five adults nested on habitat edges. Two of the five adults shifted from a range to a crop habitat, another two adults shifted from crop to range, and the fifth adult shifted from range to crop to range. The drought this year is thought to have a large influence in this shift. With the lack of rain as the summer went on more suitable habitats were available on both crop and rangeland.

In 2003, we hope to continue estimating chick survival and understand how different land uses may impact survival. In 2003 we propose two directions: 1) continue to look at the role private, agricultural practices have on chick survival, and 2) investigate the role prairie dog towns have on chick survival. Our reasoning for the first proposed direction is a result of the drought conditions in 2002. While our findings provided interesting results, we would like to investigate if these results were spurious due to the extreme environmental conditions. The second proposed direction will provide incite into the interplay between Mountain Plovers and prairie dogs in eastern Colorado. To date, most of the research investigating the role of prairie dogs on Mountain Plovers is conducted in Montana. Investigating either one of these directions is contingent on the funding of radio transmitters.

We would like to place approximately 30 radio transmitters on adults in 2003. Each transmitter cost \$140 making a grand total of \$4,200. We appreciate the support of any funds that the Lois Webster Fund of the Audubon Society of Greater Denver can contribute. All funds would go to the purchase or refurbishing (total of 6) radio transmitters.

Sincerely,

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