

**CAMERON, R. D., and J. M. VER HOEF.** Declining abundance of calving caribou in an Arctic oil-field complex. Alaska Department of Fish and Game, 1300 College Road, Fairbanks, Alaska 99701-1599.

We evaluated changes in the occurrence of calving caribou (*Rangifer tarandus granti*) in the Kuparuk Development Area (KDA), an oil field complex on the Arctic Coastal Plain, west of Prudhoe Bay, Alaska. During June 1980-1995 (except 1984), 183 calving locations for 96 radio collared females of the Central Arctic Herd were estimated using fixed-wing aircraft. Two ca. 4500-km<sup>2</sup> study areas, each extending ca. 60 km inland from the Beaufort Sea, were delineated, one west and another east of the Sagavanirktok River. The KDA, comprising all or part of three oil fields, constitutes the northeastern 20% of the western area, whereas there is no surface development in the eastern area. Together, these study areas encompassed 162 (88%) of the calving sites for 91 (95%) of the radio collared females present within the greater calving grounds of the herd. Proportions of sites in the northeastern 20% of the two areas were compared for three 5-year periods: 1980-1983, and 1985; 1986-1990; 1991-1995. Initially, proportions for the western experimental and eastern control areas declined in parallel, from 0.55 and 0.50 ( $P > 0.5$ ), respectively, to 0.25 and 0.22 ( $P > 0.5$ ), respectively. A further decrease 0.03 on the west, however, was accompanied by an increase to 0.41 on the east ( $P < 0.001$ ). This > 90% reduction in calving activity is ostensibly in response to recent sustained development, because the incidence of calving in the coastal zone is inversely related to snow cover, avoidance of the KDA tends to be more pronounced in years of early melt-off.

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