

## APPENDIX A. Species Accounts

In this section we present one-page accounts and a one-page map for each bird species detected in 2005 that is of management interest, as designated by either the USFS, Partners in Flight, USFWS and/or the New Mexico State Comprehensive Wildlife Conservation Plan.

All species accounts follow the same format with an overview of our findings, a table of the density estimates by habitat, a comparison of density estimates by habitat and management unit (providing there were sufficient data) and a summary of the findings and prospective for monitoring. In the density estimate tables we present *N*, the number of individuals observed (including between point detections and flyovers), and if *N* was at least 23, we also present *n*, the number of independent observations for each species. These numbers may be different as often several individuals are detected in a single observation, as when birds are in a flock. While the number of individuals observed is of interest, especially for rare species, density estimates are derived using only independent observations. The codes used to describe each project and the habitats where we conducted surveys are listed in Tables 8 and 9.

Table 8. List of projects and project codes used in the species accounts.

Project	Project Code
Monitoring Colorado's Birds	MCB
Monitoring Birds of the Black Hills	MBBH
Monitoring Wyoming's Birds	MWB
Monitoring Wyoming's Birds – Bighorn National Forest	MWB-BI
Monitoring Wyoming's Birds – Shoshone National Forest	MWB-SH
Monitoring the Birds of the Carson National Forest	MBCNF
Monitoring Birds of the Northern Colorado Plateau Network	NCPN

Table 9. List of habitat types and habitat codes by project used in the species accounts.

Habitat Type	Code	Project
Aspen	AS	MCB, MWB, MBCNF
Alpine Tundra	AT	MCB
Burn Areas	BU	MBBH
Foothills Riparian	FR	MBBH
Grassland	GR	MCB, MWB, MBCNF
High-elevation Conifer	HC	MWB-BI
High-elevation Riparian	HR	MCB
Juniper Woodland	JW	MWB
Low-elevation Riparian	LR	NCPN
Mid-elevation Conifer	MC	MWB, MWB-BI, MWB-SH
Mixed Conifer	MC	MCB, MWB, MBCNF

Montane Grassland	MG	MWB-SH
Montane Riparian	MR	MWB, MWB-BI, MWB-SH, MBBH
Montane Shrubland	MS	MCB
Pinyon Juniper	PJ	MCB, MBCNF, MBBH, NCPN
Ponderosa Pine, northern hills	PN	MBBH

Table 10 cont. List of Habitat types by project used in the species accounts.

Habitat Type	Code	Project
Ponderosa Pine	PP	MCB, MBCNF
Ponderosa Pine, southern hills	PS	MBBH
Sage Shrubland	SA	MCB, MBCNF, NCPN
Semi-desert Shrubland	SE	MCB
Spruce Fir	SF	MCB, NCPN
Shrubsteppe	SS	MWB, MWB-BI
Wetlands	WE	MCB
White Spruce	WS	MBBH

The geographic distribution maps in the following accounts depict the locations and relative abundance of species of management interest that were detected on point transects in 2005. Wetland transects (MCB only), since they are line transects, are not depicted in the maps. For more information on wetland species please see the 2005 MCB special species report which will be available for download on our website. The relative abundance scale used in the maps is based on the average number of birds observed per point count *along each transect* where the species was detected, and the scale will vary by species depending on the number of detections of that species. Also, the location of each dot does not necessarily indicate the precise location of the point at which the species was observed, but rather the access point of that transect. It is important to keep in mind that the maps only reflect the abundance and distribution of the species across the sites we surveyed, and should not necessarily be construed to suggest anything about the areas in between. Finally, as a note of caution, species may seem more abundant in certain areas, especially the Black Hills, because the sampling effort is greater within a smaller area and not necessarily because it is in fact more abundant. Therefore, it is important to consider the level of sampling effort in conjunction with the index of abundance when comparing a species' occurrence across the region.

