

**SPECTACLED EIDER SURVEY ALONG THE
USDOT ALPINE PIPELINE, ALASKA, JUNE 2009**

BETTY A. ANDERSON



PREPARED FOR
CONOCOPHILLIPS ALASKA, INC.
ANCHORAGE, ALASKA

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

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PIPELINE, ALASKA, JUNE 2009**

Final Report

Prepared for
ConocoPhillips Alaska, Inc.
P.O. Box 100360
Anchorage, AK 99510-0360

by
Betty A. Anderson
ABR Inc.—Environmental Research & Services
P.O. Box 80410
Fairbanks, Alaska 99708

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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. 2009). CPAI contracted with ABR, Inc., to conduct an aerial survey for pre-nesting eiders during June 2009 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.

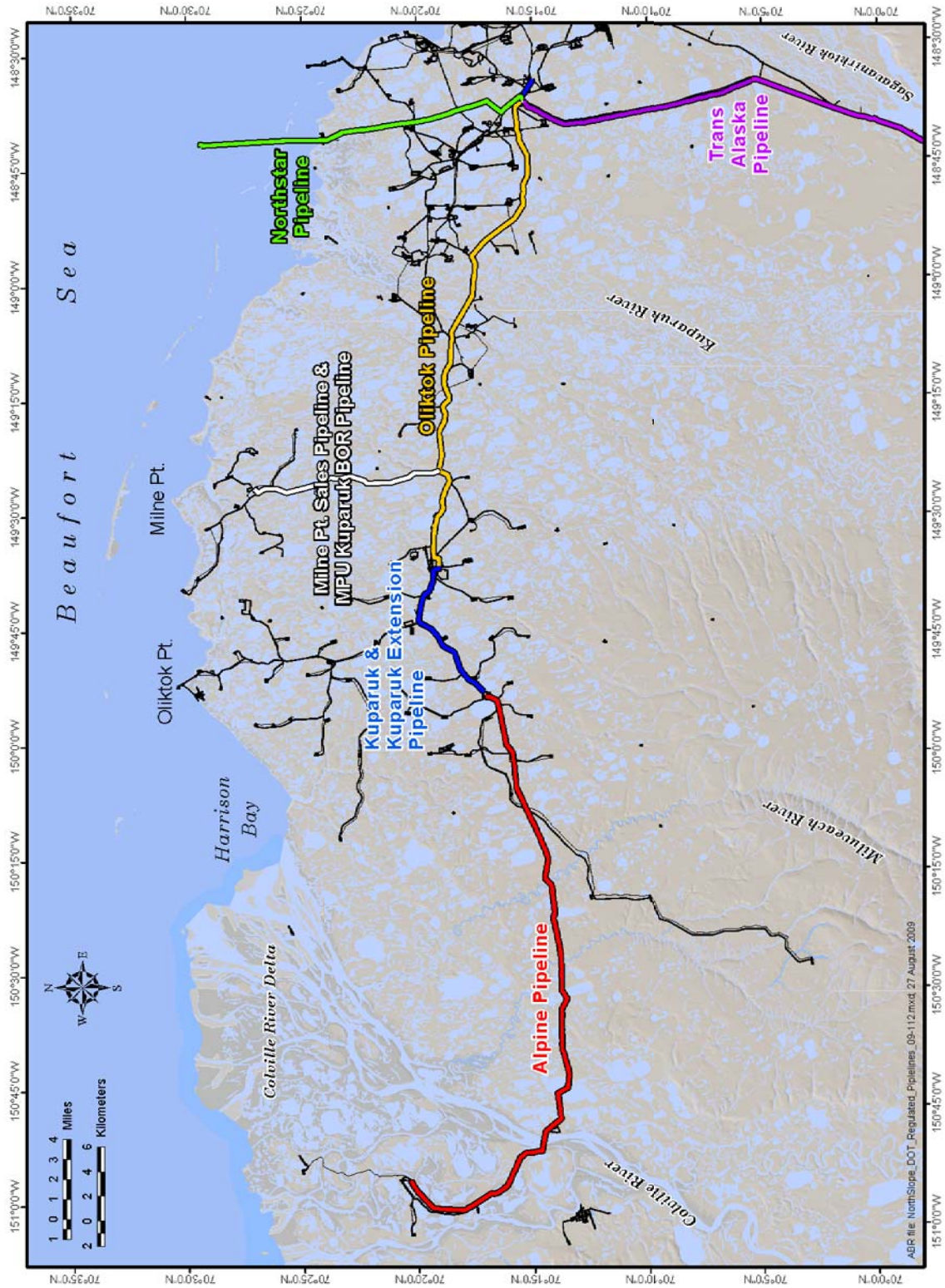


Figure 1. U.S. Department of Transportation pipelines within the Kuparuk River and Colville River unit areas, northern Alaska.

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.

The distribution and abundance of Spectacled and Steller's eiders along the other USDOT pipelines in the greater Kuparuk region were evaluated in 2009 as part of the long-term avian studies in the Kuparuk Oilfield (Anderson et al., in preparation); results from that study that pertain to the USDOT pipeline areas are summarized below.

