

**PIPING PLOVER
MANAGEMENT SYSTEM AND DATA BASE**

March 2007

Maine Department of Inland Fisheries and Wildlife
Wildlife Resource Assessment Section

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PART I. PIPING PLOVER MANAGEMENT SYSTEM

INTRODUCTION

This document describes the system by which the Maine Department of Inland Fisheries and Wildlife (MDIFW) makes decisions concerning management of the Endangered piping plover (*Charadrius melodus*). Part I outlines the decision-making process. Part II details techniques for measuring biological and habitat parameters used as inputs for decision-making and documents databases for storage of biological and habitat information. Goals and objectives for piping plover management and supporting documentation of this species, natural history and status are in the Piping Plover Assessment (MDIFW 2000). The piping plover is listed as "Threatened" by the U.S. Fish and Wildlife Service (USFWS) and as "Endangered" by MDIFW. MDIFW management goals and objectives are consistent with USFWS Piping Plover Recovery Plan (USFWS 1996).

Recovery efforts for piping plovers in Maine are coordinated by MDIFW in conjunction with the USFWS and are guided by the USFWS' Atlantic Coast Piping Plover Recovery Plan (USFWS 1996). Active monitoring and management of breeding piping plovers in Maine is a cooperative effort involving Maine Audubon (MA), The Nature Conservancy (TNC), Maine Bureau of Parks and Lands, United States Fish and Wildlife Service (USFWS), Bates Morse Mountain Association, and the towns of Wells and Ogunquit. Significant financial support for these activities have come from the MDIFW Conservation Plate, Landowner Incentive Program (LIP) funds, and USFWS Section 6 Endangered Species funding.

REGULATIONS

The piping plover is protected from take and harassment by two Federal statutes: the Migratory Bird Treaty Act of 1918 and the Endangered Species Act of 1973. In 1986, the piping plover was listed as Endangered (Great Lakes population) and Threatened (Atlantic Coast and Great Plains populations) by the U.S. Fish and Wildlife Service, under provisions of the Endangered Species Act.

The USFWS has developed a proposal to designate Critical Habitat for the Atlantic Coast population of Piping Plovers. Critical Habitat is legally defined in the Endangered Species Act as that portion of the environment that is considered essential for the continued existence of an Endangered or Threatened species. Activities funded, authorized, or carried out by Federal agencies are prohibited in areas designated as Critical Habitat if those activities will adversely affect the species for whom Critical Habitat is designated.

At the state level, Maine's Endangered Species Act of 1975 (ESA) also protects the piping plover from take or harassment. The piping plover is classified as Endangered by MDIFW. A 1988 amendment to the Act authorizes MDIFW to designate Essential Habitat that is essential to the conservation of Endangered and Threatened species, and which may require special management considerations, and to promulgate and enforce guidelines for the protection of Essential Habitat. State agencies and municipal

governments may not permit, license, fund, or carry out projects that significantly alter habitats identified as Essential or that violate protection guidelines.

Habitats of Endangered and Threatened species, including the piping plover, also receive regulatory oversight by the Maine Department of Environmental Protection (DEP) under provisions of the Natural Resources Protection Act (NRPA) of 1988. Maine's Comprehensive Growth Management Act mandates MDIFW to provide information on rare species habitats to the Department of Economic and Community Development (DECD) for use by towns for comprehensive planning purposes.

MANAGEMENT GOALS AND OBJECTIVES

A goal and objectives for managing piping plovers in Maine were established through recommendations made to MDIFW by a public working group and approved by MDIFW's Commissioner and Advisory Council in 2001. This goal and these objectives are interim in nature and are milestones toward ultimate recovery goals which have yet to be established for this species.

GOAL: Increase the abundance of piping plovers and the number and quality of nesting sites in Maine.

Population objective: Increase the number of nesting pairs of piping plovers to at least 80 distributed at all available breeding sites in at least 3 of the prior 5 years by 2015.

Nesting Habitat Objective 1: Maintain nesting, and the integrity of nesting habitat, at the 23 active nesting sites (Appendix I) used by piping plovers between 1997-1999.

Nesting Habitat Objective 2: Increase the number of successful nest sites by 5 in at least 3 of the prior 5 years through 2015.

Nesting Habitat Objective 3: Develop long term , non-regulatory habitat protection via management agreements, conservation easements, or acquisition for 10 nesting sites by 2015.

Productivity Objective: Increase the statewide average annual productivity of piping plovers to 2.0 fledged chicks per nesting female in at least 3 of the prior 5 years through 2015.

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

Outreach Objective 2: Develop and implement a landowner assistance and recognition program by 2004.

MANAGEMENT ASSUMPTIONS

The management goal and objectives address a 15-year target for abundance, distribution, and productivity that, if achieved, would contribute to the recovery of Maine's piping plover population. The goal and objectives are based on several assumptions.

Management Goal

- Habitat loss and degradation are the primary factors limiting the abundance and distribution of piping plovers in Maine. There is likely sufficient physical habitat to support 80 pairs of piping plovers in Maine. However, because of human disturbance and predation, the habitat is functionally able to support only 40-60 pairs under the current level of management.
- Abundance is gauged by the number of nesting pairs of piping plovers. Annual standardized surveys of piping plovers are used to gauge population trends and the effects of management programs.
- Intensive management (e.g. fencing nests, patrolling beaches, predator management, public education) has contributed to population increases.
- If intensive management programs are reduced or eliminated, functional carrying capacity will likely decline.

Population Objective

- Nesting is defined as the presence of one or more nests, eggs, or chicks.
- An objective to increase the population of nesting piping plovers in Maine is compatible with the Federal Piping Plover Recovery Team goal of 1,200 breeding pairs in the Atlantic Coast plover population. Maine has little undeveloped coastal

sand beach remaining, however population increases in Maine, although small, will contribute to Atlantic Coast recovery goals.

- Adequate habitat is available to achieve the population objective.
- **"All** available breeding sites" is assumed to mean at least 23 sites (Appendix I) are occupied by plovers for at least 3 of the last 5 years.

Nesting Habitat Objective

- Habitat integrity can be maintained at existing successful sites.
- Habitat, which includes nesting, feeding, and brood rearing areas, is of sufficient quality or can be improved to support nesting piping plovers at five new sites for at least 3 of the last 5 years.

Productivity Objective

- Current levels of management are necessary to maintain productivity. Expanded management efforts (especially to further minimize chick predation) are likely needed to increase productivity consistently above 2.0 chicks fledged/pair, statewide.
- **"All** sites" refers to at least 23 successful sites mentioned previously.
- To keep the document consistent, we will use the term "fledged/pair, instead of "fledged/female."

PIPING PLOVER MANAGEMENT DECISION-MAKING PROCESS

Population, nesting, and productivity objectives are to be achieved by 2015. Therefore, this management system provides a systematic framework for piping plover management by MDIFW. The Department's goal of increasing the population and distribution of Maine's piping plovers drives management decisions. Decisions regarding piping plover population management are outlined in a series of yes or no answers to questions related to piping plover abundance, distribution, and productivity (Figure 1). Decisions regarding piping plover habitat management are also outlined in a series of yes or no answers to questions related to piping plover habitat protection initiatives (Figure 2). Responses to questions are based on evaluation of input criteria, and the decision matrix guides the manager to the appropriate management actions.

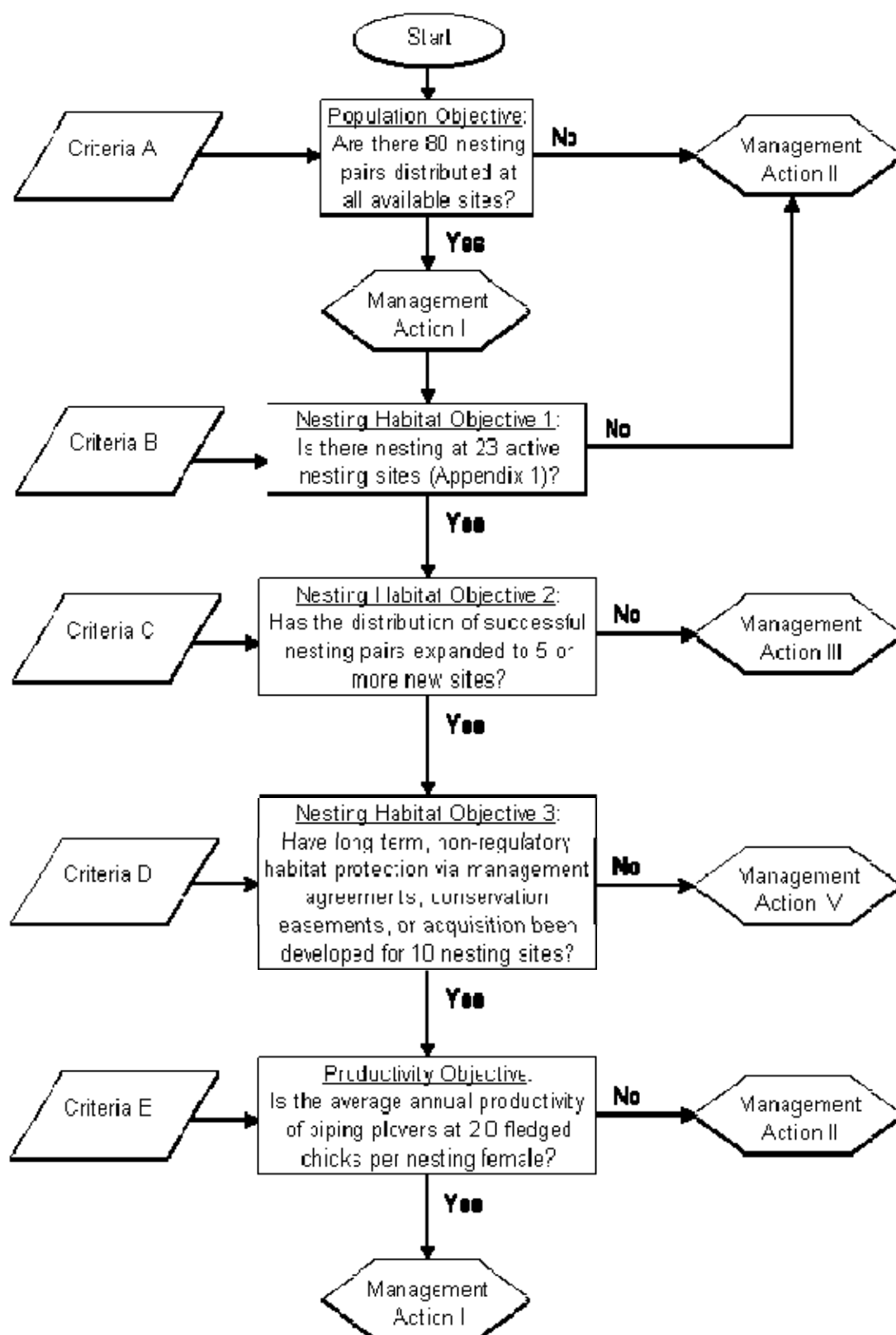


Figure 1. Flow diagram depicting decision criteria for Piping Plover Population Management System.

DECISION CRITERIA FOR PIPING PLOVER POPULATION MANAGEMENT

The following criteria are used to guide management decisions concerning the population status, distribution, and habitat protection for piping plovers in Maine.

Criteria are dictated by the goals and objectives adopted by the MDIFW Commissioner and Advisory Council (MDIFW 2001) and the assumptions enumerated in this management system.

Population Criterion A - Breeding Population Size

This input addresses the population abundance objective. It answers the question:

"Has the nesting population objective been achieved or exceeded for a minimum of 3 of the most recent 5 years as measured by annual plover nesting surveys?"

The population objective is at least 80 nesting pairs. Nesting is defined as the presence of one or more nests, eggs, or chicks. The answer to this question is "yes" if the population has equaled or exceeded 80 nesting pairs for at least 3 of the most recent 5 years. If not, the plover population is judged below target, and the answer is "no".

Abundance is measured by the number of nesting pairs as determined by a nesting survey conducted annually according to guidelines developed by the USFWS and modified for use in Maine by MDIFW, Maine Audubon, and TNC (Appendix 4). MDIFW, Maine Audubon, and TNC coordinate and conduct the surveys. MDIFW's Natural Heritage System and Piping Plover Nesting Survey databases serve as the final repository and reference source for this data input. Survey data collected by Maine Audubon and TNC since 1981 serve as the reference data.

Population Criterion B

This input addresses Nesting Habitat Objective 1. It answers the question: "Is the distribution of successful nesting pairs and integrity of nesting habitat equal or greater than 1997 – 1999 levels?"

Nesting distribution objective 1 is to maintain nesting and the integrity of nesting habitat at the 23 active nesting sites used by piping plovers between 1997-1999 (Appendix I).

