

FINAL REPORT

**SPECTACLED EIDER SURVEY ALONG THE  
USDOT ALPINE PIPELINE, ALASKA, JUNE 2008**



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## INTRODUCTION

The U.S. Department of Transportation, Office of Pipeline Safety (USDOT), has designated much of the Arctic Coastal Plain of Alaska that is currently occupied by oil and gas infrastructure as an Unusually Sensitive Area (USA) for Spectacled Eiders, a threatened species under the Endangered Species Act (ESA). The USA designation affects the USDOT-regulated pipelines in the region: Badami, Endicott, North Star, Prudhoe Bay NGL, Milne Point, Kuparuk, Oliktok, and Alpine. Five of these regulated lines are operated by ConocoPhillips Alaska, Inc. (CPAI) in the Kuparuk River and Colville River units (Figure 1). As part of the Pipeline Integrity Management Plan, CPAI instituted surveys in 2004 for threatened eiders within a corridor along the USDOT pipeline between the Alpine facilities on the Colville River Delta and Central Processing Facility 2 (CPF-2) in the Kuparuk Oilfield; the other USDOT pipelines in the Kuparuk Oilfield area have been covered by annual aerial surveys for pre-nesting eiders since 1993 (Anderson et al. 2008). CPAI contracted with ABR, Inc., to conduct an aerial survey for pre-nesting eiders during June 2008 and to conduct ground surveys for nests if any Spectacled Eiders were seen during the aerial survey, as directed by the U.S. Fish and Wildlife Service.

The Spectacled Eider is one of four species of eiders that breed in arctic Alaska (Bellrose 1976). Spectacled, King (*S. spectabilis*), and Common (*S. mollissima*) eiders all nest in the oilfields on Alaska's North Slope (Johnson and Herter 1989). The Spectacled Eider was listed by the USFWS as a threatened species on 9 June 1993 (58 FR 27474–27480) under the ESA. Steller's Eiders (*Polysticta stelleri*) occasionally occur in the oilfields but have not been recorded as nesting; they breed mainly in western and northwestern Alaska and are uncommon east of Point Barrow (Johnson and Herter 1989). The Steller's Eider was placed on the threatened list under the ESA on 11 June 1997 (62 FR 31748–31757). The Spectacled Eider is the focus of these surveys because Steller's Eiders are relatively uncommon in the CPAI-operated units.



