

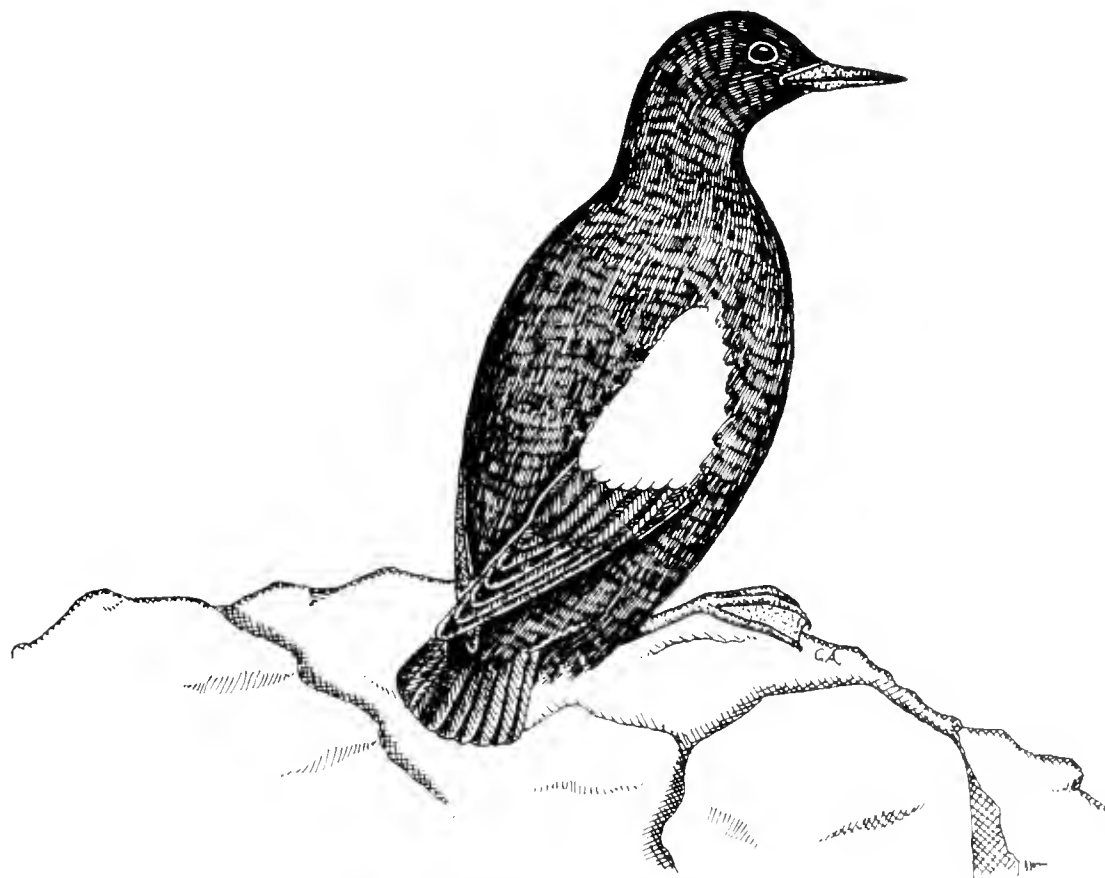
FWS 'OBS 79'9

Biological Services Program

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FWS/OBS-79/09  
September 1979

# Coastal Waterbird Colonies: MAINE



Fish and Wildlife Service

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**U.S. Department of the Interior**

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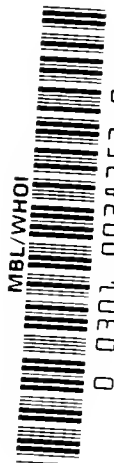
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FWS/OBS-79/09  
September 1979

COASTAL WATERBIRD COLONIES:  
MAINE

by

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A contribution of the Maine Cooperative Wildlife Research Unit,  
University of Maine, the Maine Department of Inland Fisheries and Wildlife,  
the Wildlife Management Institute and the U.S. Fish and Wildlife Service  
cooperating.

Performed for  
National Coastal Ecosystems Team  
Office of Biological Services  
Fish and Wildlife Service  
U.S. Department of the Interior  
Washington, DC 20240

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The correct citation for this report is:  
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## PREFACE

This report is one of several detailing the results of 1976 and 1977 inventories of nesting waterbird colonies along the U.S. Atlantic coast, the U.S. Great Lakes and the northern Gulf of Mexico.

Appreciation for the diversity and numbers of coastal birds in Maine and their dependence upon coastal nesting sites should help to guarantee their protection and management.

Any suggestions or questions regarding this report should be directed to:

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## EXECUTIVE SUMMARY

The Maine coast provides an abundance and diversity of nesting habitats for many kinds of birds. The objectives of this 2-year study (1976-1977) were: to locate all nesting colonies of seabirds and wading birds in Maine, north of Cape Elizabeth; to estimate the number of breeding pairs of each species; to determine the breeding chronology of each species; and to identify species population trends since 1900. A similar study was conducted in 1976 and 1977 for the region bounded by Cape Elizabeth, Maine and the southern boundary of Virginia (Erwin 1979). Data for all of Maine have been incorporated into this report for the benefit of the Maine user-group. Population data from the 1977 inventory are presented as baseline data.

Surveys were flown each spring in fixed-wing aircraft to locate colonies and to estimate populations of those species that are highly visible. Later each colony site was visited by boat to determine species composition and to estimate populations more accurately. Total nest counts, counts of breeding adults, partial nest counts, and estimates of adults were felt to be the most reliable inventory methods, in that order. A total of 353 colony sites was found with an estimated population of 100,813 breeding pairs. Nineteen species of sea and wading birds frequently nested at sites containing several species. As many as nine species sometimes nested at such a site. The most abundant nesting species on the coast was the herring gull, followed in order of abundance by common eider, Leach's storm-petrel, double-crested cormorant, great black-backed gull, 4 species of terns, 3 species of alcids, and 3 species of herons. More than 220 colonies of herring and great black-backed gulls and common eiders were located on the study area. Species with estimated total populations of less than 150 pairs nested in only a few scattered colonies along the Maine coast. Population estimates for all colonies of each species are listed. Nearly 75 percent of the birds nested at sites that were privately owned. Diagrams depict the generalized nesting chronology for each species.

From historical data and the 1977 survey, population trends for some species since about 1900 were identified. There were increases in abundances for the double-crested cormorant, common eider, great black-backed gull, herring gull, common puffin, and black guillemot. Decreases were noted for the common and Arctic terns. Recent additions to the Maine coast nesting water-bird list are the snowy egret, glossy ibis, and Louisiana heron.

A compilation of historical information about Maine seabird and wading bird colonies is on microfiche at the back of this report. Aerial photographs of colonies east of Cape Elizabeth are on file at the U.S. Fish and Wildlife Service, Regional Office, Newton Corner, Massachusetts, and at the Maine Cooperative Wildlife Research Unit.

This report was submitted in fulfillment of Contract 14-16-0008-1189 by the Maine Cooperative Wildlife Research Unit, University of Maine, under the sponsorship of the Office of Biological Services, U.S. Fish and Wildlife Service.

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## ACKNOWLEDGMENTS

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Several others contributed information and data. R. Michael Erwin of the Massachusetts Cooperative Wildlife Research Unit provided data on colonies in Maine west of Cape Elizabeth. Harry Tyler, Maine State Planning Office, provided background material and was a source of much valuable information. Employees of the Maine Bureau of Public Lands generously provided access to coastal maps and island inventories. William Drury (College of the Atlantic) permitted me to use his files on seabird observations. Eugene Lesser (College of the Atlantic), Stephen Kress (Cornell University), Phillip Conkling (Hurricane Island Outward Bound), Jeremy Hatch (University of Massachusetts/Boston), and Carl Buchheister (National Audubon Society) provided field observations. The cover art is by Charlotte Adamson (USFWS). Steve Patton (National Coastal Ecosystems Team, USFWS) reviewed the manuscript and provided editorial assistance.

## ABSTRACT

During the nesting seasons of 1976 and 1977, personnel of the Maine Cooperative Wildlife Research Unit inventoried waterbird colonies along the coast of Maine. This survey was part of a larger effort sponsored by the Office of Biological Services to survey all colonial waterbird colonies from the southern border of Virginia to the Maine-Canada border during 1976-1977. A total of 353 colony sites was found that contained 100,813 pairs of birds. Nineteen species nested in the study area. A count of nests or adult birds made during on site inspections of the colonies was the best inventory technique. Species abundance and nesting locations are listed.

Population trends of sea and wading birds since 1900 are based on published and unpublished reports which are included on microfiche cards at the back of this report. Populations of most seabird species have increased whereas wading birds have probably decreased. Nesting chronology of waterbirds is depicted in diagrams. Seventy-five percent of the waterbirds in Maine nested on privately owned sites.

## KEY WORDS

|               |                      |
|---------------|----------------------|
| Waterbirds    | Hérons               |
| Islands       | Egrets               |
| Birds         | Colony               |
| Gulls         | Breeding pairs       |
| Terns         | Population estimates |
| Alcids        | Chronology, nesting  |
| Eiders        | Seabirds             |
| Cormorants    | Wading birds         |
| Storm-petrels | Maine                |

## INTRODUCTION

The coastal regions of the United States contain a very extensive renewable natural resource potential. However, these regions are subject to petroleum and natural gas developments, industrial developments, and associated demands of an expanding urban society. Conservation of renewable natural resources that will perpetually provide benefits to our nation and its citizens requires that government and corporate planners have available an adequate data-base on the biological components of the ecosystem.

Colonial nesting sea and wading birds in Maine are important components of coastal ecosystems. They have biological, economic, educational, aesthetic, and recreational values. Many of these colonial species require isolated and/or undisturbed nesting sites. Coastal islands in Maine presently afford an abundance and diversity of suitable nesting habitats.

The U.S. Fish and Wildlife Service has the responsibility for providing a comprehensive data-base on the avian components of coastal ecosystems. Baseline information on colonial nesting waterbirds in Maine has hitherto been incomplete or lacking. This study is part of a program sponsored by the Office of Biological Services to obtain information on the status of colonial nesting waterbirds. In 1976 and 1977 the University of Maine at Orono, through the Maine Cooperative Wildlife Research Unit, conducted field inventories of colonies in Maine. The objectives of this study were as follows:

- 1) Survey the Maine coastal zone for waterbird colonies.
- 2) Census each colony for breeding pairs.
- 3) Determine the nesting chronology of each species.
- 4) Compile published and unpublished records of the historical nesting status of sea and wading birds in Maine.

## MATERIALS AND METHODS

### STUDY AREA

This study, part of a larger survey, was intended to include the rocky, island-bound coastal region of Maine from the Canadian border to Cape Elizabeth. Surveys west of Cape Elizabeth, south to the southern boundary of Virginia were coordinated and compiled by R. Michael Erwin of the Massachusetts Cooperative Wildlife Research Unit (Erwin 1979). The 1977 census data for all of Maine (Figure 1) has been incorporated into this report for the benefit of the user-group in Maine. Machias Seal Island which is claimed by both the United States and Canada was not included in the study area.

The long and irregular coast line of Maine, with bays, coves, and harbors, is noted for its numerous islands. The Maine Bureau of Public Lands has catalogued more than 3,000 islands and ledges. Nearly half of these support grasses, herbs, shrubs, or trees. Meadow foxtail (*Alopecurus pratensis*), timothy (*Phleum pratense*), and quackgrass (*Agropyron repens*) are the most common upland grasses. The typical forbs are cow parsnip (*Heracleum maximum*), goldenrod (*Solidago canadensis*), stinging nettle (*Urtica dioica*), and ragweed (*Ambrosia artemisiifolia*). Shrubs include bayberry (*Myrica pensylvanica*) raspberry (*Rubus idaeus*), rose (*Rosa virginiana*), and poison ivy (*Rhus radicans*). On forested islands, coniferous trees, especially spruces (*Picea* spp.) and balsam fir (*Abies balsamea*) dominate. Occasionally hardwood trees occur in mixed stands with conifers on coastal islands .

### SPECIES

Those seabirds and wading birds (collectively called "waterbirds") found nesting in Maine are shown in Table 1. Nomenclature follows the Check-list of the American Ornithologists' Union (1957) and revisions through the 33rd supplement (Auk 93:875-879). All textual and tabular material for birds is presented in taxonomic order according to the Check-list of the American Ornithologists' Union (1957). The term "alcids" collectively refers to razorbills, black guillemots, and common puffins which nest in Maine. The common eider

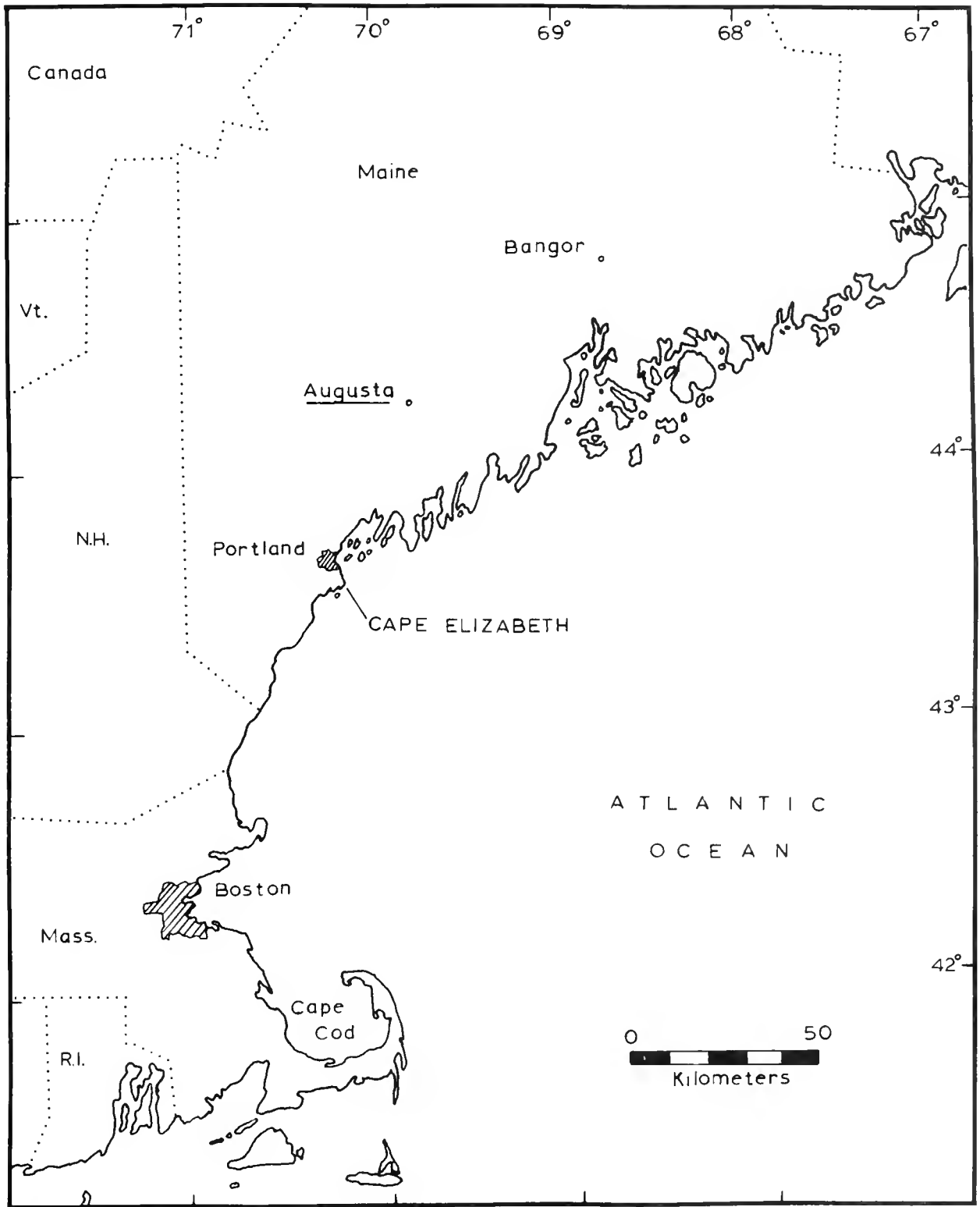


Figure 1. Study area for survey of coastal nesting waterbirds. Cape Elizabeth demarks the western limit of the field work conducted by the Maine Cooperative Wildlife Research Unit.

Table 1. Colonial nesting waterbirds in Maine.

| Common name               | Scientific name                  |
|---------------------------|----------------------------------|
| Leach's storm-petrel      | ( <u>Oceanodroma leucorhoa</u> ) |
| Double-crested cormorant  | ( <u>Phalacrocorax auritus</u> ) |
| Great blue heron          | ( <u>Ardea herodias</u> )        |
| Little blue heron         | ( <u>Florida caerulea</u> )      |
| Snowy egret               | ( <u>Egretta thula</u> )         |
| Louisiana heron           | ( <u>Hydranassa tricolor</u> )   |
| Black-crowned night heron | ( <u>Nycticorax nycticorax</u> ) |
| Glossy ibis               | ( <u>Plegadis falcinellus</u> )  |
| Common eider              | ( <u>Somateria mollissima</u> )  |
| Great black-backed gull   | ( <u>Larus marinus</u> )         |
| Herring gull              | ( <u>Larus argentatus</u> )      |
| Laughing gull             | ( <u>Larus atricilla</u> )       |
| Common tern               | ( <u>Sterna hirundo</u> )        |
| Arctic tern               | ( <u>Sterna paradisaea</u> )     |
| Roseate tern              | ( <u>Sterna dougallii</u> )      |
| Least tern                | ( <u>Sterna albifrons</u> )      |
| Razorbill                 | ( <u>Alca torda</u> )            |
| Black guillemot           | ( <u>Cepphus grylle</u> )        |
| Common puffin             | ( <u>Fratercula arctica</u> )    |



is not considered a colonially-nesting seabird by some authors; however, because of its nesting habits and its dependence upon Maine islands for breeding sites, the eider has been included in this report. Active nesting sites of ospreys (Pandion haliaetus) are listed and appear in APPENDIX A, although the osprey is not a colonial waterbird.

## COLONY HISTORICAL INFORMATION

The general ornithological literature and other existing records were searched to provide background information for locations and population trends of colonies in Maine. Since most seabird and wading bird colonies in Maine have been located on small coastal islands, data pertaining to specific islands, or island groups, could be organized. Seventy-five years of historical information were available for some colonies. Most of the historical data were found in unpublished reports. A compilation of the historical information is on microfiche at the back of this report.

Many biologists have conducted nesting bird surveys along the coast of Maine in the last 75 years. William Dutcher (1901, 1902, 1903) summarized reports of special wardens who were assigned to protect gull and tern breeding sites. Arthur H. Norton wrote many published and unpublished accounts of seabirds in Maine from 1907 to 1932. Alfred O. Gross published status reports for many species of seabirds in Maine in the early 1940's. He also summarized annually his work on the gull and cormorant control project from 1944 to 1952 (mimeo. reports). William Drury has censused gulls and terns and to a lesser extent other seabirds in Maine from 1962 to 1974. In accounts of New England seabird populations, Drury (1973, 1974) compiled the work of previous researchers and estimated the numbers of most seabirds based upon his interpretation of historical records.

Other biologists have contributed significantly to documenting particular seabird populations in Maine. Howard Mendall has compiled records of nesting eiders on islands since 1965 and double-crested cormorants during the mid-1930's. Seabirds nesting on Matinicus Rock have been censused periodically since the 1940's by Carl Buchheister. Ralph Palmer studied nesting common terns in the early 1940's. The staff of the National Audubon Society Camp at Hog Island has censused seabird populations on islands in Muscongus Bay since the 1940's.

## FIELD SURVEYS

To locate nesting colonies an aerial survey was flown during the first week of May. A pilot and airplane were provided by the Law Enforcement Division, District 13, of Region 5 of the U.S. Fish and Wildlife Service. The surveys were flown in a De Havilland Beaver and Cessna 180 in 1976 and 1977, respectively. Both aircraft were amphibious and capable of flight speeds as low as 80 knots. The surveys were flown at an altitude of less than 100 meters. Colony site, location, species composition, and population estimate data were recorded on tape with a battery-operated tape recorder.

## COLONY CENSUS

Standardization of census methods is desirable. The determination of the appropriate census technique depends upon the particular species and number of species to be inventoried, the size of the population, the size and geographic location of the colony site, and the nest substrate. These factors are compounded by the accessibility of the colony, the breeding chronology, and the availability of manpower. The methods described herein were used to census waterbirds in the Maine study area. These techniques may not be applicable in all situations. The judgement, intuition, and experience of the observers must be relied upon for choice of the most appropriate survey method.

Nesting islands were visited by boat starting the last week in May to determine the number of nesting pairs for each species. Nest counts were made where possible. Two teams of three observers censused the same part of the coastal region in both 1976 and 1977. In both years two of the three members of each crew were the same, so that in the second year of the study each team was better prepared to inventory effectively.

In Maine, identification of colonial waterbirds presented few problems. The common, Arctic, and roseate terns occasionally nested in mixed colonies and special attention had to be given to determine the species composition of those colonies. Since all of the Maine seabird colonies except two were on coastal islands, the physical size of the island often demarked the size of the colony as well. Most of the seabird colonies were located on relatively small islands or limited to parts of larger islands.

### Estimates of Nesting Populations from Aerial Photographs

On 14-16 June 1977, low-level photographs of all colonies within the study area were made with a K-17 aerial camera (9" x 9" format) mounted on a U.S. Fish and Wildlife airplane. Counts of nesting double-crested cormorants, gulls, and great blue herons were made from the aerial photographs in a few cases. The negatives of the aerial photographs are filed at the Maine Cooperative Wildlife Research Unit with an index. Figures 2 and 3 are examples of these photographs.

### Census Method for Each Species

Leach's storm-petrel. Adult petrels never were seen in the vicinity of colonies during daylight hours, therefore finding colony sites was difficult. The only method used in this inventory was to ground check all islands in the offshore area. Petrels were found nesting on wooded islands and treeless islands, islands with rocky soils, and those with deep organic soils. Identification of nesting burrows was the only positive indication that an active colony was on an island. Remains of dead birds sometimes provided a clue to the location of colonies.

A count of active burrows is the most reliable method for estimating a petrel population. However, because burrows are difficult to locate, these counts provide a low population estimate in most cases. The large colonies of Leach's storm-petrels on Little Duck and Great Duck islands were censused by



Figure 2. Aerial photograph of herring gull and double-crested cormorant colonies on Fisherman Island (268091), taken with K-17 camera.

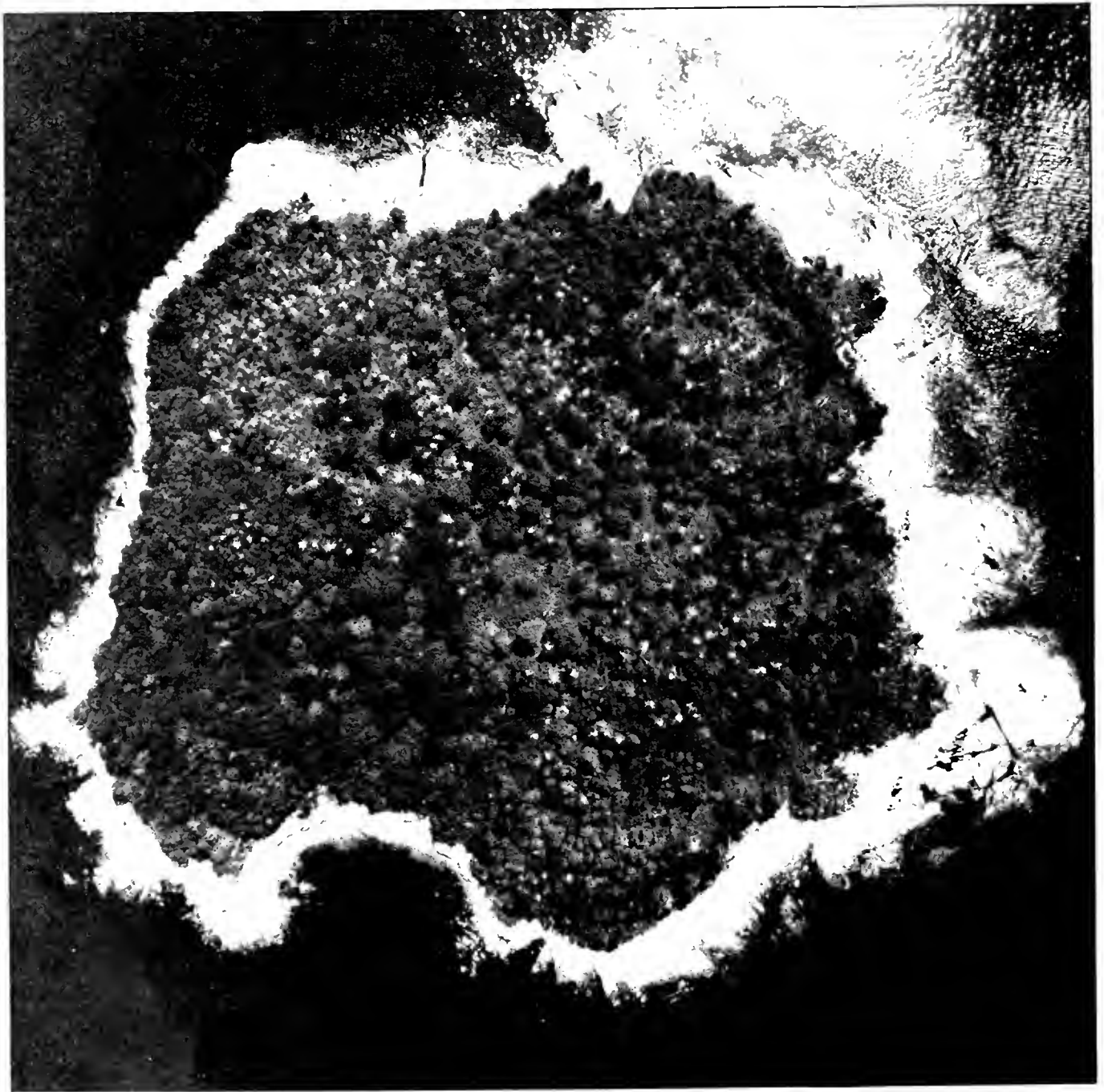


Figure 3. Aerial photograph of Wreck Island (297 006) great blue heron colony.

Lesser in 1977 (unpublished) using a combination of line transects, quadrats, and subjective evaluation of the burrow abundance and colony distribution. Lesser suggested that petrel colonies be censused in early August when active and inactive burrows can be distinguished.

Double-crested cormorants. A ground count of nests is the best method of censusing the nesting population. Counts of nests from aerial photographs taken vertically above the colony are also an accurate means of censusing cormorants.

Wading birds. A nest count from fixed- or rotary-wing aircraft is the best census technique for great blue herons in Maine since these birds nest primarily in tops of trees. Verification of aerial counts by ground counts also is recommended. Ground checks should be made early in the spring when the adults are incubating and young are relatively immobile. Nest counts from aerial photos are equally useful for censusing great blue herons.

Black-crowned night herons were never observed from fixed-wing aircraft and even when active nests were approached closely with a helicopter, the adults were not seen. A nest count from the ground is considered the most reliable method for censusing black-crowned night herons, snowy egrets, and glossy ibises, since they nest lower in the trees than great blue herons.

Common eider. Eider nesting islands are found readily by aerial surveys in late April or May. If the surveys are timed accurately, counts of eiders closely associated with islands can be used to provide a close approximation of the nesting population.

Nest counts in June provide a reliable estimate of the breeding population. If nest counts are made, nests which are active and inactive (abandoned, hatched, or destroyed by predators) should be tallied. Nest counts of eiders can be disruptive because of predation by gulls. Eider eggs should be covered with nest material after hens flush.

Gulls. The three species of gulls nesting in the study area occupied relatively small colonies. Aerial surveys were useful for locating the small colonies and in many cases a reliable population estimate could be obtained from a fixed-wing aircraft. Photographic counts may be a reliable way to estimate gull populations early in the season when cover is not too dense. The utility of this technique is being investigated. Almost all gull colonies on the Maine coast were inventoried by boat. Total nest counts were made whenever possible. If each nest in a colony could not be counted, a portion of the nesting habitat was surveyed to provide a partial count of the relative density of nests. An estimate of the breeding population was obtained by extrapolating the partial nest count to the total area of the colony. This technique frequently was used in conjunction with counts and estimates of adult birds. Special attention had to be given whenever nonnesting subadult birds, usually identifiable by plumage characteristics, were observed in the colony.

Herring and great black-backed gulls usually nested at sites containing both species, but the nests often were distinguishable by the location of the nest, size of the eggs, or color of the young. Black-backed gulls usually

nested on higher vegetated parts of the islands, whereas herring gulls often nested seaward from vegetated areas and among storm-tide debris. The eggs of black-backs are larger and the nestlings are more buffy-colored than those of the herring gulls. In large colonies the nests were counted or sampled and the proportion of adults of each species was extrapolated to derive an estimate of the respective nesting populations. The low density of laughing gulls in the few colonies where they were found required no special technique.

Terns. The protective coloration of tern eggs and the lack of structured nests make tern nests difficult to find and count. A count or estimate of adult birds is the best method for censusing large colonies. Correction factors must be used to account for members of pairs away from nests and for nonbreeders. In this inventory we assumed that 10 percent of the birds in a colony were nonbreeders, based on previous work by Nisbet (1973).

At sites containing several species the proportionate number of each species must be estimated as well as the total number. An estimate of each species population is then derived.

Alcids. Common puffins and black guillemots nest in concealed sites beneath large boulders or in rock crevices along the shoreline. Razorbills nest on rock ledges or in crevices. Nest counts are extremely time consuming and incomplete because nests are usually situated in inaccessible locations.

Methods used to census alcids are primarily for black guillemots since few common puffins and razorbills nest on the Maine coast. To census guillemots the shoreline of islands was circled very slowly by boat to flush incubating birds from their nest sites. Counts of flushed birds were considered equivalent to a nest count. However, the resulting estimate is very conservative since some incubating birds undoubtedly remain in burrows. In some instances, counts of the total number of adults on the water adjacent to an island were made after birds were flushed from nest sites. This number was divided by two to give the number of breeding pairs in the colony, assuming that there are few nonbreeding birds. Studies should be conducted to evaluate the nonbreeding portion of alcid populations. Aerial counts are not recommended for censusing alcids in Maine.

## NESTING CHRONOLOGY

Information on nesting chronology is important to establish the best time to conduct inventories and, if necessary, to make corrections for late nesting birds. For this study most information was obtained through a literature search. When possible, colonies were visited more than once in 1976 and 1977 to provide additional information.

## RESULTS

### SPECIES ABUNDANCE AND DISTRIBUTION

The 1976 breeding season was considered an experimental period to develop inventory techniques, train observers, and refine the logistics of visiting the colonies by boat. Data collected during the 1977 season are presented as baseline information. Nearly every colony was visited by boat during the 1977 field season whereas many colonies, especially in eastern Maine, were not visited in 1976. Estimates of nesting populations were made between 23 May and 19 July 1977.