The answer to this question is "yes" if plovers have successfully nested at the 23 sites in 3 of the past 5 years. If plovers have not achieved this distribution during the most recent 5-year period, the answer is "no".

Data to answer this question come from the MDIFW Piping Plover Database and MDIFW Natural Heritage Database.

Population Criterion C

This input addresses Nesting Habitat Objective 2. It answers the question: "Has the distribution of successful nesting pairs expanded to new sites?"

Nesting sites are discrete beaches where nesting has been documented. The answer to this question is "yes" if plovers have successfully nested at 5 new sites in 3 of the past 5 years. If plovers have not achieved this distribution during the latest 5-year

period, the answer is "no". Data to answer this question come from the MDIFW Piping Plover Database and MDIFW's Natural Heritage Database.

Nesting Habitat Criterion D

This input addresses Nesting Habitat objective 3. It answers the question “have long term, non-regulatory habitat protection via management agreements, conservation easements, or acquisition been developed for 10 nesting sites”.

The answer to this question can be found in MDIFW Biotics files.

Productivity Criterion E

This input addresses the productivity objective. It answers the question: "Has the population productivity objectives for piping plovers been met as measured by annual productivity surveys?"

The answer is "yes" if the statewide average productivity is at least 2.0 fledged chicks per pair for at least 3 of the past 5 years. Piping plover productivity is measured annually on all beaches according to standard guidelines developed by the USFWS, MDIFW, and Maine Audubon (Appendix 4).

POPULATION MANAGEMENT ACTIONS

Population Management Action I

- 1) Continue current management activities summarized in Table 1, at all plover nesting sites.
- 2) Continue participation in the annual International Breeding Piping Plover Census.
- 3) Acquire nesting data collected by Piping Plover Coordinators Group (MA, Rachel Carson NWR, TNC etc.) and analyze annually to assess population trends and productivity rates.
- 4) Evaluate management possibilities for increasing plover nesting density at existing sites and consider restoring functional plover nesting habitat at historic or infrequently used sites.
- 5) Review, for possible revision, the Piping Plover Assessment, Goals and Objectives, Problems and Strategies, and Management System.
- 6) Develop and maintain a group of cooperators comprised of all agencies, organizations, and individuals that are actively involved in piping plover issues to participate in Maine's piping plover management program.
- 7) Continue public information and outreach efforts.
- 8) Work closely with U. S. Fish and Wildlife Service biologists coordinating the Atlantic coast piping plover population recovery.

Population Management Action II

- 1) Continue with steps 1 – 8 from Management Action I

- 2) Identify and minimize factors negatively affecting piping plover population, distribution, or reproduction.
- 3) Initiate studies to determine factors responsible for limiting plover productivity and survival.
- 4) Increase predator control/avoidance programs and/or develop new management techniques to control predators.
- 5) Increase nest monitoring and beach patrol.
- 6) Increase measures to protect habitat (Fig. 2).
- 7) Increase efforts to coordinate plover management with Maine Audubon, TNC, USFWS, and landowners adjacent to plover nesting areas.
- 8) Increase use of Warden Service resources to enforce and facilitate protective measures if warranted.
- 9) Increase public educational efforts to discourage activities that degrade habitat or adversely alter plover nesting activity.

Population Management Action III

- 1) Continue with steps 1 – 8 from Management Action 1.
- 2) Periodically evaluate the potential of unused historical nesting sites.
- 3) Evaluate opportunities to "reclaim" functional plover habitat including:
 - Discourage dune stabilization and revegetation projects at potential plover nesting sites.
 - Explore the use of dredge spoil deposition to enhance existing habitat or create new nesting habitat.

- Vegetation management to enhance nesting habitat.
- 4) To attain the distribution objective, consistent plover nesting should be encouraged at new sites by implementing intensive management efforts (Table 1).
- 5) Continue or expand habitat protection to new nesting areas as appropriate (Fig. 2).

Population Management Action IV

- 1) Continue with steps 1 – 8 from Management Action 1.
- 2) Develop long-term Beach Management Agreements at all sites to help refine management, address limiting factors, and secure partnerships.
- 3) Develop additional land protection options, incentives, and rewards to broaden the array of land protection tools available to protect plover habitat.
- 4) Acquire important habitat if and when it becomes available.
- 5) Develop outreach programs to inform landowners and beach users and help limit disturbance to the birds and their habitat.
- 6) Provide law enforcement officers to facilitate protective measures developed in Beach Management Agreements.

Table 1. Schedule of Piping Plover Management Activities.

ACTIVITY	START	FINISH
Breeding population assessment		
▪ Pre-nesting survey	4/1	5/30
▪ Nesting inventory (initial)	5/10	6/7
▪ Nesting inventory (late and re-nesting pairs)	5/20	7/20
▪ Production survey	6/15	8/15
Human disturbance and predator management		
▪ Solicit volunteer wardens / hire full-time wardens	3/1	8/30
▪ Predator removal or deterrence	2/1	12/15
▪ Stake and twine, and post nesting areas	4/15	6/30
▪ Fence individual plover nests	4/15	7/20
▪ Initiate warden beach patrols	5/15	8/30
▪ Enforce pet restrictions	4/1	7/20
Piping Plover data management and habitat protection		
▪ Compile inventory data, input site files and update map locations to Natural Heritage Data Base	8/15	9/15
▪ Regional summaries of site and locations	9/15	10/1
▪ Information outputs for site managers (landowners, municipalities, DEP, DECD, as warranted)	10/1	10/15
▪ Submit nominations for Essential / Significant Habitat	10/15	10/30
▪ Review site protection and management priorities within the Wildlife Division	1/1	2/28
Coordination		
▪ Meet with Piping Plover Coordinator's Group	10/1	3/1
Outreach		
▪ Compile annual report, newsletter, and other outreach materials	9/1	12/31

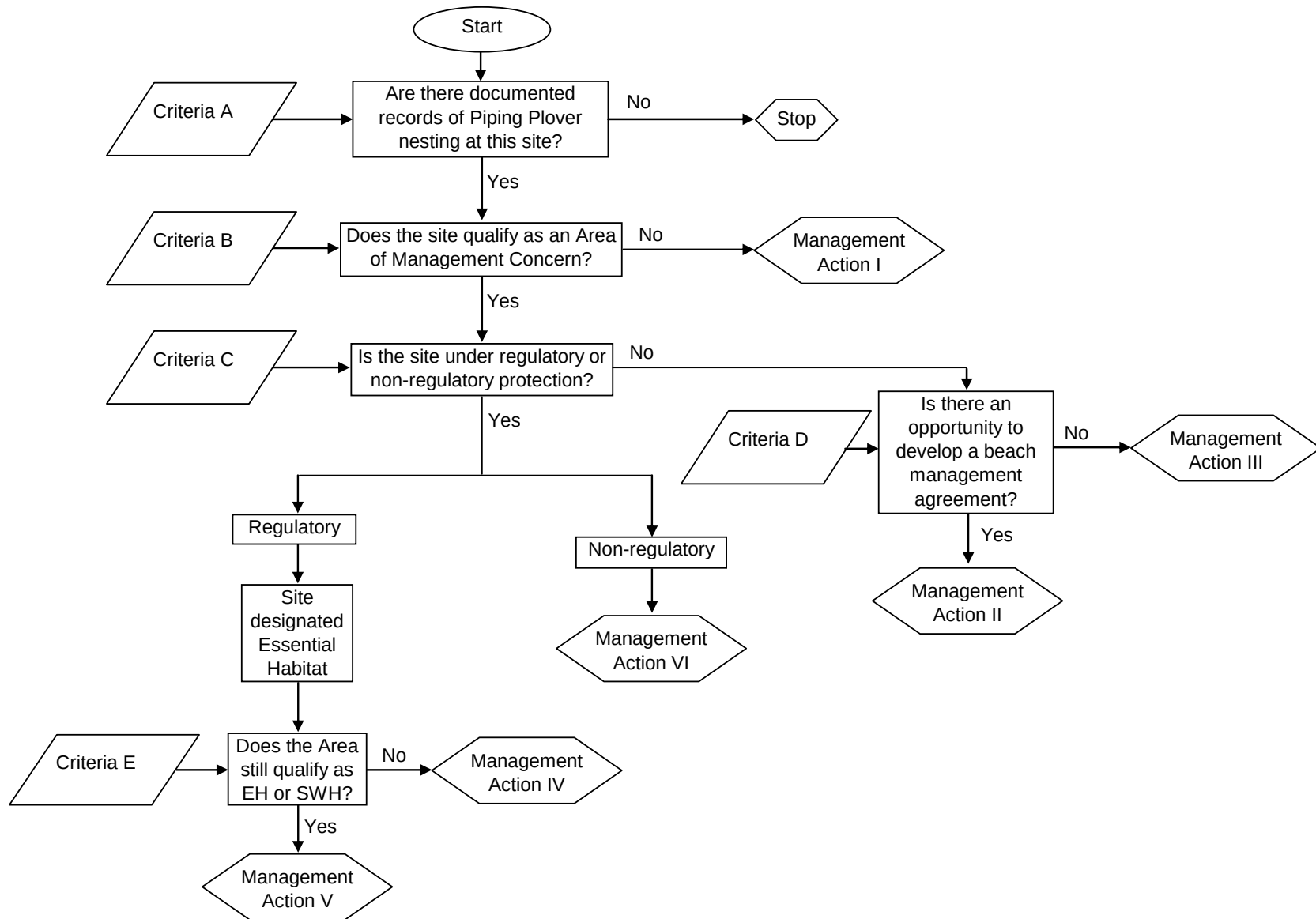


Figure 2. Flow diagram depicting decision criteria for Piping Plover habitat protection.

DECISION CRITERIA FOR PIPING PLOVER HABITAT MANAGEMENT

The following criteria are used to guide management decisions concerning habitat protection for piping plovers in Maine (Figure 2). Habitat protection is dictated by Population Management Actions I - IV.

Habitat Criterion A - Use By Piping Plovers?

This input answers the question: "Are there documented records of piping plovers nesting at this site?"

The answer to this question is "yes" if there is any record of nesting piping plovers on the beach, including historic and current records. MDIFW's Natural Heritage databases, and literature of piping plovers nesting in Maine are the reference sources in answering this question.

If the answer is "no" but the site has suitable nesting habitat, then continue to monitor area for new pairs.

Habitat Criterion B - Nesting Area of Management Concern?

This input answers the question: "Does this site qualify as a piping plover nesting area of management concern to MDIFW?"

The answer is "yes" if nesting or territorial pairs of piping plovers have been recorded at the site since 1986, suitable nesting habitat is available, and this site is considered essential to the achievement of the Department's management goals and objectives for piping plovers. MDIFW Natural Heritage databases are referenced to answer this question.

Habitat Criterion C – Site under non-regulatory or regulatory protection?

This input answers the question: "Is there an established non-regulatory or regulatory protection effort in place for this site?" The answer is "yes" if there is a current beach management agreement between the landowner/town and MDIFW or MDIFW has designated the site as Essential Habitat under ESA and/or identified the site as Significant Wildlife Habitat under NRPA.

Habitat Criterion D - Is there an opportunity to develop a beach management agreement plan for the site?

This input answers the question: "Is there an opportunity to develop an effective long-term beach management agreement between the municipality/landowner and MDIFW?" The answer is "yes" if the municipality/landowner is willing to negotiate a long-term beach management agreement with MDIFW.

Habitat Criterion E – Area currently qualifies for regulatory protection? This input answers the question: "Does the area still qualify as Essential Habitat or Significant

Wildlife Habitat?” The answer is “no” if 1) the area has not been occupied by any nesting pairs of piping plovers during the most recent 10 years and the lack of occupancy is not related to predation or competition from other species, or to any human-related activity; or 2) the area is no longer considered essential to the achievement of the Department’s management goals and objectives for piping plovers.

HABITAT MANAGEMENT ACTIONS

Habitat Management Action I

- 1) Include this beach on MDIFW's list of piping plover nesting sites maintained in the Natural Heritage System.
- 2) Survey incidentally to other inventory activities if site has functional nesting habitat.

These historic records are used to write species assessments, status reports, environmental reviews and consultations, and serve as the basis for the list of beaches to be surveyed annually.

Habitat Management Action II

- 1) Include the beach in information provided by the Habitat Group to Management Section staff for use in screening permit reviews and other information requests.
- 2) Include the beach in the notification to towns for through Beginning with Habitat or other town planning initiatives.
- 3) Evaluate the beach for protection via acquisition, conservation easement, voluntary management agreement, landowner notification, or other means.
- 4) Work with the municipality or landowner to establish an effective long-term beach management agreement. Beach management agreements should describe what the municipality's/landowner's responsibilities are as it relates to protecting piping plovers, including specific guidelines for beach cleaning, driving essential vehicles on the beach, enforcement of dog ordinance and placement of fencing.

