

the south, landing 5 m south of the nest. She waded around a little then stopped 4 m from the nest, came closer and preened. At 1651 the male stood up and walked off the nest. The female climbed up and sat down. The male began tossing vegetation back toward the nest then went on foot to the southeast end of the pond. At 1835 he flew back eventually ending up 9 m from the nest at the edge of the *Sagittaria*. As it got dark the female continued to incubate as the male stood motionless 9 m away.

During the 12 hours we observed this nest, the female incubated during three periods: (1) probably all night 1-2 March 1984 until 0715 2 March (with the known period of 0638-0715 hrs); (2) from 1034 until 1307 (153 minutes) and (3) from 1651 until 1838 then probably the entire night of 2-3 March. During daylight hours she incubated during periods of 37, 153 and 107 minutes, totaling 297 minutes. The male incubated 0715 until 1034 (199 minutes) and from 1307 until 1651 (224 minutes), a total of 423 minutes. The female worked with the nest and eggs for 9 periods of 20 minutes while the male worked with them for 7 periods or 19 minutes. Thus during the daytime there were 39 minutes during which the birds did not incubate.—Lawrence H. Walkinshaw, 5230 Timberlane Road, Lake Wales, Florida 33853.

Florida Field Naturalist 13: 67-68.

Alligator with young threatens Great Blue Heron.—I know of no reports of an alligator (*Alligator mississippiensis*) threatening or attacking a Great Blue Heron (*Ardea herodias*). In this note I report an observation of an alligator driving a heron away from her young, estimated to be 8-9 months of age, by a waterhole on the Hendrie ranch, 24 km south of Lake Placid, Highlands County, Florida. The waterhole, a pool 8 x 20 m, was free of vegetation. Also favoring observations was the tameness of the alligators and heron resulting from my daily visits to the ranch. The alligators moved into the pool on 9 April following several days of rain, preceded by months of drought. Fourteen young alligators, about 36 cm in length, arrived irregularly over the next 3 days. The smaller of the adults (ca 2.3 m in length) was probably a female, as judged by her size and the way she guarded the young (Kushlan 1973, *Herpetologica* 29: 256-257). Also, on 17 April I watched her rub her throat three times on the back of the head of the larger alligator (length ca 3.3 m), which appeared to be a male, then sink under water on top of him, a form of courtship described by Garrick (1975, *Animal Kingdom* 78(2):2-8).

On a number of mornings the young climbed onto the grass of a spoil bank to sun themselves, followed by the smaller adult and, to one side, the larger adult. The alligators were in these positions on 18 April when a Great Blue Heron alighted 3 m away, then started walking toward them. The female alligator, rising high on her legs, rushed at the heron with jaws open. The heron, seemingly not much disturbed, turned and moved to the end of the waterhole where it fed by Walking Slowly (Kushlan 1976, *Auk* 93: 86-94). After returning to her young, the smaller adult alligator slipped down the bank, with head pointed toward the heron, and disappeared under the water. The heron, as if anticipating the alligator's arrival, stood on the shore (Fig. 1a), looking in its direction. After 1-2 min the submerged alligator suddenly made an open-mouthed lunge at the heron (Fig. 1b). Because the alligator did not come very close, I think that she was trying to scare the heron rather than to catch it.

