

FEATURE ARTICLES

FEEDING ECOLOGY OF GREATER SNOW GOOSE GOSLINGS IN MESIC TUNDRA ON BYLOT ISLAND, NUNAVUT, CANADA

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Abstract. Although mesic tundra is a habitat commonly used by arctic-nesting geese, their feeding ecology in this habitat is little known compared to wetlands. Our objectives were to determine the diet and food selection of Greater Snow Goose (*Chen caerulescens atlantica*) goslings in relation to the nutritional quality of plants growing in mesic tundra habitats on Bylot Island, Nunavut, Canada. We used two different but complementary approaches: examination of esophageal contents of sacrificed wild goslings, and direct observation of the feeding activity of captive, human-imprinted goslings. The latter method was innovative and provided a reliable description of the diet, with results comparable to those obtained from wild goslings. Although mesic habitats have a more diverse floristic composition than wetlands and sparse graminoid cover, Gramineae were preferentially selected and dominated the diet (~50%). The rest of the diet consisted mainly of members of the Juncaceae, Polygonaceae, and Leguminosae families. The diet of very young goslings was diverse, but as they aged and gained efficiency, they concentrated on a few taxa. Goslings ate mostly leaves (~80%), but flowers (~20%) were also important. Food selection was influenced by nitrogen and total phenolic compounds content of plants, but the ratio of phenolic compounds to nitrogen in plant organs was most determinative of food choice. Neutral detergent fiber content of plants did not influence plant selection. Both plant nutritional quality and availability determined gosling diet across different mesic habitats and growing goslings appeared to maximize their intake of metabolizable proteins.

Key words: diet, food quality, food selection, Greater Snow Goose, mesic tundra.