

**Recovery Plan**  
**for the**  
**Florida Scrub-Jay (*Aphelocoma coerulescens*)**



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**DISCLAIMER**

Recovery plans delineate reasonable actions that are believed necessary to recover and/or protect the species. Plans are prepared by the U.S. Fish and Wildlife Service, sometimes with the assistance of recovery teams, contractors, State agencies, and others. Plans are reviewed by the public and subject to additional peer review before they are adopted by the U.S. Fish and Wildlife Service. Objectives will only be attained and funds expended contingent upon appropriations, priorities, and other budgetary constraints. Recovery plans do not obligate other parties to undertake specific tasks. Recovery plans do not necessarily represent the views nor the official positions or approval of any individuals or agencies involved in the plan formulation, other than the U.S. Fish and Wildlife Service. They represent the official position of the U.S. Fish and Wildlife Service only after they have been signed by the Regional Office as approved. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks. By approving this document, the Regional Office certifies that the information used in its development represents the best scientific and commercial data available at the time it was written. Copies of all documents reviewed in development of the plan are available in the administrative record, located at the U.S. Fish and Wildlife Service's Southeast Regional Office, Atlanta, Georgia.

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## **Recovery Plan for the Florida Scrub-Jay (*Aphelocoma coerulescens*)**

**Introduction:** This Recovery Plan revises the original Florida Scrub Jay Recovery Plan (1990), incorporating new information on the species biology, threats, and recovery needs based on the most recent Species Status Assessment information. It describes criteria for determining when the Florida Scrub-Jay should be considered for removal from the List of Endangered and Threatened Wildlife (50 CFR 17.11). Recovery actions that will be necessary to meet those criteria as well as estimates of the time and cost for implementing recovery actions and brief descriptions of the species' status, habitat requirements, and limiting factors are also included in this document. A more detailed accounting of the species' status, biology, habitat characteristics, distribution, population trends, and threats can be found in the Species Status Assessment - Florida Scrub-Jay (*Aphelocoma coerulescens*). Site-specific activities to implement the generalized recovery actions described in the recovery plan can be found in the Recovery Implementation Strategy- Florida Scrub-Jay (*Aphelocoma coerulescens*). These supplemental documents are available at <http://www.fws.gov/northflorida>. The Florida Scrub-Jay's Species Status Assessment and Recovery Implementation Strategy are finalized separately from the Recovery Plan and will be updated on a routine basis.

**Current Species Status:** Florida's only endemic bird species, the Florida Scrub-Jay was federally listed as threatened on June 3, 1987 (52 FR 20719). The U.S. Fish and Wildlife Service approved the original Florida Scrub Jay Recovery Plan on May 9, 1990. The recovery priority number (48 FR 43103-43105) for the species is 8C, meaning the degree of threat is moderate with a high recovery potential (8) and there is conflict with construction or other development projects (C). Critical habitat has not been proposed for this species.

Florida Scrub-Jays are approximately 25 to 30 cm (10 to 12 in) long and weigh about 77 g (3 oz). The head, nape, wings, and tail are pale blue, and its body is pale gray on its back and belly. Its throat and upper breast are lightly striped and bordered by a pale blue-gray "bib." The sexes are not distinguishable by plumage and males, on the average, are only slightly larger than females. Florida Scrub-Jays have a social structure that involves cooperative breeding. They live in groups ranging from two (a single mated pair) to large extended families of adults and juveniles. Fledgling Florida Scrub-Jays remain with the breeding pair in their natal territory as "helpers," forming a closely-knit, cooperative family group. The length of time Florida Scrub-Jays remain helpers in their natal territories is influenced by many factors including sex, age, and mate availability.

Florida Scrub-Jays historically occupied 39 counties in peninsular Florida. As of 2010, Florida Scrub-Jays were extirpated from 7 of the 39 counties previously occupied (Alachua, Broward, Dade, Duval, Gilchrist, Pinellas, and St. Johns) and most likely extirpated or nearly so from an additional 12 counties. Post-breeding 2015 surveys suggests extirpation from an additional 3 counties (Collier, Flagler, and Palm Beach) resulting in 10 of the original 39 counties lacking occupancy on public conservation lands. Only 9 counties had more than 30 Florida Scrub-Jay

groups – not necessarily a local population consisting of 30 interacting groups – on public conservation lands as of 2015.

