



Landbird Population Trends in the Northern Colorado Plateau Network

Why Monitor Landbirds?

Birds occupy various levels in the food web and play an important role in the flow of energy through ecosystems. Because they can be sensitive to habitat change, birds are good indicators of ecosystem integrity. Data from the relatively natural habitats of Northern Colorado Plateau Network (NCPN) parks provide status and trend information useful in comparisons with more-impacted areas.

How is the Monitoring Done?

NCPN landbirds monitoring assesses trends in breeding-bird species by habitat, rather than by park. During each breeding season, a partner organization surveys 15 transects in each of the three habitats of interest (low-elevation riparian, pinyon-juniper, and sagebrush shrubland) across 11 NCPN parks. Point counts and area searches are also conducted as part of a modified monitoring design at Pipe Spring National Monument (NM).

What's the Most Recent News?

Over 14 years of data collection, 14,273 point-count surveys have been conducted in the 11 parks, detecting 173 unique species. During the 2019 field season, 655 point-count surveys were conducted, detecting 111 unique species. Five new species were detected for this monitoring program: a sora (*Porzana carolina*) in Arches National Park, a bald eagle (*Haliaeetus leucocephalus*) in Curecanti National Recreation Area, a northern saw-whet owl (*Aegolius acadicus*) and a purple martin (*Progne subis*) in Dinosaur National Monument (NM), and an American redstart (*Setophaga ruticilla*) in Canyonlands National Park.

In total, 134 population-density trends were estimated across the three habitats for 2018. Twenty-one of those trends were significant (p-value <0.05), including 16 negative trends and 5 positive trends. There were sufficient sample sizes to estimate the densities of 63 species in at least one of the three habitats surveyed.

A total of 115 individuals of 30 species were recorded in Pipe Spring NM in 2018. Sample sizes were too low for estimation of density trends.

Significant trends in landbird species population density across three habitats in 11 NCPN parks, 2005–2019.

Species	Habitat*		
	LR	PJ	SA
Mourning dove	↓	↓	–
White-throated swift	↓	↓	–
Bushtit	–	↓	–
Rock wren	↓	–	↓
House wren	↑	–	↑
Mountain bluebird	–	↓	–
Yellow warbler	–	–	↑
Grace's warbler	–	↓	–
Black-throated gray warbler	–	↓	–
Green-tailed towhee	–	↑	–
Sagebrush sparrow	–	–	↓
Dark-eyed junco	–	↓	–
Black-headed grosbeak	↓	↑	–
Western meadowlark	–	↓	–
Brown-headed cowbird	↓	–	–
House finch	↓	–	–

*LR=low-elevation riparian; PJ=pinyon-juniper; SA=sage shrubland



Bald eagle.

How is the Information Used?

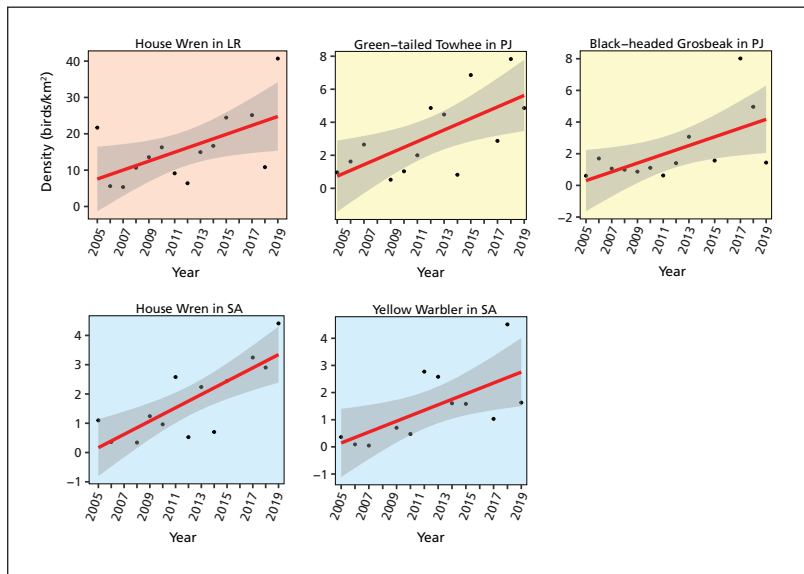
In order to know which species to manage for, park managers need to know which species are present. Data from this monitoring is also useful for park planning documents, such as Natural Resource Condition Assessments and State of the Park reports, and demonstrates the value of unimpaired national-park landscapes and their value to bird communities.

Where are Landbirds Monitored?

