

MID-AIR CAPTURE OF FISH BY TRICOLORED HERONS AND SNOWY EGRETS IN SOUTHEASTERN FLORIDA

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To forage effectively wading birds use a variety of feeding methods (Hancock and Kushlan 1984). Many of the estimated 38 feeding strategies used by Ciconiiformes have been described by Kushlan (1978), Rodgers (1983), and Hancock and Kushlan (1984). Low frequency use of most of these foraging methods suggest they are specialized techniques, selected in response to localized habitat conditions or prey types (Rodgers 1983, Kent 1987). Some ardeids possess a more varied foraging repertoire and use more active feeding strategies than others (Rodgers 1983). The relatively infrequent use of "active pursuit" foraging methods such as "running", "open wing", or "aerial" result in lower foraging efficiency than more commonly implemented "less active" strategies including "stand and wait", "peering", and "walk slowly" (Hancock and Kushlan 1984, Rodgers 1983). Most species of wading birds specialize in the more sedentary feeding techniques but active hunting is more frequently used by Reddish Egrets (*Egretta rufescens*), Tricolored Herons (*E. tricolor*), and Snowy Egrets (*E. thula*) (Recher and Recher 1980, Rodgers 1983). Herein I report the opportunistic mid-air capture of fish by foraging Snowy Egrets and Tricolored Herons in the St. Johns marshes of Indian River County, Florida.

The study area is within the 6,075-ha Blue Cypress Water Management Area of the St. Johns River Water Management District which encompasses a mosaic of marshes, sloughs, impoundments, and tree islands. Most of the study area is presently open water ranging from 0.5 to 1.5 m in depth, with interspersed herbaceous emergent vegetation including sawgrass (*Cladium jamaicense*), pickerelweed (*Pontedaria lanceolata*), maidencane (*Panicum hemitomon*), and spikerush (*Eleocharis elongata*).

On 24 March 1991, I observed four Tricolored Herons and three Snowy Egrets concentrated around a breach in an internal levy in an open water tract of the study area referred to as Lake Miami Ranch in Indian River County. The mean water depth of this area is approximately 1.0 m which precludes foraging by wading birds except along levees and berms. I observed these birds from 0900 to 1100 as they fed upon golden shiners (*Notemigonus crysoleucus*) that were swimming and jumping upstream through the levy breach. As the shiners jumped to heights of as high as 0.6 m in the air, the wading birds attempted to strike the fish in mid-air (Fig. 1). Snowy Egrets were successful in mid-air capture of golden shiners on 12 of 22 (54.5%) attempts, while Tricolored Herons were successful during 15 of 36 (41.7%) attempts. The "run" of golden shiners continued unabated for the entire 2-h observation period. The next day no wading birds or golden shiners were present because water levels on both sides of the levy had equalized, and little water flowed through the breach.

My observations suggest that Tricolored Herons and Snowy Egrets exhibit great behavioral plasticity when opportunistically exploiting ephemeral food sources. If herons modify their feeding behavior to suit local conditions, they can maximize their foraging efficiency (Rodgers 1983). More sedentary foraging wading birds generally exhibit higher hunting success rates than more active feeding species (Recher and Recher 1980,

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Figure 1. Tricolored heron feeding on jumping golden shiners. Photo by Brian Toland.

Rodgers 1983). Rodgers (1983) documented similar hunting success rates in Snowy Egrets (50.2%) and Tricolored Herons (30.6%) using more frequently deployed foraging methods. Snowy Egrets and Tricolored Herons in Tampa Bay were found to have higher prey capture success when using less active hunting methods than when employing more active behaviors (Kent 1987).

Prey type and habitat type are linked in influencing a heron's foraging strategy (Kent 1987). The use of behaviors with varying levels of activity (energy expenditure) and prey capture success rates (energy gain) indicates that maximizing energy intake is the ultimate goal of foraging herons (Kent 1987). The mid-air prey capture behavior documented herein, suggests an opportunistic foraging strategy that facilitated exploitation of a temporary superabundance of prey that would have otherwise been unavailable.

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