

50–60% of the body length of the Western Grebe, and its neck was probably less than half as tall as that of the Western Grebe.

The Western Grebe remained on the pond until mid-December, and it was seen by dozens of birders. It disappeared for several weeks, but was re-discovered on the adjacent ocean on 29 December by Steve Dinsmore.

There are several previous sight records of “Western Grebe”, essentially all of which were observed before the taxon was split into two species—the Western Grebe and the Clark’s Grebe (*Aechmophorus clarkii*). The North Carolina Bird Records Committee has accepted only one of these records, the the Western species. Clark’s Grebe is essentially unreported in the eastern United States. The Western Grebe has black coloration of the face that includes the feathers surrounding the eyes, and it has a greenish-yellow bill; the Clark’s Grebe has less black on the face such that the eye is surrounded by white feathers, and the bill is a bright orange-yellow color.

This is the first record of Western Grebe that has been documented by photographs in North Carolina. Because the species currently is listed on the Provisional List, the written descriptions from Paul Lehman and the author, and photographs taken by Shawneen Fennegan, will be reviewed by the North Carolina Bird Records Committee.

Spring Migration of Seabirds off Central North Carolina: 22 May 1992, with Notes on two Skua (*Catharacta*) Taxa

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The concentration of pelagic seabirds and other marine biota along frontal eddies of the western edge of the Gulf Stream in the northern summer is a well-documented phenomenon (Haney and McGillivray 1985, Haney 1986a-c) and is well-known to sports fishermen in the Southern Atlantic Bight. Less material has been published, however, on the concentration of migrants along this front in the northern spring. The timing of the spring migration varies over the three-week period extending from the second week in May through about the first week in June at these latitudes, with significant but lesser movement of terns, jaegers, skuas, shearwaters, and storm-petrels on either side of this period. An excursion of 22 May 1992 yielded a diversity and density of species that advances our assessment of spring bird migration off North Carolina.

This accounting of an OBServ Tour aboard the *Country Girl* out of Manteo includes commentary on a large aggregation of Arctic and Roseate Terns (*Sterna paradisaea* and *S. dougallii*) for North Carolina, as well as notes on a skua of the Great Skua complex (*Catharacta skua/antarctica*) observed. Inasmuch as relatively few public pelagic excursions have been chartered off North Carolina’s Outer Banks in the spring, this information may be useful to students of seabirds planning spring excursions in the future.

The transect for 22 May ran from Oregon Inlet southeast to the edge of the Gulf Stream, north roughly to the tower at 36° 04' N, 74° 58' W, and back to Manteo via Oregon Inlet. The majority of the birds observed were along the northbound leg, in between about twenty and forty fathoms of water. One exception was a single Manx Shearwater (*Puffinus puffinus*), seen about one nautical mile east of Oregon Inlet. That species, regularly recorded in the Gulf Stream in the spring (Lee, in ms.), also passes off Virginia in late May and early June with flights of larger shearwaters and has been recorded from shore at Cape Point, North Carolina on several occasions (i. e., Buckley 1973), as recently as 28 May and 3 June 1993 (2 each date, pers. obs.).

The other birds seen, especially the terns, were possibly more concentrated and numerous than one might expect, because the central western North Atlantic had experienced six days of unabated northeast winds, from 10–35 knots. 23 May was the final day of the system, with intensity gradually lessening during the day. For most of 22 May winds were northeast at 15–20 knots, with seas at 4–6 feet.

Typically, terns and shearwaters feed along the turbulent fronts between the cooler waters of the Continental Shelf and warm Gulf Stream waters — “the change,” as fishermen call it — which causes nutrient upwelling and hence blooms of phytoplankton, as well as concentrating prey items and *Sargassum* (Yoder et al. 1983). What was striking about 22 May was the number of birds, especially of terns. Between 0800 and 1545 EST, we tallied 284 white terns: 119 Common (*Sterna hirundo*), 7 adult Roseate, and 27 adult Arctic Terns. 131 *Sterna*, although not especially distant, were recorded as “unidentified.” My most conservative estimate is that 20–25 of the latter terns were adult Arctics.

The status of Arctic Tern off North Carolina has undergone rapid revision in the last decade. Lee and Booth (1979) felt Arctic Tern to be a very rare transient in the central western North Atlantic during the third week of May. More recently, Arctic Tern has been considered a very uncommon (Lee 1986) or a “rare offshore migrant” (LeGrand 1991) in small numbers off the North Carolina coast in the spring, with single digits being the rule. To judge from this excursion’s 40+ Arctic Terns (and from a 24 May 1992 trip out of Hatteras Harbor, which recorded between 27 and 36 Arctics), it is clear that Arctic Tern is an uncommon migrant in moderate numbers. Richard Rowlett’s offshore counts of *Sterna* following the passage of Hurricane *David* provide a previous maximum count for Arctic Tern in North Carolina, 30 on 10 September 1979, and the current maximum count for Roseate, 10 on the same date. Interestingly, Rowlett’s numbers for 8–10 September yield a proportion of (positively identified) Common:Arctic:Roseate very close to that of the 22 May count, about 20:3.5:1 (Fussell and Allen-Grimes 1980). These September counts are storm-associated, however, and not representative of autumn counts; Arctic Tern is primarily a spring migrant and is very seldom encountered at sea off North Carolina in the autumn, owing to a southbound migration route through the eastern North Atlantic (Salomonsen 1967).

