



EIDER NEST SEARCHES IN THE ALPINE AREA, 2017

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Prepared for
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Anchorage, Alaska

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ABR, INC.—ENVIRONMENTAL RESEARCH & SERVICES
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FINAL REPORT

Prepared for

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INTRODUCTION

The Alpine Satellite Development Project (Alpine Oilfield) is within the current or historic ranges of 2 species of eiders that are listed as threatened under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.): the Spectacled Eider (*Somateria fischeri*) and the Steller's Eider (*Polysticta stelleri*). The Alpine Oilfield, operated by ConocoPhillips Alaska, Inc., (CPAI) consists of 4 drill sites located on the Colville River delta, 1 drill site (CD-5) in the northeastern National Petroleum Reserve-Alaska (NE NPR-A), and 1 drill site under construction at the time of this report, Greater Mooses Tooth 1 (GMT-1) in NE NPR-A. To comply with the Terms and Conditions issued in the Biological Opinions for the Alpine satellites (USFWS 2004, 2011) and to reduce potential disturbance to breeding eiders, CPAI Operations requires documentation of the presence or absence of eider nests prior to initiating off-pad activities and then modifies those activities, after consultation with U.S. Fish and Wildlife Service (USFWS) to avoid disturbance if nests are found. Consequently, CPAI contracted ABR, Inc.—Environmental Research & Services (ABR) to conduct nest searches for eiders on the Colville River delta and adjacent areas where off-pad activities were scheduled during the 2017 breeding season. In this report, we document the absence of eider nests within search areas around 9 Alaska Clean Seas (ACS) spill response equipment sites and 3 water-source lakes (Figure 1), located on the Colville River delta. The results for nest searches conducted in the GMT-1 area nest search are in a separate report (Seiser and Johnson 2017).

Spectacled Eiders are common breeders on the Colville River delta and NE NPR-A. However, Spectacled Eider nests are not distributed uniformly in the Alpine area (Johnson et al. 2015). Spectacled Eider nests are relatively common on the outer Colville delta where the CD-3 drill site is operated as a roadless satellite to the Alpine Oilfield, less common in the areas around CD-1, CD-2, and CD-5 drill sites (Figures 1), and least common at the southernmost drill site, CD-4 (for eider distribution see Figure 3 in Johnson et al. 2017).

In contrast, Steller's Eiders are extremely rare along the central Beaufort Sea coast, where Alpine is located. Their Alaska breeding distribution is primarily centered to the northwest of the Alpine area, near Barrow, although their historic range included all of the Arctic Coastal Plain of Alaska (Quakenbush et al. 2002). Evidence of nesting by Steller's Eiders east of Barrow has been reported only 3 times in the last 30 years: a single brood was seen inland along the Colville River in 1987 (T. Swem, USFWS, unpubl. data), 1 brood was seen near Prudhoe Bay in 1993 (M. M. Deering, USFWS, pers. comm.), and another brood was seen near the upper Chipp River, approximately 80 km inland from the Dease Inlet/Admiralty Bay area in 1997 (King and Dau 1997). In the last 22 years, Steller's Eiders have been sighted only 3 times on the Colville delta (1995 [J. Bart, Boise State University, pers. comm.], and 2001 and 2007 [Johnson et al. 2002, 2008a]) and only 5 times in the Greater Kuparuk Area (1995, 2000, 2001, 2007, and 2014 [Anderson et al. 2008; CPAI, unpubl. data]). There are no records of Steller's Eider nests or broods from the Colville delta or adjacent areas.

Section 9 of the ESA prohibits harming, harassing, and disrupting normal activities of threatened and endangered species, without special exemption. However, under Section 7(b)(4) and 7(o)(2) of the ESA, Incidental Take Statements can be issued to allow actions that are prohibited under Section 9, if they comply with specific terms and conditions. In the Biological Opinions issued prior to construction of the Alpine satellites (CD-3, CD-4, and CD-5), the USFWS stipulated terms and conditions in the Incidental Take Statement that restrict human activity to existing gravel fill within 200 m of occupied Spectacled Eider nests during 1 June–1 August (USFWS 2004, 2011). Where summer support or construction activities must occur off existing gravel fill during that restricted period, USFWS-approved nest surveys for Spectacled Eiders must be conducted during the nesting period prior to those activities so that active nests can be identified and avoided (USFWS 2004). CPAI conducts off-pad activities necessary for regulatory compliance and operational needs (e.g., tundra clean-up after the ice-road season, spill response equipment deployment, hydrological

