A photograph of two ducks swimming in a body of water. On the left, a brown duck with a dark beak is swimming towards the right. On the right, a white duck with a dark beak and a white patch on its head is swimming towards the left. In the background, there are large, white ice floes floating in the water. The overall scene is a natural, outdoor setting.

**EIDER NEST SEARCHES AT CD-3 AND SPILL-RESPONSE SITES  
IN THE ALPINE OILFIELD, 2015**

**Pam E. Seiser and Charles B. Johnson**

Prepared for  
**ConocoPhillips Alaska Inc.**  
**Anchorage, Alaska**

Prepared by  
**ABR, Inc.—Environmental Research & Services**  
**Fairbanks, Alaska**



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**FINAL REPORT**

Prepared for

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December 2015



*Printed on recycled paper.*



## TABLE OF CONTENTS

Introduction.....	1
Objectives .....	3
Methods .....	3
Results.....	4
CD-3 Pad Area .....	4
Spill-Response Sites.....	4
Summary.....	11
Literature Cited.....	12

## LIST OF FIGURES

Figure 1. Study area for eider nest searches conducted prior to tundra clean-up and spill-response activities in the Colville River delta and Greater Kuparuk Area, Alaska, 2009–2015.....	2
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## LIST OF TABLES

Table 1. Site descriptions and eider habitat assessments for 19 spill-response equipment sites and 3 pipeline-bridge sites, Colville River delta and Greater Kuparuk Area, Alaska, 2009–2015....	5
Table 2. Numbers of nests of large waterbirds found in search areas at CD-3 and 7 spill-response equipment sites on the Colville River delta, Alaska, 18–24 June 2015 .....	11



## 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 and an additional drill site (CD-5) in the northeastern National Petroleum Reserve-Alaska (Figure 1). To comply with the Terms and Conditions issued in the Biological Opinions for the Alpine satellites (USFWS 2004, 2011) and to reduce inadvertent 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 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 2015 breeding season. In this report, we document eider nest locations within search areas around the CD-3 pad and airstrip and 7 Alaska Clean Seas (ACS) spill-response equipment sites in the Colville River delta (Figure 1). Spectacled Eider nest searches conducted in advance of off-pad activities associated with CD-5 and the proposed GMT-1 pipeline are reported elsewhere (Johnson and Seiser 2015a, b).

Spectacled Eiders are common breeders on the Colville delta and occur at relatively high densities on the outer portions of the delta. During the breeding season, Spectacled Eider nests are not distributed uniformly in the region (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 (Figure 1). Spectacled Eider nests are uncommon on the southern portion of the Colville delta, south of CD-1 and CD-2.

In contrast, Steller's Eiders in Alaska breed primarily near Barrow, and although their historic range included all of the Arctic Coastal Plain of Alaska, they are extremely rare along the central

Beaufort Sea coast (Quakenbush et al. 2002), including the Alpine Oilfield. Evidence of nesting by Steller's Eiders east of Barrow has been reported only 3 times in the last 25 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 20 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]). No records exist of a Steller's Eider nest or brood 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 (e.g., tundra clean-up after the ice-road season, pipeline inspections, spill-response equipment deployment, and civil surveys) on the tundra in portions of the nesting habitat of the Spectacled Eider annually during the breeding season (June and July). These off-pad activities have the potential to disturb nesting Spectacled Eiders. Eider nests are difficult to avoid, because female eiders are cryptic and the females of eider species are hard to distinguish

