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## Brown Pelican *Pelecanus occidentalis*

Brown Pelicans breed on islands along the Atlantic and Pacific coasts from central California and North Carolina through Middle and Central America and the West Indies to Chile and Venezuela (Stevenson and Anderson 1994). This bird is a much beloved and typical element of Florida's coastal vistas.

**Habitat.** Brown Pelicans are generally found in coastal nearshore habitats, such as along beaches, sandbars, docks, dredge-spoil islands, and diving for prey in most nearshore waters. In recent years Brown Pelicans have been appearing on large inland bodies of water, especially phosphate mine settling ponds. Habitat essential for maintaining Brown Pelican populations includes protected nesting sites, sandbars, islets where birds can roost and loaf undisturbed, and productive inshore and offshore fisheries (Schreiber and Schreiber 1982).

In Florida, Brown Pelicans nest primarily in trees on coastal islands, in colonies of a few dozen to several hundred pairs. A few colonies may contain more than 1,000 nests. Nests are bulky structures of sticks with an inner cup of finer materials, usually green leaves. Two to 3, mostly 3, white eggs are laid, and incubation takes about 30 days. Nestlings fledge in about 12 weeks (Schreiber 1978b).



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The Brown Pelican nests in colonies on the Florida coast from Volusia County (Port Orange), on the Atlantic, south into Florida Bay and north along the Gulf coast to the Cedar Keys (Seahorse Key), with 1 active colony in the Panhandle on a dredged-material island in St. Andrew Bay, Bay County. Pelicans formerly nested on a dredged-material island at Port St. Joe in St. Joseph Bay. Colonies are generally most numerous on the coasts central and southern Florida. Dredging of the intracoastal waterway has created numerous dredged-material islands along the route, which, after becoming covered with vegetation, have provided additional nesting sites for pelicans and other colonial nesting species and may have contributed to range expansion of the species (Nesbitt et al. 1994). The first instance of inland breeding by the Brown Pelican occurred in 1991, when 3 nests were discovered on Lake Okeechobee in Block 6 of the Clewiston North quadrangle (Smith and Goguen 1993).

Brown Pelicans feed primarily on several species of fish that occur near the water's surface, including menhaden, Atlantic threadfin, sea trout, spot, pinfish, sardines, and bay anchovy (Fogarty et al. 1981). Like most predators, they feed on the most abundant available prey. Declines in Brown Pelican productivity in the Tampa Bay and southwest Gulf coast colonies seems to be correlated with a decline in the menhaden fisheries of the region during 1991 and 1992 (S. Nesbitt, pers. commun.).

**Seasonal Occurrence.** Brown Pelicans occur throughout the year in Florida. Migrating flocks have been spotted moving westward in the spring (February and March) and eastward in the fall (October and November). Thus, many migrants come to Florida during the winter. Banding records suggest that Florida is an important nursery ground for young from other states (Williams 1972), and that there is considerable movement of Florida-born birds to other states (Stevenson and Anderson 1994). Generally, nesting begins in south Florida during fall months and in early spring in central and north Florida.

**Status.** Although classified as federally Endangered for many years, the east coast and Florida populations are now delisted. Within Florida, the Brown Pelican is listed as a Species of Special Concern (Wood 1994).

Anecdotal evidence suggests that there may have been a population reduction in Florida Brown Pelicans due to DDT-induced eggshell thinning (Robertson and Woolfenden 1992; Stevenson and Anderson 1994). However, the Florida population did not suffer the catastrophic declines experienced elsewhere in the southeast and in California.

The Florida Game and Fresh Water Fish Commission [editor: now Florida Fish and Wildlife Conservation Commission] has conducted surveys of Brown Pelican colonies annually from 1968 to 1983 and biannually from 1985 through 1995 (Williams and Martin 1970, Nesbitt et al. 1977, Nesbitt 1991b, Wilkinson et al. 1994). The Brown Pelican breeding population has increased considerably since 1968, fluctuating between 8,000 and 12,000 nesting pairs. The species is currently increasing in population size throughout the southeastern United States and is expanding its breeding range on both the Atlantic and Gulf coasts. However, these general increases may mask local decreases that have been noted in Florida Bay and in many of the Gulf coast estuarine during the collapse of estuarine fisheries. Generally the prey base upon which Brown Pelicans rely is susceptible to any degradation of estuarine productivity, such as increasing salinity, sea level rise, pollution, and destruction of coastal wetlands and sea grass beds.

Florida pelicans did not suffer the catastrophic population declines experienced elsewhere in the southeast and California result of DDT induced egg-shell thinning primarily because DDT was never used in great quantities in Florida, although some egg-shell thinning did occur (Schreiber 1977). The reduction in numbers of Brown Pelicans that has occurred since the early years of this century are attributed chiefly to the reduction in fishery productivity a result of Florida's tremendous growth and development since the 1950s. The destruction of coastal wetlands, runoff and pollution, and other anthropogenic factors have contributed to the decline in estuarine productivity.

Herbert W. Kale II

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