

FOR SEAGULLS AND SUNDRY OTHER FOWL OF THE SEA AND SHORE

by Bradford G. Blodget, State Ornithologist,
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A question I am frequently asked goes something like this: "What does the State Ornithologist do?" Actually, the greatest amount of my time and effort is spent collecting information and keeping tabs on the approximately 210 species of birds, particularly the rarer ones, that nest in Massachusetts. With this intelligence, effective recommendations can be made for their conservation, and I can answer other frequent queries like, "Where have all the bluebirds gone?"

While various specialized investigations and censuses of the state's avifauna are routinely handled, 1984 turned out to be anything but routine. One morning last spring, Ralph Andrews, a coastal bird specialist for the United States Fish and Wildlife Service (USFWS), telephoned me to announce that the service was undertaking a colonial waterbird census along the Atlantic seaboard from Maine to Virginia to update a census done in 1977. He asked me whether I would be willing to coordinate the census in Massachusetts, thus setting in motion what has turned out to be probably the largest and most comprehensive bird census handled to date by the Division of Fisheries and Wildlife's Non-game and Endangered Species Program (DFW - NESP).

Plundered by plume hunters in the 1890s, forced by human encroachment to abandon many of their natural nesting habitats and battered by the onslaught of environmental toxicants, the colonial waterbirds are survivors. Some species are still threatened today, while others - witness the gulls - rank among textbook examples of biological capitalists and flourish in vast numbers, scavenging the byproducts of the seafood industry and our "throw-away" society. The colonial waterbirds include cormorants, storm-petrels, egrets, herons, ibises, gulls, terns, and skimmers. They nest in the spring and summer in colonies, primarily on beaches and islands found along the coast. The same colonial habits that rendered them conspicuous and vulnerable targets for commercial exploitation - their dense concentrations in time and space during the nest season - make colonial waterbirds as a group relatively easy to census. The greatest difficulty is access to their remote nesting sites, the very same difficulty that once helped save some species from the plume hunters.

The group has been subdivided into colonial seabirds (cormorants, storm-petrels, gulls, terns, and skimmers), which spend most of their lives upon the ocean, and colonial wading birds (egrets, herons, and ibises), which frequent marshes and mudflats of the estuarine environment. Colonial seabirds in Massachusetts generally lay their eggs in simple ground nests. These may be the shallow scrapes in the sand made by terns and skimmers or bowls of interwoven grasses and twigs fashioned by gulls and cormorants. One exception is the rare Leach's Storm-Petrel



Gulls swirl noisily overhead as the author searches for gull nests at Milk Island in Rockport.

Photo by Bill Byrne. Courtesy of DFW.

(*Oceanodroma leucorhoa*), which deposits its eggs underground at the end of arm-length-deep burrows. Colonial wading birds tend to nest off the ground in dense thickets of shrubs and low trees.

There are three reasons why censuses of colonial waterbirds are done. First and most fundamentally, the Division of Fisheries and Wildlife (DFW) is charged with the responsibility for conservation and management of all wildlife in the best interests of the citizenry. Colonial waterbirds, like all wildlife, are strictly protected under the laws of the federal and state governments, and are maintained in what amounts to a public trust. Unlike most natural resources that stay put in one place and can be measured, wildlife resources, especially birds, move about constantly and increase and decrease. To accomplish its mandate, the Division of Fisheries and Wildlife must periodically take stock of the resources involved and undertake status evaluations. Knowledge of the locations, types, and numbers of colonial waterbirds is essential if we are to protect the rarer forms effectively or to act in the event certain populations increase to the point where they constitute a threat to public health and safety.

Second, the Division of Fisheries and Wildlife needs good data on the whereabouts of colonial waterbirds in order to comment responsibly on environmental reviews of proposed activities. In working closely with project planners, efforts are made to avoid or mitigate any damage to colonial waterbirds or their habitat.

