

**EIDER NEST SEARCHES AT THE CD3 PAD, ICE ROAD,
AND SPILL-RESPONSE SITES ON THE COLVILLE RIVER DELTA, 2013**

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PREPARED FOR
CONOCOPHILLIPS ALASKA, INC.
ANCHORAGE, ALASKA

PREPARED BY
ABR, INC.—ENVIRONMENTAL RESEARCH & SERVICES
FAIRBANKS, ALASKA

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EXECUTIVE SUMMARY

Spectacled Eiders (*Somateria fischeri*) and Steller's Eiders (*Polysticta stelleri*) occur on the Colville River Delta (henceforth, Colville Delta) and are listed as threatened species under the Endangered Species Act (ESA). ConocoPhillips Alaska, Inc., (CPAI) operates the Alpine Satellite Development Project (Alpine Oilfield), an oil and gas development on the Colville Delta, in areas of potential breeding habitat for these 2 species of eiders. The Spectacled Eider is the focus of this report because they commonly nest in the northern parts of the Colville Delta, whereas the Steller's Eider is extremely rare on the Colville Delta. In Alaska, Steller's Eiders nest primarily near Barrow, although their historic range included all of the Arctic Coastal Plain of Alaska. To comply with the ESA and to avoid disturbance of Spectacled Eiders during the nesting season, CPAI documents the location of Spectacled Eider nests in areas slated for off-pad activities (e.g., tundra clean-up, surveying, spill-response equipment deployment). When active nests are identified, CPAI delays scheduled work activities near the nest locations until after the nesting season.

This is the fifth year CPAI has contracted ABR, Inc., to conduct nest searches for eiders in areas where off-pad work was scheduled during the nesting season. In 2013, these areas included the CD3 pad and airstrip, the ice road from CD2 to CD3, and 7 Alaska Clean Seas (ACS) spill-response equipment sites. Twelve other ACS sites were evaluated for suitable eider nesting habitat during the 2009–2012 nesting seasons, but were excluded from the 2013 nest search either because no activities were scheduled at these sites during the eider nesting season or because eider nesting

habitat was lacking at a specific site. Search areas were delineated as 200-m buffers around identified work sites. The search area for the ice road was a 200 m buffer on each side of the ice-road centerline and around 4 adjacent ice pads.

In 2013, a total of 6 Spectacled Eider nests and 1 King Eider nest were discovered within nest search areas, and 1 additional Spectacled Eider nest was discovered >200 m from an ACS site. All nests were active during the 21–27 June nest search. Two Spectacled Eider nests were found within 200 m of the CD3 pad and airstrip. Three Spectacled Eider nests and 1 King Eider nest were found within 200 m of the ice road. One Spectacled Eider nest was located within 200 m of ACS Site 1, but no eider nests were located at the 6 other ACS sites searched in 2013: Site 3, Site 4, Site 8, SK-15, SK-13, and SK-20. We also found a Spectacled Eider nest outside the ACS Site 1 search area, while traveling to the site. We found no Steller's Eiders or their nests in any of the areas searched in 2013.

ABR provided CPAI environmental compliance staff with the coordinates of 6 active Spectacled Eider nests. CPAI staff then instructed the helicopter pilots and off-pad workers of the areas to avoid. At the end of the nesting season, we found evidence that 4 of the 6 active Spectacled Eider nests failed to hatch and that the 1 King Eider nest hatched.

In previous years we reviewed nesting records and made assessments of nesting habitat available at 19 spill-response equipment sites and 3 pipeline bridge sites. Based on this review and assessment, potential nesting habitat occurs at the CD3 pad and airstrip, the ice road, 9 spill-response sites, and 3 pipeline-bridge sites.

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INTRODUCTION

The Colville Delta is within the current or historic ranges of 2 species of eider ducks 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 Steller's Eider (*Polysticta stelleri*). Spectacled Eiders are common breeders on the Colville Delta and occur at relatively high densities on the outer portions of the delta. 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 on the Colville Delta (Quakenbush et al. 2002).