Cooperators located 353 waterbird colony sites along the Atlantic coast of Maine. Colonies west of Cape Elizabeth (Figure 1) were inventoried by R. M. Bollengier and A. C. Borrer in conjunction with the waterbird inventory conducted by the Massachusetts Cooperative Wildlife Research Unit. Information on those colonies in western Maine are included in this report to bring all of the Maine data together. The numbers of colonies and estimated populations for each species are summarized in Table 2. The number of nesting pairs of each species in each colony is shown in Table 3. An atlas (Erwin and Korschgen 1979), based on this and the companion study by the Massachusetts Unit shows colony location, description, species composition, and population estimates. An alphabetical list of colony site names (APPENDIX B) and a cross reference to Maine Coastal Island Registry numbers (APPENDIX C) are included.

Most of the colony sites contained more than one waterbird species. The Matinicus Rock site with nine species had the greatest diversity of birds. Black guillemots, herring gulls, great black-backed gulls, double-crested cormorants, and common eiders commonly nested at the same site. Birds nesting at the northern edge (laughing gull, roseate tern, least tern, snowy egret, little blue heron, Louisiana heron, and glossy ibis) or southern edge (common puffin and razorbill) of their breeding ranges occurred in relatively few colonies and in low numbers.

By far the largest nesting population of a single species existed on Great Duck Island. Eugene Lesser (unpublished) estimated that 14,000 pairs of Leach's storm-petrels and 400 pairs of black guillemots nested on that island in 1977. Observations of only a single pair of breeding birds were considered important because those birds might represent remnants of formerly large colonies or pioneers forming a new colony which may become important in the future. All colony sites used in 1977 are listed for each species in decreasing order of size (Table 3).



Table 2. Number of colonies and nesting pairs of coastal bird colonies in Maine and observations of nesting ospreys, 1977.

| Species                   | Number of colonies, | Estimated number of nesting pairs |
|---------------------------|---------------------|-----------------------------------|
| Leach's storm-petrel      | 16 <sup>a</sup>     | 19,131                            |
| Double-crested cormorant  | 103                 | 15,333                            |
| Great blue heron          | 18                  | 903                               |
| Little blue heron         | 2                   | 4                                 |
| Snowy egret               | 4                   | 90                                |
| Louisiana heron           | 1                   | 1                                 |
| Black-crowned night heron | 8                   | 117                               |
| Glossy ibis               | 3                   | 75                                |
| Common eider              | 239 <sup>a</sup>    | 22,390                            |
| Great black-backed gull   | 219 <sup>a</sup>    | 9,847                             |
| Herring gull              | 221 <sup>a</sup>    | 26,037                            |
| Laughing gull             | 6                   | 231                               |
| Common tern               | 24                  | 2,095                             |
| Arctic tern               | 8 <sup>a</sup>      | 1,640                             |
| Roseate tern              | 3                   | 80                                |
| Least tern                | 2                   | 21                                |
| Razorbill                 | 2                   | 25                                |
| Black guillemot           | 114 <sup>a</sup>    | 2,668                             |
| Common puffin             | 1                   | 125                               |
| Osprey                    | 125 Islands         | 172                               |

<sup>a</sup>Present at one additional colony site but numbers were not estimated.

Table 3. Nesting colonies, by species, of waterbirds in Maine, 1977.

| Species                  | Colony site number | Colony site name     | Nesting pairs |
|--------------------------|--------------------|----------------------|---------------|
| Leach's storm-petrel     | 268 088            | Great Duck Island    | 14,000        |
|                          | 268 085            | Little Duck Island   | 4,000         |
|                          | 297 065            | Matinicus Rock       | 550           |
|                          | 297 054            | Seal Island          | 335           |
|                          | 297 092            | Eastern Egg Rock     | 50            |
|                          | 269 026            | Jordans Delight      | 50            |
|                          | 268 118            | Brimstone Island     | 34            |
|                          | 297 057            | Wooden Ball Island   | 25            |
|                          | 269 014            | The Brothers Island  | 25            |
|                          | 297 055            | No Mans Land Island  | 20            |
|                          | 297 012            | Franklin Island      | 12            |
|                          | 297 011            | Haddock Island       | 12            |
|                          | 269 015            | West Brothers Island | 10            |
|                          | 268 038            | Schoodic Island      | 3             |
|                          | 297 014            | Western Egg Rock     | 3             |
|                          | 297 059            | Pudding Island       | 2             |
|                          | 268 129            | Great Spoon Island   | present       |
| Double-crested cormorant | 268 035            | The Thrumcap         | 650           |
|                          | 268 071            | Green Ledge          | 575           |
|                          | 297 014            | Western Egg Rock     | 565           |
|                          | 296 015            | Outer Green Island   | 543           |
|                          | 268 085            | Little Duck Island   | 474           |
|                          | 268 126            | Green Ledge          | 446           |
|                          | 268 078            | Ship Island          | 440           |
|                          | 269 027            | Egg Rock             | 417           |
|                          | 296 052            | Duck Island          | 400           |
|                          | 268 060            | Grass Ledge          | 388           |
|                          | 297 086            | White Island (Inner) | 373           |
|                          | 297 105            | White Bull Island    | 350           |
|                          | 268 019            | Colt Head Island     | 350           |
|                          | 268 121            | West Halibut Ledge   | 310           |
|                          | 269 006            | Nightcap Island      | 285           |
|                          | 268 079            | West Barge Island    | 280           |
|                          | 268 091            | Fisherman Island     | 275           |
|                          | 268 086            | Green Island         | 274           |
|                          | 268 038            | Schoodic Island      | 272           |
|                          | 268 034            | Goose Cove Rock      | 270           |
| 268 104                  | Green Ledge        | 270                  |               |
| 268 052                  | Hardhead Island    | 250                  |               |

(Continued)

Table 3. (Continued)

| Species                              | Colony site<br>number | Colony site<br>name   | Nesting<br>pairs |
|--------------------------------------|-----------------------|-----------------------|------------------|
| Double-crested cormorant (Continued) |                       |                       |                  |
|                                      | 297 044               | Metinic Green Island  | 238              |
|                                      | 268 070               | Mahoney Island        | 229              |
|                                      | 269 004               | Old Man               | 215              |
|                                      | 296 032               | West Brown Cow Island | 214              |
|                                      | 297 090               | Pumpkin Island        | 210              |
|                                      | 297 039               | Hay Ledge             | 196              |
|                                      | 296 041               | Eagle Island          | 196              |
|                                      | 297 111               | Heron Island          | 194              |
|                                      | 268 017               | Two Bush Island       | 190              |
|                                      | 297 094               | Little Egg Rock       | 180              |
|                                      | 296 050               | Bumpkin Island        | 171              |
|                                      | 296 033               | Inner Green Island    | 166              |
|                                      | 297 049               | Yellow Ridge Island   | 160              |
|                                      | 297 095               | Shark Island          | 152              |
|                                      | 296 034               | Junk of Pork Island   | 150              |
|                                      | 268 115               | Roberts Island        | 148              |
|                                      | 269 016               | Pulpit Rock           | 140              |
|                                      | 268 087               | Green Island Ledge    | 125              |
|                                      | 297 038               | Gunning Rocks         | 125              |
|                                      | 268 123               | Saddleback Island     | 120              |
|                                      | 268 039               | Goose Rock            | 120              |
|                                      | 297 052               | Little Green Island   | 120              |
|                                      | 268 074               | Shabby Island         | 116              |
|                                      | 268 080               | East Barge Island     | 115              |
|                                      | 268 120               | Sparrow Island        | 112              |
|                                      | 297 055               | No Mans Land Island   | 108              |
|                                      | 297 062               | Green Ledge           | 107              |
|                                      | 296 008               | Upper Green Island    | 104              |
|                                      | 297 027               | Gunning Rocks         | 104              |
|                                      | 268 111               | Green Ledge           | 97               |
|                                      | 268 042               | Egg Rock              | 97               |
|                                      | 268 105               | Medric Rock           | 96               |
|                                      | 268 059               | Spoon Ledge           | 95               |
|                                      | 268 122               | Southern Mark Island  | 95               |
|                                      | 297 029               | Long Ledge            | 85               |
|                                      | 269 003               | Red Island            | 80               |
|                                      | 297 085               | The Hyprocrites       | 79               |
|                                      | 268 092               | Marblehead Island     | 78               |
|                                      | 269 007               | Ballast Island        | 78               |
|                                      | 268 135               | Johns Island          | 75               |
|                                      | 268 127               | White Ledge           | 75               |
|                                      | 269 046               | Freeman Rock          | 75               |
|                                      | 297 013               | Little Franklin Ledge | 70               |
|                                      | 296 016               | Ram Island            | 68               |
|                                      | 269 002               | Goose Island          | 67               |
|                                      | 268 041               | Mouse Island          | 66               |

(Continued)

Table 3. (Continued)

| Species                              | Colony site number | Colony site name       | Nesting pairs |
|--------------------------------------|--------------------|------------------------|---------------|
| Double-crested cormorant (Continued) |                    |                        |               |
|                                      | 269 034            | The Ladle              | 65            |
|                                      | 268 005            | Bald Rock              | 60            |
|                                      | 268 129            | Great Spoon Island     | 60            |
|                                      | 269 042            | Egg Rock               | 60            |
|                                      | 268 128            | Spirit Ledge           | 52            |
|                                      | 296 036            | Ram Island             | 43            |
|                                      | 268 015            | Green Ledge            | 40            |
|                                      | 268 131            | White Horse Island     | 40            |
|                                      | 268 132            | Black Horse Island     | 40            |
|                                      | 269 021            | Eastern Island         | 40            |
|                                      | 297 113            | Ellingwood Rock        | 35            |
|                                      | 268 106            | Hurricane Island Ledge | 34            |
|                                      | 268 097            | Garden Island          | 33            |
|                                      | 297 003            | Jones Garden Island    | 32            |
|                                      | 297 010            | Ross Island            | 30            |
|                                      | 268 113            | Carvers Island         | 29            |
|                                      | 297 054            | Seal Island            | 27            |
|                                      | 268 047            | Robinson Rock          | 25            |
|                                      | 297 032            | Old Hump Ledges        | 25            |
|                                      | 297 030            | Shag Ledges (East)     | 24            |
|                                      | 268 134            | Brimstone Island       | 20            |
|                                      | 268 043            | East Goose Rock        | 20            |
|                                      | 297 031            | Shag Ledges (West)     | 20            |
|                                      | 297 096            | Eastern Duck Rock      | 20            |
|                                      | 268 094            | Crescent Island        | 19            |
|                                      | 296 038            | Bluff Island           | 17            |
|                                      | 268 033            | Bar Island             | 15            |
|                                      | 297 064            | Brig Ledge             | 15            |
|                                      | 269 013            | Green Island           | 12            |
|                                      | 269 026            | Jordans Delight        | 7             |
|                                      | 297 091            | New Harbor Dry Ledge   | 6             |
|                                      | 268 133            | Green Island           | 4             |
|                                      | 269 023            | Pot Rock               | 3             |
|                                      | 269 036            | Batson Ledges          | 2             |
|                                      | 268 082            | Crow Island            | 1             |
| Great blue heron                     |                    |                        |               |
|                                      | 297 006            | Wreck Island           | 150           |
|                                      | 268 001            | Burying Island         | 130           |
|                                      | 297 048            | Graffam Island         | 90            |
|                                      | 296 003            | Upper Goose Island     | 75            |
|                                      | 297 088            | Outer Heron Island     | 75            |
|                                      | 269 025            | Middle Douglas Island  | 75            |
|                                      | 268 031            | Hardwood Island        | 60            |
|                                      | 269 005            | Upper Birch Island     | 60            |

(Continued)

Table 3. (Continued)

| Species                      | Colony site number | Colony site name          | Nesting pairs |
|------------------------------|--------------------|---------------------------|---------------|
| Great blue heron (Continued) |                    |                           |               |
|                              | 268 045            | Mark Island               | 50            |
|                              | 269 019            | Stone Island              | 50            |
|                              | 268 025            | Eaton Island              | 22            |
|                              | 297 104            | Mark Island               | 20            |
|                              | 268 037            | Turtle Island             | 15            |
|                              | 268 067            | Scraggy Island            | 15            |
|                              | 269 032            | Outer Ram Island          | 7             |
|                              | 268 073            | Sheep Island              | 5             |
|                              | 268 007            | Seven Hundred Acre Island | 3             |
|                              | 268 002            | Islesboro Island          | 1             |
| Little blue heron            |                    |                           |               |
|                              | 296 037            | Stratton Island           | 3             |
|                              | 324 001            | Appledore Island          | 1             |
| Snowy egret                  |                    |                           |               |
|                              | 324 001            | Appledore Island          | 50            |
|                              | 296 043            | Wood Island               | 28            |
|                              | 297 104            | Mark Island               | 6             |
|                              | 296 037            | Stratton Island           | 6             |
| Louisiana heron              |                    |                           |               |
|                              | 296 037            | Stratton Island           | 1             |
| Black-crowned night heron    |                    |                           |               |
|                              | 297 006            | Wreck Island              | 30            |
|                              | 297 104            | Mark Island               | 21            |
|                              | 296 043            | Wood Island               | 21            |
|                              | 296 028            | Eagle Island              | 20            |
|                              | 324 001            | Appledore Island          | 10            |
|                              | 268 014            | Western Island            | 8             |
|                              | 296 037            | Stratton Island           | 5             |
|                              | 296 049            | Green Island              | 2             |
| Glossy ibis                  |                    |                           |               |
|                              | 296 043            | Wood Island               | 33            |
|                              | 324 001            | Appledore Island          | 30            |
|                              | 296 037            | Stratton Island           | 12            |
| Common eider                 |                    |                           |               |
|                              | 269 020            | Libby Island              | 1,500         |
|                              | 297 012            | Franklin Island           | 1,300         |
|                              | 297 055            | No Mans Land Island       | 800           |
|                              | 269 043            | Browney Island            | 800           |
|                              | 268 050            | Little Spruce Head Island | 500           |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name        | Nesting pairs |
|--------------------------|--------------------|-------------------------|---------------|
| Common eider (Continued) |                    |                         |               |
|                          | 268 129            | Great Spoon Island      | 500           |
|                          | 268 119            | Little Brimstone Island | 486           |
|                          | 268 014            | Western Island          | 450           |
|                          | 296 018            | Stockman Island         | 439           |
|                          | 296 023            | Bangs Island            | 400           |
|                          | 268 033            | Bar Island              | 400           |
|                          | 268 085            | Little Duck Island      | 400           |
|                          | 297 040            | Metinic Island          | 400           |
|                          | 297 044            | Metinic Green Island    | 400           |
|                          | 268 055            | Compass Island          | 350           |
|                          | 268 116            | Roberts Island          | 350           |
|                          | 297 059            | Pudding Island          | 350           |
|                          | 268 006            | Flat Island             | 350           |
|                          | 268 038            | Schoodic Island         | 300           |
|                          | 268 078            | Ship Island             | 300           |
|                          | 268 011            | Spectacle Island        | 300           |
|                          | 268 022            | Scott Island            | 300           |
|                          | 269 028            | Green Island            | 300           |
|                          | 268 054            | Grass Ledge             | 290           |
|                          | 296 019            | Little Birch Island     | 250           |
|                          | 268 061            | Bald Island             | 250           |
|                          | 268 120            | Sparrow Island          | 250           |
|                          | 297 035            | The Brothers            | 250           |
|                          | 297 037            | The Brothers            | 250           |
|                          | 297 006            | Wreck Island            | 250           |
|                          | 296 028            | Eagle Island            | 225           |
|                          | 297 052            | Little Green Island     | 208           |
|                          | 268 136            | Heron Island            | 200           |
|                          | 268 137            | Mason Ledge             | 200           |
|                          | 268 052            | Hardhead Island         | 200           |
|                          | 268 091            | Fisherman Island        | 200           |
|                          | 297 028            | Hart Island             | 200           |
|                          | 297 054            | Seal Island             | 200           |
|                          | 269 007            | Ballast Island          | 200           |
|                          | 269 010            | Ram Island              | 200           |
|                          | 297 057            | Wooden Ball Island      | 164           |
|                          | 268 113            | Carvers Island          | 160           |
|                          | 268 077            | Trumpet Island          | 150           |
|                          | 268 067            | Scraggy Island          | 150           |
|                          | 297 009            | Crane Island            | 150           |
|                          | 297 014            | Western Egg Rock        | 150           |
|                          | 297 087            | White Island (Outer)    | 150           |
|                          | 268 122            | Southern Mark Island    | 125           |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name              | Nesting pairs |
|--------------------------|--------------------|-------------------------------|---------------|
| Common eider (Continued) |                    |                               |               |
|                          | 297 023            | Bar Island                    | 125           |
|                          | 297 025            | McGee Island                  | 125           |
|                          | 297 058            | Ten Pound Island              | 125           |
|                          | 269 037            | Inner Sand Island             | 125           |
|                          | 297 104            | Mark Island                   | 110           |
|                          | 268 070            | Mahoney Island                | 100           |
|                          | 268 123            | Saddleback Island             | 100           |
|                          | 268 118            | Brimstone Island              | 100           |
|                          | 268 041            | Mouse Island                  | 100           |
|                          | 297 042            | Hog Island                    | 100           |
|                          | 297 007            | Harbor Island                 | 100           |
|                          | 269 004            | Old Man                       | 100           |
|                          | 269 018            | Outer Double Head Shot Island | 100           |
|                          | 269 038            | Big Nash Island               | 100           |
|                          | 269 033            | Little Drisko Island          | 100           |
|                          | 297 062            | Green Ledge                   | 90            |
|                          | 269 013            | Green Island                  | 90            |
|                          | 296 033            | Inner Green Island            | 85            |
|                          | 296 024            | Upper Flag Island             | 75            |
|                          | 268 084            | Gooseberry Island             | 75            |
|                          | 268 135            | Johns Island                  | 75            |
|                          | 268 008            | Thrumcap Island               | 75            |
|                          | 268 018            | Barred Island                 | 75            |
|                          | 268 019            | Colt Head Island              | 75            |
|                          | 268 029            | Torrey Island                 | 75            |
|                          | 268 076            | Three Bush Island             | 75            |
|                          | 268 074            | Shabby Island                 | 75            |
|                          | 268 103            | Green Island                  | 75            |
|                          | 268 104            | Green Ledge                   | 75            |
|                          | 297 095            | Shark Island                  | 75            |
|                          | 297 093            | Burnt Island                  | 75            |
|                          | 297 056            | Two Bush Island               | 75            |
|                          | 269 014            | The Brothers Island           | 75            |
|                          | 269 040            | Flat Island                   | 75            |
|                          | 297 053            | Large Green Island            | 65            |
|                          | 268 097            | Garden Island                 | 62            |
|                          | 268 063            | Dagger Island                 | 60            |
|                          | 268 044            | Goose Island                  | 60            |
|                          | 268 047            | Robinson Rock                 | 60            |
|                          | 296 015            | Outer Green Island            | 54            |
|                          | 269 044            | Green Rock                    | 53            |
|                          | 297 102            | Pond Island                   | 50            |
|                          | 268 086            | Green Island                  | 50            |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name        | Nesting pairs |
|--------------------------|--------------------|-------------------------|---------------|
| Common eider (Continued) |                    |                         |               |
|                          | 268 115            | Roberts Island          | 50            |
|                          | 268 126            | Green Ledge             | 50            |
|                          | 297 086            | White Island (Inner)    | 50            |
|                          | 297 090            | Pumpkin Island          | 50            |
|                          | 297 109            | Pond Island             | 50            |
|                          | 269 006            | Nightcap Island         | 50            |
|                          | 269 026            | Jordans Delight         | 50            |
|                          | 269 027            | Egg Rock                | 50            |
|                          | 297 101            | Ram Island              | 45            |
|                          | 268 043            | East Goose Rock         | 40            |
|                          | 297 047            | Seal Island             | 40            |
|                          | 297 065            | Matinicus Rock          | 40            |
|                          | 297 010            | Ross Island             | 40            |
|                          | 268 013            | Pond Island             | 35            |
|                          | 268 096            | Oak Island              | 35            |
|                          | 297 039            | Hay Ledge               | 35            |
|                          | 297 084            | Fisherman Island        | 35            |
|                          | 297 088            | Outer Heron Island      | 35            |
|                          | 268 082            | Crow Island             | 30            |
|                          | 268 125            | South Popplestone Ledge | 30            |
|                          | 268 130            | Little Spoon Island     | 30            |
|                          | 268 092            | Marblehead Island       | 30            |
|                          | 297 061            | Ragged Island           | 30            |
|                          | 268 040            | Ram Island              | 25            |
|                          | 297 011            | Haddock Island          | 25            |
|                          | 297 096            | Eastern Duck Rock       | 25            |
|                          | 297 098            | Inner Duck Rock         | 25            |
|                          | 297 110            | Wood Island             | 25            |
|                          | 297 068            | Jenny Island            | 20            |
|                          | 297 069            | Elm Island              | 20            |
|                          | 296 020            | Horse Island            | 20            |
|                          | 296 029            | Rogues Island           | 20            |
|                          | 268 087            | Green Island Ledge      | 20            |
|                          | 268 099            | Cutters Nubble          | 20            |
|                          | 268 095            | Tommy Island            | 20            |
|                          | 268 107            | Little Hurricane Island | 20            |
|                          | 297 038            | Gunning Rocks           | 20            |
|                          | 297 001            | Jims Island             | 20            |
|                          | 269 008            | Foster Island           | 20            |
|                          | 269 011            | Scabby Island           | 20            |
|                          | 269 039            | Nash Island             | 20            |
|                          | 268 015            | Green Ledge             | 19            |
|                          | 268 068            | Scraggy Island Ledge    | 18            |

(Continued)



Table 3. (Continued)

| Species                  | Colony site<br>number | Colony site<br>name  | Nesting<br>pairs |
|--------------------------|-----------------------|----------------------|------------------|
| Common eider (Continued) |                       |                      |                  |
|                          | 268 059               | Spoon Ledge          | 18               |
|                          | 268 117               | Otter Island         | 18               |
|                          | 297 067               | Duck Rock            | 15               |
|                          | 296 016               | Ram Island           | 15               |
|                          | 268 035               | The Thrumcap         | 15               |
|                          | 268 133               | Green Island         | 15               |
|                          | 268 028               | Bar Island Ledge     | 15               |
|                          | 268 057               | Sloop Island         | 15               |
|                          | 268 069               | Smuttynose Island    | 15               |
|                          | 268 064               | The Downfall         | 15               |
|                          | 268 093               | Otter Island         | 15               |
|                          | 268 101               | Sugar Loaves         | 15               |
|                          | 297 005               | Black Island         | 15               |
|                          | 297 002               | Thief Island         | 15               |
|                          | 297 032               | Old Hump Ledges      | 15               |
|                          | 297 089               | Damariscove Island   | 15               |
|                          | 269 030               | Stevens Island Ledge | 15               |
|                          | 269 021               | Eastern Island       | 15               |
|                          | 268 049               | Horse Head Island    | 14               |
|                          | 297 100               | Cedar Ledge          | 13               |
|                          | 268 027               | Eaton Island Ledge   | 13               |
|                          | 296 026               | Ministerial Island   | 12               |
|                          | 297 029               | Long Ledge           | 12               |
|                          | 268 060               | Grass Ledge          | 12               |
|                          | 296 021               | Pinkham Island       | 10               |
|                          | 296 030               | Bates Island         | 10               |
|                          | 268 075               | Halibut Rocks        | 10               |
|                          | 297 051               | Two Bush Island      | 10               |
|                          | 297 016               | Sand Island          | 10               |
|                          | 297 027               | Gunning Rocks        | 10               |
|                          | 297 092               | Eastern Egg Rock     | 10               |
|                          | 297 003               | Jones Garden Island  | 10               |
|                          | 297 004               | Killick Stone        | 10               |
|                          | 269 009               | Shag Ledge           | 10               |
|                          | 269 035               | Toms Island          | 10               |
|                          | 269 029               | Petit Manan Island   | 10               |
|                          | 296 006               | Irony Island         | 9                |
|                          | 268 124               | Fog Island Ledge     | 9                |
|                          | 296 027               | Sand Island          | 8                |
|                          | 268 009               | Buck Island          | 8                |
|                          | 297 072               | Two Bush Island      | 7                |
|                          | 297 082               | Thrumcap Island      | 7                |
|                          | 269 036               | Batson Ledges        | 7                |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name              | Nesting pairs |
|--------------------------|--------------------|-------------------------------|---------------|
| Common eider (Continued) | 297 106            | East Brown Cow Island         | 6             |
|                          | 268 045            | Mark Island                   | 6             |
|                          | 268 046            | Robinson Rock Ledge           | 6             |
|                          | 269 045            | Curlew Rock                   | 6             |
|                          | 297 066            | Rogue Island                  | 5             |
|                          | 296 007            | French Island                 | 5             |
|                          | 296 013            | Vaill Island                  | 5             |
|                          | 296 022            | Crow Island                   | 5             |
|                          | 296 025            | Turnip Island                 | 5             |
|                          | 269 022            | Sally Island                  | 5             |
|                          | 268 080            | East Barge Island             | 5             |
|                          | 268 012            | Pond Island                   | 5             |
|                          | 268 017            | Two Bush Island               | 5             |
|                          | 268 020            | Beach Island                  | 5             |
|                          | 268 025            | Eaton Island                  | 5             |
|                          | 268 111            | Green Ledge                   | 5             |
|                          | 268 102            | Dog Fish Island Ledge         | 5             |
|                          | 268 108            | Little Hurricane Island Ledge | 5             |
|                          | 268 106            | Hurricane Island Ledge        | 5             |
|                          | 297 036            | The Brothers                  | 5             |
|                          | 297 043            | Little Hog Island             | 5             |
|                          | 297 050            | Crow Island                   | 5             |
|                          | 297 008            | Little Hall Island            | 5             |
|                          | 297 017            | Ram Island                    | 5             |
|                          | 297 020            | Cranberry Island              | 5             |
|                          | 297 019            | Little Island                 | 5             |
|                          | 297 021            | Eagle Island                  | 5             |
|                          | 297 024            | Twobush Island                | 5             |
|                          | 297 034            | Allen Island                  | 5             |
|                          | 297 077            | Middle Mark Island            | 5             |
|                          | 297 078            | Cedarbush Island              | 5             |
|                          | 297 081            | Thread of Life Rock           | 5             |
|                          | 297 083            | Thrumcap Island               | 5             |
|                          | 269 034            | The Ladle                     | 5             |
|                          | 268 081            | Cherry Ledge                  | 4             |
|                          | 268 021            | Resolution Island             | 4             |
|                          | 268 114            | Hay Island                    | 4             |
|                          | 268 016            | Fiddle Head Island            | 3             |
|                          | 268 023            | Sheep Island Ledge            | 3             |
|                          | 268 039            | Goose Rock                    | 3             |
|                          | 297 111            | Heron Island                  | 3             |
|                          | 297 011            | Crow Island                   | 2             |
|                          | 268 024            | Little Eaton Island           | 2             |
|                          | 268 112            | Deadman Ledge                 | 2             |
|                          | 268 089            | Clam Ledges                   | 2             |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name       | Nesting pairs |
|--------------------------|--------------------|------------------------|---------------|
| Common eider (Continued) |                    |                        |               |
|                          | 297 022            | Stone Island           | 2             |
|                          | 296 031            | Little Mark Island     | 1             |
|                          | 268 010            | Spectacle Island       | 1             |
|                          | 268 026            | Eaton Island Ledge     | 1             |
|                          | 268 051            | Last Chain Link        | 1             |
|                          | 268 053            | Scrag Island           | 1             |
|                          | 268 056            | Channel Rock           | 1             |
|                          | 268 058            | Sloop Island Ledge     | 1             |
|                          | 268 066            | Moose Island Ledge     | 1             |
|                          | 268 072            | Egg Rock               | 1             |
|                          | 268 065            | Sheep Island           | 1             |
|                          | 268 110            | Flat Island            | 1             |
|                          | 268 048            | Dumpling Island        | 1             |
|                          | 297 026            | Barter Island          | 1             |
|                          | 297 107            | South Sugarloaf Island | 1             |
|                          | 297 112            | Gooseberry Island      | 1             |
|                          | 269 031            | Stevens Island         | 1             |
|                          | 269 041            | Stanley Ledge          | 1             |
|                          | 268 088            | Great Duck Island      | present       |
| Great black-backed gull  |                    |                        |               |
|                          | 324 002            | Smuttynose Island      | 960           |
|                          | 296 052            | Duck Island            | 800           |
|                          | 268 038            | Schoodic Island        | 500           |
|                          | 268 078            | Ship Island            | 500           |
|                          | 324 001            | Appledore Island       | 366           |
|                          | 296 038            | Bluff Island           | 360           |
|                          | 296 043            | Wood Island            | 300           |
|                          | 296 041            | Eagle Island           | 210           |
|                          | 297 054            | Seal Island            | 200           |
|                          | 297 103            | Ragged Island          | 200           |
|                          | 269 043            | Browney Island         | 200           |
|                          | 296 028            | Eagle Island           | 172           |
|                          | 296 037            | Stratton Island        | 150           |
|                          | 268 135            | Johns Island           | 150           |
|                          | 297 111            | Heron Island           | 120           |
|                          | 268 085            | Little Duck Island     | 100           |
|                          | 268 091            | Fisherman Island       | 100           |
|                          | 297 109            | Pond Island            | 100           |
|                          | 269 004            | Old Man                | 100           |
|                          | 269 007            | Ballast Island         | 100           |
|                          | 269 011            | Scabby Island          | 100           |
|                          | 269 040            | Flat Island            | 100           |
|                          | 269 038            | Big Nash Island        | 100           |

(Continued)