- 5) Develop a breeding piping plover management plan specific to this site. The management plan should include specific management activities that apply to the site such as predator control, vegetative control, enforcement needs, and efforts needed to educate and inform beach users.

Habitat Management Action III

- 1) Continue with steps 1-4 from Habitat Management Action II.
- 2) Develop habitat description, mapping conventions, protection guidelines and review standards for designation as Essential Habitat.
- 3) Recommend the areas, guidelines, and standards for rulemaking under Essential Habitat provisions of the Maine Endangered Species Act.
- 4) Implement the rules.
- 5) Explore the subsequent possibility and benefits of recommending the areas, guidelines, and standards to DEP for rulemaking under Significant Wildlife Habitat provisions of NRPA.
- 6) Develop a breeding piping plover management plan specific to this site. The management plan should include specific management activities that apply to the site such as predator control, vegetative control, enforcement needs, and efforts needed to educate and inform beach users

Habitat Management Action IV

- 1) Remove site from Essential Habitat if the area has not been occupied by any nesting pairs of piping plovers during the most recent 10 years and the lack of

occupancy is not related to predation or competition from other species, or to any human-related activity; or

- 2) The area is no longer considered essential to the achievement of the Department's management goals and objectives for piping plovers.
- 3) Survey incidentally to other inventory activities if site has functional nesting habitat.

Habitat Management Action V

- 1) Continue tracking and maintain Essential Habitat status.
- 2) Consider non-regulatory protective initiatives such as long-term beach management agreements between the landowner/town and MDIFW.
- 3) Consider acquisition or conservation easements for site.
- 4) Develop a breeding piping plover management plan specific to this site. The management plan should include specific management activities that apply to the site such as predator control, vegetative control, enforcement needs, and efforts needed to educate and inform beach users.

Habitat Management Action VI

- 1) Continue management activities according to beach management agreement.
- 2) Monitor and evaluate success of management activities dictated by the beach management agreement.
- 3) Meet with municipal officers annually to renew current agreement and modify as needed to improve management success or to address landowner concerns.

- 4) Develop a breeding piping plover management plan specific to this site. The management plan should include specific management activities that apply to the site such as predator control, vegetative control, enforcement needs, and efforts needed to educate and inform beach users.

MANAGEMENT SYSTEM OUTPUTS

Protection of piping plover nesting, feeding, and brood-rearing habitat combined with active management to reduce predation and human disturbance are essential to the recovery of piping plovers in Maine, and will likely have to be conducted in perpetuity. Without active management programs, Maine's piping plover population would be expected to decline, perhaps to extirpation.

Past protection and management of piping plover beaches has relied almost entirely on volunteer cooperation of state and private landowners. Future protection efforts should evolve to include acquisition, conservation easements, environmental permit review, management leases and options, and zoning. New regulatory authority for habitat management (i.e. designations of "Essential Habitat" and "Significant Wildlife Habitat") are tied to status listings of the species as Endangered or Threatened. These two zoning approaches overlap considerably but may provide complimentary protection by influencing different activities or unique area designations. "Essential wildlife Habitat" (Appendix 2) offers immediate opportunities to insure that state and municipal functions do not cause habitat losses that jeopardize recovery of the piping plover from endangered status. Protection of beaches via "Significant Wildlife Habitat" (Appendix 3) zoning mandates permitting of most land uses within designated zones, thus achieving more comprehensive yet flexible site protection.

In Maine, piping plovers nest in close association with least terns, another state-listed Endangered species. Both species depend on the same ecosystems for nesting, feeding, and brood rearing. If possible, habitat protection initiatives for both species should be developed simultaneously to avoid redundancy in the rule-making process, ensure continuity in regulations, and ultimately protect the integrity of the ecosystems on which both species depend.

Management intensity cannot diminish after achieving population, distribution, and productivity objectives. Predators and associated disturbance will undoubtedly persist as factors limiting recovery of piping plover populations in Maine. Likewise development and human disturbance are expected to increase in the future. Long-term recovery and maintenance of a small, but productive piping plover population in Maine will likely depend on human intervention, habitat protection, and intensive management of beaches for perpetuity.

A major emphasis of piping plover management is to promote cooperative management of beaches by groups like the USFWS, Maine Audubon, The Nature Conservancy, and Bureau of Parks and Recreation. MDIFW will play an important role in coordinating, facilitating, and assisting in these activities and monitoring the success of site management. Zoning of piping plover nesting beaches as Essential Habitat ensures MDIFW review of environmental permit applications. Case-by-case permitting and customizing management prescriptions to specific nesting areas are accomplished via

designations of Significant Wildlife Habitat. The effectiveness of these measures should be tracked and modified if observed to be either inadequate or excessive.

PART II. PIPING PLOVER MANAGEMENT DATABASE

PIPING PLOVER MANAGEMENT ACTIVITIES

Piping plover population, productivity, distribution, and site management decisions are conducted on an annual cycle. A piping plover inventory is conducted annually and provides the basic input to this management system. Population estimates and measures of productivity are made annually on all piping plover beaches. Information updates (mapping, computer, and manual site files) begin immediately with the completion of annual surveys. Environmental permit review occurs year-round.

The Piping Plover Cooperator's Group meets annually to exchange information, coordinate management and surveys, standardize census methodologies, and establish priorities. MDIFW schedules a winter meeting to compile census results, review findings, assess effectiveness of management, coordinate plans for the next season's surveys, and coordinate management of predators and human disturbance. An annual chronology of management activities is presented in Table1.

1. MAINE PIPING PLOVER SURVEY

Supported by MDIFW, Maine's breeding piping plover population has been surveyed annually by Maine Audubon and cooperators since 1981. Annual censuses should continue at all beaches that have historically supported piping plovers. Piping plovers have nested on at least 26 beaches since 1958, but only 11 beaches have been used on a regular basis since 1996. Post-1981 site records and nesting histories of plovers

breeding in Maine are maintained in MDIFW's Natural Heritage Database and the Piping Plover Database.

Piping plover beaches are repeatedly surveyed for territorial adults between 1 April and 10 June. The number of territorial adults is recorded for each site, and nests are documented (and usually fenced) soon after the first egg or two are laid. Estimates of the breeding population are most accurate if made between 25 May and 10 June when most pairs are incubating their first clutch. After 1 June, care must be taken to differentiate re-nesting birds. Throughout the nesting season the number of pairs, nesting attempts, nest losses, successful nests, chick mortality, and chicks fledged are recorded for each site. Census techniques are standardized by the USFWS (Appendix 3) and modified to meet State needs. Census data provide input for Population Criteria A and Population Criteria B in the decision-making matrix (Fig. 1). MDIFW's Natural Heritage Database and Piping Plover Database will be the final repository for the census data.

In addition to the survey work mentioned above, Maine participates in the International Piping Plover Breeding Census coordinated by the USFWS. This survey counts all piping plovers observed in a single day (usually around the first week of June) along the western Atlantic coastline.

2. PIPING PLOVER PRODUCTIVITY SURVEY

Biologists estimate productivity by counting fledged chicks (20+ days old) at each nesting beach in June, July, and August (Appendix 3). Productivity is expressed as "number of young fledged/nesting pair" and is used as an input for Population Criteria E to assess productivity objectives.

3. MDIFW'S NATURAL HERITAGE DATABASE

This is an integrated system comprised of manual, map, and computer databases for tracking and managing information on the occurrence and status of rare and endangered wildlife. Its primary function is to provide a comprehensive, standardized approach to assessing the status of rare and endangered species. It also is part of an international Heritage Program comprised of a network of similar state systems. In MDIFW, the Heritage Database serves multiple purposes, including: 1) tracking information about species distribution and abundance; 2) aiding in determining listing status under the Maine Endangered Species Act; 3) developing species assessments; 4) answering management system decisions; 5) supporting habitat protection initiatives; and 6) aiding information transfer regarding species and habitat data. There are four basic parts to the Heritage Database:

A. The Species File

This includes manual and computer files, which serve as a reference library for species information. The manual portion consists of a separate file on each species listed as Endangered, Threatened, Special Concern, Indeterminate Status, Watch List, or

Extirpated. It can also include a file for species considered possible candidates for one of those categories. Each species file includes information on summaries of occurrences, natural history, status reports, assessments, management systems, recovery plans, research reports, library and literature references, photos, correspondence, range-wide status reports, management information, and other species specific reference material.

TNC's Vertebrate and Invertebrate Characterization Abstracts make up the computer portion of this file.

B. The Map File

This manual file consists of a complete set of 7.51 USGS topographic quads for Maine. Its purpose is to track the occurrences of a subset of the species monitored by the Species File. This subset is determined based on listing status and management need, and each tracked species (or species group, or associated habitat type) is referred to as an "element". Examples of elements would be piping plover nesting area, bald eagle nest site, and box turtle report.

Steps in entering data to the map file are:

1. define the parameters of an occurrence for each tracked element
2. map the element occurrence
3. complete an element occurrence record (EOR)

4. enter map margin data unique to each occurrence which links map file to computer file.

C. The Computer File

This database manages the element occurrence records contained on the Map Files.

Currently a Biotics database housed in Bangor is being used to store the EORS.

However, its data fields and format are modeled after the Natural Heritage Program database (Biotics) developed by The Nature Conservancy and housed at MDIFW's Augusta office. Slight modifications to include additional fields necessary for MDIFW's purposes were incorporated into this database.

D. The Site File

The Site File is a manual database with an individual file for each site. A site is defined and a site file created when a specific location containing a tracked element or elements takes on management interest, at some level, to the Wildlife Resource Assessment Section (WRAS). The site file for a location includes such things as associated EORS, inventory data sheets, site maps, correspondence, environmental permit reviews and comments, ownership information, management plans, habitat protection initiatives, photos, and other site specific reference material.

Use of the site information: There are two types of uses for site file data: 1) site-specific management, and 2) policy or program development.

1) Site-specific Management Requests: MDIFW Regional Biologists take the lead on making site-specific management recommendations and answering site-specific data management requests. Their responses are guided by MDIFW policies and guidelines. The Bird Group compiles current site data, management guidelines, policy recommendations, training, and other technical assistance as required in support of the regions.

Updated information on piping plover sites will be organized by the Bird Group and be distributed by the Habitat Group to MDIFW regional offices. This list will be used as the primary screen for site specific habitat concerns for piping plovers. Additional information on interpretation of these data and management guidelines will be provided by the Bird Group to meet the needs of the Regions. Subsequent recommendations or actions on any site are guided by MDIFW policy. These policies and procedures are developed by the Wildlife Division.

A "hit" occurs whenever a permit review, data request, or other review occurs within a designated area of concern at a tracked site. Regional offices will provide written notification of each "hit" in their site management file and the Bird Group master site file, allowing consultation between MDIFW regions and the Bird Group if warranted. All recommendations ' communications, site information replies, or other actions regarding the site are documented in regional site management files. Final recommendations and other significant items regarding the site are copied to the Bird Group Site Files. The

Bird Group will assess continuing use of beaches by plovers as an indicator of management success and thus the appropriateness of site protection guidelines.

2) Policy and Program Development Requests

In addition to the site-specific information, a second type of request is routinely made of MDIFW. General inquiries for site information on rare or endangered species are frequently made by other agencies and organizations. These data are generally intended for use by the requesting agency to apply management or protection actions to rare species (often through sites) via legal mandates, policies, or programs of that agency.

This type of request has far reaching implications to MDIFW's recovery and management programs and thus requires close coordination. The Bird Group takes the lead for screening and evaluating requests of this nature. The Bird Group reviews intended uses of these data and recommends information transfers appropriate to the proposed use. This procedure provides continuity, standardization, and coordination among the many, sometimes conflicting, uses and parties seeking these data. specific sites meeting the criteria of the request are compiled and packaged by the Bird Group. A summary of the nature of the data being provided, its limitations, and intended uses are prepared for the requesting party. The completed package is sent to the Wildlife Division director and/or MDIFW regions for review. The approved product is then provided to the requesting group.

E. Topic File

This is a reference file on management topics where policy, programs, and decisions are regularly made or under evaluation to achieve MDIFW goals for rare or endangered species. It includes files on topics such as aquaculture, pesticide use, disturbance, dredging, development, forestry, and mineral exploration. Its purpose is twofold: a ready reference file by topic and a cross-reference between regions, species, and MDIFW's policies and actions on specific issues affecting rare species.

LITERATURE CITED

- U. S. Fish and Wildlife Service. 1996. Piping Plover (*Charadrius melodus*), Atlantic Coast Population, revised recovery plan. U. S. Fish and Wildlife Service, Hadley, MA. 258pp.
- Maine Department of Inland Fisheries and Wildlife. 2000. Piping plover assessment. Me Dept. Inland Fish. and Wildl., Augusta, ME. 38pp.