And third, colonial waterbirds live at the tops of food chains and are considered to be potentially useful as environmental barometers indicating the health of ecosystems. Good baseline data on population levels allow biologists to monitor fluctuations over a period of time. When population levels swing to extreme highs or lows, it may indicate a malfunction in the system. This was graphically demonstrated in the 1960s when some species, their tissues contaminated by pesticides, experienced reproductive failures.

Counting all the colonial waterbirds along the Massachusetts coastline is not something to be done in one day's work. Of all the states from Maine to Virginia, Massachusetts has the second longest coastline, about 1200 miles. With the assistance of Department of Fisheries, Wildlife and Recreational Vehicles Commissioner Walter E. Bickford, an agreement was worked out between Division of Marine and Recreational Vehicles Director Fred Nataloni and Division of Fisheries and Wildlife Director Richard Cronin, under which a boat and crew were placed in dedicated service for a ten-day period, transporting Fisheries and Wildlife personnel to approximately thirty nesting islands, from Egg Rock, Nahant, northerly to the Dry Salvages off Rockport. In addition, Alan McGroary, Director of the Division of Law Enforcement, made available the marine patrol in Buzzards Bay to assist personnel with transportation to the outer Elizabeth Islands in Gosnold.

Many other organizations became involved in the effort. The United States Fish and Wildlife Service itself provided a plane and pilot for aerial photography and manpower to census Monomoy Wilderness Area in Chatham, Parker River National Wildlife Refuge in Essex County, and with special permission from the United States Navy, remote Nomans Land, a lonely ocean outpost three miles southwest of Martha's Vineyard. In addition, the United States Fish and Wildlife Service reimbursed three-quarters of the state's cost under provisions of the Federal Aid in Wildlife Restoration Act.

The National Park Service assigned a resource specialist, park rangers, and summer seasonal personnel to assist with the count along the great outer beach from Eastham to Provincetown within the Cape Cod National Seashore. Many of our state's tern colonies have been carefully censused annually since 1974 by summer season tern wardens hired by the Massachusetts Audubon Society and other organizations. Massachusetts Audubon personnel provided important coverage at eighteen tern colonies between Scituate and Eastham. The Trustees of Reservations, which independently operates tern conservation and management programs on its own properties at Crane's Beach (Ipswich), Cape Poge (Edgartown), and Coate (Nantucket), joined in the cooperative effort, providing coverage at some sixteen colonies.

Dr. Jeremy Hatch of the Biology Department, University of Massachusetts Harbor Campus, in addition to flying with the United States Fish and Wildlife Service for aerial surveys, provided data on some twenty

Colonial Waterbird Populations in Massachusetts: DFW Summary Data 1984

SPECIES	NUMBER OF COLONIES		TOTAL	RANGE IN COLONY SIZE
			NESTING PAIRS	
Great Cormorant	1		1	-
Double-crested Cormorant	14		4957	33 - 1135
Leach's Storm-Petrel	1		10	-
Great Egret	4		5	1 - 2
Snowy Egret	14		888	1 - 350
Little Blue Heron	2		5	1 - 4
Cattle Egret	1		2	-
Black-crowned Night-Heron	16		1223	5 - 270
Glossy Ibis	4		27	1 - 11
Laughing Gull	2		1054	254 - 800
Common Black-headed Gull	1		1	-
Herring Gull	63		35655	1 - 13951
Great Black-backed Gull	56		10768	1 - 4933
Roseate Tern	8		1820	2 - 1650
Common Tern	26		6953	1 - 1540
Arctic Tern	4		16	1 - 6
Least Tern	46		2515	1 - 509
Black Skimmer	2		3	1 - 2

Comparison of Massachusetts DFW Coastal Colonial Waterbird
 Nesting Surveys, 1977 and 1984
 All reported results are in pairs.