Table 3. (Continued)

| Species                             | Colony site<br>number | Colony site<br>name     | Nesting<br>pairs |
|-------------------------------------|-----------------------|-------------------------|------------------|
| Great black-backed gull (Continued) |                       |                         |                  |
|                                     | 297 040               | Metinic Island          | 90               |
|                                     | 297 086               | White Island (Inner)    | 90               |
|                                     | 297 114               | Seguin Island           | 90               |
|                                     | 297 087               | White Island (Outer)    | 80               |
|                                     | 296 016               | Ram Island              | 75               |
|                                     | 268 136               | Heron Island            | 75               |
|                                     | 268 122               | Southern Mark Island    | 75               |
|                                     | 297 065               | Matinicus Rock          | 75               |
|                                     | 296 018               | Stockman Island         | 68               |
|                                     | 297 055               | No Mans Land Island     | 60               |
|                                     | 268 077               | Trumpet Island          | 50               |
|                                     | 268 079               | West Barge Island       | 50               |
|                                     | 268 019               | Colt Head Island        | 50               |
|                                     | 268 070               | Mahoney Island          | 50               |
|                                     | 268 113               | Carvers Island          | 50               |
|                                     | 268 119               | Little Brimstone Island | 50               |
|                                     | 268 120               | Sparrow Island          | 50               |
|                                     | 268 126               | Green Ledge             | 50               |
|                                     | 268 129               | Great Spoon Island      | 50               |
|                                     | 268 130               | Little Spoon Island     | 50               |
|                                     | 268 104               | Green Ledge             | 50               |
|                                     | 297 089               | Damariscove Island      | 50               |
|                                     | 269 020               | Libby Island            | 50               |
|                                     | 269 010               | Ram Island              | 50               |
|                                     | 269 014               | The Brothers Island     | 50               |
|                                     | 269 034               | The Ladle               | 50               |
|                                     | 269 033               | Little Drisko Island    | 50               |
|                                     | 269 026               | Jordans Delight         | 50               |
|                                     | 269 028               | Green Island            | 50               |
|                                     | 297 044               | Metinic Green Island    | 45               |
|                                     | 268 060               | Grass Ledge             | 44               |
|                                     | 296 036               | Ram Island              | 43               |
|                                     | 297 011               | Haddock Island          | 43               |
|                                     | 297 014               | Western Egg Rock        | 41               |
|                                     | 268 074               | Shabby Island           | 40               |
|                                     | 297 090               | Pumpkin Island          | 40               |
|                                     | 268 015               | Green Ledge             | 38               |
|                                     | 268 059               | Spoon Ledge             | 38               |
|                                     | 297 096               | Eastern Duck Rock       | 37               |
|                                     | 296 033               | Inner Green Island      | 35               |
|                                     | 297 104               | Mark Island             | 35               |
|                                     | 268 044               | Goose Island            | 35               |

(Continued)

Table 3. (Continued)

| Species                             | Colony site<br>number | Colony site<br>name     | Nesting<br>pairs |
|-------------------------------------|-----------------------|-------------------------|------------------|
| Great black-backed gull (Continued) |                       |                         |                  |
|                                     | 297 057               | Wooden Ball Island      | 35               |
|                                     | 297 003               | Jones Garden Island     | 35               |
|                                     | 297 038               | Gunning Rocks           | 34               |
|                                     | 297 039               | Hay Ledge               | 34               |
|                                     | 297 095               | Shark Island            | 34               |
|                                     | 296 050               | Bumpkin Island          | 32               |
|                                     | 268 086               | Green Island            | 30               |
|                                     | 268 092               | Marblehead Island       | 30               |
|                                     | 297 042               | Hog Island              | 29               |
|                                     | 297 072               | Two Bush Island         | 27               |
|                                     | 268 017               | Two Bush Island         | 27               |
|                                     | 296 034               | Junk of Pork Island     | 25               |
|                                     | 268 087               | Green Island Ledge      | 25               |
|                                     | 268 052               | Hardhead Island         | 25               |
|                                     | 297 110               | Wood Island             | 25               |
|                                     | 269 008               | Foster Island           | 25               |
|                                     | 269 006               | Nightcap Island         | 25               |
|                                     | 296 023               | Bangs Island            | 23               |
|                                     | 297 030               | Shag Ledges (East)      | 23               |
|                                     | 297 094               | Little Egg Rock         | 22               |
|                                     | 296 017               | Goose Nest Island       | 20               |
|                                     | 268 080               | East Barge Island       | 20               |
|                                     | 268 082               | Crow Island             | 20               |
|                                     | 268 041               | Mouse Island            | 20               |
|                                     | 268 095               | Tommy Island            | 20               |
|                                     | 268 103               | Green Island            | 20               |
|                                     | 297 012               | Franklin Island         | 20               |
|                                     | 297 056               | Two Bush Island         | 20               |
|                                     | 297 107               | South Sugarloaf Island  | 20               |
|                                     | 269 013               | Green Island            | 20               |
|                                     | 269 016               | Pulpit Rock             | 20               |
|                                     | 297 068               | Jenny Island            | 18               |
|                                     | 297 053               | Large Green Island      | 18               |
|                                     | 296 015               | Outer Green Island      | 18               |
|                                     | 297 052               | Little Green Island     | 17               |
|                                     | 296 032               | West Brown Cow Island   | 16               |
|                                     | 297 058               | Ten Pound Island        | 16               |
|                                     | 296 046               | Gooseberry Island       | 16               |
|                                     | 296 019               | Little Birch Island     | 15               |
|                                     | 268 084               | Gooseberry Island       | 15               |
|                                     | 268 054               | Grass Ledge             | 15               |
|                                     | 268 071               | Green Ledge             | 15               |
|                                     | 268 125               | South Popplestone Ledge | 15               |
|                                     | 268 047               | Robinson Rock           | 15               |

(Continued)

Table 3. (Continued)

| Species                             | Colony site<br>number | Colony site<br>name    | Nesting<br>pairs |
|-------------------------------------|-----------------------|------------------------|------------------|
| Great black-backed gull (Continued) |                       |                        |                  |
|                                     | 297 037               | The Brothers           | 15               |
|                                     | 269 002               | Goose Island           | 15               |
|                                     | 269 046               | Freeman Rock           | 15               |
|                                     | 269 027               | Egg Rock               | 15               |
|                                     | 297 085               | The Hypocrites         | 14               |
|                                     | 268 097               | Garden Island          | 13               |
|                                     | 297 062               | Green Ledge            | 13               |
|                                     | 297 010               | Ross Island            | 13               |
|                                     | 297 073               | Cedar Ledge            | 12               |
|                                     | 297 028               | Hart Island            | 11               |
|                                     | 297 061               | Ragged Island          | 11               |
|                                     | 296 048               | Folly Island           | 11               |
|                                     | 324 003               | Cedar Island           | 10               |
|                                     | 296 008               | Upper Green Island     | 10               |
|                                     | 296 024               | Upper Flag Island      | 10               |
|                                     | 297 006               | Wreck Island           | 10               |
|                                     | 268 035               | The Thrumcap           | 10               |
|                                     | 268 134               | Brimstone Island       | 10               |
|                                     | 268 061               | Bald Island            | 10               |
|                                     | 268 076               | Three Bush Island      | 10               |
|                                     | 268 116               | Roberts Island         | 10               |
|                                     | 268 040               | Ram Island             | 10               |
|                                     | 268 043               | East Goose Rock        | 10               |
|                                     | 269 037               | Inner Sand Island      | 10               |
|                                     | 269 035               | Toms Island            | 10               |
|                                     | 297 102               | Pond Island            | 9                |
|                                     | 268 028               | Bar Island Ledge       | 9                |
|                                     | 268 057               | Sloop Island           | 9                |
|                                     | 297 098               | Inner Duck Rock        | 9                |
|                                     | 297 069               | Elm Island             | 8                |
|                                     | 297 071               | Long Ledge             | 8                |
|                                     | 297 101               | Ram Island             | 8                |
|                                     | 297 106               | East Brown Cow Island  | 8                |
|                                     | 297 023               | Bar Island             | 8                |
|                                     | 297 031               | Shag Ledges (West)     | 8                |
|                                     | 296 044               | Stage Island           | 8                |
|                                     | 268 112               | Deadman Ledge          | 7                |
|                                     | 268 106               | Hurricane Island Ledge | 7                |
|                                     | 297 027               | Gunning Rocks          | 7                |
|                                     | 297 100               | Cedar Ledge            | 6                |
|                                     | 268 009               | Buck Island            | 6                |
|                                     | 268 068               | Scraggy Island Ledge   | 6                |
|                                     | 296 051               | Clarks Island          | 6                |

(Continued)

Table 3. (Continued)

| Species                             | Colony site number | Colony site name   | Nesting pairs |
|-------------------------------------|--------------------|--------------------|---------------|
| Great black-backed gull (Continued) |                    |                    |               |
|                                     | 296 045            | Negro Island       | 6             |
|                                     | 297 074            | Flag Island        | 5             |
|                                     | 296 025            | Turnip Island      | 5             |
|                                     | 297 105            | White Bull Island  | 5             |
|                                     | 268 137            | Mason Ledge        | 5             |
|                                     | 268 029            | Torrey Island      | 5             |
|                                     | 268 075            | Halibut Rocks      | 5             |
|                                     | 268 115            | Roberts Island     | 5             |
|                                     | 297 043            | Little Hog Island  | 5             |
|                                     | 297 018            | Gull Rock          | 5             |
|                                     | 297 029            | Long Ledge         | 5             |
|                                     | 297 032            | Old Hump Ledges    | 5             |
|                                     | 297 084            | Fisherman Island   | 5             |
|                                     | 297 008            | Outer Heron Island | 5             |
|                                     | 297 097            | Duck Rocks         | 5             |
|                                     | 297 077            | Middle Mark Island | 5             |
|                                     | 269 036            | Batson Ledges      | 5             |
|                                     | 269 044            | Green Rock         | 5             |
|                                     | 269 021            | Eastern Island     | 5             |
|                                     | 269 029            | Petit Manan Island | 5             |
|                                     | 297 067            | Duck Rock          | 4             |
|                                     | 297 070            | Long Ledge         | 4             |
|                                     | 296 009            | Upper Green Island | 4             |
|                                     | 268 117            | Otter Island       | 4             |
|                                     | 297 059            | Pudding Island     | 4             |
|                                     | 269 045            | Curlew Rock        | 4             |
|                                     | 296 020            | Horse Island       | 3             |
|                                     | 268 128            | Spirit Ledge       | 3             |
|                                     | 268 123            | Saddleback Island  | 3             |
|                                     | 268 063            | Dagger Island      | 3             |
|                                     | 268 101            | Sugar Loaves       | 3             |
|                                     | 297 035            | The Brothers       | 3             |
|                                     | 269 041            | Stanley Ledge      | 3             |
|                                     | 268 036            | Heron Island       | 2             |
|                                     | 268 034            | Goose Cove Rock    | 2             |
|                                     | 268 081            | Cherry Ledge       | 2             |
|                                     | 268 133            | Green Island       | 2             |
|                                     | 268 056            | Channel Rock       | 2             |
|                                     | 268 064            | The Downfall       | 2             |
|                                     | 268 121            | West Halibut Ledge | 2             |
|                                     | 268 093            | Otter Island       | 2             |
|                                     | 268 096            | Oak Island         | 2             |
|                                     | 268 098            | Dix Island         | 2             |
|                                     | 268 089            | Clam Ledges        | 2             |

(Continued)

Table 3. (Continued)

| Species                             | Colony site<br>number | Colony site<br>name           | Nesting<br>pairs |
|-------------------------------------|-----------------------|-------------------------------|------------------|
| Great black-backed gull (Continued) |                       |                               |                  |
|                                     | 297 004               | Killick Stone                 | 2                |
|                                     | 297 041               | The Nubble                    | 2                |
|                                     | 297 047               | Seal Island                   | 2                |
|                                     | 297 049               | Yellow Ridge Island           | 2                |
|                                     | 297 092               | Eastern Egg Rock              | 2                |
|                                     | 297 081               | Thread of Life Rock           | 2                |
|                                     | 296 042               | Ram Island                    | 2                |
|                                     | 268 032               | Rumell Island                 | 1                |
|                                     | 268 023               | Sheep Island Ledge            | 1                |
|                                     | 268 027               | Eaton Island Ledge            | 1                |
|                                     | 268 026               | Eaton Island Ledge            | 1                |
|                                     | 268 051               | Last Chain Link               | 1                |
|                                     | 268 058               | Sloop Island Ledge            | 1                |
|                                     | 268 066               | Moose Island Ledge            | 1                |
|                                     | 268 072               | Egg Rock                      | 1                |
|                                     | 268 062               | Dagger Ledge                  | 1                |
|                                     | 268 111               | Green Ledge                   | 1                |
|                                     | 268 114               | Hay Island                    | 1                |
|                                     | 268 124               | Fog Island Ledge              | 1                |
|                                     | 268 046               | Robinson Rock Ledge           | 1                |
|                                     | 268 108               | Little Hurricane Island Ledge | 1                |
|                                     | 297 099               | Smutty Nose Island            | 1                |
|                                     | 269 023               | Pot Rock                      | 1                |
|                                     | 268 088               | Great Duck Island             | present          |
| Herring gull                        |                       |                               |                  |
|                                     | 324 001               | Appledore Island              | 2,274            |
|                                     | 324 002               | Smuttynose Island             | 1,800            |
|                                     | 296 037               | Stratton Island               | 1,200            |
|                                     | 296 043               | Wood Island                   | 900              |
|                                     | 268 006               | Flat Island                   | 800              |
|                                     | 268 129               | Great Spoon Island            | 750              |
|                                     | 296 051               | Clarks Island                 | 579              |
|                                     | 296 038               | Bluff Island                  | 540              |
|                                     | 268 014               | Western Island                | 500              |
|                                     | 268 038               | Schoodic Island               | 500              |
|                                     | 268 070               | Mahoney Island                | 500              |
|                                     | 268 113               | Carvers Island                | 500              |
|                                     | 269 004               | Old Man                       | 500              |
|                                     | 268 085               | Little Duck Island            | 450              |
|                                     | 269 043               | Browney Island                | 400              |
|                                     | 296 044               | Stage Island                  | 385              |
|                                     | 296 036               | Ram Island                    | 380              |
|                                     | 296 018               | Stockman Island               | 380              |
|                                     | 296 048               | Folly Island                  | 356              |

(Continued)



Table 3. (Continued)

| Species                  | Colony site<br>number | Colony site<br>name           | Nesting<br>pairs |
|--------------------------|-----------------------|-------------------------------|------------------|
| Herring gull (Continued) |                       |                               |                  |
|                          | 296 016               | Ram Island                    | 350              |
|                          | 269 007               | Ballast Island                | 350              |
|                          | 268 033               | Bar Island                    | 300              |
|                          | 268 022               | Scott Island                  | 300              |
|                          | 269 002               | Goose Island                  | 300              |
|                          | 269 001               | Spectacle Island              | 300              |
|                          | 269 020               | Libby Island                  | 300              |
|                          | 296 028               | Green Island                  | 300              |
|                          | 296 050               | Bumpkin Island                | 285              |
|                          | 296 049               | Green Island                  | 283              |
|                          | 268 120               | Sparrow Island                | 250              |
|                          | 296 041               | Eagle Island                  | 240              |
|                          | 297 109               | Pond Island                   | 225              |
|                          | 269 006               | Nightcap Island               | 225              |
|                          | 296 019               | Little Birch Island           | 200              |
|                          | 268 074               | Shabby Island                 | 200              |
|                          | 297 054               | Seal Island                   | 200              |
|                          | 269 018               | Outer Double Head Shot Island | 200              |
|                          | 268 091               | Fisherman Island              | 185              |
|                          | 296 015               | Outer Green Island            | 182              |
|                          | 296 052               | Duck Island                   | 180              |
|                          | 296 046               | Gooseberry Island             | 169              |
|                          | 297 102               | Pond Island                   | 165              |
|                          | 297 103               | Ragged Island                 | 150              |
|                          | 268 136               | Heron Island                  | 150              |
|                          | 269 037               | Inner Sand Island             | 150              |
|                          | 269 026               | Jordans Delight               | 150              |
|                          | 297 106               | East Brown Cow Island         | 143              |
|                          | 296 033               | Inner Green Island            | 140              |
|                          | 297 047               | Seal Island                   | 140              |
|                          | 296 008               | Upper Green Island            | 130              |
|                          | 268 061               | Bald Island                   | 125              |
|                          | 297 052               | Little Green Island           | 125              |
|                          | 297 065               | Matinicus Rock                | 125              |
|                          | 269 034               | The Ladle                     | 125              |
|                          | 268 095               | Tommy Island                  | 120              |
|                          | 297 028               | Hart Island                   | 104              |
|                          | 268 135               | Johns Island                  | 100              |
|                          | 268 052               | Hardhead Island               | 100              |
|                          | 268 116               | Roberts Island                | 100              |
|                          | 269 010               | Ram Island                    | 100              |
|                          | 269 040               | Flat Island                   | 100              |

(Continued)

Table 3. (Continued)

| Species                  | Colony site<br>number | Colony site<br>name  | Nesting<br>pairs |
|--------------------------|-----------------------|----------------------|------------------|
| Herring gull (Continued) |                       |                      |                  |
|                          | 269 038               | Big Nash Island      | 100              |
|                          | 297 040               | Metinic Island       | 90               |
|                          | 296 009               | Upper Green Island   | 87               |
|                          | 296 045               | Negro Island         | 85               |
|                          | 297 071               | Long Ledge           | 80               |
|                          | 268 004               | Bean Island          | 80               |
|                          | 297 087               | White Island (Outer) | 80               |
|                          | 296 024               | Upper Flag Island    | 75               |
|                          | 268 130               | Little Spoon Island  | 75               |
|                          | 268 040               | Ram Island           | 75               |
|                          | 297 089               | Damariscove Island   | 75               |
|                          | 297 110               | Wood Island          | 75               |
|                          | 297 101               | Ram Island           | 70               |
|                          | 297 073               | Cedar Ledge          | 65               |
|                          | 297 023               | Bar Island           | 65               |
|                          | 297 057               | Wooden Ball Island   | 60               |
|                          | 268 039               | Goose Rock           | 59               |
|                          | 296 023               | Bangs Island         | 58               |
|                          | 268 012               | Pond Island          | 56               |
|                          | 268 035               | The Thrumcap         | 50               |
|                          | 268 077               | Trumpet Island       | 50               |
|                          | 268 078               | Ship Island          | 50               |
|                          | 268 019               | Colt Head Island     | 50               |
|                          | 268 047               | Robinson Rock        | 50               |
|                          | 268 104               | Green Ledge          | 50               |
|                          | 297 044               | Metinic Green Island | 50               |
|                          | 297 055               | No Mans Land Island  | 50               |
|                          | 297 056               | Two Bush Island      | 50               |
|                          | 269 039               | Nash Island          | 50               |
|                          | 269 033               | Little Drisko Island | 50               |
|                          | 269 035               | Toms Island          | 50               |
|                          | 324 003               | Cedar Island         | 50               |
|                          | 268 124               | Fog Island Ledge     | 49               |
|                          | 297 010               | Ross Island          | 48               |
|                          | 297 068               | Jenny Island         | 47               |
|                          | 297 074               | Flag Island          | 45               |
|                          | 296 042               | Ram Island           | 45               |
|                          | 296 025               | Turnip Island        | 45               |
|                          | 297 061               | Ragged Island        | 45               |
|                          | 297 096               | Eastern Duck Rock    | 45               |
|                          | 297 069               | Elm Island           | 43               |
|                          | 297 058               | Ten Pound Island     | 42               |
|                          | 297 105               | White Bull Island    | 41               |
|                          | 268 084               | Gooseberry Island    | 40               |

(Continued)

Table 3. (Continued)

| Species                  | Colony site<br>number | Colony site<br>name   | Nesting<br>pairs |
|--------------------------|-----------------------|-----------------------|------------------|
| Herring gull (Continued) |                       |                       |                  |
|                          | 268 043               | East Goose Rock       | 40               |
|                          | 297 114               | Seguin Island         | 40               |
|                          | 296 014               | House Island          | 35               |
|                          | 297 100               | Cedar Ledge           | 35               |
|                          | 297 104               | Mark Island           | 35               |
|                          | 268 044               | Goose Island          | 35               |
|                          | 297 007               | Harbor Island         | 35               |
|                          | 297 006               | Wreck Island          | 35               |
|                          | 297 070               | Long Ledge            | 34               |
|                          | 297 067               | Duck Rock             | 33               |
|                          | 268 064               | The Downfall          | 32               |
|                          | 297 027               | Gunning Rocks         | 31               |
|                          | 268 133               | Green Island          | 30               |
|                          | 268 041               | Mouse Island          | 30               |
|                          | 297 077               | Middle Mark Island    | 30               |
|                          | 297 072               | Two Bush Island       | 27               |
|                          | 268 097               | Garden Island         | 27               |
|                          | 296 034               | Junk of Pork Island   | 25               |
|                          | 268 137               | Mason Ledge           | 25               |
|                          | 268 011               | Spectacle Island      | 25               |
|                          | 268 115               | Roberts Island        | 25               |
|                          | 268 118               | Brimstone Island      | 25               |
|                          | 268 122               | Southern Mark Island  | 25               |
|                          | 268 126               | Green Ledge           | 25               |
|                          | 297 011               | Haddock Island        | 25               |
|                          | 297 084               | Fisherman Island      | 25               |
|                          | 297 086               | White Island (Inner)  | 25               |
|                          | 297 111               | Heron Island          | 25               |
|                          | 297 035               | The Brothers          | 23               |
|                          | 268 096               | Oak Island            | 21               |
|                          | 296 017               | Goose Nest Island     | 20               |
|                          | 296 032               | West Brown Cow Island | 20               |
|                          | 268 086               | Green Island          | 20               |
|                          | 268 029               | Torrey Island         | 20               |
|                          | 268 099               | Cutters Nubble        | 20               |
|                          | 268 114               | Hay Island            | 20               |
|                          | 268 117               | Otter Island          | 20               |
|                          | 297 012               | Franklin Island       | 20               |
|                          | 297 112               | Gooseberry Island     | 20               |
|                          | 269 046               | Freeman Rock          | 20               |
|                          | 297 059               | Pudding Island        | 18               |
|                          | 297 092               | Eastern Egg Rock      | 17               |
|                          | 297 009               | Crane Island          | 16               |
|                          | 297 098               | Inner Duck Rock       | 16               |

(Continued)

Table 3. (Continued)

| Species                  | Colony site<br>number | Colony site<br>name     | Nesting<br>pairs |
|--------------------------|-----------------------|-------------------------|------------------|
| Herring gull (Continued) |                       |                         |                  |
|                          | 296 012               | Crow Island             | 15               |
|                          | 296 013               | Vaill Island            | 15               |
|                          | 268 111               | Green Ledge             | 15               |
|                          | 268 119               | Little Brimstone Island | 15               |
|                          | 297 037               | The Brothers            | 15               |
|                          | 297 053               | Large Green Island      | 15               |
|                          | 297 078               | Cedarbush Island        | 15               |
|                          | 297 079               | Cat Ledge               | 15               |
|                          | 269 011               | Scabby Island           | 15               |
|                          | 269 009               | Shag Ledge              | 15               |
|                          | 269 021               | Eastern Island          | 15               |
|                          | 297 094               | Little Egg Rock         | 14               |
|                          | 297 085               | The Hypocrites          | 14               |
|                          | 296 020               | Horse Island            | 12               |
|                          | 296 031               | Little Mark Island      | 12               |
|                          | 268 123               | Saddleback Island       | 12               |
|                          | 297 003               | Jones Garden Island     | 12               |
|                          | 296 028               | Eagle Island            | 10               |
|                          | 268 128               | Spirit Ledge            | 10               |
|                          | 268 134               | Brimstone Island        | 10               |
|                          | 268 076               | Three Bush Island       | 10               |
|                          | 268 046               | Robinson Rock Ledge     | 10               |
|                          | 268 092               | Marblehead Island       | 10               |
|                          | 268 093               | Otter Island            | 10               |
|                          | 297 029               | Long Ledge              | 10               |
|                          | 297 062               | Green Ledge             | 10               |
|                          | 297 088               | Outer Heron Island      | 10               |
|                          | 297 080               | The Cuckolds Island     | 10               |
|                          | 269 008               | Foster Island           | 10               |
|                          | 269 027               | Egg Rock                | 10               |
|                          | 297 014               | Western Egg Rock        | 9                |
|                          | 297 042               | Hog Island              | 8                |
|                          | 268 055               | Compass Island          | 6                |
|                          | 297 039               | Hay Ledge               | 6                |
|                          | 269 030               | Stevens Island Ledge    | 6                |
|                          | 296 001               | Sister Island Ledge     | 5                |
|                          | 269 022               | Sally Island            | 5                |
|                          | 268 071               | Green Ledge             | 5                |
|                          | 268 059               | Spoon Ledge             | 5                |
|                          | 268 125               | South Popplestone Ledge | 5                |
|                          | 268 103               | Green Island            | 5                |
|                          | 297 043               | Little Hog island       | 5                |
|                          | 297 049               | Yellow Ridge Island     | 5                |

(Continued)

Table 3. (Continued)

| Species                  | Colony site number | Colony site name       | Nesting pairs |
|--------------------------|--------------------|------------------------|---------------|
| Herring gull (Continued) |                    |                        |               |
|                          | 297 008            | Little Hall Island     | 5             |
|                          | 297 018            | Gull Rock              | 5             |
|                          | 297 032            | Old Hump Ledges        | 5             |
|                          | 297 004            | Killick Stone          | 5             |
|                          | 297 081            | Thread of Life Rock    | 5             |
|                          | 297 090            | Pumpkin Island         | 5             |
|                          | 269 013            | Green Island           | 5             |
|                          | 269 015            | Pulpit Rock            | 5             |
|                          | 269 029            | Petit Manan Island     | 5             |
|                          | 297 038            | Gunning Rocks          | 4             |
|                          | 268 094            | Crescent Island        | 3             |
|                          | 297 051            | Two Bush Island        | 3             |
|                          | 269 045            | Curlew Rock            | 3             |
|                          | 269 044            | Green Rock             | 3             |
|                          | 296 022            | Crow Island            | 2             |
|                          | 296 027            | Sand Island            | 2             |
|                          | 296 030            | Bates Island           | 2             |
|                          | 296 029            | Rogues Island          | 2             |
|                          | 268 058            | Sloop Island Ledge     | 2             |
|                          | 268 132            | Black Horse Island     | 2             |
|                          | 268 098            | Dix Island             | 2             |
|                          | 268 105            | Medric Rock            | 2             |
|                          | 297 041            | The Nubble             | 2             |
|                          | 297 095            | Shark Island           | 2             |
|                          | 268 032            | Rumell Island          | 1             |
|                          | 268 068            | Scraggy Island Ledge   | 1             |
|                          | 268 063            | Dagger Island          | 1             |
|                          | 297 046            | Hurricane Island       | 1             |
|                          | 297 013            | Little Franklin Ledge  | 1             |
|                          | 268 088            | Great Duck Island      | present       |
| Laughing gull            |                    |                        |               |
|                          | 269 029            | Petit Manan Island     | 150           |
|                          | 297 065            | Matinicus Rock         | 40            |
|                          | 297 036            | The Brothers           | 17            |
|                          | 297 004            | Killick Stone          | 15            |
|                          | 297 057            | Wooden Ball Island     | 8             |
|                          | 297 052            | Little Green Island    | 1             |
| Common tern              |                    |                        |               |
|                          | 269 029            | Petit Manan Island     | 700           |
|                          | 297 075            | North Sugarloaf Island | 350           |
|                          | 268 008            | Thrumcap Island        | 300           |
|                          | 296 047            | Beach Island           | 152           |

(Continued)

Table 3. (Continued)

| Species                 | Colony site number | Colony site name               | Nesting pairs |
|-------------------------|--------------------|--------------------------------|---------------|
| Common tern (Continued) |                    |                                |               |
|                         | 297 004            | Killick Stone                  | 100           |
|                         | 297 036            | The Brothers                   | 80            |
|                         | 296 005            | Grassy Ledge                   | 65            |
|                         | 296 002            | Sister Island                  | 50            |
|                         | 296 039            | West Goose Rocks               | 45            |
|                         | 296 010            | Clapboard Island Ledge         | 45            |
|                         | 268 069            | Smuttynose Island              | 25            |
|                         | 297 016            | Sand Island                    | 25            |
|                         | 297 067            | Duck Rock                      | 21            |
|                         | 297 015            | Nubbins Island                 | 20            |
|                         | 269 038            | Big Nash Island                | 20            |
|                         | 268 030            | Green Island Ledge             | 19            |
|                         | 296 025            | Turnip Island                  | 18            |
|                         | 268 122            | Southern Mark Island           | 17            |
|                         | 268 027            | Eaton Island Ledge             | 15            |
|                         | 296 004            | Black Rock                     | 14            |
|                         | 268 125            | South Popplestone Ledge        | 6             |
|                         | 268 110            | Flat Island                    | 4             |
|                         | 268 003            | Johns Island                   | 3             |
|                         | 268 109            | Big Smith Island Ledge         | 1             |
| Arctic tern             |                    |                                |               |
|                         | 269 029            | Petit Manan Island             | 700           |
|                         | 297 065            | Matinicus Rock                 | 400           |
|                         | 297 075            | North Sugarloaf Island         | 350           |
|                         | 269 040            | Flat Island                    | 75            |
|                         | 297 057            | Wooden Ball Island             | 65            |
|                         | 297 052            | Little Green Island            | 20            |
|                         | 297 053            | Large Green Island             | 20            |
|                         | 297 040            | Metinic Island                 | 10            |
|                         | 268 129            | Great Spoon Island             | present       |
| Roseate tern            |                    |                                |               |
|                         | 297 075            | North Sugarloaf Island         | 35            |
|                         | 296 047            | Beach Island                   | 25            |
|                         | 269 029            | Petit Manan Island             | 20            |
| Least tern              |                    |                                |               |
|                         | 296 040            | Goose Rocks Beach (Mainland)   | 14            |
|                         | 297 108            | Sprague River Beach (Mainland) | 7             |
| Razorbill               |                    |                                |               |
|                         | 297 065            | Matinicus Rock                 | 15            |
|                         | 269 004            | Old Man                        | 10            |

(Continued)

Table 3. (Continued)

| Species         | Colony site number   | Colony site name              | Nesting pairs |
|-----------------|----------------------|-------------------------------|---------------|
| Black guillemot | 268 088              | Great Duck Island             | 400           |
|                 | 268 085              | Little Duck Island            | 250           |
|                 | 297 057              | Wooden Ball Island            | 200           |
|                 | 297 054              | Seal Island                   | 200           |
|                 | 297 065              | Matinicus Rock                | 175           |
|                 | 269 014              | The Brothers Island           | 150           |
|                 | 297 055              | No Mans Land Island           | 100           |
|                 | 269 004              | Old Man                       | 100           |
|                 | 297 092              | Eastern Egg Rock              | 60            |
|                 | 268 118              | Brimstone Island              | 50            |
|                 | 269 018              | Outer Double Head Shot Island | 50            |
|                 | 269 026              | Jordans Delight               | 50            |
|                 | 297 053              | Large Green Island            | 40            |
|                 | 297 058              | Ten Pound Island              | 35            |
|                 | 268 128              | Spirit Ledge                  | 30            |
|                 | 268 092              | Marblehead Island             | 30            |
|                 | 268 055              | Compass Island                | 25            |
|                 | 268 111              | Green Ledge                   | 25            |
|                 | 297 052              | Little Green Island           | 25            |
|                 | 297 061              | Ragged Island                 | 25            |
|                 | 269 020              | Libby Island                  | 25            |
|                 | 269 016              | Pulpit Rock                   | 25            |
|                 | 297 012              | Franklin Island               | 21            |
|                 | 268 038              | Schoodic Island               | 20            |
|                 | 268 113              | Carvers Island                | 20            |
|                 | 297 040              | Metinic Island                | 20            |
|                 | 297 094              | Little Egg Rock               | 18            |
|                 | 297 032              | Old Hump Ledges               | 17            |
|                 | 268 087              | Green Island Ledge            | 15            |
|                 | 268 115              | Roberts Island                | 15            |
|                 | 297 056              | Two Bush Island               | 15            |
|                 | 268 129              | Great Spoon Island            | 15            |
|                 | 268 130              | Little Spoon Island           | 15            |
|                 | 297 062              | Green Ledge                   | 15            |
|                 | 297 089              | Damariscove Island            | 15            |
|                 | 268 097              | Garden Island                 | 14            |
|                 | 268 052              | Hardhead Island               | 12            |
|                 | 268 075              | Halibut Rocks                 | 12            |
|                 | 268 117              | Otter Island                  | 12            |
|                 | 297 098              | Inner Duck Rock               | 12            |
| 297 103         | Ragged Island        | 10                            |               |
| 268 134         | Brimstone Island     | 10                            |               |
| 268 091         | Fisherman Island     | 10                            |               |
| 268 094         | Crescent Island      | 10                            |               |
| 297 044         | Metinic Green Island | 10                            |               |
| 297 042         | Hog Island           | 10                            |               |

