Species Conservation Guidelines

South Florida

Florida Scrub-jay

The Species Conservation Guidelines for the Florida Scrub-jay (*Aphelocoma coerulescens*) (scrub-jay) provide a tool to assist the user in determining if an action, i.e., a Federal permit, a Federal construction project, or other such action, may adversely affect the scrub-jay. Here we describe what actions might have a detrimental impact on the Florida scrub-jay and how these effects can be avoided or minimized.

Life History

The Fish and Wildlife Service (Service) federally listed the scrub-jay as threatened in 1987 due to loss, fragmentation, and degradation of scrub habitats throughout Florida. Service (1999) provides a synopsis of scrub-jay ecology. Fitzpatrick et al. (1991) provides additional information on habitat needs, territory sizes, and species biology.

The scrub-jay is a relict species of fire-dominated oak scrub habitat that occurs on well drained sandy soils in peninsular Florida. Scrub-jays are extremely habitat-specific, sedentary, and territorial. Florida scrub-jays form family groups; fledglings remain with their parents in their natal territory as helpers. They are similar in size and shape to the blue jay (*Cyanocitta cristata*), but differ significantly in coloration (Woolfenden and Fitzpatrick 1996). Unlike the blue jay, scrub-jays lack a crest.

Habitat

Suitable habitats for the scrub-jay are not only the more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but also include (FLUCCS code in parentheses): improved, unimproved, and woodland pastures (211-213); citrus groves (221); rangeland (310-330); pine flatwoods (441); longleaf pine xeric oak (412); sand pine (413); sand pine plantations (4411); forest regeneration areas (443); sand other than beaches (720); disturbed rural land in transition without positive indicators of intended activity (741); and disturbed burned areas (745). The presence of scrub oaks, no matter how sparsely distributed, is a key indicator of "scrub" habitat. Fitzpatrick et al. (1991) defined three classes of scrub-jay habitat:

> Type I – any upland plant community in which percent cover of the substrate by scrub oak species is 15 percent or more.

Type II – any plant community, not meeting the definition of type I habitat, in which one or more scrub oak species is represented.

Type III – any upland or seasonally dry wetland within 400 m (0.25 mi) of any area designated as Type I or II habitats.

Distribution

The scrub-jay can be found in coastal and ridge scrub areas throughout central Florida (Fig. 1). Historically, the only county on the peninsula that lacked scrub-jays was Monroe, although they were never considered abundant on the Atlantic coast south of Martin County, and occurred only in a narrow coastal band there (Service 1999). Scrub-jays are presently extirpated from Broward and Miami-Dade Counties. Scrub-jays are divided into 10 metapopulations in south Florida (Stith 1999). Table 1 lists the metapopulation and ranks their level of risk.

Determination

The Standard Local Operating Procedures for Endangered Species (SLOPES) are used to make a determination for the scrub-jay. See the SLOPES Introduction for details on this process (Service 2004a). The SLOPES flowchart for scrub-jays can be found in Figure 2. For the scrub-jay consider not only the project area, but also a 183-m (600-ft) buffer surrounding the area. This buffer allows for overlap of an off-site scrub-jay territory onto the property. Next review Figure 1 to determine if the project falls within the consultation area.

Suitable habitat for the scrub-jay is typically oak scrub and scrubby coastal strand, but includes a wide range of habitat. Type I, II, or III habitats defined above are considered suitable habitat for scrub-jays. If the project is outside the consultation area or is within the consultation area and no suitable habitat is present then no effect to scrub-jays is anticipated.

If the project is located within the consultation area and suitable habitat is present then the project may affect the scrub-jay. Two options are available to assess potential effects. Suitable habitat can be surveyed (option a**)**. Details on how to carry out a scrub-jay survey can be found in Appendix A (Service 2004b). If no scrub-jays are detected by survey in the project and buffer area then the scrub-jay is not likely to be adversely affected. However, if habitat alterations do not begin prior to the next year's nesting season, then a follow-up survey should be conducted prior to construction. Survey results should be included in the biological assessment. Alternatively (option b), suitable habitat can be assumed to support scrub-jays and conservation measures implemented.

If scrub-jays are detected by survey or are known to be present on the property then the project may affect the scrub-jay.

