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PRIORITIES FOR RESEARCH AND MONITORING, MANAGEMENT, AND OUTREACH AS DETERMINED BY THE SWALLOW-TAILED KITE CONSERVATION ALLIANCE—A PARTNERSHIP TO ADVANCE CONSERVATION OF A VULNERABLE SPECIES

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Abstract. The Swallow-tailed Kite Conservation Alliance began in 1998 (as the Swallow-tailed Kite Working Group) in response to a growing concern regarding populations of Swallow-tailed Kites (*Elanoides forficatus forficatus*) that breed in the U.S. Conservation partners from across the U.S. breeding range participate in the Alliance, which includes state and federal wildlife agencies, non-profit organizations, academia, and the timber industry. The Alliance is dedicated to protecting the U.S. population of Swallow-tailed Kites throughout their annual cycle. Operating within and alongside existing conservation partnerships, the Alliance works to prioritize, initiate, and coordinate actions that improve scientific understanding, promote habitat and landscape sustainability, implement management actions, and foster public awareness and social responsibility in support of kite conservation. The Alliance identified several priorities to guide the conservation of Swallow-tailed Kites through research and monitoring, management, and outreach.

Key Words: Elanoides forficatus, management, outreach, research and monitoring, Swallow-tailed Kite, Swallow-tailed Kite Conservation Alliance.

LAS PRIORIDADES DE INVESTIGACIÓN Y MONITOREO, GESTIÓN Y DIVULGACIÓN, DETERMINADAS POR LA ALIANZA PARA LA CONSERVACIÓN DEL MILANO TIJERETA—UNA ASOCIACIÓN PARA AVANZAR EN LA CONSERVACIÓN DE UNA ESPECIE VULNERABLE

Resumen. La Alianza para la Conservación del Milano Tijereta surgió en 1998 (como Grupo de Trabajo Milano Tijereta), en respuesta a una creciente preocupación por poblaciones de esta especie (Elanoides forficatus forficatus), que se reproducen en los Estados Unidos. Participan en la Alianza socios conservacionistas de todas las zonas de cría de los EE.UU., incluyendo a organismos estatales y federales de vida salvaje, organizaciones no lucrativas, instituciones académicas y la industria maderera. La Alianza se dedica a proteger la población del Milano Tijereta estadounidense durante su ciclo anual. Operando dentro de y junto a asociaciones de conservación ya existentes, la Alianza trabaja para priorizar, iniciar y coordinar acciones que mejoren el entendimiento científico, promuevan la sostenibilidad del hábitat y el paisaje, implementen medidas de gestión y fomenten la concienciación pública y la responsabilidad social como vías de apoyo a la conservación del Milano Tijereta. Mediante la investigación y el monitoreo, la gestión y la divulgación, la Alianza identificó varias prioridades para encausar la conservación del Milano Tijereta.

INTRODUCTION

The northern subspecies of the Swallow-tailed Kite (*Elanoides forficatus forficatus*) is of continental conservation concern in North America because fewer than 10 000 individuals (~2500 breeding pairs) are believed to exist, and threats to remaining habitats continue. This subspecies, which breeds exclusively in the United States, experienced a dramatic reduction in breeding range (and presumably population size) from 1880–1940. Although the causes have not been confirmed, the loss of wetland forests for timber production and to agricultural uses, plus egg collecting, and shooting have all been implicated (Meyer 1995). The breeding range formerly included parts of at least 17 southern and midwestern states, but is now restricted to portions of South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, and Arkansas.

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The Swallow-tailed Kite Conservation Alliance (Alliance) is a voluntary partnership dedicated to conserving and protecting populations of *Elanoides forficatus forficatus* throughout their annual cycle. The Alliance includes over 30 partners representing state and federal wildlife agencies, non-profit organizations, academia, and the private industry. The mission of the Alliance is to operate within and alongside existing conservation partnerships to prioritize, initiate, and coordinate actions that improve scientific understanding, promote habitat and landscape sustainability, and foster public awareness and social responsibility to conserve the northern subspecies (i.e., the United States population) of the Swallow-tailed Kite.