Lee and Cardiff (1993) summarize 61 records of Arctic Tern in the southeastern United States through 1991 and attribute the species’ scarcity in spring to a migration route seaward of most seabird research and to the recessed coast of the southeastern United States. Observations subsequent to

this period support their findings. The spring migration of 1991 was marked by weather conditions similar to 1992, with "a strong back-door cold front" moving through the Carolinas on 18 May, with easterly and northeasterly winds persisting for several days thereafter. LeGrand (1992) notes "the best flurry ever for spring sightings" of Arctic Tern for 1991 and speculates that "the winds might also have dammed up the northbound migration of the terns" (records of 3, 3, 5, 8 birds on 4 trips between May 11-26). It appears then, for part of their northward migration, that Arctic Terns stay well to the east of the Gulf Stream's western wall and are only occasionally brought westward by frontal systems with an easterly component. Given that strong northeasterly winds routinely cause the cancellation of pelagic excursions, it would under such circumstances be likely that many more Arctic Terns pass through the waters of the Continental Shelf than have been detected thus far. The spring of 1993, characterized predominantly by westerly winds, saw eight pelagic excursions May 15-June 9; none recorded Arctic Tern, and all trips combined saw a total of only 20 Common Terns.

The number of Roseates observed is equally unusual. LeGrand (1991) notes that Roseates "are practically never seen on pelagic trips"; this trip's participants watched four Roseates hovering together over a large mat of Sargassum, feeding on small fish. Aside from Rowlett's storm-associated counts, there are few records of multiple Roseate Terns off North Carolina in spring.

In most cases, terns could be studied at very close range (2-10 meters), since they formed dense feeding flocks directly over "the change," which despite rough weather was relatively well-defined. Rather than advancing rapidly toward a flock, Capt. Foreman allowed the boat to drift slowly into the feeding group; as a result, the boat was frequently engulfed by calling, diving terns. The tern flocks were very attractive to jaegers, especially Parasitic (*Stercorarius parasiticus*) and Long-tailed (*S. longicaudus*) Jaegers: two of the former and four adults of the latter were seen in pursuit of Arctic Terns. Very few terns were found away from the change, and flocks of 15-40 terns were found at regular intervals, about every 3-4 nautical miles.

On this trip it was apparent that, for participants who had not regularly seen Arctic Terns, especially in company with Common Terns, distinguishing the two species at sea was difficult. With experience, the flight characters of Arctic Tern provide a good shortcut for singling out birds for plumage study: a long tail and relatively small bill and small rounded head make this species' wings appear "set far forward on its body" (Kaufman 1990). Kaufman also notes that "its flight looks especially buoyant: the upstroke of the wings is quick, and the following downstroke is a slow, emphasized motion; the bird seems to float through the air" (see also Finch et al. 1978, Stallcup 1981). Commentators on Arctic Tern in North Carolina have noted the difficulty in identifying Arctic Terns as a hindrance to determining their relative abundance, but with the fresh plumage of spring adults, this should become less problematic, as pelagic observers increase their familiarity with the species.

Associated with about fifty percent of the tern flocks, small shearwater and storm-petrel groups were attracted to the same areas and fed on the water's surface. Greater, Sooty, and Cory's Shearwaters (*Puffinus gravis*, *P. griseus*, and *Calonectris diomedea*) were seen, as well as a single Northern Fulmar

(*Fulmarus glacialis*). These in turn attracted South Polar Skuas (*Catharacta maccormicki*) and Pomarine Jaegers (*Stercorarius pomarinus*). Five South Polar Skuas were seen; previous maximum counts for North Carolina include four off Beaufort Inlet 29 May 1987 and four off Oregon Inlet 25 May 1991 (LeGrand 1988, 1991). In several cases, South Polar Skuas actively harassed Greater and Cory's Shearwaters, with one skua alighting on the back of a Cory's in mid-air and pushing the shearwater down to the water, forcing it to disgorge food.