In the summary, we tried to briefly describe the breeding habitat for each species in the CNF, other pertinent information, and evaluate our ability to monitor the species under MBCNF. If we had enough detections to calculate a density estimate for the species and the coefficient of variation was 0.50 or less, we assumed that we will be able to effectively monitor the species and detect a population trend (decline of 3.0% per year) in *at least* 30 years. Although there is yearly variation in the coefficient of variation for each species, typically it does not fluctuate beyond our ability to calculate a density estimate.



**Blue Grouse**  
***(Dendragapus obscurus)***

\*PIF Species of Continental Concern

\*NM-PIF Highest Priority Species for Spruce-fir

\*NM-PIF Priority Species for Mixed Conifer

\*NMDGF – Species of Greatest Conservation Need

In 2005, we detected six Blue Grouse in three habitats on the MBCNF project. We also detected Blue Grouse on the MCB, MWB and NCPN projects. The number of detections, however, was too low to calculate a density estimate for this species in any habitat on any project.

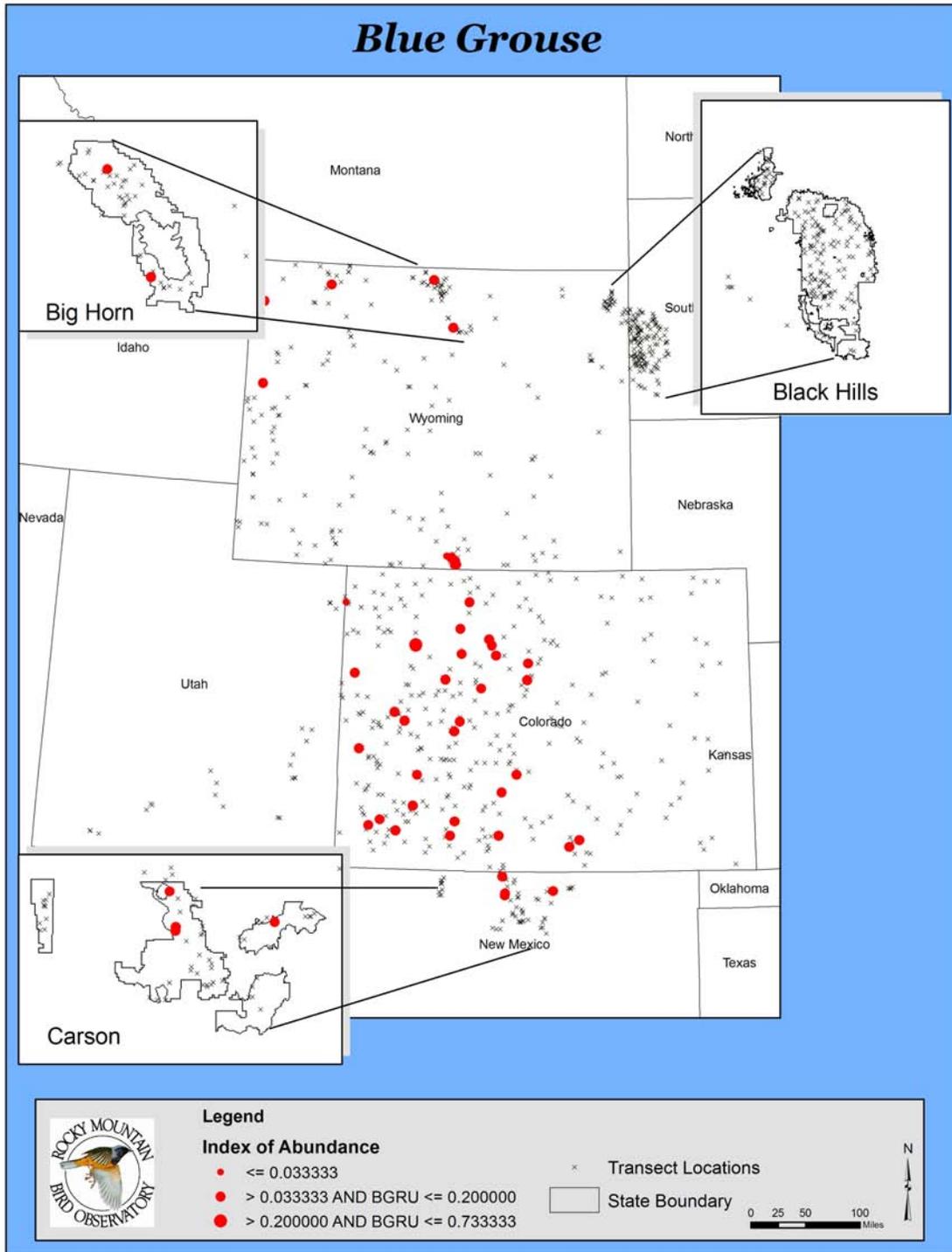
Total number of independent detections, number of individuals, and habitat-specific density estimates for Blue Grouse for the MBCNF monitoring project, 2005.