Based on a comparison survey conducted in 2009-10 of 198 managed conservation lands to 1992-93 survey results (excluding Ocala National Forest), the population was estimated at 1,253 Florida Scrub-Jay groups (Boughton and Bowman 2011). Surveys indicated a 25% decline on managed conservation lands during the 17-year timeframe. Incorporating private lands (unmanaged and suburban habitats) and assuming an estimated overall population decline between 35-40%, the range-wide population was projected between 2,400-2,600 Florida Scrub-Jay groups (excluding Ocala National Forest).

Currently, the population estimates for the entire Ocala National Forest are very crude and are possibly overestimated. Extrapolating data from limited known forest management area population densities to all currently suitable habitat in the forest, the estimate is roughly 1,000 Florida Scrub-Jay groups (pers. com. FFWCC and USFS).

**Habitat Requirements and Limiting Factors:** Florida Scrub-Jays are non-migratory, extremely sedentary, and restricted to scrub and scrubby flatwoods. These natural communities occur on relict dunes and sand ridges throughout peninsular Florida, primarily concentrated along both the Atlantic and Gulf coasts and on the central ridges. Florida Scrub-Jays need large, open landscapes for long-term population persistence. The attributes of optimal habitat can be described as short oak vegetation and open sandy areas with low densities of pine trees. Optimal Florida Scrub-Jay habitat has greater than 50% of the shrub layer comprised of scrub oaks, a mosaic of oak scrubs that occur in optimal height (1.2-1.7 m, 4-5.5 ft), numerous patches of bare sand or sparse herbaceous vegetation, less than 15% pine canopy cover, and greater than 300 m (984 ft) from a forest edge. Predation is a primary factor influencing the Florida Scrub-Jay's preference for landscapes dominated by frequently burned scrub. Vegetation that characterizes open (recently burned) scrub is short enough to allow Florida Scrub-Jays to monitor a large area for predators but tall enough to provide refuge and acorns.

A primary historic cause for Florida Scrub-Jay decline is the loss, degradation, and fragmentation of habitat as a result of residential and commercial development. Development-related habitat loss and fragmentation, and associated poor demographic performance in suburban and rural residential settings, continue to be causing population declines throughout the remaining range of the species. In addition, an important driver of continued Florida Scrub-Jay declines is poor demographic success associated with overgrown habitat conditions caused by reductions in fire frequency. Reduced fire frequency causes increases in shrub height, decreases in open space, increases in tree densities, and the replacement of scrub by forest or mesic hammock. All these conditions favor increased predator pressure and competition with Blue Jays, reducing reproductive success below replacement levels.

**Recovery Strategy:** A successful recovery strategy for the Florida Scrub-Jay requires incorporating representation (genetic and ecological diversity), resiliency (sufficient population size), and redundancy (sufficient number of populations) into a conceptual document to realize a

stable or increasing overall population. The overall species' population must be capable of withstanding both catastrophic events – including disease outbreaks, unusually intense and widespread fires, and protracted periods of inadequate land management – and reductions in local population viability caused by inbreeding. The recovery strategy emphasizes creating and maintaining viable Florida Scrub-Jay populations across most of the species' remaining geographic subpopulations and distinct genetic units. To accomplish this, the strategy prioritizes large landscapes that provide optimal opportunities for long-term persistence of Florida Scrub-Jay populations within a majority of their distinct genetic units. Within these large landscapes, the strategy also emphasizes maintaining and improving connectivity to facilitate dispersal among local populations within their respective genetic unit.

The strategy incorporates a core ecological premise of species representation, resiliency, and redundancy by identifying landscapes within genetic units that still have potential networks of connected habitat patches capable of supporting large Florida Scrub-Jay populations. These areas, referred to as “focal landscapes,” were developed from a comprehensive range-wide habitat mapping exercise. The analysis utilized the best available habitat data to identify areas capable of supporting potential local populations. The areas were categorized and prioritized based on the amount and connectivity of potential habitat. The Florida Scrub-Jay Species Status Assessment expounds on the rationale and decision process justifying the identification and development for the focal landscapes.