Federal listing of the Swallow-tailed Kite under the Endangered Species Act (7 U. S. C. § 136, U. S. C. § 1531 et seq.) may be warranted based on current population estimates, habitat loss and degradation in the United States, and continued, if not increasing, threats on the migration and winter ranges.

However, the Alliance believes that a listing petition is not appropriate at this time due to the need for more robust population and trend estimates, and because of existing partnerships with corporate and non-industrial private landowners who voluntarily support kite conservation. Increasing the extent and intensity of proactive management may facilitate population recovery and eliminate the need for Federal listing or other regulatory protections.

APPROACH

The Alliance is developing a strategic plan to identify initial priorities for research, monitoring, management, and outreach that were largely derived from a workshop hosted by the Alliance in Ocean Springs, Mississippi, October 2007. The strategic plan is a work in progress. Many of these priorities represent complex needs that will require close collaboration and cooperation among Alliance participants and other experts to be successfully addressed. However, other priorities could be achieved as individual "projects" undertaken by small groups of partners or even individual partners. Several priority categories are offered to help discriminate among priorities based on relative degree of importance and/or whether the priority is an immediate or long-term consideration. We recognize that certain efforts and needs are more essential or urgent to advancing the conservation of kites, therefore warrant more attention. Items categorized as "mid-range" or "long-range " priorities are obviously still important to kite conservation, but represent actions that may be more appropriately or more effectively addressed by other groups, or that may already be receiving attention in some form. Thus, greater emphasis is given to needed actions that would best benefit from the Alliance's collective attention, and that are not yet otherwise receiving attention.

PRIORITIES

The Alliance has divided priorities for Swallow-tailed Kite conservation action into three main categories: Research and monitoring, management, and outreach. The original organizational priorities were developed with consideration for temporal needs (i.e., long vs. shorter-term) as well as relative importance (i.e., higher versus lower). For clarification, these categories have been assigned action ranks of "Immediate", "Mid-range", and "Long-range". A fourth heading of "Other needs" describes issues not discussed or not yet ranked. Note that not all four of the action ranks are represented in each of the three organizational categories.

Research and Monitoring Priorities

The following list details the Alliance's priorities for Swallow-tailed Kite research and population monitoring. In all cases, these priorities focus on obtaining information essential for designing management and conservation action that will increase, or at least stabilize, the present United States population of Swallow-tailed Kites.

Immediate Priority

Obtain a robust estimate of Swallow-tailed Kite population size: This requires a broad-scale inventory, which could be based on range-wide counts at pre-migration communal roosts, where over half the U. S. population might be counted simultaneously. This also requires a multi-state coordination of synchronized, systematic roost surveys.

Determine relative importance of potential limiting factors: Further research is needed in the U.S. on prey availability, general ecology, and causes of nest failure. There is also an urgent need to understand anthropogenic mortality on the winter range. We need to collect vital rate data, such as survival and age of first breeding, to support a population viability analysis and corresponding sensitivity analysis.

Mid-range Priority

Standardize boat survey methodology: These can be used to assess the need for action

at watershed level. Multi-state coordination and planning will be required. It may be possible to relate these numbers to population changes identified from communal roost counts and to provide distribution estimates for local breeding population.

Centralize the Citizen-Science on-line database: Sighting reports from the public are used to help describe current distribution and conservation needs. This will require multi-state coordination of methods and a leader for distributing and collecting information in each state.

Long-range Priority

Determine the landscape components needed for sustained and increased breeding effort: Build a predictive model to guide land-use and conservation policy. Assess the feasibility and success of fostering nestlings to increase productivity. Develop a productivity index based on observations at large communal roosts.

Management Priorities

The Alliance's priorities for Swallow-tailed Kite management target the most immediate threats to these birds throughout their year-round range. The goal, at a minimum, is to sustain the present breeding population by a) securing adequate suitable habitat (in perpetuity on public lands and, more commonly, sequentially on sustainably-managed timberlands); and b) preserving sufficient wintering habitat free from negative impacts caused by widespread land conversion over the larger, surrounding landscape. Our ultimate goal is to expand (geographically into parts of the pre-decline range) the breeding distribution and increase abundance in the United States while simultaneously ensuring the availability of adequate, safe wintering habitat for this population.