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), one brood was seen near Prudhoe Bay in 1993 (M. M. Johnson, 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 19 years, Steller's Eiders have been sighted only 3 times on the Colville Delta (1995, 2001, and 2007) (J. Bart, Boise State University, pers. comm.; Johnson et al. 2002, 2008a), and there is no record of a Steller's Eider nest or brood from the delta or adjacent areas.

Spectacled Eiders nest on the outer Colville River Delta where ConocoPhillips Alaska, Inc., (CPAI) operates the CD3 drill site as part of the Alpine Oilfield (Figure 1). 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 Opinion issued prior to construction of CD3 (part of the Alpine Satellites Development Project [ASDP]), the U.S. Fish and Wildlife Service (USFWS) stipulated terms and conditions in the Incidental Take Statement for the project that restrict human activity to existing gravel fill within 200 m of occupied Spectacled Eider nests during 1 June–1 August (USFWS 2004). Where minimal summer support or construction activities must

occur off existing gravel fill during the restricted period, USFWS-approved nest surveys for Spectacled Eiders must be conducted each year during the nesting period prior to those activities so that active nests can be avoided. 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, because the cryptic female eiders are difficult to detect and avoid from a distance and female eiders are difficult to identify to species. Without prior knowledge of nest locations, workers could unintentionally flush birds from their nests, leaving the nest 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 work sites.

CPAI has a regulatory obligation in its Oil Discharge Prevention and Contingency Plan for Alpine to deploy spill prevention equipment as soon as ice leaves the 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 on the Colville Delta and agreed that 9 June is 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 alter the start date of the period during which nest searches were required from 1 June to 9 June.

To comply with the Incidental Take Statement issued in the Biological Opinion for ASDP (USFWS 2004) and to reduce inadvertent disturbance to breeding Spectacled Eiders, CPAI Operations requires documentation of the presence or absence of Spectacled 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., to conduct nest searches for eiders in areas of the Colville Delta where off-pad activities were