(Continued)

Table 3. (Continued)

| Species                     | Colony site<br>number | Colony site<br>name     | Nesting<br>pairs |
|-----------------------------|-----------------------|-------------------------|------------------|
| Black guillemot (Continued) |                       |                         |                  |
|                             | 269 029               | Petit Manan Island      | 10               |
|                             | 268 046               | Robinson Rock Ledge     | 8                |
|                             | 268 047               | Robinson Rock           | 8                |
|                             | 297 095               | Shark Island            | 8                |
|                             | 269 034               | The Ladle               | 8                |
|                             | 268 116               | Roberts Island          | 7                |
|                             | 297 014               | Western Egg Rock        | 7                |
|                             | 297 105               | White Bull Island       | 6                |
|                             | 268 014               | Western Island          | 6                |
|                             | 268 043               | East Goose Rock         | 6                |
|                             | 268 123               | Saddleback Island       | 6                |
|                             | 268 122               | Southern Mark Island    | 6                |
|                             | 268 125               | South Popplestone Ledge | 6                |
|                             | 268 104               | Green Ledge             | 6                |
|                             | 297 027               | Gunning Rocks           | 6                |
|                             | 297 010               | Ross Island             | 6                |
|                             | 297 096               | Eastern Duck Rock       | 6                |
|                             | 268 086               | Green Island            | 5                |
|                             | 268 136               | Heron Island            | 5                |
|                             | 268 137               | Mason Ledge             | 5                |
|                             | 297 038               | Gunning Rocks           | 5                |
|                             | 297 035               | The Brothers Island     | 5                |
|                             | 297 039               | Hay Ledge               | 5                |
|                             | 297 059               | Pudding Island          | 5                |
|                             | 297 011               | Haddock Island          | 5                |
|                             | 297 084               | Fisherman Island        | 5                |
|                             | 297 114               | Seguin Island           | 5                |
|                             | 268 070               | Mahoney Island          | 4                |
|                             | 268 124               | Fog Island Ledge        | 4                |
|                             | 268 100               | Andrews Island          | 4                |
|                             | 268 083               | High Sheriff Island     | 3                |
|                             | 268 074               | Shabby Island           | 3                |
|                             | 268 114               | Hay Island              | 3                |
|                             | 268 126               | Green Ledge             | 3                |
|                             | 268 095               | Tommy Island            | 3                |
|                             | 297 045               | Hewett Island           | 3                |
|                             | 297 033               | Old Hump Ledges         | 3                |
|                             | 297 087               | White Island (Outer)    | 3                |
|                             | 324 002               | Smuttynose Island       | 3                |
|                             | 296 016               | Ram Island              | 2                |
|                             | 296 015               | Outer Green Island      | 2                |
|                             | 268 133               | Green Island            | 2                |
|                             | 268 061               | Bald Island             | 2                |
|                             | 268 090               | Sheep Island            | 2                |
|                             | 268 098               | Dix Island              | 2                |

(Continued)



Table 3. (Concluded)

| Species                     | Colony site<br>number | Colony site<br>name           | Nesting<br>pairs |
|-----------------------------|-----------------------|-------------------------------|------------------|
| Black guillemot (Continued) |                       |                               |                  |
|                             | 297 037               | The Brothers                  | 2                |
|                             | 297 041               | The Nubble                    | 2                |
|                             | 297 022               | Stone Island                  | 2                |
|                             | 297 031               | Shag Ledges (West)            | 2                |
|                             | 297 034               | Allen Island                  | 2                |
|                             | 297 060               | Shag Ledge                    | 2                |
|                             | 297 063               | Seal Ledge                    | 2                |
|                             | 297 086               | White Island (Inner)          | 2                |
|                             | 297 090               | Pumpkin Island                | 2                |
|                             | 269 017               | Inner Double Head Shot Island | 2                |
|                             | 269 012               | Halifax Island                | 2                |
|                             | 269 013               | Green Island                  | 2                |
|                             | 269 021               | Eastern Island                | 2                |
|                             | 269 023               | Pot Rock                      | 2                |
|                             | 269 027               | Egg Rock                      | 2                |
|                             | 268 019               | Colt Head Island              | 1                |
|                             | 268 044               | Goose Island                  | 1                |
|                             | 268 106               | Hurricane Island Ledge        | 1                |
|                             | 297 049               | Yellow Ridge Island           | 1                |
|                             | 297 023               | Bar Island                    | 1                |
|                             | 297 026               | Barter Island                 | 1                |
|                             | 297 076               | Salter Island                 | 1                |
|                             | 269 024               | Shipstern Island              | 1                |
|                             | 296 035               | Whale Rock                    | possible         |
| Common puffin               | 297 065               | Matinicus Rock                | 125              |

## NESTING CHRONOLOGY

Initiation of egg-laying for a given species at a given colony can vary by as much as 3 weeks from year to year due to environmental conditions. Also, birds in the western part of the Maine coast tend to nest earlier than birds in eastern Maine due to differences in climate. Therefore, the estimated breeding chronology of seabirds and wading birds in Maine is shown by phenophase diagrams (Figures 4-8). In general, great black-backed gulls, herring gulls, common eiders, great blue herons, and double-crested cormorants start nesting in late April or early May. The terns, alcids, Leach's storm-petrels, and laughing gulls nest later.

There are insufficient data from Maine to determine the breeding chronology of roseate terns; however, for this report the timing is assumed to be similar to that of common and Arctic terns. Breeding chronology data are scant for such scarce nesters as razorbills, laughing gulls, and some of the wading birds. The complete citation for each literature reference is included in the REFERENCES section of this report. Diagrams without a reference are based on observations made during the present study.

## POPULATION TRENDS OF WATERBIRDS IN MAINE

Drury (1973) summarized the status of seabird populations in New England (primarily Maine) prior to 1900 as follows:

Seabirds were almost completely "eaten off" the outer islands during the 18th and 19th centuries (Bent, 1919, 1921, 1922, 1925; Dutcher, 1901, 1902, 1903, 1904, 1905; Forbush, 1925, Norton, 1907, 1923, 1924a, b, 1925a, b). Double-crested Cormorants (Phalacrocorax auritus) and Great Black-backed Gulls (Larus marinus) had disappeared from the coast as breeding birds early in the 19th century. By the 1870's Common Eiders (Somateria mollissima), Common Puffins (Fratercula arctica), and Black Guillemots (Cepphus grylle) were essentially eliminated and the remnant populations of Herring Gulls (Larus argentatus) were driven to small outer islands. Only small birds of relatively little food value, such as Leach's Petrels (Oceanodroma leucorhoa) and terns (Sterna sp.) survived in large numbers. Two great campaigns of shooting seabirds for the millinery trade, about 1876 and 1896, nearly eliminated all seabirds except petrels (Norton 1923, 1924, 1925). The low ebb of seabird populations in New England seems to have been between 1890 and 1906.

Norton (unpublished) reported that in 1900 there were only 28 colonies of gulls and terns along the entire coast of Maine. Seabirds were protected on their breeding grounds starting in 1901 under the auspices of the American Ornithologists' Union and the National Association of Audubon Societies. Maine islands now support major populations of several seabird species. Historical trends for individual species follow.

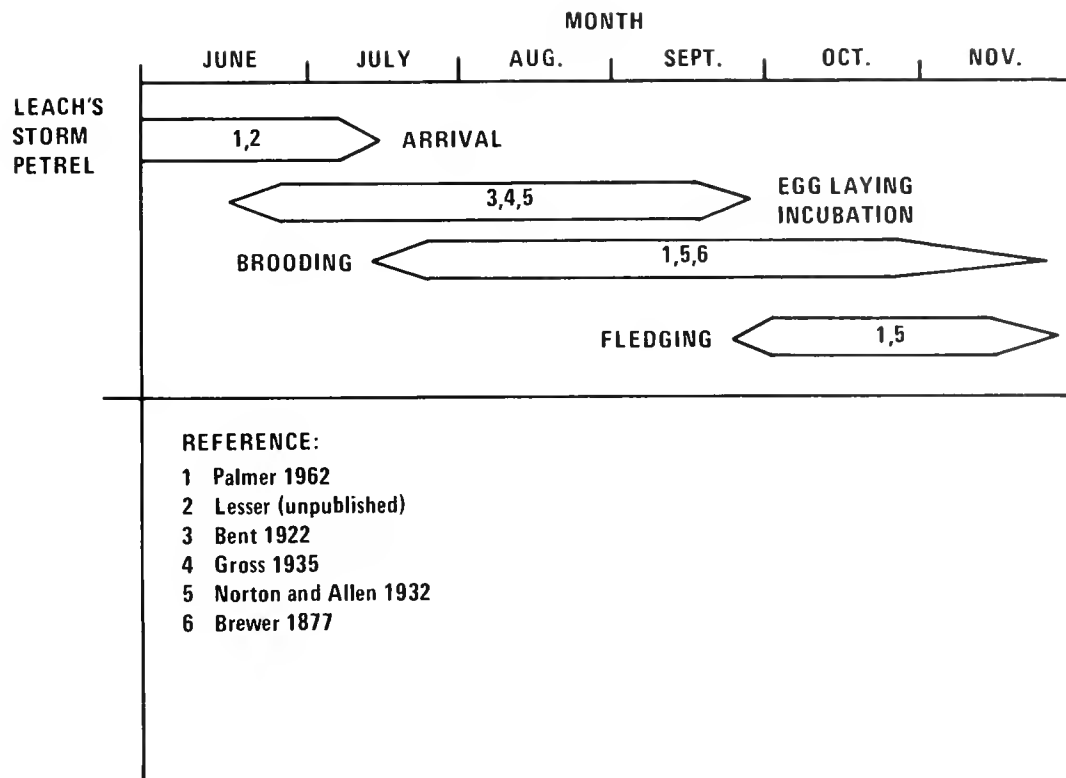


Figure 4. Estimated breeding chronology of Leach's storm-petrels nesting in Maine.

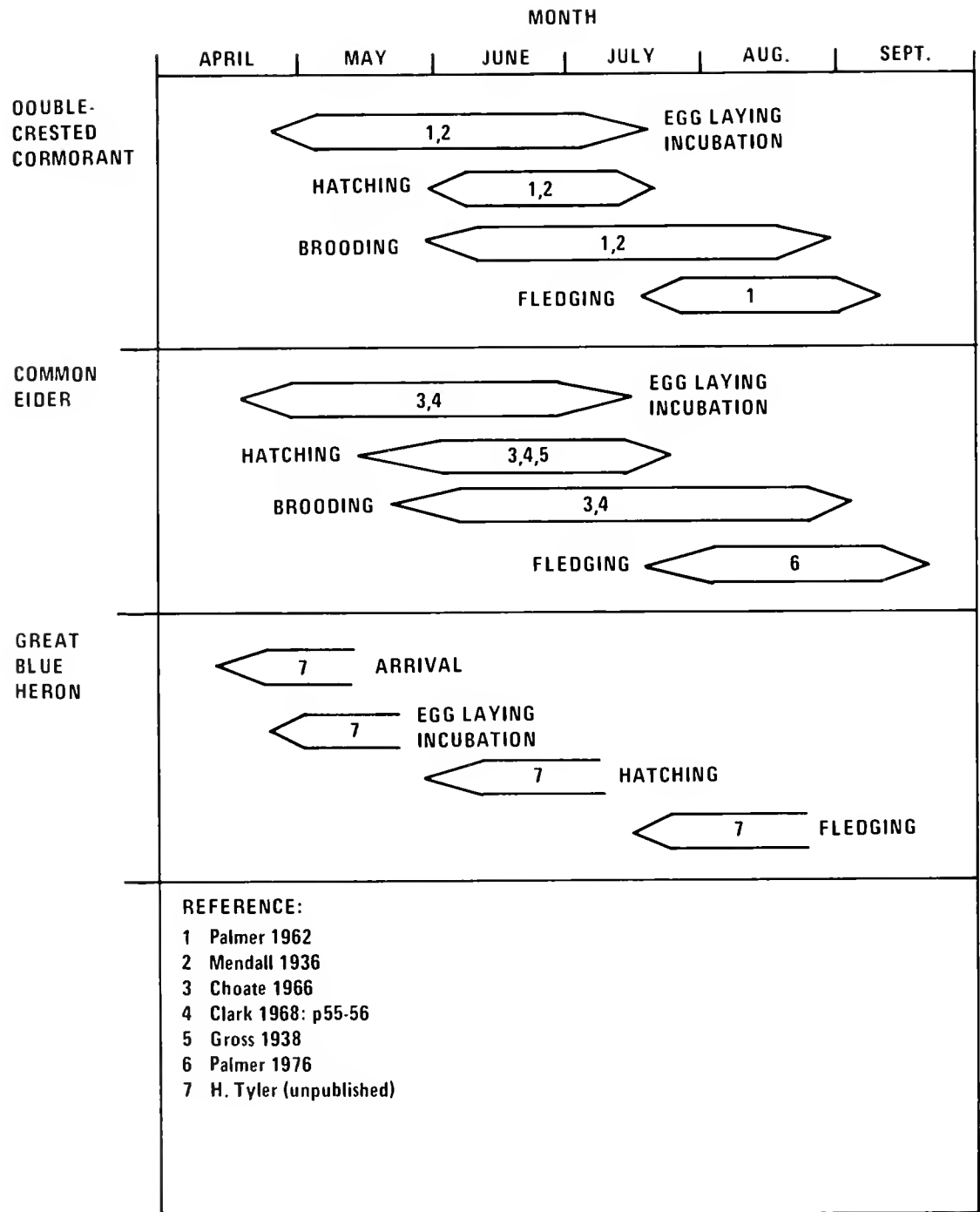


Figure 5. Estimated breeding chronology of double-crested cormorants, common eiders, and great blue herons nesting in Maine.

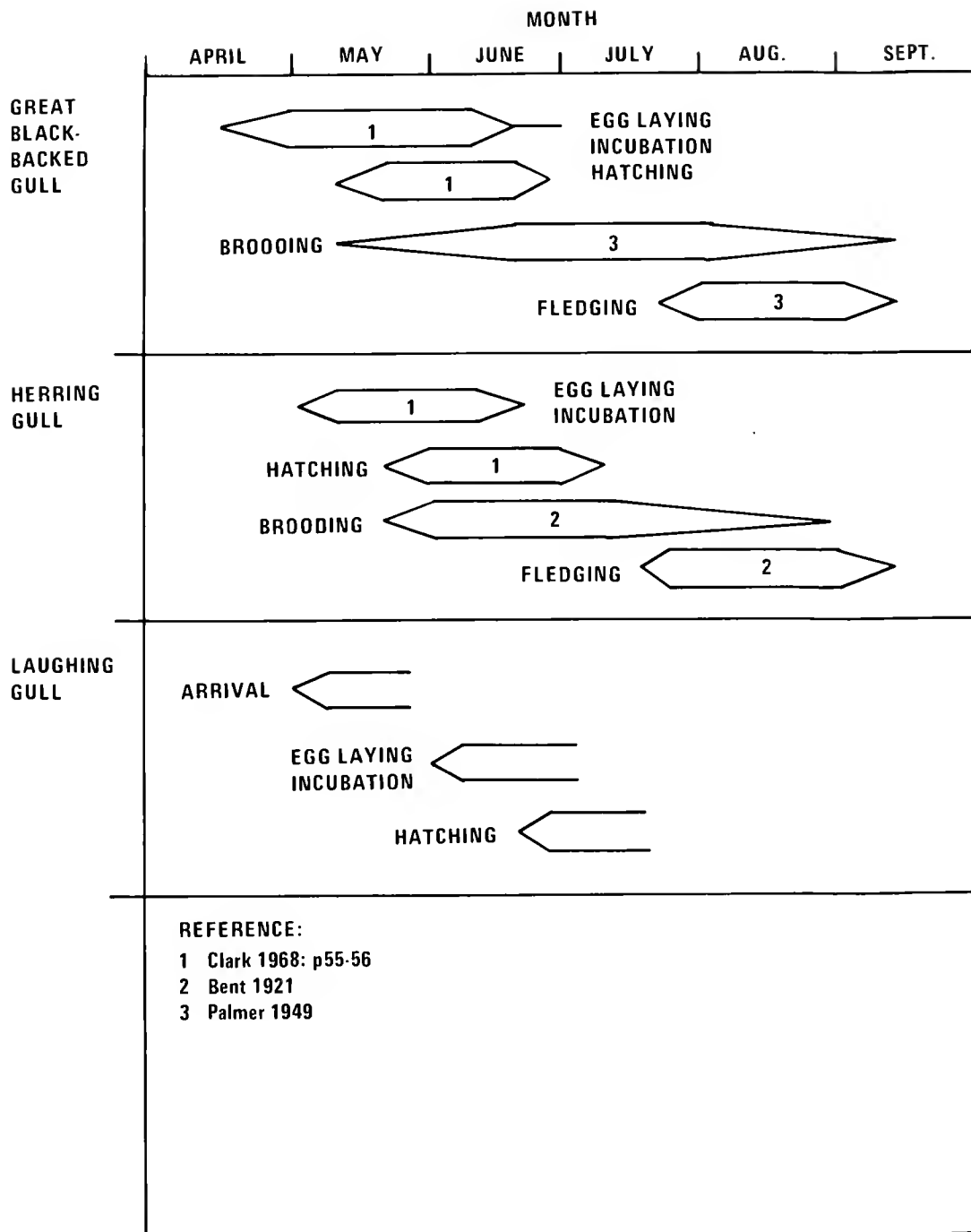


Figure 6. Estimated breeding chronology of three species of gulls nesting in Maine.

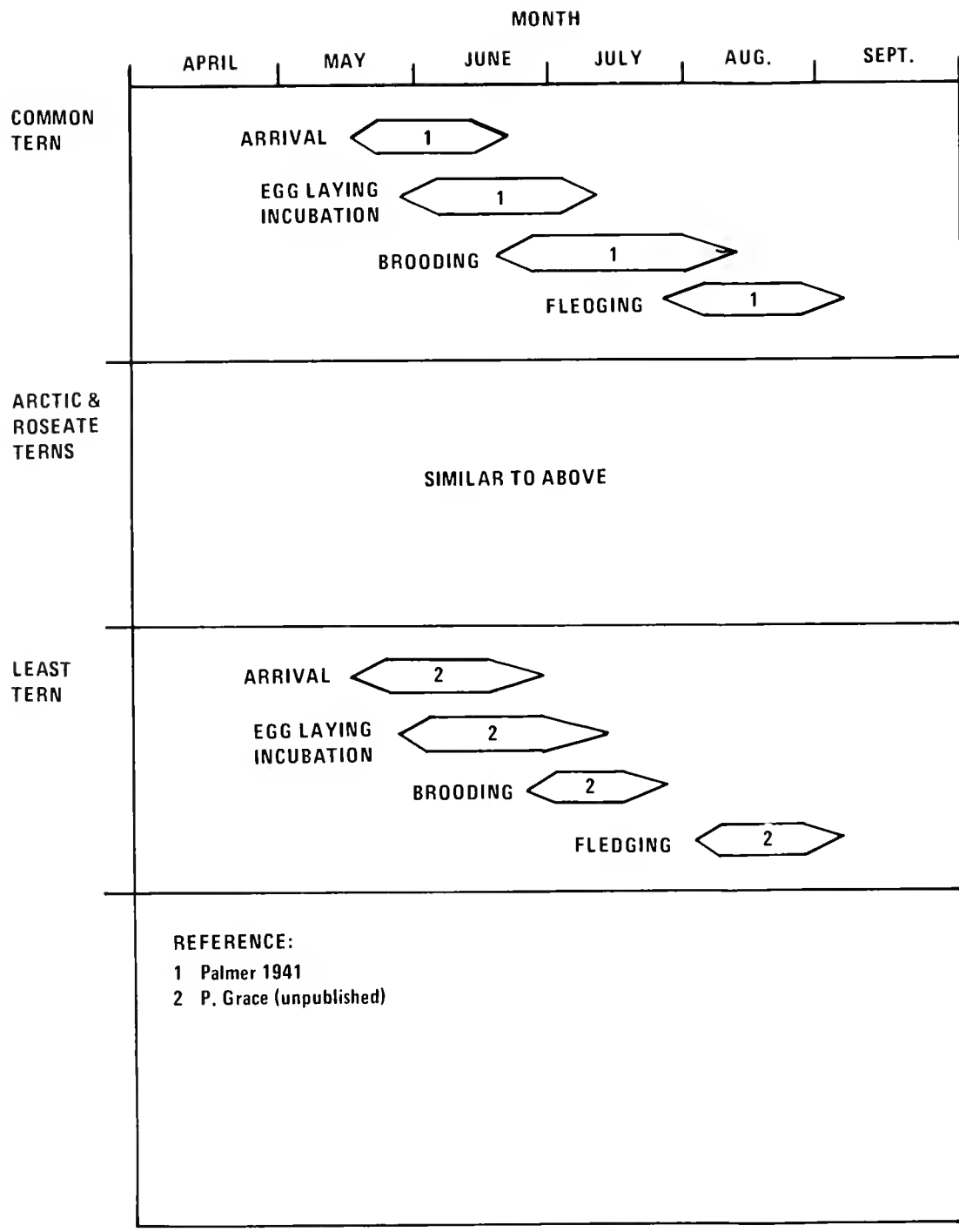


Figure 7. Estimated breeding chronology of four species of terns nesting in Maine.

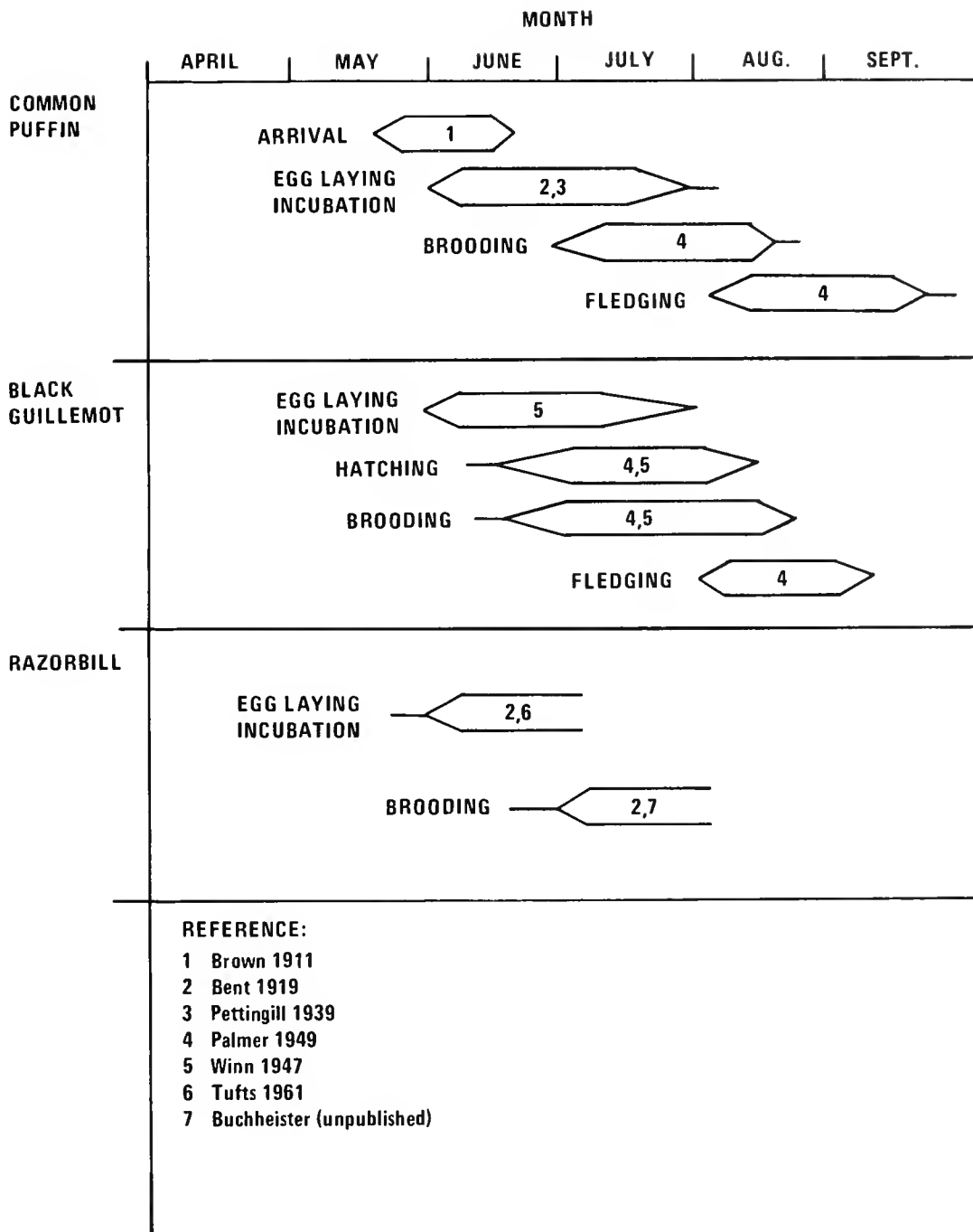


Figure 8. Estimated breeding chronology of three species of alcids nesting in Maine.

Leach's storm-petrel. On the western Atlantic coast, Leach's petrels breed from Labrador to New England. Information about New England petrel populations is meager because Maine is on the southern edge of the breeding range and colonies tend to be isolated. The nocturnal habits of the birds at nesting sites make them difficult to observe and the entrances to nest burrows are often well concealed by vegetation. Actual counts of all adults at petrel colonies have not been made, and only a small percentage of nesting burrows may have been found.

At the turn of the century "enormous" colonies were reported on 7 islands, "large" colonies on 4 and "small" colonies on 6 islands (Drury 1973). In 1931, Norton (unpublished) reported finding occupied burrows on 12 islands. At that time the colony on Great Duck Island was considered the second largest. Allen (1937) reported that when he revisited 5 islands which had been occupied by petrels in 1931, petrels remained at only 3. Drury (unpublished) has found petrels nesting on 15 islands in Maine including Machias Seal Island.

The most intensive attempt to estimate nesting populations of the large petrel colonies was performed by Lesser (unpublished) during the summer of 1977. Based on quadrat studies, he estimated that Great and Little Duck Islands had 14,000 and 4,000 active nests, respectively. These large colonies, plus the smaller colonies found on 15 other islands, indicate that the petrel population in Maine was at least 19,131 pairs.

Double-crested cormorant. Double-crested cormorants were extirpated from the New England coast in the early 19th century (Audubon 1835, Dutcher 1901, Mendall 1936). The birds apparently did not breed again in Maine until 1893 when seven nests were found on Black Horse Ledge (Knight 1900). Between 1903 and 1923 Norton (1924) found no cormorants nesting between Portland and Cutler, Maine.

Exactly when the birds began to nest again in Maine is not known, but it was probably about 1925 (Mendall 1936). In 1931 Norton (unpublished) found 875 pairs nesting on five islands. The population increased rapidly between 1925 and 1945 reaching about 13,000 pairs (Figure 9) in 38 colonies by 1943 (Gross 1944).

Due to the complaints of fishermen, a cormorant control program began in 1944 and continued through 1953 (Gross, unpublished). This program caused a temporary halt in population growth. Drury (1973) estimated that the Maine cormorant population in 1972 was slightly over 13,000 pairs. In the 1970's double-crested cormorants have been controlled locally in eastern Maine by the Maine Department of Inland Fisheries and Wildlife and the U.S. Fish and Wildlife Service. This was necessary because cormorants were found to be eating stocked Atlantic smolt released in the spring in selected rivers and streams. During the 1977 field season an estimated 15,333 pairs of cormorants nested in Maine.

Hérons, egrets and glossy ibises. Wading birds have established both coastal and inland nesting colonies in Maine. Coastal colonies are the largest and contain the most species (H. Tyler, unpublished). Historical



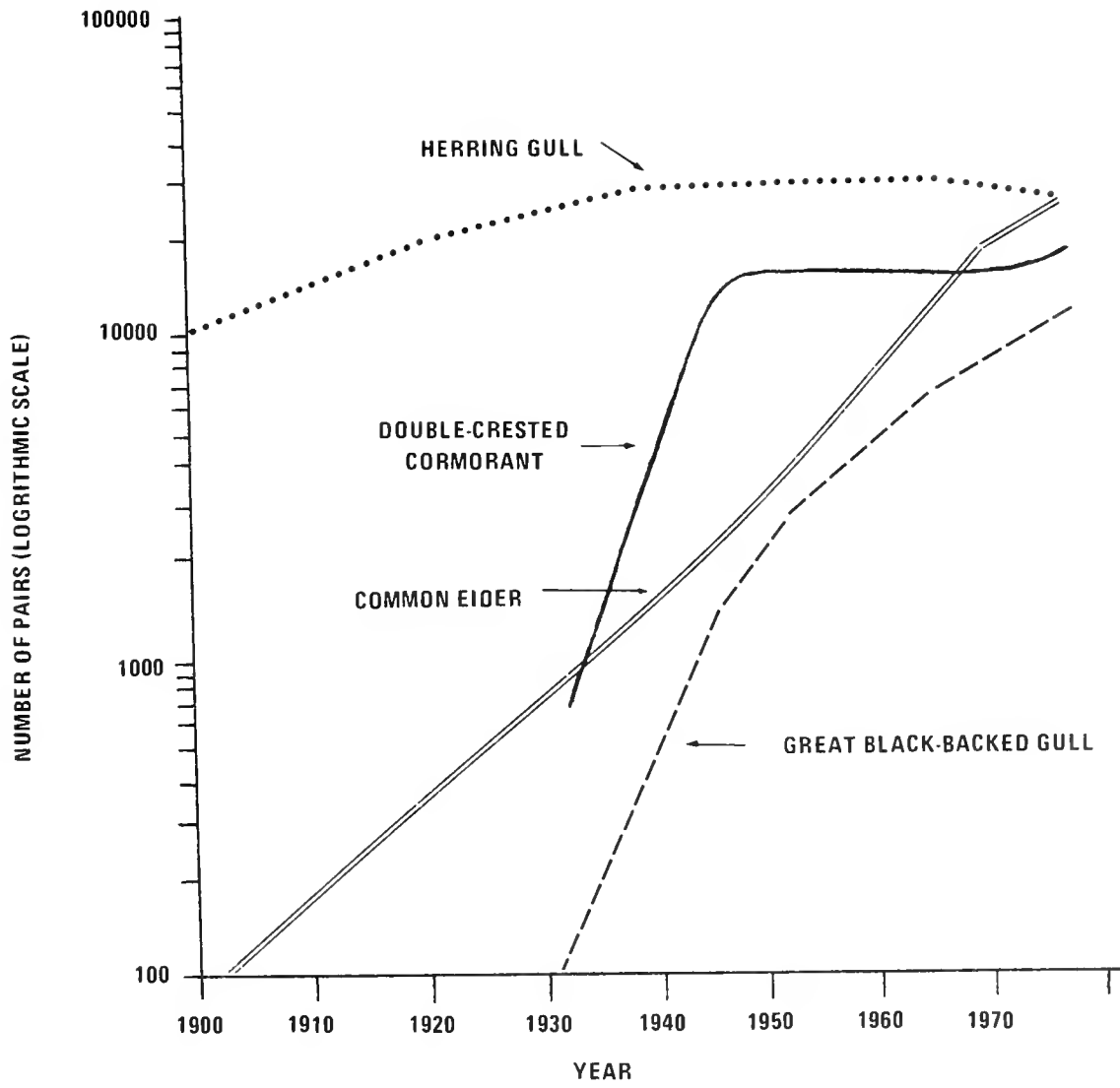


Figure 9. Trends of herring and great black-backed gulls, double-crested cormorants and common eiders nesting in Maine since 1900.

records of heron colonies are sketchy and population estimates are inadequate to establish trends.

