INTRA-SERVICE BIOLOGICAL OPINION

for

U.S. Fish & Wildlife Service's Issuance of a Section 10 Permit to the Alaska SeaLife Center

for

Alaska-breeding Steller's and Spectacled Eider Research and Conservation

November 21 2013

INTRODUCTION

This document is the U.S. Fish and Wildlife Service's (Service) Biological Opinion (BO) on the issuance of a permit by the Service for take of threatened Steller's eiders (*Polysticta stelleri*) from the Alaska-breeding population and spectacled eiders (*Somateria fischeri*) to the Alaska SeaLife Center (ASLC) pursuant to section 10(a)(1)(A) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Additionally, the Service has funded past captive propagation efforts by the ASLC and if funding levels allow, plans to provide funding to support this effort in the future. The ASLC plans to maintain flocks of these species, including accepting eggs, juveniles, and adults from the wild. The circumstances under which the eggs, juveniles, and adults would be collected are described below. Thus, this BO describes the effects of collecting eggs and maintaining the captive flock at ASLC on threatened Alaska-breeding Steller's eiders and spectacled eiders pursuant to section 7 of the Act. Section 7(a)(2) of the ESA states that Federal agencies must ensure that their activities are not likely to:

- Jeopardize the continued existence of any listed species, or
- Result in the destruction or adverse modification of designated critical habitat.

After reviewing the status and environmental baseline of Alaska-breeding Steller's and spectacled eiders, and the analysis of the potential effects of the Proposed Action, the Service concludes the Proposed Action *is not likely to jeopardize the continued existence of these species*. If you have comments or concerns regarding this BO, please contact Ted Swem, Endangered Species Branch Chief, Fairbanks Fish and Wildlife Field Office at (907) 456-0441.

THE PROPOSED ACTION

The proposed permit would authorize the ASLC to take listed Alaska-breeding Steller's and spectacled eiders pursuant to section 10(a)(1)(A) of the Act to benefit recovery of these species. The permit would allow collection of eggs from active and abandoned/failed nests on the Yukon-Kuskokwim Delta (Y-K Delta) and North Slope for the purpose of maintaining a flock of known-geographic origin for Alaska-breeding Steller's eiders at the ASLC. Additionally, the Proposed Action would permit the collection of injured juveniles and adults and the maintenance of a captive flock of both species.

The ASLC would be permitted as follows:

1. Receive, transport, and care for opportunistically collected injured spectacled and Alaska-breeding Steller's eider juveniles and adults from the wild. Fully rehabilitated birds may be released into the wild, if practicable, or may become part of the captive flock. Permanently injured birds will become part of the captive flock, in consultation with the Service;
2. Maintain a captive flock of spectacled eider eggs, juveniles, and adults of a population size appropriate for the ASLC facility;

3. Maintain of a captive flock of Alaska-breeding Steller's eider eggs, juveniles, and adults of a population size appropriate for the ASLC facility;
4. Receive, transport, and hatch an unlimited number of Alaska-breeding Steller's eider eggs from an unlimited number of abandoned nests in the Yukon Delta National Wildlife Refuge and the North Slope;
5. Receive, transport, and hatch up to a combined total of 20 Alaska-breeding Steller's eider eggs from active nests in the Yukon Delta National Wildlife Refuge and the North Slope over the 5-year duration of this permit;
    a. Eggs may be taken at any stage of incubation;
    b. No more than 3 eggs would be collected from a single active nest;
        i. Use of these eggs would be authorized for the following activities:
            1. Maintenance and propagation of a captive flock of Alaska-breeding Steller's eiders at the ASLC; and,
            2. Research and education on biology, physiology, and reintroduction methods development.
6. Receive and transport an unlimited number of non-viable Alaska-breeding Steller's eider and spectacled eider eggs from the Yukon Delta National Wildlife Refuge and North Slope for research activities; and,
7. Conduct research on biology and physiology of Alaska-breeding Steller's and spectacled eiders using birds from the captive flock.

