

Bullen Point to Staines River (Bullen-Staines)

Similar to the other study areas, the number of caribou in the study area declined over the post-calving period, with the exception of the 23 July survey when parasitic insects were active (Table 2). During this survey, 5957 caribou were observed, mostly in 4 large groups. Two groups were along the Beaufort Sea coast between Point Gordon and Point Hopson and the other two groups were <5 km from the coast (Figure 8). Noel and Olson (1999a) reported caribou use of the areas around Bullen Point and Point Thomson and riparian areas near the Staines and Canning rivers as insect-relief habitats. Noel and Olson (2001a) summarized the distribution of caribou along the coast for surveys conducted between 1993 and 2000 and reported that caribou during the post-calving period concentrated primarily near Bullen Point, Point Gordon, Point Sweeney, east of Point Thomson, and near North Staines River #1.

Caribou Distribution Relative to Oilfield Infrastructure

Our results from the interval analysis were similar to those reported by Noel and Demarchi (2002) for calves and other caribou (excluding bulls and cow/calf pairs) during the post-calving period in the MPU study area. Overall, the 2001 MPU study area interval analysis suggested that calves and other caribou were observed either in greater than expected or not different than expected numbers within the 1-km and 2-km intervals. The 2001 PBOF interval analysis suggested that all classes of caribou were in less than expected numbers in the 1-km through 5-km intervals and with the exception of bulls, mostly in greater than expected numbers in the ≥ 9 -km intervals. However, Cronin et al (1998b) showed that from 1990-1996 caribou numbers were not different from expected in the 1-km through 5-km intervals. The results from the 2001 analysis for PBOF are not directly comparable to previous studies (Cronin et al. 1998b) because of the changes in the number of intervals and combination of intervals used in the analysis. However, these results and past interval analyses show that distribution of caribou relative to oilfield infrastructure during the post-calving period is highly variable among caribou sex and age classes, study areas, and years. Other analyses (e.g., by individual survey, log-linear regression; Cronin et al 1998b) may yield additional insights on the relationship between caribou distribution and habitat characteristics within the oilfields.

Differential habitat use along a continuum of insect harassment (from none to severe) and large-scale movements between insect relief and foraging habitats during the post-calving period make it difficult to detect or interpret patterns in caribou distribution relative to oilfield infrastructure. Caribou distributions during the post-calving period often change within hours in response to fluctuating weather patterns and, thus, insect activity (White et al. 1975; Pollard et al. 1996a). During any aerial survey, parasitic insects may or may not influence caribou distribution. For example, caribou often occur in large groups in non-vegetated areas along the coast or in riparian areas during severe mosquito harassment, but disperse to vegetated areas to forage when wind speed increases and/or temperature decreases. Because aerial surveys are snap-shots in time, caribou distribution is described under inconsistent weather patterns and varying levels of insect activity. Thus, it may be difficult to assess whether caribou are selecting for insect-relief or foraging habitats, or moving between these habitats. Additionally, results of the interval analyses should only be interpreted relative to the study area and should not be extrapolated to represent a population-level response by caribou to oilfield infrastructure.