Habitat	D	LCL	UCL	CV	n	N
AS	ID	--	--	--	--	1
MC	ID	--	--	--	--	2
SF	ID	--	--	--	--	3

D = Density (birds/square kilometer); LCL = lower 95% confidence interval of the density; UCL = upper 95% confidence interval of the density; CV(%) = coefficient of variation of the density; n = number of independent detections; N = number of individuals; ID = insufficient data.

**Summary** – Blue Grouse can usually be found in coniferous forests, aspen, or shrubby lowlands in summer, and some move to higher elevations in the fall to spend the winter (Righter et al. 2004).

We detect this species in low numbers every year especially in mixed-conifer, spruce-fir and aspen habitats. Blue Grouse are often detected along transects and less frequently at point-count stations. Detections of this species are too low, however, to monitor its status through point-count transects under MBCNF. Given interest, however, with several years' data we may be able to pool data across years and habitats and weight observations by habitat area to generate a global detection function for this species and thereby generate an annual forest-wide density estimate that may be robust enough for population-trend monitoring.



**Cooper's Hawk**  
**(*Accipiter cooperi*)**

\*NM-PIF Highest Priority Management Species

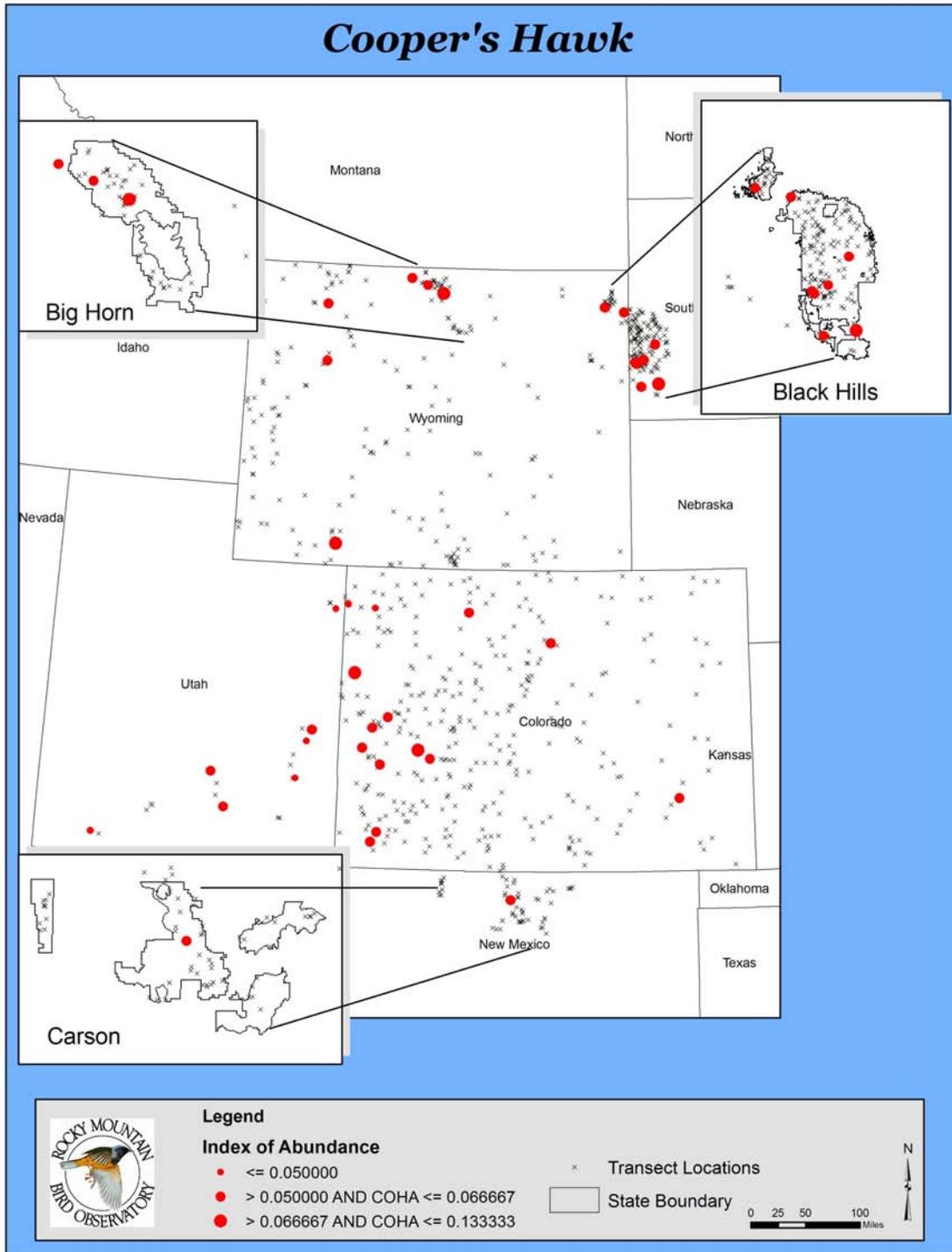
One Cooper's Hawk was recorded in ponderosa pine on the MBCNF project. We detected this species on all of the other RMBO point-transect monitoring projects; however, we did not record a sufficient number of detections to estimate a density in any habitat on any project.