LIST OF APPENDICES

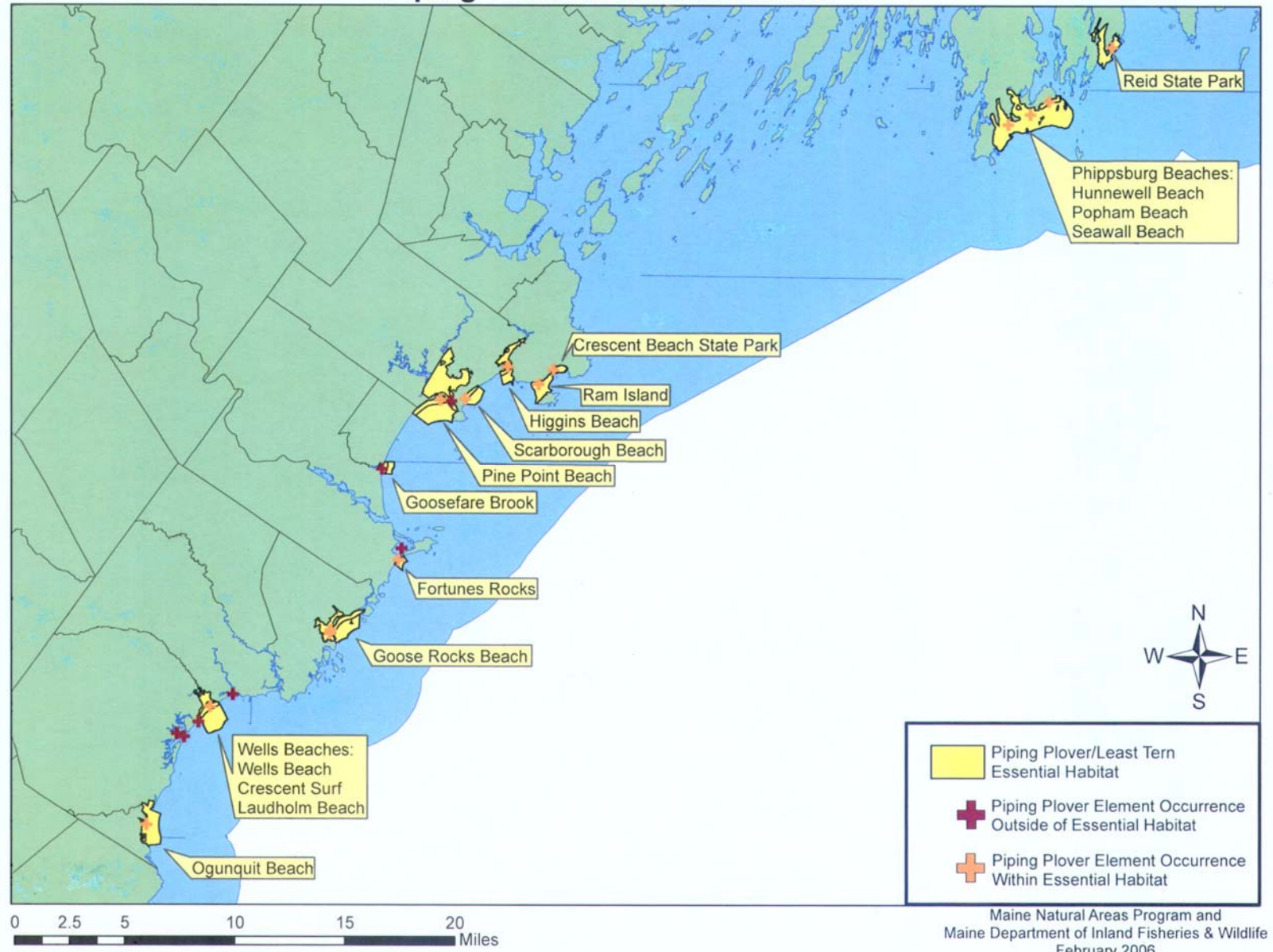
- Appendix 1. Piping Plover Nesting Sites
- Appendix 2. Maine Endangered Species Act
- Appendix 3. Maine Natural Resource Protection Act – Significant Wildlife Habitat
- Appendix 4. Standardized survey methods for determining piping plover nesting population and productivity in Maine.
- Appendix 5. Protection Guidelines for designating Essential Habitat for piping plovers.

APPENDIX 1

Maine Piping Plover Nesting Sites 1997-1999

Site	Township	County
Ogunquit Beach,	Ogunquit,	York County
Moody Beach,	Wells,	York County
Wells Beach,	Wells,	York County
Drakes Island Beach,	Wells,	York County
Laudholm Farm Beach,	Wells,	York County
Crescent Surf Beach,	Kennebunk,	York County
Batson River,	Kennebunkport,	York County
Goose Rocks,	Kennebunkport,	York County
Fortunes Rocks,	Biddeford,	York County
Ferry Beach,	Saco,	York County
Goosefare Brook,	Saco,	York County
Old Orchard Beach,	Old Orchard,	York County
Pine Point,	Scarborough,	Cumberland County
Western Beach,	Scarborough,	Cumberland County
Scarborough Beach,	Scarborough,	Cumberland County
Higgins Beach,	Scarborough,	Cumberland County
Ram Island,	Cape Elizabeth,	Cumberland County
Crescent Beach,	Cape Elizabeth,	Cumberland County
Seawall Beach,	Phippsburg,	Sagadahoc County
Popham Beach,	Phippsburg,	Sagadahoc County
Hunnewell Beach,	Phippsburg,	Sagadahoc County
Indian Point,	Georgetown,	Sagadahoc County
Reid State Park,	Georgetown,	Sagadahoc County

Piping Plover Essential Habitat





APPENDIX 2

Maine Endangered Species Act

Title 12, Chapter 925, FISH AND WILDLIFE MANAGEMENT AND RESEARCH (HEADING: PL 2003, c. 414, Pt. A, §2 (new); Pt. D, §7 (aff); c. 614, §9 (aff))

Subchapter 1: WILDLIFE MANAGEMENT AND RESEARCH (HEADING: PL 2003, c. 414, Pt. A, §2 (new); Pt. D, §7 (aff); c. 614, §9 (aff))

Subchapter 3: ENDANGERED SPECIES; MANAGEMENT AND RESEARCH (HEADING: PL 2003, c. 414, Pt. A, §2 (new); Pt. D, §7 (aff); c. 614, §9 (aff))

§12801. Declaration of purpose

The Legislature finds that various species of fish or wildlife have been and are in danger of being rendered extinct within the State of Maine, and that these species are of esthetic, ecological, educational, historical, recreational and scientific value to the people of the State. The Legislature, therefore, declares that it is the policy of the State to conserve, by according such protection as is necessary to maintain and enhance their numbers, all species of fish or wildlife found in the State, as well as the ecosystems upon which they depend. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

This subchapter and chapter 631 are established to carry out the purposes of this section. [2003, c. 573, §5 (new); §8 (aff); c. 655, Pt. C, §3, 6 (aff).]

PL 2003, Ch. 414, §A2 (NEW).

PL 2003, Ch. 414, §D7 (AFF).

PL 2003, Ch. 573, §5 (AMD).

PL 2003, Ch. 573, §8 (AFF).

PL 2003, Ch. 614, §9 (AFF).

PL 2003, Ch. 655, §C3,6 (AFF).

§12802. Commissioner's authority, investigations and programs

1. Investigations. The commissioner may conduct investigations in order to develop information relating to population size, distribution, habitat needs, limiting factors and other biological and ecological data relating to the status and requirements for survival of any species of fish or wildlife occurring in the State, whether endangered or not.

[2003, c. 614, §9 (aff); c. 655, Pt. B, §308 (amd); §422 (aff).]

2. Programs. The commissioner may develop programs to enhance or maintain the populations described in subsection 1.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).

PL 2003, Ch. 414, §D7 (AFF).

PL 2003, Ch. 614, §9 (AFF).

PL 2003, Ch. 655, §B308 (AMD).

PL 2003, Ch. 655, §B422 (AFF).

§12803. Designation of endangered species

1. Standards. The commissioner shall recommend a species to be listed as endangered or threatened whenever the commissioner finds one of the following to exist:

- A. The present or threatened destruction, modification or curtailment of its habitat or range; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- B. Overutilization for commercial, sporting, scientific, educational or other purposes; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- C. Disease or predation; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- D. Inadequacy of existing regulatory mechanisms; or [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- E. Other natural or manmade factors affecting its continued existence within the State. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

2. Commissioner's duties. In recommending a species to be listed as endangered or threatened, the commissioner shall:

- A. Make use of the best scientific, commercial and other data available; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- B. Consult, as appropriate, with federal agencies, other interested state agencies, other states having a common interest in the species and interested persons and organizations; and [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
- C. Maintain a list of all species that the Legislature has designated to be endangered or threatened, naming each species by both its scientific and common name, if any, and specifying over what portion of its range each species so designated is endangered or threatened. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

3. Legislative authority. The Legislature, as sole authority, shall designate a species as a state endangered or state threatened species. The list of state endangered or state threatened species by common name, scientific name and status is as follows:

- A. Least tern, *Sterna albifrons*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- B. Golden eagle, *Aquila chrysaetos*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- C. Piping plover, *Charadrius melodus*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- D. Sedge wren, *Cistothorus platenis*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- E. Grasshopper sparrow, *Ammodramus savannarum*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- F. Box turtle, *Terrapene carolina*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- G. Black racer, *Coluber constrictor*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- H. Roseate tern, *Sterna dougallii*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- I. Northern bog lemming, *Synaptomys borealis*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]

- J. Blanding's turtle, *Emydoidea blandingii*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- K. Black tern, *Chlidonias niger*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- L. American pipit, *Anthus rubescens*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- M. Peregrine falcon, *Falco peregrinus*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- N. Flat-headed mayfly, *Epeorus frisoni*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- O. Ringed boghaunter, *Williamsonia lintneri*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- P. Clayton's copper, *Lycaena dorcas claytoni*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- Q. Edwards' hairstreak, *Satyrium edwardsii*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- R. Hessel's hairstreak, *Mitoura hesseli*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- S. Katahdin arctic, *Oenis polixenes katahdin*, endangered; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- T. Spotted turtle, *Clemmys guttata*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- U. Bald eagle, *Haliaeetus leucocephalus*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- V. Razorbill, *Alca torda*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- W. Atlantic puffin, *Fratercula arctica*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- X. Harlequin duck, *Histrionicus histrionicus*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- Y. Arctic tern, *Sterna paradisaea*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- Z. Upland sandpiper, *Bartramia longicauda*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- AA. Swamp darter, *Etheostoma fusiforme*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- BB. Tidewater mucket, *Leptodea ochracea*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- CC. Yellow lampmussel, *Lampsilis cariosa*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- DD. Tomah mayfly, *Siphonisca aerodromia*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- EE. Pygmy snaketail, *Ophiogomphus howei*, threatened; [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- FF. Twilight moth, *Lycia rachelae*, threatened; and [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]
- GG. Pine barrens zanclognatha, *Zanclognatha martha*, threatened. [2003, c. 573, §6 (new); §8 (aff); c. 655, Pt. C, §§3, 6 (aff).]

[2003, c. 573, §6 (rpr); §8 (aff); c. 614, §9 (aff); c. 655, Pt. C, §§3, 6 (aff).]

4. Process for recommendation; notice and hearings. Prior to recommending an addition, deletion or other change to the endangered and threatened species listed in subsection 3, the commissioner shall provide for public notice and public hearings on that proposed recommendation in accordance with the provisions of Title 5, chapter 375, subchapter 2.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

5. Designation by Legislature. The Legislature may not amend the list of endangered or threatened species in subsection 3 except upon the recommendation of the commissioner.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).

PL 2003, Ch. 414, §D7 (AFF).

PL 2003, Ch. 573, §6 (AMD).

PL 2003, Ch. 573, §8 (AFF).

PL 2003, Ch. 614, §9 (AFF).

PL 2003, Ch. 655, §C3,6 (AFF).

