

97. *Melospiza georgiana*, SWAMP SPARROW.—Fairly common summer resident. St. Anthony, May 28 to September 19.
98. *Plectrophenax nivalis nivalis*, EASTERN SNOW BUNTING.—Common in migration. Occasional winter straggler. St. Anthony, March 27 to May 2; October 13 to November 11. Cape Bauld, October 10, 1943.

LABRADOR NOTES OF INTEREST

1. *Gavia stellata*, RED-THROATED LOON.—Rigolet, September 24, 1940 (specimen).
2. *Fulmarus glacialis glacialis*, ATLANTIC FULMAR.—Batteau, September 21, 1940.
3. *Histrionicus histrionicus histrionicus*, EASTERN HARLEQUIN DUCK.—Square Island, July, 1940. Stuffed bird recently killed offered to me for sale.
4. *Melanitta fusca deglandi*, WHITE-WINGED SCOTER.—Rigolet, September 21, 1940 (fifty).
5. *Melanitta perspicillata*, SURF SCOTER.—Lake Melville, September 15, 1940; September 21, 1940 (2000).
6. *Mergus serrator*, RED-BREASTED MERGANSER.—Lake Melville, September 16, 1940 (adults with young).
7. *Arenaria interpres*, RUDDY TURNSTONE.—Greedy, August 23, 1936; Seal Islands, September 12, 1940; Batteau, September 21, 1940.
8. *Erolia fuscicollis*, WHITE-RUMPED SANDPIPER.—Indian Harbor, abundant summer resident. July 22, 1935, adults seen with young birds (I can find no record of the bird's breeding in Labrador).
9. *Crocethia alba*, SANDERLING.—Brador Bay, September 23, 1936 (Burge).
10. *Hirundo rustica erythrogaster*, BARN SWALLOW.—Indian Harbor. One record, August 23, 1935.
11. *Loxia leucoptera leucoptera*, WHITE-WINGED CROSSBILL.—Indian Harbor, August 7, 1935.

Washington, D. C.

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THE PRESENT STATUS OF THE GREAT BLACK-BACKED  
GULL ON THE COAST OF MAINE<sup>1</sup>

BY ALFRED O. GROSS

*Plates 12-15*

SINCE the beginning of the present century great changes have taken place in the populations of the sea birds inhabiting the Maine coast. The unprecedented increase brought about by protection and other contributing factors has involved serious competition among the birds, which is requiring many readjustments. For example, islands which 25 years ago were inhabited by thriving colonies of terns have since been completely taken over by Herring Gulls and today are now being encroached upon by the Black-backed Gulls.

Not only have these increases affected the interrelations of the birds

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<sup>1</sup> Contribution no. 13, Bowdoin Scientific Station, Kent Island, Bay of Fundy, New Brunswick, Canada.

but some of them concern the direct interests of man. For instance, the Double-crested Cormorant was completely extirpated as a breeding bird on our coast in 1900, but by 1930 it had again established itself. Today it has extended its range as far as the coast of Massachusetts and has increased its numbers to such an extent that demands are being made, chiefly by representatives of the fishing industry, that effective control measures be instituted. Cf. Gross (1943 and 1944).

The American Eider, which was reduced to the low ebb of two nesting birds in 1907, has also made a remarkable recovery and today is well established as a nesting species as far southwest as Mark Island in Casco Bay. Cf. Gross (1944a).

The Herring Gull, which was threatened with extermination as a nesting species on the Maine coast in 1900, today has become so abundant that the U. S. Fish and Wildlife Service has found it necessary to take active steps towards its control. Similar changes in populations are likewise true in the case of other species.

During the past four years I have had an opportunity, while serving with the U. S. Fish and Wildlife Service as a collaborator from 1941-1943 and as Biologist in 1944, to observe and record the recent changes that are taking place in the sea-bird colonies along the Maine coast.<sup>1</sup> These trips were taken each year from about May 20 to June 20 at the height of the nesting season. All of the important Herring Gull colonies between the Isles of Shoals at the New Hampshire-Maine state boundary to the Bay of Fundy were visited for the purpose of gull control. This paper will deal primarily with the present status of the Great Black-backed Gull (*Larus marinus*).

The Great Black-backed Gull is a recent addition to the nesting birds of the Maine coast although certain publications in the past have implied that it nested in this region. The vague statement of J. J. Audubon (1835) that: "None breed south of the eastern extremity of Maine" has never been considered as a definite record for the state.

G. A. Boardman (1862) in his 'Catalogue of the Birds found in the vicinity of Calais, Maine, and about the Bay of Fundy,' wrote as follows: "Resident. Not plenty. A few breed about the islands." This statement undoubtedly referred to the islands of the Grand Manan Archipelago in the Bay of Fundy and not to islands along the coast of Maine. A. E. Verrill, who edited and arranged Boardman's list of birds, quoted Boardman in his 'Catalogue of the Birds found at Norway, Oxford County, Maine' that: "A few appear to breed on islands in the Bay of Fundy." It is apparent that the statement of

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<sup>1</sup> I wish to thank the officials of the U. S. Fish and Wildlife Service for the facilities and opportunities they have so freely given for this work.

their breeding on the coast of Maine by W. A. Stearns and E. Coues (1883) was based on Boardman's paper and not on new and original observations. This supposition is borne out by reports of contemporary authors. Everett Smith (1883), who was stationed at Machias in the service of the U. S. Coast Survey and who had corresponded and traveled extensively along the coast in gathering material for his 'Birds of Maine,' stated positively that no Black-backed Gulls bred on the coast of Maine. This statement was substantiated by S. F. Baird who was well acquainted with the coast as superintendent of the U. S. Fish Commission Surveys. Baird, Brewer and Ridgway (1884), in discussing the nesting distribution of this gull, mention its presence on islands in the Bay of Fundy but did not include the coast of Maine. The foregoing statements make it clear that the Great Black-backed Gulls were not breeding on islands of Maine during the latter part of the nineteenth century. [See also Norton and Allen (1931).]