Colonies in Maine have not been accurately inventoried due, in part, to the difficulty of finding the colonies and also because heronries have been reported incidental to seabird censuses.

Norton (unpublished) found seven great blue heron colonies in eastern and midcoast Maine in 1931. In 1977, 18 great blue heron colonies were located with a total of 903 pairs. Colony size ranged from 1 to 150 pairs. More inventories will be required in future years to establish the population trend of great blue herons in Maine.

If all major colonies of black-crowned night herons were found during the 1977 inventory, there is little doubt that their population has drastically declined in recent years. Colonies containing several hundred pairs have been reported at various times in the last 75 years (Gross 1923, H.L. Mendall, personal communication). In 1977 only eight coastal colonies were found with an estimated breeding population of 117 pairs.

Snowy egrets were first reported nesting in Maine in 1963 on Stratton Island by Tyler (unpublished). In 1966 snowy egrets also were nesting on Appledore Island at the New Hampshire border. By 1977 colonies were found on Mark Island, Wood Island, Stratton Island, and Appledore Island with 50 pairs at the latter colony. Louisiana herons were found nesting for the first time in Maine on Stratton Island in 1976 and also nested in 1977 (Vickery 1977). Eggs and young were observed. Three pairs of little blue herons pioneered to Stratton Island in 1977 and nested there. They first nested on Appledore Island in 1971 (Erwin, unpublished).

Glossy ibises began nesting in southern Maine in 1972 on Stratton Island and have since nested also on Wood and Appledore Islands. Seventy-five pairs nested on those three islands in 1977.

Common eider. The numbers of common eiders nesting on the Maine coast have fluctuated greatly since Colonial days. Historical accounts mention a gradual decline from the mid-1800's to shortly after the turn of the 20th century. According to Gross (1944), the low point for eiders in Maine was reached about 1907. Norton (1907) found only one breeding colony that year on Old Man Island in eastern Maine. According to the early writers, egg collecting for food and over-shooting at concentration points, especially on breeding islands in the spring, were the major factors causing the decline. Soon after 1907, protection policies were implemented. They included abolition of spring shooting, complete closing of the eider hunting season for several years and the protection of several seabird nesting islands by the National Audubon Society. As a result, by 1915 the population of eiders began to increase (Figure 9).

At first the increase was gradual. Gross (1944) surveyed seabird colonies in Maine and found eiders nesting on 31 islands and probably nesting on 14 others. He estimated the population as "probably" more than 2,000 pairs in 1943. Eiders were nesting on at least 75 islands in 1967 (Mendall 1968), and the population appeared to have stabilized between the mid-1960's and the

mid-1970's at 20,000 pairs (Mendall 1976). In 1977 eider nests were found on 240 islands, and the breeding population was approximately 22,390 pairs.

Great black-backed gull. This large gull has expanded its nesting range southward during this century. No great black-backed gulls nested in New England during the closing decades of the 19th century. Allen and Norton (unpublished) stated that no great black-backed gulls nested in Maine in 1883 or 1914. Norton (1907) reported that this gull was roosting in small numbers on three islands in Maine. Since the mid-1920's breeding black-backs have increased in number along the entire coast of Maine.

Norton (unpublished) found 25-35 pairs nesting at eight different locations in 1931. Gross (1945) estimated that the nesting population in Maine was at least 1,700 pairs on 98 islands in the 1940's. Many of the colonies consisted of only 1 to 5 pairs, but Gross found that black-backs in some areas were in colonies of up to 150 pairs. Drury (1973) estimated that in 1972 the Maine breeding population of great black-backed gulls was approximately 7,500 pairs. In 1977, 220 great black-backed gull colonies were found with an estimated population of 9,847 pairs (Figure 9). Black-backs usually nested in association with herring gulls.

Herring gull. William Drury has had a special interest in the herring gull population of the Northeast, including Maine, and has compiled population estimates for different periods of time based on interpretations of data of various researchers. Allen and Norton (unpublished) stated that an extensive inspection of the coast carried out in the summer of 1903, located only 14 herring gull colonies, numbering about 11,000 pairs. In 1931, Norton (unpublished) conducted another extensive search for seabird colonies and found approximately 26,000 pairs on 65 islands. Drury (1973) noted that some of the estimates by Norton appeared to be exceedingly high for some colonies in the 1920's. Norton (unpublished) suggested that the control of herring gulls was essential for the survival of smaller, more vulnerable terns. Gross (unpublished) managed a gull control program, under contract from the U.S. Fish and Wildlife Service, for a large section of the Maine coast between 1944 and 1952. Drury used Gross's unpublished data on the number of gull eggs per island to estimate the breeding population. The control program appeared to have limited and even reversed the growth of the herring gull population in Maine for a short time. The gull control program may also have accelerated the shift of gulls from the coast of Maine southward to Massachusetts and from outer islands on the coast to ones closer to the mainland (Drury 1973).

The Maine population of herring gulls began to stabilize about 1945 (Figure 9) while the gull population in Massachusetts increased rapidly. The southward extension of the breeding range continued during the 1950's. The shift from outer islands toward centers of human population has continued during the last 20 years. Drury (1973) believed that the population in Maine remained relatively constant for the last 20 years and estimated that 29,000 pairs of herring gulls nested in the coastal region between Portland and the Canadian border in 1972. The 1976-1977 census found herring gulls nesting in 222 colonies with an estimated population of 26,037 pairs.

Laughing gull. Maine is the northern breeding limit of laughing gulls and the population has never been very large. In 1895 there was only one colony, Western Egg Rock, containing seven pairs (Gross 1945). In 1900, approximately four pairs of nesting birds and 50 nonbreeding associates remained in Maine (Norton 1924). By 1920 this colony had increased to several hundred birds. In 1937 about 300 pairs were found on two islands, and in 1940 about 300 pairs nested in the only remaining colony on Little Green Island. Encroachment by herring gulls and grazing of sheep on certain islands resulted in poor nesting conditions. Palmer (1949) reported that after 1944 this species did not nest in Maine. Laughing gulls returned to breed in the early 1950's when sheep were removed from Little Green Island, but the gulls left when sheep were reintroduced.

In 1969 and 1970 there were only three colonies in Maine with approximately 100 breeding pairs (Nisbet 1971). In 1977 six active laughing gull colonies were found with an estimated population of 231 pairs.

Common and Arctic terns. Drury (1973) pointed out several problems that are encountered when one attempts to synthesize historical population data on terns. The foremost of which is that until recently censuses in Maine did not distinguish species (i.e., common or Arctic terns). Also, terns often shift nesting locations from year to year making it difficult to compare data obtained in successive years. Lastly, few researchers have been able to conduct total nest counts; instead, the total number of birds flying above a nesting colony has been estimated (excluding those nonbreeding birds loafing near the colony).

Allen and Norton (unpublished) listed 67 islands on which terns nested in Maine in 1886. By 1890 that number declined to 32 and by 1900 to about 16. Since 1900 terns have nested on 80 different islands in Maine but have occupied no more than 30 in a given year (Drury 1973).

The history of common terns in Maine since 1900 has been one of early increase followed by three decades of decline (Figure 10). From the early 1900's until the 1940's common terns increased. Norton (unpublished) estimated the population in 1931 to be 3,650 pairs in 19 colonies. Several sources indicate that in 1940 the population peaked with approximately 8,000 pairs nesting on 25 islands. From this peak the population declined to about 2,600 pairs on 18 islands in 1972 (Drury 1973). In 1977, 24 common tern colonies with a total estimated breeding population of 2,095 pairs were found. Many of the colonies were small; less than 50 pairs. Harassment by gulls and Norway rats (Rattus norvegicus), overgrazing of cover by sheep, and human disturbance are believed to have contributed to the recent decline. However, common and Arctic terns have "been subject to ceaseless series of cycles with an alternating ebb and flow of their numbers and contraction and expansion of their breeding range" (Norton 1924).

Arctic terns are less abundant now on the Maine coast than they have been at any time in the last 75 years. According to Drury (1973), 5,500 pairs of Arctic terns nested in Maine (including Machias Seal Island) in 1902 and 1911. Allen and Norton (unpublished) censused four major Arctic tern colonies in 1930 and listed 1,650 pairs, excluding Machias Seal Island. Palmer (1949)

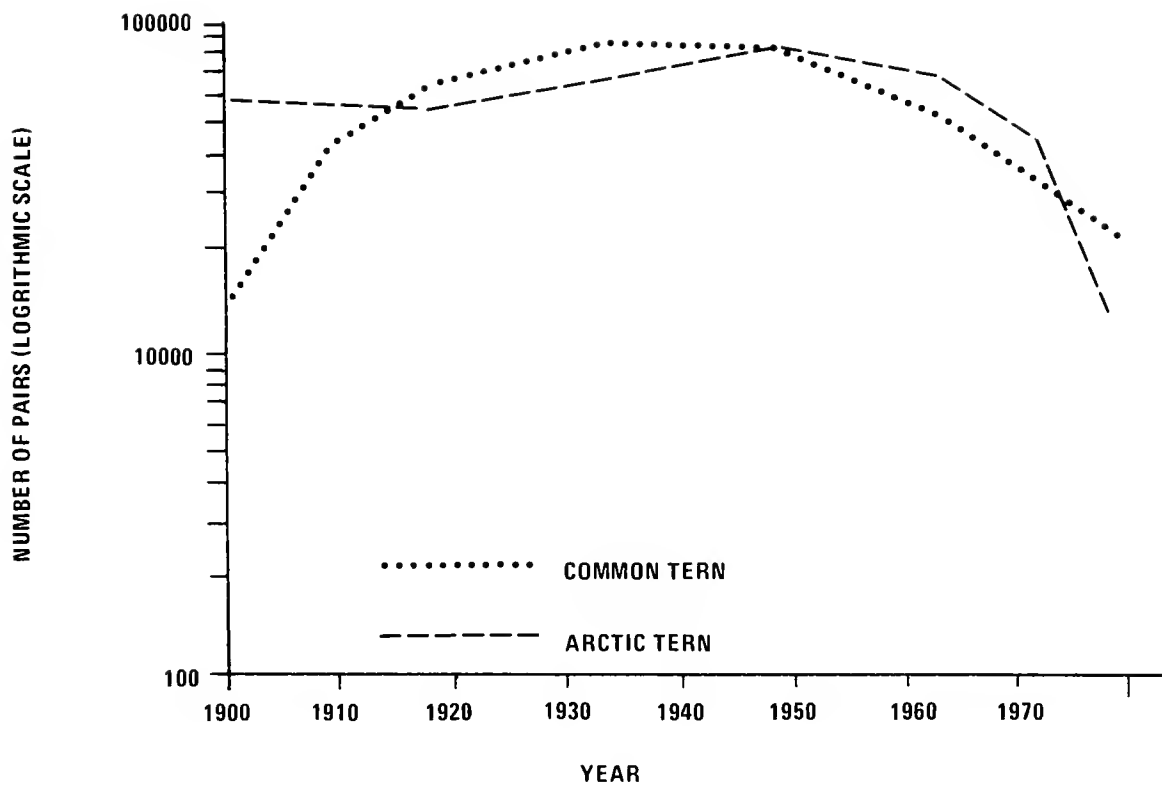


Figure 10. Trends of Arctic and common terns nesting in Maine since 1900.

listed 8,000 pairs at 10 colonies in 1936 (Figure 10). In 1972, 2,900 pairs of Arctic terns were estimated to be nesting on four islands in Maine (Drury 1973). In 1977, nine Arctic tern colonies were located which had a combined estimated breeding population of 1,640 pairs.

Roseate terns. Nisbet (1971) indicated that roseate terns in Maine are at the northern limit of their range. A small number have nested in western Maine for at least the last 40 years. The most persistent colony is on North Sugarloaf Island at the mouth of the Kennebec River, where they nest with common and Arctic terns. A few pairs of roseate terns have nested in association with common terns from time to time at other locations.

In 1931 Norton (unpublished) reported 275 pairs of roseates in 2 colonies on Stratton Island, and North Sugarloaf Island, and 1 bird on Machias Seal Island. North Sugarloaf recently has been the largest colony. Morse (1957) reported five pairs in 1956. In 1971, 150 pairs were seen and in 1972, 75 pairs. In 1977 roseate terns were found nesting on North Sugarloaf, Petit Manan, and Beach islands with a combined population estimate of 80 pairs.

Least tern. The least tern has never been abundant in Maine, probably reaching a high population of 50-60 pairs in 1972 (Dorr, unpublished). Like the roseate tern, it is at the northern limit of its nesting range. Only two colonies were found during this inventory, and they were located on mainland beaches. H. Tyler (personal communication) reports that approximately 10 pairs nested on Popham Beach in 1976. In 1977 this small colony moved from Popham Beach westward to Sprague River Beach. Fourteen pairs also nested on Goose Rocks Beach in 1977.

Razorbill Nesting razorbills have been scarce in Maine in this century (Figure 11). Razorbills have been seen on a number of islands but until recently have nested only on Matinicus Rock.

Norton (1923) reported that between 1894 and 1923 no razorbills nested in Maine. Five pairs nested on Matinicus Rock in 1968 to 1970, and nine pairs in 1974 (C. Buchheister, unpublished). Drury (1973) counted 40 razorbills on Old Man Island in May 1973. However, he did not find evidence of nesting. In July 1976, Old Man Island was visited and young razorbills were seen on the island. We determined that at least 4 pairs had young and about 50 adults were in the vicinity. In May 1977 numerous razorbills were seen on or around the island and several appeared to be nesting; a close inspection was not made due to the vulnerability of the razorbill eggs to gulls. Maine now has two active nesting colonies of razorbills totaling about 25 pairs.

Black guillemot The guillemot population has increased on the Maine coast during recent decades (Figure 11). This increase has been associated primarily with the establishment of new colonies. Norton (unpublished) reported that in 1903 guillemots nested on 14 islands and totaled about 75 pairs. His survey in 1931 recorded 24 nesting islands with a total population of about 300 pairs. The total breeding population was estimated to be approximately 3,400 pairs in 1970-1972 (Drury 1973).

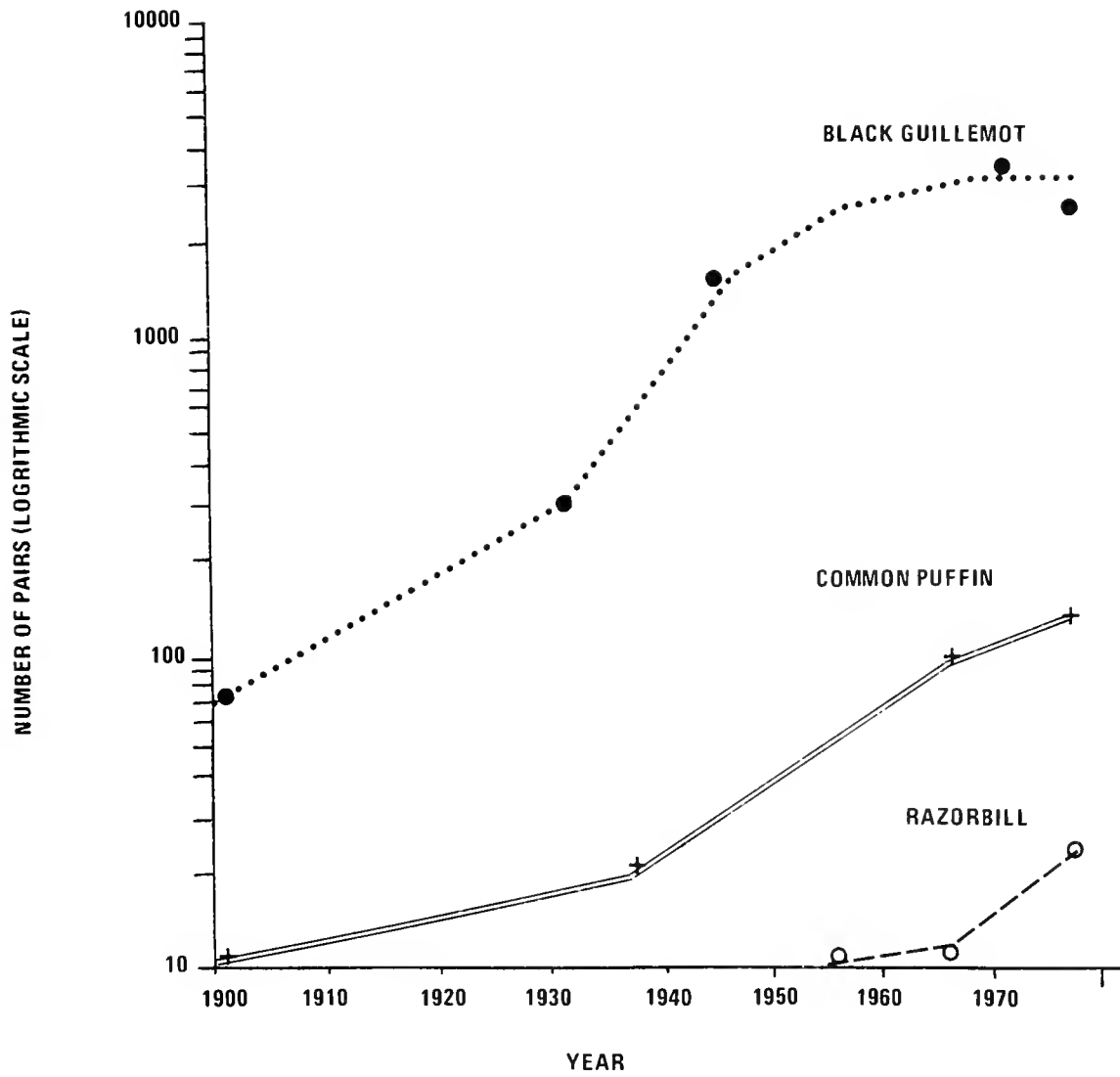


Figure 11. Trends in nesting populations of three species of alcids in Maine (excluding Machias Seal Island) since 1900. Breeding populations were nonexistent or very low prior to the first data point.

During the 1977 nesting season 115 guillemot colonies were found with estimated numbers ranging from 1 to 400 pairs. The estimated population was 2,668 pairs. Because of the difficulty of estimating nesting pairs of black guillemots, population estimates given are presumed to be low.

Guillemots appear to have extended their range westward as the population increased. In 1969 and 1970 Drury (1973) found a few guillemots nesting on Smuttynose Island in the Isles of Shoals group on the Maine-New Hampshire border.

Common puffin Maine islands represent the southern breeding limit of common puffins. Puffins were abundant on some islands in Maine before 1860 (Norton 1923); however, no population estimate was made. Puffins were eliminated from Maine islands by the millinery trade and by fishermen in the late 1800's.

At least six islands have been mentioned in the literature as being used by nesting puffins. Norton (unpublished) reported that the only puffin colony in Maine in 1903 was on Matinicus Rock. The population of puffins on Matinicus Rock has increased slowly during the last 75 years (Figure 11). Three or four pairs nested in 1897, 2 pairs in 1901, 3 pairs in 1904, 20 pairs in 1937, 100 pairs in 1968-70, and approximately 125 pairs in 1977. Machias Seal Island, an offshore island claimed by both the United States and Canada, has been a nesting site for puffins for many years (Brown et al. 1975). Machias Seal Island reportedly had about 30 pairs nesting in 1883 and 150 pairs in 1902. Since then the population has increased to about 750 pairs (Drury 1973). A sharp drop in the nesting puffin population on Machias Seal Island was reported during 1977 by the Canadian Wildlife Service. The cause of the decline was unknown.

Gull predation is believed to be a major factor limiting the spread of the puffin population in Maine (Drury 1973).

#### OWNERSHIP OF WATERBIRD COLONY SITES

In order to determine the potential amount of protection which can be given to waterbird colonies, the ownership of nesting sites was obtained from the Maine Bureau of Public Lands. Ownership was classified according to public or private categories. The name of the government agency or private group was recorded when appropriate.

Approximately 100,813 pairs of colonial waterbirds nested on the Maine coast in 1977. Of those, 73,720 pairs (73%) nested on privately owned property. Most black guillemots, great black-backed gulls, herring gulls, Leach's storm-petrels, common eiders, and wading birds nested on privately owned sites (Table 4). This pattern holds true for the number of colonies as well as for the number of pairs of birds (Table 5).



Table 4. Ownership of sites where colonies were located in 1977, listed by species and numbers of pairs.

| Species and Sample Size (n)       | Public Ownership               |                            |                  |           |                                |                            |                              |           |              | Private Ownership |                    |                |               |
|-----------------------------------|--------------------------------|----------------------------|------------------|-----------|--------------------------------|----------------------------|------------------------------|-----------|--------------|-------------------|--------------------|----------------|---------------|
|                                   | U.S. Fish and Wildlife Service | U.S. National Park Service | U.S. Coast Guard | U.S. Navy | Maine Inland Fish and Wildlife | Maine Parks and Recreation | Maine Bureau of Public Lands | Municipal | Total Public | Audubon Society   | Nature Conservancy | Individual (s) | Total Private |
| Leach's storm-petrel (19,131)     | 347                            | 0                          | 550              | 0         | 0                              | 0                          | 52                           | 0         | 949          | 4,003             | 0                  | 14,179         | 18,182        |
|                                   | 1.8%                           | 0                          | 2.9%             | 0         | 0                              | 0                          | 0.3%                         | 0         | 5.0%         | 20.9%             | 0                  | 74.1%          | 95.0%         |
| Double-crested cormorant (15,333) | 27                             | 0                          | 0                | 0         | 1,912                          | 0                          | 6,580                        | 0         | 8,519        | 1,086             | 194                | 5,534          | 6,814         |
|                                   | 0.2%                           | 0                          | 0                | 0         | 12.5%                          | 0                          | 42.9%                        | 0         | 55.6%        | 7.1%              | 1.3%               | 36.1%          | 44.4%         |
| Great blue heron (903)            | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 115                | 788            | 903           |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 12.7%              | 87.3%          | 100.0%        |
| Little blue heron (4)             | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 0                  | 4              | 4             |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 0                  | 100.0%         | 100.0%        |
| Snowy egret (90)                  | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 28                | 0                  | 62             | 90            |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 31.1%             | 0                  | 68.9%          | 100.0%        |
| Louisiana heron (1)               | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 0                  | 1              | 1             |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 0                  | 100.0%         | 100.0%        |
| Black-crowned night heron (117)   | 0                              | 0                          | 0                | 0         | 0                              | 20                         | 0                            | 0         | 20           | 21                | 0                  | 76             | 97            |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 17.1%                      | 0                            | 0         | 17.1%        | 17.9%             | 0                  | 65.0%          | 82.9%         |
| Glossy ibis (75)                  | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 33                | 0                  | 42             | 75            |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 44.0%             | 0                  | 56.0%          | 100.0%        |
| Common eider (22,390)             | 1,560                          | 200                        | 50               | 0         | 1,665                          | 626                        | 2,004                        | 20        | 6,125        | 715               | 24                 | 15,526         | 16,265        |
|                                   | 7.0%                           | 0.9%                       | 0.2%             | 0         | 7.4%                           | 2.8%                       | 9.0%                         | 0.1%      | 27.4%        | 3.2%              | 0.1%               | 69.3%          | 72.6%         |
| Great black-backed gull (9,847)   | 325                            | 75                         | 75               | 6         | 471                            | 215                        | 78                           | 8         | 2,153        | 988               | 170                | 6,536          | 7,694         |
|                                   | 3.3%                           | 0.8%                       | 0.8%             | 0.1%      | 4.8%                           | 2.2%                       | 9.9%                         | 0.1%      | 21.9%        | 10.0%             | 1.7%               | 66.4%          | 78.1%         |
| Herring gull (26,037)             | 450                            | 150                        | 128              | 594       | 1,598                          | 68                         | 1,893                        | 43        | 4,924        | 1,449             | 100                | 19,564         | 21,113        |
|                                   | 1.7%                           | 0.6%                       | 0.5%             | 2.3%      | 6.1%                           | 0.3%                       | 7.3%                         | 0.2%      | 18.9%        | 5.6%              | 0.4%               | 75.1%          | 81.1%         |
| Laughing gull (231)               | 150                            | 0                          | 40               | 0         | 0                              | 0                          | 0                            | 0         | 190          | 0                 | 0                  | 41             | 41            |
|                                   | 64.9%                          | 0                          | 17.3%            | 0         | 0                              | 0                          | 0                            | 0         | 82.2%        | 0                 | 0                  | 17.7%          | 17.7%         |
| Common tern (2,095)               | 700                            | 0                          | 0                | 0         | 300                            | 350                        | 334                          | 3         | 1,687        | 0                 | 0                  | 408            | 408           |
|                                   | 33.4%                          | 0                          | 0                | 0         | 14.3%                          | 16.7%                      | 15.9%                        | 0.1%      | 80.5%        | 0                 | 0                  | 19.5%          | 19.5%         |
| Arctic tern (1,640)               | 700                            | 0                          | 400              | 0         | 0                              | 350                        | 0                            | 0         | 1,450        | 0                 | 0                  | 190            | 190           |
|                                   | 42.7%                          | 0                          | 24.4%            | 0         | 0                              | 21.3%                      | 0                            | 0         | 88.4%        | 0                 | 0                  | 11.6%          | 11.6%         |
| Roseate tern (80)                 | 20                             | 0                          | 0                | 0         | 0                              | 35                         | 25                           | 0         | 80           | 0                 | 0                  | 0              | 0             |
|                                   | 25.0%                          | 0                          | 0                | 0         | 0                              | 43.8%                      | 31.2%                        | 0         | 100.0%       | 0                 | 0                  | 0              | 0             |
| Least tern (21)                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 14        | 14           | 0                 | 0                  | 7              | 7             |
|                                   | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 66.6%     | 66.6%        | 0                 | 0                  | 33.3%          | 33.3%         |
| Razorbill (25)                    | 0                              | 0                          | 15               | 0         | 0                              | 0                          | 0                            | 0         | 15           | 0                 | 0                  | 10             | 10            |
|                                   | 0                              | 0                          | 60.0%            | 0         | 0                              | 0                          | 0                            | 0         | 60.0%        | 0                 | 0                  | 40.0%          | 40.0%         |
| Black guillemot (2,668)           | 231                            | 5                          | 175              | 0         | 111                            | 0                          | 320                          | 0         | 842          | 298               | 15                 | 1,513          | 1,826         |
|                                   | 8.7%                           | 0.2%                       | 6.6%             | 0         | 4.2%                           | 0                          | 12.0%                        | 0         | 31.6%        | 11.2%             | 0.6%               | 56.7%          | 68.4%         |
| Common puffin (125)               | 0                              | 0                          | 125              | 0         | 0                              | 0                          | 0                            | 0         | 125          | 0                 | 0                  | 0              | 0             |
|                                   | 0                              | 0                          | 100.0%           | 0         | 0                              | 0                          | 0                            | 0         | 100.0%       | 0                 | 0                  | 0              | 0             |
| Subtotal (100,813)                | 4,510                          | 430                        | 1,558            | 600       | 6,057                          | 1,664                      | 12,186                       | 88        | 27,093       | 8,621             | 618                | 64,481         | 73,720        |

Table 5. Ownership of sites where colonies were located in 1977.  
Listed by species and number of colonies.

| Species and Sample Size (n)    | Public Ownership               |                            |                  |           |                                |                            |                              |           |              | Private Ownership |                    |                |               |
|--------------------------------|--------------------------------|----------------------------|------------------|-----------|--------------------------------|----------------------------|------------------------------|-----------|--------------|-------------------|--------------------|----------------|---------------|
|                                | U.S. Fish and Wildlife Service | U.S. National Park Service | U.S. Coast Guard | U.S. Navy | Maine Inland Fish and Wildlife | Maine Parks and Recreation | Maine Bureau of Public Lands | Municipal | Total Public | Audubon Society   | Nature Conservancy | Individual (s) | Total Private |
| Leach's storm-petrel (17)      | 2                              | 0                          | 1                | 0         | 0                              | 0                          | 2                            | 0         | 5            | 2                 | 0                  | 10             | 12            |
| Double-crested cormorant (103) | 1                              | 0                          | 0                | 0         | 13                             | 0                          | 50                           | 0         | 64           | 4                 | 1                  | 34             | 39            |
| Great blue heron (18)          | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 0                 | 3                  | 15             | 18            |
| Little blue heron (2)          | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 1                 | 0                  | 1              | 2             |
| Snowy egret (4)                | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 2                 | 0                  | 2              | 4             |
| Louisiana heron (1)            | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 1                 | 0                  | 0              | 1             |
| Black-crowned night heron (8)  | 0                              | 0                          | 0                | 0         | 0                              | 1                          | 0                            | 0         | 1            | 2                 | 0                  | 5              | 7             |
| Glossy ibis (3)                | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 0         | 0            | 2                 | 0                  | 1              | 3             |
| Common eider (240)             | 4                              | 1                          | 2                | 0         | 19                             | 3                          | 61                           | 1         | 91           | 4                 | 3                  | 142            | 149           |
| Great black-backed gull (220)  | 4                              | 1                          | 1                | 1         | 18                             | 3                          | 78                           | 1         | 107          | 8                 | 2                  | 103            | 113           |
| Herring gull (222)             | 4                              | 1                          | 2                | 2         | 16                             | 2                          | 61                           | 1         | 89           | 8                 | 2                  | 123            | 133           |
| Laughing gull (6)              | 1                              | 0                          | 1                | 0         | 0                              | 0                          | 0                            | 0         | 2            | 0                 | 0                  | 4              | 4             |
| Common tern (24)               | 1                              | 0                          | 0                | 0         | 1                              | 1                          | 8                            | 1         | 12           | 1                 | 0                  | 11             | 12            |
| Arctic tern (9)                | 1                              | 0                          | 1                | 0         | 0                              | 1                          | 0                            | 0         | 3            | 0                 | 0                  | 6              | 6             |
| Roseate tern (3)               | 1                              | 0                          | 0                | 0         | 0                              | 1                          | 0                            | 0         | 2            | 1                 | 0                  | 0              | 1             |
| Least tern (2)                 | 0                              | 0                          | 0                | 0         | 0                              | 0                          | 0                            | 1         | 1            | 0                 | 0                  | 1              | 1             |
| Razorbill (2)                  | 0                              | 0                          | 1                | 0         | 0                              | 0                          | 0                            | 0         | 1            | 0                 | 0                  | 1              | 1             |
| Black guillemot (115)          | 3                              | 1                          | 1                | 0         | 11                             | 0                          | 35                           | 0         | 51           | 4                 | 1                  | 59             | 64            |
| Common puffin (1)              | 0                              | 0                          | 1                | 0         | 0                              | 0                          | 0                            | 0         | 1            | 0                 | 0                  | 0              | 0             |

## DISCUSSION

### IMPORTANCE OF COLONY SITES

Interest in protecting the seabirds and wading birds of Maine has been at a high level ever since the turn of the century. Many ornithologists have estimated populations of some species at frequent enough intervals to determine the increase or reduction of numbers. Even though some early estimates were rough, it is evident that the numbers of alcids, large gulls, cormorants, and eiders have increased substantially from their near extirpation in the late 1800's. The numbers of terns, laughing gulls, and herons do not appear to be as high as in the past. Undoubtedly, certain ecological or environmental factors are operating to limit populations. Population levels of the Leach's storm-petrel have never been accurately assessed in Maine. It is hoped that the numbers of pairs estimated for petrel colonies will provide a base for comparison with future information.