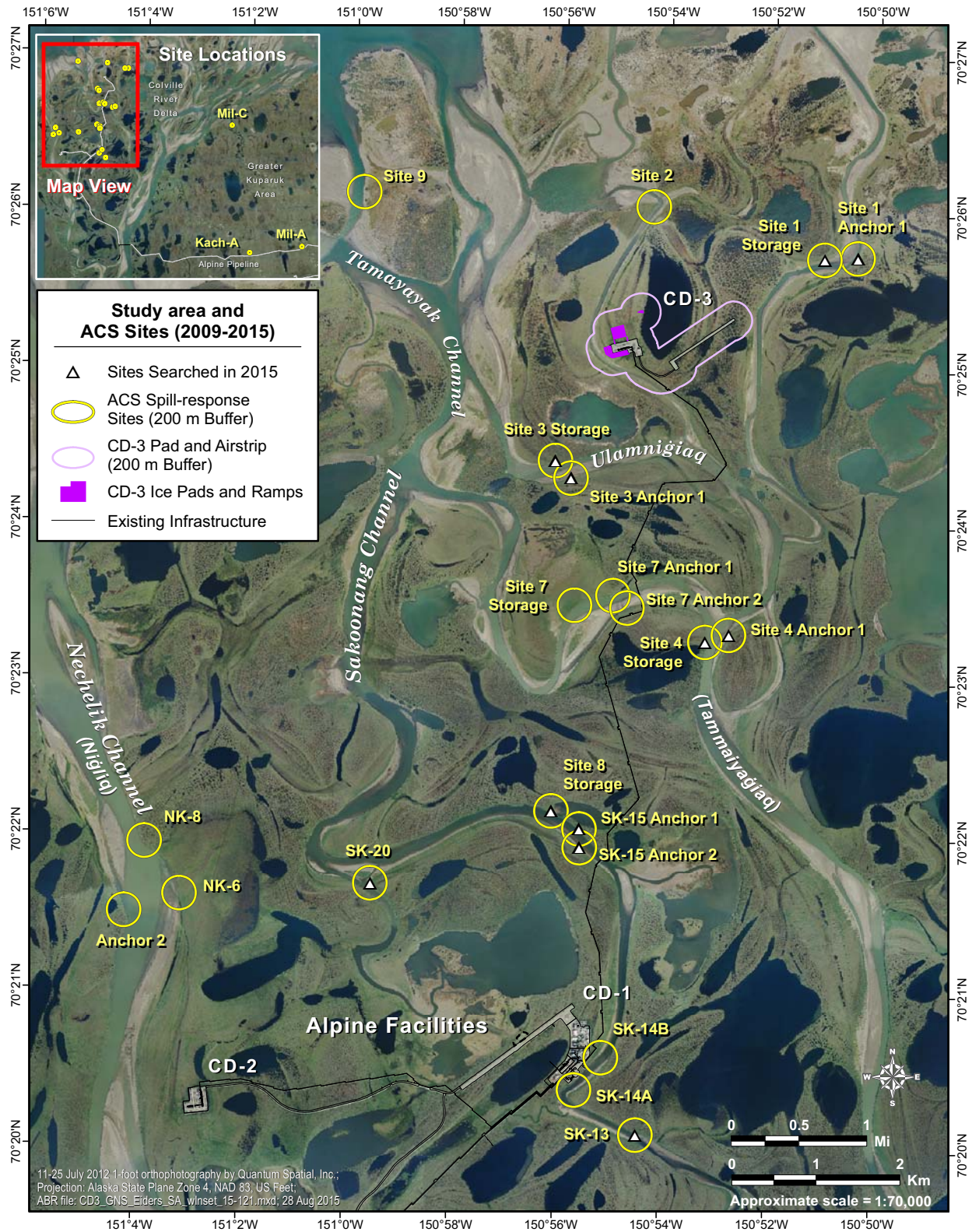


Figure 1. Study area for eider nest searches conducted prior to tundra clean-up and spill-response activities in the Colville River delta and Greater Kugaruk Area, Alaska, 2009–2015.



with the untrained eye. Without prior knowledge of nest locations, workers could unintentionally flush birds from their nests, leaving nests exposed to predators. In particular, helicopter landings and clean-up crews picking up debris from the tundra near gravel pads and along ice-road routes could inadvertently disturb nesting Spectacled Eiders. Similarly, seasonal mobilization at spill-response sites and pipeline-bridge inspections may affect eiders nesting near those work sites.