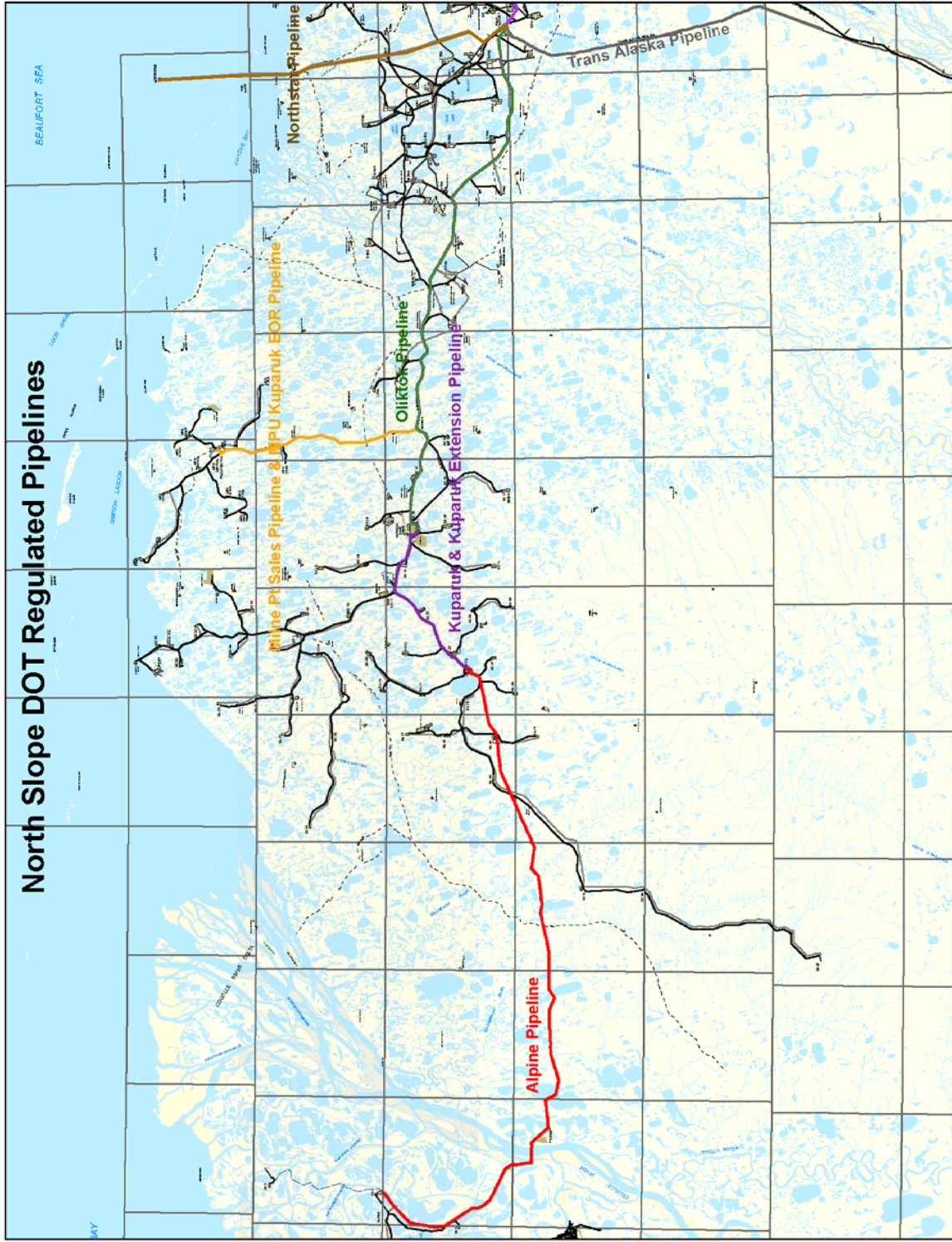


Figure 1. U.S. Department of Transportation pipelines within the Kuparuk River and Colville River unit areas, northern Alaska.

The main objectives of the Spectacled Eider survey along the USDOT pipeline between Alpine (CD-1) and CPF-2 were to

- monitor the distribution and abundance of Spectacled Eiders within an 800-m (~0.5 mi) wide corridor surrounding to the pipeline during pre-nesting; and
- if pre-nesting Spectacled Eiders were seen on the aerial survey, locate any nests during a ground-based nest search and monitor their fate.

In addition to the Alpine pipeline survey, the distribution and abundance of Spectacled and Steller's eiders along the other USDOT pipelines in the greater Kuparuk region were evaluated in 2008 as part of the long-term avian studies in the Kuparuk Oilfield; results from that study that pertain to the area near the USDOT pipelines are summarized and full results for the long-term study are presented in a separate report (Anderson et al. 2009).

## **STUDY AREA**

The USDOT Alpine pipeline connects Alpine CD-1 on the Colville River Delta with the CPF-2 in the Kuparuk Oilfield to the east (Figure 2). Both of these oilfields are located on the Arctic Coastal Plain of Alaska in an area dominated by habitats created by the thaw-lake cycle, fluvial processes from the Kuparuk and Colville rivers, and coastal processes of flooding, erosion, and sediment deposition. The representative wetland communities and habitat types are discussed in Roth et al. (2007) and Roth and Loomis (2008) for most of the Kuparuk Oilfield and in Jorgenson et al. (1997) for the Colville River Delta and the Alpine Transportation Corridor (which encompasses the route of the Alpine pipeline).

## **METHODS**

One aerial survey was conducted for breeding pairs of eiders on 15 June 2008 along the USDOT Alpine pipeline between CPF-2 in the Kuparuk Oilfield and Alpine CD-1 on the Colville River Delta (Figure 2). The survey was flown during the pre-nesting period, when male eiders (the more visible of the two sexes when in breeding plumage) are still on the breeding grounds. The survey area covered a strip 400-m (~0.25 mi) wide on each side of the pipeline, for a total corridor width of 800 m (~0.5 mi) and a total survey area of 46.6 km<sup>2</sup> (18 mi<sup>2</sup>). The other





Figure 2. Study area for the USDOT Alpine Pipelines eider survey in the Kuparuk Oilfield and the Colville River Delta, Alaska, 2008. The aerial survey was conducted along a 400-m (~0.25 mi) wide area on each side of the pipelines.

USDOT pipelines in the Kuparuk Oilfield were surveyed during the slope-wide aerial survey for Spectacled Eiders on 13–15 June 2008 and were surveyed by flying E-W transects spaced 800 m (~0.5 mi) apart, which provided 50% coverage of the entire study area. The Colville River Delta was also surveyed for eiders on 11–12 June 2008 at 100% coverage (transects spaced at 400 m intervals [~0.25 mi]).