§12804. Conservation of endangered species

1. Conservation of nongame and endangered species. The commissioner may establish such programs as are necessary to bring any endangered or threatened species to the point where it is no longer endangered or threatened, including:

A. Acquisition of land or aquatic habitat or interests in land or aquatic habitat; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

B. Propagation; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

C. Live trapping; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

D. Transplantation. Prior to the transplantation, introduction or reintroduction of an endangered or threatened species in the State, the commissioner shall, in conjunction with the Atlantic Salmon Commission, when appropriate, develop a recovery plan for that species, conduct a public hearing on that recovery plan pursuant to Title 5, Part 18 and submit that plan to the joint standing committee of the Legislature having jurisdiction over inland fisheries and wildlife matters. The introduction or reintroduction of that species must be conducted in accordance with the recovery plan developed under this paragraph and may not begin sooner than 90 days after all conditions of this paragraph have been met; and [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

E. In the extraordinary case where population pressures within a given group ecosystem can not be otherwise relieved, regulated taking. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

2. Habitat. For species designated as endangered or threatened under this subchapter the commissioner may by rule identify areas currently or historically providing physical or biological features essential to the conservation of the species and that may require special management considerations. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

[2003, c. 614, §9 (aff); c. 655, Pt. B, §309 (amd); §422 (aff).]

3. Protection guidelines. The commissioner may by rule develop guidelines for the protection of species designated as endangered or threatened under this subchapter. Rules adopted pursuant to this subsection are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

[2003, c. 614, §9 (aff); c. 655, Pt. B, §309 (amd); §422 (aff).]

4. Annual report. The commissioner shall submit a written report by January 1st of each year to the joint standing committee of the Legislature having jurisdiction over inland fisheries and wildlife matters and the joint standing committee of the Legislature having jurisdiction over marine resources matters describing the status of all current and planned programs, activities and rules of the department pertaining to the conservation or management of endangered or threatened species. When appropriate, this report may be combined with any transplantation report required under subsection 1, paragraph D. The commissioner shall notify the Legislature by January 1st of each year that the report has been delivered.

[2003, c. 573, §7 (amd); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).
 PL 2003, Ch. 414, §D7 (AFF).
 PL 2003, Ch. 573, §7 (AMD).
 PL 2003, Ch. 614, §9 (AFF).
 PL 2003, Ch. 655, §B309 (AMD).
 PL 2003, Ch. 655, §B422 (AFF).

§12805. Cooperative agreements

The commissioner may enter into agreements with federal agencies, other states, political subdivisions of this State or private persons for the establishment and maintenance of programs for the conservation of endangered or threatened species and may receive all federal funds allocated for obligations to the State pursuant to these agreements. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).
 PL 2003, Ch. 414, §D7 (AFF).
 PL 2003, Ch. 614, §9 (AFF).

§12806. State and local cooperation

1. Review. A state agency or municipal government may not permit, license, fund or carry out projects that will:

A. Significantly alter the habitat identified under section 12804, subsection 2 of any species designated as threatened or endangered under this subchapter; or [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

B. Violate protection guidelines set forth in section 12804, subsection 3. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

The commissioner shall make information under section 12804 available to all other state agencies and municipal governments for the purposes of review.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

2. Variance. Notwithstanding subsection 1, state agencies and municipal governments may grant a variance from this section provided that:

A. The commissioner certifies that the proposed action would not pose a significant risk to any population of endangered or threatened species within the State; and [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

B. A public hearing is held on the proposed action. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

3. Pending applications. Notwithstanding Title 1, section 302, applications pending at the time of adoption of habitats and guidelines under section 12804, subsections 2 and 3 are governed by this section.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]
 PL 2003, Ch. 414, §A2 (NEW).

PL 2003, Ch. 414, §D7 (AFF).
 PL 2003, Ch. 614, §9 (AFF).

§12807. Introduction of wolves to State; approval

A person may not release a wolf in the State for the purpose of reintroducing that species into the State without the prior approval of both Houses of the Legislature and the commissioner. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

A person who violates this section commits a Class E crime. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).
 PL 2003, Ch. 414, §D7 (AFF).
 PL 2003, Ch. 614, §9 (AFF).

§12808. Misuse of endangered or threatened species

For the purposes of this section, "to take," "take" and "taking" mean the act or omission that results in the death of any endangered or threatened species. [2003, c. 614, §9 (aff); c. 655, Pt. B, §310 (amd); §422 (aff).]

1. Prohibited acts regarding endangered or threatened species; negligence. Except as provided in subsections 2 and 3, a person may not negligently:

A. Import into the State or export out of the State any endangered or threatened species. A person who violates this paragraph commits a Class E crime; [2003, c. 614, §9 (aff); c. 655, Pt. B, §311 (rpr); §422 (aff).]

B. Hunt, take, trap or possess any endangered or threatened species within the State. A person who violates this paragraph commits a Class E crime; [2003, c. 614, §9 (aff); c. 655, Pt. B, §311 (rpr); §422 (aff).]

C. Possess, process, sell, offer for sale, deliver, carry, transport or ship, by any means whatsoever, any endangered or threatened species or any part of an endangered or threatened species. A person who violates this paragraph commits a Class E crime; or [2003, c. 614, §9 (aff); c. 655, Pt. B, §311 (rpr); §422 (aff).]

D. Feed, set bait for or harass any endangered or threatened species. A law enforcement officer, as defined in Title 25, section 2801-A, subsection 5, must issue a warning to a person who violates this paragraph for the first time. A person who violates this paragraph after having previously been given a warning under this paragraph commits a Class E crime. [2003, c. 614, §9 (aff); c. 655, Pt. B, §311 (rpr); §422 (aff).]

[2003, c. 614, §9 (aff); c. 655, Pt. B, §311 (rpr); §422 (aff).]

1-A. Prohibited acts regarding endangered or threatened species; intentional. Except as provided in subsections 2 and 3, a person may not intentionally:

A. Import into the State or export out of the State any endangered or threatened species. A person who violates this paragraph commits a Class D crime; [2003, c. 655, Pt. B, §312 (new); §422 (aff).]

B. Hunt, take, trap or possess any endangered or threatened species within the State. A person who violates this paragraph commits a Class D crime; [2003, c. 655, Pt. B, §312 (new); §422 (aff).]

C. Possess, process, sell, offer for sale, deliver, carry, transport or ship, by any means whatsoever, any endangered or threatened species or any part of an endangered or threatened species. A person who violates this paragraph commits a Class D crime; or [2005, c. 477, §23 (amd).]

D. Feed, set bait for or harass any endangered or threatened species. A law enforcement officer, as defined in Title 25, section 2801-A, subsection 5, must issue a warning to a person who violates this paragraph for the first time. A person who violates this paragraph after having previously been given a warning under this paragraph commits a Class D crime. [2003, c. 655, Pt. B, §312 (new); §422 (aff).]

[2005, c. 477, §23 (amd).]

2. Exceptions for certain purposes. Notwithstanding subsections 1 and 1-A or section 10650 as it applies to rules adopted in accordance with this subchapter, the commissioner may:

A. Under such terms and conditions as the commissioner may prescribe, permit any act prohibited by this section or by rule for educational or scientific purposes or to enhance the propagation or survival of an endangered or threatened species; and [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

B. Under such terms and conditions as the commissioner may prescribe, permit any endangered or threatened species that enters the State and is being transported to a point outside the State to be so entered and transported without restriction in accordance with the terms of any federal or state permit. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

[2003, c. 614, §9 (aff); c. 655, Pt. B, §313 (amd); §422 (aff).]

3. Exceptions; incidental take plan. Notwithstanding subsection 1, the commissioner may:

A. Permit the taking of any endangered species or threatened species if:

- (1) Such taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity;
- (2) The taking will not impair the recovery of any endangered species or threatened species; and
- (3) The person develops and implements an incidental take plan approved by the commissioner to take an endangered species or threatened species pursuant to paragraph B; and

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

B. Allow a plan that minimizes the incidental taking of an endangered species or threatened species that specifies the following:

- (1) A description of the specific activities sought to be authorized by the incidental take permit and an analysis of potential alternatives;
- (2) The individual and cumulative effects that may reasonably be anticipated to result from the proposed actions covered by the plan;
- (3) The recovery measures the applicant will implement to prevent, minimize and mitigate the individual and cumulative effects and any provisions that are necessary to prevent, minimize and mitigate circumstances that are likely to impair the recovery of any endangered or threatened species covered by the plan;
- (4) The procedures for monitoring the effectiveness of the recovery measures in the plan;
- (5) The anticipated costs of implementing the plan and the availability of necessary funding for the applicant to implement the plan; and
- (6) Other modifications to the plan or other additional measures, if any, that the department may require and such other matters as the department determines to be necessary for the recovery of species consistent with this section.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

The department shall seek input from knowledgeable individuals or groups on each incidental take plan for endangered or threatened species.

If any person fails to abide by the terms of any permit authorizing the incidental taking of an endangered or threatened species, the permit must be immediately suspended or revoked.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff).]

PL 2003, Ch. 414, §A2 (NEW).

PL 2003, Ch. 414, §D7 (AFF).

PL 2003, Ch. 614, §9 (AFF).

PL 2003, Ch. 655, §B310-313 (AMD).

PL 2003, Ch. 655, §B422 (AFF) .
 PL 2005, Ch. 477, §23 (AMD) .

§12809. Judicial enforcement

1. General. In the event of a violation of this subchapter, any rule adopted pursuant to this subchapter or any license or permit granted under this subchapter, the Attorney General may institute injunctive proceedings to enjoin any further violation, a civil or criminal action, or any appropriate combination of those proceedings without recourse to any other provision of law administered by the department.

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff) .]

2. Restoration. The court may order restoration of any area affected by any activity found to be in violation of this subchapter, any rule adopted pursuant to this subchapter or any license or permit granted under this subchapter, to its condition prior to the violation or as near to that condition as possible. When the court finds that the violation was willful, the court shall order restoration under this subchapter, unless the restoration would result in:

A. A threat to public health and safety; [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff) .]

B. Environmental damage; or [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff) .]

C. A substantial injustice. [2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff) .]

[2003, c. 414, Pt. A, §2 (new); c. 614, §9 (aff) .]

PL 2003, Ch. 414, §A2 (NEW) .
 PL 2003, Ch. 414, §D7 (AFF) .
 PL 2003, Ch. 614, §9 (AFF) .

APPENDIX 3

06-096

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Chapter 335.

SIGNIFICANT WILDLIFE HABITAT

SUMMARY: These rules outline requirements associated with a Natural Resources Protection Act permit for an activity impacting significant wildlife habitat.

1. **Applicability.** This chapter applies to an activity that takes place in, on, or over a significant wildlife habitat, or adjacent to a significant wildlife habitat contained within a freshwater wetland, and requires approval from the department pursuant to the Natural Resources Protection Act (NRPA), 38 M.R.S.A. §§ 480-A et. seq. This chapter applies to an application for an individual permit under the NRPA and describes basic standards for an activity affecting a significant wildlife habitat.

NOTE: If a significant wildlife habitat contains a coastal wetland, great pond, river, stream, or brook, or freshwater wetland, the applicant is also required to comply with Chapter 310, The Wetlands and Waterbodies Protection Rules.

2. **Definitions.** As used in this chapter, unless the context otherwise indicates, the following terms have the following meanings.

The terms "freshwater wetland" and "significant wildlife habitat" have the same meaning as defined in the NRPA in 38 M.R.S.A. § 480-B.

- A. **Activity.** Dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials, draining or otherwise dewatering; filling or any construction, repair or alteration of any permanent structure in, on, or over a significant wildlife habitat, or adjacent to a significant wildlife habitat contained within a freshwater wetland, as applicable under the NRPA.

On a case-by-case basis as determined by the department, the term "activity" may not include:

- (1) The disturbance of very little soil through an activity such as installing a fence post or planting shrubs by hand;
- (2) The addition of a minor feature, such as a bench or hand rail, to a structure; or
- (3) The construction, repair or alteration of a small structure with minimal impact such as a nesting box, pasture fence, or staff gauge.

- B. **Adjacent to a significant wildlife habitat.** The area within 75 feet, measured horizontally, of the edge of a significant wildlife habitat contained within a freshwater wetland.

- C. **Existing development area.** The area of property altered including, but not limited to, buildings, driveways, parking areas, wastewater disposal systems, lawns and other non-native vegetation, as of the effective date of this chapter.

- D. **Practicable.** Available and feasible considering cost, existing technology and logistics based on the overall purpose of the project.

- E. **Subject wildlife.** Wildlife species for which an area has been designated as significant wildlife habitat.

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3. General standards applicable to all activities

- A. Avoidance.** No activity that would degrade the significant wildlife habitat, disturb the subject wildlife, or affect the continued use of the significant wildlife habitat by the subject wildlife, either during or as a result of the activity, is permitted if there is a practicable alternative to the project that would be less damaging to the environment.
- B. Minimal alteration.** Alteration of the habitat and disturbance of subject wildlife must be kept to the minimum amount necessary by, among other methods, minimizing the size of the alteration, the duration of the activity, and its proximity to the significant wildlife habitat and subject wildlife. Temporary structures must be used instead of permanent structures wherever possible and more protective of the significant wildlife habitat or subject wildlife.
- C. No unreasonable impact.** Even if the activity has no practicable alternative, and the applicant has minimized the proposed alteration as much as possible, the application will be denied if the activity will have an unreasonable impact on protected natural resources or the subject wildlife. "Unreasonable impact" means that one or more of the standards of the NRPA at 38 M.R.S.A. § 480-D will not be met. In making this determination, the department considers the area of the significant wildlife habitat affected by the activity, including areas beyond the physical boundaries of the project and the cumulative effects of frequent minor alterations of significant wildlife habitats.

