

Checking the Pulse on Our Birds

Using IMBCR trends and an updated Rocky Mountain Avian Data Center (RMADC) to assess the status of species across management scales

Bird populations in North America have declined precipitously over the last 50 years (Rosenberg et al. 2019). Monitoring the status of both species of concern and formerly common but declining species is thus, an important objective for management agencies. However, while national trends can help inform broad priorities and sound the alarm on range-wide declines, management occurs locally and regionally.

Bird Conservancy's Integrated Monitoring in Bird Conservation Regions (IMBCR) program has now collected avian occurrence and density data throughout the western United States (Fig 1.) for over 15 years in some regions. These data enable the program to provide critical trend information on bird populations at multiple scales, from individual management units to state or region-wide. Here, we highlight the utility of these data for managers and decision-makers to monitor both existing priority species and common species in decline by accessing data via our recently updated Rocky Mountain Avian Data Center, RMADC (<https://apps.birdconservancy.org/rmadc/>).



Figure 1. IMBCR monitoring efforts in 2024.

Case Study: Evening Grosbeak

- Road to Recovery tipping point forest specialist showing long term decline
- Managers in different USFS units may wish to address different concerns
- Variation in trends (Fig. 2)
- Opportunity for comparison

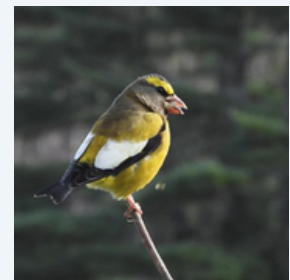


Photo credit: Keith Ramos/USFWS

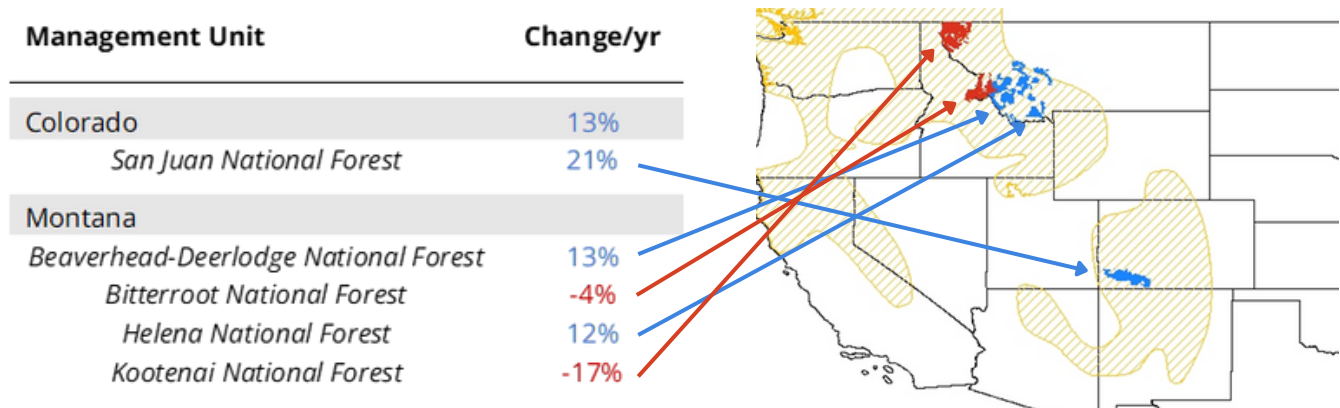


Figure 2. Spatial variation in annual population decline (%) for National Forests across the range of Evening Grosbeak with declining management units shown in red, increasing in blue, and breeding range in yellow (Bird Life International).