The general procedures for the aerial survey were similar to those used in 1993 (Anderson and Cooper 1994) and employed two observers (in addition to the pilot) in a fixed-wing aircraft (Cessna 185 or 206). During the survey, the pilot navigated the airplane along the pipeline using a global positioning system (GPS) receiver and photomosaic maps of the area, as well as visual reference to the pipelines. Flight altitude was 30–50 m (98–164 ft) above ground level (agl) and flight speed was approximately 145 km/h (90 mph). Each observer recorded on a tape recorder the species of eider, number of each sex, number of identifiable pairs, side (north or south) of the pipeline, and whether the birds were flying or on the ground. Each observer also marked all eider locations on photomosaic maps of the study area, which were at a scale similar to USGS quadrangle maps (1:63,360). All observations were digitized and added to a GIS database.

## **RESULTS AND DISCUSSION**

No Spectacled Eiders were recorded during the aerial survey for breeding eiders along the USDOT Alpine pipeline on 15 June 2008 (Figure 3); the closest Spectacled Eiders in the Alpine Oilfield were >1 km (0.6 mi) from the USDOT Alpine pipeline, well outside the survey area. The only eiders observed during the USDOT Alpine pipeline survey were King Eiders (20 adults in 8 locations; 17 adults in 6 locations were of birds on the ground and the remaining 3 adults [2 locations] were flying birds). In addition to the aerial survey specifically flown for the USDOT Alpine pipeline, some parts of the Alpine pipeline also were covered a second time during the aerial surveys for breeding eiders on the Colville River Delta (11–12 June) and in the Kuparuk Oilfield (13–15 June). During the aerial survey of the Kuparuk study area, the closest Spectacled Eiders to the USDOT Alpine pipeline were a pair located 1800 m (1.2 mi) from the pipeline and northwest of CPF-2 (along the northwest shore of the large lake; Figure 3). That pair of eiders was at a distance greater than 0.5 mi from the pipelines, which is the farthest distance CPAI