In order to meet the "harm to habitats; fisheries" standard at 38 M.R.S.A. § 480-D(3), the following requirements must be met.

- (1) Unreasonable degradation, disturbance, or effect. The activity may not unreasonably degrade the significant wildlife habitat, unreasonably disturb subject wildlife, or unreasonably affect the continued use of the site by the subject wildlife.
- (2) Timing. The department may require that construction activities occur during a time when impacts on protected habitats, wildlife, fisheries and aquatic life will be minimized, such as outside of any critical nesting or breeding periods or similar critical periods, depending on the specific habitat and species. For example, an activity that could potentially cause sedimentation, such as excavation, may not be carried out during times of the year when fish are spawning. This requirement must be met unless the work can only practically be completed at that time, and it is determined by the department that the impacts to the protected natural resource will be short term, and will not result in permanent harm to fish, wildlife, or marine resources.
- D. Compensation.** Compensation is the off-setting of a lost habitat function with a function of equal or greater value. The goal of compensation is to achieve no net loss of habitat functions and values. Every case where compensation may be required is unique due to differences in habitat type and geographic location. For this reason, the method, location, and amount of compensation work necessary is variable.
 - (1) Location of compensation. Compensation on-site or within very close proximity to the affected significant wildlife habitat is preferred to off-site compensation, although in some instances the department may determine that off-site compensation may be used or is preferable to off-set impacts.

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NOTE: Where habitat priorities have been established at a local, regional, or state level, these priorities should be considered in devising a compensation plan in the area to allow the applicant to look beyond on-site and in-kind compensation possibilities. Directional buffers may also be used in some instances to off-set impacts.

- (2) When required. Compensation is required when the department determines that an impact to significant wildlife habitat will cause habitat functions or values to be lost or degraded as identified by the department's or the Department of Inland Fisheries & Wildlife's evaluation of the project.
 - (3) Compensation amounts. The amount of compensation required to replace lost functions depends on a number of factors including: the size of the alteration activity; the functions of the habitat to be altered; the type of compensation to be used; and the characteristics of the compensation site. Compensation must be performed to meet the following ratios at a minimum, unless the department finds that a different ratio is appropriate to directly off-set habitat functions to achieve an equal or higher net benefit for habitat:
 - (a) 2:1 for restoration, enhancement, or creation;
 - (b) 8:1 for preservation, including adjacent upland or wetland habitat.
 - (4) Waiver. The department may waive the requirement for an assessment of habitat functions and values, compensation, or both. The department may waive the requirement for an assessment of the habitat if it already possesses the information necessary to determine the functions and values of the area proposed to be altered. The department may waive the requirement for compensation if it determines that the impact to habitat functions and values from the activity will be insignificant.
- E. Seasonal factors.** When determining the significance of a wildlife habitat or impact from a proposed activity, seasonal factors and events that temporarily reduce the numbers and visibility of plants or animals, or obscure the topography and characteristics of a habitat such as a period of high water, snow and ice cover, erosion event, or drought are taken into account. Determinations may be deferred for an amount of time necessary to allow assessment of the resource without such seasonal factors.

4. Pre-application and pre-submission meetings.

- A. Purpose.** The pre-application meeting between the applicant and the department is an opportunity for the applicant to determine the statutory and regulatory requirements that apply to a specific activity. The purpose of this meeting is to identify issues, processing times, fees and the types of information and documentation necessary for the department to properly assess the activity. The pre-submission meeting is an opportunity to review the assembled application to ensure that the necessary types of information have been included prior to filing the application.

NOTE: Activities requiring an NRPA permit are described at 38 M.R.S.A. § 480-C. Exemptions are described at 38 M.R.S.A. § 480-Q.

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B. Submissions and scheduling. The following information and items must be submitted prior to scheduling a pre-application meeting with the department.

- (1) Sketch plan. A sketch plan of the site showing the proposed activity, adjacent structures and features, property lines, and the significant wildlife habitat, with all distances and dimensions approximately to scale.
- (2) Location map. A map showing the location of the proposed project site in relation to major roads and landmarks.
- (3) Description of activity. A brief description of the activity including its dimensions.
- (4) Description of significant wildlife habitat. A description of the significant wildlife habitat to be altered.
- (5) Description of probable impacts. A description of probable impacts of the activity on the subject wildlife, significant wildlife habitat, and any other protected natural resources.
- (6) Photographs. Photographs of the project area showing its characteristics.

5. Submission requirements. The applicant shall submit evidence that affirmatively demonstrates that the activity will meet the standards of the NRPA and this chapter including, but not limited to, the information listed below. Because of the site-specific nature of activities and potential impacts to significant wildlife habitat, the department may, on a case-by-case basis, require more or less information than specified in this section, in order to determine whether the standards will be met. Failure to provide any requested information necessary for the processing of the application may result in the application not being accepted as complete for processing or denial of the application.

A. Description of avoidance measures. A narrative describing whether a practicable alternative to the alteration exists that would be less damaging to the environment and what alternatives were considered during project design. The narrative must address why the activity cannot avoid or lessen impacts to the significant wildlife habitat by utilizing, managing or expanding one or more other sites; reducing the size, scope, configuration or density of the proposed activity; developing alternative project designs; or by some other means.

B. Site description and impacts. A narrative addressing the following.

- (1) Description of activity. A narrative including the following:
 - (a) The dimensions of the activity, the activity site, and the area of the significant wildlife habitat to be altered;
 - (b) The impacts of the activity on subject wildlife and protected natural resources; and
 - (c) The nature and timing of procedures intended to reduce the impacts of the activity on subject wildlife and protected natural resources.
- (2) Location map. A map showing the location of the proposed activity site in relation to major roads and landmarks.

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- (3) Drawings (Sketch plan). Scale drawings (overhead and side views) showing dimensions of the activity, the activity site, and the area of the significant wildlife habitat to be altered.
 - (4) Description of site characteristics. A description of existing significant wildlife habitat characteristics.
 - (5) Photographs. Photographs of the activity area, showing its characteristics.
 - (6) Description of activity construction. A description of how the activity will be constructed with information on how the activity site will be accessed, and any erosion control measures proposed.
6. **Terms and conditions.** The department may, as a term or condition of approval, establish any reasonable requirement to ensure that the proposed activity will meet the standards of Title 38 M.R.S.A. § 480-D and comply with this chapter.
7. **Severability.** Should any provision of these rules be declared invalid or ineffective by court decision, the decision shall not invalidate any other provision of these rules.
8. **Seabird nesting island.** Seabird nesting islands are significant wildlife habitats. An activity impacting a seabird nesting island must meet the standards of this chapter.

Seabirds live over the open ocean, returning to land only once a year to nest, and their survival depends on undisturbed nesting habitat. Small, unforested, rocky islands such as those off the coast of Maine provide a setting free of mammalian predators such as foxes, coyotes, and raccoons. Flying distance from the mainland discourages avian predators such as great horned owls. Many seabird species nearly eradicated in Maine by the end of the 19th century have recovered dramatically, thanks to the passage of state and federal conservation laws and the restoration efforts of dedicated scientists. In 1998, 234 seabird nesting Islands in Maine were afforded protection as Significant Wildlife Habitat under the Natural Resource Protection Act.

A. **Definitions.** As used in this chapter, unless the context otherwise indicates, the following terms have the following meanings.

- (1) Seabird. Colonial nesting waterbirds including Leach's Storm-petrel, Great Cormorant, Double-crested Cormorant, Laughing Gull, Herring Gull, Great Black-backed Gull, Common Tern, Arctic Tern, Roseate Tern, Razorbill, Black Guillemot, Atlantic Puffin, and Common Eider.
- (2) Seabird nesting island. (a) An island, ledge, or portion thereof in tidal waters that has documentation of 25 or more: nests or seabirds, adult seabirds displaced from nests, or in combination (single species or aggregate of different species) in any nesting season during, or since, 1976; provided that the island, ledge, or portion thereof continues to have suitable nesting habitat. (b) An island, ledge, or portion thereof in tidal waters that has documentation of one or more nests of a seabird that is a Maine endangered or threatened species in any year during, or since, 1976 provided that the island, ledge, or portion thereof, continues to have suitable nesting habitat.

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- B. Maps.** Seabird nesting islands are delineated on 7.5 minute U.S. Coast and Geodetic Survey maps developed by the Maine Department of Inland Fisheries and Wildlife. The maps are identified as Significant Wildlife Habitat Seabird Nesting Island Maps #1-55, January 1998.

NOTE: The criteria used to define seabird nesting islands was developed by the Maine Department of Inland Fisheries and Wildlife (09-137 CMR 10.02(F)). Maps of seabird nesting islands are available from the Department of Environmental Protection or the Maine Department of Inland Fisheries and Wildlife (IF&W).

- C. Removal or displacement of vegetation.** For seabird nesting islands, removal or displacement of vegetation does not include:

- (1) Gardening, lawn cutting, removal of fallen vegetation, and tree and shrub pruning within an existing development area as of the effective date of this chapter.
- (2) Removal of an entire tree when it threatens a building.

- D. Seabird critical nesting period.** The seabird critical nesting period is from April 15 to August 31 each year unless otherwise approved by the Maine Department of Inland Fisheries and Wildlife.

9. Significant vernal pools.

A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.

Whether a vernal pool is a significant vernal pool is determined by the number and type of pool-breeding amphibian egg masses in a pool, or the presence of fairy shrimp, or use by threatened or endangered species as specified in Section 9(B). Significant vernal pool habitat consists of a vernal pool depression and a portion of the critical terrestrial habitat within a 250 foot radius of the spring or fall high water mark of the depression. An activity that takes place in, on, over, or adjacent to a significant vernal pool habitat must meet the standards of this chapter.

NOTE: The term vernal (vernal = spring) pool is used in the Natural Resources Protection Act, and has typically been used to discuss the types of pools described in Section 9. However, because some pools are wet in both spring and fall, and others are never dry, they have also been referred to as "seasonal forest pools." Vernal pool is still a common term, and will continue to be used in this section.

NOTE: The 250 feet of critical terrestrial habitat protected as significant vernal pool habitat is only a portion of the habitat used by adult wood frogs, ambystomatid salamanders, and threatened and endangered species. Tracking studies of adult pool-breeding amphibians have shown that they can travel over a third-mile away from their breeding pool, and that a radius of 750 feet around the pool is optimal for protecting viable amphibian populations. The department

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encourages efforts to protect more habitat adjacent to a vernal pool than this regulation has authority over.

NOTE: For more information on identifying vernal pools, see "Maine Citizen's Guide to Locating and Documenting Vernal Pools." Maine Audubon Society, 2003 or the department's fact sheet entitled "Locating and Documenting Significant Vernal Pools".

A. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

- (1) Critical terrestrial habitat. Uplands and wetlands associated with significant vernal pools used by pool breeding amphibians for migration, feeding, and hibernation, in particular, forested wetlands and forested uplands that provide deep organic litter, coarse woody debris and canopy shade.
- (2) Egg mass. Three or more individual eggs clumped in a gelatinous matrix constitute an egg mass. Egg masses often occur in clusters, but each mass within a cluster must be counted as an individual egg mass.
- (3) Natural. A natural vernal pool includes pools of natural origin that have been modified or excavated. A natural vernal pool does not include other natural wetland types (wet meadows, marshes, etc.) that have been altered and currently function as vernal pools.
- (4) Pool-breeding amphibians. Animals that, as part of their life cycle, reproduce in vernal pools. Most pool-breeding amphibians return to reproduce in the pool where they originated. Most adult pool-breeding amphibians spend less than one month in breeding pools; the rest of their annual cycle is spent in critical terrestrial habitat.
- (5) Vernal pool depression. This area includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression.

B. Significant vernal pool identification criteria. Vernal pool significance must be determined and documented by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a significant vernal pool.

- (1) Abundance. Any one of or combination of the following species abundance levels, documented in any given year, determine the significance of a vernal pool.

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Species	Abundance Criteria
Fairy shrimp	Presence in any life stage.
Blue spotted salamanders	Presence of 10 or more egg masses.
Spotted salamanders	Presence of 20 or more egg masses.
Wood frogs	Presence of 40 or more egg masses.