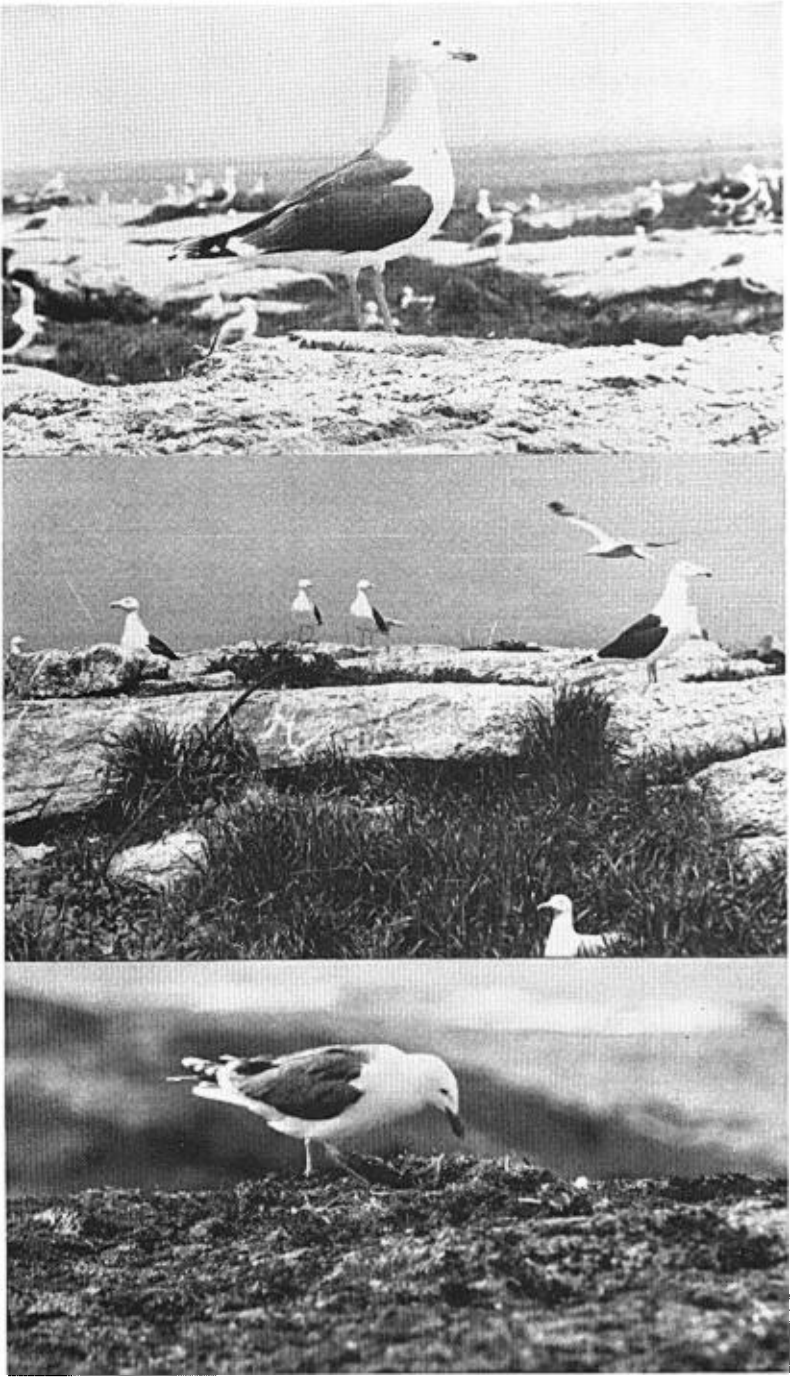
At the beginning of the present century the National Audubon Society took an active interest in protecting the sea birds of this region. From that time on, numerous observers, including William Dutcher, Arthur H. Norton, Ora Knight and others, made frequent and thorough inspections of all of the important colonies. During this period the Black-backed Gull was common as a winter resident and a few stragglers remained during the summer, but not a single pair was found breeding until the year 1928 when Jackson and Allen (1932) found three pairs nesting on Duck Island of the Isles of Shoals. [See also L. O. Shelley (1934).]

In 1931, Arthur H. Norton and Robert P. Allen (1931) made a thorough inspection of the Maine sea-bird colonies from June 23 to July 14 for the National Audubon Society. In an unpublished manuscript they reported finding the Black-backed Gull breeding on ten islands concerning which they made the following comments: "Double-shot Island, several nesting; Little Duck Island, two pairs with young; The Brothers, at least two pairs breeding; Cone Island, several nesting; Green Island off of Swan's Island, one pair nesting; Hardhead Island, one pair nesting [See also Berolzheimer (1932)]; Spoon Ledge, two nests found; Egg Rock in West Penobscot Bay, several nesting; Yellow Ridge, one pair seen, one young ready to fly; and Northern White Island, one pair of adults and one young seen." It is possible that Black-backed Gulls were breeding on some of the above islands a year or two prior to 1931 but were not observed and reported. It is of interest to note that in the same year Richard J. Eaton (1931) discovered these birds to be nesting on North Gooseberry

Island, near Salem, Massachusetts, on July 7, 1931. On July 2, 1944, F. Burnett (1944) found more than 30 young Black-backed Gulls on this island.

