Landbird Population Trends in the Northern Colorado Plateau Network, 2021 Field Season



Mourning dove.

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 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.

What's the Most Recent News?

Data collected over 16 years of monitoring reveal eight significant (p-value < 0.05) trends in population density. Six trends are declining; two are increasing (see table). In all, 117 population-density trends have been estimated across the three habitats—but most are not statistically significant.

Significant trends in landbird species population density across three habitats in 11 Northern Colorado Plateau Network parks, 2005–2021.

Species	LR	PJ	SA
Mourning dove	↓	↓	–
White-throated swift	↓	↓	–
Rock wren	↓	–	↓
Vesper sparrow	–	↑	–
Lark sparrow	–	–	↑

LR = low-elevation riparian
PJ = pinyon-juniper
SA = sagebrush shrubland

A total of 656 point-count surveys were conducted at 11 parks, detecting 105 unique species. Two new species were detected for this monitoring program: a Swainson's hawk (*Buteo swainsoni*) in Bryce Canyon National Park and a Wilson's snipe (*Gallinago delicata*) in Colorado National Monument. The snipe was also a new species for Colorado National Monument. New species detected for the monitoring program at individual parks were a lazuli bunting (*Passerina amoena*) at Bryce Canyon National Park, a northern mockingbird (*Mimus polyglottos*), a western kingbird (*Tyrannus verticalis*), and two Wilson's warblers (*Cardellina pusilla*) at Colorado National Monument, a Brewer's sparrow (*Spizella breweri*), brown-headed cowbird (*Molothrus ater*), and lark sparrow (*Chondestes grammacus*) at Natural Bridges National Monument, and a greater roadrunner (*Geococcyx californianus*) and ruby-crowned kinglet (*Regulus calendula*) at Pipe Spring National Monument.

Since monitoring began in 2005, a total of 15,139 point-count surveys have been conducted in the 11 parks, detecting 178 unique species.

How is the Information Used?

In order to know which species to manage for, park managers need to know which species are present. Declines in certain species or habitats—or increases in others—can alert managers to potential ecosystem change. This information can also be combined with other data, such as climate variables, to do vulnerability assessments (https://www.nps.gov/articles/000/ncpn_birds-and-drought.htm).

Data from this monitoring are useful for park planning documents, such as Natural Resource Condition Assessments and State of the Park reports, and demonstrate the value of unimpaired national park landscapes and their value to bird communities.

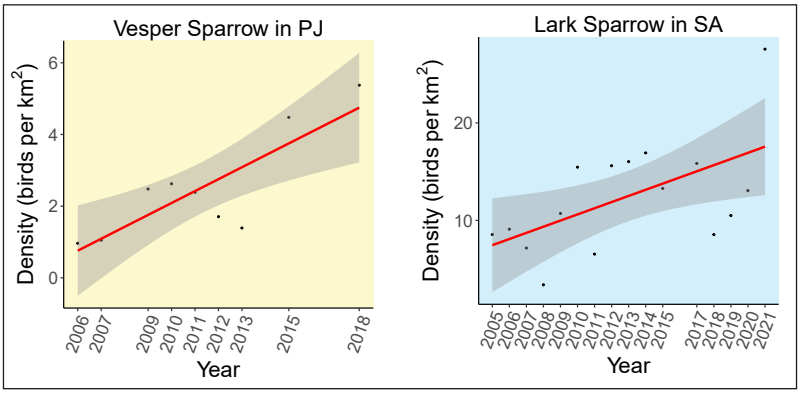
Where are Landbirds Monitored?

NCPN landbirds are monitored 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.