Case Study: Savannah Sparrow

- Formerly abundant grassland species in wide decline, but not currently of conservation concern
- Consistent declines (Fig. 3)
- Jurisdictions differ in decline severity implying different causal mechanisms
- Prioritizing the species may be justified



Photo credit: Becky Matsubara

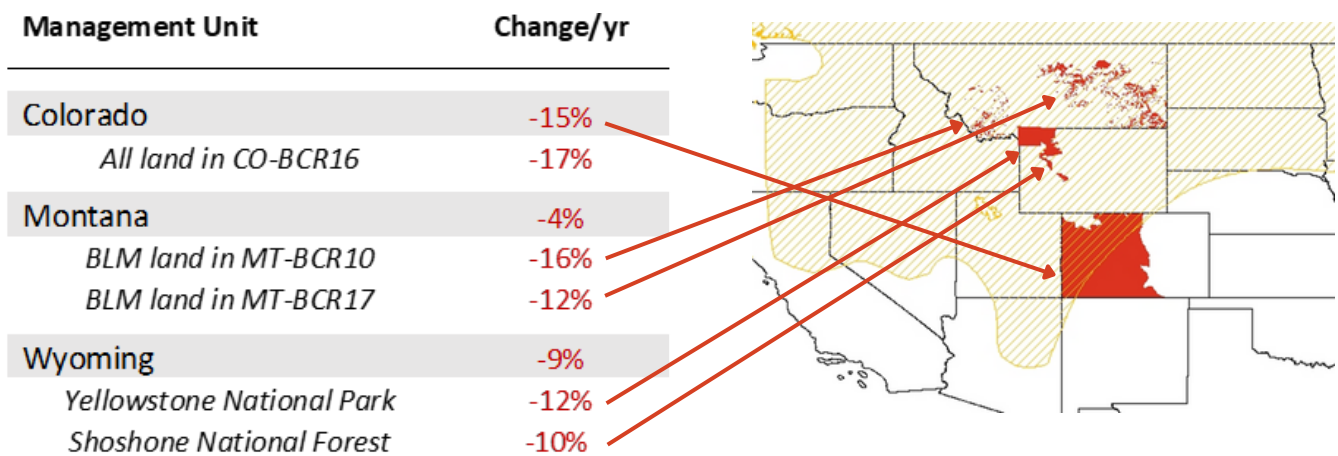


Figure 3. Spatial variation in annual population decline (%) for jurisdictions across the western range of Savannah Sparrow with declining management units shown in red, and breeding range in yellow (Bird Life International).

RMADC: Trends at your finger tips

Visit the Rocky Mountain Avian Data Center (<https://apps.birdconservancy.org/rmadc/>) to view trends for species of interest in your management area (Fig. 4). IMBCR estimates are available for numerous focal areas, termed “strata”, where partners have invested in monitoring (e.g., Bighorn National Forest). The “Superstratum” filter is helpful to find trends for broader regions or states (e.g., the BCR18-portion of Colorado) that provide context for strata. Filter trends by f-value >0.9 to view only robust estimates.

Trend Estimates by Superstratum									
Stratum	Species	Years	Trend based on Density			Trend based on Occupancy			
			Trend	f	95% CI	Trend	f	95% CI	
BCR17	Chestnut-collared Longspur	2009-2023	-12.45	1	(-18.53, -5.58)	-8.4	1	(-13.17, -3.55)	
BLM Lands in BCR 17	Chestnut-collared Longspur	2009-2023	-11.36	0.99	(-19.46, -2)	-7.25	0.98	(-13.8, 0.45)	
MT-BCR17	Chestnut-collared Longspur	2010-2023	-6.85	0.85	(-23.03, 8.24)	-5.39	0.83	(-18.35, 7.14)	
MT-BCR17-All Other	Chestnut-collared Longspur	2009-2011	9.15	0.54	(-94.17, 814.49)	34.41	0.6	(-89.51, 667.25)	
MT-BCR17-BLM	Chestnut-collared Longspur	2009-2023	-7.74	0.89	(-22.15, 7.05)	-6.94	0.88	(-20.98, 5.42)	
ND-All Other	Chestnut-collared Longspur	2013-2023	-15	0.97	(-29.68, 0.91)	-18.82	1	(-30.58, -5.32)	

Figure 4. RMADC output showing trend estimates for a species over multiple strata. Red and blue indicate direction of trend change, and yellow denotes statistically robust estimates.



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