From this small beginning, made less than 15 years ago, the Black-backed Gull has firmly established itself as a breeding bird along the northern New England coast and has extended its range as far south and west as Cartwright Island off Long Island, New York [Arbib and Eynon (1940), Nichols (1942) and Wilcox (1944)]. It has recently been found nesting on rocks off Sakonnet Point, Rhode Island (Clement and Emerson, 1944). Today, a conservative estimate places the Great Black-backed Gull nesting population on this coast at no less than 3,500 individuals.

With only five exceptions, islands on which the Black-backed Gulls were found nesting were also inhabited by Herring Gulls. The Black-backs, on the average, start nesting about ten days or two weeks before the Herring Gulls. They thus acquire the choice nesting sites on the higher elevations and rounded knolls. The nests of the Black-backed Gulls, in addition to generally occupying the higher places, are larger, with nesting materials more widely spread, and are less deeply cupped than those of the Herring Gull. The materials are usually of grass and small weed stalks and seldom are mixed with masses of turf, soil and large sticks which so frequently are a part of the structure of the Herring Gull's nest. The eggs of the two species are similar in their color and markings but those of the Black-backed Gull average larger in size. According to A. C. Bent (1921) the average of a series of 59 Black-backed Gull eggs is 77.9 x 54.2 mm. and the average of 45 Herring Gull eggs is 72.3 x 50.5 mm. Although the nests and eggs of each species have certain distinctive characteristics, there are instances, especially where the nests of both are closely intermingled in a crowded colony, where I have been unable to determine the identity of the nest without seeing the incubating adult. During the last week of May we found that many of the eggs of the Black-backed Gulls had hatched whereas those of the Herring Gull were intact, with incubation of those in the most advanced stages not exceeding two weeks. Later, when downy young of both species were represented, one could distinguish the more robust, darker gray and more heavily spotted young of the Black-back from the paler and buffy young Herring Gull. The buff or yellowish-brown color is especially prominent on the tips of the down of the neck and upper breast of the latter species. The legs and feet of the Black-back young are brownish-black; those of the Herring Gull are a dusky pink in color. The juvenal and subsequent plumages of the two species are easily differentiated.



GREAT BLACK-BACKED GULL.—(*Upper fig.*) ADULT NEAR NEST ON THE HIGHEST KNOLL OF THE COLONY AT DUCK ISLAND, ISLES OF SHOALS, MAINE, MAY 24, 1944. (*Middle fig.*) FOUR ADULTS IN THE DUCK ISLAND COLONY, MAY 24, 1944. (*Lower fig.*) ADULT IN THE ACT OF DESTROYING THE THREE EGGS OF A HERRING GULL'S NEST, ST. MARY'S ISLAND, GULF OF ST. LAWRENCE, QUEBEC, JULY 7, 1931.

Thus far I have visited 98 islands, distributed along the coast of Maine, that are inhabited by nesting Black-backed Gulls. This represents only a part of the islands occupied by these birds yet it is a fair sample which serves to indicate the present trend of the population of this species. The census of the various islands also provides a basis of comparison of the status of these birds in the past as well as what it may be in the future. Of the 98 islands, there were 47 with one to five pairs, 23 with six to ten pairs, 13 with eleven to twenty pairs and 15 islands with more than twenty pairs of breeding birds. In the group of 47 islands supporting only one to five pairs there was a total of 289 adults and a proportionate number of nests counted, an average of about six birds or three pairs breeding on each of the islands. These 47 islands present conditions which in the past have been considered typical, that is with only one or a few pairs occupying any one island, but as the Black-backed Gulls have increased on our coast more and more of them have tended to concentrate on the established nesting places. Today, some of these islands have so many nesting birds—in one case 150 pairs—that we can think of them as Black-backed Gull colonies. The habit of concentrating to form large colonies is also true in regions within the long-established nesting range of the species. H. Lewis (1942), in a census of the bird islands along the north shore of the Gulf of St. Lawrence, reported a population of 1,134 Great Black-backed Gulls on Mecatina Island. On July 3, 1934, I found 800 pairs (1600 individuals) nesting on the Gannett Islands off the Newfoundland Labrador coast north of Battle Harbor Gross (1937). There is also a concentration of about 600 nesting birds on islands in Lake George, Yarmouth County, Nova Scotia.

Following is a list of 61 islands along the coast of Maine on which five or more pairs of Black-backed Gulls were found nesting. Practically all of these islands have exhibited a substantial increase in numbers during the last four years. The numbers of nesting pairs presented in the table are from the 1944 census excepting Pumpkin and Sheep and the two islands in the Casco Bay quadrangle which we were unable to visit this year. In the latter the counts of previous years are given. The islands are arranged in order, beginning with the most eastern colony on Old Man Island and thence proceeding west and south to Smutty Nose Island in the Isles of Shoals group off Portsmouth, New Hampshire, just inside the Maine-New Hampshire state boundary.

On this group of 61 islands, there are 1,154 pairs or 2,308 individuals, an average of approximately 38 nesting Black-backed Gulls to each island.

ISLANDS OF THE COAST OF MAINE ON WHICH FIVE OR MORE PAIRS OF BLACK-BACKED GULLS WERE FOUND NESTING. THE ISLANDS ARE GROUPED BY QUADRANGLES OF THE U. S. GEOLOGICAL SURVEY. FOR CONVENIENCE IN LOCATING THE ISLANDS, THE APPROXIMATE LATITUDE AND LONGITUDE OF EACH ISLAND ARE INDICATED

<i>Quadrangle</i>	<i>Island</i>	<i>Location</i>	<i>Pairs nesting</i>
Cutler	Old Man Island	44° 37.2' N., 67° 14.2' W.	35
Machias	Double Shot Islands	44° 36.3' N., 67° 16' W.	10
	Green Island	44° 33.7' N., 67° 26.6' W.	5
	The Brothers Islands	44° 33.4' N., 67° 26.3' W.	54
	Pulpit Rock	44° 33.2' N., 67° 28' W.	6
Columbia Falls	Ballast Island	44° 33.7' N., 67° 33.2' W.	5
Great Wass Island	The Ladle	44° 29' N., 67° 44.4' W.	8
	Cone Island	44° 28' N., 67° 44.3' W.	65
Bar Harbor	Schoodic Island	44° 20' N., 68° 2' W.	46
Swan Island	Little Duck Island	44° 10.4' N., 68° 14.7' W.	32
	Great Duck Island	44° 9' N., 68° 15' W.	8
	John's Island	44° 6.6' N., 68° 24.5' W.	12
Deer Island	Great Spoon Island	44° 2.5' N., 68° 33.5' W.	24
Castine	Barred Islands	44° 16' N., 68° 50' W.	13
	Colt Head Island	44° 15.6' N., 68° 50.5' W.	16
Vinalhaven	Grass Ledge	44° 13.1' N., 68° 51' W.	6
	Compass Island	44° 12.9' N., 68° 52' W.	18
	Sloop Island	44° 12.4' N., 68° 49' W.	10
	Spoon Island	44° 12.1' N., 68° 49.7' W.	11
	Grass Ledge	44° 11.7' N., 68° 47.8' W.	6
	Dagger Island	44° 11' N., 68° 48.3' W.	8
	Sheep Island	44° 10.8' N., 68° 47.8' W.	7
	Downfall Island	44° 10.8' N., 68° 48.4' W.	6
	Robinson Rock	44° 9.7' N., 68° 58.7' W.	24
	Matinicus	No Man's Land	43° 53' N., 68° 52.2' W.
Ten Pound Island		43° 50.8' N., 68° 53.2' W.	15
Rockland	Fisherman's Island	44° 2.5' N., 69° 2.4' W.	28
	Marblehead Island	44° 2.1' N., 69° 2.5' W.	5
	Otter Island	44° 1.2' N., 69° 4.3' W.	7
Tenant's Harbor	Little Green Island	43° 54.8' N., 69° 2' W.	6
	The Nubble	43° 52.4' N., 69° 7.2' W.	5
	Hog Island	43° 52.2' N., 69° 7.4' W.	16
	Metinic Green Island	43° 51.7' N., 69° 8' W.	28
	Hay Island	43° 54.5' N., 69° 14' W.	13
	The Brothers Islands	43° 54.6' N., 69° 14.4' W.	8
Monhegan	West Gunning Rocks	43° 54.5' N., 69° 15.1' W.	7
	Old Hump Ledge	43° 52.6' N., 69° 21.4' W.	18
	Western Egg Rock	43° 52.7' N., 69° 25' W.	65
	Eastern Egg Rock	43° 51.7' N., 69° 23' W.	150
	Little Egg Rock	43° 51.3' N., 69° 20.5' W.	19
	Shark Island	43° 50.7' N., 69° 21.4' W.	28
	Eastern Duck Rock	43° 46.6' N., 69° 18.6' W.	16

<i>Quadrangle</i>	<i>Island</i>	<i>Location</i>	<i>Pairs nesting</i>
Boothbay	The Hypocrites	43° 48' N., 69° 35.3' W.	5
	N. White Island	43° 47.6' N., 69° 34.5' W.	8
	Pumpkin Island	43° 45.2' N., 69° 35' W.	12
Bath	Long Ledge	43° 45.7' N., 69° 54' W.	6
	Elm Islands	43° 43.4' N., 69° 56' W.	5
Small Point	Heron Islands	43° 43.2' N., 69° 48.3' W.	55
	East Brown Cow Island	43° 42.4' N., 69° 53.4' W.	8
	Mark Island	43° 43.2' N., 69° 54' W.	5
	White Bull Island	43° 43.1' N., 69° 55.5' W.	7
	Ragged Island	43° 43.6' N., 69° 56.3' W.	18
	Cedar Ledge	43° 44.7' N., 69° 57.1' W.	5
Freeport	Upper Green Island	43° 46.3' N., 70° 5' W.	6
Casco Bay	Western Brown Cow Island	43° 41.7' N., 70° 4.4' W.	5
	Outer Green Island	43° 39' N., 70° 7.5' W.	10
Portland	Bluff Island	43° 30.5' N., 70° 19.2' W.	8
	Stratton Island	43° 30.3' N., 70° 18.8' W.	6
Biddeford	Eagle Island	43° 28.8' N., 70° 21.6' W.	5
York	Duck Island	43° 0.3' N., 70° 36.3' W.	80
	Smutty Nose Island	42° 59' N., 70° 36.3' W.	6

#### EXTENSION OF THE WINTER RANGE

Before the Great Black-backed Gull invaded the New England coast as a nesting species it was a common winter resident in Maine and Massachusetts, some wintered on Long Island, New York and a few as far south as New Jersey but beyond this part of the coast it was rare and only an occasional straggler, usually an immature bird, was ever reported.

With the extension of the breeding range the winter range has likewise been extended. Reports of this extension made their appearance soon after the bird was found nesting on the New England coast 1928-1931. On January 17, 1931, T. D. Burleigh (1937) saw four Black-backed Gulls at Oregon Inlet, North Carolina; H. L. Harllee (1933) reported seeing two Black-backed Gulls on St. Helena Sound, South Carolina, on November 24, 1932; Alexander Sprunt (1935) reported another seen at Bull's Island on May 12, 1935. In correspondence just received from Mr. Sprunt, he reports that S. B. Crayton has seen these gulls occasionally near South Island. An immature bird was seen by Mr. Sprunt and Robert P. Allen at Cape Romain Refuge in Oyster Bay on January 21, 1936. In January, 1940, Mr. Sprunt states that Allan Cruickshank saw and photographed three adults on January 8; and three immatures on the 10th and one adult

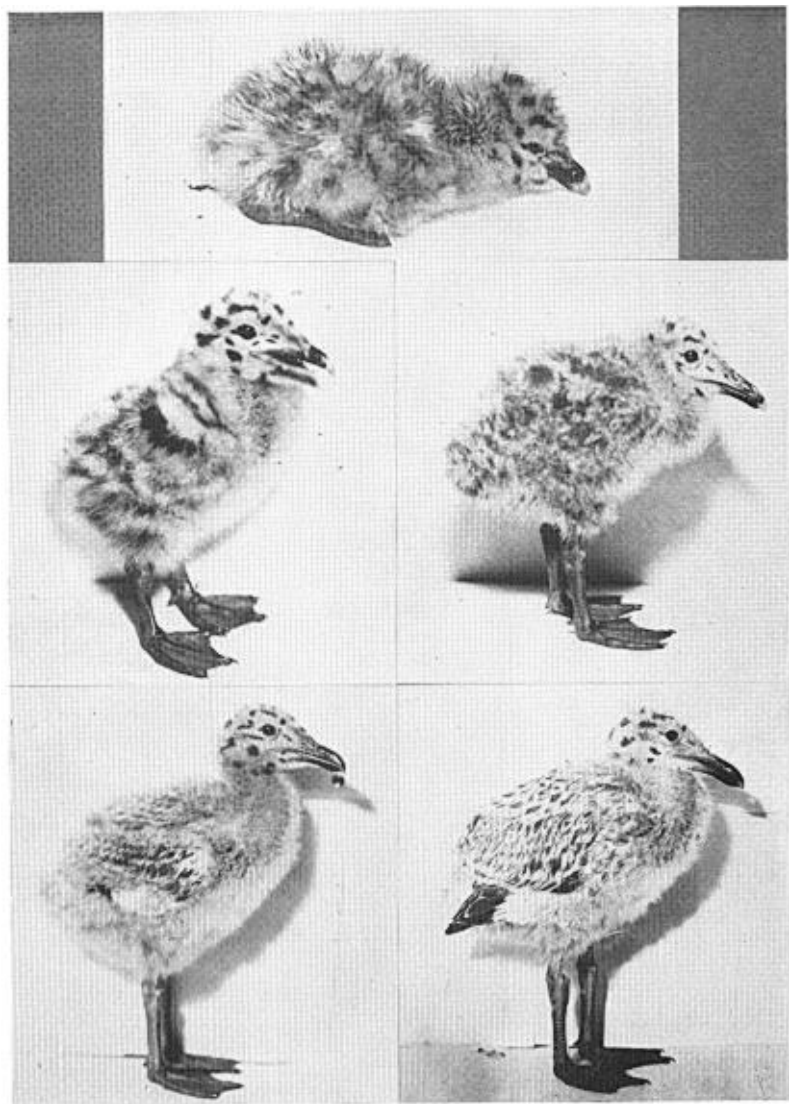


and two immatures on the 18th. J. J. Murray (1933) saw an adult at Sand Bridge, Virginia, on January 19, 1933; S. A. Eliot, Jr. (1936) saw one at Merritt's Island, Florida, on February 22, 1936, and Maurice Broun (1935) reported seeing two immatures on the Florida Keys, February 4, 1935. The last constitutes the most southern record of the Black-backed Gull on the Atlantic seaboard up to this time. These representative records indicate an extension of the winter range, but what is of greater significance are the reports of Clarence Cottam of the U. S. Fish and Wildlife Service, of the regular occurrence of larger numbers in the region from Delaware south to North Carolina. In 1934 he wrote: "During the past winter (1933-34) the writer has observed this bird in Delaware, Maryland, Virginia and North Carolina in numbers that would indicate the species occurs more than casually south of Delaware Bay." On February 23, 1934, Mr. Cottam saw 17 adults, and the following day, six in Pamlico Sound, North Carolina. On February 27, ten were seen at Cape Hatteras. In 1935, Cottam reported seeing 50 of these birds in Pamlico Sound in the course of five days, and 30 were seen in the region of Cape Hatteras, thirteen of which were in one flock. On January 26-27, Cottam (1938) reported seeing a dozen or more at Pea Island, North Carolina. In recent correspondence received from Dr. Cottam he has included some reports from his field men. Mr. John H. Buckalew of Chincoteague, Virginia, reports that, during a period of 16 years, he has recorded the Black-backed Gull as a regular visitor. The largest number seen during one day was 17. Of all the birds observed he estimated that 75 per cent were adults and only 25 per cent were immature birds. Mr. S. A. Walker of Manteo, North Carolina, writes that during the winter months he has found Black-backed Gulls along the entire coast line. The first fall arrivals, according to Mr. Walker, are usually seen during the latter part of September. During January and February they are present in sufficient numbers to be considered common visitors. Most of the adults are gone from the coast of North Carolina by April 10, but immature birds may be seen during the month of May. These reports are evidence of a normal extension of the winter range of the Black-backed Gull as far south as North Carolina which is correlated in time with the extension of the nesting range along the New England coast.

It is also interesting to note that recent dates of first appearances in the autumn are earlier than those reported prior to 1930. In times past the Black-backed Gull was not seen on the coast of New Jersey until November, but according to Cottam (1936a) the first arrivals now appear the last week of September. In the same year Cottam



GREAT BLACK-BACKED GULL.—(*Upper fig.*) TYPICAL NEST AND THREE EGGS; KENT ISLAND, NEW BRUNSWICK, JUNE 10, 1936. (*Middle fig.*) NEST AND THREE EGGS—ONE EGG PIPPED; SHARK ISLAND, JUNE 1, 1944. (*Lower fig.*) NEST CONTAINING THREE YOUNG ABOUT ONE DAY OLD; WESTERN EGG ROCK, MAINE, MAY 31, 1944.



GREAT BLACK-BACKED GULL, KENT ISLAND, NEW BRUNSWICK.—(Upper fig.) YOUNG ONE HOUR OLD; JUNE, 1936. (Middle left) TWO DAYS OLD; JUNE, 1936. (Middle right) SIX DAYS OLD; JULY 15, 1935. (Lower left) TEN DAYS OLD. (Lower right) TWO WEEKS OLD.

(1936b) received reports of very early occurrences of this bird in Rhode Island. One adult was seen as early as August 5, 1935, at Cranston, Rhode Island, two were seen on September 5, and on September 15 a flock of 12 appeared. One was reported at Mastic, Long Island, on September 2. Because these early arrivals have occurred since the Black-backed Gull has extended its range to New England, it is probable that they are of birds which inhabit this region in the summer. This view receives some support by banding operations. For example, an individual banded by J. M. Cadbury in Muscongus Bay, Maine, on July 6, 1941, was recovered at Provincetown on September 15, 1941. Another bird banded at Eastern Egg Rock, Maine on July 18, 1939, was recovered as a three-year-old individual at Narragansett, Rhode Island, early in September, 1942.

In the past five years the number of wintering birds has greatly increased. Ludlow Griscom and other observers have frequently reported flocks of adult Black-backed Gulls, numbering from 50 to 250 individuals, on the Massachusetts coast. At Long Beach, New Jersey, J. K. Potter (1941) and Brimley and Grey (1941) reported seeing a flock of 100 individuals on November 10, 1940. Numerous other recent records indicate the same general trend. In addition to a larger number of breeding individuals on Massachusetts coastal islands there has also been an increase in the number of non-breeding birds seen during the summer months.

#### MIGRATION

The migratory instinct of the Black-backed Gull is not as highly developed as that of the Herring Gull. This is clearly indicated in a comparison of the recoveries of banded individuals of the two species. Many Herring Gulls banded at Kent Island and in the Great Lakes region were found to travel distances of 1,000 to 1,500 miles and a considerable number of them exceed a distance of 2,000 miles from the place of banding (Gross, 1940). The Black-backed Gull has been banded in smaller numbers, but we have 134 recoveries<sup>1</sup> which are sufficient to indicate that the distances flown during the migratory flight are comparatively limited. There are 58 recoveries of Black-backed Gulls banded on various islands along the north shore of the Gulf of Saint Lawrence, Saguenay County, Quebec, most of which were banded by Dr. Harrison Lewis and a few by Robert Johnson and others. Of these 58 recoveries, 35 were from Newfoundland, ten from the same

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<sup>1</sup> Many of these have been published in the Official Record of Bird-Banding Returns in various issues of the Canadian Field-Naturalist and others were furnished by Frederick C. Lincoln in charge of Migratory Bird Investigations, U. S. Fish and Wildlife Service.

general region in which they were banded, three from the coast of Labrador, one from the Magdalene Islands, two from Prince Edward Island, four from Nova Scotia, and three from New Brunswick. Of three recoveries of birds banded on the coast of Newfoundland Labrador by Dr. Oliver Austin, two were from Newfoundland and one from Prince Edward Island. All the recoveries of these birds banded at long-established northern colonies were well within a 500-mile radius from the place of banding. It will be noted that none of the 61 birds migrated to the United States but all wintered in the Maritime Provinces and Newfoundland.

Going south to Lake George, Yarmouth County, in southern Nova Scotia, we have 60 recoveries of birds banded by R. W. Tufts, Basil Colbran, and others. Of these, 46 were recovered in Nova Scotia, one was captured at sea southeast of Nova Scotia, four were from New Brunswick, four from Maine, and five from Massachusetts. It is interesting to note that nine of the recoveries are from New England yet all are from points less than 300 miles from the place of banding. A bird banded at Kent Island, Bay of Fundy, New Brunswick, was taken at Lubec, Maine. On the coast of Maine there are records of 11 recoveries of Black-backed Gulls banded on various islands in Muscongus Bay by Joseph Cadbury, of which three were recovered in Maine, five in Massachusetts, two in Rhode Island, and one in New Jersey. One immature which I banded on Ragged Island was recovered at Bayonne, New Jersey. These records all indicate that the migratory flight of the Black-backed Gull is a comparatively short one and that the bulk of the individuals do not travel more than a few hundred miles. Gulls nesting on the coast of Labrador and the north shore of the Gulf of Saint Lawrence, Province of Quebec, do not migrate as far as the United States. Birds nesting in Nova Scotia winter chiefly from the Bay of Fundy to points along the New England coast. Birds nesting on the New England coast winter a correspondingly greater distance to the southward.

The extension of the winter range to points on the Atlantic coast south of New Jersey coincides in time to the extension of the breeding range to the New England coast. If the breeding range of the Black-backed Gull is extended as much in the next 15 years as it has been in the past 15 years we can reasonably expect the species to become a regular winter resident as far south as Florida and the Gulf Coast.

#### DESTRUCTIVE HABITS OF THE BLACK-BACKED GULL

This large gull is an aggressive and destructive bird in its relation to other species which share the same nesting islands. As it extends

its range and becomes more abundant on our coast, its depredations, especially on the eggs and young, becomes a serious menace to birds such as the eider ducks. Even one or two pairs of Black-backed Gulls nesting in the midst of a populous colony of eiders may destroy a large percentage of the eggs in the course of the nesting season. Not only are the eggs punctured and eaten, but I have seen adult Black-backed Gulls attack and kill the young ducklings. At Kent Island, from a blind placed in the midst of the colony, I saw a Black-back, in the course of a few minutes, kill three ten-day-old Herring Gulls that had unwittingly wandered into its nesting territory, by viciously pecking the heads and backs of the defenseless youngsters. I have also seen them attack and kill young eiders that were swimming in the water.

The tendency of the Black-backed Gulls to molest and plunder is not peculiar to individuals that have invaded this coast but apparently is a habit of long standing, more or less general in other parts of its range. M. Abbott Frazar (1887) during the course of the summer of 1884 spent on Canadian Labrador, made the following observations of the Black-backed Gull: "During the breeding season they feed very largely upon the eggs of other birds, and upon young Eider Ducks. They will take a Murre egg, grasp it in the center with their bill, and without breaking the two ends apart, they will crush in their sides and secure the contents. They must do it skillfully, as I never saw any part of an egg spilt on the rocks, nor did I ever see a gull's plumage stained with it either. They catch young Eiders in this way; two or three gulls will hover over a brood in the water, which of course confuses the mother duck and scatters the brood in all directions. Then by following the ducklings after each dive they would soon tire them out, and a skillfully directed blow at the base of the skull, which seldom missed its aim, would in an instant finish the business, and before the unhappy duck would know which way to turn, its brood would be one less."

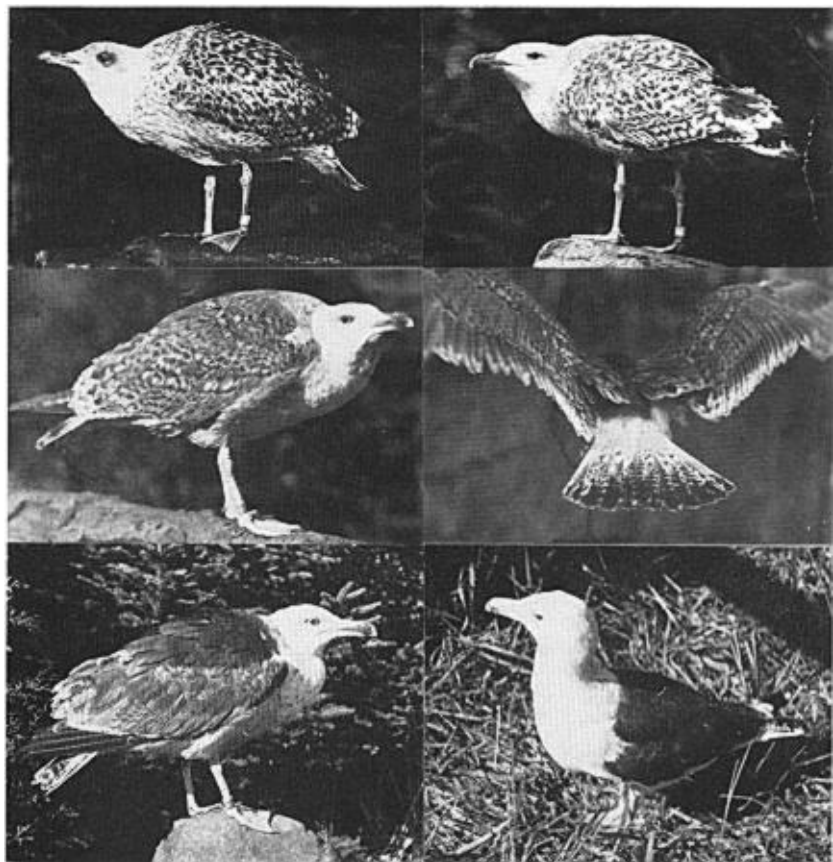
Johan Beetz (1916) who resided for twenty years at Piashte Bay, mid-way between Esquimaux Point and Natashquam and who was a keen observer and made many collections and interesting observations of the birds of the region, has the following to say concerning the habits of this gull: "The greatest destroyer of the Eider is without doubt *Larus marinus*, which during the years when there are not enough little fish to feed its young, kills with ease all the young Eiders that it finds. Flying at a great height this gull sees its prey from afar, and as the young Eider (up to ten days of age) dives but a short distance, by sailing just above the water the gull is able to watch it constantly, and follow it, until, when the young is so fatigued that

it is unable to dive more, the gull seizes it with its powerful beak. If during the journey to the nest, the young still struggles in the beak, the gull carries the duckling to a height of 30 or 40 rods, and, calculating the strength of the wind, drops it on the rocks where it is killed. The gull immediately follows and picks up the dead body."

In recent years the birds nesting along the north shore of the Gulf of Saint Lawrence have been protected by laws enforced by the Canadian Government. As a result the Black-backed Gulls, as well as other species, have increased their numbers. Dr. Harrison Lewis, Chief Federal Migratory Bird Officer who has charge of this region, stated the following in his report of 1942: "The Great Black-backed Gull, *Larus marinus* which consumes eggs and young of other birds, particularly the Southern Eider, has indeed become so numerous in this region as to be unduly destructive, with the result that it has become necessary to institute special means of control."