Total number of independent detections, number of individuals, and habitat-specific density estimates for Cooper's Hawk for the MBCNF monitoring project, 2005.

Habitat	D	LCL	UCL	CV	n	N
PP	ID	--	--	--	--	1

D = Density (birds/square kilometer); LCL = lower 95% confidence interval of the density; UCL = upper 95% confidence interval of the density; CV(%) = coefficient of variation of the density; n = number of independent detections; N = number of individuals; ID = insufficient data.

**Summary** – Cooper's Hawk is detected too infrequently to monitor or track this species through point-transects under MBCNF. Effective monitoring will likely require more intensive and focused efforts, probably involving call-response surveys. Given interest, such a program could be implemented cost-effectively as part of MBCNF, with observers using playback to detect Cooper's Hawks and other forest raptors at count stations after point-transect surveys.



**Band-tailed Pigeon**  
**(*Patagioenas fasciata*)**

\*PIF Continental Stewardship Species

\*NM-PIF Habitat Representative Species for Ponderosa Pine

\*NMDGF - Species of Greatest Conservation Need

In 2005, we detected 13 Band-tailed Pigeons in mixed conifer on the MBCNF project and also detected the species on the MCB project. However, the total number of detections for this species was insufficient to calculate a density estimate in any habitat on any project.

