FEASIBILITY STATEMENTS FOR LEAST TERN GOALS AND OBJECTIVES

Prepared by: Mark McCollough
March 23, 2001

The desirability, feasibility, habitat capability, and possible consequences of the recommended least tern objectives are presented below. To achieve the stated objectives, management activities will have to be significantly increased, new partnerships and working relationships will need to be established, and additional staff or a reallocation of staff time will be needed. Significant new funding will have to be generated for least tern management. The financial and staff resources to achieve these objectives are currently not available to the Maine Department of Inland Fisheries and Wildlife (MDIFW).

Goal: Increase the abundance of least terns and the number and quality of nesting sites in Maine.

Population Objective: Increase the number of nesting pairs of least terns to at least 150 distributed over 7 areas (Laudholm Beach, Crescent Surf Beach, Goose Rocks Beach, Higgins Beach, Seawall Beach, Popham Beach, and Reid State Park) in at least 3 of the prior 5 years by 2015.

Desirability: Meeting this objective would better secure the status of the least tern. Although, the population would still not be viable, it would be more secure than the low populations (50 pairs) in the late 1990s. Furthermore, an increase to 150 pairs would be a significant contribution toward securing the species' population in New England.

Feasibility: Increasing the population to 150 pairs is not feasible at this time because of the lack of financial resources needed to address least tern management. There are no federal allocations (Section 6) for least terns because they are not a federally listed species. A recent assessment of MDIFW endangered species needs and priorities (Job 113) determined that $55,000 is needed annually to address the needs of least tern management, planning, landowner relations, and contracts to cooperators.

Capability of the Habitat: As of 2000, least terns have been documented nesting at 12 different sites (Table 3, Assessment). The 7 sites providing the most important habitat for least terns in Maine are: Laudholm Beach, Crescent Surf Beach, Goose Rocks Beach, Popham Beach, Reid State Park, Higgins Beach, and Seawall Beach.

Elsewhere in New England and along the eastern seaboard, least terns nest at higher densities than in Maine. Thus it could be assumed that under optimal beach configuration and ideal management, Maine's habitat could support 150 pairs of least terns. Furthermore, large nesting groups of least terns would probably be more successful at deterring predators.

The maximum number of pairs recorded in Maine in any one year has been about 125 pairs (1986 and 1993). Nesting populations are often determined, in part, by beach configuration and habitat suitability. We don't know if least terns will nest at higher densities in Maine, especially with the loss of the functional capacity of the habitat to support least terns from human activities. Therefore, a population objective of 150 pairs may not be attainable.

In 1999, Maine Audubon received a $15,000 grant from the Maine Outdoor Heritage Fund (OHF) to address predation problems for least terns. In 1999 and 2000, biologists watched the colonies each night during the nesting period and deterred predators. This small investment paid large dividends. Least tern productivity increased to near-record levels in both years in response to this management, and in 2000 the population climbed to an all-time high of 126 pairs. New management techniques, like night watches of colonies, may enable us to reach a goal of 150 pairs, but lack of funding may preclude us from reaching this goal.

Possible Consequences: During the 1990s, the declining population of least terns (and increasing demands from a growing piping plover population) greatly increased the complexity and cost of management. With static levels of funding, additional help was needed. MDIFW biologists (assigned to regions and the Bureau of Parks and Lands) and U. S. Fish and Wildlife Service (USFWS) biologists have all contributed to the increased management efforts by installing fencing, signs, etc. Also, there has been an increasing demand for law enforcement (both state and federal) at some sites. As with piping plover management, we anticipate that costs, time demands, and complexity of management issues will increase with a growing least tern population. MDIFW does not have the capacity to address the added demands of landowner relations, municipal management of beaches, and "take" provisions of the state and federal Endangered Species Acts, that will accompany a growing population.

Essential Habitat may have to be expanded to new sites. Also, many existing Essential Habitats are in need of Beach Management Plans (especially with municipalities and state parks) to clarify "take" and management issues. Incidental take permit provisions of the Maine Endangered Species Act may have to be negotiated in the future for some projects and activities. Some public beach activities may be further restricted because of an expanding least tern population.

Nesting Habitat Objective 1: Maintain the integrity of the nesting habitat at the 7 areas (Laudholm Beach, Crescent Surf Beach, Goose Rocks Beach, Higgins Beach, Seawall Beach, Popham Beach, and Reid State Park) used by least terns in Maine.

Desirability: Attaining this objective would secure the primary habitat in Maine for least terns and the many other species of plants and wildlife that use the beach/dune community. Terns need alternate nesting sites in case some beaches configure poorly after winter storms and offer little nesting opportunities.

Feasibility: This objective is feasible and attainable, particularly if additional financial resources can be allocated to least tern management. Additional resources are needed to support full implementation of Essential Habitat and increase the amount of time, training, and support provided to landowners, municipalities, and park managers.