CPAI has a regulatory obligation in its Oil Discharge Prevention and Contingency Plan for the Alpine Oilfield to deploy spill-prevention 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 delay the earliest date when nest searches would be required for off-pad activity from 1 June to 9 June. Any off-pad work from 9 June to 1 August would require nest searches if it occurred in areas where potential nesting habitat of Spectacled Eiders existed.

This is the seventh year that eider nest searches have been conducted in advance of off-pad work in the Alpine Oilfield. In 2015, the CD-3 drill pad and airstrip and 7 spill-response sites required nest searches. Unlike previous years, searches of the CD-3 ice road were not necessary in 2015 because off-pad work on the ice road was delayed until after 1 August. A summary of nesting habitat and results of nest searches at 19 spill-response equipment sites and 3 pipeline-bridge sites visited during 2009–2015 (Seiser and Johnson 2010; 2011a, b; 2012; 2014a, b) are included in this report.

## OBJECTIVES

The primary objective of nest searching in 2015 was to identify the locations of nesting Spectacled and Steller's eiders prior to off-pad activities in eider nesting habitat. Documentation of nest locations allowed CPAI to modify planned activities occurring near nests, either by delaying activities until after the nesting season or by

maintaining a 200 m zone of no activity around nests. ABR identified the presence or absence of active eiders nests in off-pad work areas and transmitted the list of active eider nest locations to CPAI field environmental compliance staff, who then informed helicopter pilots and off-pad workers of areas to avoid.

## METHODS

We conducted intensive ground-based nest searches for eiders on the Colville delta where tundra clean-up, mobilization, and maintenance of spill-response equipment, or other tundra-based activities were proposed to occur during the breeding season (Figure 1). Search areas included a 200 m buffer around work sites within potential eider nesting habitat. The 200 m buffer around work sites is based on terms and conditions in the Incidental Take Statement issued in the Biological Opinion for the Alpine Satellite Development Project (USFWS 2004). While regulatory guidelines have not been issued on the extent of area around human activity that should be monitored for nesting activity, or conversely, the area around nests in which human activity should be avoided, we have applied the 200 m buffer as a zone outside of which human activity is not likely to cause severe disturbance. 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).

Crews of 4–8 people searched for nests by walking a regular search pattern with 10–20 m between searchers, which provided total coverage of the tundra within search boundaries. Crews were transported by helicopter to search sites, except for a few sites near CD-1 that were reached by boat or by walking. All eider nest locations were recorded with handheld GPS units and on aerial photo maps. Each nest was recorded as active if occupied, or inactive if empty. Inactive eider nests were identified to species based on the color pattern of contour feathers collected from the nest (Anderson and Cooper 1994). We tried to avoid disturbing incubating Spectacled Eiders once they were discovered by approaching nests no closer than needed to identify to species. Research activities were permitted under USFWS Federal Fish and

Wildlife Permit TE012155-4, and Alaska Department of Fish and Game Scientific Permit 15-146.

The CD-3 drill pad, airstrip, and ice pads are scheduled annually for summer tundra clean-up. In 2015 at CD-3, we searched the area within 200 m of the drill pad, airstrip, and connecting road, as well as the adjacent ice pad and ramp (Figure 1). We also searched 7 spill-response equipment sites (Figure 1), where maintenance and inspection activities were planned during the nesting season. Sites included spill-response storage containers and anchor points for floating boom. At sites where spill-response storage containers were already in place, we searched within a 200 m radius of the container, otherwise we searched a 200 m radius around the coordinates provided by ACS. In 2015 a few anchor locations were updated based on aerial photos of the boom placements in 2014.