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 12–13 June 2009 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 km² (18 mi²). The other



Figure 2. Study area for the USDOT Alpine Pipelines eider survey in the Kuparuk Oilfield and the Colville River Delta, Alaska, 2009. 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 10–12 June 2009 and were surveyed by flying east-west 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 8–9 June 2009 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 12–13 June 2009 (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 (7 adults [3 pairs and 1 single male] in 4 locations; all birds were observed on the ground). 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 (8–9 June) and in the Kuparuk Oilfield (10–12 June). During the aerial survey of the Kuparuk study area, the closest Spectacled Eiders to the USDOT Alpine pipeline were a pair with a male located 1,085 m (0.67 mi) from the pipeline and southwest of DS-2M (Figure 3). These eiders were greater than 0.5 mi from the pipelines, which is the farthest

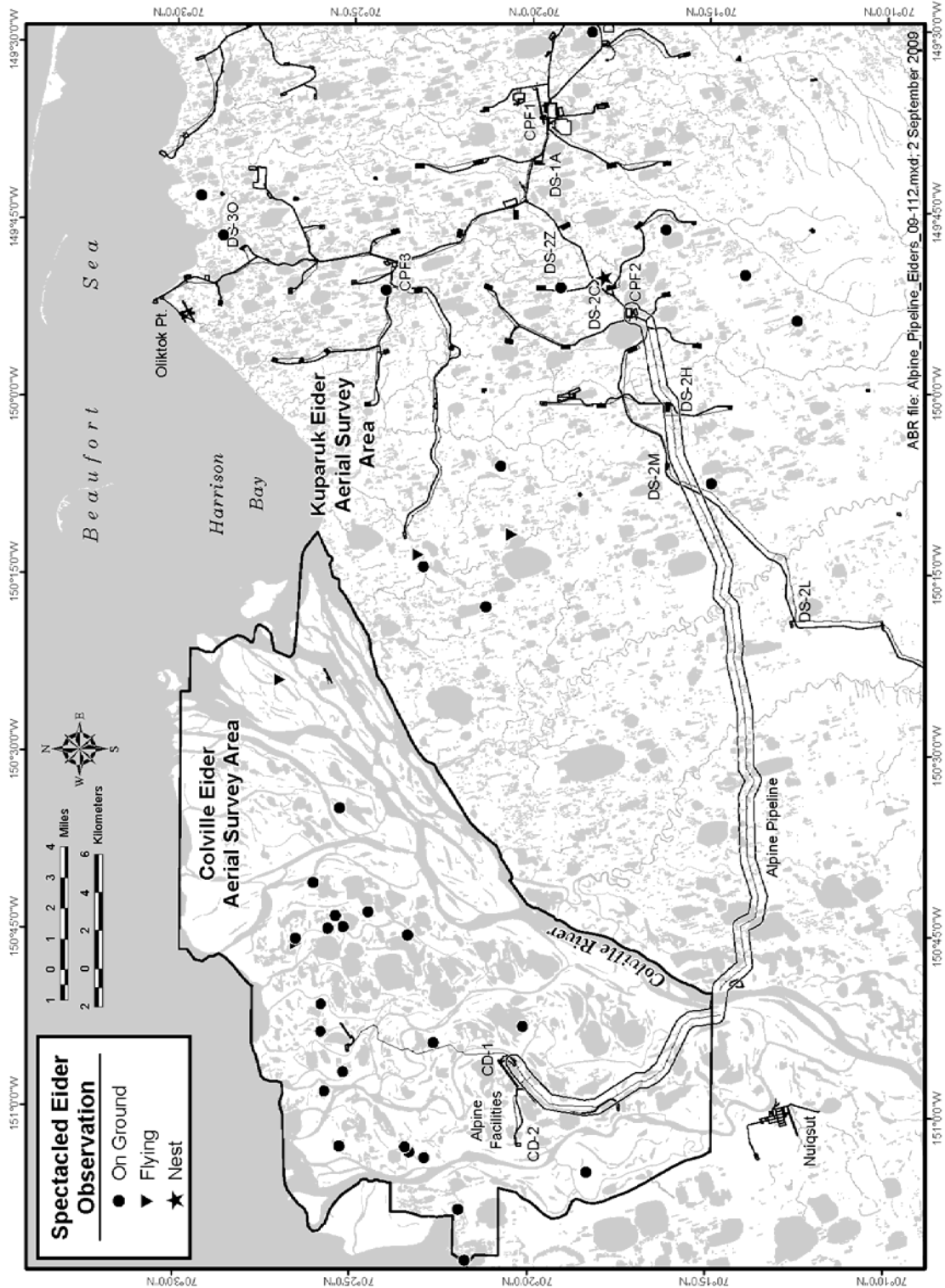


Figure 3. Distribution of Spectacled Eiders observed during pre-nesting aerial surveys flown along the USDOT Alpine Pipelines (12–13 June 2009), in the Kuparuk Oilfield (10–12 June 2009), and on the Colville River Delta (8–9 June 2009), northern Alaska.

CPAI considers being 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 2009. Spectacled Eiders have been observed near the USDOT Alpine pipeline in only one year (2007) and the nest search conducted then could not confirm the presence 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 and 2008 surveys (Anderson and Shook 2004; Anderson 2005, 2006) and during this (2009) 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, Roth et al. 2008). This is consistent with a previous industry analysis of the Spectacled Eider USA designation in the Alpine and Kuparuk oilfields (McDonald et al. 2002) which calculated that most of the USDOT Alpine pipeline crosses areas of relatively low densities of Spectacled Eiders, based on aerial surveys in the region.

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 (except 2009), no nests were located in that area in 2006–2009. 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 2009, however, at least three pairs were observed near the Alpine facilities, one

pair to the southwest of the Nechelik Channel (3.4 km [2.1 mi] from the pipeline), a pair to the northwest (4.3 km [2.7 mi] from the pipeline), and a third pair east of CD-1 in the open lead of a deep, open lake (1.9 km [1.2 mi] from the pipeline) (Figure 3).

In the Kuparuk Oilfield, Spectacled Eiders have been observed regularly 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 2009 and one active nest, which later was determined to have been successful, was found about 440 m (0.3 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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