Table 1. Metapopulations of scrub-jays in south Florida with protected population size, maximum population size if all occupied habitat acquired for conservation, extinction probability with no further acquisition, quasi-extinction probability (population falls below 10 pairs) with no further acquisition, rank of risk in south Florida, and rank of risk statewide.

Metapopulation	Protected Population Size	Maximum Population Size	Extinction Probability	Quasi-Extinction Probability	South Florida Rank	State Rank
Central Charlotte	5	61	1.00	1.00	1	1
Lake Wales Ridge	535	858	0.00	0.00	10	16
Lee	15	62	0.73	1.00	4	8
Manatee	36	145	0.97	1.00	2	4
Martin	85	120	0.00	0.00	8	16
NW Charlotte	28	56	0.67	1.00	5	9
Palm Beach	9	13	0.90	1.00	3	7
Sarasota	50	89	0.03	0.10	8	15
South Brevard	62	165	0.07	0.20	7	13
St. Lucie	23	37	0.20	0.73	5	11

	Counties in south Florida included in metapopulation (see Stith 1999 for details).
Central Charlotte	Charlotte, Lee
Lake Wales Ridge	Polk, Osceola, Hardee, DeSoto, Highlands, Okeechobee, Glades, Hendry, Charlotte
Lee	Lee, Charlotte, Hendry, Collier
Manatee	Polk, Hardee, DeSoto, Sarasota
Martin	Martin, Palm Beach
NW Charlotte	Charlotte, Sarasota, DeSoto
Palm Beach	Palm Beach, Broward
Sarasota	Sarasota, Charlotte
South Brevard	Indian River
St. Lucie	St. Lucie

Conservation Measures

We encourage the use of Fitzpatrick et al. (1991) for guidance on any on-site preservation, enhancement, or management actions that might be proposed for the scrub-jay. The Service recommends that occupied scrub habitat be avoided and preserved. This can be accomplished by modifying the project footprint to avoid direct impacts to scrub-jay habitat. The Service also recommends that the habitat be protected from further development via deed restriction, easement, or other protective covenant. If the occupied habitat exceeds 2 ha (5 acres), then a Scrub-jay Habitat Management Plan is also recommended (see below).

The Service recommends on-site enhancements in situations where a project can not avoid impacting occupied scrub-jay habitat. When a project has avoided impacting a substantial portion of the scrub habitat, but a small amount of habitat loss will still occur, the loss can be compensated by restoring or enhancing the remaining scrub through exotic vegetation removal, reintroduction of fire, or fencing to exclude predators such as domestic cats. The incorporation of these improvements into the proposed project may decrease the potential for adverse affects to scrub-jays to occur. The management plan, in this scenario, also needs a monitoring program to document the success of any enhancement actions.

The Service strongly recommends that occupied scrub-jay habitats be avoided and preserved, but if the amount of habitat on-site and in the adjacent off-site buffer is not sufficient to support a scrub-jay family, then the project is likely to adversely affect the scrub-jay. Sufficient habitat for this evaluation is 10.1 ha (25 acres), which is the average size of a scrub-jay territory.

To assist in minimizing adverse effects from anticipated incidental take, the Service has developed measures that are applicable to projects where compensation is appropriate. These measures further the Service's goals for conservation and recovery of the species. The measures were originally developed by the Service to address mitigation needs for "Incidental Take Permits" under section 10 of the ESA. The mitigation guidelines identified scrub-jay metapopulation territories where conservation and recovery goals for the species can be achieved. In general the guidelines recommend expanding the boundaries of existing preserves or protecting and managing occupied and unoccupied habitats that are contiguous to the preserved lands or that are within unobstructed scrub-jay dispersal distances from the preserved lands. The specifics of each of these measures can be found in Appendix B (Service 2004c) and should be incorporated into the Scrub-jay Habitat Management Plan.

Reports

Scrub-jay Management Plan

A Scrub-jay Habitat Management Plan will be helpful in minimizing potential adverse effects to scrub-jays. In general, the plan should include a description of the project and a description of how the project will affect scrub-jays as well as any survey reports, survey data sheets,

delineated territorial boundaries, and any proposed land preservation covenant. The plan should also include descriptions of habitats and techniques that will be used to manage the land. The Scrub-jay Habitat Management Plan should be included with the consultation initiation package See Service (2004d) for a more details on what should be in this document.