Five of the 7 areas are already in conservation ownership, although the disparate nature of the owners means that management and protection are not uniform over all sites. A sixth site, Higgins Beach, may be owned by the state, but this has not been resolved. If state owned, it could be transferred to MDIFW and become a state Wildlife Management Area.

Capability of the Habitat: Essential Habitat has been designated at most nesting areas (Table 2 of the Assessment) and should prevent further deterioration of habitat. Full implementation of Essential Habitat would require beach management agreements at many sites to better address projects and activities funded and carried out by municipalities and state agencies (e.g. beach sweeping, recreational use, garbage pickup, vehicles on beaches) that could adversely affect least terns. Major habitat improvement projects (removal of seawalls, jetties and some beach nourishment projects) could further increase the carrying capacity of beaches to support nesting least terns.

Possible Consequences: Protecting the primary habitat for least terns will require increased vigilance and attendance to environmental permit reviews on these beaches. Activities of landowners, towns, and state park staff will need to be monitored closely, and the amount of time coordinating with these groups will need to increase appreciably.

Protecting these core-nesting areas will not have any further negative impacts to landowners, municipalities, state parks, and beach users over what is already occurring.

Nesting Habitat Objective 2: By 2005, develop long-term, management agreements to protect and manage habitat at all current least tern nesting sites in conservation ownership.

Desirability: Meeting this objective would help facilitate management of Maine's most important least tern nesting areas and increase the probability of achieving the population objective.
Feasibility: Appreciable financial resources and staff time will be needed to negotiate beach management agreements with landowners. A recent beach agreement with the town of Wells required staff time from 3 MDIFW biologists, a professional facilitator, and Maine Audubon biologists over a 9 month period. It is unlikely that this level of effort will be required for areas that are already in conservation ownership; however, each area has its own unique issues and stakeholders. Several months of a Wildlife Resource Assessment Section (WRAS) and Wildlife Management Section (WMS) biologist's time would be needed annually to accomplish this task. It is preferable that piping plovers and least terns are both included in beach management agreements.

Capability of the Habitat: Table 3 in the Assessment lists the 12 beaches in Maine that have supported nesting least terns in the past. Sites that are in conservation ownership (and owners) include:

- Laudholm Beach - Wells National Estuarine Reserve
- Crescent Surf Beach - Rachel Carson National Wildlife Refuge
- Higgins Beach - state owned? MDIFW?
- Goosefare Brook - Rachel Carson National Wildlife Refuge
- Seawall Beach - privately owned but managed by The Nature Conservancy
- Popham Beach – Department of Conservation
- Reid State Park – Department of Conservation

Essential Habitat (EH) has been designated at all of the above sites. EH requires that projects requiring a state or municipal permit or activities funded, or carried out by the state or municipality within an EH, requires review by MDIFW. Most state-owned or municipal-owned beaches have many activities "funded or carried out by" their owners that should be reviewed. A beach management agreement offers an opportunity to identify frequent activities and develop strategies to address these issues.

Possible Consequences: Securing beach management agreements would facilitate management at these sites, including streamlining environmental permit review. It may be possible to lift Essential Habitat provisions (as was done in Wells) if an effective beach management agreement is in place.

To be successful, beach management agreements must address contentious issues and arrive at negotiated decisions. It is possible that municipalities, landowners, and beach users will be upset at new restrictions placed on their traditional uses of the beach. Furthermore, to avoid take of terns, municipalities and landowners may need to invest their time and money to assist with least tern and piping plover management. Although this may be a cost, it is also considered a wise investment to insure that plovers and terns will not be taken as a result of proposed projects and activities.

Nesting Habitat Objective 3: By 2005, develop long-term, non-regulatory habitat protection and management via management agreements, conservation easements, or acquisition at Goose Rocks and Seawall Beach.

Desirability: Meeting this objective is highly desirable as it can lead to increased partnerships, greatly facilitating future beach management. For instance, in Wells, the town agreed to hire a volunteer coordinator, and over 20 volunteers assisted with plover management in 2000. The town has also played plover public service announcements on the local cable channel, developed plover interpretive materials, and sent mailings to residents. Furthermore, future environmental permit review will be greatly facilitated by the communication and understanding achieved through the beach management agreement process.

Feasibility: Management agreements have been drafted at one beach (Wells and Laudholm) in 2000 in lieu of Essential Habitat. To achieve a beach management agreement (which all stakeholders did not sign in the end) required about 9 months of meetings (1 meeting/ month) between MDIFW staff (Wildlife Division Director, Regional Biologist and Endangered Species Project Leader), use of a paid professional facilitator hired by MDIFW, and considerable staff time devoted to writing drafts, etc. Beach management agreements are attainable, but require appreciable staff time and cost. Although Goose Rocks and Seawall will not be as contentious as Wells, each site has its own unique history of management problems, personalities, and stakeholder groups. Without an appreciable increase in funding and staff who can devote time to this process, it is questionable whether this objective can be attained by 2005.

