

# Netting and Banding Florida Grasshopper Sparrows

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## INTRODUCTION

The Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*) was listed as endangered in 1986 (Federal Register 1986). The subspecies is endemic to the southcentral prairie region of the state, and most colonies (breeding aggregations) are located on native grasslands (Delany et al. 1985; Delany and Cox 1986) with compacted, sandy soils. Habitat loss is the principal cause of decline of the sparrow (U.S. Fish and Wildlife Service 1988). Much of the "native" prairie in Florida has been converted to improved pasture (Davis 1980) or reduced by phosphate mining (Callahan et al. 1990). The recovery plan for this subspecies (U.S. Fish and Wildlife Service 1988) identifies the need for basic information on habitat requirements, movements, and survival before the Florida Grasshopper Sparrow can be managed properly. A banding study was initiated in 1989 to obtain information necessary to manage the population. This paper describes mist netting techniques and reports preliminary banding results.

The study area was the U.S. Air Force Avon Park Bombing Range in Highlands and Polk Counties, Florida. The 430 km<sup>2</sup> military installation serves primarily as a training range for fighter aircraft and Florida Army National Guard maneuvers. The bombing range has a variety of plant communities in and around target areas, including native grasslands and forested areas. Most of the installation is leased for cattle grazing. A colony of Grasshopper Sparrows was studied within a 700 ha prairie dominated by saw palmetto (*Serenoa repens*), dwarf oak (*Quercus minima*), pineland threeawn (*Aristida stricta*), bluestems (*Andropogon* spp.), and yellow-eyed grass (*Xyris* spp.).

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## MATERIALS AND METHODS

As an alternative to commercially available mist net poles and pounders, we designed a step insertion pole (Figure 1), consisting of a 305 cm (10 foot) length of 2 cm (3/4 inch) diameter, galvanized electrical conduit. A 46 cm metal rod, 1.6 cm in diameter, was inserted 34 cm into the conduit and welded into place. The exposed 12 cm was sharpened to a point. One side (12 cm) of an L-shaped, 0.6 x 2.5 cm, flat metal bar was welded to the conduit to form a "step" 36 cm from the point. The cost per pole was \$3.45 for materials and \$8.50 for labor.

Usually, two to four people searched for singing male Grasshopper Sparrows by making visual and auditory observations while walking through the study area. The searchers carried one to two 18 m furred mist net(s) (3.2 cm mesh) mounted on two to four modified poles. Net loops were strung on the poles without attachments. When a sparrow was found, the poles were set into the ground by stepping on the horizontal bar, and the nets were unfurled. Neither guy wires nor center poles were needed to support the poles or nets. The nets were positioned between singing perches so the sparrow could be captured when flushed. Grasshopper Sparrows were marked with numbered, aluminum U.S. Fish and Wildlife Service bands and a unique combination of two colored, plastic leg bands (Figure 2). The split plastic bands were not glued shut. During the breeding season (March to June), the sex of adult sparrows was determined by the presence of a cloacal protuberance (male), or its absence and the presence of a brood patch (female). Age (juvenile or adult) was determined by plumage. Sparrows were released at the site of capture, and the process was repeated at the next occupied territory. One to five captures could be

made in a morning. Capture locations and subsequent observations of marked sparrows were recorded on large scale (1:2,400) aerial photographs. Most banding occurred during the breeding season between sunrise and 0900 hours, when sparrows were most active.

## RESULTS AND DISCUSSION

From 21 March 1989 to 20 November 1991, we banded 71 Grasshopper Sparrows during 86 netting attempts lasting 10 to 30 minutes each. The sample included 49 males, 15 females, and 7 individuals of undetermined sex. Only three sparrows less than one year old were captured. Of 38 males banded prior to the 1991 breeding season, we observed 17 on territories within 100 m of their capture location during succeeding years. The longest observed movement was a male that moved 2 km from his natal site to occupy a territory the following spring. Of 29 males banded during 1989, 11 were seen in 1990 and four were observed in 1991. Six of the nine males banded during 1990 were seen the following year. No banded females were recaptured or seen during succeeding years.

Two instances of plastic band loss were observed. One band was missing from a male one year post-banding, and two were missing from a male after two years. Both sparrows were recaptured and the bands replaced.

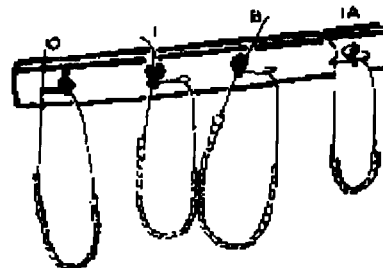
Our capture and banding activities did not appear to adversely influence breeding Grasshopper Sparrows. Most banded males resumed territorial behavior (singing) when released. Poles modified with the point and step attachments were inexpensive, easy to set, and provided a secure attachment for mist nets. The modified poles allowed rapid positioning of nets which minimized disturbance to breeding birds, and maximized the effectiveness of our efforts during the limited banding period. Techniques described here may facilitate similar studies on compacted substrates. Overlapping or glued plastic bands may be needed to improve band retention for Grasshopper Sparrows. Information from this study will be related to prairie management for cattle, and recommendations will be made to benefit the Florida Grasshopper Sparrow.