A monitoring plan is needed if on-site enhancements are proposed. An annual report should include a description of the site and any habitat enhancements made, as well as, a survey to document scrub-jay population levels and area occupied. Survey reports should be submitted to the Scrub-jay Lead Biologist at U.S. Fish and Wildlife Service, South Florida Ecological Services Office, 1339 29th Street, Vero Beach, Florida 32960-3559.

Literature Cited

Fitzpatrick, J.W., G.E. Woolfenden, and M.T. Kopeny. 1991. Ecology and development-related habitat requirements of the Florida scrub-jay (*Aphelocoma coerulescens*). Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 8. Tallahassee, Florida.

Stith, B. 1999. Metapopulation viability analysis of the Florida scrub-jay (*Aphelocoma coelurescens*): a statewide assessment. Report to U.S. Fish and Wildlife Service, Jacksonville, Florida.

U.S. Fish and Wildlife Service (Service). 1999. South Florida multi-species recovery plan. Atlanta, Georgia. http://verobeach.fws.gov/Programs/Recovery/vbms5.html.

U.S. Fish and Wildlife Service (Service). 2004a. Standard local operating procedures for endangered species: Introduction. South Florida Ecological Services Office, Vero Beach, Florida.

U.S. Fish and Wildlife Service (Service). 2004b. Scrub-jay survey protocol. South Florida Ecological Services Office, Vero Beach, Florida. (Appendix A).

U.S. Fish and Wildlife Service (Service). 2004c. Amended guidance for assessing mitigation needs for Florida scrub-jays. February 24, 2004. Jacksonville Field Office, Jacksonville, Florida. (Appendix B).

U.S. Fish and Wildlife Service (Service). 2004d. Guide to a complete initiation package. South Florida Ecological Services Office, Vero Beach, Florida. (see SLOPES Introduction Appendix A).

Woolfenden, G.E., and J.W. Fitzpatrick. 1996. Florida scrub jay. Pages 267-280 in J.A. Rodgers, H.W. Kale, and H.T. Smith, editors. Rare and endangered biota of Florida, volume V. Birds. University Presses of Florida; Gainesville, Florida.

GIS Data Layers

Scrub-jay_CA.shp - consultation area boundary

Appendices

Appendix A. Scrub-jay survey protocol.
Appendix B. Amended guidance for assessing mitigation needs for Florida scrub-jays

South Florida Ecological Services
DRAFT
May 28, 2004

APPENDIX A

Scrub-jay survey protocol

Florida Scrub-jay Survey Protocol

These guidelines are the minimum levels of effort the Service believes are necessary to determine the presence or absence of the Florida scrub-jay (*Aphelocoma coerulescens*) (scrub-jay) in an area. Suitable habitat on the property may not only be the nest sites of scrub-jays, but could be part of the scrub-jay foraging habitat, which is considered by the Service as occupied, because the habitat fulfills the species life history requirements. In most applications, a one time survey event within the preferred time-of-year sufficient for Service consultations.

These survey protocols are primarily adapted from Fitzpatrick et al. (1991). The most effective method of surveying a site for scrub-jays is to traverse the area systematically, using a high quality tape recording of scrub-jay territorial scolding in an attempt to attract the scrub-jays. The recording should include clear examples of all typical territorial scolds, including the female "hiccup" call. Vocalizations are available from:

Macaulay Library
Cornell Lab of Ornithology
159 Sapsucker Woods Road
Ithaca, NY 14850
Phone: (607) 254-2157
Fax: (607) 254-2439
Email: macaulaylibrary@cornell.edu
Web site: www.birds.cornell.edu/macaulaylibrary

Map habitat types for the project area and a 183-m (600 ft) buffer zone either on a 7.5-min U.S. Geological Survey (USGS) topographic map or an aerial photograph at a scale of no more than 1:4800 scale. The habitat map should also show all existing development. On the habitat map, establish parallel line transects across all suitable habitat. Habitats to sample should include not only the more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but also improved, unimproved, and woodland pastures; citrus groves; rangeland; pine flatwoods; longleaf pine xeric oak; sand pine; sand pine plantations; forest regeneration areas; sand other than beaches; disturbed rural land in transition without positive indicators of intended activity; and disturbed burned areas. The presence of scrub oaks, no matter how sparsely distributed, is the key indicator of "scrub" habitat.