Introduction

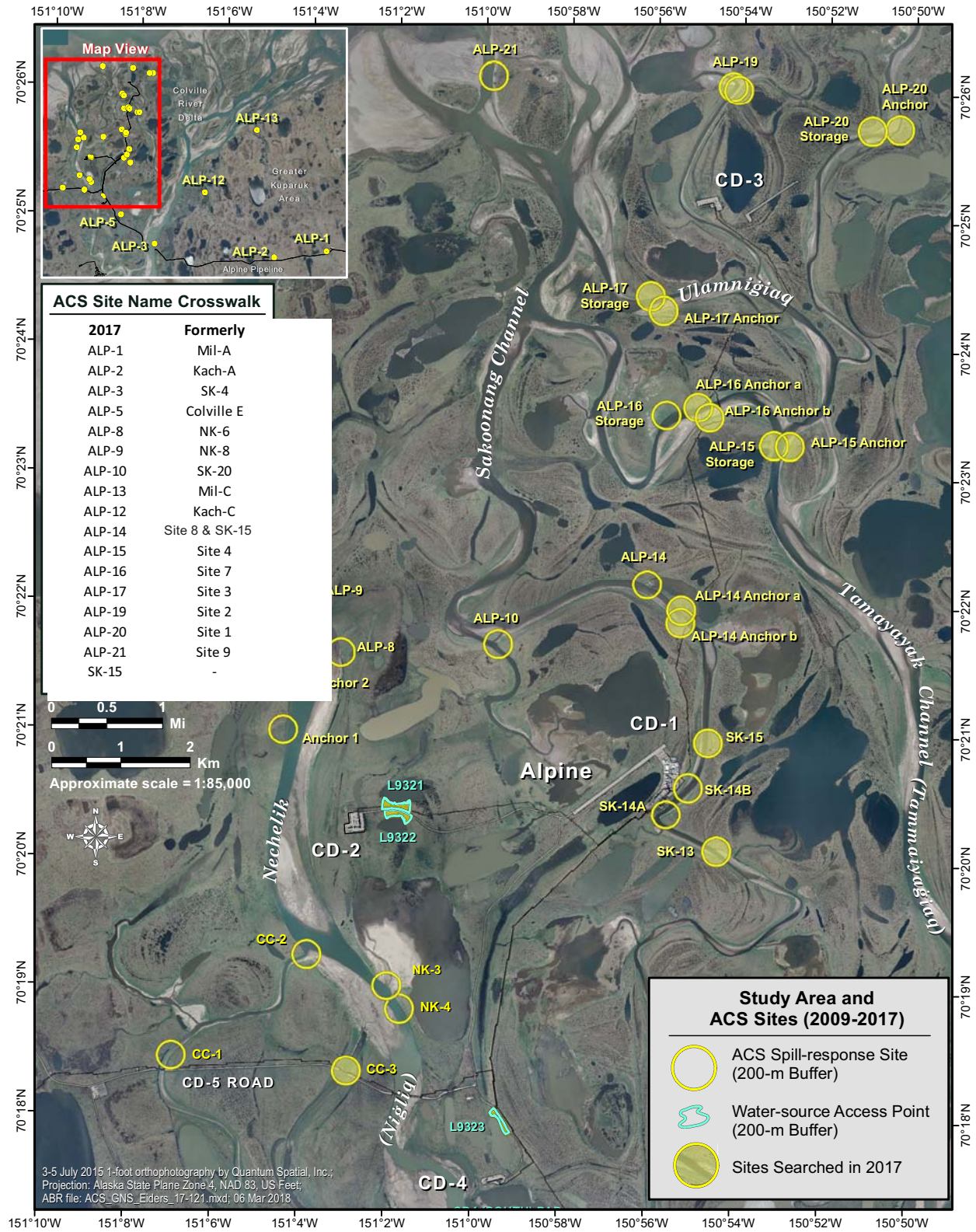


Figure 1. Study area for eider nest searches conducted prior to spill response activities in the Colville River delta and adjacent areas, Alaska, 2009–2017.

monitoring, water access, civil surveys) on the tundra in portions of the nesting habitat of the Spectacled Eider annually during the breeding season (June and July). Eider nests are difficult to avoid, because female eiders are cryptic and the females of 4 eider species (Steller's, Spectacled, King [*S. spectabilis*], and Common eiders [*S. mollissima*]) are hard to distinguish with the untrained eye. Without prior knowledge of nest locations, workers could accidentally damage eggs or unintentionally flush birds from their nests, leaving eggs exposed to predators.

