



Landbird Monitoring

Importance

By occupying various levels in the food web, birds play an important role in the flow of energy through ecosystems. They consume insects as nestlings, rely on insects and plants for food as adults, and also serve as food resources for higher-trophic bird and mammal species. Because they can be sensitive to habitat change, birds are good indicators of ecosystem integrity. They also have strong public appeal; unlike many other animal taxa in the xeric Colorado Plateau, birds are diurnal and, thus, more visible to park visitors. Data from the relatively natural habitats of Northern Colorado Plateau Network (NCPN) parks will provide status and trend information useful in comparisons with more impacted areas.

Long-term Monitoring

The Northern Colorado Plateau Network (NCPN) is partnering with the Rocky Mountain Bird Observatory (RMBO) to assess breeding-bird species trends in three different habitats: riparian, pinyon-juniper, and sage-shrubland. NCPN survey plots will contribute to the RMBO's broader, landscape-scale breeding-bird monitoring program, which includes more than 1,000 plots in 11 states in the Rocky Mountains and Colorado Plateau. During a five-minute count on park transects, a field crew records (1) the distance to the bird, (2) how the bird was detected (visually, aurally), (3) the sex of the bird, (4) the bearing of the bird from the recorder, and (5) habitat information. Ecologists then examine population trends relative to habitat, density, and diversity of species.



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Black-chinned hummingbird.

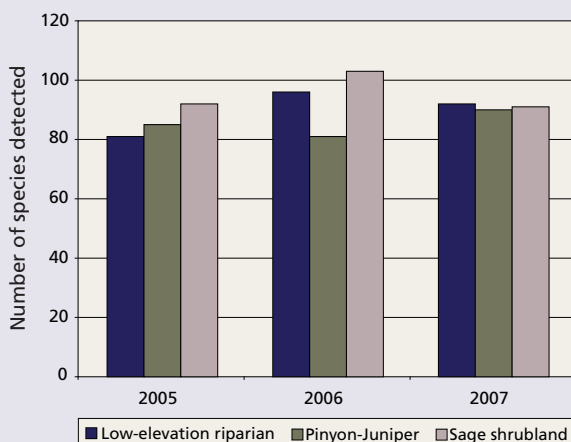
Status and Trends

Annual surveys began in 2005. In 2007, surveys detected a total of 10,576 individual birds of 128 species on all transects, with 90–92 species detected in each of the three habitats. When pooled together, the 2005–2007 data yielded robust density estimates for 41 species and moderately robust estimates for 11 additional species. The NCPN and RMBO will seek to estimate long-term, habitat-specific population trends for these 52 species, which represent more than 90% of all individual birds observed during 2005–2007. Initial trend estimates will occur after five years of data collection; that is, after the 2009 field season. These data will act as building blocks for determining longer-term trends in each successive year, eventually allowing the network an 80% probability of detecting 3% change over 30 years. Trends larger than 3% will likely be detected sooner. The fourth year of NCPN landbird monitoring has been completed; analyses of these data will occur this winter.

Contact

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Species richness in NCPN habitats surveyed



Network park units where birds are being monitored

Arches NP	Curecanti NRA
Black Canyon of the Gunnison NP	Dinosaur NM
Bryce Canyon NP	Fossil Butte NM
Canyonlands NP	Natural Bridges NM
Capitol Reef NP	Pipe Spring NM
Colorado NM	Zion NP

NP = National Park; NM = National Monument; NRA = National Recreation Area