SPECIES	NUMBER OF COLONIES		TOTAL NESTING PAIRS		MEAN COLONY SIZE	
	1977	1984	1977	1984	1977	1984
Great Cormorant ¹	-	1	-	11	-	1
Double-crested Cormorant	11	14	1760	4957	160	354
Leach's Storm-Petrel	1	1	20+ ²	10	20	10
Great Egret	3	4	6	5	2	1
Snowy Egret	12	14	459	888	38	63
Little Blue Heron	4	2	19	5	4	3
Tricolored Heron	1	-	1	-	1	-
Cattle Egret	1	1	10	2	10	2
Black-crowned Night-Heron	14	16	1958	1223	140	76
Glossy Ibis	3 ³	4	112	27	56	7
Laughing Gull	1	2	200	1054	200	527
Common Black-headed Gull ¹	-	1	-	11	-	1
Herring Gull	61	63	35251	35655	577	566
Great Black-backed Gull	50	56	7344	10768	147	192
Roseate Tern	6	8	1327	1820	221	228
Common Tern	30	26	4475	6953	149	267
Arctic Tern	7	4	73	16	10	4
Least Tern	32	45	1551	2415	48	58
Black Skimmer	-	2	-	3	-	2

¹First nesting record for Massachusetts.

²Based on previous years' estimates.

³Includes one colony site at which the species may have bred but for which no estimate was available.



Gulls and cormorants nest among the rocks at Milk Island in great density. Nests are bulky affairs of grass and twigs wedged between the rocks. Photo by Bill Byrne. Courtesy of DFW.

colonies scattered among the Boston Harbor islands and nine others of the South Shore and around Buzzards Bay. Kathleen Parson, a research affiliate at Manomet Bird Observatory, provided 1984 census data from Clark's Island, Plymouth. In all, some sixty persons were directly involved, contributing an aggregate total of some 145 man-days of effort.

By far the most abundant of the colonial waterbirds are the gulls, collectively known to most persons as simply "seagulls." The most common and widespread is the familiar Herring Gull (*Larus argentatus*), with an estimated nesting population of 35,655 pairs distributed among 63 colonies. This many gulls, wingtip to wingtip, would stretch fifty-four miles, about from Boston to the Cape Cod Canal! Included in the total is the Monomoy Wilderness Area, where 14,521 pairs were estimated, possibly the largest Herring Gull colony in North America. Other large colonies included Clark's Island, Plymouth (1813 pairs), Middle Brewster Island, Boston (1400 pairs), Milk Island, Rockport (1330 pairs), Nomans Land, Chilmark (1200 pairs), and Straitsmouth Island, Rockport (1135 pairs). Virtually unknown as a nesting species in Massachusetts prior to 1930, the population increased steadily until about 1965, after which it has remained high and essentially stable. Unfortunately, such enormous populations are not achieved without some cost. Other colonial nesting species, particularly terns, have been adversely affected as the more dominant gulls have usurped nesting islands and systematically taken control of more and more nesting space. Gulls, known to eat the chicks of other birds, may even be partly to blame for the decline and disappearance of the Piping Plover (*Charadrius melodus*) in some areas. The Piping Plover is currently being proposed by the United States Fish and Wildlife Service as an endangered and threatened species.



A gull nest is checked. A special egg gauge is used to distinguish between clutches of Herring and Great Black-backed gull eggs. Slightly smaller, the Herring Gull eggs readily slip through the gauge.

Photo by Bill Byrne. Courtesy of DFW.

Closely tied to the Herring Gull and usually nesting in close association with it is the Great Black-backed Gull (*Larus marinus*), found to number 10,768 pairs at fifty-six sites. Large colonies were found at Monomoy (4933 pairs), Muskeget Island, Nantucket (750 pairs), and Milk Island, Rockport (700 pairs). This gull, the largest species in the world and a particularly powerful and aggressive type, also arrived in the state about 1930 but increased much more gradually than the Herring Gull, reaching only some 2575 pairs by 1965. However, since 1965 the Great Black-backed Gull seems to have expanded much more dramatically, possibly at some expense of the Herring Gull. Our findings this year indicate a 47 percent increase since 1977.

