

Pinyon Jay Surveys in the Gila National Forest End of FY 2022 Progress Report

Kristine Johnson, Nathan Petersen, and Lynn Wickersham
Animas Biological Studies
June 2022

The Pinyon Jay (*Gymnorhinus cyanocephalus*) is an immediate priority Species of Greatest Conservation Need (SGCN) in New Mexico (New Mexico Department of Game and Fish 2016). It is listed as vulnerable on the Red List of Threatened Species by the International Union for the Conservation of Nature, suggesting that it is at risk of extinction in the medium-term future (Birdlife International 2017). It is a US Fish and Wildlife Service (USFWS) species of conservation concern (USFWS 2021) and is the fastest declining bird of piñon-juniper habitats (Boone et al. 2018). Its rangewide population has declined an estimated 3.69% annually from 1967 to 2015; similar annual declines (3.46%) have been documented in New Mexico (Sauer et al. 2020). A petitioned to list the species as threatened or endangered was filed with the USFWS on 25 April 2022 (Defenders of Wildlife 2022).

Breeding Bird Survey data suggest the Gila National Forest (Gila NF) may be an area of Pinyon Jay population stability or increase. Prior to our 2021 and 2022 Share with Wildlife-supported surveys, systematic surveys of the area had not been conducted. The 2021 survey suggested that the area contains a large breeding population, perhaps the only area as extensive in New Mexico (Johnson et al. 2021). Additional surveys in 2022 supported this conclusion.

In 2022, we conducted surveys following standard Pinyon Jay nest and road survey protocols (Petersen et al. 2014, Pinyon Jay Working Group 2021a, b). Starting in blocks where Pinyon Jays were present and showed breeding behaviors in previous years, we searched for indications of breeding activity. When large winter flocks began to break up and occupy previously-used nesting colony sites, surveys of 5 x 5 km blocks began.

Within each block prioritized for survey, all survey points were at least 1 km apart along public roads (with no minimum number of points per sub-block). Additional survey points were added in the field (1 km from existing points) when adjacent suitable habitat was identified and accessible. Survey points were removed in the field when habitat was found to be unsuitable or poor road conditions limited access. The surveyor drove slowly through designated blocks, listening for Pinyon Jay calls and watching for jays flying over. All Pinyon Jays detected while driving were recorded on data sheets.

The surveyor stopped at each pre-designated survey point (except those removed due to lack of suitable habitat), watched and listened for 6 min, and recorded all detections. When Pinyon Jays gave breeding calls (rattle, piping rattle, begging) or displayed breeding behaviors (courtship chases or feeding, begging by females, nest construction, copulation, fledglings), suggesting that the birds were nesting nearby, the surveyor attempted to follow them to nesting colonies by vehicle or on foot.

For every block, the surveyor recorded:

1. date
2. wind at start and end of day (first and last point in block) in Beaufort units
3. start and end cloud cover (%)
4. start and end temperature

For every point, the surveyor recorded

1. start and end times
2. detection method (if PIJA detected). Audio (A) and/or visual (V) and an estimate of the number of birds
3. distance bin (if PIJA detected)
4. bearing (if PIJA detected, degrees)
5. behavior (if PIJA detected)
6. resighting (if PIJA detected; notes, e.g., "maybe")
7. comments on habitat, access, water availability, and additional behaviors. The surveyor recorded indications of breeding, including: pairs moving separately from the flock, courtship chases, courtship feeding, nest construction, females fed at the nest, fledglings, and calls indicating breeding (rattle, piping rattle, begging).

The following tasks were accomplished through June 2022:

Task 1. Surveyed additional blocks of likely Pinyon Jay occurrence in the Gila National Forest. From 1 April to 6 May 2022, we surveyed 153, 5 x 5 km blocks, 99 new and 54 repeats of blocks surveyed in 2021 (Figure 1).

Task 2 Found additional nests and delineated colonies. In 2022, we found 41 additional nests and 4 new colony sites, for a two-year total of 47 nests and 9 colony sites.

The following tasks will be accomplished during the remainder of the contract period:

Task 3 Update the 2021 occupancy model with 2022 survey results. Occupancy modeling will be developed from July to August 2022.

Task 4. The 2022 final report will include introduction, methods (field and occupancy modeling), results, discussion, management recommendations, and areas for further study.

Task 5. The Natural Heritage New Mexico Pinyon Jay geodatabase is being updated for delivery with the 2022 final report.

Surveys in 2023, if funded, will survey the few remaining priority habitat blocks, find additional nesting colonies, ascertain nesting activity, and update the occupancy model with a third year of data.

