

**Clutch information for the Florida Grasshopper Sparrow from oological collections.**—Egg set data on oology slips from museum collections can be used to examine temporal patterns of the reproductive biology of birds. The Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*) is classified by the state of Florida as an endangered species (Kale 1978), and Delany et al. (1985) have suggested that it be classified on the Federal list as threatened or endangered. This note presents information on clutch size and date of clutch initiation of the Florida Grasshopper Sparrow obtained from oological collections and adds some historical information on its distribution and abundance omitted by Delany et al. (1985).

**Methods.**—I obtained information on 51 egg sets from oology slips and recorded the following data: 1) clutch size, 2) date of clutch initiation, and 3) incubation stage. I excluded data from four egg sets that were contradictory or that precluded reliable calculation of clutch size and date of clutch initiation.

I determined the date of clutch initiation from oology data following the procedure of McNair (1985). In brief, I estimated the date of clutch initiation as the date the egg set was collected minus clutch size plus one day. Additional days were subtracted from this date according to the collector's estimation of elapsed incubation time: fresh-0 day, slight-2 days, advanced-10 days, unknown-6 days (half of estimated incubation period). If the number of days of incubation was estimated and stated explicitly, I used that number.

Mean clutch size was calculated from clutches containing no fewer than three eggs. I assumed smaller clutches were incomplete (Nicholson 1938, Smith 1968). This may of course lead to an underestimate of clutch size.

**Results.**—Fifty-one egg sets of the Florida Grasshopper Sparrow in museum collections comprise 11.6% of Grasshopper Sparrow egg sets located in the United States and Canada (see McNair 1984, 1985 for museum collections examined). The total of 51 complete egg sets excludes numerous records of incomplete egg sets or of nests unfinished or destroyed (D. J. Nicholson and W. H. Nicholson, unpubl.). The majority (33 egg sets, 64.7%) of complete egg sets were found when fresh or slightly incubated.

I calculated mean clutch size of the Florida Grasshopper Sparrow to be  $3.71 \pm 0.46$  SD. The mean date of clutch initiation is 9 May  $\pm$  22 days SD. The mean was 5 May and the mode was 27 April. Dates of clutch initiation ranged from 21 March to 22 June (93 days).

The great majority of records I used were collected by D. J. Nicholson and W. H. Nicholson in the Kissimmee Prairie region of south-central Florida, 8.0 to 15.5 km west and southwest of Kenansville, Osceola County. Their most intensive work occurred in 1932 and 1933, but they also collected egg sets in 1935, 1938-1939, 1945, and 1950. The only estimates of abundance they gave are of a "large colony" or "small colony" present. D. J. Nicholson and W. H. Nicholson, and J. C. Howell, Jr., collected or found a minimum of 19 nests, most of which were incomplete or unfinished, 9.8 km west of Kenansville on 23 April 1933. Assuming the Grasshopper Sparrow is primarily monogamous, the number of nests found indicate a minimum of 19 breeding pairs present. This is the largest precise count available (from oological data) for the size of any "colony". The Nicholsons found nine nests each in the Kenansville area on two other days in either 1932 or 1933.

Delany et al. (1985) do not list any records of the Florida Grasshopper Sparrow from 1945 to 1962. Hence, I summarize all available egg set data on oology slips from 1945 to 1953.

D. J. Nicholson and W. H. Nicholson collected seven egg sets, each with four eggs, from 20 April to 27 May 1945 in the Kenansville area. D. J. Nicholson and W. H. Nicholson, and C. Carter found two egg sets, of two eggs each and about five days old, on 25 June 1950 in the Kenansville area. They also found a nest with four newly hatched young.

W. H. Nicholson collected a set of three fresh eggs on 13 May 1947 near Highway 60, Osceola County. This locality is distinct from the Kenansville area.

C. Carter collected one egg set with four slightly incubated eggs on 24 May 1953 in the Kissimmee Prairie on the east-northeast side of Lake Kissimmee, Osceola County. This nest was placed under a small tuft of Pineland Threeawn (*Aristida stricta*) amid Saw Palmettos (*Serenoa repens*).

**Discussion.**—Information on clutch size and date of clutch initiation presented herein generally agree with the literature (Smith 1968 and others), which suggests that the Florida Grasshopper Sparrow may begin egg-laying in late March and possibly extends its breeding season into July or even afterwards. However, the lack of adequate surveys both early or late in the breeding season prevent an accurate assessment of the duration of the breeding season.

This note has also provided additional information on the distribution and abundance of the Florida Grasshopper Sparrow. To complete the information I have, in addition to C. E. Doe's breeding record near Bassinger, Okeechobee County, cited in Howell (1932), Doe also collected a set of 4 fresh eggs at the same site on 19 April 1928. Habitat information on oology slips supports the interpretation presented in Delany et al. (1985).

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**Flushing lores of a male Least Bittern.**—A change and intensification of lore coloration with the onset of the breeding season is common among ardeids (Palmer 1962, Hancock and Elliot 1978, Hancock and Kushlan 1984) and is thought to emphasize certain movements of the displaying bird (Meyerriecks 1960). Lore color of females fades as eggs are laid but color may persist in males until hatching (Meyerriecks 1960, Hancock and Kushlan 1984). Color is usually brighter in males (Meyerriecks 1960). Flushing of the lores, a rapid, short term color intensification, has been noted in some species when alarmed at the nest or