The historical information compiled during this project documents the presence of colonies on particular islands as far back as 75 years and illustrates that some species shift their colonies from one site to another. A study of the historical information confirms the importance of Maine coastal islands for nesting seabirds and wading birds. All islands in Maine, especially the "bird" islands, deserve protection because they are discrete ecological units which can be destroyed very gradually or very quickly depending upon the forces which are operating.

The 1977 inventory data has a current value and a historical value. For those colonies with an historical record, the 1977 species data will add another link to that record. For those colonies without a historical record, the 1977 data will establish a base to add to in the future. The data must be used in light of not only other ecological data but also in terms of man induced changes in the environment. For example, several colonies with long term historical records did not appear to have bird populations as high in 1977 as were recorded in previous decades. By talking to local island owners, predisposing causes for the decline were recognized. Grazing of domestic livestock, burning, timber cutting, quarrying, and house building may result

in a direct disturbance or affect the habitat which in turn affects the bird populations for many years. Other problems of shorter duration such as the presence of rats, mink (Mustela vison), dogs, and cats on islands are frequently too subtle to be noticed except by the experienced observer. Inventory data must be used prudently.

The shifting of colonies from one site to another over a period of years is characteristic of some species, for example terns and herons. To designate present colony sites for protection at the expense of permitting abuse to former or potential colony sites could result in a drastic decline of those species in the future. Groups or clusters of islands should be protected and managed as units for colonial nesting waterbirds.

## INVENTORY METHODS

### Aerial Versus Ground Inventories

In both 1976 and 1977, the inventories were initiated by surveying the coastal islands from a fixed-wing amphibious aircraft. Fixed-wing aircraft were used for the survey because they offered greater flight speed and longer sustained flights than helicopters. Approximately 20 hours of flight time was required to survey the entire study area.

Ground counts of the colonies were considered essential. During the spring surveys at altitudes of less than 100 m and at 80 knots/hour, common puffins, black guillemots, razorbills, laughing gulls, Leach's storm-petrels, and black-crowned night herons were rarely seen because of their low numbers, inconspicuous coloration, small size, or secretive habits. It was also impossible to differentiate common, Arctic, and roseate terns. Therefore, an inventory of Maine's coastal waterbird colonies would be very incomplete without ground verification of species composition and breeding populations.

A flight in a small Bell helicopter during the 1977 nesting season revealed some advantages and disadvantages of surveying the Maine colonies by helicopter. Excellent visibility permitted fairly precise estimates of the number of nests of double-crested cormorants and great blue herons and also adult gulls and terns. However, the advantage to the observer appeared to be outweighed by the disadvantage to the birds. Black guillemots and common eiders were disturbed by the approaching helicopter. Black guillemots took flight and if overtaken by the helicopter dove directly from the air into the water. Substantial losses of nests of common eiders were anticipated due to predation by gulls when incubating eiders were flushed, because gulls returned to the colony sooner than eiders. The nest predation could be somewhat alleviated by landing the helicopter and covering eider nests with down as was done when ground checks were made. The habitat and small size of the islands frequently precluded landing a helicopter without damage to the nesting cover or nests.

## OWNERSHIP OF COLONY SITES

The fact that a large proportion (73%) of the seabirds and wading birds nested in colonies located on privately-owned lands is cause for some concern.

Some owners are aware of the nesting birds on their islands and attempt to restrict their activities during the nesting season. Some people are oblivious to the birds and picnic and camp in the middle of colonies. Disturbance of colonies could become critical in the future as the coast is used by increasing numbers of people for recreation. Both privately-owned colony sites and publicly-owned sites will be affected adversely unless the general public is educated about the destructive nature of visitation to waterbird colonies. Trespass laws should be enforced on publicly-owned colony sites during the nesting season.

## CONCLUSIONS

Coastal islands of Maine provide nesting habitat for more kinds of waterbirds than are found in most other States along the Atlantic coast. Maine is the only Atlantic State with breeding populations of common puffins, black guillemots, razorbills, Leach's storm-petrels, and common eiders. Large populations of great black-backed gulls, herring gulls, and double-crested cormorants also are present.

Data in this report will serve as baseline information from which numbers and the geographical distribution of waterbirds in Maine can be evaluated in the future. This inventory was conducted using techniques that provided the most precise information feasible in the limited time available to cover a large geographical area. Based on the 1976 and 1977 nesting seasons, the locations of the major colonies of each species were found. The precision of the population estimates for most species are believed to be relatively reliable. The nesting chronology, predation, renesting, and the logistics of surveying all colonies in a short time will always preclude exact determinations of breeding populations.

## RECOMMENDATIONS

### POPULATION MONITORING

This report should be useful to Federal, State, and local governments and private organizations interested in the avian component of the coastal ecosystem in Maine. The value of these data will be increased if inventories can be repeated in the future. For most species, inventories at 3-year intervals will be frequent enough unless ecological or environmental changes indicate a need for more frequent inventories.

This 2-year inventory demonstrated that not all waterbird colonies are stable in terms of population numbers and colony location. Future inventories will be most useful when they are based on intensive fieldwork to locate new colonies and document disappearance of others. Censuses of only the known largest colonies of each species would be difficult to interpret and extrapolate in terms of total population trends.

Aerial surveys in fixed-wing aircraft are valuable because they alert observers to the location and size of some of the populations. Ground checks of the colony sites are necessary to determine species composition and estimate nesting pairs. Surveys by helicopter generally are not recommended for the Maine colonies. Aerial photography is useful to estimate populations of some species. Various census techniques should be correlated so that accurate census data can be obtained. Behavioral studies to document nest attentiveness, nesting chronology, and disturbance factors should be made and interpreted to determine how species specific behavior affects population estimates.

### PRODUCTIVITY OF COLONIES

Censuses of breeding adults should be supplemented with long term studies of the productivity of each species. In Maine the productivity of species at different colony sizes, in different habitat regimes, and geographical areas should be investigated. The large colonies may not always be the ones with the highest productivity. Studies of those species which now nest in abundance should have priority over those species which are on the periphery of their historical breeding range and have sparse populations in Maine.

### HABITAT REQUIREMENTS

The nesting requirements of breeding waterbirds are fulfilled by numerous islands in the coastal zone of Maine. Perhaps the best recommendation with regard to habitat requirements is to maintain colony sites in their existing condition, except in those situations where predisposing causes for population decline can be recognized, such as overgrazing by sheep.

Controlled experiments to enhance the nesting substrates for particular species could be attempted. Alcids may be receptive to artificial nesting structures. More raspberry bushes, fallen spruce trees, or wooden shelters might increase eider production by protecting nests from predation.

The habitat requirements for nesting birds during the entire annual cycle should be determined. Roosting and feeding areas should be identified for those species which are permanent residents. Likewise, concentration areas for migrant shorebirds and wintering seabirds should be delineated. Baseline information on food availability and utilization for each species should be gathered.

#### PROTECTION OF WATERBIRD COLONIES

Human Activity. Human activity should be restricted in the vicinity of waterbird colonies from 1 May to 15 July for most birds and even later for terns. Activities which disturb the nesting habitat should be discouraged. Pets and domestic livestock should not be permitted to roam over islands during the nesting seasons.

An educational program to inform the general public, conservation groups and agencies should be initiated. The booklet by P. and F. Buckley (1976) could serve as a model. Owners of colony sites should be contacted to acquaint them of the importance of their land to a nesting population. Private landowners should be encouraged to restrict activity on their property during the nesting season. Signs near colony sites informing the public of the island's use by birds should be erected.

Acquisition. Acquisition programs should endeavor to preserve as many optimum nesting sites as possible for each species. Wherever possible clusters of islands, islets, ledges, and beaches should be acquired to provide for colony expansion and also serve as a buffer from human disturbance. Active and potential colony sites should be evaluated to provide a diversity of nesting habitat in the future for all species.

Cooperative agreements for management of waterbird colonies between Federal agencies and the Maine Department of Inland Fisheries and Wildlife should be encouraged. Leases and easements of publicly-owned colony sites to private individuals or groups should not be allowed. Property title to a colony site should be given to the U.S. Fish and Wildlife Service or the Maine Department of Inland Fisheries and Wildlife directly. These agencies should encourage this type of donation.



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## APPENDIX A

Table A1: Osprey Nesting Islands in 1977.

| Island name                   | Latitude | Longitude | Quadrangle      | Pairs |
|-------------------------------|----------|-----------|-----------------|-------|
| Allen Island                  | 435200   | 691900    | Friendship      | 1     |
| Andrew Island                 | 440848   | 684212    | Deer Isle NW/4  | 1     |
| Andrews Island                | 440000   | 690315    | Rockland        | 2     |
| Anguilla Island               | 443400   | 672820    | Roque Bluffs    | 1     |
| Ash Island                    | 440220   | 690415    | Rockland        | 1     |
| Babson Island                 | 441415   | 683345    | Deer Isle NE/4  | 1     |
| Bar Island                    | 443100   | 674700    | Harrington      | 1     |
| Bar Island Ledge              | 441612   | 684254    | Blue Hill SW/4  | 1     |
| Basket Island                 | 434400   | 701000    | Portland East   | 1     |
| Bear Island                   | 441315   | 684930    | Vinalhaven NE/4 | 1     |
| Bear Island                   | 434700   | 695250    | Orrs Island     | 1     |
| Big Douglas Island            | 442700   | 675120    | Bois Bubert     | 1     |
| Big Freeze Island             | 441215   | 683645    | Deer Isle NE/4  | 1     |
| Birch Island                  | 434920   | 700020    | Orrs Island     | 3     |
| Birch Island                  | 441800   | 684450    | Blue Hill SW/4  | 1     |
| Burnt Island                  | 441115   | 684900    | Vinalhaven NE/4 | 1     |
| Butter Island                 | 441348   | 689730    | Vinalhaven NE/4 | 1     |
| Calf Island                   | 442740   | 680930    | Bar Harbor NW/4 | 1     |
| Carney Island                 | 441630   | 684110    | Blue Hills SW/4 | 1     |
| Clark Island Ledge            | 434900   | 691100    | Tenants Harbor  | 1     |
| Clarke Island                 | 435900   | 691100    | Tenants Harbor  | 1     |
| Crane Island                  | 435350   | 692300    | Louds Island    | 1     |
| Crow Island                   | 441440   | 684430    | Deer Isle NW/4  | 1     |
| Crow Island                   | 441440   | 684430    | Deer Isle NW/4  | 1     |
| Crow Island                   | 435800   | 690500    | Hewetts Island  | 1     |
| Crow Island Ledge             | 434940   | 694230    | Boothbay Harbor | 1     |
| Curtis Island                 | 441200   | 690300    | Camden          | 1     |
| Dix Island                    | 440030   | 690415    | Rockland        | 1     |
| Dram Island                   | 442806   | 681124    | Bar Harbor NW/4 | 1     |
| Dumpling Island               | 440742   | 685342    | Vinalhaven NW/4 | 1     |
| Eagle Island                  | 435540   | 691800    | Friendship      | 1     |
| Eastern Island                | 442400   | 675615    | Petit Manan     | 1     |
| Eastern Mark Island           | 441010   | 683440    | Deer Isle NE/4  | 1     |
| Eaton Island                  | 441610   | 684350    | Blue Hill SW/4  | 2     |
| Eben Island                   | 440120   | 690650    | Rockland        | 1     |
| Ensign Island                 | 441350   | 685745    | Vinalhaven NW/4 | 1     |
| First Chain Link              | 441354   | 684830    | Vinalhaven NE/4 | 1     |
| Franklin Island               | 435330   | 692230    | Louds Island    | 1     |
| George Head                   | 440745   | 683920    | Deer Isle NW/4  | 1     |
| Googins Island                | 434915   | 700450    | Freeport        | 1     |
| Goslings Island               | 434700   | 700245    | Freeport        | 1     |
| Goslings Island               | 434700   | 700230    | Freeport        | 1     |
| Graffam Island                | 435900   | 690530    | Hewetts Island  | 4     |
| Great Spruce Head Island      | 441405   | 684930    | Vinalhaven NE/4 | 3     |
| Great Sprucehead Island Ledge | 441405   | 684930    | Vinalhaven NE/4 | 1     |

(Continued)

Table A1. (Continued)

| Island name                   | Latitude | Longitude | Quadrangle        | Pairs |
|-------------------------------|----------|-----------|-------------------|-------|
| Green Island                  | 442845   | 673300    | Jonesport         | 1     |
| Haddock Island                | 435220   | 692600    | Louds Island      | 1     |
| Haddock Island                | 435220   | 692600    | Louds Island      | 1     |
| Harbor Island                 | 435420   | 692300    | Louds Island      | 2     |
| Hardwood Island               | 440630   | 684000    | Deer Isle SW/4    | 1     |
| Hewett Island                 | 435930   | 690415    | Hewetts Island    | 2     |
| High Island                   | 440045   | 690340    | Rockland          | 2     |
| Hog Island                    | 441042   | 684900    | Vinalhaven NE/4   | 1     |
| Hog Island                    | 435000   | 692600    | Louds Island      | 1     |
| Hog Island                    | 444050   | 672000    | Machias Bay       | 1     |
| Horsehead Island              | 441500   | 685100    | Vinalhaven NE/4   | 1     |
| Ingalls Island                | 442930   | 681215    | Bar Harbor NW/4   | 1     |
| Inner Double Head Shot Island | 443630   | 671550    | Cross Island      | 1     |
| Isle of Springs               | 435145   | 694100    | Boothbay Harbor   | 1     |
| Jim's Island                  | 435730   | 692400    | Louds Island      | 1     |
| Job Island                    | 441330   | 685640    | Vinalhaven NW/4   | 2     |
| Johns Island                  | 435200   | 693200    | Pemaquid Point    | 1     |
| Lakeman Island                | 443430   | 672920    | Roque Bluffs      | 1     |
| Lassell Island                | 441145   | 685740    | Vinalhaven NW/4   | 2     |
| Lime Island                   | 441220   | 685715    | Vinalhaven NW/4   | 1     |
| Little Birch Island           | 434940   | 695920    | Orrs Island       | 2     |
| Little Douglas Island         | 442650   | 675045    | Bois Bubert       | 1     |
| Little Hardwood Island        | 442940   | 673330    | Great Wass Island | 1     |
| Little Green Island           | 435500   | 690218    | Hewetts Island    | 1     |
| Little Mullens Island         | 440945   | 684830    | Vinalhaven NE/4   | 1     |
| Little Pickering Island       | 441530   | 684500    | Blue Hill SW/4    | 1     |
| Little Pond Island            | 440045   | 690300    | Rockland          | 1     |
| Little Spruce Head            | 441354   | 685100    | Vinalhaven NE/4   | 1     |
| Little Whaleboat Island       | 434550   | 700315    | Freeport          | 1     |
| Lower Mark Island             | 434730   | 694030    | Boothbay Harbor   | 1     |
| Mark Island                   | 434330   | 695400    | Bailey Island     | 1     |
| Mark Island                   | 440815   | 684200    | Deer Isle NW/4    | 1     |
| Mark Island                   | 441020   | 685900    | Vinalhaven NW/4   | 2     |
| McGee Island                  | 435500   | 691830    | Friendship        | 1     |
| McGlatherey Island            | 440725   | 683700    | Deer Isle NE/4    | 1     |
| Metinic Island                | 435300   | 690730    | Tenants Harbor    | 1     |
| Minot Island                  | 441430   | 685615    | Vinalhaven NW/4   | 1     |
| Monroe Island                 | 440445   | 690225    | Rockland          | 2     |
| Narrows Island                | 443100   | 674700    | Harrington        | 1     |
| Negro Island                  | 434915   | 693640    | Pemaquid Point    | 1     |
| Norton Island                 | 435900   | 690830    | Tenants Harbor    | 1     |
| Oar Island                    | 435900   | 692430    | Louds Island      | 2     |
| Osprey's Nest Island          | 441354   | 684830    | Vinalhaven NE/4   | 1     |
| Otter Island                  | 440124   | 690430    | Rockland          | 2     |
| Outer Heron Island            | 434630   | 693505    | Pemaquid Point    | 1     |
| Outer Ram Island              | 442920   | 673815    | Drisko Island     | 2     |
| Preble Island                 | 442745   | 681030    | Bar Harbor NW/4   | 3     |

(Continued)

Table A1. (Concluded)

| Island name        | Latitude | Longitude | Quadrangle      | Pairs |
|--------------------|----------|-----------|-----------------|-------|
| Ragged Island      | 434340   | 695620    | Bailey Island   | 1     |
| Ram Island         | 440810   | 683650    | Deer Isle NW/4  | 1     |
| Ram Island         | 442015   | 685520    | Castine SW/4    | 1     |
| Ram Island         | 442930   | 674220    | Drisko Island   | 1     |
| Ram Island         | 442940   | 673830    | Drisko Island   | 3     |
| Resolution Island  | 441530   | 685140    | Castine SE/4    | 1     |
| Roque Island       | 443500   | 673100    | Jonesport       | 1     |
| Saddle Island      | 441040   | 685800    | Vinalhaven NW/4 | 2     |
| Scott Island       | 441700   | 684410    | Blue Hill SW/4  | 1     |
| Scott Island       | 441700   | 684420    | Blue Hill SW/4  | 1     |
| Scrag Island       | 441324   | 685006    | Vinalhaven NE/4 | 1     |
| Sheep Island       | 441645   | 684330    | Blue Hill SW/4  | 1     |
| Sheep Island       | 441030   | 683600    | Deer Isle NE/4  | 2     |
| Sheep Island       | 440350   | 690300    | Rockland        | 6     |
| Sheep Island       | 443036   | 674500    | Addison         | 1     |
| Sheep Island Ledge | 441645   | 684330    | Blue Hill SW/4  | 1     |
| Stave Island       | 442630   | 680800    | Bar Harbor NW/4 | 1     |
| Stone Island       | 443600   | 672215    | Cross Island    | 8     |
| Teel Island        | 435530   | 691730    | Friendship      | 2     |
| Thrumcap Island    | 434915   | 693300    | Pemaquid Point  | 1     |
| Tommy Island       | 442900   | 674840    | Bois Bubert     | 1     |
| Trafton Island     | 442906   | 674922    | Bois Bubert     | 6     |
| Treasure Island    | 442900   | 680930    | Bar Harbor NW/4 | 1     |
| Turkey Island      | 442715   | 675030    | Bois Bubert     | 1     |
| Upper Goose Island | 434820   | 700200    | Freeport        | 3     |
| Warren Island      | 441620   | 685645    | Castine SW/4    | 1     |
| White Island       | 440300   | 685420    | Vinalhaven SW/4 | 1     |
| Williams Island    | 434830   | 695415    | Orrs Island     | 1     |
| Williams Island    | 434845   | 700300    | Freeport        | 1     |
| Wood Island        | 434420   | 694645    | Small Point     | 1     |
| Wreck Island       | 435430   | 692400    | Louds Island    | 2     |
| Yellow Head        | 443830   | 672100    | Machias Bay     | 1     |
| Yellow Island      | 442505   | 680815    | Bar Harbor NW/4 | 1     |

## APPENDIX B

Table B1. Alphabetical list of colony site names.

| Colony site name       | Colony site number | Lat. N | Long. W | Quadrangle        |
|------------------------|--------------------|--------|---------|-------------------|
| Allen Island           | 297 034            | 4352   | 6919    | Friendship        |
| Andrews Island         | 268 100            | 4400   | 6903    | Rockland          |
| Appledore Island       | 324 001            | 4259   | 7037    | Isles of Shoals   |
| Bald Island            | 268 061            | 4411   | 6847    | Vinalhaven NE/4   |
| Bald Rock              | 268 005            | 4425   | 6813    | Bar Harbor NW/4   |
| Ballast Island         | 269 007            | 4434   | 6733    | Jonesport         |
| Bangs Island           | 296 023            | 4343   | 7005    | South Harpswell   |
| Bar Island             | 268 033            | 4415   | 6827    | Mount Desert SW/4 |
| Bar Island             | 297 023            | 4355   | 6917    | Friendship        |
| Bar Island Ledge       | 268 028            | 4416   | 6843    | Blue Hill SW/4    |
| Barred Island          | 268 018            | 4416   | 6850    | Castine SE/4      |
| Barter Island          | 297 026            | 4354   | 6918    | Friendship        |
| Bates Island           | 296 030            | 4342   | 7005    | South Harpswell   |
| Batson Ledges          | 269 036            | 4428   | 6740    | Drisko Island     |
| Beach Island           | 268 020            | 4415   | 6849    | Castine SE/4      |
| Beach Island           | 296 047            | 4326   | 7027    | Biddeford Pool    |
| Bean Island            | 268 004            | 4428   | 6812    | Bar Harbor NW/4   |
| Big Nash Island        | 269 038            | 4428   | 6744    | Drisko Island     |
| Big Smith Island Ledge | 268 109            | 4405   | 6848    | Vinalhaven SE/4   |
| Black Horse Island     | 268 132            | 4402   | 6835    | Deer Isle SE/4    |
| Black Rock             | 297 005            | 4356   | 6922    | Louds Island      |
| Black Rock             | 296 004            | 4348   | 7000    | Freeport          |
| Bluff Island           | 296 038            | 4331   | 7019    | Prouts Neck       |
| Brig Ledge             | 297 064            | 4349   | 6853    | Matinicus         |
| Brimstone Island       | 268 134            | 4407   | 6828    | Swans Island SW/4 |
| Brimstone Island       | 268 118            | 4401   | 6846    | Vinalhaven SE/4   |
| Browney Island         | 269 043            | 4428   | 6737    | Great Wass Island |
| Buck Island            | 268 009            | 4419   | 6847    | Castine SE/4      |
| Bumpkin Island         | 296 050            | 4321   | 7027    | Kennebunkport     |
| Burnt Island           | 297 093            | 4352   | 6917    | Monhegan          |
| Burying Island         | 268 001            | 4433   | 6816    | Ellsworth SE/4    |
| Carvers Island         | 268 113            | 4401   | 6848    | Vinalhaven SE/4   |
| Cat Ledge              | 297 079            | 4348   | 6941    | Boothbay Harbor   |
| Cedarbush Island       | 297 078            | 4349   | 6941    | Boothbay Harbor   |
| Cedar Island           | 324 003            | 4259   | 7036    | Isles of Shoals   |
| Cedar Ledge            | 297 073            | 4345   | 6957    | Orrs Island       |
| Cedar Ledge            | 297 100            | 4345   | 6957    | Bailey Island     |
| Channel Rock           | 268 056            | 4413   | 6849    | Vinalhaven NE/4   |
| Cherry Ledge           | 268 081            | 4411   | 6826    | Swans Island NW/4 |
| Clam Ledges            | 268 089            | 4400   | 6905    | Rockland          |
| Clapboard Island Ledge | 296 010            | 4343   | 7012    | Portland East     |
| Clarks Island          | 296 051            | 4305   | 7043    | Kittery           |
| Colt Head Island       | 268 019            | 4416   | 6850    | Castine SE/4      |

(Continued)



Table B1. (Continued)

| Colony site name      | Colony site number | Lat. N | Long. W | Quadrangle        |
|-----------------------|--------------------|--------|---------|-------------------|
| Compass Island        | 268 055            | 4413   | 6852    | Vinalhaven NE/4   |
| Cranberry Island      | 297 020            | 4356   | 6922    | Friendship        |
| Crane Island          | 297 009            | 4354   | 6923    | Louds Island      |
| Crescent Island       | 268 094            | 4401   | 6902    | Rockland          |
| Crow Island           | 296 011            | 4343   | 7008    | Portland East     |
| Crow Island           | 296 012            | 4341   | 7011    | Portland East     |
| Crow Island           | 296 022            | 4344   | 7006    | South Harpswell   |
| Crow Island           | 268 082            | 4411   | 6826    | Swans Island NW/4 |
| Crow Island           | 297 050            | 4358   | 6905    | Hewetts Island    |
| Curlew Rock           | 269 045            | 4426   | 6736    | Great Wass Island |
| Cutters Nubble        | 268 099            | 4404   | 6903    | Rockland          |
| Dagger Island         | 268 063            | 4411   | 6848    | Vinalhaven NE/4   |
| Dagger Ledge          | 268 062            | 4411   | 6848    | Vinalhaven NE/4   |
| Damariscove Island    | 297 089            | 4346   | 6937    | Pemaquid Point    |
| Deadman Ledge         | 268 112            | 4401   | 6852    | Vinalhaven SE/4   |
| Dix Island            | 268 098            | 4400   | 6904    | Rockland          |
| Dogfish Island Ledge  | 268 102            | 4405   | 6855    | Vinalhaven SW/4   |
| Duck Island           | 296 052            | 4300   | 7036    | Isles of Shoals   |
| Duck Rock             | 297 067            | 4346   | 6955    | Orrs Island       |
| Duck Rocks            | 297 097            | 4347   | 6919    | Monhegan          |
| Dumpling Island       | 268 048            | 4408   | 6854    | Vinalhaven NW/4   |
| Eagle Island          | 296 028            | 4343   | 7003    | South Harpswell   |
| Eagle Island          | 296 041            | 4329   | 7022    | Biddeford Pool    |
| Eagle Island          | 297 021            | 4356   | 6918    | Friendship        |
| Eastern Duck Rock     | 297 096            | 4347   | 6919    | Monhegan          |
| Eastern Egg Rock      | 297 092            | 4352   | 6923    | New Harbor        |
| Eastern Island        | 269 021            | 4424   | 6756    | Petit Manan       |
| East Barge Island     | 268 080            | 4414   | 6826    | Swans Island NW/4 |
| East Brown Cow Island | 297 106            | 4342   | 6953    | Bailey Island     |
| East Goose Rock       | 268 043            | 4411   | 6859    | Vinalhaven NW/4   |
| Eaton Island          | 268 025            | 4416   | 6844    | Blue Hill SW/4    |
| Eaton Island Ledge    | 268 027            | 4416   | 6844    | Blue Hill SW/4    |
| Eaton Island Ledge    | 268 026            | 4416   | 6843    | Blue Hill SW/4    |
| Egg Rock              | 268 072            | 4411   | 6830    | Deer Isle NE/4    |
| Egg Rock              | 268 042            | 4411   | 6853    | Vinalhaven NW/4   |
| Egg Rock              | 269 042            | 4426   | 6738    | Drisko Island     |
| Egg Rock              | 269 027            | 4424   | 6752    | Bois Bubert       |
| Ellingwood Rock       | 297 113            | 4343   | 6946    | Small Point       |
| Elm Island            | 297 069            | 4345   | 6956    | Orrs Island       |
| Fiddle Head           | 268 016            | 4417   | 6847    | Castine SE/4      |
| Fisherman Island      | 268 091            | 4403   | 6902    | Rockland          |
| Fisherman Island      | 297 084            | 4348   | 6936    | Pemaquid Point    |
| Flag Island           | 297 074            | 4345   | 6953    | Orrs Island       |
| Flat Island           | 268 110            | 4404   | 6852    | Vinalhaven SE/4   |
| Flat Island           | 268 006            | 4419   | 6856    | Castine SW/4      |
| Flat Island           | 269 040            | 4427   | 6742    | Drisko Island     |

(Continued)