Per conditions of the permit, the Sea Life Center must:

1. Adhere to the most up-to-date *Alaska SeaLife Center Husbandry Manual* and *Alaska SeaLife Center Disease Management Plan*, and the Service's *2013 Protocol for Handling Dead Spectacled and Steller's Eiders* (copies attached);
2. Not exceed the maximum numbers of eggs, juveniles, and adults stated above.

THE ACTION AREA

The Action Area is that area in which the direct and indirect effects of the proposed action may occur. The Action Area includes the:

1. Yukon-Kuskokwim Delta (Y-K Delta):
    a. Kigigak Island; and
    b. Coastal zone of the Y-K Delta between the Kashunuk and Ninglick rivers.
    c. Please see the *Biological Opinion for Issuance of Section 10 Permit for Spectacled Eider Population Monitoring Studies on the Yukon Delta National Wildlife Refuge, 2011-2016* (USFWS 2011a) for a description of this portion of the Action Area and environmental baseline for Alaska-breeding Steller's eiders on the Y-K Delta.
2. North Slope of Alaska.
    a. Please see the *Intra-service Biological Opinion to the Fairbanks Fish and Wildlife Field Office for Issuance of a Section 10 Permit for Breeding Biology Research of Steller's Eiders and Other Waterfowl and Control of Foxes near Barrow, Alaska (2012-2014)* (USFWS 2011b, amended 2013)

for a description of this Action Area and the environmental baseline for Alaska-breeding Steller's and spectacled eiders.

3. The SeaLife Center in Seward, Alaska.

STATUS OF THE SPECIES

This section considers biological and ecological information relevant to the BO. Appropriate information on species' life history, habitat and distribution, and other factors necessary for their survival is considered for analysis in later sections.

Please see the *Biological Opinion for the National Petroleum Reserve – Alaska Integrated Activity Plan 2013* for the most recent description of that status of Alaska-breeding Steller's and spectacled eiders.

Our BO includes consideration of ongoing and projected changes in climate using terms as are defined by the Intergovernmental Panel on Climate Change (IPCC). "Climate" refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007, p. 78). The term "climate change" thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8–14, 18–19). In our BO, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of climate change.

ENVIRONMENTAL BASELINE

Regulations implementing the ESA (50 CFR §402.02) define the environmental baseline to include the past and present impacts of all Federal, State, or private actions and other human activities in the Action Area. Also included are anticipated impacts of all proposed Federal projects in the Action Area that have undergone section 7 consultation and the impacts of State and private actions contemporaneous with the consultation in progress.

Please see the biological opinions mentioned in the section, *The Action Area*, for a description of the Y-K Delta and North Slope where the proposed action (i.e., the collection of eggs) could take place.

EFFECTS OF THE ACTION ON LISTED SPECIES

This section of the BO provides an analysis of the effects of the Action on listed species. Direct effects (those immediately attributable to the Action), and indirect effects (those

caused by the Action, but which will occur later in time, and are reasonably certain to occur) are considered. Finally, the effects from interrelated and interdependent activities are also considered. These effects will then be added to the environmental baseline in determining the proposed Action's effects to the species or its critical habitat (50 CFR Part 402.02).

Alaska-breeding Steller's Eiders

This project would affect Alaska-breeding Steller's eiders directly through removal of eggs and injured juveniles and adults from the wild, and from maintaining birds in captivity. Additionally, some indirect effects of these actions could occur, as described below. The action of receiving the eggs and transferring them to ASLC is not expected to cause indirect take.

Effects of collecting eggs

Currently, egg collection from wild populations of Alaska-breeding Steller's eiders is not needed to genetically supplement the ASLC captive population. However, the permit would allow for collection of viable eggs from active and abandoned/failed nests should the need arise to supplement the genetics of the captive population. For the 5-year duration of this permit, up to 20 Alaska-breeding Steller's eider eggs could be collected from active nests and an unlimited number of eggs could be collected from abandoned nests. Due to logistical field constraints, eggs would likely be collected during all stages of incubation. We discuss effects of collection on individuals and the wild population below.