The Laughing Gull (*Larus atricilla*) is basically a warm-water gull that appears here only in the summer. The Bay State's migratory nesting group seems to be a specialized cold-water-adapted population that survives disjunct from the main range extending from New Jersey southward. Its fortunes have risen and fallen over the years. Numbers expanded at Muskeget Island from 1900 to a peak of 20,000 pairs in the 1940s after which numbers dwindled to a handful in the early 1970s. With Herring and Great Black-backed gulls firmly in control at Muskeget Island, Laughing Gulls shifted to Monomoy Island, where 200 pairs nested in

1977. Further improvement was evident in 1984 with 800 pairs at Monomoy and 254 pairs at an additional site in Eastham. It was among the Laughing Gulls that a pair of Common Black-headed Gulls (*Larus ridibundus*), a European form, turned up nesting for the first time in the state.

The four species of nesting terns have received the greatest amount of attention over the years. By far the most abundant type has always been the Common Tern (*Sterna hirundo*). At its zenith around 1940, the population reached 30,000 pairs, but as gulls inexorably rose to dominate the scene, and the activities of man further encroached upon nesting areas, the Common Tern fell upon harder times. Since 1972, the population has fluctuated between 4000 and 8000 pairs, with 6953 pairs counted in 1984. About 68 percent of these birds are contained in only four colonies at Plymouth Beach, Nauset-New Island in Eastham, Monomoy in Chatham, and Gray's Beach in Yarmouth.

The Roseate Tern (*Sterna dougallii*) has declined approximately 60 percent from an estimated peak of 5000 pairs in the 1930s but seems to have stabilized during the last decade at about 1500 to 2000 pairs. In 1984, about 1820 pairs were estimated with 1650 pairs (91 percent) concentrated at Bird Island in Marion, the largest colony of this rare bird in the Western Hemisphere. Because of its global rarity and its concentration in only a few large colonies around the world, mostly in the tropics, some have suggested listing the Roseate Tern as a threatened species.

The Arctic Tern (*Sterna paradisaea*) has always maintained a small outpost population, the southernmost in the world, in Massachusetts. Although never exceeding 250 pairs, the population had shrunk to fifty-three pairs by 1978 and, unfortunately, the downward trend continued into 1984 with only sixteen pairs counted. Being at the fringe of its circumpolar range, the Arctic Tern may not find conditions in Massachusetts entirely to its liking.

The fourth species of nesting tern is the Least Tern (*Sterna antillarum*). This small, yellow-billed variety, almost exterminated near the turn of the century, has slowly and steadily increased over the last decade, attaining a historic high of 2415 pairs in 1984, a 56 percent increase since 1977. Its improved status suggests it has been a chief beneficiary of tern management efforts. String and post fences are erected around nesting areas on bare, sandy beaches by wardens from the Massachusetts Audubon Society, the Trustees of Reservations, and other organizations. Such "symbolic fencing" serves to divert over-sand vehicle and pedestrian beach traffic that can unwittingly intrude upon and demolish a colony. The previous three larger types of terns have not benefited as directly from these efforts, since they generally eschew mainland nesting sites, retiring instead to islands where they must face tough competition from gulls for space.

The Double-crested Cormorant (*Phalacrocorax auritus*) is truly in the midst of a population boom. After tripling between 1972 and 1977, census data for 1984 show it has again tripled, reaching 4957 pairs at fourteen colonies! Twelve of these cormorant colonies, harboring about 75 percent of the birds, are located in the Boston Harbor area northward, with the largest groups found at Little Calf Island (971 pairs)



The most abundant nesting heron in Massachusetts is the Black-crowned Night-Heron.

Photo by Bill Byrne. Courtesy of DFW.

and Shag Rocks (886 pairs) in Boston, and at Milk Island, Rockport (717 pairs). The largest colony, however, occurs far to the south at the Weecket Islands in Gosnold. Numbering 1135 pairs, this colony also has the distinction of being probably the southernmost colony in New England. Embedded within this colony, Jeremy Hatch discovered a pair of Great Cormorants (*Phalacrocorax carbo*), another first-ever nesting record for the state and a southernmost-ever nesting for the species.

