



U.S. Fish & Wildlife Service

Restoring Alaska's Islands

Alaska Maritime National Wildlife Refuge's Invasive Species Program

50 Years of Righting the Wrongs

Storm tossed, mist shrouded islands of the Alaska Maritime National Wildlife Refuge are scattered along Alaska's coast and the 1000 mile long Aleutian chain, a vast archipelago reaching from mainland Alaska nearly to Russia. Forty million seabirds swirl around the cliffs and volcanic slopes of the 2500 refuge islands and islets. The Refuge was established to conserve these seabirds as well as marine mammals, other migratory birds and the marine resources on which they rely.

One would think such far away, rugged islands would be pristine wilderness and indeed 2.7 million acres of the refuge are included in the National Wilderness Preservation System. But beginning in the 1700's, human accidents and actions changed the nature of many of these islands when non-native species were introduced to this seabird paradise. For over 50 years, the Refuge has been undoing this damage by removing the introduced animals, restoring the native ecosystems and bringing the birds back.

Accidents and Bad Ideas

Shipwrecks, stowaways, trappers, government agencies, and homesteaders all introduced non-native animals to the wild islands of the Refuge. The Refuge itself permitted and encouraged some introductions until the 1950's. Over the past two centuries, rats, foxes, ground squirrels, rabbits, mice, cattle, horses, sheep, reindeer, caribou and bison have been introduced to some islands within the Refuge. Plants, invertebrates and fish have also been introduced.



Steve Hillebrand/USFWS

Seabirds have flourished on Big Konuigi Island since foxes were eliminated.

Islands Are Different

Island ecosystems are limited to the species that can swim, fly or drift there. Birds flourish without mammal predators or competitors. Such was the case on Refuge islands before human intervention. But with the arrival of the introduced animals, many bird populations crashed. These island dwelling species had no adaptations to cope with newcomers. In addition, on the tree-less Alaskan islands, birds nest on the ground, on cliffs or in burrows, often accessible to predators.

Success with Foxes

Foxes were the most widespread invasive species on the Refuge. Russians and later the Americans brought foxes to hundreds of islands for the fur trade. Trappers dropped foxes on islands returning later to harvest the offspring. The fox fur trade flourished until World War II brought an end to the industry. Fox fur was no longer worth the cost of trapping.

Foxes decimated ground nesting birds and drove the Aleutian cackling goose nearly to extinction. The only way to undue the damage and restore the natural biodiversity was to remove the non-native foxes. Pioneering Refuge Manger Bob "Sea Otter" Jones began doing just that after World War II when he initiated fox removal on Amchitka Island. This program gained steam in the 1980's until foxes were removed from over 40 islands, restoring more than one million acres of habitat.



Alaska Maritime Refuge

Rat Island → ★



Once rare, whiskered auklets have increased dramatically since Refuge islands were cleared of foxes.

"Making Birds"

Good news from our restoration work

- The Aleutian cackling goose was brought back from the brink of extinction once foxes were removed from its former nesting habitat. A rare exception for an endangered species, this bird came off the Endangered Species List as fully recovered in 2001. This bird's population has gone from less than 1000 to over 115,000.
- The Evermann's rock ptarmigan survived the fox farming era only on rugged Attu Island. Now with foxes removed, the ptarmigan has been successfully reintroduced and is nesting once again on nearby Agattu Island.
- Puffins, whiskered auklets, and oystercatchers are among the 25 species that have flourished since fox removal. Bird populations have already increased by more than a quarter million birds.

Rats Are Next

Of the remaining introduced species on the refuge, rats are the most immediate threat to Aleutian biodiversity. Rats are voracious predators on birds, chicks and eggs. Worldwide, rats have caused about half of all recorded bird extinctions.

In the 1780's, a Japanese ship brought the first rats to Alaska when it wrecked on an island that would become known as Rat Island. Rats spread as ship traffic increased and harbors were established. World War II led to rat infestation of other Refuge islands as troop ships and landing craft moved throughout the Aleutians. Rats have become established on about ten large islands and several small islets in the Refuge greatly diminishing the native birds and altering the plant life and intertidal communities.

Evermann's rock ptarmigan, a unique Aleutian sub-species, is being re-established on fox free islands.

Rats Still Leave Sinking Ships

Nearly 3000 ships a year pass through the Refuge on the great circle shipping route between Asia and North America putting the Refuge at risk for "rat spills". With an average of two shipping mishaps a year, the Refuge has prepared by assembling ship wreck response kits and training rat spill responders. Although oil spills are bad for wildlife, oil degrades over time while rats multiply.

Partners to the Rescue

The Refuge is not alone in its work to turn the tide on rats. Others, including the Alaska Dept. of Fish and Game, Defenders of Wildlife, National Audubon, World Wildlife Fund, the Aleut Community of St. Paul Island, Kayumixtax, Alaska Sea Grant, and Marine Conservation Alliance, have banded together to halt the spread of rats in Alaska. The Nature Conservancy and Island Conservation have also partnered with the Refuge to restore seabird breeding habitat by removing rats.

Hope For the Future

Rodents have been successfully removed from over 300 islands worldwide, resulting in the explosive recovery of bird populations. Anacapa Island in the Channel Islands off California, Langara off British Columbia, and Campbell Island in New Zealand are a few examples. The Refuge and its partners, The Nature Conservancy and Island Conservation, are committed to applying the lessons learned from these successes to restore Refuge islands. The first step in this partnership is the restoration of Rat Island (see box).

The goal of the island restoration program is to protect and restore the natural diversity of Refuge islands. The results have been dramatic over the last 50 years. By preventing new introductions of invasive species and removing existing infestations, the Refuge will maintain its trust responsibility of protecting native wildlife and plants for generations to come.

Restoring Rat Island



Art. Scents/USFWS



Rat Island Facts

- Rats arrived in 1780's. Alaska's first rats
- Located in the Aleutian Islands, 1300 miles west of Anchorage
- Became part of the Refuge in 1913; designated Wilderness in 1980
- 6,861 acres of cliffs, mountains, and tundra
- Virtually no remaining seabirds; few land birds
- No native land mammals

Rat Eradication

- Partnered project with The Nature Conservancy and Island Conservation
- Planned for fall of 2008 pending final permit and pesticide approvals
- Finding of No Significant Impact, Environmental Assessment, map, photos and Q & As available on-line at <http://alaskamaritime.fws.gov/news.html> or call (907) 235-6546
- 37 comments, nearly all supportive, received during the comment period on the Environmental Assessment



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