
**EIDER NEST SEARCHES AT THE CD-3 PAD, ICE ROAD, AND
SPILL-RESPONSE SITES ON THE COLVILLE RIVER DELTA, 2009**

FINAL REPORT

Prepared for
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BACKGROUND

Two species of birds in the Colville area currently are listed as threatened under the Endangered Species Act—Spectacled Eider and Steller’s Eider (*Somateria fischeri* and *Polysticta stelleri*, respectively). Steller’s Eiders in Alaska breed primarily near Barrow, Alaska, and occur rarely on the Colville River Delta. In contrast, Spectacled Eiders are common breeders on the Colville River Delta and more frequent on the outer portions of the delta, where ConocoPhillips Alaska, Inc. (CPAI) operates the CD-3 drilling pad, than elsewhere on the delta. The Endangered Species Act prohibits harming, harassing, and disrupting normal activities of threatened and endangered species. CPAI, which operates the Alpine Oilfield, conducts off-pad activities annually (e.g., tundra clean-up after the ice-road season and civil surveys) in the tundra nesting habitat of the Spectacled Eider during the months of June and July. These off-pad activities have the potential to disturb nesting eiders. Female eiders on nests are difficult to detect from a distance and difficult to identify without experience. Without knowledge of nest locations, workers could unintentionally flush birds from their nests. In particular, helicopter landings and clean-up crews picking up debris from the tundra near gravel pads and along ice-road routes could disturb nesting birds. Similarly, seasonal mobilization at spill-response sites

has the potential to disturb eiders nesting nearby. CPAI Operations has required identification of Spectacled Eider nests prior to off-pad activity to minimize disturbance to this species of nesting bird. Consequently, CPAI contracted ABR, Inc., to conduct nest searches for eiders in June 2009 in areas of the Colville River Delta where off-pad activities were scheduled for summer 2009. In this report, we document eider nest locations within search areas around CD-3, the ice road from CD-2 to CD-3, and Alaska Clean Seas (ACS) spill-response sites on the Colville Delta, and we evaluate eider nesting habitat at 16 spill-response sites.

OBJECTIVES

The primary objective of nest searching in 2009 was to identify the locations of nesting Spectacled Eiders prior to off-pad activities in eider nesting habitat. Documentation of nest locations allowed CPAI to modify planned activities occurring near nests. A list of Spectacled Eider nest locations was transmitted to environmental staff at CPAI at the completion of field work in order to inform off-pad workers of areas to avoid. This report summarizes the project findings.

METHODS

We conducted intensive ground-based nest searches for eiders in areas where tundra clean-up or other tundra-based activity was proposed to occur during the breeding season. We searched a 200-m strip around the CD-3 gravel pad and a 200-m radius around each of 16 spill-response deployment sites (Figure 1). We searched within a 200-m strip primarily because that is the area that was evaluated for effects on Spectacled Eiders in the Biological Opinion for the Alpine Satellites Development Project (USFWS 2004). We did not search any spill-response sites south of Alpine because Spectacled Eiders are rarely observed there (Johnson et al. 2004b). Along the ice-road route (henceforth, ice road), we narrowed our search width from the proposed 200-m strips because 1) the amount of litter decreased to little or none as we moved 450 m away from the CD-3 pad, and 2) we did not have enough time to complete 200-m strips on both sides of the 13.8-km ice road. Therefore, we searched 200 m on each side of the ice road from CD-3 to the Tamayayak Channel, and 50 m on each side for the remainder of the ice road, which we expected was wide enough to encompass all the area that would be traversed by clean-up