Eider nest searches were conducted only in the subset of ACS sites that contained suitable nesting habitat and that were scheduled for site visits between 9 June and 1 August. We had previously evaluated habitat quality for nesting Spectacled Eiders at 19 spill-response sites and 3 pipeline-bridge sites during our nest searches in 2009–2014 (Seiser and Johnson 2014b). We inventoried habitat within 200 m of each site by visual inspection and by overlaying each site on a wildlife habitat map of the Colville delta and the Alpine Transportation Corridor (Johnson et al. 1997, Jorgenson et al. 1997). For sites outside the mapped areas, we visually assessed habitat quality during the nest search. We considered habitats that were preferred or frequently used by nesting and pre-nesting Spectacled Eiders (Johnson et al. 2008a, 2008b, 2015) to have the highest potential for nesting: 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, and Patterned Wet Meadow.

Of the 22 total sites, including 3 pipeline-bridge crossings, 10 were considered to have insufficient nesting habitat to merit nest searching for eiders (Table 1). Spill-response sites south of Alpine on the Colville delta were deleted from the list of sites to search because previous studies had shown Spectacled Eiders rarely occurred there

(Johnson et al. 2004). In a meeting on 2 May 2011, the USFWS, CPAI, and ABR agreed to conduct nest searches at a reduced list of spill-response sites based on assessments of nesting habitat (letter from Caryn Rea to Sarah Conn, dated June 2011). As a result of this meeting, 4 sites (NK-6, Site 7, SK-14A, and SK-14B) were dropped from the list of sites requiring nest searches because they lacked sufficient nesting habitat or because their location was south of Alpine. The same justification was used to drop another 6 sites (Anchor 1, Kach-A, Mil-A, Mil-C, NK-8, and Site 2) from the list after the nest search in 2011 (letter from Caryn Rea to Sarah Conn, dated 14 March 2012). Thus, 9 ACS sites and 3 pipeline-bridge crossings remain on the list for nest searches when maintenance activities are planned during the eider breeding season. In 2015, only 7 of these ACS sites were scheduled for spill-response activities after 9 June and consequently required nest searches.

## RESULTS

### CD-3 PAD AREA

We searched 120.9 ha within 200 m of the CD-3 complex (gravel pad, airstrip, access road to the airstrip, ice pad, and ice ramp) on 24 June (Figure 1, Table 2). We found no Spectacled Eider or King Eider (*Somateria spectabilis*) nests. This is the first time we have not located a Spectacled Eider nest in 7 years of nest searching the perimeter of the CD-3 pad and airstrip. In contrast, we found 6 nests in 2014, our highest count of Spectacled Eiders nests for the CD-3 search area. The 7-year average for CD-3 is 2.6 nests (SE = 0.8 nests). Nest counts for non-eider species remained relatively high in 2015 compared with previous years. While searching for eider nests, we found 45 nests of other large waterbirds in the CD-3 search area (Table 2). The majority of nests (42) belonged to Greater White-fronted Geese. As in the previous 6 years of nest searching, no Steller's Eider adults or nests were sighted in any of the search areas in 2015.

### SPILL-RESPONSE SITES

No Spectacled Eider nests were found within 200 m of the 7 spill-response sites that we searched on 18–19 June (Figure 1). During eider nest

Table 1. Site descriptions and eider habitat assessments for 19 spill-response equipment sites and 3 pipeline-bridge sites, Colville River delta and Greater Kuparuk Area, Alaska, 2009–2015.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/		Search in Future Years?	Comments
						Nesting Records	Years Searched		
Anchor 1	N 70.35003 W 151.07447	Western bank of the Nechelik 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.
Anchor 2	N 70.35828 W 150.07022	Western bank of the Nechelik 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.
Kach-A	N 70.23750 W 150.45838	Kachemach River, just north of the pipeline	MSSM MTTU NWM TLDS	Small pocket of wet meadow surrounded by drier habitat	No	No/No	2011	No	Poor habitat because NWM is <10% of the total area, and the surrounding area is occupied by shrubs.
Mil-A	N 70.24403 W 150.29674	Miluveach River, just north of the pipeline	PWM MSSM TLDS	Diverse site, 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, contained marginal nesting habitat.
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.
NK-6	N 70.36017 W 151.05275	Eastern bank of the Nechelik 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.