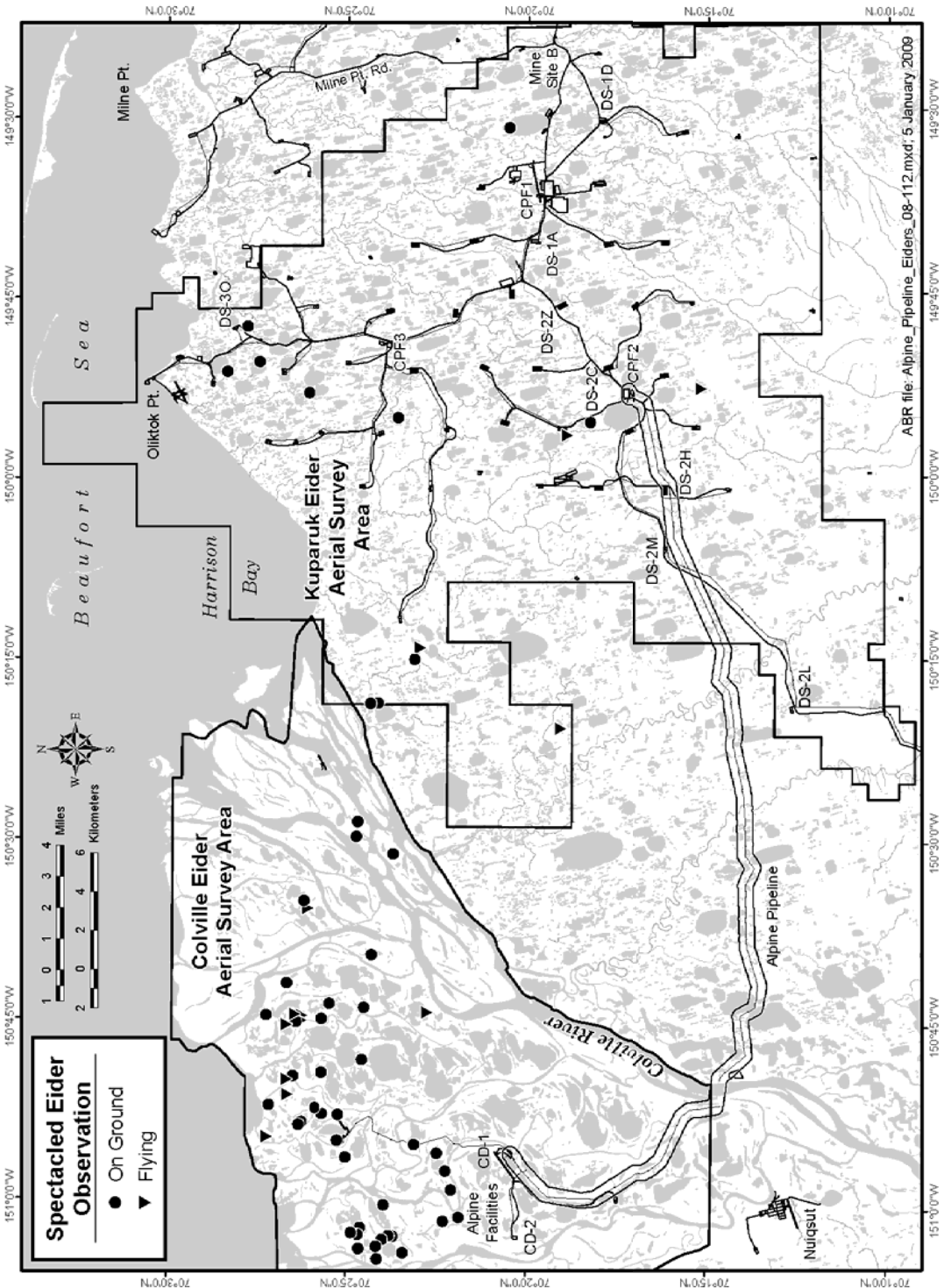


Figure 3. Distribution of Spectacled Eiders observed during pre-nesting aerial surveys flown along the USDOT Alpine Pipelines (15 June 2008), in the Kuparuk Oilfield (13–15 June 2008), and on the Colville River Delta (11–12 June 2008), northern Alaska.

considers to be within the potential ‘could-affect’ zone for oil spills in their Integrity Management Program (McDonald et al. 2002). That zone would be the area that could be affected by a pipeline release under a worst-case scenario of oil spraying into the air and being broadcast by wind onto the adjacent tundra. All other Spectacled Eiders seen during the aerial survey of the Kuparuk study area were greater than 2 km (1.2 mi) from any of the USDOT pipelines.

Because no Spectacled Eiders were observed within the USDOT Alpine pipeline survey area, no ground search for nests was conducted in 2008. Only in 2007, have Spectacled Eiders been observed near the USDOT Alpine pipeline and the nest search then could not confirm the occurrence of a nesting pair (Anderson et al. 2007). The lack of Spectacled Eiders along the USDOT Alpine pipeline west of the Kuparuk Oilfield during the 2004–2006 surveys (Anderson and Shook 2004; Anderson 2005, 2006) and during this (2008) survey suggests that the area is not commonly used by Spectacled Eiders. In general, most of the area along the Alpine pipeline lacks suitable habitats (basin wetland complexes and shallow ponds with aquatic marshes) for breeding eiders, but is instead dominated by drier habitats with limited waterbodies (e.g., moist tussock tundra, moist sedge shrub meadows, and upland shrub) (Jorgenson et al. 1997 and Roth et al. 2008). Also, a previous analysis of the risk assessment to Spectacled Eiders of the USDOT pipelines in the Alpine and Kuparuk oilfields (McDonald et al. 2002) that calculated relative densities for eiders based on aerial surveys in the region demonstrated that most of the USDOT Alpine pipeline crosses areas of relatively low densities of Spectacled Eiders.

The primary area along the USDOT Alpine pipeline where Spectacled Eiders are known to occur regularly is in the wetlands south of the pipelines between CPF-2 and DS-2F, where several eider nests have been located in previous years and where eiders are seen regularly during road surveys (Anderson et al. 2004, 2005, 2006, 2007, 2008, 2009). None of the Spectacled Eider nests located near DS-2F in previous years has been within 0.5 mi of the USDOT Alpine pipeline, and, although adults were present during pre-nesting each year, no nests were located in that area in 2006–2008. On the Colville River Delta, the USDOT Alpine pipeline and other Alpine facilities are not located in an area regularly used by Spectacled Eiders (Johnson et al. 2004), although one sighting was recorded east of CD-1 in 2007 (Johnson et al. 2008).

In the Kuparuk Oilfield, Spectacled Eiders have been regularly observed near the Kuparuk and Kuparuk Extension USDOT Pipelines (see Figure 1) near DS-2C, where a basin wetland complex east of the drill site supports nesting eiders almost annually. This basin wetland complex was searched for Spectacled Eider nests in late June 2008 and one failed nest was found about 350 m (0.2 mi) south of the USDOT pipeline (Anderson et al. 2009). Because this nest was within 0.5 mi of the pipeline, it was within the potential could-affect zone for oil spills in CPAI's Integrity Management Program (McDonald et al. 2002).



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