

ROSS'S × SNOW GOOSE HYBRIDS ON ASSATEAGUE ISLAND, VIRGINIA

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Hybrids between Ross's Goose (*Chen rossii*) and Snow Goose (*Chen caerulescens*) are occasionally encountered on the wintering grounds from California east to the Mississippi Valley where both species are relatively common (McLandress and McLandress 1979, Trauger et al. 1971), but are poorly documented in the Atlantic flyway where Ross's Geese are rare winter residents.

On 23 November 2000, I observed a family group of white geese, composed of an adult Ross's Goose, an adult Snow Goose, and two hybrid juveniles on Assateague Island (Chincoteague National Wildlife Refuge), Accomack County, Virginia. I watched the foursome with binoculars (Zeiss 10 X 40) from a distance of 40-60 m in good light as they walked as a group through a large flock of Snow Geese toward the southeastern margin of Snow Goose Pool (1500-1510 EST), which was dry except for the barrow ditch adjacent to the levee. The adult Ross's Goose had a rounded head, short stocky neck, and diminutive dark pink bill that lacked a grin patch. The juveniles, of equal stature, were significantly taller and more gracile than the Ross's but were a head shorter than the Snow Goose, which appeared to be a typical white-morph adult. Bill proportions of the juveniles were also intermediate whereas the dorsal plumage was paler than that of nearby juvenile Snow Geese. The intermediate size and shape of the juveniles, as well as the pale plumage, suggests that they were the hybrid progeny of the accompanying adults.

On 24 November 2006, I observed a probable blue-morph Ross's × Snow Goose hybrid with a flock of 15,000+ Snow Geese near the northwestern margin of Snow Goose Pool from a distance of 50 m through a spotting scope (Swarovski HD-ATS 65, 20-60 X) under good midday sun (1240-1345 EST). Geese in this portion of the flock were alternately bathing, preening and sleeping during the observation period. The hybrid was standing in shallow water among white-morph and a few blue-morph Snow Geese. A family group of white-morph Ross's Geese (two adults and a juvenile) was sitting about 10 m behind the hybrid but in the same field of view (Zeiss, 10 X 40 binoculars). I took several photographs of the hybrid with an Olympus E-20 (5 megapixel) camera with 35-140 mm lens and a 300 mm tele-extension lens (Fig. 1). The hybrid was significantly shorter in stature than adjacent Snow Geese and had a proportionally shorter neck and rounder, less angular head.

The plumage color pattern was similar to an adult Class-6 blue-morph Snow Goose (Cooke and Cooch 1968), but the black neck plumage extended to the throat and up the back of the neck to the crown. The white facial plumage, which extended to the uppermost furrows in the neck plumage, was more extensive than that of a probable pure blue-morph Ross's Goose that I observed in the same locality on 24 November 2001 (Graves 2005). There was no evidence of ferrous staining on the hybrid's face or head. The hybrid's bill was significantly smaller than those of adjacent Snow Geese but appeared to be proportionally longer than those of Ross's Geese in the background. The hybrid's bill was dark pink, bluish-gray at the base, with a thin black stripe faintly visible along the tomium. On the following day, I studied what appeared to be the same hybrid near the southwestern margin of Snow Goose Pond from a distance of 60 m in good light (1345-1400).

It would be unwise to accord much significance to anecdotal observations of hybrid Ross's \times Snow geese on Assateague Island or elsewhere in Virginia (e.g., at Mappsville, Accomack County, 9 February 1996 [Rottenborn and Brinkley 2007]). However, the presence of such hybrids could signal significant introgression of *Chen caerulescens* genes into the gene pool of the small wintering population of *Chen rossii* on the Delmarva Peninsula. Discriminating F_1 hybrids among large flocks of Snow Geese is facilitated by their intermediate size (Buckley 1982, MacInnes et al. 1989) but identifying backcrossed hybrids (e.g., pure Ross's $\times F_1$ hybrid) will be considerably more difficult.

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Fig. 1. A probable adult blue-morph Ross's Goose (*Chen rossii*) X Snow Goose (*Chen caerulescens*) hybrid on Assateague Island (Chincoteague National Wildlife Refuge), Accomack County, Virginia, on 24 November 2006.