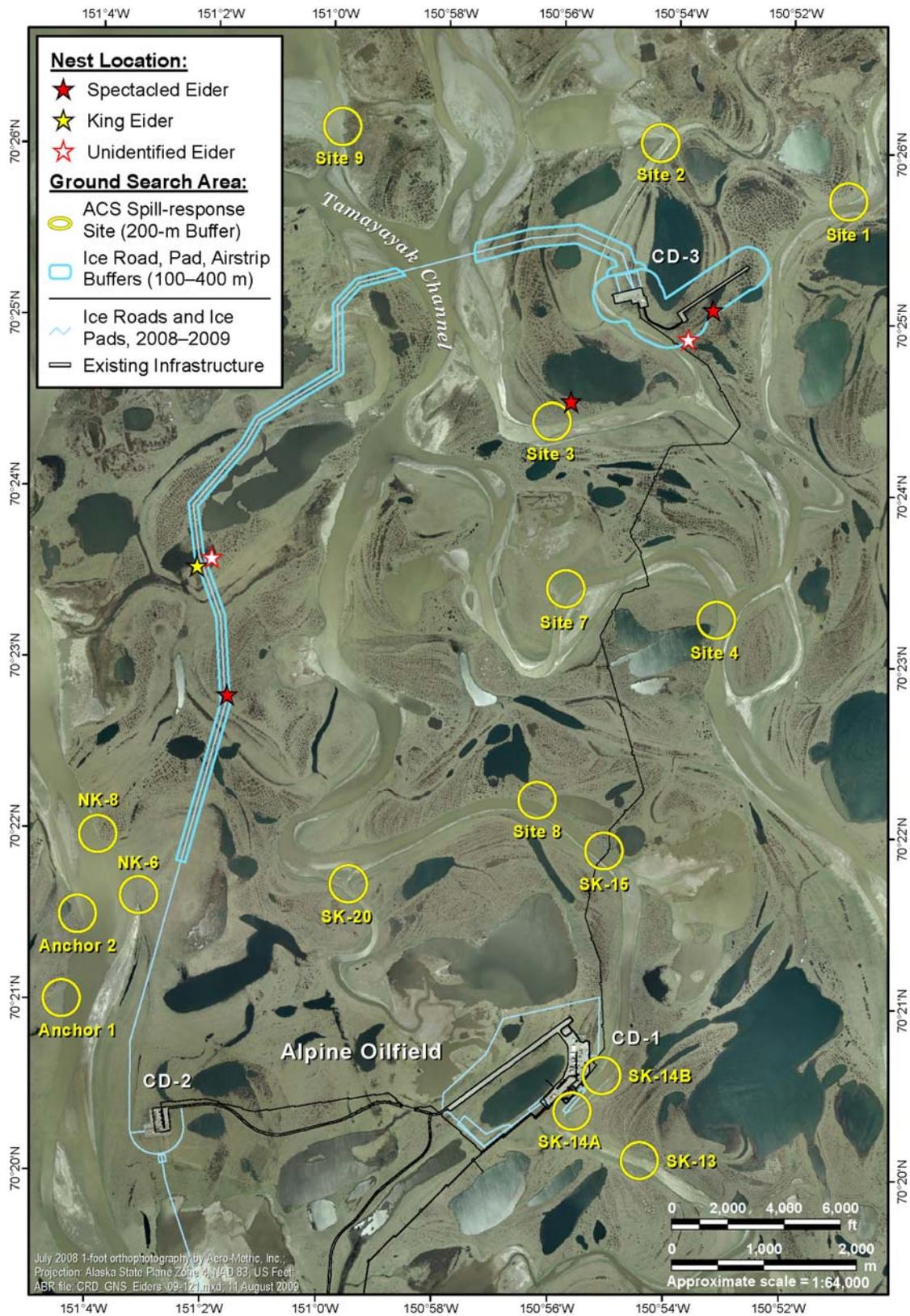


Figure 1. Map of eider nest locations in the CD-3, ice road, and spill-response equipment site search areas on the Colville River Delta, Alaska, June 2009.

workers. We extended the nest search farther from the ice road along the shorelines of waterbodies. We searched the ice road to within approximately 2.6 km of CD-2 (Figure 1). We did not search the ice road south of that point because eiders are uncommon south of that area, and the habitat along that portion of the ice road (wet tussocks and willows) has not been used by nesting eiders in prior studies (ABR, unpublished data).

Crews of 3 to 10 people searched for nests by walking a regular search pattern with 10–20 m between searchers, which provided total coverage of the tundra between searchers. All nest locations were recorded with handheld GPSs and on aerial photos 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 instrumented the nest with an artificial temperature-sensing egg, which was used to determine nest fate (success or failure), the timing of hatch or nest failure, and incubation constancy. We returned to retrieve the artificial eggs from nests after hatch.

In addition to nest searches, we evaluated eider nesting habitat within a 200-m radius of each ACS spill-response equipment site. Habitat mapping was available from previous work conducted by Johnson et al. (1997). At sites where storage containers were already in place, we evaluated habitat within 200 m of the container, otherwise we searched a 200-m radius around the coordinates provided by ACS. Habitats we considered to have the highest potential for nesting included 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. Barrens, Moist Sedge–Shrub Meadow, and Tall, Low, and Dwarf Shrub were classified as non-nesting habitat.

