Literature Cited

Dusi, J.L. 1968. The competition between Cattle Egrets and Little Blue Herons. Alabama Birdlife 16(1): 4-6.

McKitrick, S. R. L. 1975. Growth and development of nestling Cattle Egrets, Bubulcus ibis, and Little Blue Herons, Florida caerulea, in an upland heronry in Macon Co., Alabama. Unpublished Masters Thesis, Auburn University.

Parsons, K. C. 1995. Heron nesting at Pea Patch Island, upper Delaware Bay, USA: abundance and reproductive success. Colonial Waterbirds 18(1): 69-78.

Weise, J. H. 1976. A study of the reproductive biology of herons, egrets and ibis nesting on Pea Patch Island, Delaware. Delmarva Power and Light Co., Manomet Bird Observatory, Manomet, Mass.

POSSIBLE COOPERATIVE PREY CAPTURE IN THE GREAT CRESTED FLYCATCHER (MYIARCHIS CRINITIS)

George W. Folkerts

Cases in which birds cooperate to capture prey are rare. The classical example is that of the extinct New Zealand Huia (Heteralocha acutirostris), in which the chisel-like beak of the male was used to expose grubs which were extracted by the thinner curved beak of the female (Soper 1972).

Social foraging involving cooperation also is known in a number of raptors (Ellis et al. 1993). Sullivan (1984) observed cooperation between Laughing Gulls (Larus atricilla) in which one individual uncovered horseshoe crab eggs and another ate them, later regurgitating the eggs and sharing with the other bird. Pruett-Jones (1980) reported cooperative prey capture and prey sharing in Parasitic Jaegers (Stercorarius parasiticus). White Pelicans (Pelicanus erythrorhynchos), Double-crested Cormorants (Phalacrocorax auritus), and other piscivorous birds are known to cooperate to corral fishes (Thorpe 1963). Although social foraging is common in passerines, no instances of cooperative capture of prey have been reported in this group.

On 16 June 1994, in an open wooded area within the city limits of Auburn, Lee County, Alabama, what was apparently cooperative prey capture was observed in a pair of Great Crested Flycatchers (Myiarchis crinitis). A search for the source of a snapping sound and associated whirring noise in a sycamore (Platanus occidentalis) tree revealed an adult flycatcher with a large cicada (Tibicen sp) in its beak. As I watched, the bird repeatedly turned its head to the side and with a rapid whipping motion and struck the cicada against the surface of the lateral branch on which it perched. As it continued this, an impact dislodged the cicada which immediately flew away, apparently unhurt.

The bird immediately flew after the escaped cicada and caught the insect in the air just after the cicada flew beyond the crown of the tree, whereupon it returned to the same branch and commenced striking the cicada

on the branch. Again, one of the impacts dislodged the insect and it flew away, seemingly without impairment. The adult gave chase, but as the insect left the crown of the tree, another adult Great Crested Flycatcher, that had not been noticed, took wing from near the end of a branch, higher and on the opposite side of the tree. This individual flew out toward the flying cicada, causing the insect to veer in its flight path whereupon it was caught by the first individual who had given chase. The second adult returned to its original perch without attempting to follow the bird that had re-captured the insect. The flycatcher with the cicada returned to its former perching site and again began to strike the insect against the branch. Once again, impact dislodged the cicada and it flew away. Again, the second individual flew out toward the flying cicada, causing the latter to change its flight path, enabling the original bird to again re-capture it. It seemed clear that the actions of the second bird did not merely represent its own attempts to unsuccessfully capture the cicada. Both birds again returned to the same perches. This time, the bird with the cicada succeeded in stunning the insect and began to peck at it, apparently trying to dismember it. The second bird evinced interest, but never approached. At this time I was forced to leave the area, making further scrutiny impossible.

Although these events can be interpreted in a number of ways, it appeared that the second bird was assisting the original bird by corralling the flying insect in a way that facilitated re-capture by the first bird. It could be contended that the second bird was positioning itself to capture the prey,

should the other individual not have been able to do so. This would still be a type of cooperation. Cooperative behavior between Great Crested Flycatchers would probably not be necessary with most types of prey. However, cicadas are known to be eaten by this species (Bent 1942), and it is possible that the capture of a large cicada by one member of a pair elicits watchful and, if needed, cooperative capture behavior on the part of the other individual. Cicadas are tough-bodied and heavily sclerotized insects, seemingly hard for birds to stun or kill. They would be difficult to hold because of their slick body surface and stridulatory vibrations they produce when captured.

Whether or not the two Great Crested Flycatchers were a mated pair is not known, but both were adults. It is likely that they were the parents of fledgling Great Crested Flycatchers noticed in the area a few weeks later. The fate of the cicada is unknown. In order for this example to be true cooperative hunting in the sense of Ellis et al (1993), the cicada would have to have been shared by the two individuals. Nevertheless, if the cicada were fed to the young, or consumed by one member of a monogamous pair, the fitness result would be functionally similar and the concept of true cooperative hunting should probably still apply.

This observation represents only a single instance of what may be cooperative behavior. Nevertheless, the circumstances point to the possibility that attempts to capture certain types of prey may evoke behavioral responses otherwise seldom observed in a species.

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Literature Cited

Bent, A. C. 1942. Life histories of North American flycatchers, larks, swallows, and their allies. Bull. U. S. National Museum, No. 179.

Ellis, D. H., J. C. Bednarz, D. G. Smith, and S. P. Fleming. 1993. Social foraging classes in raptorial birds. BioScience 43:14-20.

Pruett-Jones, S. G. 1980. Team hunting and food sharing in Parasitic Jaegers. Wilson Bull. 94:524-526.

Soper, M. F. 1972. New Zealand birds. Whitcombe and Tombs, Christchurch.

Sullivan, K. A. 1984. Cooperative foraging and courtship feeding in the laughing gull. Wilson Bull. 96:710-711.

Thorpe, W. H. 1963. Learning and instinct in animals. Methuen, London.