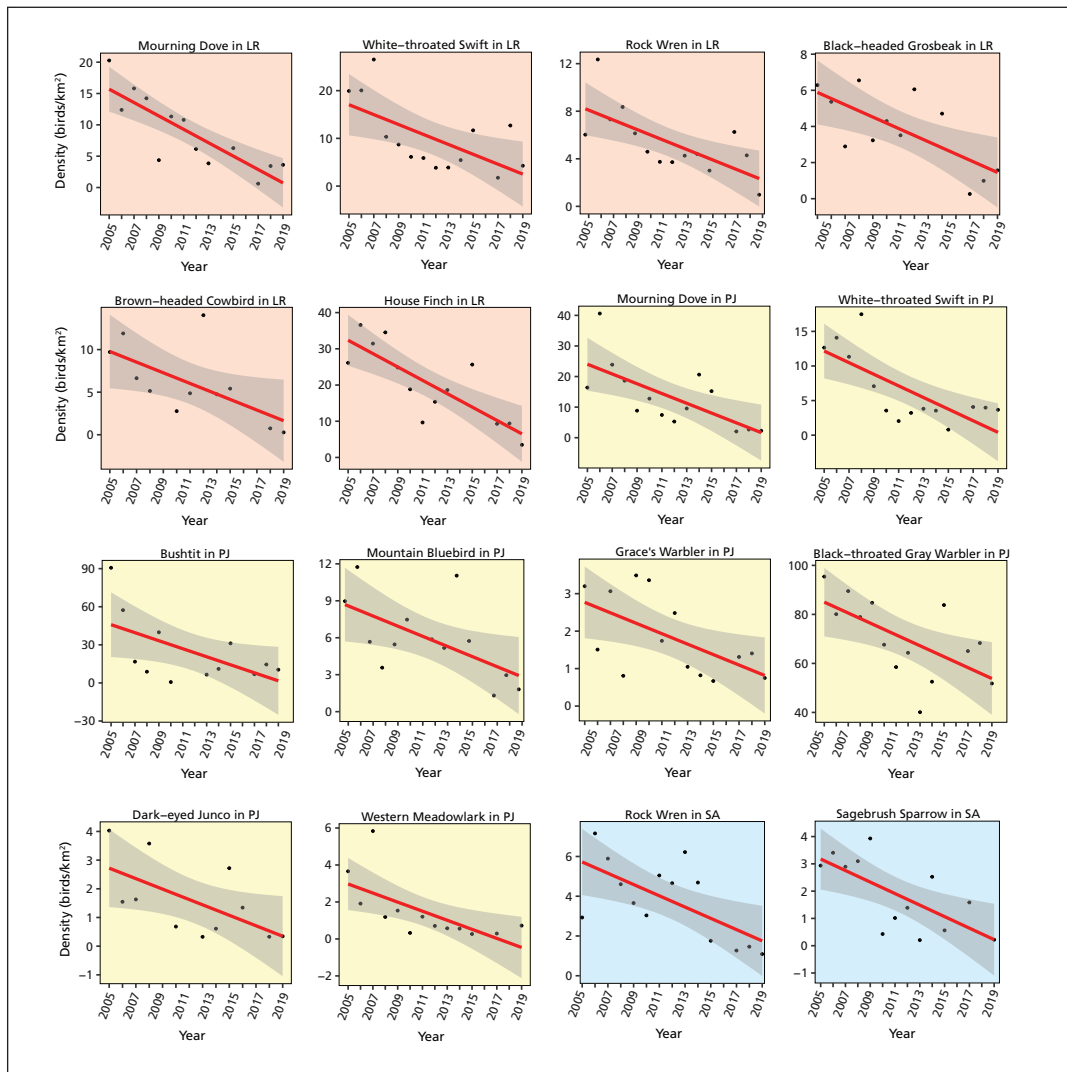
NCPN landbirds monitoring occurs at 12 network parks: Arches, Black Canyon of the Gunnison, Bryce Canyon, Canyonlands, Capitol Reef, and Zion national parks; Colorado, Dinosaur, Fossil Butte, Natural Bridges, and Pipe Spring national monuments; and Curecanti National Recreation Area.

How Can I Learn More?

Visit www.nps.gov/im/ncpn or contact dustin_w_perkins@nps.gov.



Five increasing trends were estimated for species in low-elevation riparian (LR), pinyon-juniper (PJ), and sage shrubland (SA) habitats.



Sixteen declining trends were estimated for species in low-elevation riparian (LR), pinyon-juniper (PJ), and sage shrubland (SA) habitats.