Immediate Priority

Develop written documents containing specific management recommendations for timberlands, including Best Management Practices (BMPs) for kites: Efforts already underway in FL and GA may serve as a model for outreach and management implications across the breeding range. These guidelines will primarily be applied to industrial timber lands.

Establish population targets by watershed: Review Hunter's (1999) delineations of key watersheds and their respective targets. Within each target area, there should be a well-planned effort to increase the proportion of nesting territories on public conservation lands.

Protect winter roost sites in South America: These roosts have been identified by a combination of VHF and satellite telemetry. Changing land uses on family-owned ranchlands, where all of the known large roosts occur, requires further investigation and coordinated action. Possibilities include landowner cooperation, incentives, easements, and ecotourism.

Mid-range Priority

Assess the proportion of nesting that occurs on protected lands: Create a GIS map showing protection status, nest sites, roost sites, occupied range, and citizen-science sightings. This will help to prioritize land protection on the breeding range.

Review State Wildlife Action plans to assess the Swallow-tailed Kite's present status: Produce a printed review for public distribution. Elevate the Swallow-tailed Kite's status within State Wildlife Action plans (this would become a long-term goal requiring active participation of state "leads" in the Alliance.

Long-range Priority

Management of disturbance at pre-migratory roost sites in Florida.

Periodic evaluation of State and Federal listing status.

Increase cooperation on private lands and increase proportion of nesting on protected lands by applying management recommendations derived from research on timberlands (e.g., thinning practices, heterogeneous stand structure, minimum patch sizes, minimum harvest rotations, prescribed fire regimes).

Other Needs

- Promote re-establishment of former breeding range.
- Develop predictive models to help guide future land use policy.
- Identify applications of kite protection for regulatory processes.
- Establish international partnerships.
- Consider predation management.

Outreach Priorities

Following is a list of the Alliance's priorities for educational outreach that will directly improve our success at funding and implementing the research, monitoring, and management activities outlined above.

Immediate Priority

Training for field crews, loggers, foresters, and land managers: Individual presentations will be made across the breeding range, starting in Florida to serve as a model for other states. This may be accomplished with workshops and field trips and by the production of a DVD that will be widely distributed or available on-line.

A citizen-science database as an outreach tool: This model is underway in South Carolina. It requires funding, planning, and multi-state coordination. Additional information will be provided to all contributors to promote the use of kite-friendly land practices.

Other Needs

- Produce hunter education programs.
- Understand floodplain dynamics.
- Develop international education programs for the general public, schools, local and international NGOs.
- Interact with Hawk Watch International and other raptor migration organizations to expand our audience and link to conservation efforts for other raptors facing similar threats on their common migration and winter ranges.
- Promote Swallow-tailed Kite issues with coastal decision makers and recommend management action and policy changes.
- Submit articles to newsletters and magazines (state, federal, timber industry, NGO).

CONCLUSION

For most of the highest, near-term priorities identified above, we have determined who within the Alliance is best positioned to collaborate and work with other partners to make progress. Our next step is for Alliance partners to develop plans of action, seek funding, and initiate work as warranted by each priority.

Alliance members will work with partners and experts throughout the bird conservation community in developing these plans and determining how to proceed. The Alliance will regularly revisit its list of objectives, expanding and reprioritizing them based on updated information, emerging threats, and the continuing input from partners. The Alliance is dedicated to protecting Swallow-tailed Kites throughout their annual cycle, and these actions will help improve understanding and support habitat protection and management by promoting conservation action.

TABLE 1. Recent attendees (1998–2008) at meetings of the Swallow-tailed Kite Conservation Alliance.

Attendees
Alabama Dept. of Conservation & Nat. Resources:
Eric Soehren, eric.soehren@dcnr.alabama.gov
Arkansas Game and Fish Commission:
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The Alliance is a voluntary effort open to all, not an exclusive partnership. We welcome participation from all sectors of the conservation community to help address management, research, monitoring, outreach and other needs related to the conservation of Swallow-tailed Kites. To become involved in the Alliance or share any ideas or information, we encourage you to contact a member from the following list of recent meeting attendees (Table 1).

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