At nearby Penikese Island, approximately ten pairs of nesting Leach's Storm-Petrels (*Oceanodroma leucorhoa*), the only ones in the state, were estimated. These mysterious birds of the ocean maintain their southernmost nesting station at Penikese, where they were first discovered to be nesting in 1930 in and around the ruins of a leper hospital that the Massachusetts Department of Public Health once operated. Since 1930, varying estimates of from six to ninety pairs have been made.

With the exception of the Snowy Egret (*Egretta thula*), which approximately doubled from 1977 to 1984, most of the colonial wading birds seem to have declined in the same period. More than any other single factor, this may be accounted for by the demise of two major colonies that were flourishing in 1977 at House Island, Manchester, and Madaket, Nantucket. In the former case, almost 1000 pairs of herons, egrets, and ibises nested in 1977 in extremely dense clusters. Inspection of House Island this year revealed that drastic habitat devastation had occurred, and no birds were found. It would appear that the birds, in the process of nesting and raising their young in great density, had literally ruined their own habitat. This state of affairs arises in

dense heronries because of the production of copious amounts of excrement. This results in overfertilization, acid burn, and inevitable die-back of the understory vegetation to the extent that the area is no longer desirable as a nesting ground. A similar situation may have occurred at Madaket. Under normal circumstances, the birds just move on to other areas. The 1984 results show that herons were indeed reported from seven new colony locations and increased at other colonies but in no way near large enough numbers to offset the losses. Such fluctuation over a period of time seems to be normal for colonial wading birds, and colony locations are notoriously subject to sudden abandonment and relocation.

The Black-crowned Night-Heron (*Nycticorax nycticorax*), although down 38 percent from 1977, was still the most common of the colonial wading bird group with 1223 pairs reported from sixteen sites versus fourteen in 1977. Historically, the Black-crowned Night-Heron attained a documented high of about 3600 pairs at ten colonies in 1955. Over the last fifteen years, the Snowy Egret has emerged as the second most abundant bird in this group. This type, which only began to nest here in 1955, has demonstrated a steady general increase, especially since 1960. A total of 888 pairs, censused in 1984, represents a 93 percent increase since 1977.

To summarize this, our colonial waterbird populations, while facing many problems, are in very good shape. Including five other peripheral species that maintain small populations in the state - Great Egret (*Casmerodius albus*), Cattle Egret (*Bubulcus ibis*), Little Blue Heron (*Egretta caerulea*), Glossy Ibis (*Plegadis falcinellus*), and Black Skimmer (*Rynchops niger*) - eighteen species of colonial waterbirds were nesting along the Massachusetts coast in 1984 at some 119 locations. Two species were first-time nesters here. Of the remaining sixteen, six showed major increases, two underwent major declines, and the balance of eight remained basically unchanged from the 1977 census.

Interaction with humans and the forces of nature assure that fluctuation and change will continue to be the rule rather than the exception among this interesting group of birds. So, stay tuned, the census-taker will call again in 1989.

BRADFORD G. BLODGET, well-known to most birders as the State Ornithologist, which he has been since 1977, was well prepared for this position. Interested in birds from the age of nine, he graduated from Clark University, took an M.S. in Wildlife Biology at the University of Massachusetts at Amherst, and held positions in this and related fields at Massachusetts Audubon Society (Wellfleet Bay Sanctuary), at the Worcester Science Center, at New England Research, with the National Park Service, and finally with the Division of Fisheries and Wildlife (DFW). He has been active in the Forbush Bird Club and as editor of The Chickadee, is a member of Nuttall and the A.O.U., and has served with the Worcester Conservation Commission. Brad gave Bird Observer permission to cut his article "down if it is too long or whatever" and bade us to "enjoy it." We did not cut it, we lengthened it - by adding the summary tables prepared by the Massachusetts DFW - and we enjoyed every bit of it!