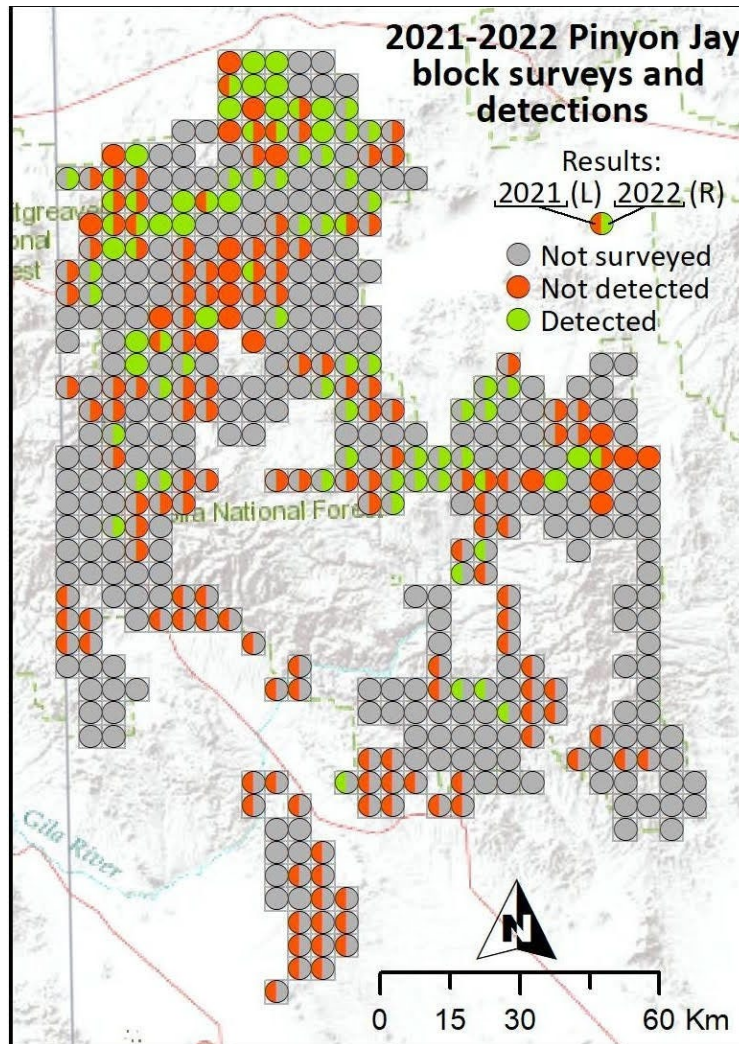


Figure 1. Results of Pinyon Jay (*Gymnorhinus cyanocephalus*) surveys in the Gila National Forest, 2021 and 2022. Survey blocks are shown as circles for ease of depiction.

Literature Cited

- BirdLife International. 2017. *Gymnorhinus cyanocephalus* (amended version of 2016 assessment). The IUCN Red List of Threatened Species 2017: e.T22705608A110431877. [online] URL: <https://www.iucnredlist.org/species/22705608/110431877>
- Boone, J. D., E. Ammon, and K. Johnson. 2018. Long-term declines in the Pinyon Jay and management implications for piñon-juniper woodlands. *In* Trends and Traditions: Avifaunal Change in Western North America (W. D. Shuford, R. E. Gill Jr., and C. M. Handel, Editors), Studies of Western Birds 3. pp. 190–197. Camarillo, CA, USA: Western Field Ornithologists. <https://doi.org/10.21199/SWB3.10>

Defenders of Wildlife. 2022. Petition to List the Pinyon Jay (*Gymnorhinus cyanocephalus*) as Endangered or Threatened Under the Endangered Species Act. Submitted to the U.S. Secretary of the Interior acting through the U.S. Fish and Wildlife Service.

https://defenders.org/sites/default/files/inline-files/2022.4.25_FWS_Listing%20petition_Pinyon%20Jay.pdf

Johnson, K., N. Petersen, and G. Sadoti. 2021. Pinyon Jay surveys in the Gila National Forest 2021. Natural Heritage New Mexico Technical Report #21-420. Biology Department, University of New Mexico, Albuquerque, New Mexico.

New Mexico Department of Game and Fish. 2016. State Wildlife Action Plan for New Mexico. New Mexico Department of Game and Fish, Santa Fe, New Mexico, USA.

<https://www.wildlife.state.nm.us/download/conservation/swap/New-Mexico-State-Wildlife-Action-Plan-SWAP-Final-2019.pdf>

Petersen, N., K. Johnson, and J. Smith. 2014. Pinyon Jay monitoring program for New Mexico. Natural Heritage New Mexico Technical Report No. 14-GTR-382. Biology Department, University of New Mexico, Albuquerque, New Mexico. 46 pp.

Pinyon Jay Working Group. 2021a. Guidance for locating pinyon jay nests and confirming breeding. <https://partnersinflight.org/wp-content/uploads/2019/10/Guidance-for-Locating-Pinyon-Jay-Nests-and-Confirming-Breeding.pdf>

Pinyon Jay Working Group. 2021b. Data standards and survey protocol for pinyon jays. <https://partnersinflight.org/wp-content/uploads/2019/10/Data-Standards-and-Survey-Protocol-for-Pinyon-Jays.pdf>

Sauer, J.R., W.A. Link, and J.E. Hines. 2020. The North American Breeding Bird Survey, Analysis Results 1966–2019: U.S. Geological Survey data release, <https://doi.org/10.5066/P96A7675>

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. Falls Church, Virginia: United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds. <https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>