CPAI has a regulatory obligation in its Oil Discharge Prevention and Contingency Plan for the Alpine Oilfield to stage or deploy spill response equipment as soon as ice leaves the river channels, which typically overlaps with the eider nesting season. In a meeting on 2 May 2011, USFWS, CPAI, and ABR reviewed the data available on nest initiation dates for Spectacled Eiders and identified 9 June as the earliest known record of nest initiation for Spectacled Eiders on the Colville delta (ABR, unpubl. data). As a result of this meeting, USFWS agreed to postpone the earliest date when nest searches would be required for off-pad activity from 1 June to 9 June. Any off-pad work, including spill response equipment deployment, from 9 June to 1 August would require nest searches if it occurred in areas where potential nesting habitat of Spectacled Eiders existed.

The summer of 2017 is the ninth season that eider nest searches have been conducted in advance of off-pad work in the Alpine Oilfield. The number of spill response sites increased after the CD-5 drill site came on line in 2016, extending the range of sites from Colville River delta as far as the Nigliagvik Channel. The current list of spill-response sites requiring nest searches prior to off-pad activities was determined by joint reviews by USFWS, CPAI, and ABR (letters from Caryn Rea, CPAI, to Sarah Conn, USFWS, dated June 2011 and March 2012). Eleven of 23 spill-response sites have been eliminated from further consideration for eider nest searches because they either lack of appropriate eider nesting habitat, contained nesting habitat in insufficient quantity or quality, or had degraded and unusable nesting habitat (for example, the flare at SK-14A and persistent snow berms at SK-14B). Currently, 12 ACS sites and 3

pipeline bridge crossings (between CD-1 and CD-3) remain on the list for nest searches when maintenance activities are planned during the eider breeding season (Table 1). A summary of the habitat composition and nest search histories at 23 spill response equipment sites and 3 pipeline bridge sites that have been searched at least once during 2009–2017 is presented in Table 1 (Seiser and Johnson 2010; 2011a, b; 2012; 2014a, b; 2015; 2016).

OBJECTIVES

The primary objective of nest searching in 2017 was to document the presence or absence of nesting Spectacled and Steller's eiders prior to off-pad activities. If active nests of Spectacled or Steller's eiders were found, their locations would be transmitted to CPAI field environmental staff. Documentation of nest locations allowed CPAI to modify planned activities occurring near nests, as needed. ABR searched for eider nests in designated off-pad work areas and transmitted information on presence or absence of active Spectacled Eider nests to CPAI field environmental staff within 24 hours of the completion of the search in each work area.

METHODS

Methods have been similar since USFWS-approved nest searches for off-pad work were initiated in 2009. Eider nest searches are conducted only in the subset of ACS sites that contain suitable nesting habitat and that are scheduled for work visits between 9 June and 1 August. In 2017, only 9 qualifying ACS sites and 3 water-source lakes were scheduled for work activities between 9 June and 1 August, and consequently, were searched for eider nests. Nest searches along CD-3–CD-2 ice road, and CD-3 drill pad and airstrip were not necessary this year because off-pad work was delayed until after 1 August.

Each year, we conducted intensive ground-based nest searches for Spectacled Eiders where off-pad work was proposed to occur on the Colville River delta during the breeding season. Search areas typically included a 200 m buffer around work sites located within potential eider nesting habitat. The 200 m buffer around work sites is