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/ Nesting Records	Years Searched	Search in Future Years?	Comments
NK-8	N 70.36606 W 151.06483	NW bank of the Nechelik 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.
Site 1	Storage: N 70.42874 W 150.85064 Anchor 1 N 70.428919 W 150.840197	Container on west bank of the Tamayayak and the boom is anchored downstream where the channel narrows	NWM, PWM, DPC BAR, SOW	Vegetated areas on west side are predominately NWM and PWM; The east side also includes DPC and BAR.	Yes	Yes <sup>c</sup> /Yes	2009–2011 2013–2015	Yes	Eider nesting habitat consists of polygon ponds 100 m inland from the container; nesting habitat is easily delineated from the rest of the site by distinct rise in elevation above the current river bank and container location. One Spectacled Eider nest present in 2013 and 2014.
Site 2	N 70.43417 W 150.90533	Container on western bank, site includes both sides of the of the West Ulamnigiaq	MSSM, PWM, NWM, BAR, SM, SKT	Half of site is vegetated. MSSM is on the west bank and on the east bank SM with NWM grades into PWM	Yes	Yes <sup>c</sup> /No	2009–2011 2014	No	Marginal nesting habitat; site borders better nesting habitat; driftwood lines indicate flooding is common at this site. Channel is ~60 m wide.

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/ Nesting Records	Years Searched	Search in Future Years?	Comments
Site 3	Storage: N 70.40692 W 150.93549 Anchor 1 N 70.405078 W 150.93047	Container on northern bank of Ulamnigïaq; site spans the channel and mud flats on south bank	NWM, PWM, BAR	Vegetated areas ~50% NWM and ~50% PWM	Yes	Yes <sup>c</sup> /Yes	2009–2015	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.
Site 4	Storage: N 70.38775 W 150.88718 Anchor 1: N 70.388532 W 150.87973	Container on western bank of the Tamayayak; boom anchor opposite bank slightly down stream.	PWM, MSSM, DOWIP, BAR	~70% dry, low-relief PWM; ~10% high-relief PWM; ~10% DOWIP; ~10% BAR	Yes	No/No	2009–2015	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.
Site 7	Anchor 1: N 70.392613 W 150.916575 Anchor 2: N 70.391308 W 150.912088	Container on NW bank of Tamayayak; site includes mud bar in the of middle channel	NWM, TLDS, BAR	Well-drained NWM and low shrubs along the river channel	No	No/No	2009 2011	No	No suitable nesting habitat; area dry and shrubby; no lakes within 200 m. Location has been updated to the 2011 location of container.

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/ Nesting Records	Years Searched	Search in Future Years?	Comments
Site 8	Storage: N 70.369519 W 150.935226	Predominately on the northern bank of the Sakoonang Channel; site barely spans the channel	TLLWC, PWM, TLDS, BAR	~20% low-relief PWM, ~30% high-relief PWM, and ~50% shrub habitats (MSSM & TLDS) on north bank, TLDS and BAR on south bank	Yes	No/No	2009–2011 2013–2015	Yes	Nesting habitat limited to area of PWM north of container. Shoreline of channel and tap lake are unsuitable because of abundance of low shrubs. Two female Spectacled Eiders observed flying over the site in 2010.
Site 9	N 70.43531 W 150.99748	Container on eastern side of Tamayayak	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.
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 <sup>d</sup> /No	1998–2000 2009 2011–2015	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.