Along each transect establish playback stations. Distance between transects and stations depend on many factors, including power of the speaker used for broadcasting the calls, topography of the site, and the density of the surrounding vegetation. Adequate spacing between transects can be estimated roughly as the distance at which a person listening to the tape directly in front of the speaker perceives the "bird" to be no more than about 100 m (328 ft) away. A distance of 100 to 200 m (328-656 ft) between transects and stations is generally adequate when using a good-quality, hand-held cassette player broadcasting at full volume. Use 100 m (328 ft) for dense canopy scrub and 200 m (656 ft) for open scrub. Place transect and playback stations so that all scrub types will be sampled for scrub-jays.

Surveys should be carried out on calm, clear days about one hour after sunrise, and should terminate before midday. Surveys should not be conducted in winds stronger than a moderate breeze (5-8 mph), in mist or fog, or in precipitation exceeding a light, intermittent drizzle. Heat and especially wind lowers the tendency for scrub-jays to respond to distant territorial scolds, and wind reduces the distance over which recordings can be heard. Scrub-jays are also reluctant to fly on windy days regardless of hour or season.

Surveys should be conducted during the spring (March) or fall (September and October), when territorial displays are most frequent and vigorous. Other times of year are poor times to survey because scrub-jays are most likely to fly far for food or the young are quiet and the adults are occupied with molt and feeding fledglings. Consecutive surveys for a minimum of five days are sufficient to assess scrub-jay presence and territory size and distribution.

Transects may be driven or walked. If driven, step out or stand atop the vehicle at each playback station. Broadcast the calls at each station for at least one minute in all four directions around the playback station, emphasizing any direction in which low-growing oak scrub is the predominant vegetation. On the habitat map, plot the locations and indicate group size of all scrub-jays where they are first seen or heard. Note the direction from whence they came. Distinguish adult-plumaged scrub-jays from juvenile-plumaged scrub-jays whenever possible.

At localities with car trails, large areas of scrub can be surveyed with a vehicle in one day. On foot, the process is more laborious because of the relatively large size of territories. Once a group is located, stop broadcasting at that station. Remaining at this station briefly should result in the assembly of the entire group. This allows one to estimate group size and, if done during the midsummer, to distinguish young of the year from adults.

Sometimes two or more groups will be attracted to one station, usually from different directions. Observers should be careful, therefore, to plot each group where it was first spotted or heard. In rare circumstances, especially at sites where numerous groups congregate at artificial food or water sources, it may be difficult to differentiate groups. This is especially true where scrub-jays have become habituated and tame to human approach. Again, in such cases careful observation is extremely important. Studies of such congregations using color-marked scrub-jays have confirmed that almost always they consist of members of different family groups. Often they may have crossed several territory boundaries to reach the neutral feeding or drinking areas. The result gives a false impression of extremely high scrub-jay density.

It is essential that the subject area be surveyed to establish an accurate count of scrub-jay groups and territorial boundaries. If more than eight to ten scrub-jays are encountered at a single playback station during a fall or spring survey period, the scrub-jays at this site should be monitored carefully over several visits and different times of day. Numbers will shift as groups arrive and depart. Often it is possible to watch where the scrub-jays come from or return to as a means of determining how many groups are represented.

Territory Boundary Determinations

In general, scrub-jays have well-defined territories defended year-round by all group members. Territorial defense is most active immediately before nesting in the spring and after molt is complete in autumn. Territorial boundaries may be most accurately predicted through a combination of observing scrub-jays and listening for territorial behavior (in the case where several families of scrub-jays exist in contiguous habitats) or by including habitat suitable for occupation by scrub-jays within a territorial boundary (in the case where a family of scrub-jays is somewhat isolated from other groups). Territories typically occupy the same areas for many years, and ownership is passed on by mate replacement or inheritance by helpers. Mean territory size is about 9 ha (25 acres), although the size may vary depending on group size and suitability of habitat. To determine the territorial boundaries of the scrub-jay group, it is essential that the surveyor be familiar with different types of behavior exhibited by scrub-jays.

The boundaries of scrub-jay groups can be determined by standard methods (Bibby et al. 2000). Here is a brief synopsis of the procedure. At each station, record the direction the scrub-jays came from and any observed hostility to other scrub-jays that also approach the station, especially if from a different direction. Also note the number of scrub-jays that approach the station as a group.

