

SOME OBSERVATIONS OF ROSS' GEESE  
AT KITTS HUMMOCK, DELAWARE

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On March 28, 1987, while searching the fields along the road to Kitts Hummock for a flock of Greater Snow Geese (*Chen caerulescens atlanticus*) reported to have a Ross' Goose (*C. rossii*) among them, I found a flock of 800 Snow Geese that also included both blue and white Lesser Snow Geese (*Chen c. caerulescens*) color phases. The birds were constantly in motion, but soon I was able to find a Ross' Goose, which eventually came within 15 yards of me before the birds moved away again. I observed the Ross' Goose for 45 minutes through 10X Bushnell binoculars and a 15-60 zoom Swift telescope.

At first I used its noticeably shorter and thinner body size to find the bird as it milled about in the flock. The head, bill and short neck of the Ross' Goose were very different from those of the Snow Geese. Its clean face stood out among the muddy, ferrous-stained faces of the Snow Geese. The Ross' head was more distinctly rounded. Its bill was much shorter and more conical, and its base formed a straight, vertical line rather than curved as in the Snow Geese (Figures 1 and 2). The lack of a "grinning patch" was obvious through the telescope even when the Ross' Goose was facing away so that only the underside of the bill was visible (Figure 3). Caruncles were seen only when the bird was very close.

FIGURES 1-3

Ross' Goose

Snow Goose

1—Bill, side view.



2—Head, silhouette.



3—Bill, ventral view.



When the bird moved to the other side of a group, I found the field-mark combination of head shape and bill very effective in relocating it. When the bird returned to my side of the flock, these field marks were still more effective than its smaller size. There was noticeable pecking between the two species. The Ross' Goose readily defended itself, but it spent most of its time on the outside edge of the flock. Eventually, I discovered I could find the bird by just looking near the edge of the flock.

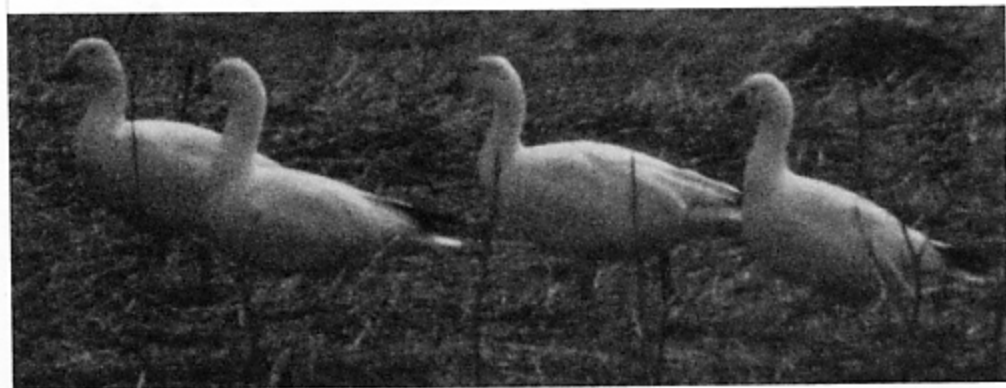
As I observed the flock, small groups of Snows constantly flew up and returned. It was during this mixing that the Ross' Goose suddenly came beak to beak with two other Ross' Geese on the far side of the flock. I followed this new pair until a farm vehicle drove the flock farther out into the field. The farmer said he was concerned about how soon the geese would be leaving. He had given up on the barley and didn't want to replant before the geese had left. He mentioned another small flock of 50 birds by the gate. There I found another Ross' Goose. This suggested there were four birds in the total flock.

Each Ross' Goose was shorter and thinner than the Snow Geese, and the head, neck and bill were distinctive. None of the Ross' Geese showed the "grinning patch." All these field marks are important because of recent sightings in the eastern United States of possible hybrids with Snow Geese. (Many hybrids have been identified out West as well.) One eastern bird, seen at Pea Island, North Carolina, in December 1985, was, like an expected Ross' Goose, 25 to 30 percent smaller, and had a proportionately smaller head and bill than a Snow Goose. But, its head and neck were stained, and its neck was longer than would be expected of a Ross'.