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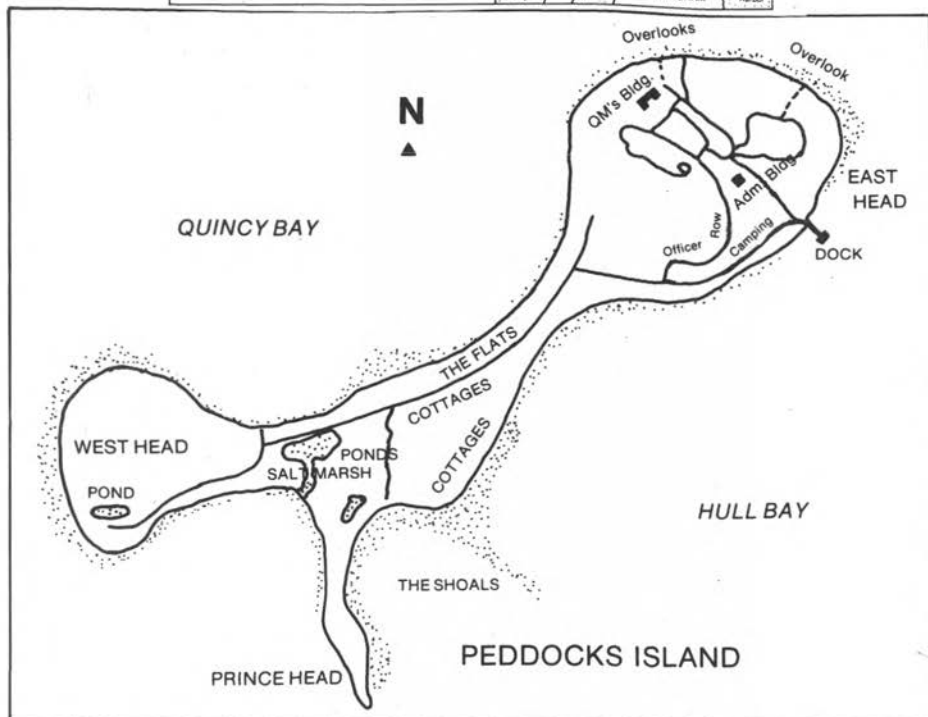
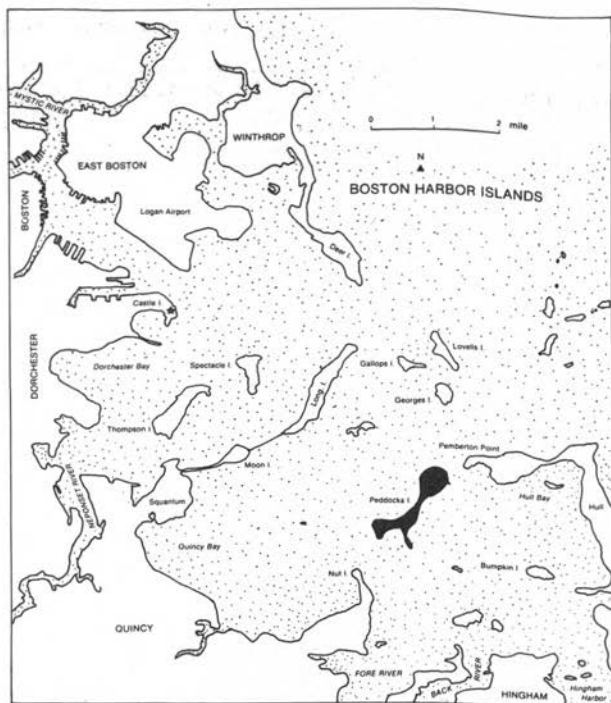
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Peddocks Island is approximately 1.5 miles long and is 188 acres in size. It is formed from five drumlins connected by low gravelly flatlands. There are splendid views of Boston and the Harbor Islands from the overlooks.

Map by P.S.S./J.L.H.