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GREATER SANDHILL CRANES WINTERING IN CENTRAL FLORIDA

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During the 1800s when the pioneers settled the north-central United States, wild game yielded much of the necessary meat for many families. This hunting pressure and the drainage of many small and some larger marshes (both good nesting habitats) for agriculture probably accounted for the disappearance of the Greater Sandhill Crane (*Grus canadensis tabida*) as a breeding species east of the Rocky Mountains except for a few surviving pairs in northern Minnesota, central Wisconsin, and the eastern portion of the Upper Peninsula and the south-central part of the Lower Peninsula on Michigan (Walkinshaw 1949). Although the A.O.U. Check-list (1957) did not include Florida in the winter range of the Greater Sandhill (where the presence of a resident population, *G. c. pratensis*, may have caused some confusion), there were clues that some Greater Sandhills probably wintered in Florida. In late October 1942, a flock of 50 Sandhill Cranes fed for several days near Knoxville, Tennessee. The land owner shot one of these cranes (Ijams 1942, spec. Great Smoky Mtn. Natl. Park collection) and it is referable to *tabida* (Walkinshaw 1949). With a definite increase in the population of *tabida*, other reports came each spring and fall from Georgia (Walkinshaw 1953) and elsewhere east of the Mississippi River (Walkinshaw 1960). The evidence indicated that *tabida* migrated to Florida and southeastern Georgia along a line drawn between northeastern Indiana and Gainesville, Florida. Williams and Phelps (1972) were the first to color-mark wintering cranes in Florida. These marked birds were found in migration in Georgia, eastern Tennessee and Kentucky, and Indiana and during the nesting season in Michigan, Wisconsin, Minnesota and one in southern Manitoba (Williams and Phelps 1972, Nesbitt 1975,

Nesbitt and Williams 1979). More recent studies of nesting *tabida* fitted with color markers and/or radio transmitters provide more detailed information on the duration of migration and the location of wintering areas (Melvin 1977, Toepfer and Crete 1978). I present here my records of locations for wintering Greater Sandhill Cranes and my observations of their migration to establish a better understanding of their distribution in Florida.

METHODS

In central Florida (Glades, Highlands, Indian River, Okeechobee, Osceola, Polk co.), I studied Sandhill Cranes in 1938, 1945, 1960, and 1966-81 from October to late April (Walkinshaw 1976). During this time many ranchers have generously allowed me free access to their land. Often I remained overnight on a ranch so that I could be afield at daybreak. Many observations were made from vehicles, and twice I have used a helicopter (one trip donated by Florida Audubon Soc.). But I have also tramped many miles annually searching for crane nests which were my primary objective.

RESULTS

WINTERING AREAS

Greater Sandhill Cranes arrive in Florida in flocks or small groups during late October or November. At this time *pratensis* usually occurs in pairs or small family groups of 3 or 4, although they may occur in flocks in summer or early fall. Nesting by *pratensis* can begin as early as January, with the peak of egg-laying in central Florida occurring from 15 February-11 March (Walkinshaw 1976). Thus, all large flocks of cranes I saw in Florida during October to April were assumed to be *tabida*.

The records listed below include all of my sightings, and those of my contacts and field companions, of presumed *tabida* flocks in central Florida, including color-marked birds. Almost all of these are unpublished records. Fig. 1 shows these localities in relation to the other published localities of wintering concentrations of *tabida*.

Abbreviations of observers' names are as follows; WCB-W. Clay Babcock, LB-LeRoy Bass, GB-George Bent, CB-Cecille Bruner, DB-Dan Bruner, WAD-William A. Dyer, CLG-Charles L. Geanangel, WPH-W. Paul Hayman, RH-Ronald Hoffman, EJ-Earle Johnson, SM-Scott Melvin, MP-Miles Peelle, HM-Harold Moore, MR-Mildred Rulison, RR-Robert Rulison, DS-Don Stone, LHW-Lawrence H. Walkinshaw, MW-Mark Weldon.

DESOTO COUNTY.—ARCADIA-12 mi SE, *Hall Ranch*. 20 March 1971, 65 cranes.

HIGHLANDS COUNTY.—AVON PARK-4.5 mi NE, SR 64, *Dressel Dairy Farm*, R 29E, T32S, Sec. 3&4. During 12-30 January 1979, 19-23 cranes fed in pastures with dairy cattle and in harvested sorghum field (LHW, MR).

