

DRAFT

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Species Conservation Guidelines**South Florida****Florida Grasshopper Sparrow**

The Species Conservation Guidelines (Guidelines) for the Florida grasshopper sparrow (*Ammodramus savannarum floridanaus*) provide a tool to determine if a project, *i.e.*, a Federal permit, a Federal construction project, or other such action, may adversely affect the Florida grasshopper sparrow. Here we describe what actions might have a detrimental impact on Florida grasshopper sparrows and how these effects can be avoided or minimized.

Life History

The Fish and Wildlife Service (Service) listed the Florida grasshopper sparrow as endangered in 1986 due to habitat loss and degradation. It is a subspecies of the broadly distributed grasshopper sparrow that is nonmigratory and restricted in distribution to central peninsular Florida. Service (1999) can be referred to for more detailed information on the species biology and ecology. Florida grasshopper sparrows tend to be very secretive and quiet, and almost seem to disappear completely at certain times of the year. They may be easily overlooked when not surveyed at the appropriate time. Males vigorously defend the boundaries of their territories from courtship through incubation. Florida grasshopper sparrows nest from March through September with the peak nesting activity occurring between early April and late June. These sparrows occupy a territory varying in size from 2.0 to 4.9 ha (5.0 to 12.0 acres). As the interval between fires increases and the habitat becomes less optimal, sparrow home ranges become larger (Delany et al. 1995). The Service considers an average home range for a breeding pair to be an area with a radius of 100 m (328 ft) or 3.1 ha (7.7 acres) with the location of the singing male as the center of the territory.

Habitat

Habitat for the Florida grasshopper sparrow has been described as dry prairie that is relatively open and low in stature (Shriver and Vickery 1999). The habitat consists of treeless, relatively poorly-drained grasslands that have a history of frequent fires (Service 1999). The prairie vegetative community is typically dominated by saw palmetto (*Serenoa repens*) and dwarf oaks (*Quercus minima*) ranging from 30 to 70 cm (12 to 28 in) in height. Bluestem grasses (*Andropogon* spp.), St. John's wort (*Hypericum* spp.), and wiregrasses (*Aristida* spp.) are important components of Florida grasshopper sparrow habitat (Delany et al. 1985).

Florida grasshopper sparrows generally occupy an open landscape, and tend to avoid forested edges and preferentially use the centers of open patches (Vickery 1996). Edge effects, including

DRAFT

June 15, 2004

reduced reproductive success and increased predation, may extend up to 400 m (1,312 ft) from an edge. Optimal habitat occurs at the peak in a fire maintained system with a early summer (June) three-year burn cycle. Consequently, sparrows often occur in conditions that are sub-optimal. Recent survey efforts on public lands have shown that Florida grasshopper sparrows also reproduce successfully in pastures that are overgrown or ungrazed (Service 1999). In these cases, sparrows seem to prefer pastures that are not bahia monocultures, but instead have some other plant types (low forbs and shrubs). These other plants appear to provide some structural diversity to the prairies. However, as pastures become heavily grazed, sparrow populations decrease or disappear (Delany and Linda 1994). Thus flatwoods that have been converted to pasture that are lightly grazed should be considered suitable habitat for Florida grasshopper sparrows. There is no designated critical habitat for the Florida grasshopper sparrow.

Distribution

There are currently only six known populations of Florida grasshopper sparrows in Florida, three on Avon Park Air Force Range, one on Kissimmee Prairie State Preserve, one on Three Lakes Wildlife Management Area, and one on private property. Historically it was a year-round resident of the dry prairie habitat (Shriver and Vickery 1999). The core distributional area includes DeSoto, Glades, Hendry, Highlands, Polk, Okeechobee, and Osceola Counties (Service 1999). In addition the consultation area includes parts of Charlotte, Hardee, Indian River, Lee, Martin, Palm Beach, Polk, Sarasota, and St. Lucie Counties where the Florida grasshopper sparrow may be found (Fig. 1). Records have been reported from Collier and Miami-Dade Counties, but these are outside of the breeding range.

Determination

The Florida grasshopper sparrow SLOPES flowchart should be used to help make a determination (Fig. 2). The first step requires project-specific information that generally includes a project description, habitat maps, and project location. On the project maps, determine the boundaries of the project and a 100-m (328-ft) buffer surrounding the property. This buffer identifies off-site territories that may overlap onto the property.