- (2) **Rarity.** A pool that has documented use in any given year by state-listed rare, endangered or threatened species that commonly require a vernal pool to complete a critical portion of their life-history is a significant vernal pool. Examples of vernal pool dependent state-listed endangered or threatened species include, but are not limited to, Blanding's turtles, Spotted turtles, and Bog haunter dragonflies.
- (3) **Identification period.** Egg masses must be counted just past the peak breeding period of pool-breeding amphibians. Abundance of pool-breeding amphibians can only be used to determine the presence of a significant vernal pool during the identification period. The presence of fairy shrimp or a state-listed endangered or threatened species may be used to determine the presence of a significant vernal pool at times of the year other than the identification period.

NOTE: If present, additional rare indicator species are likely to be associated with a significant vernal pool from early spring through September. These species include ribbon snakes, wood turtles, and four-toed salamanders.

NOTE: Optimal times for counting egg masses of pool-breeding amphibians vary according to geographic location and weather. For instance, during cold springs, breeding can begin as much as 2 weeks later than it does in warm, wet springs. The optimal time to count masses is just past the peak breeding period. For wood frogs, this occurs approximately 2 weeks after they start full choruses. Wood frog egg masses hatch very quickly and are more difficult to count much past peak breeding. Salamanders do not have one peak; they often take 4 to 6 weeks to complete egg-laying. Furthermore, their egg masses do not hatch quickly and can be surveyed later than those of wood frogs. The following are guidelines for optimal times for counting egg masses:

Geographic Region	Wood Frogs	Spotted & Blue Spotted Salamanders
Northern Maine	May 1 – May 21	May 10 – May 31
Southern Maine	April 7 – April 21	April 20 – May 21

- (4) **Geographic region.** For the purposes of this chapter, the Northern Maine region is considered to be approximately that part of the state north of a line extending from Fryeburg to Auburn to Skowhegan to Bangor to Calais. Similarly, the Southern Maine region is considered to be approximately that part of the state south of that same line.
- (5) **Seasonality.** The department may require an assessment of significance by a qualified individual during the identification period. In any season, indicators of a vernal pool may include flat topography with depressions or pit-and-mound topography, fingernail clams, caddisfly cases, and evidence of temporary flooding.

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- (6) Voluntary identification. An individual may voluntarily submit documentation to the department or the Maine Department of Inland Fisheries & Wildlife (IF&W) regarding the significance of a vernal pool on that individual's property. Documentation must be completed by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a significant vernal pool, or field verified by either the department or IF&W prior to its inclusion on a Geographic Information System (GIS) data layer maintained by either IF&W or the department. A landowner will receive written confirmation of such documentation from the department.
- (7) Verification of significance. A significant vernal pool documented on a Geographic Information System (GIS) data layer maintained by either IF&W or the department is eligible for removal from that data layer following IF&W verification of three consecutive years of data demonstrating that a vernal pool no longer meets the criteria in Sections 9 (B)(1) or (2). A written request to remove a significant vernal pool from the data layer must be submitted to both IF&W and the department and include documentation made during the identification period by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document presence or absence of a significant vernal pool. A written department determination that a vernal pool is not significant remains valid regardless of timeframe.

NOTE: For more information on managing the critical terrestrial habitat surrounding vernal pools, see:

- Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.
- Calhoun, A.J.K. and P. deMaynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

C. Habitat management standards for significant vernal pools. To the greatest extent practicable, the following management practices must be followed within significant vernal pool habitat.

- (1) No disturbance within the vernal pool depression;
- (2) Maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris.
- (3) Maintain or restore forest corridors connecting wetlands and significant vernal pools;
- (4) Minimize forest floor disturbance; and
- (5) Maintain native understory vegetation and downed woody debris.

If more than 25% of the critical terrestrial habitat has been previously developed, restoring a portion of that area through supplemental planting or regrowth of native forest species may be considered toward meeting these standards, or towards standards for avoidance, minimization, or compensation. For purposes of this chapter, developed area includes

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disturbed areas excluding areas that are returned to a condition with the same drainage patterns and the same or improved cover type that existed prior to the disturbance;

- D. Permit by Rule.** An activity occurring in, on, over, or adjacent to a significant vernal pool or a potential significant vernal pool is eligible for a Permit by Rule (PBR) as described in Chapter 305, Section 19, provided that the habitat management standards in Section 9 (C) above are met. An applicant submitting a Permit by Rule notification pursuant to Chapter 305, Section 19, is not required to provide a seasonal assessment of significance.

Submission of a PBR notification pursuant to this section does not negate an applicant's ability to submit subsequent documentation to verify or negate applicability of Section 9 of this chapter provided that documentation is completed during the identification period by an individual who has experience and training in either wetland ecology or wildlife ecology. GIS data points specific to Chapter 305, Section 19, will be uploaded to the GIS data layer maintained by IF&W only following submission and verification of such documentation by department or IF&W.

This section does not apply to an activity that is not or will not be in compliance with the terms and conditions of a permit issued under the Site Location of Development Law, 38 M.R.S.A. Sections 481 to 490, the Stormwater Management Law, 38 M.R.S.A. Section 420-D, or the Natural Resources Protection Act, 38 M.R.S.A. Sections 480-A to BB.

- E. Permit not required.** A permit is not required from the department under the following circumstances.

- (1) Forest management activities. Forest management activities within 250 feet of a significant vernal pool do not require a permit pursuant to this section if the significant vernal pool is not defined and mapped according to 38 M.R.S.A. § 480-I.
- (2) Location of pool. An activity impacting a significant vernal pool does not require a permit pursuant to this section if the significant vernal pool depression is not located on a parcel owned or controlled by the person carrying out the activity. A permit is required, however, if the significant vernal pool is either defined and mapped according to 38 M.R.S.A. § 480-I or is located on a Geographic Information System (GIS) data layer maintained by either IF&W or the department. This provision does not apply if evidence of property transfers indicate an intent to evade regulation under the Natural Resources Protection Act.
- (3) Department determination. If, upon request from a landowner, department staff provide a written field determination or advisory opinion regarding the presence or absence of a significant vernal pool, a landowner acting on that determination or advisory opinion by carrying out an activity subsequently found to be in violation is not required to obtain a permit for that activity and will not be subject to enforcement action if jurisdiction or penalty would be based solely on that activity.
- (4) Communications and electric facilities. Construction of overhead communications and electric lines, poles, guy anchors, and related overhead infrastructure located within a public or private right of way, within 25 feet of the edge of the road right of way, or within an existing clearing created for a public or private road does not require a permit pursuant to this section provided that poles are not placed within a significant vernal pool depression.

NOTE: GIS data layer information may be obtained at IF&W and MDEP offices.

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F. Implementation date. Section 9 may not be enforced or implemented until September 1, 2007. All other sections of this chapter will be enforced or implemented as of the effective date of this rule.

- 10. High and moderate value waterfowl and wading bird habitat.** High and moderate value waterfowl and wading bird habitats are significant wildlife habitats. Waterfowl are members of the family Anatidae including but not limited to brant, wild ducks, geese, and swans. Wading birds include but are not limited to herons, glossy ibis, bitterns, rails, coots, common moorhens, and sandhill cranes. An activity that takes place in, on, over, or adjacent to a high and moderate value waterfowl and wading bird habitat must meet the standards of this chapter. High and moderate value waterfowl and wading bird habitats subject to this chapter are depicted on a GIS data layer maintained by IF&W and available from either IF&W or the department.

NOTE: The IF&W rating procedure and list of waterfowl and wading bird species was created December 22, 1993, updated September 1, 2005, and is available at IF&W offices and on line at <http://www.maine.gov/ifw/index.html>.

A. Inland habitat identification criteria. A high to moderate value inland habitat is an inland wetland complex, and a 250 foot wide zone surrounding the wetland complex, that through a combination of dominant wetland type, wetland diversity, wetland size, wetland type interspersions, and percent open water meets IF&W guidelines or is an inland wetland complex that has documented outstanding use by waterfowl or wading birds. Determination of high to moderate value inland habitat is based on the following.

- (1) Wetland type. Dominant wetland type is rated by the assigned score for the wetland type of greatest area in the wetland. Wetland type is determined using the classification system published by IF&W based on McCall, 1972, for waterfowl and wading bird habitat rating. A score for the value to waterfowl and wading birds is assigned to each type using the IF&W rating procedure.
- (2) Wetland diversity. Wetland diversity is rated by assigning the wetland to one of the diversity categories based on the number of wetland types present in the wetland using the IF&W rating procedure.
- (3) Wetland size. Wetland size is rated by assigning the wetland to one of three size categories based on the total area of the wetland using the IF&W rating procedure.
- (4) Interspersion. Wetland type interspersions is rated by assigning the wetland to one of three interspersions categories using the Golet (1974) system, as modified for Maine in the IF&W rating procedure.
- (5) Open water. Percent open water is rated by assigning the wetland to one of four categories, based on the percent of the wetland in open water using the IF&W rating procedure.

NOTE: The following are literature citations as referenced above:

McCall, C.A. 1972. Manual for Maine wetlands inventory. Maine Department of Inland Fisheries and Game, Augusta, Maine. 38pp.

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Golet, F.C., and J.S. Larson. 1974. Classification of freshwater wetlands in the glaciated northeast. Resource Publication 116. U.S. Department of the Interior, Washington, D.C. 56pp.

B. Tidal habitat identification criteria. A high or moderate value tidal habitat is as defined in IF&W's rating procedure or is a tidal habitat that has documented outstanding use by waterfowl or wading birds or use by a rare species of waterfowl or wading birds. Habitat type is determined using the classification system published by Cowardin et al. (1979) and defined in the IF&W rating procedure. Four habitat types considered as potential high or moderate value tidal habitat are described below.

- (1) Aquatic bed habitat. The extent of aquatic bed habitat for the delineation of high value tidal waterfowl and wading bird habitat will be defined by the eelgrass (*Zostera marina*) beds currently mapped by Maine Department of Marine Resources. Eelgrass beds greater than 25 acres in size are high value. Eel grass beds greater than or equal to 2.5 acres but less than 25 acres are moderate value.
- (2) Reefs. Reefs included in tidal waterfowl and wading bird habitat in Maine are limited to mussel bars or beds. All mussel bars or beds are high value tidal waterfowl and wading bird habitat.
- (3) Emergent wetlands. Emergent wetlands equal to or greater than 25 acres in size are high value. Emergent wetlands greater than or equal to 2.5 acres but less than 25 acres are moderate value.
- (4) Mudflats. Mudflats equal to or greater than 25 acres are high value tidal waterfowl and wading bird habitat. Mudflats greater than or equal to 12.5 acres but less than 25 acres are moderate value. Mudflat immediately adjacent to one of the above habitats will result in the combined habitats being rated high if the total area is greater than 25 acres in size or moderate if the combination is greater than or equal to 2.5 acres but less than 25 acres.

NOTE: The following are literature citations as referenced above:

Cowardin, L.W., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Washington, D.C. 103 pp.

C. Verification of habitat value. An individual may voluntarily submit documentation to the department or the Maine Department of Inland Fisheries & Wildlife (IF&W) regarding the value of a waterfowl and wading bird habitat on that individual's property. Documentation must be completed by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a high or moderate value waterfowl and wading bird habitat, or field verified by IF&W. Following review of such documentation, IF&W may modify the boundary of a high or moderate value waterfowl and wading bird habitat depicted on the applicable GIS data layer. A landowner will receive written confirmation of such documentation from the department.

D. Department determination. If, upon request from a landowner, department staff provide a written field determination or advisory opinion regarding the presence or absence of a high or

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moderate value waterfowl and wading bird habitat, a landowner acting on that determination or advisory opinion by carrying out an activity subsequently found to be in violation is not required to obtain a permit for that activity and will not be subject to enforcement action if jurisdiction or penalty would be based solely on that activity.

- 11. Shorebird nesting, feeding, and staging areas.** High or moderate value shorebird nesting, feeding, and staging areas, and a 250 foot wide zone surrounding those areas, are significant wildlife habitats. Shorebird species include the members of the families Scolopacidae, Charadriidae, and Haematopodidae, including, but not limited to, sandpipers and plovers. A complete list of species is provided in the Maine Department of Inland Fisheries and Wildlife (IF&W) procedures for classifying significant shorebird habitat. An activity that takes place in, on, over, or adjacent to a high and moderate value shorebird nesting, feeding, and staging area habitat must meet the standards of this chapter. High and moderate value shorebird habitats subject to this chapter are depicted on a GIS data layer maintained by IF&W and available from either IF&W or the department. To date, IF&W has not adopted a definition of nesting area habitat, and therefore no criteria are presently included in this regulation.

Maine feeding and staging areas provide migrating shorebirds with the food resources to acquire the large fat reserves necessary to fuel their transoceanic migration to wintering areas. Shorebird staging habitats include both feeding areas where shorebirds congregate to feed and roosting areas used by shorebirds to rest during high water when feeding areas are unavailable.

