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LONGEVITY AND SITE FIDELITY OF FLORIDA GRASSHOPPER SPARROWS

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Abstract.—Three adult male Florida Grasshopper Sparrows recaptured during a banding study on the Avon Park Air Force Range, Highlands County, Florida extend the longevity record for Grasshopper Sparrows beyond published records to at least 6.6 yr. Recaptures were ≤320 m from original banding locations, which is consistent with the supposition that Florida Grasshopper Sparrows are sedentary. This population of the endangered Florida subspecies appears to be longer-lived than Grasshopper Sparrow populations in other parts of the species' range and may have different demographic patterns. Long-term studies are needed to confirm this.

LONGEVIDAD Y FIDELIDAD EN AREA DE ANIDAJE DE *AMMODRAMUS SAVANNARUM FLORIDANUS*

Sinopsis—Tres machos adultos de *Ammodramus savannarum floridanus* capturados durante un estudio de anillaje en los predios de la Fuerza Aerea en Avon Park. Condado de Highlands, Florida, han extendido los registros de longevidad publicados para la especie hasta al menos 6.6 años. Las recapturas ocurrieron ≤320 m de las localidades donde se anillaron originalmente, lo que es consistente con la suposición que los individuos de *Ammodramus savannarum floridanus* son sedentarios. Esta poblacion de la subespecie en peligro de extinción parece vivir más que otras poblaciones de la especie en otras partes de su distribución, y puede tener patrones demográficos diferentes. Se necesitan estudios de largo plazo para estudiar esta posibilidad.

The Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*) was listed as endangered in 1986 due to habitat loss, population decline, and a limited distribution (Federal Register 1986). The subspecies is known from only seven small (≤200 individuals) populations within central peninsular Florida. Florida Grasshopper Sparrows were first band-

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ed at the Avon Park Air Force Range (APAFR), in Highlands and Polk Counties, Florida in 1989, and by 1992, 73 individuals were banded (Delany et al. 1993). A second banding study was initiated at this location in 1995. This paper provides information on longevity and site fidelity of Florida Grasshopper Sparrows captured during the first study and recaptured during the second.

The study site is a 700-ha area of contiguous prairie on APAFR. The plant community is dominated by bunchgrasses, including wiregrass (*Aristida* spp.) and bluestems (*Andropogon* spp.), with approximately 30% shrub cover. Dominant shrub species are saw palmetto (*Serenoa repens*), dwarf live oak (*Quercus minima*), and fetterbush (*Lyonia* spp.). Additional details about vegetation composition and structure are provided in Delany et al. (1985). The climate is humid-subtropical (Winsberg 1990).

Florida Grasshopper Sparrows were target mist-netted during the breeding season (April–July) by locating singing or calling birds, and then placing a mist net in close proximity. Sparrows were lured into the net by playing tape-recorded songs of Grasshopper Sparrows, or were flushed into the net by ≥2 field biologists. Birds were captured during the winter (October–February) by dragging weighted ropes between field biologists to flush birds into mist nets. Capture and banding were authorized under U.S. Fish and Wildlife Service Endangered Species Permit PRT-801597 and Bird Banding Permit 20739.

We captured 35 Florida Grasshopper Sparrows from June 1995–January 1996. Most (29) were adult males, and three of these were originally banded by Delany et al. (1995). These recaptures meet or exceed published longevity records for Grasshopper Sparrows. The last published longevity record for Grasshopper Sparrows was for a bird that was minimally 4.0-yr old (Delany et al. 1993) and was banded and recaptured within our study area. Their report extended a previous longevity record of 3.08 years (Klimkiewicz and Futcher 1987), for a Grasshopper Sparrow banded in Nebraska (presumably *A. s. pratensis*). Observations of Grasshopper Sparrows at this location (Delany et al. 1993, this study) represent the four oldest recorded members of the species. Populations of the *floridanus* subspecies appear to be longer-lived, and may have substantially greater survival rates than populations in other geographic areas. However, the former longevity record of 3.08 years for the species is one of the shortest reported for any of the North American sparrows (Klimkiewicz and Futcher 1987, 1989). It is unclear whether this is indicative of a species with a generally short life span or a paucity of banding data. The short duration of most banding studies may not allow effective documentation of longevity.

The recaptures reported here are consistent with annual survival probabilities of 0.598 for adult males estimated for this population (Delany et al. 1993). Based on this estimate, the cumulative probability of survival for four and five years after reaching adulthood (corresponding to minimum ages of 5- and 6-yr old) would be 0.127 and 0.077, respectively. Long life spans may help counteract low or highly variable reproductive

TABLE 1. Capture information from recaptured Florida Grasshopper Sparrows at Avon Park Air Force Range, Highlands County, Florida, June 1995–January 1996.

USFWS Band #	Initial band date	Recapture date	Minimum age (yr)[a]	Distance from initial capture site (m)
920-63042	31 May 1990	21 Jan. 1996	6.6	150
920-63044	12 Jun. 1990	1 Jul. 1995	6.0	150
920-63094	27 Mar. 1992	10 Jun. 1995	4.0	320

[a] Assuming a hatch date of 1 June of the previous year for adult birds (Klimkiewicz and Futcher 1989).

rates, and may aid in recovery of this endangered taxon. Because long life spans may act to mask population declines, monitoring methods for this subspecies should be sensitive to small variations.

Recapture locations were ≤320 m from initial capture sites (Table 1). The *floridanus* subspecies is thought to be sedentary (Delany et al. 1995) and non-migratory (Stevenson 1978), and our recaptures support these suppositions. The long life spans of individuals from this site suggests that this population, and possibly this subspecies, may have demographic patterns that differ from those in other Grasshopper Sparrow populations. However, information on other non-migratory and tropical subspecies is needed to fully assess the range-wide patterns of survival and longevity in Grasshopper Sparrows, and such information is currently lacking (Vickery 1996).

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