The Recovery Implementation Strategy incorporates specific requirements for habitat and population management within the focal landscapes deemed to have potential for long-term persistence. Without active habitat management, even the largest, best protected, and seemingly most viable Florida Scrub-Jay populations decline and eventually go extinct.

**Recovery Criteria (Criteria for Delisting):**

The Florida Scrub-Jay should be considered for delisting when the following criteria are met:

Criterion 1: Each of the seven focal landscapes (East Coastal, North Central, Northeast Coastal, Lake Wales Ridge North, Lake Wales Ridge South, Southwest Inland, and Southeast Coastal) within six of the genetic unit's exhibit a stable or increasing trend including natural recruitment and multiple age classes.

Criterion 2: Subpopulations are connected to the extent that genetic diversity can be naturally maintained without translocations.

Criterion 3: When in addition to the above criteria, it can be demonstrated that the threats particularly habitat loss and degradation associated with sea level rise, development, and inadequate habitat management are diminished such that sufficient habitat remains for the species to remain viable for the foreseeable future.

Actions Needed:

The recovery actions identified below are those that, based on the best scientific data available, are necessary to bring about the recovery of the Florida Scrub-Jay. Included with the recovery action is an estimated cost to complete the action and a priority number<sup>1</sup>.

Table 1. Recovery Actions with Estimated Cost and Priority Number.

Recovery Action	Priority
<b>1. Habitat Management and Restoration</b> – appropriate fire return intervals, optimal vegetative structure, sufficient sandy openings, increasing connectivity, eliminating dispersal barriers, promoting mosaic within habitat.	1
<b>2. Habitat Protection and Acquisition</b> – protect existing public lands, conservation easements on private lands, limited acquisitions to promote connectivity of landscapes, optimum boundaries, eliminate inholdings.	1
<b>3. Population Management</b> – translocations: population augmentations, genetic rescues, maintenance of genetic diversity, re-introductions.	1
<b>4. Population Monitoring</b> – annual post-breeding surveys range-wide, surveys and long-term monitoring in all large population centers and following any restoration/translocation operations.	1
<b>5. Research</b> – population viability analyses, demographic monitoring in response to habitat management, translocation effects on populations, allee effects, genetic studies to investigate degrees of and inbreeding in all populations and its effects on fitness and viability.	1
<b>6. Regulatory</b> – incorporate conservation strategy in conservation measures, mitigation, mitigation banking, safe harbor agreements.	2
<b>7. Incentives</b> – Partners for Fish and Wildlife, Legacy Landowners Program, Working Lands for Wildlife Program.	3
<b>8. Outreach</b> – promote large connected landscapes, facilitate scrub working groups, educate public and increase public support for prescribed fire applications, engage partners and stakeholders in strategic conservation.	3

**Total Estimated Cost of Recovery by Recovery Action:**

The estimated costs associated with implementing recovery actions are \$92,255,000. The estimated cost for Action 2 is based on the potential protection and acquisition of an additional 35,000 acres through simple fee or conservation easements to increase existing carrying capacities and improving connectivity within the focal landscapes. The following cost estimates are in \$1,000.

<sup>1</sup>

**Priority 1:** An action that must be taken to prevent extinction or to prevent Florida Scrub-Jay populations from declining irreversibly in the foreseeable future.

**Priority 2:** An action that would prevent a significant decline in Florida Scrub-Jay populations or habitat quality or in some other significant impact short of extinction.

**Priority 3:** All other actions necessary to provide for full recovery of the Florida Scrub-Jay.

Action	1	2	3	4	5	6	7	8	TOTAL
Total	\$2,105	\$89,025	\$138	\$225	\$625	\$0	\$112	\$25	\$92,255

**Date of Recovery:**

If all recovery actions are fully funded, implemented, and biologically successful as outlined – including full cooperation of all partners needed to achieve recovery – we anticipate that the recovery criteria for delisting could be met by 2050.