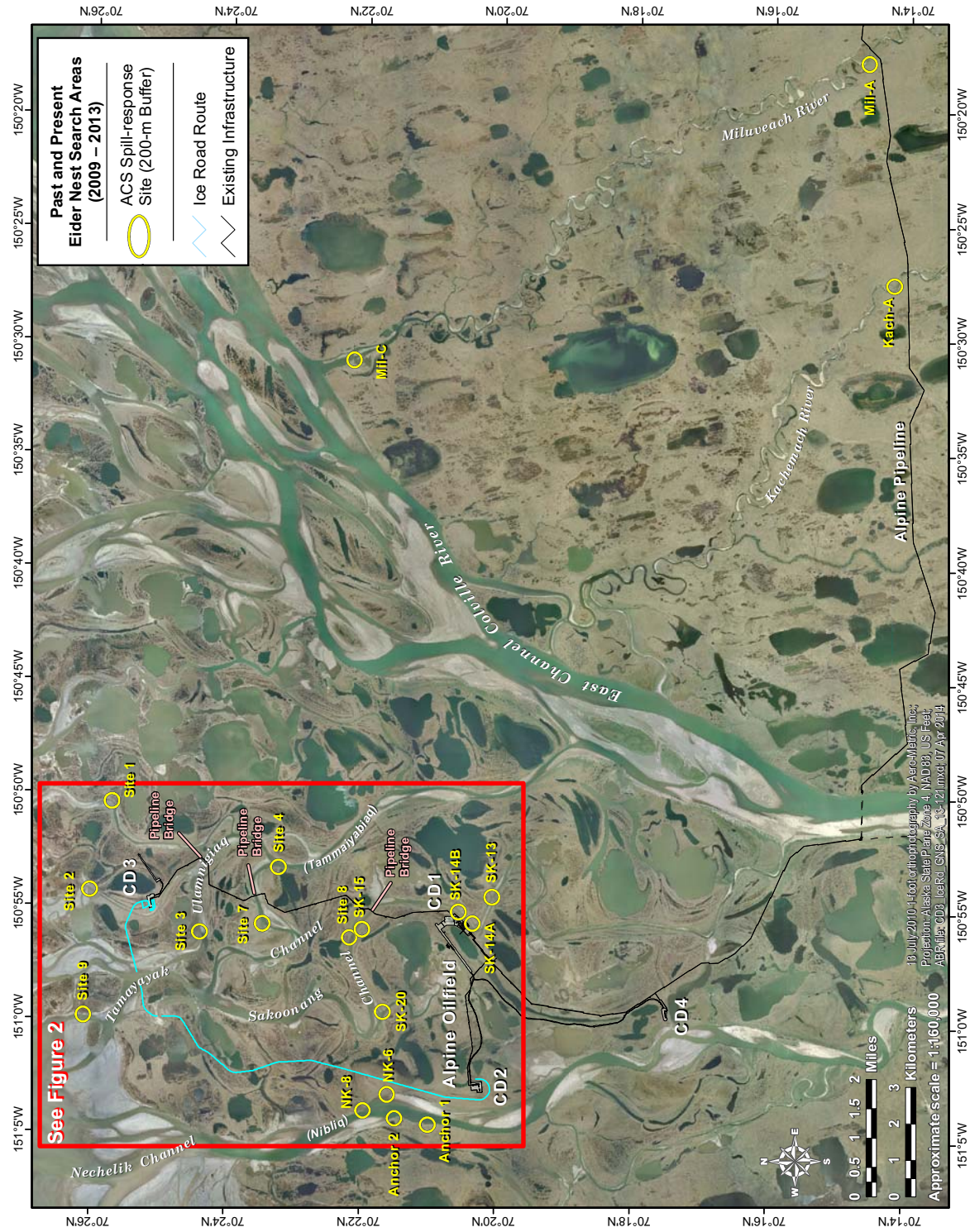


Figure 1. Areas searched for Spectacled Eider nests at CD3, the ice-road route, spill-response equipment sites, and pipeline-bridge sites on the Colville Delta, Alaska, 2009–2013.

scheduled during the 2013 breeding season. In this report, we document eider nest locations within search areas around the CD3 pad and airstrip, the ice road from CD2 to CD3, and 7 Alaska Clean Seas (ACS) spill-response equipment sites on the Colville Delta. Three pipeline bridge sites were on the schedule for nest searching in 2013, but the inspections that triggered the nest searches were rescheduled to occur sometime other than 9 June–1 August 2013. This is the fifth year that eider nest searches have been conducted in advance of the off-pad work, and included in this report is a summary of nesting habitat and prior nest searches for 19 spill-response equipment sites and 3 pipeline-bridge sites visited during 2009–2013 (Seiser and Johnson 2010, 2011a, 2011b, 2012).

OBJECTIVES

The primary objective of nest searching in 2013 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. On the completion of nest searches, ABR transmitted a 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 in areas on the Colville Delta and nearby areas where tundra cleanup, 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 the majority of work sites. The 200-m buffer around work sites is based on terms and conditions in the Incidental Take Statement contained within 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 3–8 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 Alpine that were reached by vehicle 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. We tried to avoid disturbing incubating Spectacled Eiders, but when a female Spectacled Eider was flushed inadvertently, we floated the eggs to estimate hatch dates and installed in the nest an artificial temperature-sensing egg. Temperature data recorded by the artificial egg were used to determine nest fate (success or failure), the timing of hatch or nest failure, and incubation constancy. After hatch, we returned to retrieve the artificial eggs and record the fate of nests.

The CD3 pad, airstrip, and ice road areas are scheduled annually for summer tundra clean-up. At CD3, we searched the area within 200 m of the drill pad, airstrip, and connecting road (Figure 2). For the ice road, we searched the entire length from CD3 to CD2, within 200 m of each side of the road centerline, and within a 200-m buffer around 4 ice pads (Figure 2). In 2013, we searched 7 spill-response equipment sites (Figure 2), where maintenance and inspection activities were planned during the nesting season. 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.