Table B1. (Continued)

| Colony site name   | Colony site number | Lat. |      | Long.             |   | Quadrangle |
|--------------------|--------------------|------|------|-------------------|---|------------|
|                    |                    | N    | W    | N                 | W |            |
| Fog Island Ledge   | 268 124            | 4406 | 6834 | Deer Isle SE/4    |   |            |
| Folly Island       | 296 048            | 4321 | 7026 | Kennebunkport     |   |            |
| Foster Island      | 269 008            | 4435 | 6724 | Roque Bluffs      |   |            |
| Franklin Island    | 297 012            | 4353 | 6922 | Louds Island      |   |            |
| Freeman Rock       | 269 046            | 4428 | 6743 | Great Wass Island |   |            |
| French Island      | 296 007            | 4347 | 7004 | Freeport          |   |            |
| Garden Island      | 268 097            | 4401 | 6907 | Rockland          |   |            |
| Gooseberry Island  | 268 084            | 4408 | 6828 | Swans Island NW/4 |   |            |
| Gooseberry Island  | 296 046            | 4327 | 7020 | Biddeford Pool    |   |            |
| Gooseberry Island  | 297 112            | 4343 | 6951 | Small Point       |   |            |
| Goose Cove Rock    | 268 034            | 4415 | 6825 | Mount Desert SW/4 |   |            |
| Goose Island       | 268 044            | 4411 | 6857 | Vinalhaven NW/4   |   |            |
| Goose Island       | 269 002            | 4455 | 6702 | Eastpoint         |   |            |
| Goose Nest Island  | 296 017            | 4344 | 7005 | South Harpswell   |   |            |
| Goose Rock         | 268 039            | 4411 | 6903 | Camden            |   |            |
| Goose Rocks Beach  | 296 040            | 4323 | 7025 | Biddeford         |   |            |
| Graffam Island     | 297 048            | 4359 | 6905 | Hewetts Island    |   |            |
| Grass Ledge        | 268 060            | 4412 | 6848 | Vinalhaven NE/4   |   |            |
| Grass Ledge        | 268 054            | 4413 | 6851 | Vinalhaven NE/4   |   |            |
| Grassy Ledge       | 296 005            | 4347 | 7003 | Freeport          |   |            |
| Great Duck Island  | 268 088            | 4409 | 6815 | Swans Island NE/4 |   |            |
| Great Spoon Island | 268 129            | 4402 | 6833 | Deer Isle SE/4    |   |            |
| Green Island       | 268 086            | 4409 | 6820 | Swans Island NE/4 |   |            |
| Green Island       | 268 133            | 4407 | 6827 | Swans Island SW/4 |   |            |
| Green Island       | 268 103            | 4404 | 6855 | Vinalhaven SW/4   |   |            |
| Green Island       | 269 013            | 4434 | 6727 | Roque Bluffs      |   |            |
| Green Island       | 269 028            | 4422 | 6752 | Bois Bubert       |   |            |
| Green Island       | 296 049            | 4321 | 7026 | Kennebunkport     |   |            |
| Green Island Ledge | 268 087            | 4409 | 6820 | Swans Island NE/4 |   |            |
| Green Island Ledge | 268 030            | 4415 | 6830 | Blue Hill SE/4    |   |            |
| Green Ledge        | 268 015            | 4417 | 6850 | Castine SE/4      |   |            |
| Green Ledge        | 268 071            | 4411 | 6833 | Deer Isle NE/4    |   |            |
| Green Ledge        | 268 111            | 4403 | 6847 | Vinalhaven SE/4   |   |            |
| Green Ledge        | 268 126            | 4405 | 6834 | Deer Isle SE/4    |   |            |
| Green Ledge        | 268 104            | 4404 | 6855 | Vinalhaven SW/4   |   |            |
| Green Ledge        | 297 062            | 4350 | 6853 | Matinicus         |   |            |
| Green Rock         | 269 044            | 4426 | 6736 | Great Wass Island |   |            |
| Gull Rock          | 297 018            | 4357 | 6922 | Friendship        |   |            |
| Gunning Rocks      | 297 038            | 4354 | 6915 | Tenants Harbor    |   |            |
| Gunning Rocks      | 297 027            | 4355 | 6915 | Friendship        |   |            |
| Haddock Island     | 297 011            | 4352 | 6926 | Louds Island      |   |            |
| Halibut Rocks      | 268 075            | 4408 | 6831 | Deer Isle NE/4    |   |            |
| Halifax Island     | 269 012            | 4434 | 6727 | Roque Bluffs      |   |            |
| Harbor Island      | 297 007            | 4354 | 6923 | Louds Island      |   |            |
| Hardhead Island    | 268 052            | 4413 | 6845 | Vinalhaven NE/4   |   |            |
| Hardwood Island    | 268 031            | 4418 | 6827 | Mount Desert SW/4 |   |            |

(Continued)

Table B1. (Continued)

| Colony site name              | Colony site number | Lat. N | Long. W | Quadrangle        |
|-------------------------------|--------------------|--------|---------|-------------------|
| Hart Island                   | 297 028            | 4354   | 6916    | Friendship        |
| Hay Island                    | 268 114            | 4401   | 6848    | Vinalhaven SE/4   |
| Hay Ledge                     | 297 039            | 4355   | 6914    | Tenants Harbor    |
| Heron Island                  | 268 036            | 4422   | 6806    | Bar Harbor SE/4   |
| Heron Island                  | 268 136            | 4406   | 6828    | Swans Island SW/4 |
| Heron Island                  | 297 111            | 4343   | 6948    | Small Point       |
| Hewett Island                 | 297 045            | 4359   | 6904    | Hewetts Island    |
| High Sheriff Island           | 268 083            | 4408   | 6828    | Swans Island NW/4 |
| Hog Island                    | 297 042            | 4352   | 6907    | Tenants Harbor    |
| Horse Island                  | 296 020            | 4344   | 7003    | South Harpswell   |
| Horse Head Island             | 268 049            | 4415   | 6851    | Vinalhaven NE/4   |
| House Island                  | 296 014            | 4339   | 7012    | Portland East     |
| Hurricane Island              | 297 046            | 4401   | 6906    | Hewetts Island    |
| Hurricane Island Ledge        | 268 106            | 4402   | 6853    | Vinalhaven SW/4   |
| Inner Double Head Shot Island | 269 017            | 4436   | 6716    | Cross Island      |
| Inner Duck Rock               | 297 098            | 4346   | 6919    | Monhegan          |
| Inner Green Island            | 296 033            | 4340   | 7006    | South Harpswell   |
| Inner Sand Island             | 269 037            | 4428   | 6740    | Drisko Island     |
| Irony Island                  | 296 006            | 4347   | 7002    | Freeport          |
| Islesboro Island              | 268 002            | 4419   | 6854    | Castine NW/4      |
| Jenny Island                  | 297 068            | 4346   | 6954    | Orrs Island       |
| Jims Island                   | 297 001            | 4357   | 6924    | Louds Island      |
| Johns Island                  | 268 135            | 4407   | 6824    | Swans Island SW/4 |
| Johns Island                  | 268 003            | 4424   | 6835    | Blue Hill NE/4    |
| Jones Garden Island           | 297 003            | 4356   | 6923    | Louds Island      |
| Jordans Delight               | 269 026            | 4427   | 6749    | Bois Bubert       |
| Junk of Pork Island           | 296 034            | 4339   | 7007    | South Harpswell   |
| Killick Stone                 | 297 004            | 4356   | 6925    | Louds Island      |
| Large Green Island            | 297 053            | 4354   | 6901    | Hewetts Island    |
| Last Chain Link               | 268 051            | 4414   | 6848    | Vinalhaven NE/4   |
| Libby Island                  | 269 020            | 4435   | 6721    | Cross Island      |
| Little Birch Island           | 296 019            | 4344   | 7003    | South Harpswell   |
| Little Brimstone Island       | 268 119            | 4400   | 6846    | Vinalhaven SE/4   |
| Little Drisko Island          | 269 033            | 4429   | 6740    | Drisko Island     |
| Little Duck Island            | 268 085            | 4410   | 6815    | Swans Island NE/4 |
| Little Eaton Island           | 268 024            | 4416   | 6844    | Blue Hill SW/4    |
| Little Egg Rock               | 297 094            | 4351   | 6920    | Monhegan          |
| Little Franklin Ledge         | 297 013            | 4353   | 6922    | Louds Island      |
| Little Green Island           | 297 052            | 4355   | 6902    | Hewetts Island    |
| Little Hall Island            | 297 008            | 4354   | 6922    | Louds Island      |
| Little Hog Island             | 297 043            | 4352   | 6907    | Tenants Harbor    |
| Little Hurricane Island       | 268 107            | 4402   | 6854    | Vinalhaven SW/4   |
| Lt. Hurricane Island Ledge    | 268 108            | 4402   | 6854    | Vinalhaven SW/4   |
| Little Island                 | 297 019            | 4356   | 6921    | Friendship        |
| Little Mark Island            | 296 031            | 4342   | 7002    | South Harpswell   |
| Little Spoon Island           | 268 130            | 4402   | 6834    | Deer Isle SE/4    |

(Continued)

Table B1. (Continued)

| Colony site name              | Colony site number | Lat. N | Long. W | Quadrangle        |
|-------------------------------|--------------------|--------|---------|-------------------|
| Little Spruce Head Island     | 268 050            | 4414   | 6851    | Vinalhaven NE/4   |
| Long Ledge                    | 297 070            | 4345   | 6954    | Orrs Island       |
| Long Ledge                    | 297 071            | 4345   | 6954    | Orrs Island       |
| Long Ledge                    | 297 029            | 4353   | 6922    | Friendship        |
| Mahoney Island                | 268 070            | 4413   | 6831    | Deer Isle NE/4    |
| Marblehead Island             | 268 092            | 4402   | 6902    | Rockland          |
| Mark Island                   | 297 104            | 4343   | 6954    | Bailey Island     |
| Mark Island                   | 268 045            | 4410   | 6859    | Vinalhaven NW/4   |
| Mason Ledge                   | 268 137            | 4406   | 6829    | Swans Island SW/4 |
| Matinicus Rock                | 297 065            | 4347   | 6851    | Matinicus         |
| McGee Island                  | 297 025            | 4355   | 6918    | Friendship        |
| Medric Rock                   | 268 105            | 4404   | 6856    | Vinalhaven SW/4   |
| Metinic Green Island          | 297 044            | 4352   | 6908    | Tenants Harbor    |
| Metinic Island                | 297 040            | 4353   | 6907    | Tenants Harbor    |
| Middle Douglas Island         | 269 025            | 4427   | 6751    | Bois Bubert       |
| Middle Mark Island            | 297 077            | 4344   | 6942    | Boothbay Harbor   |
| Ministerial Island            | 296 026            | 4343   | 7005    | South Harpswell   |
| Moose Island Ledge            | 268 066            | 4409   | 6841    | Deer Isle NW/4    |
| Mouse Island                  | 268 041            | 4412   | 6857    | Vinalhaven NW/4   |
| Nash Island                   | 269 039            | 4428   | 6745    | Drisko Island     |
| Negro Island                  | 296 045            | 4327   | 7021    | Biddeford Pool    |
| New Harbor Dry Ledge          | 297 091            | 4352   | 6929    | New Harbor        |
| Nightcap Island               | 269 006            | 4431   | 6745    | Harrington        |
| No Mans Land Island           | 297 055            | 4353   | 6852    | Matinicus         |
| North Sugarloaf Island        | 297 075            | 4345   | 6947    | Phippsburg        |
| Nubbins Island                | 297 015            | 4358   | 6921    | Friendship        |
| Oak Island                    | 268 096            | 4401   | 6905    | Rockland          |
| Old Hump Ledges               | 297 032            | 4352   | 6921    | Friendship        |
| Old Hump Ledges               | 297 033            | 4352   | 6921    | Friendship        |
| Old Man                       | 269 004            | 4437   | 6714    | Cutler            |
| Otter Island                  | 268 117            | 4400   | 6848    | Vinalhaven SE/4   |
| Otter Island                  | 268 093            | 4401   | 6904    | Rockland          |
| Outer Double Head Shot Island | 269 018            | 4436   | 6716    | Cross Island      |
| Outer Green Island            | 296 015            | 4339   | 7007    | Portland East     |
| Outer Heron Island            | 297 088            | 4346   | 6935    | Pemaquid Point    |
| Outer Ram Island              | 269 032            | 4429   | 6738    | Drisko Island     |
| Petit Manan Island            | 269 029            | 4422   | 6752    | Bois Bubert       |
| Pinkham Island                | 296 021            | 4344   | 7001    | South Harpswell   |
| Pond Island                   | 297 102            | 4344   | 6958    | Bailey Island     |
| Pond Island                   | 268 012            | 4417   | 6848    | Castine SE/4      |
| Pond Island                   | 268 013            | 4417   | 6848    | Castine SE/4      |
| Pond Island                   | 297 109            | 4344   | 6946    | Small Point       |
| Pot Rock                      | 269 023            | 4429   | 6745    | Bois Bubert       |
| Pudding Island                | 297 059            | 4350   | 6853    | Matinicus         |
| Pulpit Rock                   | 269 016            | 4433   | 6728    | Roque Bluffs      |
| Pumpkin Island                | 297 090            | 4345   | 6935    | Pemaquid Point    |

(Continued)

Table B1. (Continued)

| Colony site name          | Colony site number | Lat. N | Long. W | Quadrangle        |
|---------------------------|--------------------|--------|---------|-------------------|
| Ragged Island             | 297 103            | 4344   | 6956    | Bailey Island     |
| Ragged Island             | 297 061            | 4349   | 6853    | Matinicus         |
| Ram Island                | 296 016            | 4338   | 7011    | Portland East     |
| Ram Island                | 296 036            | 4333   | 7016    | Prout's Neck      |
| Ram Island                | 296 042            | 4328   | 7022    | Biddeford Pool    |
| Ram Island                | 297 101            | 4344   | 6959    | Bailey Island     |
| Ram Island                | 268 040            | 4408   | 6904    | Camden            |
| Ram Island                | 297 017            | 4358   | 6921    | Friendship        |
| Ram Island                | 269 010            | 4434   | 6724    | Roque Bluffs      |
| Red Island                | 269 003            | 4455   | 6705    | Eastport          |
| Resolution Island         | 268 021            | 4415   | 6852    | Castine SE/4      |
| Roberts Island            | 268 116            | 4401   | 6848    | Vinalhaven SE/4   |
| Roberts Island            | 268 115            | 4401   | 6849    | Vinalhaven SE/4   |
| Robinson Rock             | 268 047            | 4410   | 6859    | Vinalhaven NW/4   |
| Robinson Rock Ledge       | 268 046            | 4410   | 6859    | Vinalhaven NW/4   |
| Rogue Island              | 297 066            | 4346   | 6954    | Orrs Island       |
| Rogues Island             | 296 029            | 4342   | 7007    | South Harpswell   |
| Ross Island               | 297 010            | 4354   | 6926    | Louds Island      |
| Rumell Island             | 268 032            | 4416   | 6825    | Mount Desert SW/4 |
| Saddleback Island         | 268 123            | 4406   | 6832    | Deer Isle SE/4    |
| Sally Island              | 269 022            | 4424   | 6757    | Petit Manan       |
| Salter Island             | 297 076            | 4345   | 6945    | Phippsburg        |
| Sand Island               | 296 027            | 4343   | 7006    | South Harpswell   |
| Sand Island               | 297 016            | 4358   | 6921    | Friendship        |
| Scabby Island             | 269 011            | 4434   | 6724    | Roque Bluffs      |
| Schoodic Island           | 268 038            | 4420   | 6802    | Bar Harbor SE/4   |
| Scott Island              | 268 022            | 4417   | 6844    | Blue Hill SW/4    |
| Scrag Island              | 268 053            | 4413   | 6850    | Vinalhaven NE/4   |
| Scraggy Island            | 268 067            | 4408   | 6842    | Deer Isle NW/4    |
| Scraggy Island Ledge      | 268 068            | 4408   | 6842    | Deer Isle NW/4    |
| Seal Island               | 297 047            | 4359   | 6907    | Hewetts Island    |
| Seal Island               | 297 054            | 4353   | 6844    | Matinicus         |
| Seal Ledge                | 297 063            | 4349   | 6853    | Matinicus         |
| Seguin Island             | 297 114            | 4342   | 6945    | Small point       |
| Seven Hundred Acre Island | 268 007            | 4415   | 6858    | Castine SW/4      |
| Shabby Island             | 268 074            | 4410   | 6834    | Deer Isle NE/4    |
| Shag Ledge                | 297 060            | 4351   | 6853    | Matinicus         |
| Shag Ledge                | 269 009            | 4435   | 6725    | Roque Bluffs      |
| Shag Ledges (East)        | 297 030            | 4353   | 6918    | Friendship        |
| Shag Ledges (West)        | 297 031            | 4353   | 6918    | Friendship        |
| Shark Island              | 297 095            | 4351   | 6921    | Monhegan          |
| Sheep Island              | 268 073            | 4410   | 6836    | Deer Isle NE/4    |
| Sheep Island              | 268 065            | 4411   | 6848    | Vinalhaven NE/4   |
| Sheep Island              | 268 090            | 4404   | 6903    | Rockland          |
| Sheep Island Ledge        | 268 023            | 4417   | 6843    | Blue Hill SW/4    |
| Ship Island               | 268 078            | 4414   | 6826    | Swans Island NW/4 |

(Continued)

Table B1. (Continued)

| Colony site name        | Colony site number | Lat. Long. |      | Quadrangle      |
|-------------------------|--------------------|------------|------|-----------------|
|                         |                    | N          | W    |                 |
| Shipstern Island        | 269 024            | 4428       | 6748 | Bois Bubert     |
| Sister Island           | 296 002            | 4349       | 7002 | Freeport        |
| Sister Island Ledge     | 296 001            | 4349       | 7002 | Freeport        |
| Sloop Island            | 268 057            | 4412       | 6849 | Vinalhaven NE/4 |
| Sloop Island Ledge      | 268 058            | 4412       | 6849 | Vinalhaven NE/4 |
| Smuttynose Island       | 268 069            | 4413       | 6831 | Deer Isle NE/4  |
| Smuttynose Island       | 324 002            | 4259       | 7036 | Isles of Shoals |
| Smutty Nose Island      | 297 099            | 4346       | 6919 | Monhegan        |
| South Popplestone Ledge | 268 125            | 4406       | 6834 | Deer Isle SE/4  |
| South Sugarloaf Island  | 297 107            | 4345       | 6946 | Small Point     |
| Southern Mark Island    | 268 122            | 4407       | 6834 | Deer Isle SE/4  |
| Sparrow Island          | 268 120            | 4407       | 6842 | Deer Isle SW/4  |
| Spectacle Island        | 268 011            | 4418       | 6847 | Castine SE/4    |
| Spectacle Island        | 268 010            | 4418       | 6847 | Castine SE/4    |
| Spectacle Island        | 269 001            | 4455       | 6702 | Eastport        |
| Spirit Ledge            | 268 128            | 4405       | 6831 | Deer Isle SE/4  |
| Spoon Ledge             | 268 059            | 4412       | 6850 | Vinalhaven NE/4 |
| Sprague River Beach     | 297 108            | 4344       | 6949 | Small Point     |
| Stage Island            | 296 044            | 4328       | 7021 | Biddeford Pool  |
| Stanley Ledge           | 269 041            | 4427       | 6740 | Drisko Island   |
| Stevens Island          | 269 031            | 4429       | 6740 | Drisko Island   |
| Stevens Island Ledge    | 269 030            | 4430       | 6740 | Drisko Island   |
| Stockman Island         | 296 018            | 4344       | 7005 | South Harpswell |
| Stone Island            | 297 022            | 4356       | 6918 | Friendship      |
| Stone Island            | 269 019            | 4436       | 6722 | Cross Island    |
| Stratton Island         | 296 037            | 4331       | 7019 | Prouts Neck     |
| Sugar Loaves            | 268 101            | 4407       | 6855 | Vinalhaven SW/4 |
| Tenpound Island         | 297 058            | 4351       | 6853 | Matinicus       |
| The Brothers            | 297 035            | 4355       | 6914 | Tenants Harbor  |
| The Brothers            | 297 036            | 4355       | 6914 | Tenants Harbor  |
| The Brothers            | 297 037            | 4355       | 6914 | Tenants Harbor  |
| The Brothers Island     | 269 014            | 4433       | 6726 | Roque Bluffs    |
| The Cuckolds Island     | 297 080            | 4347       | 6939 | Boothbay Harbor |
| The Downfall            | 268 064            | 4411       | 6848 | Vinalhaven NE/4 |
| The Hypocrites          | 297 085            | 4348       | 6935 | Pemaquid Point  |
| The Ladle               | 269 034            | 4429       | 6744 | Drisko Island   |
| The Nubble              | 297 041            | 4352       | 6907 | Tenants Harbor  |
| The Thrumcap            | 268 035            | 4422       | 6811 | Bar Harbor SW/4 |
| Thief Island            | 297 002            | 4356       | 6925 | Louds Island    |
| Thread of Life Rock     | 297 081            | 4350       | 6933 | Pemaquid Point  |
| Three Bush Island       | 268 076            | 4407       | 6831 | Deer Isle NE/4  |
| Thrumcap Island         | 268 008            | 4419       | 6845 | Castine SE/4    |
| Thrumcap Island         | 297 082            | 4349       | 6933 | Pemaquid Point  |
| Thrumcap Island         | 297 083            | 4349       | 6933 | Pemaquid Point  |
| Tommy Island            | 268 095            | 4401       | 6907 | Rockland        |
| Toms Island             | 269 035            | 4429       | 6741 | Drisko Island   |

(Continued)

Table B1. (Concluded)

| Colony site name      | Colony site number | Lat. N | Long. W | Quadrangle        |
|-----------------------|--------------------|--------|---------|-------------------|
| Torrey Island         | 268 029            | 4415   | 6835    | Blue Hill SE/4    |
| Trumpet Island        | 268 077            | 4415   | 6827    | Swans Island NW/4 |
| Turnip Island         | 296 025            | 4343   | 7001    | South Harpswell   |
| Turtle Island         | 268 037            | 4421   | 6806    | Bar Harbor SE/4   |
| Twobush Island        | 297 051            | 4358   | 6905    | Hewetts Island    |
| Twobush Island        | 297 024            | 4355   | 6919    | Friendship        |
| Two Bush Island       | 297 072            | 4345   | 6956    | Orrs Island       |
| Two Bush Island       | 268 017            | 4417   | 6846    | Castine SE/4      |
| Two Bush Island       | 297 056            | 4353   | 6853    | Matinicus         |
| Upper Birch Island    | 269 005            | 4432   | 6746    | Harrington        |
| Upper Flag Island     | 296 024            | 4343   | 7003    | South Harpswell   |
| Upper Goose Island    | 296 003            | 4348   | 7002    | Freeport          |
| Upper Green Island    | 296 008            | 4346   | 7005    | Freeport          |
| Upper Green Island    | 296 009            | 4346   | 7005    | Freeport          |
| Vaill Island          | 296 013            | 4340   | 7010    | Portland East     |
| West Barge Island     | 268 079            | 4414   | 6827    | Swans Island NW/4 |
| West Brothers Island  | 269 015            | 4433   | 6726    | Roque Bluffs      |
| West Brown Cow Island | 296 032            | 4342   | 7004    | South Harpswell   |
| Western Egg Rock      | 297 014            | 4353   | 6925    | Louds Island      |
| Western Island        | 268 014            | 4417   | 6849    | Castine SE/4      |
| West Goose Rocks      | 296 039            | 4323   | 7025    | Biddeford         |
| West Halibut Ledge    | 268 121            | 4407   | 6842    | Deer Isle NW/4    |
| Whale Rock            | 296 035            | 4342   | 7002    | South Harpswell   |
| White Bull Island     | 297 105            | 4343   | 6955    | Bailey Island     |
| White Horse Island    | 268 131            | 4402   | 6834    | Deer Isle SE/4    |
| White Island (Inner)  | 297 086            | 4348   | 6935    | Pemaquid Point    |
| White Island (Outer)  | 297 087            | 4347   | 6935    | Pemaquid Point    |
| White Ledge           | 268 127            | 4405   | 6834    | Deer Isle SE/4    |
| Wooden Ball Island    | 297 057            | 4351   | 6849    | Matinicus         |
| Wood Island           | 296 043            | 4328   | 7020    | Biddeford Pool    |
| Wood Island           | 297 110            | 4344   | 6947    | Small Point       |
| Wreck Island          | 297 006            | 4354   | 6924    | Louds Island      |
| Yellow Ridge Island   | 297 049            | 4359   | 6907    | Hewetts Island    |

## APPENDIX C

Table C1. List of Maine Coastal Island Registry Numbers where waterbird colonies were located in 1977.

| Island <sup>a</sup><br>number | Colony site |                | Lat. |  | Long.<br>W | Quadrangle      |
|-------------------------------|-------------|----------------|------|--|------------|-----------------|
|                               | number      | Island name    | N    |  |            |                 |
| 55-150                        | 297 066     | Rogue I        | 4346 |  | 6954       | Orrs Island     |
| 55-156                        | 297 067     | Duck Rk        | 4346 |  | 6955       | Orrs Island     |
| 55-159                        | 297 068     | Jenny I        | 4346 |  | 6954       | Orrs Island     |
| 55-174                        | 297 069     | Elm I          | 4345 |  | 6956       | Orrs Island     |
| 55-175                        | 297 070     | Long Ld        | 4345 |  | 6954       | Orrs Island     |
| 55-176                        | 297 071     | Long Ld        | 4345 |  | 6954       | Orrs Island     |
| 55-177                        | 297 074     | Flagg I        | 4345 |  | 6953       | Orrs Island     |
| 55-178                        | 297 072     | Two Bush I     | 4345 |  | 6956       | Orrs Island     |
| 55-179                        | 297 073     | Cedar Ld       | 4345 |  | 6957       | Orrs Island     |
| 55-237                        | 296 001     | Sister I Ld    | 4349 |  | 7002       | Freeport        |
| 55-238                        | 296 002     | Sister I       | 4349 |  | 7002       | Freeport        |
| 55-251                        | 296 003     | Upper Goose I  | 4348 |  | 7002       | Freeport        |
| 55-252                        | 296 004     | Black Rk       | 4348 |  | 7000       | Freeport        |
| 55-259                        | 296 005     | Grassy Ld      | 4347 |  | 7003       | Freeport        |
| 55-264                        | 296 006     | Irony I        | 4347 |  | 7002       | Freeport        |
| 55-271                        | 296 007     | French I       | 4347 |  | 7004       | Freeport        |
| 55-275                        | 296 008     | Upper Green I  | 4346 |  | 7005       | Freeport        |
| 55-297                        | 296 009     | Upper Green I  | 4346 |  | 7005       | Freeport        |
| 55-328                        | 296 010     | Clapboard I Ld | 4343 |  | 7012       | Portland East   |
| 55-331                        | 296 011     | Crow I         | 4342 |  | 7008       | Portland East   |
| 55-358                        | 296 012     | Crow I         | 4341 |  | 7011       | Portland East   |
| 55-369                        | 296 013     | Vaill I        | 4340 |  | 7010       | Portland East   |
| 55-381                        | 296 014     | House I        | 4339 |  | 7012       | Portland East   |
| 55-383                        | 296 016     | Ram I          | 4338 |  | 7011       | Portland East   |
| 55-386                        | 296 015     | Outer Green I  | 4339 |  | 7007       | Portland East   |
| 55-400                        | 296 017     | Goose Nest I   | 4344 |  | 7005       | South Harpswell |
| 55-401                        | 296 018     | Stockman I     | 4344 |  | 7005       | South Harpswell |
| 55-404                        | 296 021     | Pinkham I      | 4344 |  | 7001       | South Harpswell |
| 55-405                        | 296 020     | Horse I        | 4344 |  | 7003       | South Harpswell |
| 55-406                        | 296 019     | Little Birch I | 4344 |  | 7003       | South Harpswell |
| 55-411                        | 296 022     | Crow I         | 4344 |  | 7006       | South Harpswell |
| 55-412                        | 296 023     | Bangs I        | 4343 |  | 7005       | South Harpswell |
| 55-415                        | 296 024     | Upper Flag I   | 4343 |  | 7003       | South Harpswell |
| 55-424                        | 296 026     | Ministerial I  | 4343 |  | 7005       | South Harpswell |
| 55-426                        | 296 027     | Sand I         | 4343 |  | 7006       | South Harpswell |
| 55-427                        | 296 025     | Turnip I       | 4343 |  | 7001       | South Harpswell |
| 55-437                        | 296 031     | Little Mark I  | 4342 |  | 7002       | South Harpswell |
| 55-439                        | 296 028     | Eagle I        | 4343 |  | 7003       | South Harpswell |
| 55-440                        | 296 030     | Bates I        | 4342 |  | 7005       | South Harpswell |

(Continued)

<sup>a</sup>Island numbers and names designated by the Coastal Island Registry Program, Maine Bureau of Public Lands.