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/ Nesting Records	Years Searched	Search in Future Years?	Comments
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 <sup>d</sup> /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 <sup>d</sup> /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.
SK-15	Anchor 1: N 70.36764 W 150.92625 Anchor 2: N 70.36565 W 150.92608	~2.5 km north of Alpine and next to a pipeline bridge on the Sakoonang	TLLWC, PWM, NWM, MSSM, TLDS, BAR	Tap lake with brushy shoreline on NW side, opposite side mostly NWM. Both sides have a small area of PWM	Yes	No/No	1998 1999 2009–2015	Yes	Nesting habitat on both sides of the channel in areas of PWM and NWM.
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	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

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat <sup>a</sup>	Habitat Description	Nesting Habitat Present <sup>b</sup>	Search History/ Nesting Records	Years Searched	Search in Future Years?	Comments
Sakoonang Pipeline Bridge	N 70.36444	First Colville River channel-	PWM,	PWM on NE bank, SW bank is	Yes	Yes <sup>d</sup> /No	1998	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.
	W 150.91888	crossing north of Alpine, adjacent to SK-15	NWM, TLDS, BAR	shrubs with low-centered polygons in PWM			1999 2010		
Tamayayak Pipeline Bridge	N 70.39277	Second Colville River channel-	PWM,	PWM and NWM on north bank, south bank is	Yes	No/No	2010	Yes	Willows along channel margins, suitable nesting habitat away from channels.
	W 150.90805	crossing north of Alpine	NWM, TLDS, BAR	barrens, shrub, and NWM					
Ulamnigig Pipeline Bridge	N 70.39277	Third Colville River channel-	PWM,	PWM and NWM on north bank, south bank is	Yes	Yes <sup>c</sup>	2000–2007	Yes	The majority of this site contains suitable nesting habitat.
	W 150.90805	crossing north of Alpine	NWM, BAR	NWM			2010		

<sup>a</sup> Wildlife Habitats = Salt Marsh (SM), Salt-killed Tundra (SKT), 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), and Barrens (BAR)

<sup>b</sup> Areas containing SM, SKT, DOWIP, DOW, SOW, NWM, PWM, or DPC (Deep Polygon Complex)

<sup>c</sup> 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)

<sup>d</sup> Alpine nest searches conducted in 1995–2001 (Johnson et al. 2003)



Table 2. Numbers of nests of large waterbirds found in search areas at CD-3 and 7 spill-response equipment sites on the Colville River delta, Alaska, 18–24 June 2015. No Spectacled or Steller eider nests were found in 2015.

Search Area	Greater White-fronted Goose	Snow Goose	Cackling/Canada Goose <sup>a</sup>	Tundra Swan	Northern Shoveler	Northern Pintail	Long-tailed Duck	Unidentified Duck	Willow Ptarmigan	Unidentified Loon	Bar-tailed Godwit	Arctic Tern	Parasitic Jaeger	Total
CD-3 Pad and Airstrip	42	–	1	–	–	–	–	–	–	1	–	1	–	45
ACS Spill-response Sites														
Site 1 Storage and Anchor 1	18	4	–	1	1	–	–	1	–	–	–	–	–	25
Site 3 Storage and Anchor 1	11	–	–	–	–	1	1	–	–	–	–	–	1	14
Site 4 Storage and Anchor 1	9	–	–	–	–	–	–	–	–	–	–	–	–	9
Site 8 Storage	1	–	–	–	–	–	–	–	–	–	–	–	–	1
SK-13	5	–	–	–	–	–	–	–	–	–	1	–	–	6
SK-15 Anchor 1 and 2	9	–	–	–	–	–	–	–	–	–	–	–	–	9
SK-20	5	–	–	–	–	–	–	–	1	–	–	–	–	6
Total Nests	100	4	1	1	1	1	1	1	1	1	1	1	1	115

<sup>a</sup> Nest belonging to either Cackling Goose or Canada Goose

searches of the spill-response sites, we identified 69 large waterbird nests (Table 2). Most of the nests (58) belonged to Greater White-fronted Geese.