A. Definitions.

- (1) Feeding. Waterfowl and wading bird feeding habitats include areas used by breeding adults, juvenile, and sub-adults or non-breeding birds.
- (2) Staging. Waterfowl and wading bird staging habitats include areas used for feeding, roosting, and loafing during spring and fall migration and post-breeding dispersal.

- B. Shorebird nesting, feeding, and staging area identification criteria.** A feeding or staging site qualifies as significant shorebird habitat if either of the following criteria is met, as determined by an individual with experience or training in wildlife ecology:

- (1) Number of observations. The mean number of shorebird observations since 1987 for a site is 10% or more of the total mean number of shorebirds surveyed in a particular shorebird survey unit as defined in IF&W procedures.
- (2) Number of shorebirds. The mean number of shorebirds for a single species since 1989 at a site is 10% or more of the overall or total mean number observed of that species in the encompassing shorebird survey unit.

NOTE: Shorebird occurrence data is from the current IF&W database as described in procedure created December 22, 1993, and updated September 1, 2005. As new data is entered the mean of the observations is recalculated. The IF&W rating procedure and database information are available at IF&W offices and on line at <http://www.maine.gov/ifw/index.html>.

- C. Verification of habitat value.** An individual may voluntarily submit documentation to the department or the Maine Department of Inland Fisheries & Wildlife (IF&W) regarding the value

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of a shorebird nesting, feeding or staging area. Documentation must be completed by an individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a high or moderate value shorebird nesting, feeding or staging area, or field verified by IF&W. Following review of such documentation, IF&W may modify the boundary of a high or moderate value shorebird nesting, feeding or staging area depicted on the applicable GIS data layer. A landowner will receive written confirmation of such documentation from the department.

- D. Department determination.** If, upon request from a landowner, department staff provide a written field determination or advisory opinion regarding the presence or absence of a high or moderate value shorebird nesting, feeding, and staging area, a landowner acting on that determination or advisory opinion by carrying out an activity subsequently found to be in violation is not required to obtain a permit for that activity and will not be subject to enforcement action if jurisdiction or penalty would be based solely on that activity.

AUTHORITY: 38 M.R.S.A. §§ 341-D and 480-A et seq.

EFFECTIVE DATE: September 15, 1998

REVISION DATE:

APPENDIX 4. STANDARDIZED GUIDELINES FOR CONDUCTING MAINE PIPING PLOVER NESTING SURVEYS.

Piping plovers arrive on the breeding grounds in Maine during April. Some plovers arrive paired, but most apparently pair on the breeding grounds. After 2 to 4 weeks of courtship they build a nest (or scrape) and lay a clutch. Incubation averages 27 to 30+ days. Adults accompany their young until they are able to fly at 25-35 days after hatching. If the initial clutch is destroyed or deserted early in the breeding season (which is common), the pair will reneest - sometimes in the same vicinity or sometimes at another site. Females may reneest as many as 6 times in a season, and new nests have been found in Maine as late as July.

Management of piping plovers in Maine requires annual information on nesting population size, distribution, and nesting success. To date, these data have been collected by Maine Audubon and The Nature Conservancy biologists. The appended guidelines, developed by the USFWS, will serve as standardized census procedure for Maine with the following modifications and additions:

- 1) Plovers have been recorded nesting at 10 sites since 1981. These sites should be surveyed at least twice from April 15 to May 25 to record territorial adults and document nesting pairs. other historic nesting sites should be monitored at least once every other year.

- 2) Presence of territorial adults (between April 15 to July 30 is significant. Territorial adults are a pair of birds actively courting on a beach for at least 5 consecutive days and exhibiting pre-nesting behavior - courtship flights, copulating, building nests scrapes, and tilt displays.
- 3) All 10 sites (or others suspected of having plover nesting habitat) should continue to be surveyed at least once a month in June and July to document new or renesting pairs.
- 4) Nesting attempts at each site (including territorial adults, destroyed clutches, and abandoned clutches) should be tallied in the annual report as in the following example

Crescent Surf Beach

Pairs	4	(1 pr. territorial, but did not nest)
Nesting Attempts	5	(2 renests)
Losses	3	(predators, fox? - 2 within nest enclosure)
Successful Nests	1	
Chick Mortality	0	
Chicks Fledged	4	

- 5) The nesting population census should be conducted in Maine between May 10 and June 7. In addition, all beaches should be visited on a single day between June 1-7. All beaches where plovers were previously observed should be visited at least twice during this period to locate nests. Most breeding birds should be incubating by this time. Nests will likely be enclosed immediately. Some pairs may initiate nesting after June 7. There should be reasonable evidence to demonstrate that these are not renests before adding them to the state total of nesting pairs. Breeding pairs as defined by the USFWS are "pairs together on a territory, a nest seen with either bird incubating, or adult(s) seen with young".

- 6) Inevitably there will be many instances of renesting. The number of nesting attempts (number of clutches laid) should be documented for each site as in the example above.
- 7) Successful nests are those that produced chicks.

APPENDIX 5

STATE OF MAINE INLAND FISHERIES AND WILDLIFE RULES 5/11/95

CHAPTER 8.05 Essential Habitat for Species Designated as Endangered or Threatened.

The following areas, identified as currently or historically providing physical or biological features essential to the conservation of an endangered or threatened species and requiring special management considerations, and the management guidelines for the protection of these areas are adopted in accordance with the provisions of Title 12, §7754 (2,3) and §7755-A (1,2,3). The Commissioner has identified and mapped such habitats as depicted on the maps entitled "Essential Habitat For Endangered And Threatened Species" which are incorporated herein.

C. Piping Plover and Least Tern Nesting, Feeding, and Brood-Rearing Areas

1. Purpose

The purpose of Essential Habitat designation for Piping Plovers and Least Terns is to: 1) provide special protection to maintain nesting, feeding, and brood-rearing habitats essential to the conservation of these species; and 2) minimize human-related disturbance that can cause nesting failure of these species. Protection is focused on the coastal wetlands and coastal sand dune systems used by nesting Piping Plovers or Least Terns.

This rule is not intended to, and shall not be interpreted to: 1) preclude rebuilding of existing structures in accordance with implementation of the coastal sand dune regulations (38 M.R.S.A., Sect. 480-A, Q and Chapter 355 of Department of Environmental Protection Rules), nor 2) preclude recreational uses in practice at the time an area was designated as Essential Habitat and that are otherwise allowed by law.

2. Definitions

When used in this section, the following words and terms shall have the following meaning:

- a. Nesting. "Nesting" means the presence of one or more nests, eggs or chicks of Piping Plovers or Least Terns.

- b. Nesting, feeding, and brood-rearing area. "Nesting, feeding, and brood-rearing area" means a locality encompassing portions of coastal wetlands and coastal sand dune systems (including subtidal, intertidal and beach and associated salt marshes and wetlands) used by at least one pair of nesting Piping Plovers or Least Terns.
- c. Project. "Project" means a planned undertaking, newly initiated or reinitiated.

3. Designation Criteria

Piping Plover and Least Tern nesting, feeding, and brood-rearing areas identified and mapped by the Commissioner of Inland Fisheries and Wildlife (IF&W) as Essential Habitat must:

- a. Have a record of nesting by at least one pair of Piping Plovers or Least Terns since 1986, and
- b. Be considered essential to the achievement of the Department's management goals and objectives for Piping Plovers or Least Terns.

Piping Plover and Least Tern nesting, feeding, and brood-rearing areas designated as Essential Habitat will be deleted if:

- a. The area has not been occupied by any nesting pairs of Piping Plovers or Least Terns during the most recent 10 years and the lack of occupancy is not related to predation or competition from other species, or to any human-related activity; or
- b. The area is no longer considered essential to the achievement of the Department's management goals and objectives for Piping Plovers or Least Terns.

4. Interpretation of Essential Habitat Area Boundaries

The following guidelines shall be used to interpret mapped Essential Habitat boundaries:

- a. In shaded areas, boundary lines are delineated in greater detail on composite aerial photographs (see "Boundary Line Detail Photos For Piping Plover And Least Tern Essential Habitat", prepared in November, 1994). Copies of these photographs are available for viewing at town offices in affected municipalities; Maine Department of Inland Fisheries and Wildlife offices in Gray,

Augusta, and Bangor; and Maine Department of Environmental Protection offices in Portland and Augusta, or they may be purchased from: Essential Habitat Maps, Wildlife Assessment Section, 650 State Street, Bangor, Maine 04401-5654.

Outside of shaded areas, the lines on the maps indicate the boundaries. Where a line is solid, the line on the map determines the boundary, and the inside of the line is the edge of the boundary. Where a line is dashed, the boundary is determined by the edge of the coastal wetlands as defined by 38 M.R.S.A., Sect. 480-B. Cross-hatched areas are not part of the Essential Habitat.

- b. Where a boundary line follows a seawall or similar protective structure, only the beach area on the seaward side is intended to be included within the Essential Habitat: neither the seawall itself nor the property behind it are part of the Essential Habitat.

5. Protection Guidelines

- a. Projects Prohibited Without the Commissioner's Approval

Any project requiring a permit or license from, or to be funded or carried out by, a state agency or municipal government partly or wholly within a Piping Plover and Least Tern nesting, feeding, and brood-rearing area designated as Essential Habitat shall not be permitted, licensed, funded, or carried out unless the Commissioner determines that the project will not significantly alter the Essential Habitat.

Examples of projects that may be affected include, but are not limited to: subdivision of land or buildings; construction, installation, expansion, alteration or repair of permanent structures; mineral exploration and extraction; road projects and construction; dredging; bulldozing; removing or displacing soil, sand, vegetation, or other materials; draining or otherwise dewatering; filling, including adding sand or other material to a coastal sand dune; beach nourishment projects; dune restoration projects; utility construction; water crossing; water impoundment; aquaculture; installation of subsurface wastewater disposal system; and issuance of an exemption to the minimum lot size requirement.

Projects located wholly outside an area designated as Essential Habitat, regardless of whether some other portion of the lot or parcel of land is within the Essential Habitat, are not affected by this rule.

Licensed activities which are not considered projects and therefore is not affected by this rule include, but are not limited to: recreational hunting and fishing, shellfish harvesting, sulky driving, dog ownership, and motor vehicle and boat operation.

b. Exemptions

Within areas designated as Essential Habitat, the following projects are exempted from the requirements of this paragraph:

- 1) Emergency repairs to existing utilities and structures, including roads and seawalls that, due to unforeseen circumstances, require immediate action and do not require a coastal sand dune permit under 38 M.R.S.A., Section 480-A, Q.
- 2) Emergency activities that, due to unforeseen circumstances, require immediate action for public health or safety.
- 3) Licenses and permits to operate or occupy a completed project.
- 4) Projects limited to repairs, maintenance, and alterations to the interior of an existing structure.
- 5) Projects that address the protection of the Essential Habitat and the Endangered or Threatened Species and are conducted as part of a Department Management Area Plan or Species Management Plan, or a Land Use Regulation Commission Resource Protection Plan (P-RP) to which the Department is a party, provided that the parties of the agreement perform according to its terms.
- 6) Municipal licenses or permits for a project for which the Department, through another permitting process, has already found no significant alteration of the habitat or violation of protection guidelines for the essential habitat as currently mapped.

c. Review Process

For projects located partly or wholly within Essential Habitat as defined by 12 M.R.S.A. §7754 and this chapter, it is the responsibility of the state agency or municipality considering the permit or license application, or funding or carrying out the project, to obtain the Department's review. Forms entitled Request for Project Evaluation will be provided by the Department. Upon receiving a Request for Project Evaluation, the Department will provide an evaluation of whether the project would significantly alter the essential habitat or violate the Department protection guidelines as set forth in 12 M.R.S.A. § 7755-A(1). If the proposed project will significantly alter Essential Habitat or violate the protection guidelines, and if a variance is sought, the Commissioner will determine whether a certification of no significant risk to the population, as described in 12 MRSA § 7755-A(2) can be issued.

6. Significant Alteration of Habitat

In determining whether a project significantly alters essential nesting, feeding, and brood-rearing habitat for Piping Plovers and Least Terns, the following factors will be considered:

- a. Magnitude and time of year of noise and human activity generated by the project;
- b. Within the area designated as Essential Habitat, destruction, alteration, or degradation of a portion of a coastal wetlands or coastal sand dune system (including subtidal, intertidal and beach and associated salt marshes and wetlands) which will adversely affect the Essential Habitat;
- c. Increase in disturbance by humans and their pets, or increased predation (or attraction of predators) or competition from other species; and
- d. Reduction in the future suitability of the nesting, feeding, and brood-rearing habitat for Piping Plovers and Least Terns.

AUTHORITY: SECTION 7035 AND 7754
Effective Date: