ADDITIONS TO THE SEABIRD FAUNA OF NORTH CAROLINA

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During the last several years the knowledge of North Carolina's pelagic and offshore avifauna has been greatly enhanced. Not only is information available concerning expected seasonal occurrence of the known fauna (Lee and Booth, in prep.), but documented seabird diversity has significantly increased. Although some information has been obtained accidentally from storm casualties, most of the recent data are a direct result of numerous planned offshore trips for the express purpose of observing and identifying birds at sea. These trips have contributed significantly to the understanding of the seasonal and geographic distribution of seabirds in the western North Atlantic.

Since publication of *The Birds of North Carolina* (Pearson et al. 1942) five additional species of seabirds have been added to the state list (see Parnell et al. 1978), all of which were officially documented in the last 10 years. They are Leach's Storm-Petrel (*Oceanodroma leucorhoa*) (Blem and Sonneborn 1972); Harcourt's Storm-Petrel (*O. castro*) (Fussell 1974); Black-capped Petrel (*Pterodroma hasitata*) (Lee 1977); Sabine's Gull, (*Xema sabini*) (Culbertson 1977); and Bridled Tern (*Sterna anaethetus*) (Browne et al. 1976).

This paper provides documentation of seven species not previously recognized as occurring in North Carolina's offshore waters, and additional records for the Black-capped Petrel.

The records presented here are mostly incidental observations from a long-range study by Lee on the natural history of seabirds in North Carolina's offshore waters. Information on measurements, geographical and seasonal distribution, food items, and resource partitioning will be presented elsewhere. Studies on external parasites (M.M. Browne, N.C. State University), internal parasites (Ron Mobley, N.C. State University), heavy metal concentrations (Joseph Bonaventura, Duke University Marine Laboratory), and the oil glands (David W. Johnston, University of Florida) of these birds are in progress. Specimens have been deposited in the systematics collection of the North Carolina State Museum (NCSM) and the United States National Museum (USNM), and measurements of those cited in this paper are summarized in Table 1.

Northern Fulmar (*Fulmarus glacialis*). Even though the Northern Fulmar has experienced rapid population and range expansion in Europe during this century (Fisher 1952, Lockley 1974), and there are numerous winter sight records from the Baltimore Canyon (Rowlett, pers. obs.) and one from South Carolina (Nugent 1978), its occurrence in North Carolina's offshore waters has not been documented. The recently summarized knowledge of this bird in North Carolina was reported as follows (Lee and Booth, in prep.): "Two previously unpublished records are available for this species in North Carolina. In the early spring of 1973 John Williamson, Refuge Manager of the Pea Island National Wildlife Refuge, received an injured Fulmar that a visitor found on a parking lot at the refuge. The bird died several days later, in spite of attention given to it by the refuge staff, but the specimen was not saved. On 14 October 1976 we watched a light-phase fulmar for approximately 15 minutes as it flew in a parallel line with the course of our boat at a distance of about 50-70 yards. The bird glided several feet above the water, occasionally flapping its wings. Its large, light head and neck provided a marked contrast to its gray wings. This sighting was made approximately 35 miles southeast of Oregon Inlet at the edge of the continental shelf."

On 17 May 1978 Eloise Potter, Ron Mobley, Lee, and the crew of the *Gal-O-Mine* watched a fulmar for 3 to 5 minutes as it fed on a chum slick they had placed approximately 8 miles S of the Diamond Shoals Light. Its large head and neck and soaring-flapping flight were noted as the bird flew. Later they watched as it swam on the surface among feeding Laughing Gulls and Wilson's Storm-Petrels. On several occasions the bird was seen within 20 yards of the boat. On 18 May 1978 a second bird, with a decidedly yellowish head and neck, was observed and later collected by Lee approximately 47 miles E of

TABLE 1. Measurements and weights of specimens of seabirds collected during this study. (NCSM) = North Carolina State Museum; USNM = U.S. National Museum.)

Species/date	*Museum No.*	*Age/sex*	*Total length*	*Tail length*	*Tarsus*	*Wing cord*	*Wing span*	*Weight*
Northern Fulmar								
18 May 1978	NCSM 6457	yg. female	460 mm	117 mm	47mm	350 mm	1125 mm	642.4 g
1 October 1978	NCSM 6864	male	466 mm	126 mm	54 mm	318 mm	1120 mm	731.6 g
1 October 1978	NCSM 6880	ad. female	468 mm	126 mm	54 mm	309 mm	1055 mm	556.0 g
Manx Shearwater								
Spring 1978	NCSM 6554	prob. ad. female	343 mm	80 mm	43 mm	245 mm	ca. 858 mm	ca. 370 g
30 December 1978	NCSM 7091	male	386 mm	79 mm	49 mm	221 mm	755 mm	430.3 g
30 December 1978	NCSM 7092	male	385 mm	79 mm	50 mm	230 mm	787 mm	423.6 g
30 December 1978	NCSM 7093	male	390 mm	77 mm	51 mm	232 mm	778 mm	409.7 g
30 December 1978	NCSM 7094	ad. female	403 mm	77 mm	54 mm	237 mm	822 mm	503.4 g
Black-capped Petrel	NCSM 6456	im. female	370 mm	140 mm	30 mm	275 mm	930 mm	373.5 g
White-faced Storm-Petrel	NCSM 6223 and USNM 527825	ad. female	—	73 mm	51 mm	157 mm	424 mm	47.6 g
Long-tailed Jaeger								
31 August 1977	NCSM 6280	im. female	—	175 mm	39 mm	284 mm	835 mm	202.5 g
23 August 1977	NCSM 6281	im. female	410 mm	150 mm	45 mm	290 mm	820 mm	271.5 g
24 September 1977	NCSM 6391	im. female	384 mm	150 mm	41 mm	305 mm	926 mm	291.0 g
7 November 1977	NCSM 6392	im. female	380 mm	120 mm	46 mm	301 mm	890 mm	349.5 g
25 September 1977	NCSM 6616	im. female	384 mm	130 mm	38 mm	290 mm	933 mm	219.9 g
South Polar Skua	USNM 573001	ad. female	—	140 mm	61 mm	366 mm	—	—
Arctic Tern	NCSM 6000	im. male	ca. 365	161 mm	14 mm	255 mm	734 mm	110.4 g

TABLE 2. Summary of Carolina records for the Black-capped Petrel.
(*Observed by the authors. (P) Documented with photographs. (S) Documented with specimen.)

Date	*Position*	*Number*	*Source*
6 Sept. 1966	N. Fla. to S.C. from 30°15′ - 33°30′N and 78°50′ - 76°30′W	12+	Morzer Bruyns, 1967
22 Oct. 1972	50 mi SE Morehead City	1	Lee, 1977
21 Oct. 1973	30 mi SSE Morehead City	1	Lee, 1977
4 Aug. 1974	Off Cape Hatteras	6	Lee, 1977
18 May 1975	Gulf Stream off Hatteras	2	Lee, 1977
12 Oct. 1975	22 mi E Cape Hatteras, 35°10′N, 75°05′W	1*	Lee, 1977
1 Aug. 1976	20 mi E Cape Hatteras, 35°06′N, 75°10′W	1*(P)	this study
6 Sep. 1976	22 mi SSW Cape Hatteras, 34°52′N, 75°33′W	1*	Lee, 1977
6 Sep. 1976	23 mi SSW Cape Hatteras, 34°51′N, 75°33′W	1*	Lee, 1977
14 Oct. 1976	28 mi SSE Oregon Inlet, 35°36′N, 75°00′W	1*	Lee, 1977
14 Oct. 1976	30 mi SSE Oregon Inlet, 35°36′N, 74°58′W	1*	Lee, 1977
4 Feb. 1977	42 mi SSE Cape Hatteras, 34°37′N, 75°07′W	1*(P)	this study
4 Feb. 1977	38 mi SE Cape Hatteras, 34°50′N, 74°55′W	1*	this study
4 Feb. 1977	40 mi ESE Cape Hatteras, 34°54′N, 74°49′W	1*	this study
21 May 1977	19 mi SSW Cape Hatteras, 34°55′N, 75°32′W	1*(P)	this study
21 May 1977	16 mi SSW Cape Hatteras, 34°57′N, 75°34′W	1*	this study
25 May 1977	30 mi E Oregon Inlet, 35°33′N, 74°59′W	1*	this study
1 June 1977	ca. 35 mi E Oregon Inlet, 35°31′N, 74°53′W	1+*	this study
22 June 1977	ca. 30 mi E Oregon Inlet	1	this study
19 July 1977	38-40 mi E Oregon Inlet, ca. 35°30′N, 74°50′W	1	this study
22 Sept. 1977	29 mi E Oregon Inlet, 35°42′N, 74°58′W	1*	this study
23 Sept. 1977	29 mi E Oregon Inlet 35°40′N, 74°58′W	1	this study
7 Nov. 1977	46 mi SE Oregon Inlet, 35°28′N, 74°44′W	1*	this study
17 April 1978	ca. 37 mi E Oregon Inlet, 35°33′N, 74°51′W	1-2*	this study
10 May 1978	ca. 44-48 mi SE Oregon Inlet, 35°28′N, 74°47′W to 35°27′N, 74°43′W	16+*(S)	this study
18 May 1978	ca. 46 mi ESE Oregon Inlet, 35°37′N, 74°37′W	3*	this study
20 Aug. 1978	Off Hatteras Inlet	1*	this study
10 Oct. 1978	Off Hatteras Inlet	20-40+*	this study