Another skua (seen very near 36° N, 75° W) was clearly not a South Polar; the bird was either an old or aberrantly plumaged nominate Great Skua (*Catharacta [skua] skua*) or, perhaps as likely, a member of the southern part of that complex, currently classified by authorities as *C. (skua) antarctica*, the Antarctic Skua. Great Skua has not been recorded on in spring off New Jersey or other mid-Atlantic states, but probable Antarctic Skuas have been photographed at Hudson Canyon on 28 May 1977 (photograph in *Am. Birds* 32:1108; P. Buckley, A. Brady, pers. comm.) and off New Jersey on 29 May 1987 (Brady 1988). I can find no confirmed spring records of *C. skua* for the central western North Atlantic; records prior to the late 1970s identify all spring skuas as Great Skua.

Despite these records, I suspect that it is now generally taken for granted by many that spring skuas at these latitudes are South Polars. North Carolina has four Great Skua specimens: one from Cape Lookout from 29 December 1975 (banded at Kvisker, Iceland, as a juvenile on 24 July 1975; Lee and Booth 1979; Lee and Rowlett 1979), one from north of Cape Hatteras Point (NCSM 8171), another from Fort Macon State Park from 10 January 1989 (NCSM 16006; LeGrand 1990), and a fourth specimen taken at sea off North Carolina (NCSM 11747; Lee, in ms.). A skua recorded by Rowlett and Edsburg from shore at Pea Island on 18 February 1974 probably refers to this species (Dumont and Dumont 1975), and Lee has seen several others off Oregon Inlet. A Great Skua was photographed off Cape Lookout on 3 April 1993 by A. Bryan (*Am. Birds* 47.3:404). The species has thus been documented as a regular, but very uncommon, visitor in North Carolina waters in the winter months, as it has been in southern Virginia waters (Patteson and Brinkley 1994). It is unclear what taxon of skua occurs in late October off Oregon Inlet (Allan Foreman, pers. comm.), but it may be that early Great Skuas begin to appear at this time.

My description of the skua in question is as follows: "*Catharacta*, NE Oregon Inlet, ca. 25 fthm. Flat wood-brown skua in worn plumage; molt of 1-2 inner primaries apparent from 15-20 m. Light on the bird was good, adequate to distinguish several plumage aspects: underparts even brownish with two pale, oblong patches on either side of the breast; a brownish back heavily spangled with dollops of whitish-gold, marks irregular in size and distribution. The strongly marked dorsal surface, which extended to some degree onto the upperwing coverts, was startlingly different from previous 4 skuas seen [and from a last skua seen 20 minutes later], enough so for me to comment on it to a participant: 'Look at the back on that one — really different from the other intermediates we've seen.'"

"Intermediates" here refers to so-called intermediate-morph South Polar Skuas, which I had presumed our skuas to have been until Brian Patteson mentioned Alan Brady's *antarctica* reports, which I had not reviewed. The

plumage characters noted in the field rule out South Polar Skua, although they may not exclude aberrant Great Skua; they most strongly suggest one of the *antarctica* group, possibly the "Brown" Skua (*C. a. lönnbergi*), the taxon suspected in the 1977 photograph (*Am. Birds* 32: 1108). "Tristan" Skua (*C. a. hamiltoni*), the suspect in the 1987 report, would seem less likely, in that the body in that subspecies is strongly marked with ruddy, as in Great Skua (see Devillers 1977). The same holds for the "Falkland" Skua (*C. a. antarctica*), a taxon that also typically shows a cap, like the Great Skua. In general, the bird seemed large, rangy, and dishevelled — partly the product of molt, but also of apparent size. The general condition of the plumage resembled that of Brady's bird on the cover of *Cassinia* 62, although the upperparts bore larger pale spangles. South Polar Skua typically shows pale or gold feathering in the nuchal area and can show pale feather edges in the mantle, but this is a mottled or clouded look with dull sandy rather than gold tones (see "adult atypical," plate 413, Harrison 1987).

It is important to note that the individual was just beginning molt: one or two inner primaries were missing. Great Skua should have completed its molt by mid-March at the latest (Cramp and Simmons 1983), and indeed skuas observed off Virginia and Maryland in February (1978-1992) are typically finishing a molt of the primaries (pers. obs.). Alan Brady notes that his spring *antarctica* was in molt in May 1987. Molts of most southern skuas are so incompletely known, however, that to identify them on this basis is impossible; the susceptibility of individual molt to alteration by age, illness, or injury also makes that information only marginally useful.

