

and emit a low-pitched hissing sound. On 26 July, more than 15 weeks after fledging, the young were still begging food but were not fed on the one occasion I observed them. Long post-fledging dependence is also indicated for the Turkey Vulture by the hand-reared young's recognition of and behavior towards me. For 7 weeks after fledging the young Turkey Vulture would, upon my appearance, assume a posture with wings slightly spread and arched downwards, the head lowered, and the tail inclined upwards with the feathers separated. There was much head-bobbing and wing-flapping when food was presented, but no vocalizations. The Turkey Vulture did not behave in this manner if approached or fed by other individuals.

The nesting of Turkey and Black vultures I observed corresponds to the dry season in Panama which is from January to April. Wetmore's (Smithsonian Misc. Coll., 150(1): 160-161, 1965) incidental reports of Black Vulture nesting activity, nestlings, fledglings, and an egg collection also indicate that nesting occurs during the dry season in Panama for this species. His only information on *Cathartes* sp. nesting in Panama is for the Yellow-headed Vulture, *C. burrovianus*, for which he reported 2 young "only recently able to fly" on 14 May 1953. The Turkey Vulture from the nest on the island fledged 21 May.

Vulture nesting activity correspondence with the dry season may be due to several factors. Carrion resources for vultures may be greater during the dry season. However, for frugivorous animal populations at least, highest mortality might be expected at the end of the wet season, during November, December, and January, when fruit abundance is lowest (Smythe, Am. Nat. 104:25-35, 1970). Alternatively, the dry season weather may be more favorable for raising young. The dry season months are windier and drier than the rest of the year and foraging time is likely maximal then. The wet season's rains and calmer weather may make soaring difficult and thus make hunting less energetically efficient. Also, the higher relative humidity and rainfall then might be detrimental to the health and development of the terrestrial young.

I thank Eugene S. Morton for commenting on the manuscript.—LAURIE A. MCHARGUE, *Smithsonian Tropical Research Institute, Box 2072, Balboa, Canal Zone. Accepted 11 Nov. 1976.*

Fulvous Whistling Duck populations in Texas and Louisiana.—Numbers of Fulvous Whistling Ducks (*Dendrocygna bicolor*) declined rapidly in the 1960's apparently from exposure to pesticides applied to rice (Flickinger and King, J. Wildl. Manage. 36: 706-727, 1972). The species was listed as endangered by the Texas Organization for Endangered Species since 1972. However, numbers have increased since 1970 when many rice growers began to voluntarily discontinue the use of aldrin-treated rice seed in Texas and to substitute drill planting for aerial seeding of treated seed in Louisiana. Aldrin treatment of rice seed was suspended by the U. S. Environmental Protection Agency in 1974.

Ground or aerial surveys of Fulvous Whistling Ducks were made at all their traditional concentration areas in 14 southeast Texas counties or 4 Parishes of southwest Louisiana along the Gulf Coast. Counts and estimates were alternated between Texas and Louisiana between 1968 and 1974 when the first late summer estimates were made for both states. Spring and later summer censusing was done in Texas for the first time in 1975. Most spring counts were made from the ground from mid-April through May with the exception of the count in Texas in 1975 (made 15 to 30 April). Late summer birds in both states were estimated from aircraft during mid-September except in Texas in 1975 when a ground count was taken.

In the spring of 1968 only 1123 Fulvous Whistling Ducks were counted in both states

TABLE I
FULVOUS WHISTLING DUCKS OBSERVED IN TEXAS AND LOUISIANA, 1966-1975

Year	Texas	Louisiana
	Spring ^a	
1966	— ^b	192
1967	519	672
1968	379 ^c	744 (1,000)
1969	978	—
1970	—	1,441 (4,000)
1971	—	1,555 (4,000)
1973	(2,000) ^d	—
1975	1,650 ^e	—
	Late Summer	
1973	—	(6,000- 8,000)
1974	(15,000) ^e	(8,000-10,000)
1975	6,700	(8,000-12,000)

^a Counts and estimates of total numbers in Louisiana from J. Lynch, U. S. Fish and Wildlife Service (pers. comm.); ^b (—) = No observations made; ^c Ground and aerial counts made in the rice belt; ^d Estimate for the Texas Rice Belt (from C. Stutzenbaker) in Bellrose (The Ducks, Geese and Swans of North America, Stackpole Books, Harrisburg, PA, 1976:75; ^e Estimate of Chambers and Jefferson counties from J. Dunks, Texas Parks and Wildlife Department (pers. comm.).

(Table I) when the use of aldrin-treated rice seed was at a peak. Following a decline in aldrin use, numbers increased in the spring in Louisiana (1441 in 1970) and in Texas (about 2000 in 1973). There were also fewer Fulvous Whistling Ducks found dead in rice fields in 1970 and 1971 (Flickinger and King, J. Wild. Manage. 36:706-727, 1972) than in earlier years.