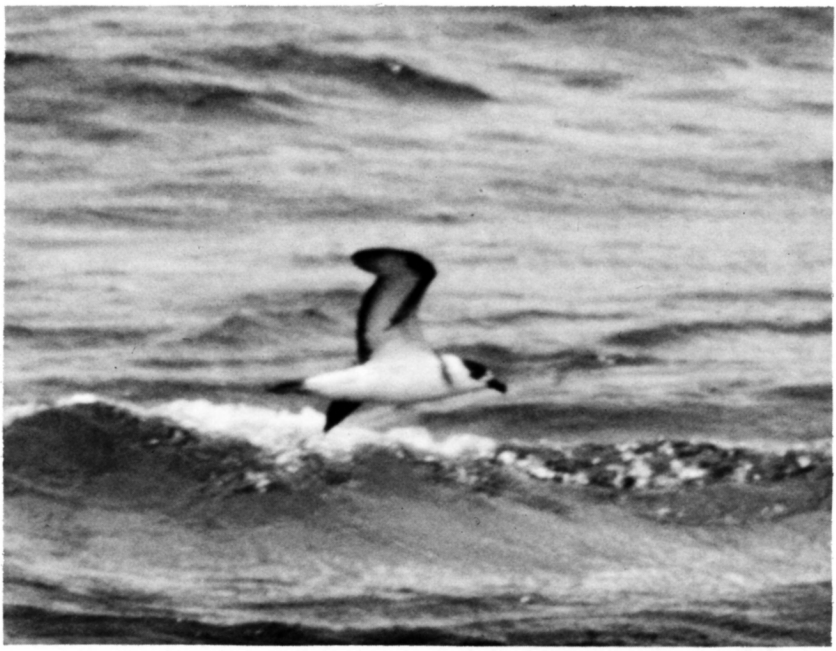

Fig. 1. A Black-capped Petrel was flying over the Gulf Stream off North Carolina on 4 August 1976. (Photo by Richard A. Rowlett)

Oregon Inlet. Both birds were encountered along the western edge of the Gulf Stream.

Captain Allen Foreman collected two Northern Fulmars for the North Carolina State Museum on 1 October 1978, 40 miles E of Oregon Inlet. On 14 November 1978, Steve Platania and Lee observed two additional fulmars about 40 and 30 miles SSE of Oregon Inlet. One was a dark-phase bird, the only such individual observed off North Carolina to date.

Manx Shearwater (*Puffinus puffinus*). The only report of this species in North Carolina waters was a sight record made by Buckley (1973) of two individuals seen in migration from the beach at Hatteras on 31 May 1970.

On 17 April 1978, 30 miles E of Oregon Inlet, Lee saw an unidentified shearwater that he believes to have been this species. Although field marks were not confirmed, its identity is based on the following points: Audubon's Shearwater has not been observed locally this early in the season; the bird looked larger than an Audubon's; the wing beat was slower than that of an Audubon's; and the individual was several (5+) miles inshore from the Gulf Stream. The latter point is relevant because Audubon's Shearwater, unlike the Manx Shearwater, is a warm-water species and would be expected only in association with the Gulf Stream this early in the season.

In the early spring of 1978, Mr. and Mrs. Tim Mutchles salvaged a dead, oil-soaked shearwater from the campground area at Cape Hatteras beach. At our request this specimen was sent ot the N.C. State Museum, and we confirmed their suspicion that it was a Manx Shearwater. Although this bird represents the first specimen record for the species from the Carolinas, there is a recent storm-wreck specimen record for Virginia (29 June 1975, USMN).

