# Tree Density Reduction in Florida Scrub-Jay Habitat at Malabar Scrub Sanctuary

Beginning in December 2021, the EEL Program will be furthering its efforts to improve the habitat conditions for the Florida Scrub-Jay at the Malabar Scrub Sanctuary. This work will involve the removal of trees where habitat conditions are not suitable to support scrub-jay populations. The Florida Scrub-Jay requires an open landscape of low scrub-oak vegetation and reasonably open adjacent pine flatwoods in order to maintain food resources and breeding success.

The Florida Fish and Wildlife Conservation Commission consider Florida scrub-jays an umbrella species because its habitat requirements benefit a large suite of scrub-dependent species. Florida scrub-jays have been declining throughout the species’ range as most habitat has become too fragmented to support long-term viability and are listed as threatened under the U.S. Endangered Species Act (U.S. Fish and Wildlife Service 2007). The Brevard County Environmentally Endangered Lands (EEL) Program plans to prioritize resources and efforts to improve its largest scrub-jay populations and contiguous habitat with the highest probability of recovery success, while still dedicating resources to areas with smaller populations and a lower probability of success which will still benefit the variety of other species dependent upon scrub habitat.

According to the Florida Fish and Wildlife Conservation Commission’s Scrub Management Guidelines for Peninsular Florida, optimal Florida scrub-jay habitat contains less than one tree greater than 15 feet per acre. Additionally, it is recommended to maintain a 1,000-foot non-forested (<1 tree per acre) buffer between scrub-jay territories and forest edges. The current tree densities in potential scrub-jay territories on Micco, Jordan, Malabar, and Valkaria Scrub Sanctuaries far exceed Florida’s scrub management guidelines. Initial effort has been made to reduce tree densities through burning, but fire alone has not been effective in meeting this guideline. As adjacent Florida scrub-jay habitat is being developed, tree reduction in scrub and scrubby flatwoods is imperative to provide optimal habitat within species dispersal distances. By further reducing tree densities mechanically, and continuing ongoing burning operations, we anticipate being able to maximize our ability to maintain optimal habitat conditions and expand population size.

Utilizing decades of population census data throughout Brevard County, a Population Viability Analysis (or P.V.A.) model, developed by Dr. Robert Lacy and local experts, identified specific population goals to avoid local extinctions of the Florida scrub-jay. This modeling identified that without immigration amongst these isolated metapopulations, 70% or more of the potential habitat should be maintained in optimal condition with at least 100 potential territories available. These 100 territories can be an interconnected set of local populations allowing genetic exchange amongst them, assuming dispersal amongst them is possible. Based on this modeling, managing potential territories within these parameters ensures stable populations for 100 years. In current conditions, this P.V.A. model identifies some of our populations becoming locally extinct in as little as 20 years.

The subpopulation of Florida scrub-jays located on the Jordan, Malabar, and Valkaria Scrub Sanctuaries currently support 25-27 groups while there are 76 potential territories. Similarly, the Micco Scrub Sanctuary and neighboring conservation lands currently support a subpopulation of 9 families, while having the potential to support 23 (Breininger *et al.* 2006). Amongst this metapopulation of South and Central Mainland Brevard there are 242 potential scrub-jay territories with varying degrees of connectivity. In addition to this large potential core population in southern Brevard, there are many potential support populations throughout the remainder of the County. Helen & Allen Cruikshank Sanctuary, Scottsmoor Flatwoods Sanctuary, North Buck Lake Scrub Sanctuary, South Lake Conservation Area, Indian Mound Station Sanctuary, Fox Lake Sanctuary, Dicerandra Scrub Sanctuary, and their neighboring properties, can each support 10-39 breeding pairs of Florida scrub-jays (Breininger *et al.* 2006). Tree reduction and mechanical vegetation treatments will support the Environmentally Endangered Lands Program in reaching Florida’s scrub management guideline parameters. This will allow for more aggressive fire and mechanical treatments to maintain optimal vegetation height, providing the highest potential for successful scrub-jay population recovery in our region, as well as benefitting the variety of other scrub-dependent species.

## Works Cited

Breininger, D. R., B. Toland, D. M. Oddy, and M. L. Legare.  2006.  Landcover characterizations and Florida Scrub-Jay (*Aphelocoma coerulescens*) population dynamics.  Biological Conservation 128:169-181.

Fitzpatrick, J.W., G.E. Woolfenden, and M.T. Kopeny. 1991.  Ecology and development-related habitat requirements of the Florida scrub jay (Aphelocoma coerulescens coerulescens).  Florida Game and Fresh Water Fish Commission Nongame Wildlife Program Technical Report Number 8. Tallahassee, Florida. 49 pages.

Florida Fish and Wildlife Conservation Commission. 2019. Scrub Management Guidelines for Peninsular Florida. Tallahassee, Florida, USA

U.S. Fish and Wildlife Service [Service]. 2007. Florida Scrub-Jay (Aphelocoma coerulescens) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service; Atlanta, Woolfenden, G.E. and J.W Fitzpatrick. 1996. Florida Scrub-Jay Aphelocoma coerulescens. Rare and endangered biota of Florida vol. V. Birds eds. J.A. Rodgers Jr., H.W. Kale Ii & H.T. Smith). Univ. Press of Florida, Gainesville, FL USA. pp. 267-280