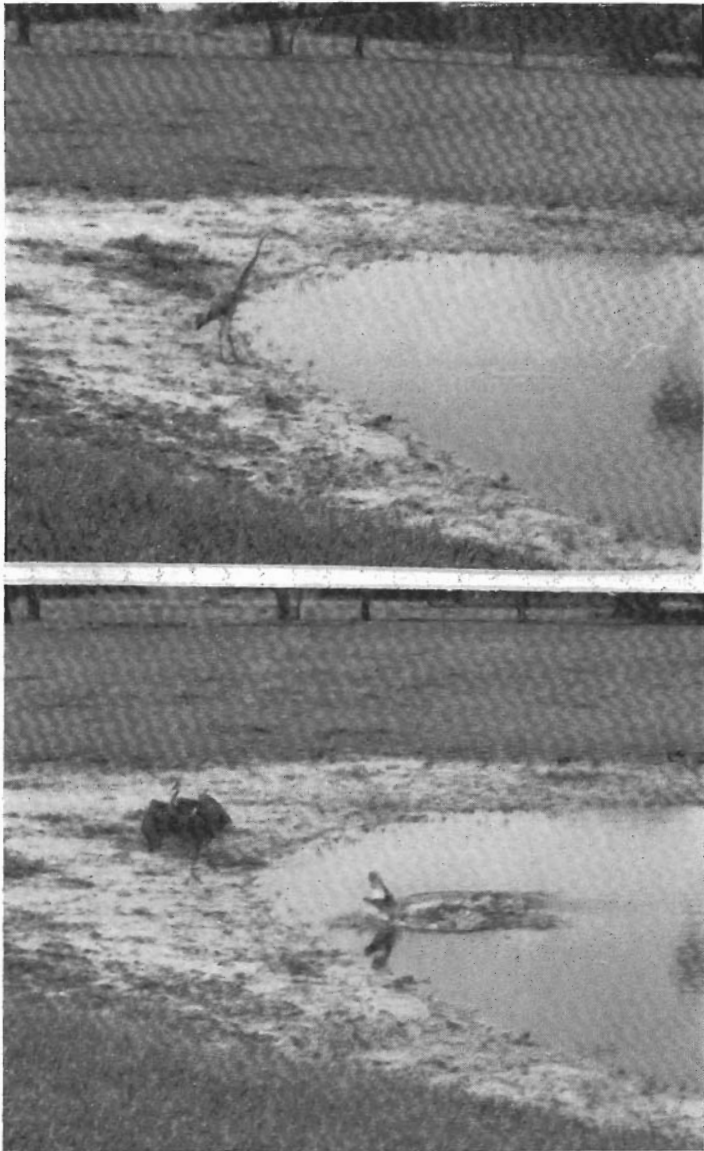


Figure 1. A (Top) Great Blue Heron Looking into Water as if Anticipating Arrival of Alligator. B (Bottom) Female Alligator Making an Opened-mouth Lunge from Submerged Position.

It would be interesting to know if Great Blue Herons are important predators of young alligators and up to what size. The young on the spoil bank did not appear to be too large for, in January 1981, I watched a Great Blue Heron in Georgia swallow a chunky fish that was as long as the young alligators and may have weighed considerably more.

The behavior observed at the ranch, although similar in general, does not exactly fit patterns described by Kushlan and Kushlan (1980, *Herpetologica* 36: 27-32) of defense by nesting alligators, possibly because situations change as young grow older. The smaller alligator at the ranch defended her young directly when they were on the bank and also the pool as a territory. This latter approach fitted prior observations that the young were apt to swim about the whole of the pool when not sunning themselves on the bank.

I thank James H. Hendrie, Sr. and John D. Hendrie for letting my wife and I visit their ranch and James N. Layne and Fred E. Lohrer of the Archbold Biological Station, Lake Placid, Florida, for general assistance.

Lawrence Kilham, Main St., Box 37, Lyme, New Hampshire.

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REVIEW

Florida atlas of breeding sites for herons and their allies: 1976-78.—Stephen A. Nesbitt, John C. Ogden, Herbert W. Kale II, Barbara W. Patty, and Lesley A. Rowse. 1982. U.S. Fish and Wildlife Service, Office of Biological Services. FWS/OBS-81/49.—This report presents information on heron colonies in Florida east of the Ochlockonee River. Data cover 1976 through 1978 and include 295 identified colony sites and 22 species of colonial waterbirds. The report is organized by county and by colony, with the account for each site including colony location, colony name, site description, and the number of pairs of each species, mostly in April or June of the several years, depending on the information available. The report was printed by the National Coastal Ecosystems Team of the U.S. Fish and Wildlife Service, whose stated purpose was "to aid resource managers and others concerned with the intelligent management of Florida's natural resources." With such an important audience in mind, it is of some value to examine whether the purpose has been met.

The most useful potential contribution of this report is to document the locations of waterbird colonies censused in Florida. For the most part, the locations given for colony sites are approximately correct, especially those located near prominent landmarks. Not all colonies are correctly placed, however, so the best approach for a local conservationist is to use the atlas as a starting point for locating colony sites and then to seek corroborative evidence elsewhere. Also one should not assume that the sites presented represent all of the colonies active in Florida during the years covered, in that the aerial searches for previously unknown colony sites were far from complete. Clearly the listing of colony sites in one report is a contribution, but this atlas must be used cautiously.

With respect to a second potential contribution, the documentation of species composition and nesting numbers, the Atlas ends up doing a decided disservice to its audience, because of its reporting of data marred by un-evaluated errors especially resulting from the use of one-shot aerial censuses. The existence of such errors are noted in the Methods section, including my finding that they may be as high as 30-100%. Regardless, census numbers are