Lee and Platania observed a single Manx Shearwater and one other unidentified black-and-white shearwater 40 miles SSE of Oregon Inlet near the edge of the Gulf

Stream on 5 December 1978. On 30 December 1978 Lee collected four individuals in approximately the same area. The birds were near the edge of the Gulf Stream (22 degrees C) but over "cold" water (16.5 degrees C).

Black-capped Petrel (*Pterodroma hasitata*). Since the first reporting of Black-capped Petrels in North Carolina waters (Lee 1977), numerous additional records have accumulated. Rowlett (see Fig. 1) has documented the species' presence with photographs and added six other records, and several more sightings have been published in *American Birds*. On recent N.C. State Museum offshore trips Lee acquired an additional 27 sight records and one specimen (19 May 1978). Apparently this species is a regular offshore resident, and individuals probably are present throughout the year along the inner edge of the Gulf Stream (see Table 2).

It is interesting to note that the presence of the Black-capped Petrel in South Carolina offshore waters has been known for over a decade (Mörzer Bruyns 1967), although this reference has apparently been overlooked by that state's records committee.

White-faced Storm-Petrel (*Pelagodroma marina*). Buckley and Wurster (1970) and Barnhill and DuMont (1973) summarized previous North Atlantic records of this species. Although there are a limited number of sightings from near shore, records exist for Delaware, New York, Massachusetts, and New Jersey. Robert Ake and David Johnson (Am. Birds 26:45) saw two storm-driven individuals in Oregon Inlet on 2 October 1971, but there are no detailed reports of the species' occurrence in North Carolina. On 31 August 1977 Captain John Booth, Manteo, N.C., collected a specimen of an unfamiliar seabird 38 miles off Oregon Inlet. Although the bird was later positively identified by Booth, the specimen was lost to a neighbor's cat while Booth was calling Lee about the record. On 24 September 1977, Booth collected a second individual (see front cover) at the same location (NCSM 6223, now USNM 527825). Booth commented on the erratic, bouncing flight of both individuals and stated that the bird is unmistakable from any distance. Subspecific identification of the single specimen is being determined by George Watson of the U.S. National Museum.

White-faced Storm-Petrels may not be as scarce as our records indicate, for one commercial fisherman reported seeing them on several occasions in the fall of 1977.

Long-tailed Jaeger (*Stercorarius longicaudus*). Because of problems in identifying birds not in spring plumage, this jaeger may also be more common than our few records indicate. It is interesting to note that all sight records are of birds in spring plumage. Buckley (1973) discussed 10 individuals, which he observed from shore during a spectacular seabird migration, 30 May through 1 June 1970. The only other published sight report is from Cape Lookout on 13 May 1972 (Chat 36:114). On 25 May 1977, Lee watched an adult Long-tailed Jaeger for more than 20 minutes as it hovered and fed around a chum slick 12-15 miles due east of Oregon Inlet. Its long central tail feathers were visible even from a considerable distance. On 23 August, 31 August, and 24 September 1977, John Booth collected four immature specimens, but at the time was unable to distinguish them by sight from Parasitic Jaegers. Lee obtained an additional specimen on 7 November 1977, at which time all three jaeger species were observed and collected. Again, he was unable to distinguish this species from fall-plumaged Parasitic Jaegers until the bird was in hand.

On 17 May 1978, Potter, Mobley, and Lee watched two full-plumaged birds as they flew above the boat 15 miles ENE of Diamond Shoals Light. Long central tail feathers and the more streamlined body readily distinguished these birds from the Pomarine Jaegers that had been seen earlier in the day.

South Polar Skua (*Catharacta maccormicki*). Two documented occurrences of this bird are here recorded for North Carolina. A dark-phase female (USNM 568001) was found at Cape Hatteras, Dare County, by Joseph P. Hudick on 17 May 1976 (see Fig. 2). On 21 May 1977, Rowlett photographed an apparently light-phase South Polar Skua in the Gulf Stream, 18 miles S of Cape Hatteras. The bird was observed for about 30 minutes by 40 bird watchers at a distance of 30 to 160 feet (see Fig. 3).