The next step is to determine if the project falls within the Florida grasshopper sparrow consultation area (Fig. 1). Map habitat types present on the property and buffer area using a standard classification scheme (see SLOPES Introduction for more details). Suitable habitat for Florida grasshopper sparrow is dry prairie including improved pasture, palmetto prairie, unimproved pasture, especially associated with freshwater marshes and wet prairies, but any unforested habitat within the consultation area including pasture might be used. An exception would be row-crops and cleared sites devoid of vegetation that do not offer suitable conditions for the Florida grasshopper sparrow.

DRAFT

June 15, 2004

If the project falls outside the consultation area then no effect on the Florida grasshopper sparrow is anticipated. Keep in mind that if the Florida grasshopper sparrow is found on the site even outside the consultation area, conservation measures should be implemented.

If the project occurs within the consultation area and no suitable habitat is present, then no effect on the Florida grasshopper sparrow is anticipated. If suitable habitat is present then the project may affect the Florida grasshopper sparrow. Two options are available: 1) **option a** provides for the use of surveys of the property to determine the presence or presumed absence of Florida grasshopper sparrows in suitable habitat and 2) **option b** assumes that the Florida grasshopper sparrow is present.

If suitable habitat is present and the Florida grasshopper sparrow is not assumed present then a survey should be carried out. See Appendix A for the survey protocol. The Florida grasshopper sparrow survey protocol is the minimum level of effort the Service believes necessary to determine the presence or presumed absence of this species in the project area.

If surveys do not detect the presence of Florida grasshopper sparrow, then no effect on Florida grasshopper sparrow is anticipated. However, if site alterations do not begin prior to the next year's nesting season, then a follow-up survey may be needed prior to construction.

If Florida grasshopper sparrows are detected by surveys, known to be present on the property, or assumed present then the project may affect the Florida grasshopper sparrow and conservation measures should be implemented to minimize any adverse effects.

Conservation Measures

The first measure recommended by the Service is to modify the project footprint to avoid direct impacts to Florida grasshopper sparrow habitat. It is also recommended that occupied habitat be designated as an environmentally sensitive area and set aside by deed restriction, easement, or other protective covenant. If the occupied habitat exceeds 2 ha (5 acres), then a Habitat Management Plan is also recommended. The incorporation of these recommendations into the project design and documented in a Habitat Management Plan should result in the project not adversely affecting the Florida grasshopper sparrow.

When Florida grasshopper sparrows are present on the property, and the extent of the population has been determined, there are several ways to minimize impacts and provide adequate habitat for the maintenance of the population. Maintaining the openness of a site will provide a favorable environment for this sparrow. Introduction of any forested edge or other consistent visual barrier near a Florida grasshopper sparrow population may negatively affect the sparrows. Whenever possible, a buffer of approximately 400 m (1,312 ft) around the population area should be maintained when introducing a barrier. Maintaining a connection to adjacent open habitats in the area may also help sustain long-term populations and maintain the subspecies as a

DRAFT

June 15, 2004

whole by providing a network that may be used to disperse among populations. Corridors in the traditional sense are probably not effective for the Florida grasshopper sparrow because they are unlikely to enter a narrow swath of suitable habitat if it is surrounded by unsuitable areas (specifically, surrounded by forested areas or other features that may constitute a barrier). While sparrows are known to cross barriers, such as dense cypress-dominated forests and oak hammocks, large expanses of these habitat types dramatically reduce the likelihood that sparrows will successfully disperse. Maintaining one edge (or approximately 1/4 of the perimeter of a site occupied by sparrows) undeveloped and contiguous with other adjacent open habitats can improve habitat for the Florida grasshopper sparrow.

Maintaining occupied habitat in good condition is important for the success of the sparrow. This translates into maintaining the habitat in a low-stature, grass-dominated condition. Whenever possible, growth of native bunchgrasses, such as wiregrass (*Aristida* spp.) and bluestems (*Andropogon* spp.), and low-stature native shrubs and forbs should be encouraged. This is traditionally accomplished through prescribed fire with sites burned on a 3-year rotation generally provide near-optimal conditions for sparrows. Old fences should be removed from occupied sites to reduce perches for avian predators. Cattle grazing (with moderate stocking rates), native seed harvesting, hunting, and other low-impact recreation are uses consistent with management for the Florida grasshopper sparrow.