Eider nest searches were conducted only in the subset of ACS sites that contain suitable nesting habitat and sites that were identified by CPAI staff as areas scheduled for possible 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

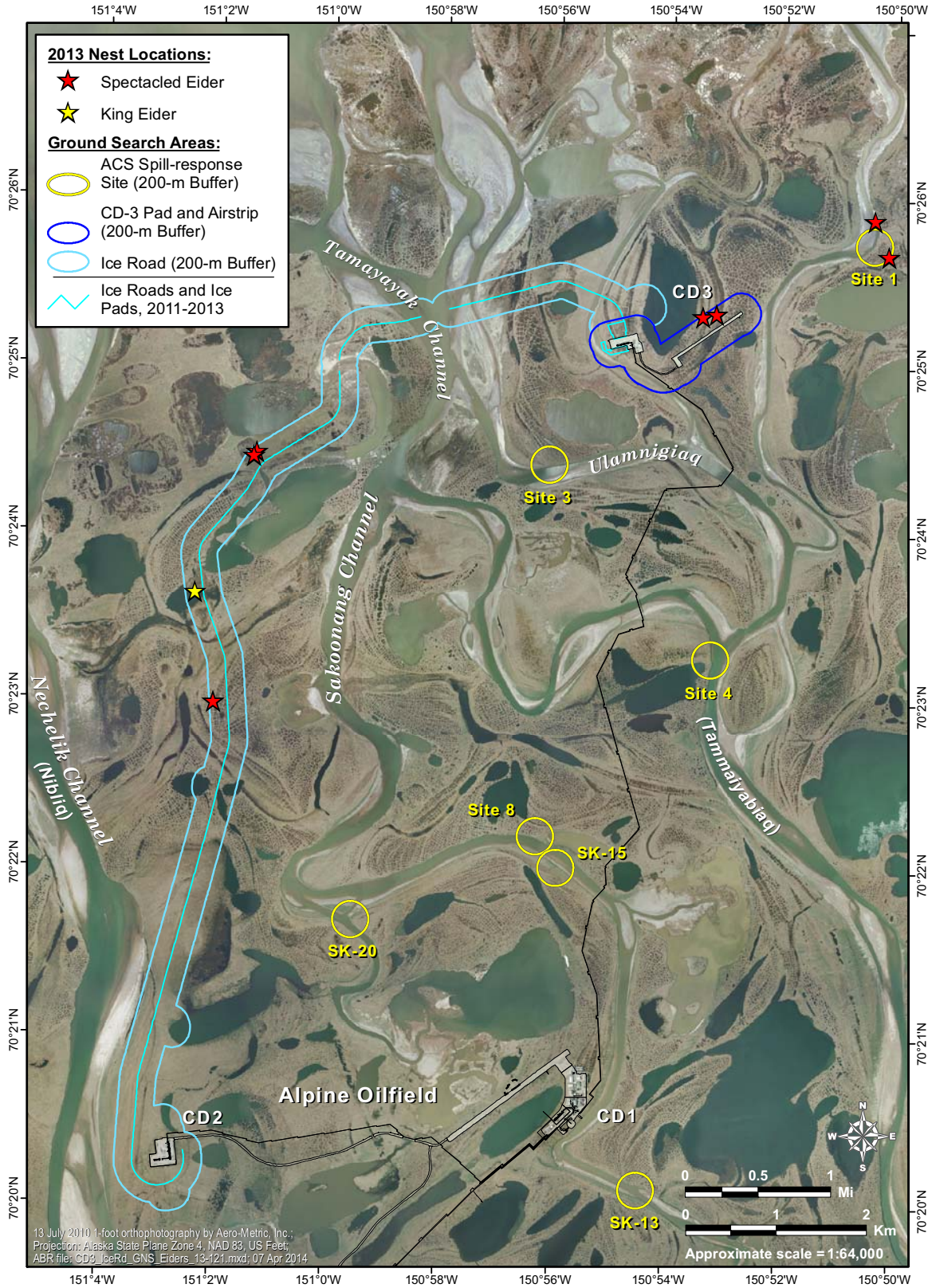


Figure 2. Eider nest locations at CD3, the ice-road route, and spill-response equipment sites on the Colville Delta, Alaska, June 2013.