### SUMMARY

In 2015, no Spectacled Eider nests were found within 200 m of CD-3 or the spill-response sites. No Steller's Eider nests were found, nor were Steller's Eiders adults seen in any of the areas searched in 2015. Lack of Steller's Eider observations in 2015 is consistent with data collected over the last 20 years on the Colville delta. Nests of Steller's Eiders have 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 (ABR, unpubl. data).

Between 2009 and 2015, we have searched a total of 19 spill-response sites and 3 pipeline-bridge sites and found eider nesting habitat varied in quality and abundance among the sites (Table 1). We determined that 10 of these 22 sites either

lacked eider nesting habitat (Site 7, NK-6, Kach-A), contained nesting habitat low in quantity or quality (Anchor 1, Mil-A, Mil-C, NK-8, Site 2), or had degraded and unusable nesting habitat (flare at SK-14A, remnant snow berms at SK-14B). The USFWS, CPAI, and ABR agreed to omit these 10 sites, reducing to 12 the number of sites that would require ground searches prior to off-pad activities during the nesting season. These remaining 9 spill-response sites and 3 pipeline-bridge sites contain habitat that could potentially attract nesting Spectacled Eiders (Table 1).

We have found Spectacled Eider nests in 6 of 7 years within 200 m of the CD-3 pad, in 4 of 6 years within 200 m of the CD-3 ice road centerline, and in 2 of 7 years within 200 m of spill-response sites. Identification of active Spectacled Eider nests in areas with off-pad human activity through nest searches continues to be a key method of avoiding unintended disturbance to nesting eiders, while allowing vital oilfield operations, for example spill-response preparation, to continue on schedule.

### LITERATURE CITED

- Anderson, B. A., and B. A. Cooper. 1994. Distribution and abundance of Spectacled Eiders in the Kuparuk and Milne Point oilfields, Alaska, 1993. Report for ARCO Alaska, Inc., and the Kuparuk River Unit, Anchorage, AK, by Alaska Biological Research, Inc., Fairbanks, AK. 71 pp.
- Anderson, B. A., A. A. Stickney, T. Obritschkewitsch, and J. E. Shook. 2008. Avian studies in the Kuparuk Oilfield, Alaska, 2007. Data summary report for ConocoPhillips Alaska, Inc., and the Kuparuk River Unit, Anchorage, AK, by ABR, Inc., Fairbanks, AK. 38 pp.
- Johnson, C. B. and P. E. Seiser. 2015a. CD-5 pipeline Spectacled Eider nest search, 2015. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 7 pp.
- Johnson, C. B. and P. E. Seiser. 2015b. GMT-1 pipeline route Spectacled Eider nest search, 2015. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 7 pp.
- Johnson, C. B., B. E. Lawhead, J. R. Rose, A. A. Stickney, and A. M. Wildman. 1997. Wildlife studies on the Colville River delta, Alaska, 1996. Fifth annual report for ARCO Alaska, Inc., and Kuukpik Unit Owners, Anchorage, AK, by ABR, Inc., Fairbanks, AK.
- Johnson, C. B., R. M. Burgess, B. E. Lawhead, J. R. Rose, A. A. Stickney, and A. M. Wildman. 2002. Wildlife studies in the CD North study area, 2001. Second annual report for PHILLIPS Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 114 pp.
- Johnson, C. B., R. M. Burgess, B. E. Lawhead, J. Neville, J. P. Parrett, A. K. Prichard, J. R. Rose, A. A. Stickney, and A. M. Wildman. 2003. Alpine Avian Monitoring Program, 2001. Fourth annual and synthesis report for ConocoPhillips Alaska, Inc., and Anadarko Petroleum Corporation, Anchorage, AK, by ABR, Inc., Fairbanks, AK. 194 pp.
- Johnson, C. B., A. Zusi-Cobb, A. M. Wildman, A. A. Stickney, and B. A. Anderson. 2004. Biological assessment for Spectacled and Steller's eiders in the Alpine Satellite Development Project area. Report for ConocoPhillips Alaska, Inc., and Anadarko Petroleum Corporation, Anchorage, AK, by ABR, Inc., Fairbanks, AK. 119 pp.
- Johnson, C. B., A. M. Wildman, J. P. Parrett, J. R. Rose, T. Obritschkewitsch, and J. E. Shook. 2008a. Avian studies for the Alpine Satellite Development Project, 2007. Fifth annual report for ConocoPhillips Alaska, Inc., and Anadarko Petroleum Corporation, Anchorage, AK, by ABR, Inc., Fairbanks, AK.
- Johnson, C. B., J. P. Parrett, and P. E. Seiser. 2008b. Spectacled Eider monitoring at the CD-3 development, 2007. Annual report for ConocoPhillips Alaska, Inc., and Anadarko Petroleum Corporation, Anchorage, AK, by ABR, Inc., Fairbanks, AK.
- Johnson, C. B., J. P. Parrett, T. Obritschkewitsch, J. R. Rose, K. B. Rozell, and P.E. Seiser. 2015. Avian studies for the Alpine Satellite Development Project, 2014. Twelfth annual report for ConocoPhillips Alaska, Inc., and Anadarko Petroleum Corporation, Anchorage, AK, by ABR, Inc., Fairbanks, AK. 115 pp.
- Jorgenson, M. T., J. E. Roth, E. R. Pullman, R. M. Burgess, M. Reynolds, A. A. Stickney, M. D. Smith, and T. Zimmer. 1997. An ecological land survey for the Colville River delta, Alaska. Report for ARCO Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK.
- King, J., and C. Dau. 1997. Expanded aerial searches for Steller's Eiders on the Arctic Coastal Plain of Alaska, 1997. Unpublished report by U.S. Fish and Wildlife Service, Fairbanks, AK. 4 pp.
- Quakenbush, L. T., R. H. Day, B. A. Anderson, F. A. Pitelka, and B. J. McCaffery. 2002. Historical and present breeding season distribution of Steller's Eiders in Alaska. *Western Birds* 33: 99–120.