Table 1. Site descriptions for 27 spill response equipment sites and 3 pipeline bridge sites in the Alpine area, Colville River delta, and adjacent areas, Alaska, 2009–2017. Sites that were renamed in 2015 have their previous names listed in parentheses.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--------------------|----------------------------|---|-------------------------------|---|--------------------------------------|------------------------------------|----------------|-------------------------|---|
| ALP-1 (Mil-A) | N 70.24403 W 150.29674 | Miluveach River, just north of TransAlpine pipeline | PWM MSSM TLDS | West side well drained, east side is MSSM grading to PWM | Yes | No/No | 2011 | No | Conexes are located on a well-drained bluff. Search area on the opposite bank, near boom anchor point, contains marginal nesting habitat. |
| ALP-2 (Kach-A) | N 70.23750 W 150.45838 | Kachemach River, just north of TransAlpine pipeline | MSSM MTTU NWM TLDS | Small pocket of wet meadow surrounded by drier habitat | No | No/No | 2011 | No | Unsuitable habitat because NWM is <10% of the total area, and the surrounding area is occupied by shrubs. |
| ALP-3 (Colville E) | N 70.25062 W -150.82796 | East Bank of the Colville River, 0.7 km north pipeline. | PWM NWM TLDS BAR | | – | No/No | None | No | No Site Visit. Pre-nesting aerial surveys in adjacent areas suggest lack of use by eiders. |
| ALP-5 (SK-4) | N 70.280721 W 150.93346 | Sakoonaang Channel, ~6.6 km south of CD-1 | PWM NWM TLDS BAR | | – | No/No | None | No | No site visit. Pre-nesting aerial surveys indicate lack of use by eiders. |
| ALP-8 (NK-6) | N 70.36017 W 151.05275 | Eastern bank of the Nigliq Channel | TLDS, MSSM | Low willow shrubs and non-patterned grass/sedge | No | No/No | 2009 | No | No nesting habitat at this site for eiders or most other species of waterfowl. |
| ALP-9 (NK-8) | N 70.36606 W 151.06483 | Eastern bank of the Nigliq Channel | PWM, MSSM | Low willow shrubs with some polygons, river bank with polygon troughs | Yes | No/No | 2009–2011 | No | Marginal nesting habitat due to prevalence of shrubs; contains some polygonal areas. |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--|---|---|--|--|--------------------------------------|------------------------------------|---|-------------------------|---|
| ALP-10 (SK-20) | Storage: N 70.36154 W 150.99201 | Near the intersection of channels on the Sakoonang | PWM, NWM, TLDS, BAR | 10% PWM, 50% low relief MSSM, 40% riverine habitats | Yes | No/No | 2009, 2013, 2015–2016 | Yes | Nesting habitat on both sides of the channel in areas of PWM, but not on willow covered island. Container location shifted between 2014 and 2015. |
| ALP-12 (Kach-C) | N 70.30462 W 150.67467 | Apline Pipeline site, Kachemach River, ~12 km east of CD-4 | PWM, NWM, TLDS, BAR | | – | No/No | None | No | No site visit. East of the Colville delta. Spans a ~75 m wide channel lined with low shrub. |
| ALP-13 (Mil-C) | N 70.37038 W 150.51505 | Shoreline and islands ~800 m upstream of Miluveach River mouth | NWM, BAR, SKT | NWM on river banks, BAR and SKT on islands | Yes | No/No | 2010 | No | No habitat mapping available for this site. Field appraisal in 2010 concluded only marginal nesting habitat existed on banks and islands and subject to frequent flooding. |
| ALP-14 (Site 8 & SK-15 ^c) | Storage: N 70.369519 W 150.93522; Anchor a: N 70.366204 W 150.921931; Anchor b: N 70.364615 W 150.92218 | Storage: Conex on the northern bank of the Sakoonang Channel. Anchors: Adjacent to Sakoonang pipeline bridge, ~2.5 km north of CD-1 | TLLWC, PWM, NWM, MSSW TLDS, BAR | Storage: ~50% PWM (both low-relief and high-relief polygons), and ~50% shrub habitats (MSSM & TLDS). Anchor a: high relief PWM surrounded by shrub habitats. Anchor b: NWM with narrow band of PWM | Yes | No/No | Storage: 2009–2011, 2013–2016 Anchors: 1998, 1999, 2009–2017 | Yes | Nesting habitat at storage site limited to area of PWM north of container. Shoreline of channel and tapped lake are unsuitable because of abundance of low shrubs. Two female Spectacled Eiders observed flying over the site in 2010. Potential nesting habitat present at both anchor sites. Anchor a has high relief PWM and Anchor b has a 125 m band of PWM & NWM |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--------------------|---|--|-------------------------------|--|--------------------------------------|------------------------------------|---|---------------------------|--|
| ALP-15 (Site 4) | Storage: N 70.38775 W 150.88718 Anchor : N 70.387675 W 150.88104 | Container on western bank of the Tamayayak boom anchor opposite bank slightly down stream. | PWM, MSSM, DOWIP, BAR | ~70% moist, low-relief PWM; ~10% high-relief PWM; ~10% DOWIP; ~10% BAR | Yes | No/No | 2009–2017 | Yes | Suitable habitat on container side in low-relief areas and along lake. Marginal nesting habitat in the high-relief area. Eider nesting habitat is also present on the anchor side of the channel. |
| ALP-16 (Site 7) | Storage: N 70.39152 W 150.92881 Anchor a: N 70.39261 W 150.91657 Anchor b: N 70.39130 W 150.91208 | Container on NW bank of Tamayayak; anchors adjacent to Tamayayak pipeline bridge. | PWM, NWM, TLDS, BAR | Storage: Well-drained NWM with low shrubs. Anchor a: PWM edged with low shrubs. Anchor b: NWM with narrow band of PWM. | Yes | No/No | Storage: 2009–2011, 2016 Anchors: 2017 | Yes, at Anchor sites only | No suitable nesting habitat near storage unit, the area is dry, shrubby and lacks ponds. Anchors a and b have suitable habitat inland from the shrub lined banks. |