pipeline-bridge sites during our nest searches in 2009–2012. We inventoried habitat within 200 m of each site by visual inspection and by overlapping wildlife habitat maps of the Colville Delta and the Alpine Transportation Corridor (Johnson et al. 1997, Jorgenson et al. 1997) on each site. 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. 2008b) 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. 2004b). 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 (searched annually) and 3 pipeline bridge crossings (searched every 3 years) remain on the list for nest searches when maintenance activities are planned during the eider breeding season. In 2013, only 7 of these ACS sites were scheduled for spill response activities after 9 June and consequently required nest searches.

RESULTS

CD3 PAD

On 24 June, we searched 103.8 ha within 200 m of the CD3 pad, airstrip, and access road to the airstrip (Figure 2). We found 2 active Spectacled Eider nests 120 m apart on the north side of the airstrip. We revisited the 2 Spectacled Eider nests on 15 July and found evidence of hatch at 1 nest site. No Steller's Eider adults or nests were sighted in the CD3 search areas in 2013. While searching for eider nests, we also found 30 nests of other large waterbirds in the CD3 search area (Table 2).

ICE ROAD

During 22–26 June, we searched the area within 200 m of each side of the centerline of the ice road between CD2 and CD3 (13.8 km), and around 4 ice pads adjacent to the ice road (Figure 2). We found 3 Spectacled Eider nests and 1 King Eider nest within the 619-ha search area (Figure 2, Table 2). All of the female eiders remained on their nests, except one Spectacled Eider that was flushed by nest searchers. During that female's absence, we installed a temperature-sensing egg in the nest. The float angle of the eggs indicated the clutch was approximately 7 days into the 24-day incubation period. Fifty-five minutes after the hen's initial departure, the data logger registered that the Spectacled Eider returned to incubate the nest. Temperature records also indicated that the nest failed 12.7 hours after discovery when the nest temperature dropped to ambient levels. During the period the female incubated, her incubation constancy was 92% ($n = 153$ temperature records). We returned on 15 July and found only 1 of the 3 Spectacled Eider nests and the 1 King Eider nest had hatched. In addition to the eider nests, we recorded 196 nests of other large waterbirds within the ice-road search area (Table 2).

SPILL-RESPONSE SITES

We found 1 Spectacled Eider nest in the 7 spill-response sites that we searched on 20–23 June. That nest was located 190 m from ACS Site 1. We also discovered 1 Spectacled Eider nest while in transit between search areas (Figure 2). That nest was 286 m from ACS Site 1. Nesting Spectacled Eiders were recorded near Site 1 in

Table 1. Site descriptions and eider habitat assessments for 19 spill-response equipment sites and 3 pipeline bridge sites on the Colville Delta, Alaska, 2009–2013.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History /		Search in Future Years?	Comments
						Nesting Records	Years Searched		
Anchor 1	N 70.35003	Western bank of the Nechelik Channel	NWM,	Shrubs, low-relief low-center polygons	Yes	No/No	2009–2011	No	Marginal nesting habitat because of prevalence of shrubs. Few ponds.
	W 151.07447		MSSM, PWM						
Anchor 2	N 70.35828	Western bank of the Nechelik Channel	PWM,	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.
	W 150.07022		DOWIP						
Kach-A	N 70.23750	Kachemach River, just north of the pipeline	MSSM	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.
	W 150.45838		MTTU						
			NWM TLDS						
Mil-A	N 70.24403	Miluveach River, just north of the pipeline	PWM	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.
	W 150.29674		MSSM						
			TLDS						
Mil-C	N 70.37038	Shoreline and islands ~800 m upstream of Miluveach River mouth	NWM,	NWM on river banks, BAR and SKT on islands	Yes	No/No	2010	No	No habitat mapping available for this site; marginal nesting habitat on both banks and islands based on appraisal in field.
	W 150.51505		BAR, SKT						
NK-6	N 70.36017	Eastern bank of the Nechelik Channel.	TLDS,	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.
	W 151.05275		MSSM						