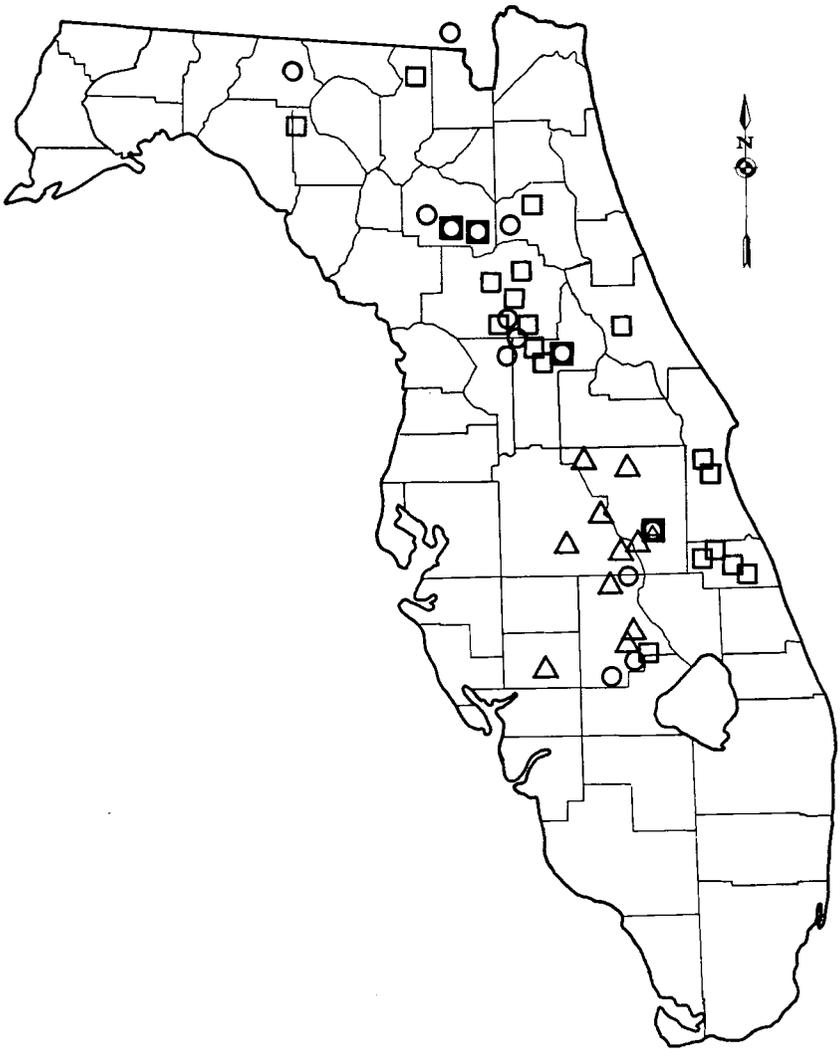


Fig. 1. Recent wintering areas in Florida for Greater Sandhill Cranes. Symbols as follows: circles, winter 1976-1977 (Melvin 1977); squares, winter 1977-1978 (Toepfer and Crete 1978), triangles, this study.

These cranes remained until 1 March 1979 (MR). Six cranes first appeared on 18 October 1979 and their numbers increased to 222 by 12 January 1980. A small remnant was seen on 6 March 1980 (MR and RR). In August and September 1980, prior to the arrival of *tabida*, 40-50 cranes were seen here (CLG). In mid-January 1981, 400 cranes were reported.—LAKE ISTOKPOGA-E and SE, *Lykes Brothers Wild Island Ranch and neighboring ranches*, R30-31E, T36-37S. On 27 March 1960, I saw 172 cranes in Sec. 15&16. In Sec. 31 or nearby, crane numbers were as follows: winter of 1969-70, 15 November-57, 9 February-247, 9 March-46, 20 March-30, 25 March-7; winter of 1970-71, 7 December-124, 4 January-140; and on 21 January 1973-7. During 1969-73, the cranes roosted in a shallow pond (Type 4, Shaw and Fredine 1956) in Sec 31 and flew one mi or less to feed in pastures. In 1973 the pastures were converted to vegetable fields and exploding devices were used to scare the birds away.—LAKE ISTOKOPOGA-5.5 mi S, *Parker Island*, R30E, T37S, Sec. 26. On 21 February 1976, a flock of 142 cranes fed in a pasture, formerly a bay-tree swamp, where a pair of *tabida* were nesting close to SR 29 in a flooded portion of the pasture.