| ALP-17 (Site 3) | Storage: N 70.40692 W 150.93549 Anchor: N 70.40507 W 150.93047 | Container on northern bank of Ulamniqiaq, anchor on opposite bank | NWM, PWM, BAR | Vegetated areas ~50% NWM and ~50% PWM | Yes | Yes ^d /Yes | 2009–2017 | Yes | Eider nesting habitat near spill response container and anchor; a Spectacled Eider nested 160 m from the container in 2011 and 207 m from the container in 2009. Two female Spectacled Eiders observed flying in 2012. |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--------------------|---|--|-------------------------------|--|--------------------------------------|------------------------------------|----------------------------|-------------------------|--|
| ALP-19 (Site 2) | Storage: N 70.43417 W 150.90533 Anchor: N 70.433872 W 150.902607 | Container on western bank, anchor on the opposite bank of the West Ulammigiaq | MSSM, DPC, NWM, BAR, SM, SKT | Half of site is vegetated. MSSM, NWM, and BAR is on the west bank, the east bank has BAR, and SM grading into NWM and PWM. | Yes | Yes ^d /No | 2009–2011, 2014, 2017 | Yes | On the anchor side there is eider nesting habitat consisting of polygon ponds. Otherwise marginal nesting habitat bordering ~60 m wide channel. On the storage unit side driftwood lines indicate flooding is common at this site. |
| ALP-20 (Site 1) | Storage: N 70.42874 W 150.85064 Anchor: N 70.428919 W 150.84019 | Container on west bank of the Tamayyak; boom anchored downstream where the channel narrows | NWM, PWM, DPC, BAR, SOW | Vegetated areas on west side of channel are predominately NWM and PWM; east side includes DPC and BAR. | Yes | Yes ^d /Yes | 2009–2011, 2013–2015, 2017 | Yes | Eider nesting habitat consists of polygon ponds 100 m inland from the container and deep polygon ponds on east side. One Spectacled Eider nest present in 2013 and 2014. |
| ALP-21 (Site 9) | N 70.43531 W 150.99748 | Container on eastern side of Tamayyak | SM, SKT, BAR | Salt-affected vegetation and abundant drift wood on east bank, river channel and BAR | Yes | No/No | 2009–2011 | Yes | Suitable nesting habitat with sparse vegetation; better habitat ~250 m east of the container in low-center polygon area; area probably used extensively by molting/brood-rearing geese in late July and early–mid August. |
| Anchor 1 | N 70.35003 W 151.07447 | Western bank of the Nigliq Channel | NWM, MSSM, PWM | Shrubs, low-relief low-center polygons | Yes | No/No | 2009–2011 | No | Marginal nesting habitat because of prevalence of shrubs. Few ponds. |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--------------------------|---------------------------|---|---------------------------------|--|--------------------------------------|------------------------------------|-------------------------|-------------------------|---|
| Anchor 2 | N 70.35828 W 150.07022 | Western bank of the Nigliq Channel | PWM, DOWIP | Shrubs, low-relief low-center polygons | Yes | No/No | 2009–2011 | Yes | Marginal nesting habitat because of prevalence of shrubs. Large and small ponds are suitable habitat. |
| CC-1 (CD-5 Site 3) | N 70.30756 W 151.11541 | Nigliagvik Channel, ~300 m from Bridge #3 | TLDS, BAR MTT, MSSM | TLDS along banks with MTT on the west side and MSSM in polygonal area on the east side of channel | No | Yes/No | 2009, 2015–2016 | No | Low center polygon area on the east bank is MSSM with abundant willow cover. |
| CC-2 (CD-5 Site 1) | N 70.32093 W 151.06402 | Mouth of the Nigliagvik Channel | TLDS, DPC, MSSM, BAR | Narrow band of TLDS with MSSM high relief low centered polygons on the north side and willow covered low centered polygons on the south side | No | No/No | 2015 | No | Low value to no nesting habitat for eiders, in areas where the landscape is patterned the vegetation tends to be MSSM with abundant willow cover. |
| CC-3 (CD-5 Site 2) | N 70.30589 W 151.04806 | Bridge #3 over Lake L9341 | TLDS, NWM, TLHWC, HUMO | Mostly TLDS with a narrow band of NWM on top of old river bank. | Yes | Yes/No | 2009, 2014–2015 2017 | Yes | The site spans an old river channel and includes the bridge. NWM occurs in patches, which may support eider nesting. |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|--------------------------|--------------------------------|---|-------------------------------|--|--------------------------------------|------------------------------------|--------------------------------|-------------------------|---|
| NK-3 | N 70.31924 W 150.03083 | Overflow waterway between Nigliq Channel and large tap lake | BAR TLDS | | No | No/No | none | No | Exclude from Spectacled Eider nest searches because it is unvegetated |
| NK-4 (CD-5 Site 4) | N 70.31697 W 151. 033072 | Nigliq Channel, ~1.3 km north of Bridge #2. | BAR, TLDS | East bank TLDS and silt covered polygons. Barrens on west bank | No | No/No | 2015 | No | Polygonal area present at the site but the abundance of willows and silt deposited by floods made habitat unsuitable for nesting eiders. |
| SK-13 | N 70.33506 W 150.90711 | Both banks of Sakoonang just south of Alpine | PWM, NWM, TLDS, BAR | Low-relief PWM with narrow bands of TLDS, BAR, and NWM | Yes | Yes ^c /No | 1998–2000 2009 2011–2017 | Yes | Potential eider nesting habitat in areas of PWM. In 2011, a Spectacled Eider pair was sighted 550 m north of SK-13 and, in 2014, a female Spectacled Eider was observed flying by the site. |
| SK-14A | N 70.33975 W 50.92675 | Site is adjacent to the Alpine flare pit on the Sakoonang | PWM, NWM, TLDS, BAR | Gravel pad, high- relief polygons, and shrubs are on the NW bank. The east bank contains TLDS, NWM, and PWM. | Yes | Yes ^c /No | 1996–2001 2009 | No | Marginal nesting habitat because of shrubs and habitat modification. The NW side bank habitat is modified by the gravel pad and flare; the SE bank is relatively dry. Previous searches have not found eider nests. |
| SK-14B | N 70.34325 W 150.91836 | Site is NW of the Alpine boat ramp | PWM, NWM, TLDS, BAR | PWM, gravel pad and NWM on NE bank, TLDS and PWM on SW bank | Yes | Yes ^c /No | 1996–2001 2009 2010 | No | Eider nesting habitat adjacent to the Alpine gravel pad and to a lesser degree on the east side of the channel. Snowbanks on the pad edge may delay availability. Previous searches have not found eider nests. |