On-site enhancements are recommended by the Service in situations where a project proposes to impact occupied Florida grasshopper sparrow habitat and surveys have shown that the habitat has been physically altered by exotic species invasion, lack of fire, or other anthropogenic actions. These conditions result in marginally suitable habitat for the survival and propagation of the Florida grasshopper sparrow. If the project can limit impacts to suitable habitat and improve habitat quality in other areas through exotic removal or prescribed burns then the project is not likely to adversely affect the Florida grasshopper sparrow. Habitat enhancement measures should be incorporated into a habitat management plan and include a monitoring component to document to the success of the measures.

The Service strongly recommends that occupied Florida grasshopper sparrow habitat be avoided and preserved. When appropriate measures can not be implemented or are insufficient to minimize effects the Florida grasshopper sparrow is likely to be adversely affected. If, after project alterations, the amount of on-site habitat and in the adjacent off-site buffer is not sufficient to support a Florida grasshopper sparrow family, then incidental take of the family is likely. The available habitat should be 3.1 ha (7.7 acres) or greater, which is the average size of a Florida grasshopper sparrow territory. Since adverse effects are expected in this scenario, formal consultation is necessary. Early communication with the Service can help facilitate problem resolution,

Off-site Conservation

DRAFT

June 15, 2004

Off-site conservation is considered as an option when on-site habitat avoidance and enhancement have been evaluated and determined to not be a viable alternative or enhancements proposed are not sufficient to ensure conservation or survival of the population on the property.

The primary goals for off-site conservation are the preservation, enhancement, or addition to publicly and/or privately protected lands. The emphasis is to 1) expand existing preserves and 2) protect and manage occupied and unoccupied habitat that is contiguous with managed public or private lands. Contiguous areas should be within unobstructed dispersal distance from preserved lands.

The Service's preferences are:

1. on-site preservation or enhancement;
2. off-site compensation within the affected population area;
3. off-site compensation to the nearest public or privately managed Florida grasshopper sparrow conservation area; and
4. off-site compensation to the nearest public or privately managed conservation area with unoccupied suitable habitat for the Florida grasshopper sparrow.

Habitat Compensation

There are three habitat compensation options. One, purchase or otherwise acquire fee title to habitat of equivalent ecological function. Acquisition of occupied habitat is preferred as unoccupied habitat may require greater compensation to provide the same ecological function. Unoccupied habitat acquisition also requires a restoration component. This may require greater compensation depending on habitat quality. All acquisitions must be accompanied by a monetary endowment sufficient to provide perpetual management of the preserved lands. If initial restoration of the preserved lands is required to make the habitat suitable for the Florida grasshopper sparrow, then the cost of restoration needs to be added to the endowment.

A second option is to restore suitable unoccupied habitat on public lands and provide sufficient funding to ensure perpetual management of the restored habitat, and a third option is to provide sufficient funding to perpetually manage occupied Florida grasshopper sparrow habitat on public lands.

Alternatives two and three are not likely to result a net benefit and as such, should be considered only as a last resort. These options should not result in actions that would otherwise be implemented by the public agency tasked with managing such public lands.

Both on-site and off-site conservation strategies can help compensate for and minimize incidental take of occupied Florida grasshopper sparrow habitat. These compensation and minimization strategies further the Service's goals for conservation and recovery of the species.

DRAFT

June 15, 2004

The on-site strategies promote the preservation and management of existing population on private lands. The off-site strategies promote expansion of the boundaries of existing preserves through efforts to protect and manage occupied and unoccupied habitats that are contiguous to the preserved lands. These measures should be incorporated into the habitat management plan.

Reports

A habitat management plan is necessary when a project may substantially affect the Florida grasshopper sparrow. The management plan should be part of the consultation initiation package (see Service 2004). The plan should also include any survey reports. If habitat enhancements are proposed, the management plan needs to include a habitat monitoring component. An annual survey of the on-site area including buffer is required to determine population status and area of use for at least 3 years following completion of project activities. Standard survey protocol procedures (Appendix A) should be followed and a survey report submitted the Florida Grasshopper Sparrow Lead Biologist at U.S. Fish and Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, FL 32960-3559 by the end of each year.

DRAFT

June 15, 2004

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GIS Data Layers

Florida Grasshopper Sparrow_CA

Consultation area for Florida Grasshopper sparrow

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DRAFT
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APPENDIX A
Florida Grasshopper Sparrow
Survey Protocol