RESULTS

CD-3 PAD

On 27 July, we searched a 200-m-wide strip around the CD-3 pad, ice pad, airstrip, and access road to the airstrip, covering 103.8 ha (Figure 1). We located 1 active Spectacled Eider nest (160 m from the airstrip) and 1 failed Spectacled Eider nest (189 m from the gravel road). The highest number of Spectacled Eider nests in this search area among years that it was searched (2000 and 2007) was 3 nests in 2002 (Johnson et al. 2004a, 2004b, 2005, 2006, 2008).

We revisited the active nest on 20 July and found egg membranes indicating that the eider was successful in hatching at least 2 young. In addition to the 2 eider nests, we located 44 nests of other large waterbird and ptarmigan species in the CD-3 search area (Table 1). No Steller's Eiders or their nests were observed. We did not deploy any artificial eggs because the female at the active nest was not flushed, and we did not want to disturb the nest unnecessarily.

ICE ROAD

We searched 71% or 9.8 km of the 13.8 km of the ice road from CD-2 to CD-3 on 27 and 28 June (Figure 1). Total area searched was 116 ha. Within the ice road search areas we found 1 active Spectacled Eider nest 34 m from the ice road and 1 active King Eider nest 78 m from the ice road (Figure 1, Table 1). We also found 1 failed eider nest, possibly belonging to a Spectacled Eider, 120 m from the ice road. The Spectacled Eider successfully hatched at least 3 young. We also found 70 nests of other large waterbird and ptarmigan species within the ice road search area (Table 1). No Steller's Eiders or their nests were observed.

SPILL-RESPONSE SITES

In 2009, we found only 1 Spectacled Eider nest among the 16 spill-response sites we visited on 25 and 26 June (Table 2). That Spectacled Eider nest was found at Site 3, 207 m from the ACS storage container, just outside the search area. Spectacled Eiders have been found nesting in or adjacent to Site 3 over several years (2002–2005 and 2007) and less frequently at Site 1 (2003, 2006, and 2007), since nest searches were initiated in these areas in 2000 (Johnson et al. 2004a, 2004b, 2005, 2006, 2008). A few nests of other waterbird or ptarmigan species were found at spill-response sites (Table 1). No Steller's Eiders or their nests were observed.

The Spectacled Eider nest at Site 3 was successful, hatching ≥ 2 eggs. Data from the temperature-sensing egg indicate that hatch occurred on 4 July, and the nest site was abandoned the following day. Females typically leave their nests with their broods within 24 hours of hatch.

Table 1. Nests of eiders and other large bird species found in search areas at the CD-3 pad, ice road from CD-2 to CD-3, and Alaska Clean Seas (ACS) spill-response sites, Colville River Delta, Alaska, 25–28 June 2009.

Search Area	Eider Species			Other Species								Total	
	Spectacled Eider	King Eider	Unidentified eider	Greater White-fronted Goose	Brant	Canada Goose	Unidentified goose	Long-tailed Duck	Willow Ptarmigan	Red-throated Loon	Pacific Loon		Parasitic Jaeger
CD-3 pad	2	-	0	41	-	1	-	-	1	1	-	-	46
CD-2 to CD-3 ice road	1	1	1	54	12	-	1	-	1	-	1	1	73
ACS Spill Response Sites													
Site 1	-	-	-	3	-	-	-	-	-	-	-	-	3
Site 2	-	-	-	1	-	-	-	-	-	-	-	-	1
Site 3	1 ^a	-	-	-	-	-	-	-	-	-	-	-	1
Site 4	-	-	-	-	-	-	-	-	-	-	-	-	0
Site 7	-	-	-	-	-	-	-	-	-	-	-	-	0
Site 8	-	-	-	-	-	-	-	-	-	-	-	-	0
Site 9	-	-	-	-	-	-	-	-	-	-	-	-	0
Anchor1	-	-	-	1	-	-	-	-	1	-	-	-	2
Anchor2	-	-	-	3	-	-	-	-	-	-	-	-	3
NK-6	-	-	-	-	-	-	-	-	-	-	-	-	0
NK-8	-	-	-	2	-	-	-	-	-	-	-	-	2
SK-13	-	-	-	1	-	-	-	-	-	-	-	-	1
SK-14a	-	-	-	2	-	-	-	-	-	-	-	-	2
SK-14b	-	-	-	1	-	-	-	-	-	-	-	-	1
SK-15	-	-	-	-	-	-	-	-	-	-	-	-	0
SK-20	-	-	-	2	-	-	-	1	2	-	-	-	5

^a Spectacled Eider nest was >200m from center of Site 3.