This bird's bill was longer than it was high and it had a slight curve at the base. The term used to describe these apparent hybrids is "intermediate" (Trauger 1971). The intermediate form is cause for concern about the possibility of misidentification of small white geese as Ross' Geese, particularly in flight. In the

ROSS' GEESE (*birds 2 and 4 from left*),  
Kitts Hummock, Delaware, March 28, 1987.

*(Photo by author).*



Audubon Society's Master Guide to Birding, for instance, the adult and possibly the immature appear to be intermediates.

Since there was the possibility of four individuals in the flock, I remained after the farmer left. Soon both flocks flew into the nearby winter wheat fields. Twice I searched the flock and each time I found single individuals toward either end and a pair near the center. These counts convinced me that my earlier count of four birds was correct.

Previous reports in this and adjacent regions have been of single Ross' Geese from North Carolina, Virginia, and Maryland, and two adults from Delaware and New Jersey. An adult and immature have been reported from New Jersey and North Carolina. (Table 1).

Finding four Rosses among 800 Snows (with 25 Blues included) makes one wonder how many Rosses may actually be in larger concentrations of Snow Geese. How many observers, after finding one or even two Ross' Geese together, keep looking for more? Normally it is hard enough to find even one.

It is important to stress that I had extremely good viewing conditions that day. The birds were at my level or just below me in an open field and were relaxed enough to allow close study for a long period of time. The date of my observations (March 28) also may have been helpful. In the spring, Rosses in the west leave after most of the Snows. Parallel behavior may occur in the east. Many of the Snow Geese had already left.

An observer must be very careful in assessing whether a suspected bird is a pure Ross' Goose. When a spring field-feeding flock is found, one must check for *all* of the adult fieldmarks (Table 2).

On December 6, 1987, I observed a Ross' Goose at Bombay Hook on Raymond Pool. Then, on December 13, 1987, I observed two intermediates along the Bombay Hook access road. The intermediates were exactly as expected for Ross' Geese, including caruncles and a blue-gray base to the bill. The only difference in these birds was the thin black edges or "lips" on the bills.

I found these intermediate geese quickly while they were grazing. The intermediate Ross'/Snow Geese were on the edge of the flock and at almost the same elevation as I was, so I could easily distinguish their head and bill shapes. In contrast, I have found it difficult to separate size and shape differences among geese when I am looking down on the birds. An added difficulty in any field identification is the fact that the white goose complex can have five or more size variations: Greater and Lesser Snow Geese, intermediates, Ross' Geese and their immatures.

Recent changes in the distribution and abundance of Snows and Rosses in their arctic breeding ranges have increased the interspecific contact. Current estimates for Greater and Lesser Snows and Ross' Geese are approximately 350,000, two million and 150,000 respectively (Richard Kerbes, pers. comm.). The main breeding colonies, once widely separated, are now closer because of the new colonies, and many of the new colonies are mixed. For example, a relatively new

southerly colony at La Perouse Bay near Churchill, Manitoba, has recently increased dramatically to 2,000 pairs and now includes 300 Ross' Geese (Fred Cookes, pers. comm.). The colony has so defoliated the nesting area that the young must be led many kilometers away just to get food. The result is that there have been "runts" in the fall migrating flocks, creating another potential source of confusion.

Some argue that the way to resolve our identification problems is to make the Ross' Goose a subspecies of the Snow Goose. Hybridization has been going on in a small way for a long time (photograph, October 5, 1935, Trauger 1976). However, differences of both behavioral and physiological segregation do exist between the two species. Generally, Snow Goose courtship is terrestrial, whereas Ross' Geese perform aerial courtship (McLandress 1983). The flying Ross' male that is best able to keep up with the female wins her. Ross' Geese are more capable of defending their colonies against jaegers (*Stercorarius* sp.), chasing them away. Snows, though also harassed by air, are better able to protect against Arctic Fox (*Alopex lagopus*) predation because of their larger size.