During the spring of 1975 largest concentrations in Texas occurred in Chambers and Wharton counties with the peak number of 650 birds in Wharton County on 26 April. The Texas counties of Chambers and Jefferson had concentrations in both spring and late summer. In late summer there was an eastward movement of Fulvous Whistling Ducks into the Port Arthur area from the western part of the rice belt (Flickinger et al., J. Wildl. Manage. 37:171-175, 1973). This may explain the increase in numbers in Chambers and Jefferson counties and their absence in western rice belt counties at this time of year. In late summer of 1974, 15,000 birds were estimated from aircraft during a general waterfowl survey of Chambers and Jefferson counties (J. Dunks, pers. comm.). In 1975, 6700 birds were recorded by ground counts made in late summer. The highest count of 5700 birds was made in Chambers County on 14 September. However, most of the rice country in Chambers and Jefferson counties was not surveyed by aircraft in the late summer of 1975. Therefore, the decrease in late summer numbers in Texas from 1974 to 1975 is probably more apparent than real and does not indicate a sudden decline in the population. From 8000 to 10,000 Fulvous Whistling Ducks were estimated for southern Louisiana in the late summer of 1974 and from 8000 to 12,000 in 1975. The largest number observed (5000-7000 birds) was in Acadia Parish on 15 September.

A reasonable estimate would be that about 17,000 Fulvous Whistling Ducks were in southeast Texas and southwest Louisiana in the late summer of 1975 (7000 in Texas

and 10,000 in Louisiana). This should provide a base-line index for future late summer censuses.—EDWARD L. FLICKINGER, *U.S. Fish and Wildlife Service, Victoria, TX 77901*; DAVID S. LOBPRIES, *Texas Parks and Wildlife Dept., Port Arthur, TX 77640*; HUGH A. BATEMAN, *Louisiana Wild Life and Fisheries Commission, Baton Rouge, LA 70804*. Accepted 14 Jan. 1977.

Slipper shells, a major food item for White-winged Scoters.—In the winters of 1973 and 1974, large feeding flocks of White-winged Scoters (*Melanitta deglandi*) moved into the New Bedford Harbor region of Buzzards Bay, Plymouth Co., Massachusetts. I collected 28 White-wings and examined their upper digestive tracts. Six individuals did not have sufficient food material in the gullet for analysis. The contents of the 22 individuals analyzed differed from those in the literature and from my own previous observations. Slipper shells (*Crepidula fornicata*) comprised 88% of the bulk organic matter by volume. The remainder of the stomach contents was mostly oyster spat and soft shelled clams. These did not exceed 25% of the bulk in any individual. Cottam (U.S.D.A. Tech. Bull. 643, 1939) reports from an examination of 819 adult White-wings, that $\frac{3}{4}$ of their food was mollusks, of which bivalves comprised 63% and less than 2% were slipper shells. Scott and Olson (Ecol. 54:996–1007, 1973) found in New Hampshire that 89% of the total volume of food of White-winged Scoters was bivalves and *Siliqua costata* was the dominant food; they recorded no slipper shells.

Trawl and dredge samples from the feeding area revealed a high accumulation of shell. These shell deposits are from shucking operations of local sea and bay scallop industries. Three species of *Crepidula* were attached to the shell deposits; *C. fornicata* was the dominant species. Hoff (Sci. Teach. 38:1, 1971) reported a heavy organic load in the surrounding waters, the primary source of which is untreated sewage from a nearby municipal sewer outfall.

It is apparent that the combination of high concentration of organic nutrients and shell substrate have provided an ideal habitat for slipper shells. These in turn have provided a different food budget for White-winged Scoters in southeastern Massachusetts.—JAMES G. HOFF, *Southeastern Massachusetts Univ., Dartmouth 02747*. Accepted 16 Jan. 1976.

Egg movement by a female Gadwall between nest bowls.—Gadwalls (*Anas strepera*) nest commonly on the Woodworth study area located 4.8 km east of Woodworth, North Dakota on the Missouri coteau (Kirsch and Higgins, Wildl. Soc. Bull. 4:16–20). This 1231 ha area is a research station of the Northern Prairie Wildlife Research Center.

On 13 June 1975 a Gadwall nest containing 10 eggs was found at the station headquarters inside an open-topped enclosure measuring 6 m by 6 m and fenced with 5 cm by 5 cm chain link wire mesh. Vegetation at the nest site consisted of smooth brome grass (*Bromus inermis*) and absinth (*Artemisia absinthium*). This nest was in a corner of the enclosure with the rim of the nest touching the fence. The clutch had been incubated approximately 2 days.

We revisited the nest on 5 July and found that 8 of the 10 eggs had been moved into a new nest bowl on the other side of the fence adjacent to the original one. The other 2 eggs were in the original nest bowl and were cold. Incubation of the 8 eggs in the new nest was about 22 days. We moved the other 2 eggs into the new nest with the remainder of the clutch. Vegetation at this site was comparable to that at the first nest site.

On 7 July all 10 eggs had been moved back through the fence into the original nest and some of the eggs had hatched. Eight ducklings had hatched and left the original nest by 8 July and 2 dead embryos in partially pipped eggs remained in the nest.