The population effect of removing viable eggs from the wild is low due to the relatively low probability that an egg would survive to become an adult bird. Most likely, some eggs collected would otherwise be depredated in the nest or after hatch as a duckling in the wild. The likelihood an egg would hatch increases as the hatch date approaches. Thus, collecting eggs early in incubation would have a lower effect on the number of eggs hatched in the wild than collecting eggs later in incubation. The approximate duckling survival rate (from hatch to fledging) for wild Alaska-breeding Steller's eiders in Barrow is 0.44 (Service unpublished data from 2005 through 2012; Safine 2011, 2012, and 2013). Thus, 20 eggs removed (near hatch date) from active nests during the proposed action equates to about 9 ducklings (20 eggs near hatch x 0.44) that would have survived to fledging. Of the 9 fledging eiders, we expect about 4.5 to be female (most valuable to the population) and 3-4 to survive to breeding age (4.5 x 0.86 x 0.86; annual survival rate is 0.86, Frost et al. 2013). Thus, the direct effect of removing eggs from viable nests would likely have only a minor impact on the wild population because of the 20 eggs collected, at most 3-4 females would survive to breeding age. This estimate of the effect of egg collection is very conservative, as eggs collected earlier in incubation would have a lower probability of surviving to fledging, and the effect of egg collection would be lower.

The effect of removing eggs from failed or abandoned nests would provide a chance that some would hatch and reach breeding age in captivity, where they could contribute to recovery efforts; whereas, eggs left in failed or abandoned nests would most likely

become non-viable with no chance of eventually entering the adult breeding population. Thus, the overall effect of collecting eggs from failed and abandoned nests would be beneficial.

Indirect impacts of removing viable eggs from active nests, however, could also occur. Incubating females may be flushed from or temporarily prevented from returning to their nests. In rare instances, females may abandon their nests and remaining eggs. These indirect effects would be minimized if eggs are collected during a regular nest check in ongoing studies, and therefore may not be an additional effect.

The permit would also allow for collection of non-viable eggs. We expect that collecting non-viable Alaska-breeding Steller's eider eggs would have no effect on this species.

Given the relatively low probability that eggs in the wild survive to become breeding adults, removal of up to 20 eggs from the wild over the next 5 years would have only a minor effect on the Alaska-breeding Steller's eider population. Ultimately, the goal is to introduce captive-bred progeny into the wild. Thus, the overall effect of the proposed action could be beneficial.

Collection of Injured Adults and Juveniles
Injured adults and juveniles collected from the wild would experience stress from handling by the collectors and from the trip to the ASLC. Collectors follow protocols for handling and transporting injured birds and maintain communication with ASLC to minimize a bird's transit time. Some injured birds may die during transport or in captivity. Indirect effects on other birds would be minimal because these birds are usually collected as lone individuals, with no opportunity to disturb other birds.

Effects of Captivity
Alaska-breeding Steller's eiders living in captivity would not be able to carry out normal behaviors such as migration and nesting in the natural substrate. However, to minimize effects, ASLC staff will adhere to protocols in the Husbandry Manual to minimize adverse effects of captivity on individuals. Although captivity would significantly alter normal behavior of individuals, these individuals would not be part of the wild population. Therefore, effects of the proposed action on individuals in captivity would have no effect on the wild population.

Spectacled Eiders
Spectacled eiders would be directly affected through collection of injured juvenile and adults and from maintaining birds in captivity. These effects on spectacled eiders are similar to those identified for Alaska-breeding Steller's eiders above.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion.

Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects for this action are the same as those identified in the USFWS 2011a and USFWS 2011b. These effects include ingestion of lead shot, risk of collision with structures, predation risk, and habitat changes due to climate change.