Easements and acquisition take time and funding. Beachfront property is very expensive, and hundreds of thousands of dollars would need to be available to purchase fee title or conservation easements. This could be accomplished, in part, with federal or Land For Maine's Future funds.

Capability of the Habitat: Not applicable.

Possible Consequences: Meeting this objective should help further secure the protection of key habitat for least terns. If beach management plans and long-term permanent habitat protection is successful, Essential Habitat may not be needed at some sites.

To be successful, beach management agreements must address contentious issues and arrive at negotiated decisions. It is possible that municipalities, landowners, and beach users will be upset at new restrictions placed on their traditional uses of the beach. Furthermore, to avoid take of terns, municipalities and landowners may need to invest their time and money to assist with least tern and piping plover management. Although this may be a cost, it is also considered a wise investment to insure that plovers and terns will not be taken as a result of proposed projects and activities.

Easements and acquisition are usually financially rewarding to landowners. Although more costly than designating Essential Habitat or negotiating beach agreements, they are probably the preferred means of habitat conservation by willing landowners.

Productivity Objective: Increase the statewide average annual productivity of least terns to 1.0 fledged chick per nesting female in at least 3 of the prior 5 years through 2015.

Desirability: Population modeling indicates that productivity of 0.7 is needed to maintain a stable population and has only been attained in 9 of the last 24 years. Maintaining an average of 1.0 young per female would be highly desirable and would help to facilitate recovery of the population.

Feasibility: Maine's statewide productivity averaged 0.52 from 1977-1999, and only exceeded 1.0 in 2 of the last 23 years. Statewide productivity declined in the late 1990s from 0.16 - 0.50 chicks per nesting female. This decline is believed to be from a) increased predation problems, b) deteriorating habitat conditions at some sites, and c) decreasing management attention afforded each colony. Increased financial and staff resources are needed to address each of these problems. Without increased funding and management attention, it is doubtful that this objective can be achieved.

Night watches of least tern colonies have raised productivity rates to 1.08 (1999) and 0.64 (2000). Productivity rates this high had only been achieved 7 times in the previous 20 years. With new, successful kinds of management, this objective may be achievable. There will always be years where unavoidable spring tides or predation will limit productivity.

Capability of the Habitat: Beach use (human disturbance, pets) and predators are the primary factors reducing the productivity of least terns. Furthermore, the quality of adjacent foraging habitats (salt marshes, shallow offshore waters, mouths of rivers) may be affected by development, pollution, contaminants, and other factors that could influence productivity. More research is needed to investigate the causes of reduced productivity in least terns.

Possible Consequences: Increasing productivity to > 1.0 young per female would help facilitate population growth and expansion. As with plovers, management cost and complexity will increase as the population grows and perhaps expands to more sites. Increasing chick survival will require greater intensity of beach management. Beach closures have never been a part of plover or tern management, but larger areas of beach may have to be fenced from public use to allow for larger colonies of terns and their chicks.

Outreach Objective 1: By 2004, develop with partners, an outreach plan containing measurable objectives to increase awareness and promote stewardship of nesting least terns in Maine.

Desirability: Many factors limiting least terns (recreation, human disturbance, pets, landowner permission to manage birds, beach sweeping, etc.) require public education. Maine Audubon currently does many landowner contacts and meets with beach associations during the nesting season. They also produce newsletters and fact sheets on plover and tern status. These all have a positive affect on management of the birds. Expanding these efforts, and determining which education and outreach materials and methods are most effective, would undoubtedly help facilitate least tern management.

Feasibility: Partners (MDIFW, USFWS, DOC, Maine Audubon, TNC and others) could probably begin this process immediately, however, a proper plan would take staff time (Audubon or MDIFW) to complete properly. Furthermore, the needs identified in the plan will undoubtedly require substantial financial resources to execute. Maine Audubon currently provides fact sheets and newsletters to cooperating landowners. Outreach plans should be done in conjunction with piping plovers.

Capability of the Habitat: Not applicable.

Possible Consequences: Producing and executing an outreach plan would have many positive outcomes, including much better cooperation and participation by the public and landowners in plover management. Few negative consequences would be anticipated.

Outreach Objective 2: By 2004, develop and implement a landowner assistance and recognition program, especially for landowners at Goose Rocks and Seawall Beach.

Desirability: Meeting this objective would provide a positive incentive for landowners to join in the management of least terns.

Feasibility: A landowner assistance program (if it requires compensation) is not attainable at this time. There are no state funds available. The Conservation and Reinvestment Act, if passed, may provide up to $200,000 annually for landowner assistance and incentives for endangered species, but it is unclear if state-listed species would qualify. Open Space legislation considered by the Maine State Legislature may also provide means to compensate landowners for long-term land conservation.

A landowner recognition program is attainable in the short term. Although no funding is available in MDIFW, funds could be possibly obtained through grant writing (OHF).

Capability of Habitat: Not applicable.
Possible Consequences: Incentives could help facilitate long term conservation agreements. Landowner recognition should generate good publicity for least terns, a positive image for management agencies, and facilitate future management.