Table 2. Site descriptions and eider habitat assessments for 16 Alaska Clean Seas spill-response sites on the Colville River Delta, Alaska, 25–26 June 2009.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History / Nesting Records	Search in Future Years?	Comments
Anchor 1	N70.35003 W151.07447	West bank of the Nechelik Channel	NWM, MSSM, PWM	Shrubby; low-centered polygons with low relief.	Yes	No	Yes	Marginal nesting habitat because of prevalence of shrubs. Used by nesting Greater-white Fronted Geese and ptarmigan.
Anchor 2	N70.35828 W151.07022	West bank of the Nechelik Channel	PWM, DOWIP	Shrubby; low-centered polygons with low relief.	Yes	No	Yes	Marginal nesting habitat because of prevalence of shrubs. Used by nesting Greater-white Fronted Geese
Site 1	N70.42874 W150.85064	Container on west bank of the Tamayayak. Site includes both sides of the channel.	NWM, PWM, BAR, SOW	Vegetated areas predominately NWM and PWM	Yes	Yes ^c /Yes	Yes	Eider nesting habitat at this site consists of polygonized ponds located 100 m inland from the containers. This nesting habitat is easily delineated from the rest of the site by distinct rise in elevation above the current river bank and container location.
Site 2	N70.43417 W150.90533	Container on west bank of the West Ulamnigial. Site includes both sides of the channel.	MSSM, BAR, SM, SKT	Only half of the site is vegetated. The west bank is primarily MSSM and east bank predominately SM.	Yes	Yes ^c /No	No	Marginal nesting habitat. This site borders better nesting habitat. Driftwood lines indicated flooding is common at this site. Previous searches have not found eider nests.

Table 2. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History / Nesting Records	Search in Future Years?	Comments
Site 3	N70.40692 W150.93553	Container on north bank of the Ulamnigïaq. Site spans the channel to mud flats on opposite shore.	NWM, PWM, BAR	North bank is 50% NWM and 50% PWM. .	Yes	Yes ^c /Yes	Yes	Good eider habitat on the north side. Found 1 Spectacle Eider nest just beyond 200-m search radius; 4 other female Spectacled Eiders were observed nearby.
Site 4	N70.38775 W150.88721	Containers on the west bank of the Tamayayak.	PWM, MSSM, DOWIP	This site is ~30% relatively dry, low-relief PWM; ~10% high-relief PWM; ~10% DOWIP lake; and 50% is channel and mud bars.	Yes	No	Yes	Marginal nesting habitat in the high relief area because of prevalence of shrubs.
Site 7	N70.39061 W150.93079	Containers on the NW bank of the Tamayayak. Site extends to mud bar in the of middle channel	NWM, TLDS	Well-drained NWM and low shrubs along the river channel	No	No	No	Area dry and shrubby, no lakes within 200 m

Table 2. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History / Nesting Records	Search in Future Years?	Comments
Site 8	N70.37003 W150.93819	Predominately on the North bank of the Sakoonang Channel. Site barely spans the channel.	PWM, TLDS, BAR	North side ~20% low-relief PWM, ~30% high-relief PWM, and ~50% shrub habitats (MSM & TLDS). South bank lined with TLDS and BAR	Yes	No	Yes	Nesting habitat limited to PWM bordering the large deep lake NE of site 8. Two female Spectacled Eiders flew by and landed ~1,000 m north of site.
Site 9	N70.43531 W150.99748	Container on east side of Tamayayak.	SM, SKT, BAR	East side is salt-affected vegetation and abundant drift wood. The west side is river channel and BAR.	Yes	No	Yes	Marginal nesting area with sparse vegetation, but better habitat ~250 m east of the container in low-centered polygon area. Area probably used extensively by brood-rearing geese in late July and August.
SK-13	N70.33506 W150.90711	Site centered on north side of Sakoonang. Site extends to both sides of the Sakoonang Channel	PWM, NWM, TLDS, BAR	Low-relief PWM is the most common habitat on both sides of the channel. Narrow bands of TLDS, BAR, and NWM line the channel.	Yes	No	Yes	Potential eider nesting habitat in areas of PWM.