Table 1. Continued.

| Site Name | Location | Site Description | Wildlife Habitat ^a | Habitat Description | Nesting Habitat Present ^b | Search History/ Nesting Records | Years Searched | Search in Future Years? | Comments |
|----------------------------------|-----------------------------|--|-------------------------------|---|--------------------------------------|------------------------------------|----------------------|-------------------------|--|
| SK-15 ^c (new site) | N 70.349086 W 150.910916 | Near CD-1, on the Sakoonang | PWM, NWM, MLS, TLDS | Willow and barrens along channel banks grading into NWM east side into low and high-relief polygons | Yes | Yes ^d /No | 1996–2001 2017 | Yes | Potential eider nesting habitat in 50-m band of NWM on west side and a wider band of PWM and shallow lake on the east side of the channel |
| Sakoonang Pipeline Bridge | N 70.36444 W 150.91888 | First Colville River channel-crossing north of Alpine | PWM, NWM, TLDS, BAR | PWM on NE bank, SW bank is shrubs with low-centered polygons in PWM | Yes | Yes ^d /No | 1998 1999 2010 | Yes | Potential nesting habitat in polygons in the southwest end of the site. Marginal nesting habitat on the NE side because of prevalence of shrubs. |
| Tamayyak Pipeline Bridge | N 70.39277 W 150.90805 | Second Colville River channel-crossing north of Alpine | PWM, NWM, TLDS BAR | PWM and NWM on north bank, south bank is BAR, shrub, and NWM | Yes | No/No | 2010 | Yes | Willows along channel margins, suitable nesting habitat away from channels. |
| Ulamniġiaq Pipeline Bridge | N 70.39277 W 150.90805 | Third Colville River channel-crossing north of Alpine | PWM, NWM, BAR | PWM and NWM on north bank, south bank is NWM | Yes | Yes ^d | 2000–2007 2010 | Yes | The majority of this site contains suitable nesting habitat. |