Another distinguishing characteristic is feeding behavior. Snow Geese have very muddy or ferrous-stained heads, and Ross' Geese are clean-headed. This difference arises from the Snow's grubbing versus the Ross' grazing methods of eating. Snows tend to eat root stalks and tubers (Palmer 1976). In the West, observers have seen them dig as far down as 18 inches for potatoes. Ross' Geese also eat exposed potatoes, but they more frequently consume sprouts, green grasses and grain heads. The species' bills are very different. The Snow's bill is deeply serrated, with the heavy, rubber-like edge along the entire bill creating the "grinning patch." This rubber-like edge appears unable to cut, only to grip and tear. Ross' Goose bill has small serrations on the outer two-thirds, but it becomes bladelike along the inner third of the bill and is good for cutting. The question of whether Snow and Ross' Geese are distinct species is unresolved at this time, despite several studies in progress.

A number of questions have been answered about birds termed intermediates (i.e., first-generation hybrids). The characteristics of these birds fall between these two *Chen* species in size and plumage (Trauger 1971). First-, second- and probably third- or fourth-generation hybrids and back-crosses exist, all with proportionately varying intermediate features. For this reason, small white geese in flight rarely can be identified with confidence.

Until studies are completed and the arguments resolved, we are left with a time-consuming identification problem. As photographs unquestionably have shown, full Ross' Goose species are present and increasing in the East. When looked for in the right conditions and with the necessary care, this rare species can be seen regularly.

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TABLE 1

*Cumulative East Coast Ross' Goose Records*

1. Winter 1967-68, 1 adult, Pea Island NWR, R.S. Palmer, 1976, Handbook of North American Birds, Vol. 2, pg. 154-170.
2. Winter 1970-71, 1 adult, Pea Island NWR, *ibid.*
3. Winter 1971-72, 1 adult, Pea Island NWR, *ibid.*
4. Winter 1971-72, 1 adult, Brigantine NWR, *Am. Birds* 27:267.
5. Winter 1980-81, 1 adult, Pea Island NWR, *Am. Birds* 35:290.
6. October 1981, 1 adult, Bombay Hook NWR, *Am. Birds* 36:158 (photograph).
7. December 1981, 1 adult, Blackwater NWR, *Am. Birds* 36:281 (subsequently changed to possible Ross' or intermediate).
8. December 1981, 1 adult, Bodie Island NWR, *Am. Birds* 36:284.
9. Winter 1981-82, 1 adult, Back Bay NWR, *Am. Birds* 36:281.
10. October-November 1982, 1 or 2 adults, Brigantine NWR, *Am. Birds* 37:161 (photograph).
11. Winter 1982-83, 1 adult, Bombay Hook NWR. *Am. Birds* 37:161, 267.
12. March 1983, 1 adult, Dutchess Co., New York, *Am. Birds* 37:851.
13. November 1983, 1 adult and 1 immature, Brigantine NWR, *Am. Birds* 38:182 (adult photographed).
14. October 1984, 1 adult, Brigantine NWR, *Am. Birds* 39:33.
15. December 1984, 1 adult, Blackwater NWR, *Am. Birds* Vol. 39:155 (changed to possible intermediate).
16. January 1985, 1 adult, Pea Island NWR, *Am. Birds* 39:157.
17. October 1985, 1 or 2 adults, Brigantine NWR, *Am. Birds* 40:262.
18. November 1985, 1 adult, Bombay Hook NWR, *Am. Birds* 40:262.
19. November 1985, 1 immature blue-phase intermediate, Brigantine NWR (photographed—Richard Ditch, Richard Kane, pers. comm.).
20. December 1985, 1 possible intermediate, Pea Island NWR (Claudia Wilds, pers. comm.).
21. October 1986, 1 or 2 adults, Brigantine NWR, *Am. Birds* 41:64.
22. November 1986, 1 adult, Bombay Hook NWR, *Am. Birds* 41:64.
23. February 1987, 1 adult, Cape Charles, Virginia, *Am. Birds* 41:265 (subsequently changed to possible Ross' or intermediate).

(All geese white-phase unless otherwise specified.)

## TABLE 2

### *Ross' Goose Fieldmark Checklist*

- ★ The goose is small (Mallard size).
- ★ The head and neck are clean of any staining.
- ★ The head shape is very round.
- ★ The neck appears shorter than Snow Goose's.
- ★ The bill is as high at the base as it is long.
- ★ The baseline of the bill is straight.
- ★ The "grinning patch" is entirely absent.
- ★ The bill base is blue-gray with varying amounts of caruncles.
- ★ It may have some black on the secondaries.
- ★ All other characteristics match those of Snow Geese.

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