Acknowledgements

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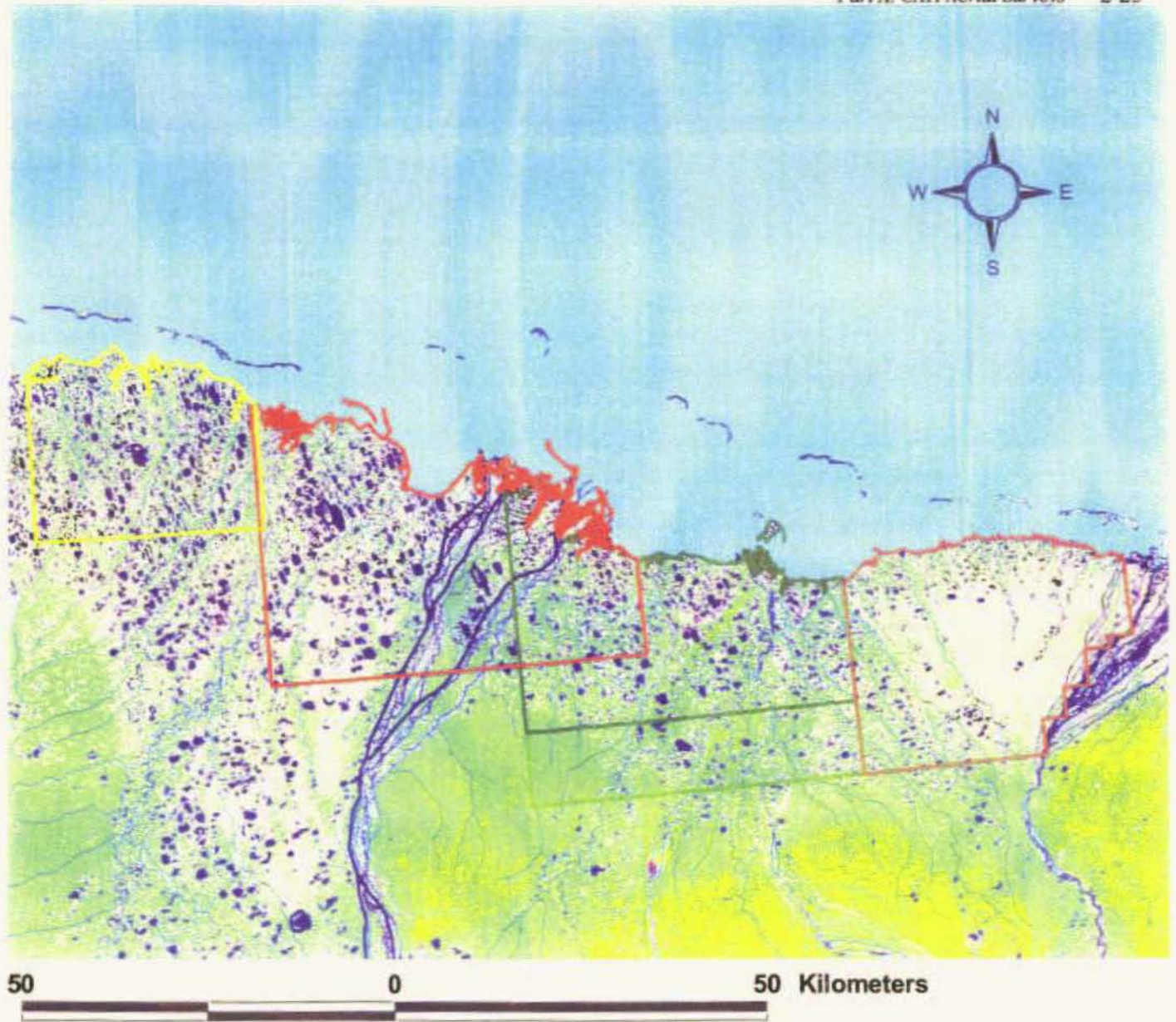
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STUDY AREAS		LAND COVER CLASSES	
	Milne Point Unit		Dry Prostrate-shrub and Barrens
	Prudhoe Bay Oilfield		Moist Graminoid, Prostrate-shrub
	Badami, Calving		Moist Dwarf-shrub, Tussock-graminoid
	Badami, Post-calving		Moist Low-shrub and other Shrublands
	Bullen-Staines		Wet Graminoid
			Water
			Clouds and ice
			Shadows
			Moist Tussock-graminoid, Dwarf-shrub

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Figure 1. Milne Point Unit (MPU), Prudhoe Bay Oilfield (PBOF), Badami, and Bullen Point to Staines River (Bullen-Staines) study areas for aerial surveys of caribou and other large mammals, 10 June – 2 August 2001. Background is a land cover classification from Muller et al. (1999).