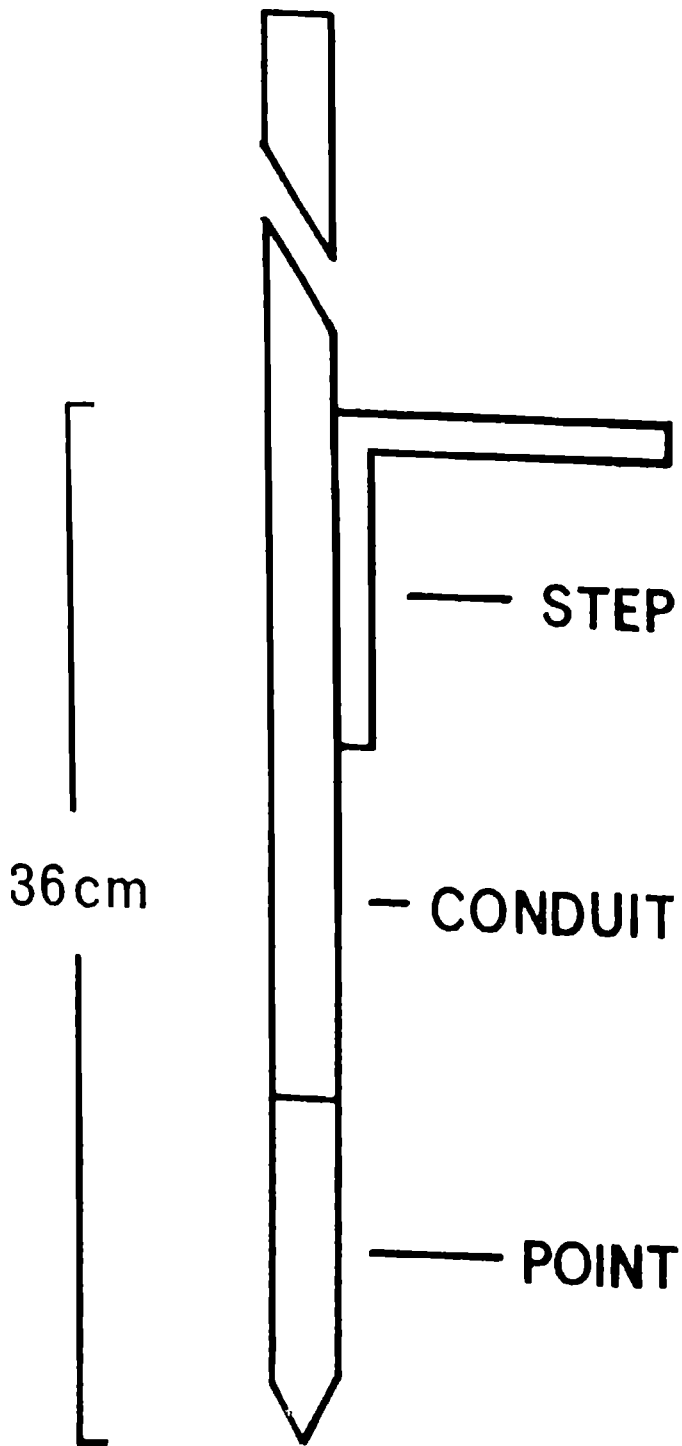
## ACKNOWLEDGMENTS

D. Necker constructed the net poles. We gratefully acknowledge the field assistance of P. Ebersbach, C. Ford, D. Ford, R. Hooten, T. Logue, C. Olsen, Col. J. Rogers, S. VanHook, and V. Wallers. J.R. Brady, S.A. Nesbitt, and J.A. Rodgers, Jr. reviewed earlier drafts of this manuscript. This technique was developed while conducting Florida Game and Fresh Water Fish Commission research project No. 7513.

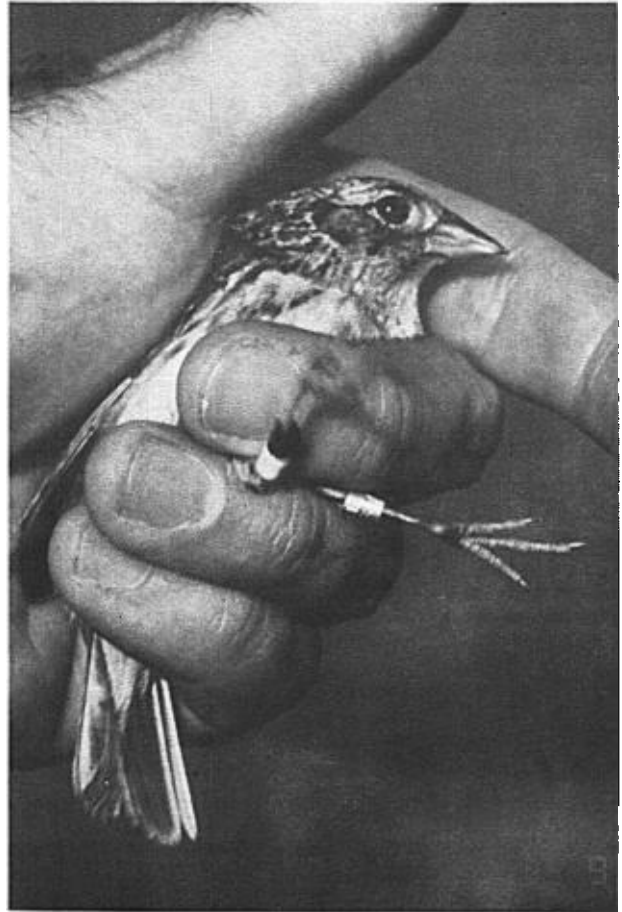
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**Figure 1. Diagram showing placement of step and point attachments to mist net pole.**



**Figure 2. A Florida Grasshopper Sparrow marked with aluminum and plastic leg bands.**