These responses are mapped on the habitat vegetation map and are the basis for determining occupied territories. A schematic is provided below that gives an example of scrub-jay survey responses and territory boundary determinations (Fig. 1). The survey grids are shown with the point counts for scrub-jays at each station, with direction of flight.

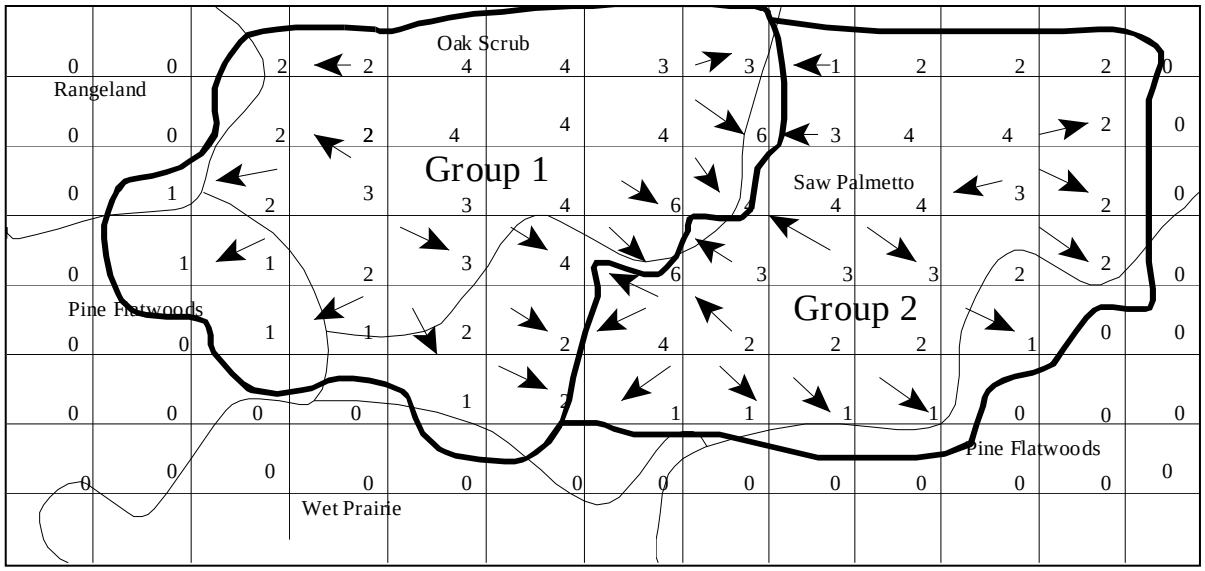

Figure 1. Schematic on determining territorial boundaries. Arrows indicate flight direction.

Territorial boundaries between adjacent groups are based on connecting station locations where territorial defense displays between scrub-jays were first observed. Fringe boundaries are determined as the midpoint between the last location that attracted scrub-jays and adjacent no-response locations. The boundaries are determined by connecting midpoints (Fig. 1). Where birds are attracted from different directions, the boundary between groups will be determined by connecting the stations with mixed groups.

The key end products of this procedure are a complete count of all on-site scrub-jay groups and an approximate territory map for each group.

A survey report to the Service should include the following, as applicable:

1. Brief description of the project.

2. An aerial photograph or habitat map depicting:
   A. the project area and buffer zone;
   B. habitat types;
   C. transect lines and playback stations; and
   D. territory boundaries of all scrub-jay groups.

3. Field data sheets including:
   A. dates and starting and ending times of all surveys conducted;
   B. weather conditions during all surveys, including average temperature, wind speed and direction, visibility, and precipitation; and
   C. total number of scrub-jay groups found, number of scrub-jays in each group, and number of juvenile-plumaged scrub-jays in each of these groups.

Literature Cited

Bibby, C.J., N.D. Burgess, D.A. Hill, and S.H. Mustoe. 2000. Bird Census Techniques. 2nd Edition. Academic Press, London, United Kingdom.

Fitzpatrick, J.W., G.E. Woolfenden, and M.T. Kopeny. 1991. Ecology and development-related habitat requirements of the Florida scrub-jay (*Aphelocoma coerulescens*). Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 8. Tallahassee, Florida.