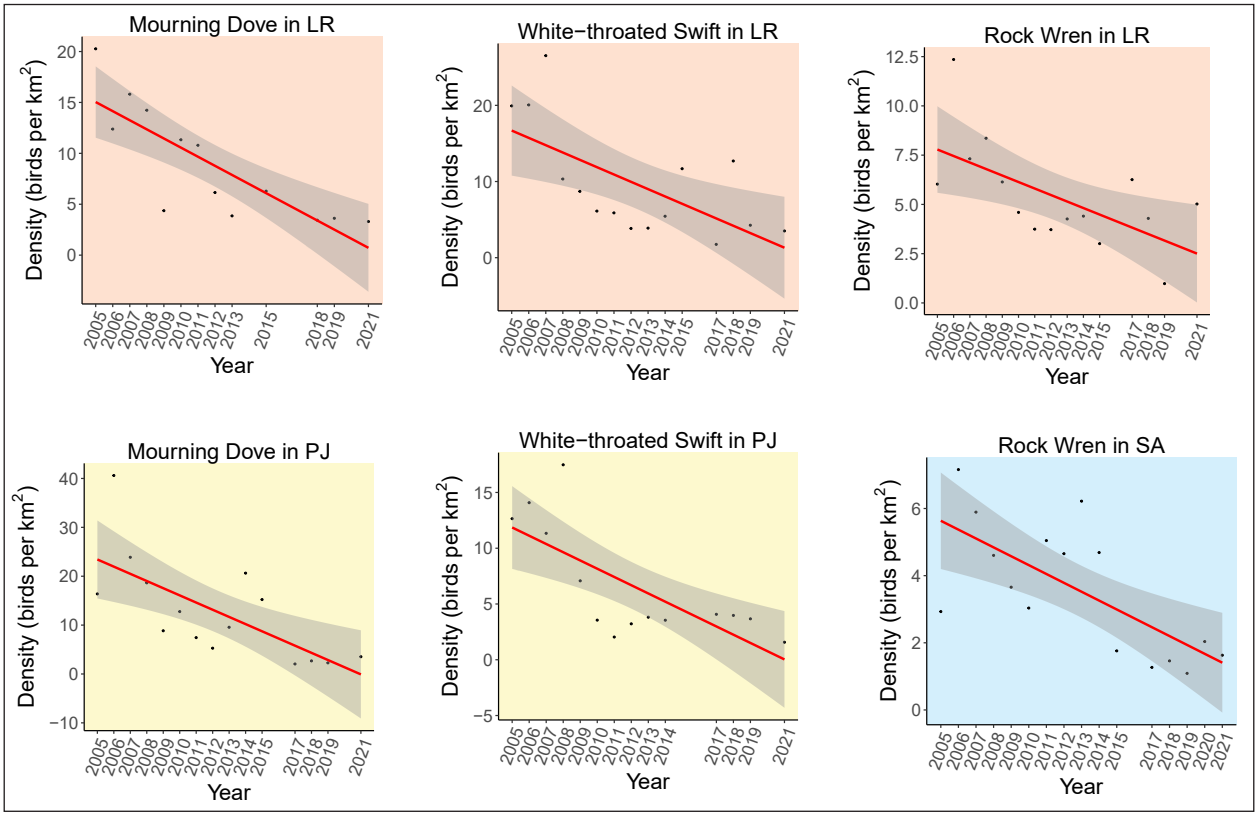
How Can I Learn More?

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

Arches NP • Black Canyon of the Gunnison NP • Bryce Canyon NP • Canyonlands NP • Capitol Reef NP • Cedar Breaks NM • Colorado NM • Curecanti NRA • Dinosaur NM • Fossil Butte NM • Golden Spike NHS • Hovenweep NM • Natural Bridges NM • Pipe Spring NM • Timpanogos Cave NM • Zion NP



Two increasing trends were estimated for species in pinyon-juniper (PJ) and sage shrubland (SA) habitats.



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

Results in this brief were summarized from S. G. Roberts, E. L. Tymkiw, Z. S. Ladin, and W. G. Shriver. 2022.
Status and Trends of Landbird Populations in the Northern Colorado Plateau Network: 2021 Field Season