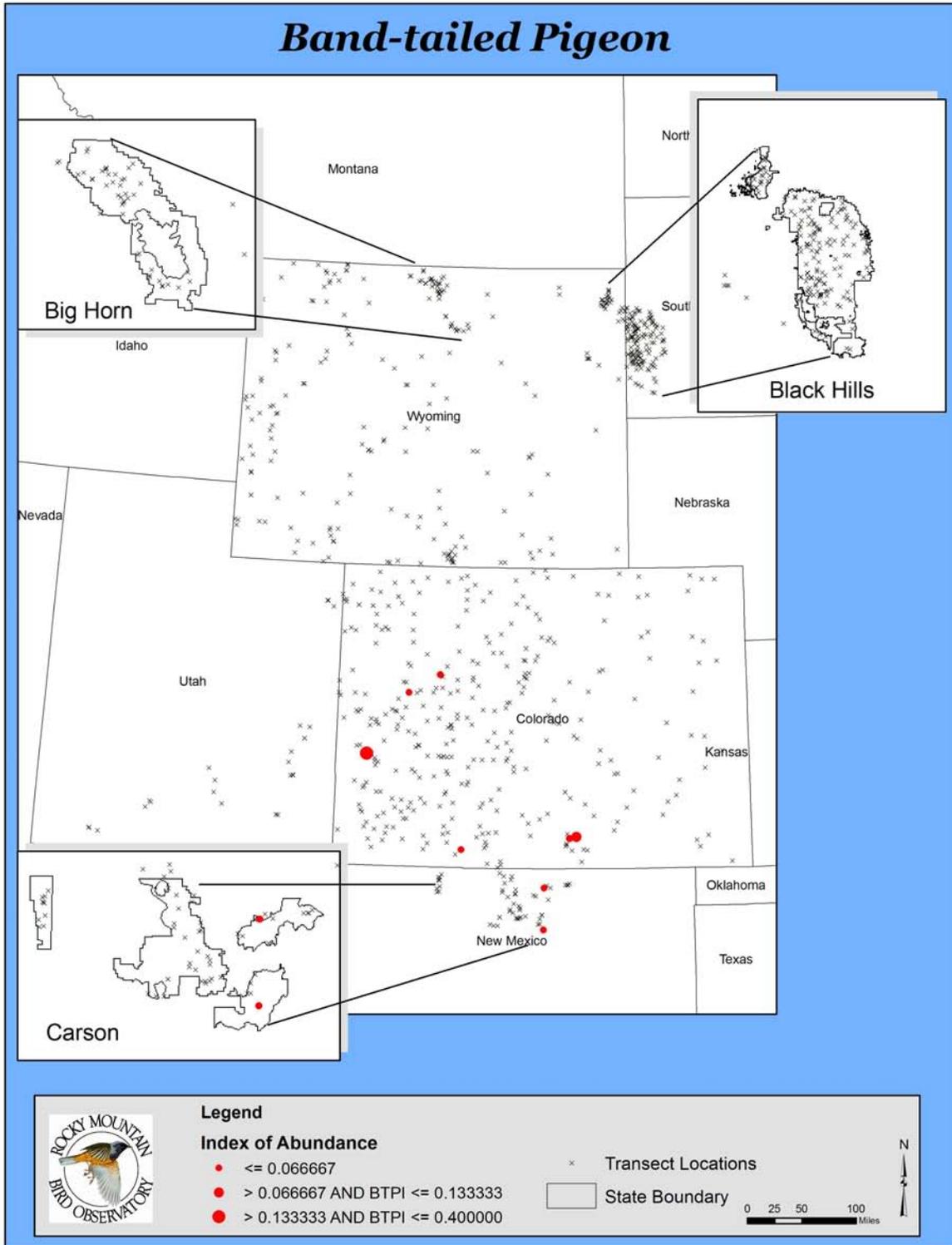
Total number of independent detections, number of individuals, and habitat-specific density estimates for Band-tailed Pigeon for the MBCNF monitoring project, 2005.

Habitat	D	LCL	UCL	CV	n	N
MC	ID	--	--	--	--	13

D = Density (birds/square kilometer); LCL = lower 95% confidence interval of the density; UCL = upper 95% confidence interval of the density; CV(%) = coefficient of variation of the density; n = number of independent detections; N = number of individuals; ID = insufficient data.