Great Skua (*Catharacta skua*). John L. Brookshire, of Winston-Salem, found a banded Great Skua at Cape Lookout, Carteret County, N.C., on 29 December 1975.

Fig. 2. A South Polar Skua was photographed shortly after it was found injured at Cape Hatteras, Dare County, N.C., 17 May 1976. (Photo by Joseph P. Hudick)

Although the specimen was not saved, the band revealed that it was a bird banded five months previously in Iceland. Eloise Potter wrote inquiring about the record and received the following information from Aevar Petersen, Curator of Zoology at the Natural History museum in Reykjavik:

> *Ring no. Reykjavik 23422. Catharacta skua.* Ringed as young 24.7.1975 at Kvisker, Hofshr., A.-Skaft., SE.Iceland (63°59′N - 16°26′W) by the Brathay Exploration Group.
> Recovered 29.12.1975 at Cape Lookout, Carteret County, North Carolina, U.S.A. (34°30′N - 76°30′W). Found dead on the beach. ...
>
> The Brathay Expl. Group is a group of amateur bird watchers that return to Iceland every year to ring Great Skuas. As a result of their ringing - and that by Icelandic ringers - we already know a great deal about the migration pattern of Icelandic Great Skuas. So far we have had 60 recoveries from the west side of the Atlantic: 47 from Greenland, 9 from Newfoundland, 1 from North Carolina, 2 from Guyana (=Surinam) and 1 from Brazil.

This is the first verified record of the Great Skua from North Carolina.

Several sight records of skuas from North Carolina were not identified to species. The first such report came from Eugene Pond, who saw a skua on the water and in flight from the Frying Pan Lightship, about 25 miles SE of Southport, on 1 August 1960 (Chat 24:105). Two separate individuals were seen off the beach, 4 miles NE of Hatteras Inlet, Dare County, 31 May 1970 (Buckley 1973). Rowlett observed single birds off the beach at

Fig. 3. Another South Polar Skua was photographed in flight and resting on the water 18 miles off Cape Hatteras on 21 May 1977. (Photos by Richard A. Rowlett)

Fig. 4. An Arctic Tern was flying off Cape Hatteras, N.C., 21 May 1977. (Photo by Richard A. Rowlett)

Pea Island National Wildlife Refuge, Dare County, 18 February 1974 (Atl. Nat. 29:175), and at sea, 14 miles S of Cape Hatteras, 6 July 1975. The latter Rowlett sighting was previously reported as having been seen 24 miles ESE of Cape Hatteras on 5 July 1975 (Am. Birds 29:959). Lee has two records from trips out of Oregon Inlet (25 May and 1 June 1977). All these birds were initially assumed to have been Great Skuas, but the recent documentation of *C. maccormicki* in the North Atlantic (Veit 1978 and this paper) leaves their identity open to question.

Arctic Tern (*Sterna paradisaea*). Sykes et al. (in prep.) are summarizing the few documented records of this tern from the western Atlantic. For North Carolina there are two sight records (19 May 1973 and 6 September 1976, Rowlett), one photographic record for 21 May 1977 when five birds were observed 18 miles S of Cape Hatteras (Rowlett, Fig. 4), and a single specimen (18 May 1977). Lee collected the specimen (NCSM 6000) approximately 32 miles ESE of Oregon Inlet. The bird was resting on a board floating in a drift line of Sargassum. Two other *Sterna*, both in adult plumage and with very red bills, were floating in the water next to the board. The specimen was a male in "Portlandica" plumage, and the bill was dark with only a trace of red at the base. For a discussion of this plumage, see Ridgway (1874). These are the first specimen and photographic records of the Arctic Tern from the Carolinas.

The addition of 12 pelagic species to the documented North Carolina avifauna during the present decade was accomplished through the combined efforts of many people. Bird students too numerous to mention have contributed records to our rapidly growing, but still far from adequate, body of data on seabird diversity, abundance, and seasonal occurrence. Because of the random nature of seabird excursions and their great cost, many years will elapse before we have a relatively complete understanding of these matters.

Meanwhile, it is hoped that persons pursuing offshore birds will continue to document their finds with specimens, photographs, and detailed accounts published in appropriate journals. It is also hoped that editors will understand the importance of the often fragmented reports of offshore trips and continue to accept records of the relatively common species as well as of the rare or previously unreported ones that surely will be found off the North Carolina coast in the future.

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