CONCLUSION

The regulations (51 FR 19958) that implement section 7(a)(2) of the Act define "jeopardize the continued existence of" as, "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." After reviewing the current status of Alaska-breeding Steller's eiders and spectacled eiders, their environmental baselines, effects of the proposed activities, and cumulative effects, it is the Service's biological opinion that the issuance of a section 10 permit to authorize the proposed activities is not likely to jeopardize the continued existence of Alaska-breeding Steller's and spectacled eiders by reducing appreciably the likelihood of survival and recovery of these species in the wild by reducing their reproduction, numbers, or distribution.

The following information led us to the conclusion that this action, as proposed, is not likely to jeopardize the continued existence of these species:

- The number of eggs (up to 20) collected from viable nests would only have a minor impact on the Alaska-breeding population of Steller's eiders in the wild;
- Eggs from abandoned nests would lose viability if left in the field and would not become part of the wild breeding population. Thus, collection of eggs would not have population-level effects on the wild population.
- Disturbance to breeding and nesting birds from egg collection from abandoned and active Alaska-breeding Steller's eider nests may occur; however, it will affect comparatively few individuals, be minor in nature, and should be offset by the net benefit of the research to recovery of the species;
- Collection of injured Alaska-breeding Steller's and spectacled eiders from the wild will likely not affect individuals other than those being collected; and
- Captive birds are not part of the wild population, and thus effects of captivity would not have population-level effects on Alaska-breeding Steller's and spectacled eiders in the wild.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including

breeding, feeding, or sheltering. "Harass" is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement. In addition, because the proposed action is the issuance of permits per section 10(a)1(A) of the Act, direct take is permitted per the statute and implementing regulations. We are not including direct take (e.g., collection of eggs) in this incidental take statement.

Spectacled Eiders
No incidental take of spectacled eiders is anticipated to occur.

Alaska-breeding Steller's Eiders
The measures described below are non-discretionary, and must be undertaken by the ASLC and the Service so that they become binding conditions of any grant or permit issued to an applicant, as appropriate, for the exemption in section 7(o)(2) to apply. ASLC and the Service have a continuing duty to regulate the activity covered by this Incidental Take Statement. If these parties fail to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, ASLC and the Service must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

As described in the *Effects of the Action* section, the activities described and assessed in this BO may adversely affect Alaska-breeding Steller's eider females incubating active nests through investigator disturbance during egg collection. **Up to 20 females may be flushed off of nests during egg collection.** This is a conservative estimate, as most eggs would be collected during routine nests checks or from abandoned nests. **No incidental take is expected to occur from other permitted activities, and no lethal take is anticipated or granted.**

While the incidental take statement provided in this consultation satisfies the requirements of the Act, it does not constitute an exemption from the prohibitions of take of listed migratory birds under the more restrictive provisions of the Migratory Bird Treaty Act. However, the Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions specified herein.

REASONABLE AND PRUDENT MEASURES

Of the activities covered under the permit, only those associated with egg collection may result in incidental take. The Service anticipates that the following reasonable and prudent measure (RPM) is necessary and appropriate to minimize this incidental take of Alaska-breeding Steller's eiders:

1. Minimize flushing females from nests during egg collection by minimizing the number of nest visits and the amount of time spent at the nest.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the Act, the following terms and conditions, which implement the reasonable and prudent measure described above applies. These terms and conditions are non-discretionary:

1. Collect the allowed number of eggs (up to three) from each active nest during one visit using accepted best practices that minimize disturbance of females and the other eggs in the nests.

REINITIATION NOTICE

This concludes formal consultation on the renewal of Recovery Permit # TE012155. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if:

1) the amount or extent of incidental take is exceeded;
    a. if researchers flush more than 20 females, or if
    b. lethal take of an adult during egg collection occurs
2) new information reveals effects of the action agency that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion;
3) the action is subsequently modified in a manner that causes an effect to listed or critical habitat not considered in this opinion; or
4) a new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

LITERATURE CITED

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