Table 2. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History / Nesting Records	Search in Future Years?	Comments
SK-14A	N70.33975 W150.92675	Site is adjacent to Alpine's flare pit on 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 ^d / No	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	N70.34325 W150.91836	Site is NW of the Alpine boat ramp.	PWM, NWM, TLDS, BAR	On the NE bank, PWM parallels the gravel pad and NWM is along the pipeline. The opposite bank has a wide band of TLDS, before opening to PWM with low-centered polygons.	Yes	Yes ^d / No	No	Adjacent to the Alpine gravel pad, and to a lesser degree, on the west side of the channel is eider nesting habitat. Snow banks on the pad edge may delay availability. Traces of compacted snow remain on 25 June. Previous searches have not found eider nests.
SK-15	N70.36514 W150.91869	Located ~2.5 km north of Alpine and adjacent to a pipeline bridge on the Sakoonang.	PWM, NWM, MSSM, TLDS, BAR	The NW side is primarily TLDS with a border of low relief NWM (totaling ~10% of the area) and barrens. Southeast side is high relief moist sedge shrub with wet and aquatic centers.	Yes	No	Yes	There is nesting habitat on both sides of the channel in areas of PWM and NWM.

Table 2. Continued.

Site Name	Location	Site Description	Wildlife Habitat ^a	Habitat Description	Nesting Habitat Present ^b	Search History / Nesting Records	Search in Future Years?	Comments
SK-20	N70.36156 W150.99228	Near the mouth of a channel connecting the Sakoonang to a lake.	PWM, NWM, TLDS, BAR	The entire site is 10% PWM, 50% low relief MSSM, 40% riverine habitats.	Yes	No	Yes	There is nesting habitat on both sides of the channel in areas of PWM.
NK-6	N70.36017 W151.05275	East bank of the Nechelik Channel.	TLDS, MSSM	Low willow shrub and grass/sedge non-patterned ground.	No	No	No	No nesting habitat at this site for eiders and most other species of waterfowl.
NK-8	N70.36606 W151.06483	On the NW bank of the Nechelik Channel.	PWM, MSSM	Low willow shrubs with some polygons. River bank lined with polygon troughs.	Yes	No	Yes	The site has polygonized areas but the prevalence of shrubs makes this area less suited for nesting eiders.

^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), Tall, Low, Dwarf Shrub (TLDS), and Barrens (BAR)

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

^c CD-3 nest searches conducted between 2000 and 2007 during which Spectacled Eider and unidentified eider nests were found (Johnson et al. 2004)

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

SUMMARY

Six eider nests—4 Spectacled Eider nests, 1 King Eider nest, and 1 nest of an unidentified eider—were found in the CD-3, ice road, and spill-response site search areas. We found no Steller's Eider nests in any of the areas searched in 2009, similar to all other nest searches conducted in the Alpine, CD-3, and CD-4 areas over nearly 2 decades (Johnson et al. 2004a, 2004b, 2005, 2006, 2008).

Potential eider nesting habitat was present in varying proportions and quality at all but 2 of the 16 spill-response equipment sites (Table 2). Four sites with potential nesting habitat were included in prior nest searches conducted in association with development of CD-3 and Alpine (Johnson et al. 2004a, 2004b, 2005, 2006, 2008). Only 2 of these 4 sites (Site 1 and Site 3) have had documented Spectacled Eider nests.

Spill-response equipment sites generally were located on channel banks where the terrain is dry and shrubby, which is not typical Spectacled Eider nesting habitat. However, potential nesting habitat does exist within 200 m of some of these containers. We have documented Spectacled Eiders nesting at 2 of the ACS spill-response sites over multiple years. Assuming there will be continued human activity at these sites, we suggest that nest searches and monitoring continue at 11 sites with potential nesting habitat. Based on habitat conditions and the absence of nests in previous ground searches, we recommend dropping 5 sites from future nest searches (Table 2). The nest search conducted along the ice road in 2009 probably was sufficient to allow subsequent tundra clean-up to proceed and a similar search area will be appropriate for future nest searches assuming that the quantity and width of litter and debris along the ice road is similar to that found in 2009. We recommend no changes in the search area around CD-3, where eiders nest perennially and where more debris tends to accumulate due to winter activities on the CD-3 pad.

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