**Summary** – Band-tailed Pigeon nests in coniferous forests of all elevations with its territories usually near water. It feeds primarily on wild nuts such as pinyon pine nuts or acorns of Gambel’s oak (Righter et al. 2004).

We detected Band-tailed Pigeons only in mixed conifer habitat in 2005. In previous years we’ve also detected them in spruce-fir, pinyon-juniper and high-elevation grassland habitats. We did not detect this species in sufficient numbers to effectively monitor its population in any one habitat or across habitats through point transects under MBCNF. Given interest, however, with several years’ data, we may be able to pool data across years and habitats and weight observations by habitat area, to generate a global detection function for this species, thereby generating an annual forest-wide density estimate that may be robust enough for population trend monitoring.



## Mourning Dove (*Zenaida macroura*)

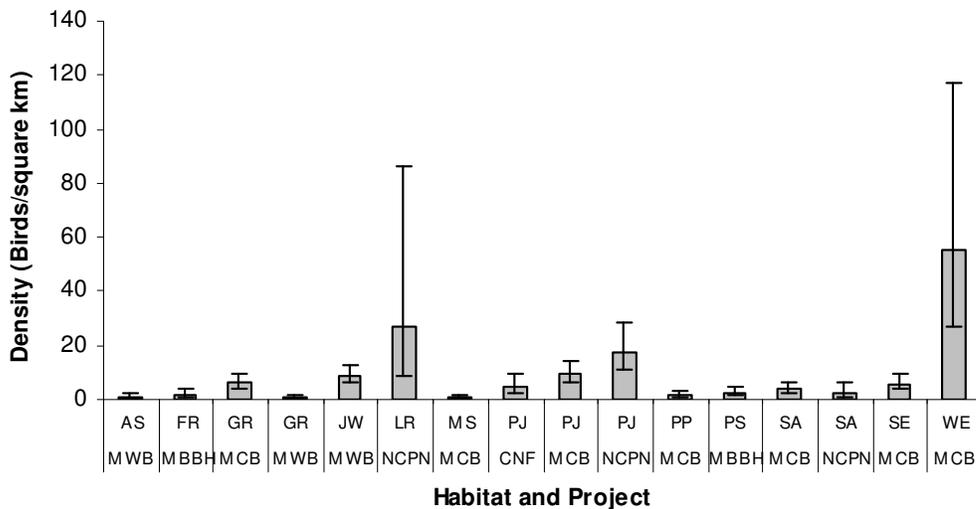
\*NMDGF -Species of Greatest Conservation Need

In 2005, we detected 59 Mourning Doves in three habitats on the MBCNF project. In total, we detected them on all RMBO point-count transect monitoring projects and we provide density estimates for 12 habitats across all monitoring projects for this species.

Total number of independent detections, number of individuals, and habitat-specific density estimates for Mourning Dove on the MBCNF project, 2005.

Habitat	D	LCL	UCL	CV	n	N
PJ	4.69	2.31	9.52	36.0%	41	42
PP	ID	--	--	--	--	12
SA	ID	--	--	--	--	5

D = Density (birds/square kilometer); LCL = lower 95% confidence interval of the density; UCL = upper 95% confidence interval of the density; CV(%) = coefficient of variation of the density; n = number of independent detections; N = number of individuals; ID = insufficient data.



Relative density of Mourning Dove among habitats for all of the RMBO point-count transect monitoring projects, 2005.

**Summary** – Mourning Doves are commonly found in all of the low-elevation habitats in the southern Rocky Mountains. They will often lay their eggs on the ground in open areas. Mourning Doves are listed as a Species of Greatest Conservation Need in the NM Comprehensive Wildlife Conservation Strategy, for the Southern Rocky Mountains Ecoregion, especially in the intermountain basins and big sagebrush shrublands.

We should be able to effectively monitor Mourning Dove through point transects under MBCNF project in at least pinyon-juniper habitat.