OSCEOLA COUNTY.—KENANSVILLE-3 mi S, *Hayman Ranch*. In 1974, a flock of 25 cranes first appeared 26-27 October and remained until 1 March 1975. On 1 March 1976 a flock of 35 cranes was still present and at 1720-1723 I watched them fly from the sod fields where they fed during the day, E across US 441 to a large pond (Type 4, Shaw and Fredine 1956) on the Crosby Ranch. The flock disappeared 6 days later (WPH). On 26 December 1976, 125 cranes fed in sod fields (LHW, SM). Three were banded; one with a white neck-collar was banded in the fall of 1973 at the Necedah Natl. Wild. Refuge, Juneau County, Wisconsin (Melvin 1977). This flock diminished over the years; only 14 cranes were found during the 1979-80 winter and none on 3 November 1980.—KENANSVILLE-3-6 mi SW, *LeRoy Bass Ranch*. During the winters of 1970-71 and 1971-72, flocks of cranes were on the NW portion of the ranch (LB). I observed cranes in pastures as follows: 17 November 1970, 41; 26 February-7 March 1972, 25-32; 3 January-31 March 1974, 21-60; 26-27 October 1974, just N of here, 25 fed in newly-planted sod fields (WPH). The March dates in 1972 and 1974 represent the last sightings for that winter and likely indicate spring departure dates.—KISSIMMEE-1 mi E, *Judge Dairy Farm*, R29E, T25S, Sec. 23. During the 1978-79 winter, a flock of cranes fed daily where cattle were fed (MW, CB, DB). I counted 38 cranes on 27 February 1978. These cranes were last seen in early March and cranes first arrived the following fall in late September (CB). On 22 January 1979 35 cranes fed near here in a harvested sorghum field (LHW). On 3 November 1980, 9 cranes fed in a pasture (LHW). In February 1978, one color-banded crane I found here was banded as a nestling in Waterloo Township, Jackson County, Michigan, on 13 June 1973 by Ronald Hoffman and seen in Michigan during the summers of 1974, 1977, 1978, 1979, and 1980 (RH).—ST. CLOUD. During the winter of 1979-80, a large flock (133) of cranes located east of the town was reported to me.

POLK COUNTY.—LAKE WALES AIRPORT, vicinity of, *W. R. Crews Ranch*, R27E, T30S, Sec. 4,5,8,9. I observed cranes as follows: 27 December 1970-31, 2 January 1971-13, 25 February 1972-18, 16 December 1972-11, 6 February 1973-18, 20 February 1973-16. Flocks at this locality were gone in April. A little west of here (R26E, T30S, Sec. 2,3,5), there were 25 cranes on

20-30 October 1979 (LHW, WCB).—LAKE WALES-20 mi SE, *River Ranch Acres*, R31E, T31S, Sec. 5-8. I observed cranes feeding on closely-cropped pastures as follows; 19 February 1966-42, 20 November 1966-36, 27 March 1967-24, 9 November 1969-34, 10 March 1970-15, 17 November 1970-74, 19 February 1971-10, 26 January 1978-14.—LAKE WALES-10 mi E, *Lake Kissimmee State Park* (LKSP), R29E, T29S, Sec. 10-14. Cranes were observed as follows: wintering flocks last seen in early March 1978, 29 December 1979-10, mid-January 1980-45 (DS), 16 February 1980-147, wintering flocks last seen about 6 March 1980, 1 November 1980-10 (LKSP personnel), 3 November 1980-81 (LHW, EJ). During February-March 1980 there were two color-banded birds present. One with a green wing-streamer (no. 124) was banded at Comstock, Wisconsin, on 21 August 1977 by Scott Melvin (Walkinshaw 1980). These birds roosted in a marsh in LKSP.

SPRING MIGRATION

In central Florida during late winter, flocks of high-flying cranes headed in a northerly direction were often located by the sound of their trumpeting calls (WCB, GB, WAD, MP, LHW). Information on these flocks is listed below.

OSCEOLA COUNTY.—ST. CLOUD-4.5 mi ESE, over *Alligator Lake*. On 15 March 1967 at 1000, 6 cranes were flying in a flock just W of N at 366 m. The day was clear with moderate S winds.

POLK COUNTY.—LAKE WALES-5 mi NE, near *Lake Pierce* at Timberlane. On 7 March 1975 at 1115 a flock of 38 cranes in V-formation was seen flying NNW at 610 m. The day was clear with moderate S winds and temperature 18°C. On 1 March 1979 at 1300, 25 cranes were flying N so high they were visible only with binoculars. The day was clear with few cumulus clouds, moderate S winds and temperature 24.4°C. On 28 February 1981 on 1205 (also see below Bok Tower), two flocks of about 25-30 each in V-formation were headed N at 475 m. On 4 March 1981 at 1200 a northward bound flock was heard passing over.—LAKE WALES-3 mi SE, *Highlands Park*. On 6 March 1980 at 1105, 35 cranes flew N in V-formation at 150 m. The day was clear with strong SSE winds and temperature 25°C.—LAKE WALES-1.5 mi N, over *Bok Tower*. On 1 March 1979 at 1200, a flock of 10 cranes flew N high overhead. On 28 February 1981 at 1200 3 flocks of 75-80 each flew N in V-formation.