It is conceivable that other southern skuas follow northbound South Polars (and other southern hemisphere species) into the northern hemisphere. The limits of nonbreeding antarctica dispersal are not well-known. Hudson (1968) documents an adult *lönnbergi* from the Caribbean, a bird banded as an adult on Deception Island in the Antarctic (27 January 1960) which was caught by a fisherman off the Îles des Saintes, Guadeloupe, on 17 May 1967. Furness (1987), however, discounts that record. Devillers (1977) cites the possibility for transequatorial movement in *lönnbergi*, noting a September 1933 specimen from Kerala, India. The wintering range of *hamiltoni* is "quite unknown" (Furness 1987). It should be noted that Great Skua does have a post-juvenile molt (March-August of the second calendar year), but Cramp and Simmons describe that age as "cinnamon-brown" below and heavily streaked with black, pale, and rufous above — quite unlike the North Carolina individual. Information on post-juvenal plumages of all *Catharacta* is largely unavailable, since members of the genus typically spend several consecutive years at sea before returning to the nesting areas (Furness 1987).

The underwing, often erroneously cited as a key feature in the identification of skuas, was not studied; in South Polar, it is blackish-brown and contrasts sharply with the paler underparts in light and intermediate morphs (Harrison 1985). This is not a diagnostic attribute, since ventrally pale Great Skuas show the same contrast (Lansdown 1993a-b; pers. obs.). According to Lansdown, field characters once thought reliable in identifying South Polar Skuas (pale nape, smaller size, smaller bill, less white in the base of the primaries) have been shown by some Great Skuas (probably subadult) off the British Isles. In the case of ventrally pale Great Skuas, however, there is "a

direct relationship between [its] pale upperparts markings and its paleness below: those individuals with the palest underparts also have the most strongly pale-streaked and pale-mottled upperparts." Normally, South Polar has "unmarked, cold-toned, dark brown upperparts," in contrast to Great Skua's "warm-toned upperparts which are streaked and mottled to a variable degree." Pale South Polars can have "pale shaft-streaks and slender, pale tips to the scapulars and, more rarely, to the upperwing-coverts." These markings, however, "are too fine to be seen in the field other than in exceptionally close views."

It appears that the 22 May bird, a cold-brown bird with heavily marked upperparts, a bird lacking rufous tones in the upperparts and underparts and lacking a cap or hood, does not fit published descriptions and photographs of either Great or South Polar Skua (see also Balch 1981). The description is consistent only with photographs of light- or medium-light Brown Skua: "fairly uniformly colored, head and upperparts medium brown," "lighter brown below," with "very large blotches on the scapulars" (Peter et al. 1990).

Recent research indicates that Brown and South Polar Skuas hybridize to a limited extent on the Antarctic Peninsula, South Shetland Islands, and South Orkney Islands (Parmelee 1988). Parmelee's extensive experience with both species and their hybrids suggests that first-generation hybrids look "like small *lönnerbergi* but behave like *maccormicki*" — this includes their "mating, feeding, and migratory behavior." It does not necessarily follow that the hybrids' molt should resemble that of *lönnerbergi*, or that the nonbreeding range of hybrids should resemble that of *maccormicki*, but Parmelee does write, based on a single banding return, that "hybrid skuas behave like South Polar Skuas in that they migrate at least as far north as Brazil." Parmelee offers no data on molt schedule for hybrids, and the molt of *lönnerbergi* is "not well known" (Furness 1987). South Polar Skuas molt from late May through July (Devillers 1977; Veit 1978), "after they have moved to their wintering areas" (Furness 1987), which includes the Southern Atlantic Bight for a few individuals.

The existence of hybrids means that no sight or photographic record of Antarctic Skua from the North Atlantic is above suspicion. Although some researchers feel that *antarctica* skuas may only be part of a complex that includes Great Skua, others feel confident that research on the molecular level will define all allopatric southern skuas as distinct species. Thorough photographic documentation can be suggestive but not sufficient to determine the taxonomic status of Antarctic Skuas in the North Atlantic; a specimen would be desirable to confirm a third taxon of skua for this region.

Other species observed on this trip were 18 Bridled Tern (*Sterna anaethetus*), one adult Black-legged Kittiwake (*Rissa tridactyla*), one Black-capped Petrel (*Pterodroma hasitata*), 172 Wilson's and one Leach's Storm-Petrel (*Oceanites oceanicus* and *Oceanodroma leucorhoa*), 9 Common Loon (*Gavia immer*) feeding well offshore (over 20 fathoms), one juvenile Northern Gannet (*Morus bassanus*) inshore, 66 Red-necked and one Red Phalarope (*Phalaropus lobatus* and *P. fulicaria*), and six Common Eider (*Somateria mollissima*) at sea, over about 12 fathoms, the latter the only at-sea record from North Carolina. The mixture of tropical, temperate, and boreal species is typical of North Carolina waters at this time of year, although the count of 18

pelagic species is well above the average for a single day (Lee and Booth 1979).

Much of what is known about spring migration at these latitudes has only appeared in the past several years, and much remains to be learned. With the steady increase in pelagic excursions available to the public at this time of year, students of seabirds can and should continue to contribute important documentation of this very exciting phenomenon.

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