

## REVIEW

**Everglade Kite recovery plan.**—Thomas Martin, Alexander Sprunt, IV, Paul W. Sykes, Jr., Lovett E. Williams, Jr. (Leader), 1983, Atlanta, Georgia, U.S. Fish and Wildlife Service, 51 pp., available from U.S. Fish and Wildlife Service, Unit i, 3840 York Street, Denver, Colorado 80205.—This report is the official plan for the conservation and management of the Snail Kite, as approved by the U.S. Fish and Wildlife Service, written by the Everglade Kite Recovery Team. As in most such teams, the members were appointed primarily as representatives of the government agencies responsible for conservation of the kite. Thomas Martin was manager of the Loxahatchee Wildlife Refuge, where considerable effort has gone into creating kite feeding habitat; Alexander Sprunt represented the National Audubon Society whose wardens patrol kite habitat near Lake Okeechobee; and Lovett Williams represented the Florida Game and Fresh Water Fish Commission, the state agency responsible for endangered species. Paul Sykes of the U.S. Fish and Wildlife Service Patuxent Wildlife Research Center was the team member with extensive experience in biological research on the species. His studies from 1967 through 1982 formed much of the biological basis for the plan.

The team and the Fish and Wildlife Service took eight years from the Team's appointment to approval of its plan, a seemingly long time—at a little over six pages per year. However, little was lost during the planning period, as research on the kite by Sykes, Noel F. R. Snyder, Stephen R. Beisinger, Jean Takekawa, and Daniel Cary proceeded at a significant pace, all funded by the U.S. Fish and Wildlife Service, which can be credited for both its long-term commitment to and recent emphasis on the Snail Kite. Knowledge gained from these studies was incorporated into the plan, which is much more robust as a result.

Although the purpose of a recovery team is to write a plan, it also serves a more crucial function. The team provides a forum for discussing the biology and needs of the species and a mechanism for monitoring its changing status. For the teams with which I am familiar, the periodic convocation of knowledgeable biologists, bureaucrats, and concerned citizens to discuss a species was an extraordinarily useful exercise. From this perspective it is unfortunate that the teams, which also function as advisors to Fish and Wildlife Service Regional Directors, are now being disbanded upon completion of their plans. Although a committee may not be the ideal way to write a plan quickly, a recovery team, through the deliberations of its members and consultants, is an effective guardian of a species' welfare.

The team states its view forthrightly that only by reclaiming now lost Everglades habitat might the salvation of the kite be assured. Recognizing that this is not possible, the team formulated alternative approaches, which it emphasizes may not be sufficient. It is the team's judgement that the kite may never again be secure in Florida, and that the species will always require management, will always be endangered, and may become extinct in Florida. In this way the team signaled an inability to fulfill its mandate to create a plan that would lead to the recovery and subsequent removal of the kite from the list of endangered species. The plans' goal therefore is less optimistic, although more realistic, to assure the existence of a secure Snail Kite population in Florida.

To this end the plan first summarizes the range, biology, and population status of the species. It notes that double brooding, serial polygamy, and long nesting season mean the kite has a relatively high reproductive potential for a raptor. The kite's dependence on snails is noted, but I find it difficult to understand why research on its nearly sole food has been so limited. The kite is nomadic, and, although evidence is lacking, might even move between Florida and Cuba, where the same subspecies occurs (Amadon 1983, Fla. Field Nat. 11: 69-72). Dispersed by the 1981 drought (Beissinger and Takekawa 1983, Fla. Field Nat. 11: 89-106) the population was estimated to be about 300 individuals as of 1982. Unfortunately the inadequacies of the census technique used in deriving such estimates are not discussed, although the plan does call for development of a standardized census technique.

Reasons for endangerment include shooting (thought not to be very important), exotic plants that cover open-water feeding habitat, and mostly water management. The adverse effects of the loss of previous Everglades habitat are unarguable. However the plans' conclusion that water management has shortened the wet cycles and worsened the effects of periodic droughts in the Everglades seems simplistic, as does its "three word" description of the needs of the kite, "reflood the Everglades." Actually some parts of the Everglades, such as Conservation Areas 2a and southeast 3a, are wetter now in most years than they used to be. The plan suggests that the only known management strategy is to make the Everglades a "permanent wetlands." If so the Everglades would cease to exist as assuredly as if it were dried out. The Everglades functions not by the maintenance of permanent high water but by dramatic seasonal and annual fluctuations that lead to a seasonal dry period.

To some extent this emphasis is a result of the single-species approach to resources management dictated by the nature of the team's charge, the "step-down" planning process, and the Endangered Species Act itself. Unfortunately what the kite needs from the Everglades, high permanent water levels, is exactly what has led the Wood Stork to the verge of its own listing as an endangered species. How did two such divergently-adapted species both survive in the primitive Everglades? Undoubtedly because of temporal and geographical heterogeneity. Some years were wet kite years; some were dry stork years. In any year some part of the vast south Florida wetlands may have experienced unusually prolonged high water conditions, which were probably soon found by parts of the nomadic kite population. It is this variability that must be restored to the Everglades if kites and storks are both to avoid local extinction there.

The plan identifies steps to achieve the goal of a secure kite population including identifying its historic range, setting population goals, assessing and correcting limiting factors, identifying, restoring, and maintaining habitat, monitoring status, and maintaining inter-agency and public cooperation. Its principal thrust is to manage kite habitat by all available means. This includes any measure that would tend to prevent drought conditions including the establishment of binding agreements for habitat management to benefit the kite. This goal, if it were possible to implement, would turn all of the Everglades into a kite refuge. Could this really be desirable? Elsewhere in this issue, Sykes (1983, Fla. Field Nat. 11: 73-88) takes what appears to be a more flexible approach, with which I personally agree. He notes that man-

agement for a single species is neither practical nor desirable over most of the kite's range including Lake Okeechobee and the Conservation Areas. In most years these areas will provide some kite habitat. In addition selected "islands" of habitat scattered within the historic range should be intensively managed for the kite. He suggests that the kite population will be preserved only by the combined maintenance of the remaining large marsh systems in as close as possible to their natural conditions and the creation smaller refuges for use by kites during periodic droughts.

The difference in approach probably derives less from individual viewpoint than from the purpose and constraints of the single-species recovery planning effort. The authors of the plan have worked admirably and done a great service in categorizing, analyzing, and prioritizing the needs of the Snail Kite and in composing a plan that conservationists and management agencies need to consider carefully in their planning efforts. It would be useful to continue the team or a successor in existence by some means to provide a forum for kite conservation. Lacking that, responsibility now rests entirely with state and federal agencies to assure the kite's continued existence in Florida, hopefully as part of a more naturally functioning Everglades ecosystem.—**James A. Kushlan**, Department of Biology, University of Miami, Coral Gables, Florida 33124.