

# Assessment of Effects of an Oil Pipeline on Caribou, *Rangifer tarandus granti*, Use of Riparian Habitats in Arctic Alaska, 2001–2003

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Elevated oil field pipelines may alter Caribou (*Rangifer tarandus granti*) movements and delay or prevent access to insect relief habitat. In an attempt to determine if the 40-km elevated Badami pipeline in northern Alaska changed Caribou use of riparian habitats at the three river crossings where the pipeline is buried, we quantified Caribou habitat use at all three crossings using time-lapse video cameras and aerial distribution surveys over three summers. We compared habitat use, behavior and duration of observations among pipeline and non-pipeline sites. We used a block experimental design with cameras at four sites at the three river crossings to evaluate differences in numbers of Caribou per day at pipeline and non-pipeline sites. At each crossing, four cameras were positioned, with one pair of cameras next to the pipeline (pipeline sites) and one pair of cameras 1.8–3.2 km upstream from the pipeline (non-pipeline sites); where cameras monitored the river bank and channel (river habitat) and the tundra within about 200 m of the river (tundra habitat). Peak numbers of Caribou per day occurred during early July 2003 and mid-July 2001 and 2002. Large numbers of Caribou recorded north of the pipeline during aerial surveys did not usually correspond with increased number per day recorded by cameras suggesting Caribou probably also crossed the pipeline outside of the riparian areas. We assessed local changes in riparian habitat use by comparing the numbers of Caribou per day in river and tundra habitats at pipeline and non-pipeline sites and found no difference. We assessed regional changes in riparian habitat use by comparing numbers of Caribou per day at pipeline sites and at non-pipeline sites and found no difference. Caribou groups spent an average of 1 minute longer at tundra pipeline sites and groups spent 30 seconds longer feeding and trotting at pipeline sites, but these differences were not significant.

Key Words: Caribou, *Rangifer tarandus granti*, aerial survey, insects, Badami pipeline riparian habitat, summer, time-lapse video, Alaska.