- Seiser, P. E., and C. B. Johnson. 2010. Eider nest searches at the CD-3 pad, ice road, and spill-response sites on the Colville River delta, 2009. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 13 pp.
- Seiser, P. E., and C. B. Johnson. 2011a. Eider nest searches at the CD-3 pad, ice road, and spill-response sites on the Colville River delta, 2010. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 15 pp.
- Seiser, P. E., and C. B. Johnson. 2011b. Eider nest searches at the CD-3 pad, ice road, and spill-response sites on the Colville River delta, 2011. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 14 pp.
- Seiser, P. E., and C. B. Johnson. 2012. Eider nest searches at the CD-3 pad, ice road, and spill-response sites on the Colville River delta, 2012. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 14 pp.
- Seiser, P. E., and C. B. Johnson. 2014a. Eider nest searches at the CD3 pad, ice road, and spill-response sites on the Colville River delta, 2013. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 13 pp.
- Seiser, P. E., and C. B. Johnson. 2014b. Eider nest searches at the CD3, spill-response sites and the CD3 and CD5 ice roads, in the Alpine Oilfield, 2014. Report for ConocoPhillips Alaska, Inc., Anchorage, AK, by ABR, Inc., Fairbanks, AK. 16 pp.
- USFWS (U.S. Fish and Wildlife Service). 2004. Final biological opinion for the Alpine Satellite Development Project. Fairbanks Field Office, U.S. Fish and Wildlife Service, Fairbanks, AK. 62 pp.
- USFWS. 2011. Biological opinion for the CD-5 Alpine Satellite Facility, ConocoPhillips Alaska, Inc. Fairbanks Field Office, U.S. Fish and Wildlife Service, Fairbanks, AK. 140 pp.