

## Steller's Eider Recovery Tasks v. August 2017

Below are the most updated Steller's eider recovery tasks as of August 2017. Revisions to the previous list were based on discussions at the February 2017 Eider Recovery Team meeting. Through a voting process, and e-mail correspondence, the Recovery Team ranked each task as high, moderate, or low priority based on the task's ability to:

- 1) increase abundance or the rate of population growth of the listed population;
- 2) reduce a threat, and that threat's current or potential impact to the listed population; or,
- 3) address a critical information need that would inform listing decisions or management actions.

High Priority
Continue intensive aerial surveys in the Barrow Triangle.
Continue education to eliminate shooting of Alaska-breeding Steller's eiders across their range.
Continue education to eliminate the use of lead shot across the range of Alaska-breeding Steller's eiders.
Continue law enforcement to eliminate the use of lead shot across the range of Alaska-breeding Steller's eiders.
Continue ground-based breeding pair surveys at Barrow.
Continue monitoring nest survival at Barrow.
Estimate natal philopatry of Alaska-breeding population.
Continue law enforcement to eliminate shooting of Alaska-breeding Steller's eiders across their range.
Continue education and outreach to eliminate take, including disturbance of nests and ducklings, across the range of Alaska-breeding Steller's eiders.
Reduce availability of anthropogenic food sources to nest predators of Steller's eiders at Barrow.
Update and evaluate the population viability analysis with the most recent survey and demographic data.
Continue raven control near Barrow to reduce predation of eggs and ducklings.

<b>Moderate Priority</b>
Develop a Barrow conservation plan to protect important habitat used during the breeding season.
Develop visibility correction factors for aerial surveys of Steller's eiders on the breeding grounds.
Investigate non-lethal methods to reduce avian nest predation.
Further analyze breeding site fidelity of Alaska-breeding birds.
Conduct fox control near Barrow to reduce predation of eggs and ducklings.
Monitor the use of lead shot on the North Slope.
Estimate the duckling or brood survival rate of the listed population.
Monitor changes in distribution and abundance of nest predators in the Barrow Triangle.
Protect important non-breeding habitats of the listed population.
Document fidelity to breeding, molting, wintering, and staging areas of Alaska-breeding birds.
Estimate first year survival rate of the listed population.
Continue aerial survey of Steller's eiders molting along the Alaska Peninsula.
Evaluate how environmental variables, body condition, and diet affect breeding propensity and productivity of Steller's eiders in Alaska.
Document Steller's eider distribution in oil spill response plans.
Characterize features of important breeding habitat on the North Slope (for example, habitats used for foraging, roosting, nesting and brood-rearing), and how they might change with a changing climate.
Describe habitat use during migration and staging so important areas can be identified for conservation planning.
Conduct studies to link breeding, molting, wintering and staging areas to identify areas that Alaska-breeding birds use disproportionately.
Estimate survival of sub-adults (1-2 year olds) in the listed population.
Investigate ways to change fox behavior to reduce predation of Steller's eider nests in the Barrow Triangle.
Determine the distribution of non-breeders during the breeding season.
Conduct aerial survey at Kuskokwim Shoals during the molting period.
Estimate age at first breeding for the listed population.

<b>Moderate Priority (continued)</b>
Test internal and external tagging techniques and evaluate retention times and physiological effects of tags on Steller's eiders.
Estimate breeding propensity of the listed population.
Monitor Alaska-breeding Steller's eiders for lead exposure.
Determine spring and summer diet at Barrow.
Reduce researcher disturbance of nesting Steller's eiders, and develop alternative methods of searching for nests and monitoring nest survival.
Determine the number and causes of infertile and inviable eggs in the listed population.
Conduct long-term mark-recapture study on Steller's eiders molting at Izembek NWR to monitor trends in annual survival rates.
Maintain a captive flock of Alaska-origin Steller's eiders as a reservoir in the event of extirpation on the North Slope.
Evaluate and determine causes of observed changes in Steller's eider molting distribution along the Alaska Peninsula.
Monitor the frequency of Steller's eider collisions with man-made structures and ships.
Continue the Arctic Coastal Plain survey.
Develop additional means of monitoring the Pacific wintering population.
Evaluate the potential effects of climate change on Steller's eider non-breeding habitat and how that may affect the population.
Improve collection and analysis of information on harvest levels of Steller's eiders in Alaska.
Examine molt phenology, duration, energetics, and body mass variation in different age/sex classes of Steller's eiders molting along the Alaska Peninsula.
Identify high quality components of Steller's eider molting habitat.
Develop and implement technology to reduce Steller's eider collisions with man-made structures and ships.
Conduct gull control at Barrow to reduce predation of eggs and ducklings.
Count Steller's eiders in Chukchi Sea ice leads in spring before they arrive on the North Slope.
Determine diet of Steller's eiders during the non-breeding season.

<b>Low Priority</b>
Develop techniques to determine age of Steller's eiders.
Continue studies on prevalence and effects of disease and causes of mortality.
Estimate demographic parameters for the Russia-breeding population by conducting a breeding ecology study in Russia.
Determine level of oil exposure in field by monitoring internal exposure of live birds.
Estimate female breeding site fidelity of Russia population.
Characterize the effects of pond salinity on Steller's eider ducklings.
Develop educational products for researchers working near Barrow to minimize take of Steller's eiders.
Conduct jaeger control near Barrow to reduce predation of eggs and ducklings.
Evaluate the ability of social attraction techniques (decoys/sound recordings) to attract Steller's eiders to the Y-K Delta or North Slope and increase breeding propensity.
Estimate natal philopatry of Russia-breeding population.
Conduct additional studies on genetic relatedness of the Russia and Alaska breeding populations.
Further investigate local movements and habitat use of Steller's eiders in wintering areas.
Determine age and sex ratios on wintering grounds to measure productivity of Pacific population.
Test efficacy of biochemical and DNA-based diet estimation techniques, and use these to estimate diet needs, metabolic rates, and body condition dynamics to develop a bioenergetics model for different life stages of Steller's eiders.
Estimate the settlement rate of lead shot in Arctic ponds.
Establish a second population of Steller's eiders on the North Slope outside of their current breeding range using translocation.
Reintroduce Steller's eiders to the Y-K Delta.
Assess effects of lead exposure on Steller's eiders.
Conduct aerial breeding pair survey in Russia.
Gather and summarize information on harvest levels in Russia.
Expand assessment of hydrocarbon levels in wintering areas.
Investigate potential for easements on Y-K Delta.

**Low Priority (continued)**

Maintain a second captive flock of Alaska-origin Steller's eiders to reduce the risk of losing the captive population in a catastrophic event.

Augment the Barrow population through translocation.