

What's Good for the GOOSE

Waterfowl Find Refuge on Great Bay in Winter

The windswept bay stretching out below is a collage of steel gray and white froth reflecting an angry sky and swirling gusts. A biting November wind is doing its best to blow you off course. Your muscles burn as you instinctively fight to stay with the others. Judging by the body language and excited sounds coming from those around you, your destination is near. The group is descending toward a large expanse of water amid mudflats and salt marshes. You're coasting now on set wings, your breast to the strong wind.

Those who arrived before you are calling out from below — your group answers with a chorus of honks. The welcome ripping sound of air passing over set wings is all you hear as you glide quickly downward on the final approach. Outstretched feet touch down, slide across the water's surface, submerge. With a tail wag and brisk shake of the head, you settle in for a float, stowing your tired wings on your back. You call out to announce your arrival, and others around you do the same.

continued on next page

BY BRIAN SMITH





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You are a Canada goose, and you've just completed the expedition that brings you to your wintering spot each year. Canada geese and many other waterfowl species make a similar voyage each fall, moving from nesting and rearing habitats to wintering areas farther south.

The Great Bay Estuary, part of New Hampshire's seacoast, plays a significant role in the life cycle of the waterfowl wintering here. Great Bay acts as a winter refuge or stopover area for between five and ten thousand ducks and geese annually, representing roughly 20 species of waterfowl. In some years, birds that would ideally spend the entire winter here are pushed farther south because of heavy ice cover. Generally, however, there is enough open water to support at least some birds through the entire winter. For waterfowl foraging here over the winter and those that make brief stops during migration, Great Bay provides essential calories for reproduction and long migratory flights.

Feed, Loaf, Roost

The typical day in the life of a duck or goose consists of feeding, loafing and roosting. These activities are carried out in different areas of Great Bay. Five major habitat types characterize the Great Bay Estuary: eelgrass beds, mudflats, salt marshes, deep channels and rocky shorelines. Each of the habitats, and the transition zones between them, are important to wintering birds. Waterfowl use these areas differently depending on the time of day, the tide, time of year and weather. Visiting the Sandy Point Discovery Center in Stratham with a pair of binoculars or a spotting scope, you can view multiple species of waterfowl as they make use of each of these habitats for their daily activities.

The green-headed drake (male) mallard is a familiar duck throughout North America. Interbreeding among mallards and American black ducks (right) has caused a decline in "pure" black ducks.

Opposite page: Frequently seen along the New England coast, the common goldeneye is known by some as the "whistler" for the sound its wings make in flight.



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Waterfowl move among the various activities and habitats in a relatively predictable manner. The largest flights occur at first light, as birds move from roosting areas to feeding areas. Birds move around throughout the day, adapting to the tide and weather and taking advantage of newly exposed or inundated areas, depending on their preferences or food needs. At dusk, they seek out safe roosting areas for the coming night; for most species, this means heading out to the ocean's open waters.

During the winter of 2002, as I was taking part in the volunteer winter waterfowl survey (*see sidebar, right*), a large concentration of American black ducks using the bay showed me exactly how they react to changing tides. I arrived at Sandy Point to count birds just as the mudflats were draining. I started counting black ducks and saw around fifty. I was about to record the number, when I saw a large flock of black ducks arriving on the flat in front of me — so I began counting again. I repeated this process once more before realizing what was happening: the black ducks were coming in from their loafing areas to feed on the flats, which were being exposed gradually as the water receded with the tide. It was an impressive sight to watch as hundreds of ducks began pouring onto the flats in front of me like an invading army. The ducks came as singles and in groups numbering upwards of 20. In less than a half-hour, my original count of 50 black ducks ballooned to more than 750.

Great Bay Buffet

Waterfowl spending the winter on Great Bay take advantage of food stores in many forms, although the amounts of ice and snow cover play a role in the exact makeup of their diet this time of year. Canada geese use Great Bay primarily as a roosting area, flying off to neighboring fields to forage on waste grain and other plant materials. When feeding in the estuary, they take advantage of eelgrass exposed by the tide. Eelgrass is essentially dormant during the winter, with much of its energy reserves tied up in underground roots called rhizomes. Wintering waterfowl readily eat this carbohydrate-rich material.

Diving ducks such as buffleheads, greater scaup and common goldeneye wintering on Great Bay

consume several species of clams. The gem clam, baltic clam, and even soft-shell clam are all important to wintering divers. Puddle ducks such as American black ducks, mallards and American widgeon employ a slightly different strategy; these birds spend much of their feeding time in the upper reaches of salt marshes at high tide and on exposed mud flats as the tide ebbs. Puddle ducks feed extensively in salt marshes, taking advantage of plant material like seeds, plus some stems and leaves. All puddle ducks will feed on exposed mud flats at low tide as well. American black ducks, however, consume more protein in the form of snails, small clams and crustaceans than other species of puddle ducks.

Making Connections

The waterfowl wintering on Great Bay represent one part of the flora and fauna that make up a vast, interconnected ecological system. Like a

continued on next page

Waterfowl Watchers Unite!

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Every other Saturday between January and early March, a group of hardy volunteers spends a couple hours counting wintering waterfowl on the

bay. This is a wonderful opportunity to see Great Bay and to help document its importance as a resource at all times of the year. If you are interested in being involved with the wintering waterfowl survey this year, contact Sandy Point Discovery Center at (603) 778-0015.




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spider web, pulling one thread moves the rest, and it is necessary to protect the whole to preserve the parts. From a bird's-eye (or goose's-eye) perspective, the estuary is not the only important wetland in our region or in the country; but it is one that we in New Hampshire can and do affect.

Waterfowl that use Great Bay carry nutrients they acquire as they travel to other wetland systems during migration and onto breeding areas. The Great Bay Estuary is but one wetland in a complex the birds will use to complete their life cycle, one important piece in the overall habitat puzzle. For example, Canada geese that spend the winter on Great Bay are part of the North Atlantic population, a group that breeds around Labrador and Newfoundland. The better shape the birds are in when they arrive on the breeding grounds, the more eggs they will likely lay. Therefore, even after geese have left the area in the spring, conditions they experience here play an important role in the next phase of their life cycle. If you think about the Great Bay Estuary in this way, it is plain to see how important it is to manage and protect this resource.

With that knowledge of conservation need, great things have been happening around Great Bay. Over the last several years, in excess of 5,800

acres of critical habitat in the Great Bay watershed have been protected by the Great Bay Resource Protection Partnership. The Great Bay National Estuarine Research Reserve, a program administered by N.H. Fish and Game, promotes education, research and stewardship activities throughout the Great Bay Estuary and its surrounding watershed. Thanks to growing public understanding and land protection efforts around the Great Bay, we all have the opportunity to go out in that November wind and watch the geese return for the winter. 

Brian Smith, a marine biologist in Fish and Game's Region 3 office, is the research coordinator for the Great Bay National Estuarine Research Reserve.

The preparation of this article was funded in part by a grant from the Office of Energy and Planning, New Hampshire Coastal Program, as authorized by the National Oceanic and Atmospheric Administration (NOAA), Grant Award Number NA17OZ1129.




Greater scaup (below) often congregate in "rafts" of hundreds of ducks on Great Bay in winter.

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