

by Lori Quakenbush and  
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# Does the Steller's Eider Depend on Lemmings?

*Iginiquaqutuq* is the Inupiat Eskimo name for the little-known seaduck most people call the Steller's eider (*Polysticta stelleri*). The Eskimo name, meaning "the bird that sat in the campfire," comes from the male's distinctive plumage. The male's breast and belly are burnt-orange in color, as the Eskimo name implies. The dark belly contrasts with white sides and a boldly patterned black and white back. As with other ducks, the female is mottled brown, in this case to blend with the arctic tundra while she incubates her eggs in a nest lined with lichen, sedges, and down from her breast.

In 1997, the North American breeding population of Steller's eiders was listed as threatened. The Steller's eider historically nested in the Yukon-Kuskokwim Delta of southwestern Alaska, but it was thought to have been lost as a breeding species there after no nests were found for almost 20 years. Recently, however, several nests have been found, leaving researchers to wonder if small numbers of nests went undetected for two decades or if birds from other breeding areas are beginning to nest on the delta. The largest number of Steller's eiders nesting in Alaska are found near Barrow, the State's northernmost city. Steller's eiders also nest in very low densities across the Arctic Coastal Plain of Alaska as far east as Prudhoe Bay. Most of the world's population of Steller's eiders nest in arctic Russia, where their status is unknown. The Alaska breeding population and many of the Russian breeders appear to molt and winter in large, dense flocks along the Alaska Peninsula, many in the Izembek National Wildlife Refuge.

The reasons for the decline of nesting Steller's eiders in Alaska are not clear. Habitat loss, overharvest, or disturbance do not seem to be the culprits. Evidence mounts that the decline of another eider, the spectacled eider (*Somateria fischeri*), may have been due at least in part to poisoning from lead shot. Lead may have affected Steller's eiders on the Yukon-Kuskokwim Delta, too, but because so few Steller's eiders remain there, the possibility is difficult to address. Large-scale changes in the Bering Sea may be affecting molting and wintering areas of Steller's eiders in ways that we do not yet understand. Other possibilities include increased predation by gulls, foxes, ravens, and other animals.

Some of the known immediate risks to the Steller's eider have been eliminated or greatly reduced. Sport and subsistence hunting of this species are no longer legal. No large development projects are planned within the habitats that Steller's eiders require. Small housing developments to support the growing human population at Barrow pose a threat to some nesting habitat, but consultations under section 7 of the Endangered Species Act are addressing these threats with cooperation from the local government and developers. Other risks that will be evaluated by the Steller's Eider Recovery Team include predation during the breeding season, vulnerability to oil spills, and disturbance in molting and wintering areas.

The breeding biology of Steller's eiders is poorly understood. The U.S. Fish and Wildlife Service (FWS) and the North Slope Borough (a local municipality equivalent to a county government) have been studying Steller's

iders near Barrow since 1991. Although Steller's eiders were present in all years of the study except one (1992), they nested in only 4 years (1991, 1993, 1995, and 1996). Interestingly, all nesting years corresponded with years of high lemming numbers. Lemmings go through dramatic population fluctuations, as many of us remember from filmed scenes in which hordes of lemmings ran off a cliff. Lemmings are prey for many arctic species, including arctic foxes (*Alopex lagopus*), pomarine jaegers (*Stercorarius pomarinus*), and snowy owls (*Nyctea scandiaca*), especially in years with lemming population highs. Pomarine jaegers and snowy owls depend on lemmings to feed their young, and these two species nest only in years and locations where lemmings are plentiful. Both bird species are aggressive and defend the areas around their nests from predators, especially foxes.

Steller's eiders nest on the ground and, aside from camouflage, have little defense against arctic foxes. In Barrow, Steller's eiders appear to nest near pomarine jaegers, and possibly snowy owls, to take advantage of the vigorous nest defense provided by these birds. Perhaps without the protection provided by jaegers and owls, it is not worthwhile, in an evolutionary sense, for Steller's eiders to attempt nesting. On the other hand, Steller's eiders must also weigh the risks of nesting near jaegers and owls because both bird species can be predators of eider eggs, chicks, and (in some cases) adults. It is possible that abundant lemmings provide an alternate food source for predators, thus greatly reducing the risk of Steller's eiders losing their eggs or chicks to predators. Regardless of why, Steller's eiders appear to nest near Barrow only in years when the area's lemming numbers are high.

The Steller's Eider Recovery Team has begun the process of recovery planning. The challenges include developing recovery criteria without quantitative data on historical numbers,

current population size, and population trends. Recovery will be difficult due to the poor understanding of the causes of the decline, and recovery will be slow due to the fact that Steller's eiders do not nest every year.

As part of the recovery process, the FWS will develop partnerships with local municipalities, Alaska Native organizations, and the State of Alaska. Managers, biologists, Alaska Natives, and other local residents need to work together to further understand the biology of Steller's eiders, the causes of the decline, obstacles to recovery, and ways to recover this "bird that sat in the campfire." Cooperation among people and organizations should pay important dividends for Steller's eiders and perhaps other species in the future. Lots of lemmings could be helpful, too.

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***It is possible that abundant lemming populations reduce Arctic fox (above) predation on Steller's eiders.***

*Corel Corp. photo*