

# Waterfowl in Winter



by Bob Armstrong and Marge Hermans  
from Southeast Alaska's Natural World

During a cold winter in Southeast Alaska, a bitter wind whips along the beach. Rocks and gravel glisten with ice. Even in sheltered inlets the water is frosted with whitecaps, and its temperature has dropped to a seasonal average of about 42°F.

A few hundred feet offshore 30 or more sea ducks—warm-blooded animals that must maintain a certain body temperature to survive—bob on the waves. Every few moments, as if they were taking turns, individual ducks dive headfirst beneath the surface, popping up moments later like corks shot from some underwater popgun.

Southeast Alaska is a Mecca for sea ducks in winter. All eight species found in North America can be seen here then—buffleheads, harlequin ducks, long-tailed ducks, Barrow's and common goldeneyes, and black, white-winged, and surf scoters. How do these birds survive the cold, especially when they spend so much time submerged in cold water?



Sea ducks have wonderful natural insulation—a kind of avian equivalent to the human population's Polarfleece® parkas and Gore-tex® rain jackets. They have a thick layer of fat just beneath the skin that helps keep them warm. Outside their skin is a thick layer of down—short, fluffy feathers



that help conserve body heat by trapping pockets of air. Covering that is an outer layer of contour feathers that pack closely together and have interlocking barbs, so the birds are virtually waterproofed—another characteristic that conserves heat.

Spreading oil that they take from a gland at the base of the tail may help birds waterproof the outer feathers, but this has not been proven. Spreading oil on the feathers while preening may be more important to protect the feathers against fungi, bacteria, and lice that would damage them.

Some sea ducks have down as much as two-thirds of an inch thick in places. It is usually thickest on their underside, the part of the body most exposed to water and thus likely to lose heat the fastest. Birds in northern areas like Southeast have more fat and feathers than birds of the same or similar species living

father south, so they are better equipped to deal with cold temperatures. In extremely cold weather sea ducks also shake their feathers after a dive, throwing off drops of water that could otherwise quickly freeze.

What keeps the ducks in Southeast during cold weather is the ready supply of food.

*Harlequin ducks are year-round residents in Southeast and are the only sea ducks that commonly nest here.*

*Buffleheads are one of the most easily observed sea ducks. They generally feed in open fresh or salt water relatively close to shore.*

*(Preceding page)  
Barrow's goldeneye,  
male*



*Swans with gray plumage are juveniles, which overwinter with their parents.*

*Vancouver Canada geese are the only subspecies that breeds and winters in Southeast Alaska.*

Sea ducks eat small crabs, clams, shrimp, limpets, chitons, mussels, amphipods, barnacles, sea urchins, sea stars, marine worms, small fish, and algae—all foods that are available in winter as well as in summer.

Although most **trumpeter swans** nest to the north and winter to the south, a few trumpeters winter in Southeast, where they add an elegant snowy white presence to gray winter days. Peter Walsh, a dedicated birder in Petersburg, for many years reported that an average 100 swans a year wintered in Blind Slough near Petersburg. A small flock sometimes numbering up to 30 swans has also wintered over at Snettisham, south of Juneau, for at least the past 12 years.

During very cold weather the swans sit down on land with their feet and legs tucked beneath their thickly feathered bellies, and their heads tucked back under their wings. This posture is one way birds can reduce heat loss from parts of their bodies that have the least insulation—their unfeathered legs



and feet, and their heads, especially around their eyes.

Swans' ability to feed at night is an advantage in winter because it allows them to be active and generating body heat during the coldest hours, while they can rest during daylight hours, when it is likely to be warmest.

Southeast Alaska's **Vancouver Canada geese** are year-round residents, not to be confused with smaller, paler subspecies that migrate through many wetland areas in the spring. According to Jim King, a wildlife biologist who lives near the Mendenhall Wetlands in Juneau, 500 to 600 Vancouver Canada geese spend the winter on the wetlands, and they seem to have adapted their habits to fit the human calendar. King says that although the birds vacate the wetlands during hunting season, by mid-October they often come in to feed at night when the hunters are elsewhere.

Soon after hunting ends in mid-December, the geese return to the wetlands, and they stay there day and night until early April, when the paired adults move to their nesting sites at such areas as Seymour Canal on Admiralty Island.

Geese, ducks, and swans all share a fascinating winter adaptation that helps them overcome the problem of heat loss and possible freezing in their bare, unfeathered legs and feet. Ducks swimming in 34-degree water, or geese standing on a frozen lake, could lose a great deal of heat through their extremities. But they don't.

The arteries and veins in their legs lie next to each other, and this minimizes heat loss. When chilled blood from the feet moves through the veins toward the body, it picks up heat from the adjacent arteries, which carry blood that is warmer because it is coming from the bird's body core. At the same time, as warmed blood from the bird's body core moves through the arteries toward the feet, it is cooled by the nearby veins, and

there is less warmth to be lost where the foot or leg is exposed to cold air, water, or ice. Under extremely cold conditions, the birds can further reduce heat loss by constricting the blood vessels in their feet and reducing the amount of blood flow.

Because of this natural heat exchange, a duck standing on a frozen lake may have a body core temperature of 104°F but a foot temperature only slightly above freezing. Considering that bare feet and legs lose heat about four times as fast when they are immersed in water as when they are exposed to air, the importance of this amazing feature is pretty clear, especially for swimming and wading birds.

Winter in Southeast Alaska is not an easy time, yet sea ducks, swans, and geese have adapted to weathering the winter in remarkable ways. We can only marvel at how they survive raging storms, ice, and cold while we sit cozy and warm in our heated homes. ●



*Waterfowl like the female mallard above are specially adapted to avoid heat loss from their legs and feet.*

## Waterfowl Courting

Sea ducks that winter in Southeast waters may spend part of the season courting. From January to May watch for some of this fascinating behavior:

- Male goldeneyes court females by dipping their bills in the water, raising their heads straight up, and then bending their heads clear over onto their backs while uttering a peculiar whistle. Competition is often intense. In the photo above and to the right, five males are courting a single female.

- Male buffleheads perform a head-bobbing, chin-up display with their head feathers erected.

- Male long-tailed ducks spring excitedly into



flight, dashing madly about, then abruptly splash back down into the water.

- Male harlequins make a mouselike squeaking sound or a low whistle that ends in a long trill.

Despite all this courtship activity, only harlequins, of all sea ducks, commonly nest in Southeast. Come spring, the mature adults of most sea ducks fly north, while subadults of some species, such as scoters, stay behind.