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-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 because of prevalence of shrubs; contains some polygonal areas.
Site 1	N 70.42874 W 150.85064	Container on western bank, site includes both sides of the Tamayayak	NWM, PWM, BAR, SOW	Vegetated areas on west side are predominately NWM and PWM; opposite bank is mostly barren.	Yes	Yes ^c /Yes	2009–2011 2013	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
Site 2	N 70.43417 W 150.90533	Container on western bank, site includes both sides of the of the West Ullamniġiaq	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 ^c /No	2009–2011	No	Marginal nesting habitat; site borders better nesting habitat; driftwood lines indicate flooding is common at this site; in future, search only east side.
Site 3	N 70.40692 W 150.93553	Container on northern bank of Ullamniġiaq; site spans the channel and mud flats on south bank	NWM, PWM, BAR	North bank is 50% NWM and 50% PWM	Yes	Yes ^c /Yes	2009–2013	Yes	Eider nesting habitat on the north side; a Spectacled Eider nested 160 m from the spill response conex in 2011 and 207 m from the conex 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 /		Search in Future Years?	Comments
						Nesting Records	Years Searched		
Site 4	N 70.38775 W 150.88718	Container on western bank of the Tamayayak	PWM, MSSM, DOWIP, BAR	~30% dry, low-relief PWM; ~10% high-relief PWM; ~10% DOWIP; ~50% channel and mud bars	Yes	No/No	2009–2013	Yes	Suitable habitat in low-relief areas and along lake. Marginal nesting habitat in the high relief area.
Site 7	N 70.39152 W 150.92881	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 conex.
Site 8	N 70.37003 W 150.93819	Predominately on the northern bank of the Sakoonang Channel. Site barely spans the channel.	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	Yes	Nesting habitat limited to PWM bordering the large deep lake NE of Site 8. 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.

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History /			Search in Future Years?	Comments
						Yes ^d /No	Years Searched	Records		
SK-13	N 70.33506 W 150.90711	Both banks of Sakoongang just south of Alpine	PWM, NWM, TLDS, BAR	Low-relief PWM with narrow bands of TLDS, BAR, and NWM	Yes	Yes ^d /No	1998–2000 2009 2011–2013	Yes	Potential eider nesting habitat in areas of PWM. In 2011, a Spectacled Eider pair was sighted 550 m north of SK-13.	
SK-14A	N 70.33975 W 50.92675	Site is adjacent to the Alpine flare pit; on the Sakoongang.	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 ^d /No	1996–2001 2009	No	Marginal nesting habitat because of shrubs and habitat modification. The NW bank habitat is modified by gravel pad and flare and 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 ^d /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. Snow banks on the pad edge may delay availability. Previous searches have not found eider nests.	
SK-15	N 70.36514 W 150.91869	~2.5 km north of Alpine and next to a pipeline bridge on the Sakoongang	PWM, NWM, MSSM, TLDS, BAR	TLDS, NWM, and BAR on NW bank, MSSM with aquatic centers on SE bank	Yes	No/No	1998 1999 2009–2013	Yes	Nesting habitat on both sides of the channel in areas of PWM and NWM.	
SK-20	N 70.361156 W 150.99228	Near the intersection of channels on the Sakoongang	PWM, NWM, TLDS, BAR	10% PWM, 50% low relief MSSM, 40% riverine habitats	Yes	No/No	2009 2013	Yes	Nesting habitat on both sides of the channel in areas of PWM, but not in the willows on the island.	