South Florida Ecological Services
DRAFT
May 28, 2004

APPENDIX B

Amended guidance for assessing mitigation needs for Florida scrub-jays

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive, Suite 310
Jacksonville, Florida 32216-0958
Phone: (904) 232-2580 FAX: (904) 232-2404

In Reply Refer To:
FWS/R4/ES-JAFL

IN REPLY REFER TO:
FWS/R4/ES-JAFL

February 24, 2004

MEMORANDUM

To: Staff

From: Field Supervisor, Jacksonville Field Office
Field Supervisor, South Florida Ecological Services Office

Subject: Amended Guidance for Assessing Mitigation Needs for Florida Scrub-Jays

This guidance supercedes similar guidance provided by the State Supervisor on July 2, 1999 (amended July 10, 2003), and is to be used when assessing minimization/mitigation needs for the Florida scrub-jay relative to applications for Incidental Take Permits for Florida scrub-jays. The Service will pursue similar "minimization" goals for scrub-jay conservation in section 7 actions, subject to the ultimate determination of acceptability by the action agency. This guidance is intended to provide interim direction until the scrub-jay recovery plan is revised.

The primary underlying principle embraced by this guidance is that future mitigation efforts by the Service will enhance existing scrub-jay populations occurring on publicly and privately protected lands. To evaluate conservation opportunities for scrub-jays under this guidance, the Service assessed multiple data sources to determine current and expected habitat availability, and current and expected scrub-jay distribution. Results of a spatially-explicit model in combination with published metapopulation data, GIS coverages of public lands and scrub habitat, published and unpublished biological data, and working knowledge of localized scrub-jay populations were used to identify and delineate areas within which future mitigation needs would result in the highest conservation benefit to scrub-jays.

These analyses resulted in the delineation of mitigation service areas (MSAs) throughout the range of the species (Figure 1). MSAs encompass areas that: (1) contain one or more public or protected private lands that, when combined, have one or more populations of scrub-jays that are anticipated to persist long-term, (2) have at least one population with a minimum of 10 pairs of scrub-jays, and (3) minimize the potential for demographic fragmentation. To maximize the effectiveness of this guidance, impacts to scrub-jays within MSAs should be mitigated within the

same MSA. Impacts to scrub-jays occurring outside of a defined MSA may be mitigated to the closest MSA.

The overall procedures are as follows:

A. General Mitigation Strategies (in order of preference)

1. Expand existing preserves and protect and manage occupied and unoccupied habitat that is contiguous with managed public or private lands where the extant population of scrub-jays is viable.

2. Protect and manage occupied and unoccupied habitat within 2 miles of protected and managed occupied habitat where the extant population of scrub-jays is viable, provided proposed mitigation lands are sufficient to support at least one family of scrub-jays. Ensure that dispersal barriers (such as open water exceeding 200 yards, densely urbanized areas, heavily canopied pine forests or plantations, open pasture, or croplands) do not predominate the landscape between mitigation sites and occupied scrub-jay habitat. Composition of the habitat proposed for mitigation should maximize continuity of habitat and minimize the edge effect of the suitable or restorable habitat. In this respect, a circular parcel of land with contiguous suitable or restorable habitat would be more beneficial (biologically), whereas a linear strip of land with interspersed patches of suitable and unsuitable habitat would be of low benefit.

3. Protect and manage occupied and unoccupied habitat that is within 5 miles of protected and managed occupied scrub-jay habitat where the extant population of scrub-jays is viable, provided proposed mitigation lands are sufficient to support at least one family of scrub-jays. Ensure that, in addition to the dispersal barriers identified above, other barriers (such as heavily canopied suburbs, unbroken citrus groves, treeless or nearly treeless suburbs, or pine flatwoods) do not predominate the landscape between mitigation sites and occupied habitat. The relative biological benefit of mitigation lands with respect to its composition should be assessed as described above.

B. Determine Population Viability

Ensure that a minimum of 10 families of demographically connected scrub-jays are present or will be present following mitigation **OR** sufficient unoccupied but restorable scrub-jay habitat (unoccupied habitat) is, or will be (after restoration, as set forth in the proposed action and concurred to by the Service) available to support at least 10 scrub-jay families. Viable groups of scrub-jays require about 200 acres of scrub habitat which may be contiguous or composed of patches of scrub habitat at least 20 acres in size. The spatial orientation of habitat patches must not lead to demographic isolation, as described in A.2 and A.3 above, and must provide for the successful dispersal of scrub-jays between habitat patches.