^a Wildlife Habitats = Salt Marsh (SM), Salt-killed Tundra (SKT), Tapped Lake with Low-water Connection (TLLWC), Tapped Lake with High-water Connection (TLHWC), Deep Open Water without Islands (DOW), Deep Open Water with Islands or Polygonized Margins (DOWIP), Shallow Open Water without Islands (SOW), Deep Polygon Complex (DPC), Nonpatterned Wet Meadow (NWM), Patterned Wet Meadow (PWM), Moist Sedge-Shrub Meadow (MSSM), Moist Tussock Tundra (MTTU), Tall, Low, Dwarf Shrub (TLDS), Barrens (BAR), and Human Modified (HUMO)

^b Areas containing SM, SKT, DOWIP, DOW, SOW, NWM, PWM, or DPC (Deep Polygon Complex)

^c SK-15 was reassigned to a new site near CD-1. Prior to 2017, ALP-14 anchors, a and b, next to Sakoonang Pipeline Bridge, were known as SK-15 anchors, a and b.

^d CD-3 nest searches conducted during 2000–2007; Spectacled Eider and unidentified eider nests were found at these sites during some years (Johnson et al. 2008b)

^e Alpine nest searches conducted in 1995–2001 (Johnson et al. 2003)

^f CD-5 eider nest searches conducted in 2009, 2014–2016 (Seiser and Johnson 2011, 2014, 2016; Johnson and Seiser 2015)

based on terms and conditions in the Incidental Take Statement (ITS) issued in the Biological Opinions for the Alpine Satellite Development Project (USFWS 2004) and for CD-5 (USFWS 2011) that prohibit off-pad human activity within 200 m of active nests. While regulatory guidelines have not been issued on the area around human activity that should be monitored for nesting activity, or conversely, the area around nests in which human activity should be avoided, the 200 m buffer has been applied in ITSs for specific projects as a zone outside of which there is a reduced probability for off-pad human activity to cause severe disturbance to nesting and brood-rearing Spectacled Eiders. Data on flushing distances for nesting Spectacled Eiders over the last 20 years of nest searching suggest that this species rarely flushes from a nest when people are greater than 25 m away (ABR, unpublished data).

A crew of 2–4 people experienced in eider identification searched for nests by walking a regular search pattern with 10–20 m between searchers, which provided total coverage of the tundra within 200 m search boundaries. Crews were transported by truck when possible, otherwise a helicopter or boat was used to access sites. All nest locations were recorded with handheld GPS units. Each eider nest was recorded as active if occupied, or inactive if empty. Biologists avoided disturbing incubating Spectacled Eiders, once they were discovered, by approaching nests no closer than needed to identify to species. Research activities were approved under USFWS Federal Fish and Wildlife Permit TE012155-6 and Alaska Department of Fish and Game Scientific Permit 17-132.

ACS sites included spill response equipment storage containers and/or anchor points for floating boom. Some ACS sites may have as many as 3 search areas centered on storage containers or anchor points for booms (Figure 1, Table 1). At sites where spill response equipment storage containers are pre-staged year-round, we searched within a 200 m radius of the container; otherwise we searched a 200 m radius around the coordinates provided by ACS. Anchor locations were identified based on aerial photos of the boom placements in 2015 (ConocoPhillips 2017).

Water-source lakes were selected by CPAI for water withdrawals for hydro-testing pipelines and

other purposes. Access points for water withdrawal are typically located along the lake shoreline at a location closest to the road. Human activity at each access point occurs along a foot path and waterline between the road and the shoreline. Therefore, we searched a 200 m buffer on each side of the line between the road and the access point.

We searched habitats that were preferred or frequently used by nesting and pre-nesting Spectacled Eiders, as determined by previous studies in the area (Johnson et al. 2008b, 2015, 2016): Brackish Water, Salt-killed Tundra, Salt Marsh, Deep Water (both with and without islands), Shallow Water (both with and without islands), Deep Polygon Complex, Sedge Marsh, Grass Marsh, Patterned Wet Meadow, and lake shorelines. We inventoried habitat within search areas at each site by visual inspection and by overlaying each site on a wildlife habitat map of the Colville River delta and the Alpine Transportation Corridor (Johnson et al. 1997; Jorgenson et al. 1997). Sites where habitat had been modified so that nesting was unlikely (i.e., gas flares or snow dumps), were re-classified as having insufficient nesting habitat. Between 2009 and 2017, we have conducted habitat evaluations at 23 spill response sites and 3 bridge sites (Table 1).