The Black-backed Gull does not limit its destruction to the eggs and young but has also been found guilty of successfully attacking and killing adult healthy birds. Since this aspect of the destructive habits of this species is not generally or fully appreciated, it is deemed desirable to call attention to a number of detailed observations by competent observers. Mr. J. D. Cleghorn (1942) observed one of these gulls kill an American Golden-eye at Ile au Heron Bird Sanctuary, Montreal, Canada, on October 19, 1941. He writes as follows: "The gull was chasing a female Goldeneye (*Glaucionetta clangula americana*) with the obvious intent of capturing her. The pursuit continued for approximately ten minutes, with the duck using every means to avoid being caught, except that of flight. As she broke the surface after a short dive, the gull seized her by the tail and held on with great tenacity, despite the fact that by this time she was rapidly beating her wings and had partially risen from the water. What immediately followed is pure conjecture, because the gull turned and faced in the opposite direction, holding its wings extended above its body; but we could see that it had pulled the duck under water, had transferred its hold from tail to neck, midway between the head and body, and was killing it by shaking it from side to side and plunging it under water. Then it released its grip, turned the duck over on its back, ripped it open, and for the next half hour gorged itself. Two hours later we saw an immature gull of the same species kill a duck, but because of the great distance we were unable to identify the victim nor to observe clearly the method the gull was using, but the result was the same."

Richard G. Kuerzi (1937) writes of a spectacle he witnessed with



GREAT BLACK-BACKED GULL; HATCHED AT KENT ISLAND, JUNE 28, 1935.—(*Upper left*) FIVE MONTHS OLD; NOV. 21, 1935. (*Upper right*) TEN MONTHS OLD; APRIL 14, 1936. (*Middle left*) ONE YEAR, SIX MONTHS OLD; DEC. 8, 1936. (*Middle right*) ONE YEAR, SIX MONTHS OLD (TO SHOW TAIL MARKINGS); DEC. 8, 1936. (*Lower left*) TWO YEARS, FOUR MONTHS OLD; OCT. 12, 1937. (*Lower right*) THREE YEARS OLD; JULY 6, 1938.



Allen Thomas and Hobart van Deusen of a Great Black-backed Gull killing and eating an adult male Red-breasted Merganser off Tod's Neck, Connecticut, on January 1, 1936. His account in part is as follows: "The combat took place about a quarter of a mile off shore. The Sound was very calm, and with the use of a 60 power telescope, a fairly accurate observation was obtained. The few scattered flocks of scoters, goldeneyes, and sheldrake had been checked over, when a scream of a Black-backed Gull drew our attention to a flock of mergansers, at which the gull was diving. A struggle ensued, a general commotion among the flock, which took wing, leaving two birds beating and flapping their wings. With the binoculars it became evident that the gull had a firm grip on the duck, which was making frantic efforts to get away by flying rather than diving. Within perhaps less than a half-minute the merganser's wing flapping was becoming much slower, the grip of the gull was apparently paralyzing in some way. By the time the telescope was trained on the pair the paralysis was almost complete. Very shortly the gull released its grip on the back, and the duck remained motionless. Next the gull administered three or four powerful, and vicious blows with its beak on the sheldrake's neck and head, which dropped perceptively. A few more vicious pecks by the gull concluded the kill. The body of the duck floated belly up with the head submerged, and the killer vigorously began tearing at the entrails."

Mr. C. E. Addy, Wildlife Technician of the Massachusetts Department of Conservation, has published his observations of the habits of the Black-backed Gull made at Newburyport, Massachusetts (*see* Addy, 1945). Mr. Addy reports numerous instances in which these gulls have molested adult Black Ducks and of Black-backed Gulls feeding on ducks and presents the details of one episode which are of special interest.

On several of the islands I have visited along the Maine coast, remains of eiders were found which apparently were killed and partially eaten by the Black-backed Gulls inhabiting the same islands. At Grass Ledge in upper Penobscot Bay, on June 4, 1944, we found a destroyed eider's nest and leading away from the nesting site was a great mass of eider feathers, indicating a violent struggle on the part of the victim. A few Black-backed Gull feathers indicated the probable identity of the aggressor. About 35 feet from the nest were the remains of the partially eaten eider.

The above and many similar reports serve as a serious indictment against the character of the Black-backed Gull. A species that extends its former nesting range, as this bird has done to the New

England coast, is in the same category as an introduced species that flourishes under new environmental conditions until natural checks serve to control its numbers. By protection, man has given an impetus to all of our sea birds but some of them, like the Black-backed Gull, are increasing their numbers at the expense of other species such as the Eider Duck. For this reason control of the Black-backed Gull has been advocated. However, it is important to note that both of the above species have made a phenomenal increase on our coast and it becomes a debatable question of how much control should be administered until we clearly understand the interrelations of all of the species involved while their populations become adjusted and stabilized under new conditions created by man. In cases where the Black-backed Gull is nesting on small islands crowded with nesting eiders and especially where the destruction of the eggs and young, and also of the adults, is known to be excessive, an immediate control of these gulls is amply justified.

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## THE HISTORY OF BIRD BANDING

BY HAROLD B. WOOD

BIRDS have been used by man to carry messages since very ancient times. Quintus Fabius Pictor, who was born about 254 B. C., recorded in his 'Annals' that "When a Roman garrison was besieged by the Ligurians a swallow taken from her nestlings was brought to him for him to indicate by knots made on a thread tied to its foot how many days later help would arrive and a sortie must be made." That siege occurred during the Second Punic War, 218-201 B. C. This is probably the earliest recorded instance of the marking of birds to carry a message. Pliny in his 'Natural History' completed in 77 A. D., further declared: "Pigeons have acted as go-betweens in important affairs, when at the siege [by Mark Anthony, 44 B. C.] of Modena, Decimus Brutus sent to the consul's camp dispatches tied to their feet." And later: "A man of knightly rank at Volterra, who owned a racing-in-hand [chariot] used to catch swallows and take them with him to Rome [135 miles distant southeast] and dispatch them to take the news of a win to his friends, as they returned to the same nest; they had the winning colors painted on them." Taurosthenes, by means of a pigeon, sent to his father on the isle of Ægina the news of