Other wintering flocks were last seen in early March in Osceola County at *Hayman Ranch*-1976 and *Judge Dairy Farm*-1978, and in Polk County, *Lake Kissimmee State Park*-1980. See above, "Wintering Areas," for details.

FALL MIGRATION

I have only one record of fall migration in central Florida, as follows:

POLK COUNTY.—LAKE WALES-6 mi NE, *Timberlane*, R28E, T29S, Sec. 8. On 28 November 1980, a cloudy, mild day, 3 flocks of cranes flew overhead at an

altitude of 200-250 m going south at 1100-1130. Two flocks of 17 and 20 birds were in V-formation, while a small flock of 5 was in irregular formation (LHW, HM).

INTERACTIONS BETWEEN GREATER AND FLORIDA SANDHILL CRANES

When *tabida* is in Florida, *pratensis* is usually preparing to nest or is nesting, and therefore on territory. Normally a pair of *pratensis* range over an area of about 2 square miles which includes their nesting marsh. Occasionally more than one pair of *pratensis* will use a field, and flocks of *tabida* may feed in the same field with *pratensis*. However, nesting *pratensis* will drive out any other cranes (*tabida* or *pratensis*) that land in their nest-marsh.

ROOSTING AND FEEDING AREAS

In central Florida the preferred nighttime roost site of *tabida* is a shallow marsh (Type 3 or 4, Shaw and Fredine 1956). They feed from early morning to dusk arriving in small groups around dawn and returning occasionally to the roost site for a drink. Most of their feeding is on open, closely cropped pastures or sod fields. Some flocks feed in fields among cattle that are given supplementary food (Kissimmee flock 1978-80, Lake Kissimmee State Park 1980, Avon Park flock 1978-80). Others feed on row-crop (corn, sorghum) fields after harvest. The only time *tabida* may do a great deal of damage to agriculture is when they feed in produce fields or on row-crop fields just after sowing. Although I have not heard any reports of damage by *tabida*, they evidently did create a problem in Highlands County at Lake Istokpoga in 1973 where noise-makers were used to frighten feeding flocks of cranes.

In central Florida, *tabida* flocks usually shift areas of useage every few years. Whether this is due to changes in food distribution or in water levels in marshes, or disturbance by humans, I do not know, but it probably has survival value for cranes.

DISCUSSION

The population of Greater Sandhill Cranes in eastern North America has increased tremendously during the past 50 years. Beneficial factors on the nesting range including cessation of hunting and protection of nesting marshes, have undoubtedly contributed to this increase. But in Florida, little is known of how land-use changes may have affected crane populations. When ranches were fenced and the open range abandoned after the 1949

Florida fence law finally closed the open range (Ackerman 1976), access for hunters became more difficult and this no doubt was beneficial to both *tabida* and *pratensis*. Also, during the past 25 years, many areas that were not prime crane habitat (pine flatwoods, shrubby marshes, swamps) were either cleared or drained for pastures, sod farms, or row crops. Use of fertilizers and irrigation has also increased. All this has opened up new feeding areas for cranes. The drainage, alas, has eliminated nesting areas for *pratensis*. The recent establishment of state parks and refuges in parts of Florida where *tabida* winters is bound to aid both populations of cranes so long as suitable crane habitat remains in these protected areas.

Recent records (Fig. 1) indicate three major areas in Florida important for wintering Greater Sandhill Cranes. One is in northern Florida in Alachua, Marion, Putnam, and northern Lake counties. The other two are central Florida in the Kissimmee River valley (Highlands, Osceola, and Polk co.) and in the upper St. Johns River valley (Brevard, Indian River co.). Surprisingly, there are no records from Okeechobee County in the Kissimmee River valley and only one from the DeSoto Prairie (Charlotte, DeSoto, Glades, western Highlands co.) where conditions seem favorable for wintering cranes and where *pratensis* is abundant.

Although annual censuses at migration staging areas in northwestern Indiana estimate the population of *tabida* at 15-20,000 (Lovvorn 1979), recent winter census efforts in Florida have only found slightly less than 5,000 of these birds (Melvin 1977, Toepfer and Crete 1978). We have learned a great deal about *tabida* in the last 10 years, but there is still much more to learn about how and where they spend their winters in Florida.

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