

Florida, Nellis saw a kingfisher hovering over a foraging Snowy Egret. The egret was using the "wade slowly" technique of foraging (Meyerriecks, 1960. "Comparative Breeding Behavior of Four Species of North American Herons." Publ. Nattall Ornith. Club, Cambridge, Mass., No. 2). While the egret was foraging in an area of sparse submerged vegetation, mainly *Elodea*, the kingfisher flew back and forth, hovering over the egret several times. The kingfisher dived into the water near the egret 3 times, and it made several false dives as well. None of the kingfisher's dives were successful. The egret noticed the kingfisher but did not appear to be disturbed by it. When Nellis's boat came too close, both birds flew away. Similar behavior was noted by Nellis at the same place late in January, 1965.

On 22 August 1965, at 1030, Meyerriecks watched the foraging behavior of one Common Egret and two Snowy Egrets in a small pond in Tampa, Florida and saw a perched kingfisher fly over the pond and dive unsuccessfully three times. Next, the kingfisher flew directly towards the Common Egret, which was using the "stand and wait" foraging method. The kingfisher hovered over the egret for about 5-10 seconds, then flew off, only to return again. This behavior was continued for about 2-3 minutes. Both birds failed to make a strike. The foraging Snowy Egrets were at the other end of the pond, about two hundred yards from the Common Egret. Then the kingfisher flew directly towards a Snowy Egret that was using the stand and wait technique. It hovered over this egret for about one minute then flew back to its former perch.

The second Snowy Egret then began to use the "disturb and chase" method of foraging (Meinertzhagen, 1949. *Ibis*, 91:465-482), and at once the kingfisher flew directly to it, hovering over the actively foraging egret. The kingfisher dove three times and made two kills. The "beater" egret also caught several tiny fish during this period. When the egret flew away the kingfisher followed it for a few moments then returned to its perch. Meyerriecks watched kingfishers and egrets at this pond on a number of occasions during the fall of 1965, but did not see this relationship again.

It is of interest that the kingfisher and the egret were successful when the egret used an active foraging technique, presumably having disturbed more prey with this method. One might speculate that the kingfisher flew directly to the egret using the more active foraging method because of some previous success with an associate foraging in an active manner.—ANDREW J. MEYERRIECKS, *Department of Zoology, University of South Florida, Tampa*, AND DAVID W. NELLIS, *Box 96, Brandon, Florida*. 25 May 1966.

Wood Duck ducklings captured by bullfrogs.—On 4 June 1956, I visited a Wood Duck (*Aix sponsa*) nest at the Olentangy Wildlife Experiment Station, Delaware County, Ohio, planning to mark the ducklings by toe-clipping. The ducklings were emerging from the nesting box on my arrival, but I was able to capture five before they made their exit. After toe-clipping, the five were released onto a pond. They promptly entered a small clump of cattails (*Typha latifolia*) as they swam toward their brood mates. When they emerged from the cattails moments later, only four of the five were present. To find what happened to the missing duckling, I immediately captured the remaining four. On one leg of each of two a band was placed, the band being attached in turn to a large fish hook, a line and a bamboo fishing pole. The two were returned to the site where their brood mate had disappeared less than an hour earlier. Within 10 minutes both ducklings were attacked by large bullfrogs (*Rana catesbeiana*).

The ducklings were hidden from view among cattails so I could not see the manner of attack. One frog released the duckling after being towed a short distance on the water. The other frog was swallowing the duckling headfirst and was towed to shore with its

meal. Only about one-third of the duckling's posterior end protruded from the frog's mouth, the duckling already being well down the frog's throat. Nevertheless, the duckling was pulled alive from the frog's throat and soon became active. The duckling's legs were not injured in the towing process.

The method used to capture these ducklings was different than the method earlier described as being used by a bullfrog for capturing a bird. W. E. Howard (1950. *Copeia*, 1950:152) reported seeing the capture of a Brown Towhee (*Pipilo fuscus caroliniae*), which was caught by one foot or leg and submerged before swallowing was started. The frog spent about an hour swallowing the bird.

A. H. Wright (1920. "Frogs: their natural history and utilization," 42) reported ducklings unusual in the bullfrog's diet. W. L. McAtee (1921. *Copeia*, 1921:40) reported shooting of a bullfrog "swallowing a three-weeks old duckling" of an unnamed species. O. H. Hewitt (1950. *J. Wildl. Mgmt.*, 14:244) reported finding two Black Ducks (*Anas rubripes*), two or three days old, in the stomach of a bullfrog.

The promptness with which the duckling disappeared as the five free ducklings moved through the cattails, together with the quick capture of the two tethered birds, suggests that bullfrog predation on young Wood Ducks may be substantial in some situations. Capture of tethered birds, of course, is only partly indicative of what would happen in a natural situation.

The observations reported in this note were made when I was conducting research on the Wood Duck under support of the Ohio Cooperative Wildlife Research Unit. Dr. E. H. Dustman guided the research project, and the U.S. Fish and Wildlife Service reviewed and typed the manuscript.—PAUL A. STEWART, *U.S. Department of Agriculture, Agricultural Research Service, Entomology Research Division, Oxford, North Carolina, 30 April 1966.*

Flight speed of the Wood Duck.—Man has always been interested in the flight speed of birds, particularly the speed and distances flown by the larger ones such as the hawks, eagles, and waterfowl. To accurately determine Wood Duck (*Aix sponsa*) flight speeds, my wife and I timed the flight speeds of seventeen flocks over a measured course.

Cooke (1937, "Flight Speed of Birds," U.S. Dept. of Agri. Circ. No. 428) tabulated early records of bird flight speeds for more than 100 species. Flight speeds of ducks

TABLE 1
FLIGHT SPEEDS OF NINE WOOD DUCK FLOCKS RECORDED 8 AUGUST 1964

Flock No.	No. in flock	Sec. to fly 970 feet	Miles per hour
1	3	14	47
2	5	17	39
3	4	14	47
4	3	17	39
5	2	15	44
6	1	14	47
7	1	12	55
8	5	13	51
9	3	14	47
Average	3.0	14.4	45.9