RESULTS

SPLL RESPONSE SITES

No Spectacled Eider or Steller's Eider nests were found within 200 m of the 9 spill response sites that we searched on 9 and 25 June 2017. We searched 5 sites (ALP-15, ALP-20, CC-3, SK-13, and SK-15) early in the nesting season on 9 June because maintenance or deployment of equipment was required at those sites prior to 25 June. Boom deployment for these sites was postponed for 16 days for all but the CC-3 site. Because eiders could begin nesting at these sites during the intervening time between our 9 June search and the date of boom deployment, we searched 4 sites a second time and ALP-14, ALP-16, ALP-17, and ALP-19 once on 25 June. During eider nest searches of the spill response sites, we located 72 large waterbird nests belonging to 4 species. The majority of those nests belonged to Greater White-fronted Geese (Table 2).

Results

Table 2. Numbers of nests of large waterbirds found in search areas at 9 spill response equipment sites and 3 water-source lakes, on the Colville River delta, Alaska, 9–25 June 2017. See Figure 1 for site locations.

| Search Area (Former Names) | Greater White-fronted Goose | Snow Goose | Cackling/Canada Goose ^a | Northern Pintail | Unidentified Scaup | Arctic Tern | Total |
|--|-----------------------------|------------|------------------------------------|------------------|--------------------|-------------|-----------|
| ACS Spill Response Sites | | | | | | | |
| ALP-14 Anchor a and Anchor (old SK-15) | 12 | – | – | 1 | – | – | 13 |
| ALP-15 Storage and Anchor (Site 4) | 7 | – | – | – | – | – | 7 |
| ALP-16 Anchor a and Anchor (Site 7) | 7 | – | – | – | 1 | – | 8 |
| ALP-17 Storage and Anchor (Site 3) | 6 | – | – | – | – | – | 6 |
| ALP-19 Storage and Anchor (Site 2) | 11 | 2 | – | – | – | – | 13 |
| ALP-20 Storage and Anchor (Site 1) | 15 | – | – | – | – | – | 15 |
| CC-3 | 7 | – | – | – | – | – | 7 |
| SK-13 | 1 | – | – | – | – | – | 1 |
| SK-15 (new location near CD-1) | 2 | – | – | – | – | – | 2 |
| Subtotal | 68 | 2 | – | 1 | 1 | – | 72 |
| Water-source Lakes | | | | | | | |
| L9321 | – | – | 1 | – | – | 1 | 2 |
| L9322 | 1 | – | 2 | – | – | 1 | 4 |
| L9323 | 1 | – | – | 1 | – | – | 2 |
| Subtotal | 2 | – | 3 | 1 | – | 2 | 8 |
| Total Nests | 70 | 2 | 3 | 2 | 1 | 2 | 80 |

^a Nest belonging to either Cackling Goose or Canada Goose.

WATER-SOURCE LAKES

We did not find Spectacled Eider or Steller's Eider nests or adults at the access points for 3 water-source lakes (L9321, L9322, and L9323) that we searched on 21 June (Figure 1). Potential Spectacled Eider nesting habitat was present at the 3 water-source lakes. These search results confirm the absence of nesting eiders only in the area used for water withdrawal activities and not the entire water-source lake. While searching for eider nests, we found 8 nests of 4 large waterbird species (Table 2).

SUMMARY

Of the 12 spill-response sites with suitable eider nesting habitat, 9 were searched in 2017 and no eider nests were found. In the past, we have found Spectacled Eider nests in areas north of CD-1, CD-2, and CD-5, but we did not search these areas in 2017 as no off-pad work was planned during the eider nesting period. No Steller's Eider adults or nests have ever been sighted in any of the spill-response, water-source lake, or bridge crossing search areas. Evidence of breeding by Steller's Eiders has not been documented on the Colville delta, NE NPR-A, or in the Greater Kuparuk Area, despite nearly annual aerial surveys and ground-based nest search efforts over the last 26 years (ABR, unpubl. data).

Identification of active Spectacled Eider nests through nest searches prior to off-pad human activity reduces the potential for unintended disturbance to nesting Spectacled Eiders, and ensures compliance with the terms and conditions listed in Biological Opinions for Alpine and CD-5. Cooperation between the USFWS and CPAI on the details, locations, and timing of required nest searches has allowed critical oilfield operations, such as spill response preparation, to be completed with minimal modifications.

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