

ABOUT THE COVER: SNOWY OWL

To many birders the sight of a Snowy Owl (*Nyctea scandiaca*) perched atop a house beside the road or on a hay rack in a Plum Island salt marsh is the highlight of a birding year. A favorite subject of artists from prehistoric caves to modern galleries, this arctic species symbolizes the cold ferocity of arctic winters. As their name implies, Snowy Owls are largely white with dusky brown or black barring. Males are generally smaller and paler than females, and immature birds are the most heavily marked.

This monotypic species is circumpolar in its distribution and breeds on the polar tundra of North America from the Aleutians to Labrador. Snowy Owls are generally nomadic and unpredictable migrants, although the bulk of the populations is thought to winter in the great Plains of southern Canada and northern United States. Immature males tend to winter farthest south, and adult females farthest north. Some birds have demonstrated winter site fidelity, but in general the movements of Snowy Owls are complex and confusing. They are also an irruptive species, generally following a four-year cycle thought to reflect the variable abundance of lemmings. Snowy Owls have been recorded as far south as southern California and the Gulf states. In Massachusetts major irruptions have occurred during sixteen winters since 1876-1877, with nearly 300 individuals recorded during the winter of 1926-1927. Most are found on the salt marshes of Plum Island and Salisbury Beach, Boston and its harbor islands, and in smaller numbers south of Boston to Cape Cod. They generally arrive in November and December and leave by April. Remarkably, in the winter of 1986-1987 over forty owls were trapped and banded at Logan Airport.

Snowy Owls are seasonally monogamous breeders, producing a single brood. They are the consummate opportunists, breeding whenever and wherever lemmings are abundant. In average food abundance years they lay clutches of three to five white eggs, but in times of abundance clutches of seven to eleven eggs are common. In times of food scarcity they do not breed at all. They nest on mounds and hillocks in rolling tundra and are sometimes joined by geese or eider, which apparently nest in close proximity to the owls for protection from foxes and other predators. The male establishes a territory, and the female chooses the nest site. Males defend the nesting territory vigorously, attacking humans, wolves, and foxes that stray too close. Awesome predators, Snowy Owls usually attack from the rear and can inflict severe wounds with their talons.

Males vocalize more frequently than females, and males sometimes call to each other along territorial boundaries. Snowy Owls also have a broad repertoire of screams, shrieks, squawks, mews, cackles, and hisses. Males engage in aerial courtship displays consisting of exaggerated wing beats producing a jerky, undulating flight that often terminates in a plummet and a landing with wings

raised. On the ground the male drops a lemming he has brought in and postures with head down, tail fanned, and wings somewhat spread. Threat displays involve feather fluffing, wing spreading, and thrusting the head and neck down and forward. It is thought that males select the territory, females the nest site. The nest is usually an unlined scrape, shaped by the female's body into a shallow depression. Incubation begins with the first egg, and subsequent eggs appear at two-day intervals. This leads to asynchronous hatching. In an eleven-egg clutch the first chick may be twenty days old when the last egg hatches! In times of food (i.e., lemming) abundance the entire brood may survive to fledging.

The female is fed by the male and remains on the nest until the young fledge. The incubation period is four to five weeks, and although the chicks may leave the nest by two weeks of age, they may return to the nest until the third or fourth week, fly by the seventh or eighth week, and may be fed by the male for five weeks after fledging. The male brings in prey, which the female then feeds to the chicks. Hatchlings are fed by regurgitation, small chicks are fed small pieces of lemming soft parts, and older chicks dismembered lemmings. By one week of age chicks may begin to cast pellets of bone and fur.

Adult owls are diurnal predators that rely on their keen vision to find their prey, although they may use hearing to locate prey under snow. They attack while flying or from a perch. Although the Snowy Owl's principal prey are lemmings, they also take other rodents, as well as rabbits, birds, fish, and even marine invertebrates if other prey is scarce. In Massachusetts they take mainly rats and voles, as well as a variety of bird species.

Midden remains in caves suggest that Snowy Owls have been hunted by man since the last glaciation. Recently, however, they have received legal protection from hunting or trapping, except by Native Americans who still hunt them for food and feathers. In the vast arctic tundra their greatest dangers lie with the vagaries of weather conditions and their highly variable food supply, which periodically brings numbers of these magnificent birds to our winter marshes.

W. E. Davis, Jr.

ABOUT THE COVER ARTIST

Keith Hansen began birdwatching in the sixth grade in Maryland and illustrating birds in high school. He is currently working on the fourteenth book that he has illustrated, among which are *Discovering Sierra Birds*, *Checklist of North American Birds*, *The Natural History of the Point Reyes Peninsula*, and *More Tales of a Low-rent Birder*. He has watched birds all over North America, Central and South America, and many islands of the tropical Pacific. He spends