Table C1. (Continued)

| Island number | Colony site |                  | Lat. N | Long. W | Quadrangle           |
|---------------|-------------|------------------|--------|---------|----------------------|
|               | number      | Island name      |        |         |                      |
| 55-441        | 296 029     | Rogues I         | 4342   | 7007    | South Harpswell      |
| 55-445        | 296 035     | Whale Rk         | 4342   | 7002    | South Harpswell      |
| 55-458        | 296 032     | West Brown Cow I | 4342   | 7004    | South Harpswell      |
| 55-486        | 296 034     | Junk of Pork I   | 4339   | 7007    | South Harpswell      |
| 55-499        | 296 033     | Inner Green I    | 4340   | 7006    | South Harpswell      |
| 55-605        | 297 101     | Ram I            | 4344   | 6959    | Bailey Island        |
| 55-608        | 297 100     | Cedar Lds        | 4345   | 6957    | Bailey Island        |
| 55-615        | 297 102     | Pond I           | 4344   | 6958    | Bailey Island        |
| 55-626        | 297 103     | Ragged I         | 4344   | 6956    | Bailey Island        |
| 55-628        | 297 105     | White Bull I     | 4343   | 6955    | Bailey Island        |
| 55-630        | 297 104     | Mark I           | 4343   | 6954    | Bailey Island        |
| 55-632        | 297 106     | East Brown Cow I | 4342   | 6953    | Bailey Island        |
| 59-001        | 268 128     | Spirit Ld        | 4405   | 6831    | SE/4 Deer Isle 15    |
| 59-037        | 269 022     | Sally I          | 4424   | 6757    | Petit Manan          |
| 59-062        | 268 038     | Schoodic I       | 4420   | 6802    | SE/4 Bar Harbor 15   |
| 59-065        | 268 037     | Turtle I         | 4421   | 6806    | SE/4 Bar Harbor 15   |
| 59-069        | 268 036     | Heron I          | 4422   | 6806    | SE/4 Bar Harbor 15   |
| 59-084        | 268 001     | Burying I        | 4433   | 6816    | SE/4 Ellsworth 15    |
| 59-190        | 268 004     | Bean I           | 4428   | 6812    | NW/4 Bar Harbor 15   |
| 59-192        | 268 005     | Bald Rk          | 4425   | 6813    | NW/4 Bar Harbor 15   |
| 59-236        | 268 031     | Hardwood I       | 4418   | 6827    | SW/4 Mount Desert 15 |
| 59-238        | 268 032     | Rumell I         | 4416   | 6825    | SW/4 Mount Desert 15 |
| 59-239        | 268 034     | Goose Cove Rk    | 4415   | 6825    | SW/4 Mount Desert 15 |
| 59-244        | 268 033     | Bar I            | 4415   | 6827    | SW/4 Mount Desert 15 |
| 59-300        | 268 035     | The Thrumcap     | 4422   | 6811    | SW/4 Bar Harbor 15   |
| 59-340        | 268 077     | Trumpet I        | 4415   | 6827    | NW/4 Swans Island 15 |
| 59-341        | 268 078     | Ship I           | 4414   | 6826    | NW/4 Swans Island 15 |
| 59-342        | 268 080     | East Barge I     | 4414   | 6826    | NW/4 Swans Island 15 |
| 59-343        | 268 079     | West Barge I     | 4414   | 6827    | NW/4 Swans Island 15 |
| 59-356        | 268 081     | Cherry Ld        | 4411   | 6826    | NW/4 Swans Island 15 |
| 59-359        | 268 082     | Crow I           | 4411   | 6826    | NW/4 Swans Island 15 |
| 59-397        | 268 083     | High Sheriff I   | 4408   | 6828    | NW/4 Swans Island 15 |
| 59-398        | 268 084     | Gooseberry I     | 4408   | 6828    | NW/4 Swans Island 15 |
| 59-439        | 268 085     | Little Duck I    | 4410   | 6815    | NE/4 Swans Island 15 |
| 59-440        | 268 088     | Great Duck I     | 4409   | 6815    | NE/4 Swans Island 15 |
| 59-445        | 268 087     | Green I Ld       | 4409   | 6820    | NE/4 Swans Island 15 |
| 59-446        | 268 086     | Green I          | 4409   | 6820    | NE/4 Swans Island 15 |
| 59-478        | 268 133     | Green I          | 4407   | 6827    | SW/4 Swans Island 15 |
| 59-479        | 268 134     | Brimstone I      | 4407   | 6828    | SW/4 Swans Island 15 |
| 59-480        | 268 136     | Heron I          | 4406   | 6828    | SW/4 Swans Island 15 |
| 59-481        | 268 137     | Mason Ld         | 4406   | 6829    | SW/4 Swans Island 15 |
| 59-483        | 268 135     | Johns I          | 4407   | 6824    | SW/4 Swans Island 15 |
| 59-622        | 268 003     | Johns I          | 4424   | 6835    | NE/4 Blue Hill 15    |
| 59-669        | 268 008     | Thrumcap I       | 4419   | 6845    | SE/4 Castine 15      |

(Continued)

Table C1. (Continued)

| Island number | Colony site |                    | Lat. N | Long. W | Quadrangle         |
|---------------|-------------|--------------------|--------|---------|--------------------|
|               | number      | Island name        |        |         |                    |
| 59-672        | 268 009     | Buck I             | 4419   | 6847    | SE/4 Castine 15    |
| 59-673        | 268 011     | Spectacle I        | 4418   | 6847    | SE/4 Castine 15    |
| 59-674        | 268 015     | Green Ld           | 4417   | 6850    | SE/4 Castine 15    |
| 59-675        | 268 014     | Western I          | 4417   | 6849    | SE/4 Castine 15    |
| 59-676        | 268 012     | Pond I             | 4417   | 6848    | SE/4 Castine 15    |
| 59-677        | 268 013     | Pond I             | 4417   | 6848    | SE/4 Castine 15    |
| 59-680        | 268 016     | Fiddle Head        | 4417   | 6847    | SE/4 Castine 15    |
| 59-681        | 268 017     | Two Bush I         | 4417   | 6846    | SE/4 Castine 15    |
| 59-684        | 268 018     | Barred I           | 4416   | 6850    | SE/4 Castine 15    |
| 59-685        | 268 019     | Colt Head I        | 4416   | 6850    | SE/4 Castine 15    |
| 59-686        | 268 021     | Resolution I       | 4415   | 6852    | SE/4 Castine 15    |
| 59-687        | 268 020     | Beach I            | 4415   | 6849    | SE/4 Castine 15    |
| 59-688        | 268 010     | Spectacle I        | 4418   | 6847    | SE/4 Castine 15    |
| 59-709        | 268 022     | Scott I            | 4417   | 6844    | SW/4 Blue Hill 15  |
| 59-711        | 268 023     | Sheep I Ld         | 4417   | 6843    | SW/4 Blue Hill 15  |
| 59-713        | 268 024     | Little Eaton I     | 4416   | 6844    | SW/4 Blue Hill 15  |
| 59-714        | 268 025     | Eaton I            | 4416   | 6844    | SW/4 Blue Hill 15  |
| 59-716        | 268 027     | Eaton I Ld         | 4416   | 6844    | SW/4 Blue Hill 15  |
| 59-717        | 268 026     | Eaton I Ld         | 4416   | 6843    | SW/4 Blue Hill 15  |
| 59-718        | 268 028     | Bar I Ld           | 4416   | 6843    | SW/4 Blue Hill 15  |
| 59-750        | 268 030     | Green I Ld         | 4415   | 6830    | SE/4 Blue Hill 15  |
| 59-758        | 268 029     | Torrey I           | 4415   | 6835    | SE/4 Blue Hill 15  |
| 59-770        | 268 049     | Horse Head I       | 4415   | 6851    | NE/4 Vinalhaven 15 |
| 59-772        | 268 050     | Little Spruce Hd I | 4414   | 6851    | NE/4 Vinalhaven 15 |
| 59-782        | 268 052     | Hardhead I         | 4413   | 6845    | NE/4 Vinalhaven 15 |
| 59-783        | 268 051     | Last Chain Link    | 4414   | 6848    | NE/4 Vinalhaven 15 |
| 59-788        | 268 053     | Scrag I            | 4413   | 6850    | NE/4 Vinalhaven 15 |
| 59-789        | 268 054     | Grass Ld           | 4413   | 6851    | NE/4 Vinalhaven 15 |
| 59-790        | 268 055     | Compass I          | 4413   | 6852    | NE/4 Vinalhaven 15 |
| 59-792        | 268 056     | Channel Rk         | 4413   | 6849    | NE/4 Vinalhaven 15 |
| 59-795        | 268 057     | Sloop I            | 4412   | 6849    | NE/4 Vinalhaven 15 |
| 59-796        | 268 058     | Sloop I Ledge      | 4412   | 6849    | NE/4 Vinalhaven 15 |
| 59-802        | 268 060     | Grass Ld           | 4412   | 6848    | NE/4 Vinalhaven 15 |
| 59-803        | 268 061     | Bald I             | 4411   | 6847    | NE/4 Vinalhaven 15 |
| 59-830        | 268 066     | Moose I Ld         | 4409   | 6841    | NW/4 Deer Isle 15  |
| 59-836        | 268 067     | Scraggy I          | 4408   | 6842    | NW/4 Deer Isle 15  |
| 59-837        | 268 068     | Scraggy I Ld       | 4408   | 6842    | NW/4 Deer Isle 15  |
| 59-931        | 268 069     | Smuttynose I       | 4413   | 6831    | NE/4 Deer Isle 15  |
| 59-933        | 268 070     | Mahoney I          | 4413   | 6831    | NE/4 Deer Isle 15  |
| 59-949        | 268 071     | Green Ld           | 4411   | 6833    | NE/4 Deer Isle 15  |
| 59-950        | 268 072     | Egg Rk             | 4411   | 6830    | NE/4 Deer Isle 15  |
| 59-953        | 268 073     | Sheep I            | 4410   | 6836    | NE/4 Deer Isle 15  |
| 59-980        | 268 076     | Three Bush I       | 4407   | 6831    | NE/4 Deer Isle 15  |
| 59-991        | 268 075     | Halibut Rks        | 4408   | 6831    | NE/4 Deer Isle 15  |

(Continued)

Table C1. (Continued)

| Island number | Colony site |                    | Lat.<br>N | Long.<br>W | Quadrangle         |
|---------------|-------------|--------------------|-----------|------------|--------------------|
|               | number      | Island name        |           |            |                    |
| 59-996        | 268 074     | Shabby I           | 4410      | 6834       | NE/4 Deer Isle 15  |
| 59-999        | 268 123     | Saddleback I       | 4406      | 6832       | SE/4 Deer Isle 15  |
| 63-011        | 268 059     | Spoon Ld           | 4412      | 6850       | NE/4 Vinalhaven 15 |
| 63-014        | 268 062     | Dagger Ld          | 4411      | 6848       | NE/4 Vinalhaven 15 |
| 63-015        | 268 063     | Dagger I           | 4411      | 6848       | NE/4 Vinalhaven 15 |
| 63-016        | 268 064     | The Downfall       | 4411      | 6848       | NE/4 Vinalhaven 15 |
| 63-018        | 268 065     | Sheep I            | 4411      | 6848       | NE/4 Vinalhaven 15 |
| 63-089        | 268 109     | Big Smith I Ld     | 4405      | 6848       | SE/4 Vinalhaven 15 |
| 63-106        | 268 110     | Flat I             | 4404      | 6852       | SE/4 Vinalhaven 15 |
| 63-135        | 268 111     | Green Ld           | 4403      | 6847       | SE/4 Vinalhaven 15 |
| 63-166        | 268 113     | Carvers I          | 4401      | 6848       | SE/4 Vinalhaven 15 |
| 63-169        | 268 114     | Hay I              | 4401      | 6848       | SE/4 Vinalhaven 15 |
| 63-170        | 268 112     | Deadman Ld         | 4401      | 6852       | SE/4 Vinalhaven 15 |
| 63-174        | 268 116     | Roberts I          | 4401      | 6848       | SE/4 Vinalhaven 15 |
| 63-175        | 268 115     | Roberts I          | 4401      | 6849       | SE/4 Vinalhaven 15 |
| 63-176        | 268 118     | Brimstone I        | 4401      | 6846       | SE/4 Vinalhaven 15 |
| 63-179        | 268 119     | Little Brimstone I | 4400      | 6846       | SE/4 Vinalhaven 15 |
| 63-183        | 268 117     | Otter I            | 4400      | 6848       | SE/4 Vinalhaven 15 |
| 63-200        | 268 120     | Sparrow I          | 4407      | 6842       | SW/4 Deer Isle 15  |
| 63-206        | 268 121     | W Halibut Ld       | 4407      | 6842       | SW/4 Deer Isle 15  |
| 63-260        | 268 122     | Southern Mark I    | 4407      | 6834       | SE/4 Deer Isle 15  |
| 63-263        | 268 124     | Fog I Ld           | 4406      | 6834       | SE/4 Deer Isle 15  |
| 63-265        | 268 125     | Popplestone Ld     | 4406      | 6834       | SE/4 Deer Isle 15  |
| 63-266        | 268 126     | Green Ld           | 4405      | 6834       | SE/4 Deer Isle 15  |
| 63-267        | 268 127     | White Ld           | 4405      | 6834       | SE/4 Deer Isle 15  |
| 63-287        | 268 129     | Great Spoon I      | 4402      | 6833       | SE/4 Deer Isle 15  |
| 63-289        | 268 130     | Little Spoon I     | 4402      | 6834       | SE/4 Deer Isle 15  |
| 63-293        | 268 131     | White Horse I      | 4402      | 6834       | SE/4 Deer Isle 15  |
| 63-294        | 268 132     | Black Horse I      | 4402      | 6835       | SE/4 Deer Isle 15  |
| 63-314        | 268 039     | Goose Rk           | 4411      | 6903       | Camden             |
| 63-323        | 268 040     | Ram I              | 4408      | 6904       | Camden             |
| 63-330        | 268 041     | Mouse I            | 4412      | 6857       | NW/4 Vinalhaven 15 |
| 63-333        | 268 042     | Egg Rk             | 4411      | 6853       | NW/4 Vinalhaven 15 |
| 63-335        | 268 043     | East Goose Rk      | 4411      | 6859       | NW/4 Vinalhaven 15 |
| 63-336        | 268 044     | Goose I            | 4411      | 6857       | NW/4 Vinalhaven 15 |
| 63-339        | 268 045     | Mark I             | 4410      | 6859       | NW/4 Vinalhaven 15 |
| 63-340        | 268 046     | Robinson Rk Ld     | 4410      | 6859       | NW/4 Vinalhaven 15 |
| 63-341        | 268 047     | Robinson Rk        | 4410      | 6859       | NW/4 Vinalhaven 15 |
| 63-351        | 268 048     | Dumpling I         | 4408      | 6854       | NW/4 Vinalhaven 15 |
| 63-393        | 268 090     | Sheep I            | 4404      | 6903       | Rockland           |
| 63-398        | 268 099     | Cutters Nubble     | 4404      | 6903       | Rockland           |
| 63-402        | 268 091     | Fisherman I        | 4403      | 6902       | Rockland           |
| 63-403        | 268 092     | Marblehead I       | 4402      | 6902       | Rockland           |
| 63-410        | 268 093     | Otter I            | 4401      | 6904       | Rockland           |

(Continued)

Table C1. (Continued)

| Island number | Colony site |                       | Lat. N | Long. W | Quadrangle         |
|---------------|-------------|-----------------------|--------|---------|--------------------|
|               | number      | Island name           |        |         |                    |
| 63-411        | 268 094     | Crescent I            | 4401   | 6902    | Rockland           |
| 63-415        | 268 095     | Tommy I               | 4401   | 6907    | Rockland           |
| 63-420        | 268 097     | Garden I              | 4401   | 6907    | Rockland           |
| 63-421        | 268 096     | Oak I                 | 4401   | 6905    | Rockland           |
| 63-427        | 268 098     | Dix I                 | 4400   | 6904    | Rockland           |
| 63-432        | 268 100     | Andrews I             | 4400   | 6903    | Rockland           |
| 63-439        | 268 089     | Clam Lds              | 4400   | 6905    | Rockland           |
| 63-465        | 268 101     | Sugar Loaves          | 4407   | 6855    | SW/4 Vinalhaven 15 |
| 63-474        | 268 102     | Dogfish I Ld          | 4405   | 6855    | SW/4 Vinalhaven 15 |
| 63-485        | 268 103     | Green I               | 4404   | 6855    | SW/4 Vinalhaven 15 |
| 63-493        | 268 103     | Green Ld              | 4404   | 6855    | SW/4 Vinalhaven 15 |
| 63-496        | 268 105     | Medric Rk             | 4404   | 6856    | SW/4 Vinalhaven 15 |
| 63-516        | 268 108     | Little Hurricane I Ld | 4402   | 6853    | SW/4 Vinalhaven 15 |
| 63-518        | 268 107     | Little Hurricane I    | 4402   | 6854    | SW/4 Vinalhaven 15 |
| 63-526        | 268 106     | Hurricane I Ld        | 4402   | 6853    | SW/4 Vinalhaven 15 |
| 63-578        | 297 038     | Gunning Rks           | 4354   | 6915    | Tenants Harbor     |
| 63-579        | 297 035     | The Brothers          | 4355   | 6914    | Tenants Harbor     |
| 63-580        | 297 036     | The Brothers          | 4355   | 6914    | Tenants Harbor     |
| 63-581        | 297 037     | The Brothers          | 4355   | 6914    | Tenants Harbor     |
| 63-582        | 297 039     | Hay Ld                | 4355   | 6914    | Tenants Harbor     |
| 63-584        | 297 040     | Metinic I             | 4353   | 6907    | Tenants Harbor     |
| 63-585        | 297 044     | Metinic Green I       | 4352   | 6908    | Tenants Harbor     |
| 63-586        | 297 041     | The Nubble            | 4352   | 6907    | Tenants Harbor     |
| 63-588        | 297 043     | Hog I                 | 4352   | 6907    | Tenants Harbor     |
| 63-589        | 297 042     | Little Hog I          | 4352   | 6907    | Tenants Harbor     |
| 63-626        | 297 046     | Hurricane I           | 4401   | 6906    | Hewetts Island     |
| 63-628        | 297 045     | Hewett I              | 4359   | 6904    | Hewetts Island     |
| 63-634        | 297 048     | Graffam I             | 4359   | 6905    | Hewetts Island     |
| 63-637        | 297 047     | Seal I                | 4359   | 6907    | Hewetts Island     |
| 63-640        | 297 049     | Yellow Ridge I        | 4359   | 6907    | Hewetts Island     |
| 63-651        | 297 050     | Crow I                | 4358   | 6905    | Hewetts Island     |
| 63-653        | 297 051     | Two Bush I            | 4358   | 6905    | Hewetts Island     |
| 63-654        | 297 052     | Little Green I        | 4355   | 6902    | Hewetts Island     |
| 63-655        | 297 053     | Large Green I         | 4354   | 6901    | Hewetts Island     |
| 63-700        | 297 005     | Black I               | 4356   | 6922    | Louds Island       |
| 63-701        | 297 007     | Harbor I              | 4354   | 6923    | Louds Island       |
| 63-704        | 297 008     | Little Hall I         | 4354   | 6922    | Louds Island       |
| 63-705        | 297 009     | Crane I               | 4354   | 6923    | Louds Island       |
| 63-707        | 297 012     | Franklin I            | 4353   | 6922    | Louds Island       |
| 63-708        | 297 013     | Little Franklin Ld    | 4353   | 6922    | Louds Island       |
| 63-724        | 297 018     | Gull Rock             | 4357   | 6922    | Friendship         |
| 63-725        | 297 015     | Nubbins I             | 4358   | 6921    | Friendship         |
| 63-730        | 297 016     | Sand I                | 4358   | 6921    | Friendship         |
| 63-731        | 297 017     | Ram I                 | 4358   | 6921    | Friendship         |
| 63-765        | 297 020     | Cranberry I           | 4356   | 6922    | Friendship         |
| 63-770        | 297 019     | Little I              | 4356   | 6921    | Friendship         |

(Continued)

Table C1. (Continued)

| Island number | Colony site |                   | Lat. N | Long. W | Quadrangle     |
|---------------|-------------|-------------------|--------|---------|----------------|
|               | number      | Island name       |        |         |                |
| 63-774        | 297 029     | Long Ld           | 4353   | 6922    | Friendship     |
| 63-795        | 297 021     | Eagle I           | 4356   | 6918    | Friendship     |
| 63-798        | 297 022     | Stone I           | 4356   | 6918    | Friendship     |
| 63-802        | 297 023     | Bar I             | 4355   | 6917    | Friendship     |
| 63-804        | 297 024     | Twobush I         | 4355   | 6919    | Friendship     |
| 63-805        | 297 025     | McGee I           | 4355   | 6918    | Friendship     |
| 63-807        | 297 026     | Barter I          | 4354   | 6918    | Friendship     |
| 63-820        | 297 030     | Shag Lds (East)   | 4353   | 6918    | Friendship     |
| 63-821        | 297 031     | Shag Lds (West)   | 4353   | 6918    | Friendship     |
| 63-833        | 297 028     | Hart I            | 4354   | 6916    | Friendship     |
| 63-836        | 297 027     | Gunning Rks       | 4355   | 6915    | Friendship     |
| 63-838        | 297 032     | Old Hump Lds      | 4352   | 6921    | Friendship     |
| 63-839        | 297 033     | Old Hump Lds      | 4352   | 6921    | Friendship     |
| 63-840        | 297 034     | Allen I           | 4352   | 6919    | Friendship     |
| 63-860        | 297 092     | Eastern Egg Rock  | 4352   | 6923    | New Harbor     |
| 63-873        | 297 094     | Little Egg Rock   | 4351   | 6920    | Monhegan       |
| 63-875        | 297 095     | Shark I           | 4351   | 6921    | Monhegan       |
| 63-880        | 297 093     | Burnt I           | 4352   | 6917    | Monhegan       |
| 63-900        | 297 055     | No Mans Land I    | 4353   | 6852    | Matinicus      |
| 63-901        | 297 056     | Two Bush I        | 4353   | 6853    | Matinicus      |
| 63-917        | 297 057     | Wooden Ball I     | 4351   | 6849    | Matinicus      |
| 63-910        | 297 058     | Ten Pound I       | 4351   | 6853    | Matinicus      |
| 63-923        | 297 054     | Seal I            | 4353   | 6844    | Matinicus      |
| 63-924        | 297 059     | Pudding I         | 4350   | 6853    | Matinicus      |
| 63-925        | 297 060     | Shag Ld           | 4351   | 6853    | Matinicus      |
| 63-929        | 297 062     | Green Ld          | 4350   | 6853    | Matinicus      |
| 63-930        | 297 061     | Ragged I          | 4349   | 6853    | Matinicus      |
| 63-931        | 297 063     | Seal Ld           | 4349   | 6853    | Matinicus      |
| 63-934        | 297 064     | Brig Ld           | 4349   | 6853    | Matinicus      |
| 63-940        | 297 065     | Matinicus Rock    | 4347   | 6851    | Matinicus      |
| 65-179        | 297 001     | Jims I            | 4357   | 6924    | Louds Island   |
| 65-186        | 297 002     | Thief I           | 4356   | 6925    | Louds Island   |
| 65-188        | 297 003     | Jones Garden I    | 4356   | 6923    | Louds Island   |
| 65-189        | 297 004     | Killick Stone     | 4356   | 6925    | Louds Island   |
| 65-194        | 297 006     | Wreck I           | 4354   | 6924    | Louds Island   |
| 65-198        | 297 010     | Ross I            | 4354   | 6926    | Louds Island   |
| 65-200        | 297 011     | Haddock I         | 4352   | 6926    | Louds Island   |
| 65-201        | 297 014     | Western Egg Rk    | 4353   | 6925    | Louds Island   |
| 65-258        | 297 081     | Thread of Life Rk | 4350   | 6933    | Pemaquid Point |
| 65-266        | 297 082     | Thrumcap I        | 4349   | 6933    | Pemaquid Point |
| 65-267        | 297 083     | Thrumcap I        | 4349   | 6933    | Pemaquid Point |
| 65-272        | 297 085     | The Hypocrites    | 4348   | 6935    | Pemaquid Point |
| 65-274        | 297 084     | Fisherman I       | 4348   | 6936    | Pemaquid Point |
| 65-276        | 297 086     | White I           | 4347   | 6934    | Pemaquid Point |
| 65-278        | 297 087     | White I           | 4347   | 6934    | Pemaquid Point |

(Continued)

Table C1. (Continued)

| Island number | Colony site |                     | Lat.<br>N | Long.<br>W | Quadrangle      |
|---------------|-------------|---------------------|-----------|------------|-----------------|
|               | number      | Island name         |           |            |                 |
| 65-279        | 297 088     | Outer Heron I       | 4346      | 6935       | Pemaquid Point  |
| 65-280        | 297 089     | Damariscove I       | 4346      | 6937       | Pemaquid Point  |
| 65-287        | 297 090     | Pumpkin I           | 4345      | 6935       | Pemaquid Point  |
| 65-301        | 297 091     | New Harbor Dry Ld   | 4352      | 6929       | New Harbor      |
| 65-310        | 297 097     | Duck Rocks          | 4347      | 6919       | Monhegan        |
| 65-313        | 297 096     | Eastern Duck Rock   | 4347      | 6919       | Monhegan        |
| 65-314        | 297 099     | Smuttynose I        | 4346      | 6919       | Monhegan        |
| 65-316        | 297 098     | Inner Duck Rk       | 4346      | 6919       | Monhegan        |
| 65-445        | 297 078     | Cedarbush I         | 4349      | 6941       | Boothbay Harbor |
| 65-453        | 297 079     | Cat Ld              | 4348      | 6941       | Boothbay Harbor |
| 65-466        | 297 080     | The Cuckolds I      | 4347      | 6939       | Boothbay Harbor |
| 73-XXX        | 297 108     | Sprague River Beach | 4344      | 6949       | Small Point     |
| 73-213        | 297 075     | N Sugarloaf I       | 4345      | 6947       | Phippsburg      |
| 73-215        | 297 076     | Salter I            | 4345      | 6945       | Phippsburg      |
| 73-234        | 297 077     | Middle Mark I       | 4344      | 6942       | Boothbay Harbor |
| 73-280        | 297 107     | South Sugarloaf I   | 4345      | 6946       | Small Point     |
| 73-282        | 297 109     | Pond I              | 4344      | 6946       | Small Point     |
| 73-283        | 297 110     | Wood I              | 4344      | 6947       | Small Point     |
| 73-301        | 297 112     | Gooseberry I        | 4343      | 6951       | Small Point     |
| 73-315        | 297 111     | Heron I             | 4343      | 6948       | Small Point     |
| 73-319        | 297 113     | Ellingwood Rock     | 4343      | 6946       | Small Point     |
| 73-320        | 297 114     | Seguin I            | 4342      | 6945       | Small Point     |
| 77-012        | 268 002     | Islesboro I         | 4419      | 6854       | NW/4 Castine 15 |
| 77-047        | 268 006     | Flat I              | 4419      | 6856       | SW/4 Castine 15 |
| 77-054        | 268 007     | Sev. Hund. Acre I   | 4415      | 6858       | SW/4 Castine 15 |
| 79-126        | 269 002     | Goose I             | 4455      | 6702       | Eastport        |
| 79-132        | 269 001     | Spectacle I         | 4455      | 6702       | Eastport        |
| 79-137        | 269 003     | Red I               | 4455      | 6705       | Eastport        |
| 79-313        | 269 004     | Old Man             | 4437      | 6714       | Cutler          |
| 79-351        | 269 017     | Inner Double Hd Sh  | 4436      | 6716       | Cross Island    |
| 79-352        | 269 018     | Outer Double Hd Sh  | 4436      | 6716       | Cross Island    |
| 79-356        | 269 019     | Stone I             | 4436      | 6722       | Cross Island    |
| 79-359        | 269 020     | Libby I             | 4435      | 6721       | Cross Island    |
| 79-488        | 269 007     | Ballast I           | 4434      | 6733       | Jonesport       |
| 79-551        | 269 008     | Foster I            | 4435      | 6724       | Roque Bluffs    |
| 79-552        | 269 010     | Ram I               | 4434      | 6724       | Roque Bluffs    |
| 79-554        | 269 011     | Scabby I            | 4434      | 6724       | Roque Bluffs    |
| 79-556        | 269 009     | Shag Ld             | 4435      | 6725       | Roque Bluffs    |
| 79-570        | 269 012     | Halifax I           | 4434      | 6727       | Roque Bluffs    |
| 79-572        | 269 013     | Green I             | 4434      | 6727       | Roque Bluffs    |
| 79-573        | 269 014     | The Brothers I      | 4433      | 6726       | Roque Bluffs    |
| 79-576        | 269 016     | Pulpit Rk           | 4433      | 6728       | Roque Bluffs    |
| 79-586        | 269 015     | W Brothers I        | 4433      | 6726       | Roque Bluffs    |
| 79-602        | 269 032     | Outer Ram I         | 4429      | 6738       | Drisko Island   |

(Continued)

Table C1. (Concluded)

| Island number | Colony site |                                 | Lat. N | Long. W | Quadrangle        |
|---------------|-------------|---------------------------------|--------|---------|-------------------|
|               | number      | Island name                     |        |         |                   |
| 79-605        | 269 042     | Egg Rock                        | 4426   | 6738    | Drisko Island     |
| 79-608        | 269 031     | Stevens I                       | 4429   | 6740    | Drisko Island     |
| 79-613        | 269 036     | Batson Lds                      | 4428   | 6740    | Drisko Island     |
| 79-614        | 269 037     | Inner Sand I                    | 4428   | 6740    | Drisko Island     |
| 79-618        | 269 041     | Stanley Ld                      | 4427   | 6740    | Drisko Island     |
| 79-621        | 269 040     | Flat I                          | 4427   | 6742    | Drisko Island     |
| 79-626        | 269 038     | Big Nash I                      | 4428   | 6744    | Drisko Island     |
| 79-627        | 269 039     | Nash I                          | 4428   | 6745    | Drisko Island     |
| 79-632        | 269 034     | The Ladle                       | 4429   | 6744    | Drisko Island     |
| 79-637        | 269 030     | Stevens I Ld                    | 4430   | 6740    | Drisko Island     |
| 79-638        | 269 033     | Little Drisko I                 | 4429   | 6740    | Drisko Island     |
| 79-639        | 269 035     | Toms I                          | 4429   | 6741    | Drisko Island     |
| 79-676        | 269 046     | Freeman Rk                      | 4428   | 6743    | Great Wass Island |
| 79-693        | 269 043     | Browney I                       | 4428   | 6737    | Great Wass Island |
| 79-697        | 269 045     | Curlew Rk                       | 4426   | 6736    | Great Wass Island |
| 79-699        | 269 044     | Green Rk                        | 4426   | 6736    | Great Wass Island |
| 79-740        | 269 005     | Upper Birch I                   | 4432   | 6746    | Harrington        |
| 79-748        | 269 006     | Nightcap I                      | 4431   | 6745    | Harrington        |
| 79-843        | 269 021     | Eastern I                       | 4424   | 6756    | Petit Manan       |
| 79-902        | 269 023     | Pot Rk                          | 4429   | 6745    | Bois Bubert       |
| 79-906        | 269 024     | Shipstern I                     | 4428   | 6748    | Bois Bubert       |
| 79-918        | 269 025     | Middle Douglas I                | 4427   | 6751    | Bois Bubert       |
| 79-922        | 269 026     | Jordans Delight                 | 4427   | 6749    | Bois Bubert       |
| 79-929        | 269 028     | Green I                         | 4422   | 6752    | Bois Bubert       |
| 79-933        | 269 029     | Petit Manan I                   | 4422   | 6752    | Bois Bubert       |
| 79-935        | 269 027     | Egg Rock                        | 4424   | 6752    | Bois Bubert       |
| 81-001        | 296 038     | Bluff I                         | 4331   | 7019    | Prouts Neck       |
| 81-002        | 296 037     | Stratton I                      | 4331   | 7019    | Prouts Neck       |
| 81-010        | 296 041     | Eagle I                         | 4329   | 7022    | Biddeford Pool    |
| 81-011        | 296 036     | Ram I                           | 4333   | 7016    | Prout's Neck      |
| 81-015        | 296 043     | Wood I                          | 4328   | 7020    | Biddeford Pool    |
| 81-016        | 296 044     | Stage I                         | 4328   | 7021    | Biddeford Pool    |
| 81-018        | 296 047     | Beach I                         | 4326   | 7027    | Biddeford Pool    |
| 81-025        | 296 046     | Gooseberry I                    | 4327   | 7020    | Biddeford Pool    |
| 81-161        | 296 042     | Ram I                           | 4321   | 7026    | Biddeford Pool    |
| 81-XXX        | 296 040     | Goose Rocks Beach<br>(Mainland) | 4323   | 7025    | Biddeford         |
| 81-041        | 296 039     | West Goose Rocks                | 4323   | 7025    | Biddeford         |
| 81-094        | 296 045     | Negro I                         | 4327   | 7021    | Biddeford Pool    |
| 81-098        | 296 049     | Green I                         | 4321   | 7026    | Kennebunkport     |
| 81-101        | 296 048     | Folly I                         | 4321   | 7026    | Kennebunkport     |
| 81-102        | 296 050     | Bumpkin I                       | 4321   | 7027    | Kennebunkport     |
| 81-161        | 296 042     | Ram I                           | 4321   | 7026    | Biddeford Pool    |
| 81-163        | 296 051     | Clarks I                        | 4305   | 7043    | Kittery           |
| 81-181        | 296 052     | Duck I                          | 4300   | 7036    | Isles of Shoals   |
| 81-182        | 324 002     | Smuttynose I                    | 4259   | 7036    | Isles of Shoals   |
| 81-191        | 324 001     | Appledore I                     | 4259   | 7037    | Isles of Shoals   |
| 81-194        | 324 003     | Cedar I                         | 4259   | 7036    | Isles of Shoals   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                               |    |                              |
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| <p>Waterbird colonies along the coast of Maine were inventoried during the nesting seasons of 1976 and 1977. A total of 353 colony sites was found; they contained 100,813 pairs of birds. Nineteen species nested in the study area. A count of nests on adult birds made during on-site inspections was the best inventory technique. Species abundance and nesting locations are listed.</p> <p>Population trends since 1900 are based on published and unpublished reports. Populations of most seabird species have increased whereas wading birds have probably decreased.</p> |  | 14.                                                           |    |                              |
| 17. Document Analysis a. Descriptors<br>Birds, wildlife                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                               |    |                              |
| b. Identifiers/Open-Ended Terms<br>Waterbirds, gulls, terns, alcids, eiders, cormorants, storm-petrels, herons, egrets, Maine                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                               |    |                              |
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COASTAL WATERBIRD COLONIES MAINE  
NESTING RECORDS SINCE 1900

The image shows a grid of approximately 100 small, dark rectangular boxes, likely representing a data table or a grid of photographs. The boxes are arranged in roughly 10 rows and 10 columns, though some are missing or obscured by shadows. The overall appearance is that of a heavily redacted or underexposed document page.



# DEPARTMENT OF THE INTERIOR

## U.S. FISH AND WILDLIFE SERVICE



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.