C. Determine Demographic Priority

Demographic considerations in selecting mitigation locations within the MSA are described in order of preference below:

1. Mitigate onsite if conditions in B. (above) exist or can be achieved through management.

2. Mitigate offsite but within affected viable population, as defined in B.

3. Mitigate offsite to the nearest viable population, as defined in B.

D. Determining Habitat Mitigation Need - Small Landowners Only

1. Small landowners (described herein as any person or company owning real property represented by one or more contiguous lots not exceeding, in combination, 0.5 acres, within a residential subdivision) may choose to implement any one of the mitigation alternatives described in items E.1. - E.5. without regard to preference.

E. Determine Habitat Mitigation Need (in order of preference) - Other Than Small Landowners. Selection of any of the first 5 options will require the applicant to provide funds for restoration (if needed) and management of the lands into perpetuity.

1. Purchase (or otherwise acquire fee title) two acres of occupied scrub-jay habitat for each acre of affected occupied scrub-jay habitat[1,2] .

2. Purchase (or otherwise acquire fee title) two acres of unoccupied, but restorable[3] habitat for each acre of affected occupied habitat provided the unoccupied, restorable habitat is immediately contiguous to occupied scrub-jay habitat under public ownership that is managed for conservation purposes[1,2].

3. Secure perpetual conservation easement and land management agreement on sufficient lands to achieve mitigation needs identified in E.1. and E.2. above[1,2]. Holder of any agreement must be approved by the Service.

4. Purchase (or otherwise acquire fee title) or secure perpetual conservation easement and land management agreement on three acres of unoccupied, but restorable habitat for each acre of affected habitat, provided the unoccupied, but restorable habitat lies within two miles of occupied scrub-jay habitat under public ownership that is managed for conservation purposes[1,2,4].

5. Deposit funding into the Florida Scrub-Jay Conservation Fund sufficient to achieve mitigation needs identified in E.1., plus five percent of total mitigation costs to cover administrative overhead.

6. Purchase/acquire fee title (at a ratio of five acres of habitat for each acre of affected occupied habitat) lands adjoining publicly-owned occupied or unoccupied but restorable scrub-jay habitat to provide buffer from adjacent urban activities and to buffer adjacent urban areas from land management activities (e.g., prescribed fire).

F. Applicant Protocols

1. A through E above will be discussed and reviewed with applicants as soon as sufficient information is provided to determine the extent of project impacts.

2. The Service will provide the applicant a list of mitigatory requirements immediately following initial discussion of a project. Written updates will be provided if the project changes scope.

3. If E.5. applies, notify applicant that mitigation cost will be based on the cost to conduct work at the most appropriate mitigation site as determined above. Field offices will maintain written cost estimates on file for applicant review as requested. Mitigation cost will be obtained primarily through assessments of comparative sales of land within the scrub-jay group (as defined in B above) to which mitigation will be directed. Where such data are lacking, broader assessments of comparative sales data may be needed. These values should be updated as necessary considering changes in land values and inflation. Mitigation cost estimates will be based on Service documents at the time of final application for an incidental take permit, unless the applicant can demonstrate comparative land sales data resulting in a lower mitigation cost.

4. Upon request, the Service shall provide the applicant copies of modeling software and associated data used by the Service in making determinations in A through E above, provided the release of information does not violate copyright or other legal instruments that may protect such information.

This guidance should be updated jointly by our respective staffs as needs and new information dictate.

[1] During the process of drafting the Brevard County Scrub Conservation and Development Plan, certain "core" areas were designated as essential to long-term survival of Florida scrub-jays within that county. As a result, these core areas are more beneficial (biologically speaking) to scrub-jays than other areas within the county. Impacts to core areas within Brevard County, therefore, will be mitigated by purchase or otherwise acquiring fee title to four acres of occupied habitat for each acre of occupied habitat affected and will be located only in areas included in the draft reserve design.

[2] All acquisition and easements must be accompanied by a cash endowment sufficient to provide perpetual management of preserved lands and any other funds identified by a prospective title or easement recipient that may be necessary for that entity to accept title or easement (e.g., contaminants surveys, fencing, trash removal, etc.).

[3] Restorable habitat refers to areas with appropriate soil and vegetation types that require implementation of land management actions to provide the vegetative structure and diversity typical of suitable scrub-jay habitat.

[4] The Service requires a higher ratio in the case of restored habitat not contiguous to public lands managed for and occupied by scrub-jays to address the uncertainties inherent in habitat restoration and recolonization by scrub-jays, and the temporal loss of habitat.

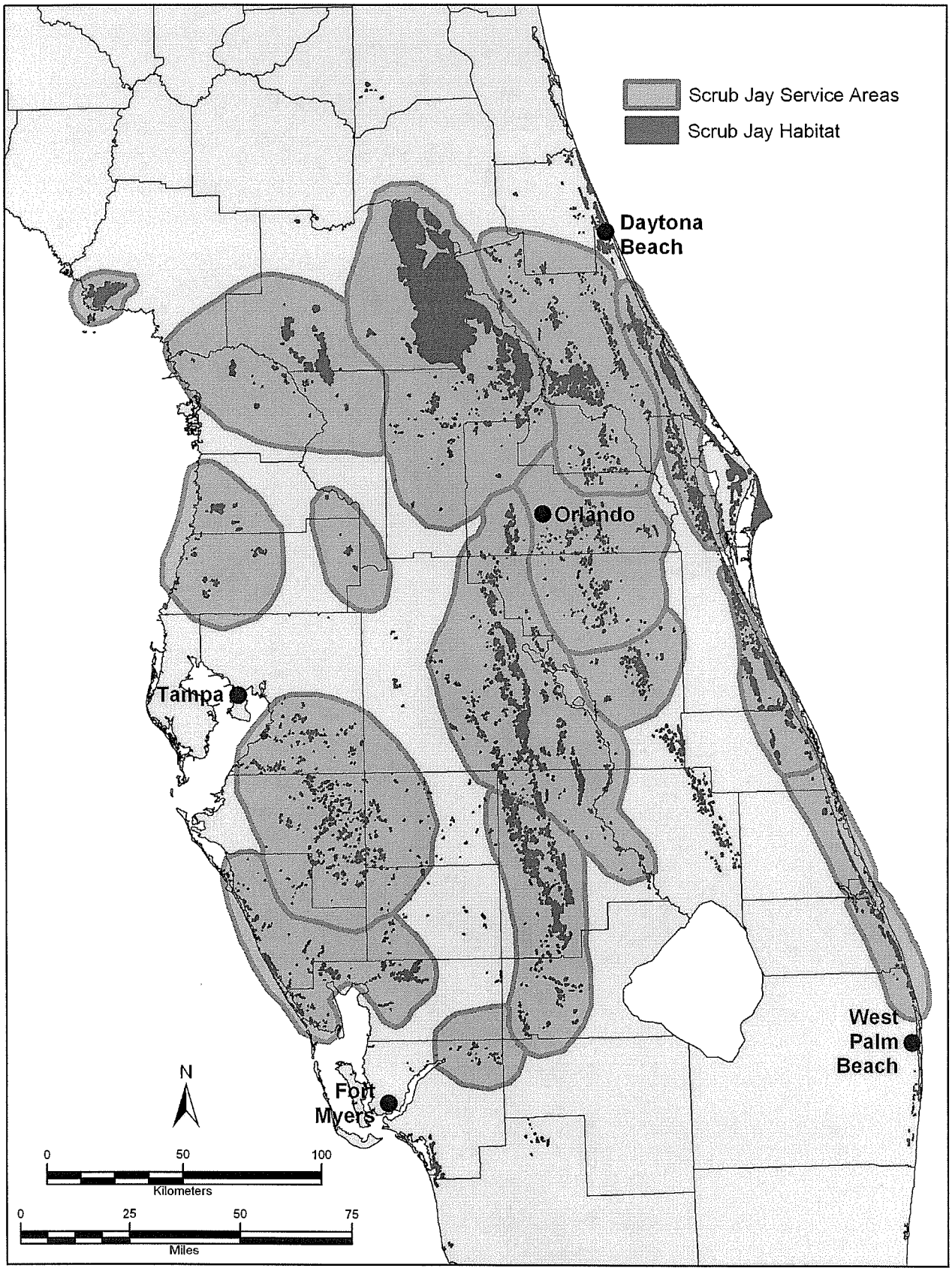

Figure 1. Mitigation Service Areas for the Florida scrub-jay.