Table 1. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History /			Search in Future Years?	Comments
						Records	Years Searched	Years Searched		
Sakoonang Pipeline Bridge	N 70.36444	First Colville River channel-	PWM,	PWM on NE bank, SW bank is	Yes	Yes ^d /No	1998	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			2010	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	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						
Ulamniġiaq Pipeline Bridge	N 70.39277	Third Colville River channel-	PWM,	PWM and NWM on north bank, south bank is	Yes	Yes ^c	2000-2007	2000-2007	Yes	The majority of this site contains suitable nesting habitat.
	W 150.90805	crossing north of Alpine	NWM, BAR	south bank is NWM			2010	2010		

^a 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), 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)

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

^c CD3 nest searches conducted during 2000-2007; Spectacled Eider and unidentified eider nests were found at these sites during some years (Johnson et al. 2008b)

^d Alpine nest searches conducted in 1995-2001 (Johnson et al. 2008b)

Table 2. Numbers of nests of Spectacled Eiders and other large waterbirds found in search areas at CD3, the ice road between CD2 and CD3, and 7 spill-response equipment sites, Colville Delta, Alaska, 20–26 June 2013.

Search Area	Eider Species		Other Waterbirds														Total			
	Spectacled Eider	King Eider	Greater White-fronted Goose	Snow Goose	Brant	Cackling/Canada Goose ^a	Unidentified goose	Northern Pintail	Green-winged Teal	Long-tailed Duck	Unidentified duck	Willow Ptarmigan	Red-throated Loon	Pacific Loon	Sandhill Crane	Sabine's Gull		Glaucous Gull	Arctic Tern	Parasitic Jaeger
CD3 Pad and Airstrip	2	–	22	2	–	1	–	–	–	–	1	–	2	–	–	–	–	1	1	32
CD2 to CD3 Ice Road	3	1	161	–	6	8	1	3	2	1	–	–	1	2	1	1	1	3	1	196
ACS Spill-response Sites																				
Site 1	1	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7
Site 3	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Site 4	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Site 8	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
SK-13	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
SK-15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
SK-20	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
Total of Spill-response Sites	1	–	18	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	20
Incidental Nests ^b	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1

^a. Nest belonging to either Cackling or Canada goose

^b. See figure 2 for location of nest.

previous years (2006, 2007), but not since searches of ACS sites have been conducted (2009–2012). In 2013, we found 19 nests of other large waterbirds at the 7 spill-response sites (Table 2).

SUMMARY

Six Spectacled Eider nests and 1 King Eider nest were found within the areas searched in 2013. Two Spectacled Eider nests were within 200 m of the CD3 pad and airstrip, 3 Spectacled Eider nests and 1 King Eider nest were within 200 m of the ice road, and 1 Spectacled Eider nest was within 200 m of ACS Site 1, 1 of 7 spill-response sites that were searched. An additional Spectacled Eider nest was found incidentally more than 200 m from ACS Site 1. We found no Steller's Eiders or their nests in any of the areas searched in 2013, which is consistent with past results of nest search efforts on the delta. No nests of Steller's Eiders have been documented on the Colville Delta despite nearly annual search efforts from 1992 to 2013. Observations of Steller's Eiders on the Colville Delta are rare. Only 3 sightings of Steller's Eiders have been recorded between 1992 and 2013; 5 were in a group seen on the outer delta in 1995, a pair was seen near CD3 in 2001, and a male in flight was observed in 2007.

Between 2009 and 2013, we have visited 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; Seiser and Johnson 2010, 2011a, 2011b, 2012). We found 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 (e.g., 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. The 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 within 200 m of the CD3 pad and airstrip in all 5 years that searches have been conducted, and we have found Spectacled Eider nests within 200 m of the

ice road in 3 of 5 years (Seiser and Johnson 2010, 2011a, 2011b, 2012). As long as clean-up and other off-pad activities are scheduled in these areas during the breeding season (currently defined as 9 June–1 August), searches for Spectacled Eider nests will continue to ensure that human-caused disturbance to nesting eiders can be avoided.

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