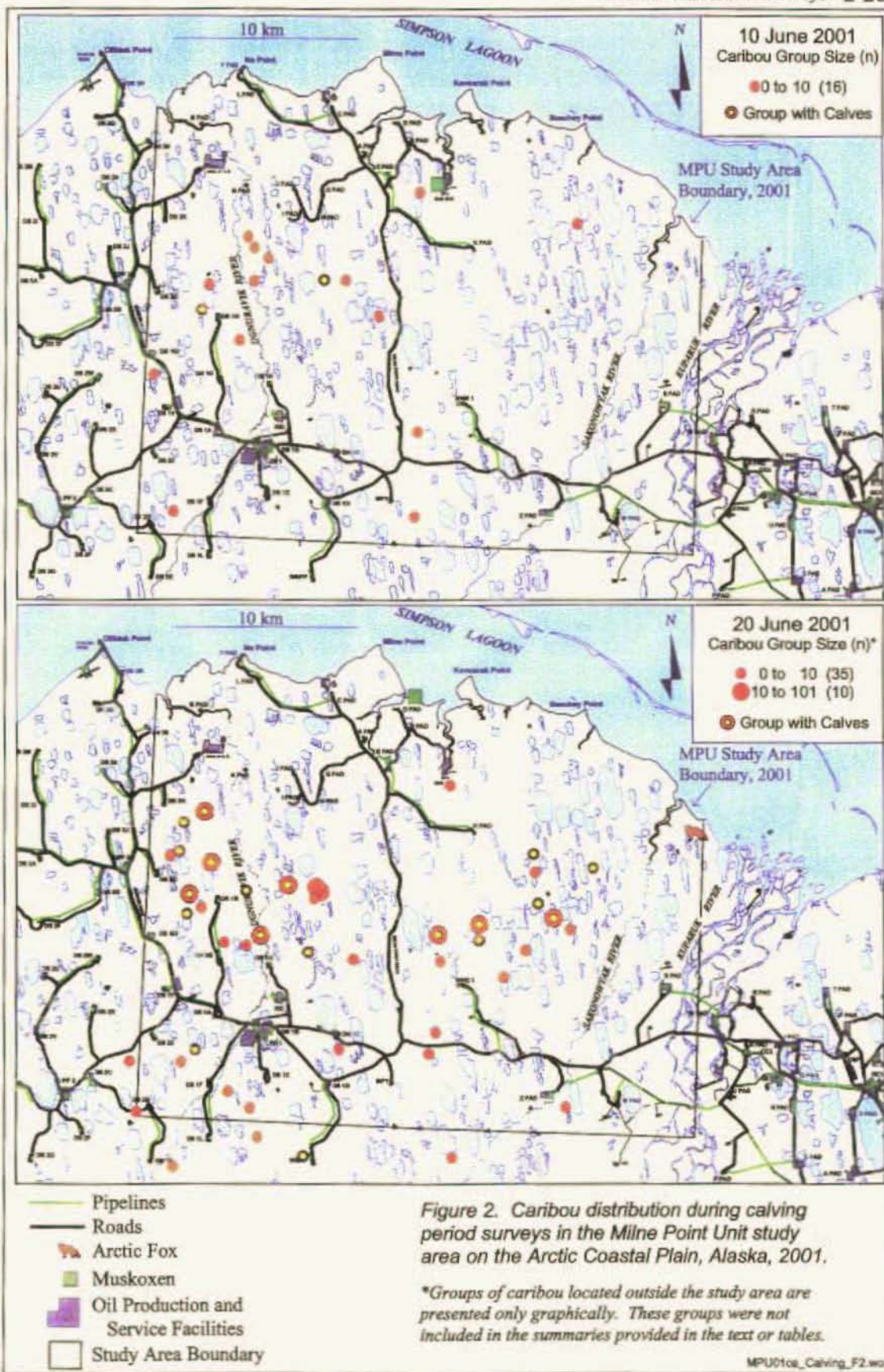
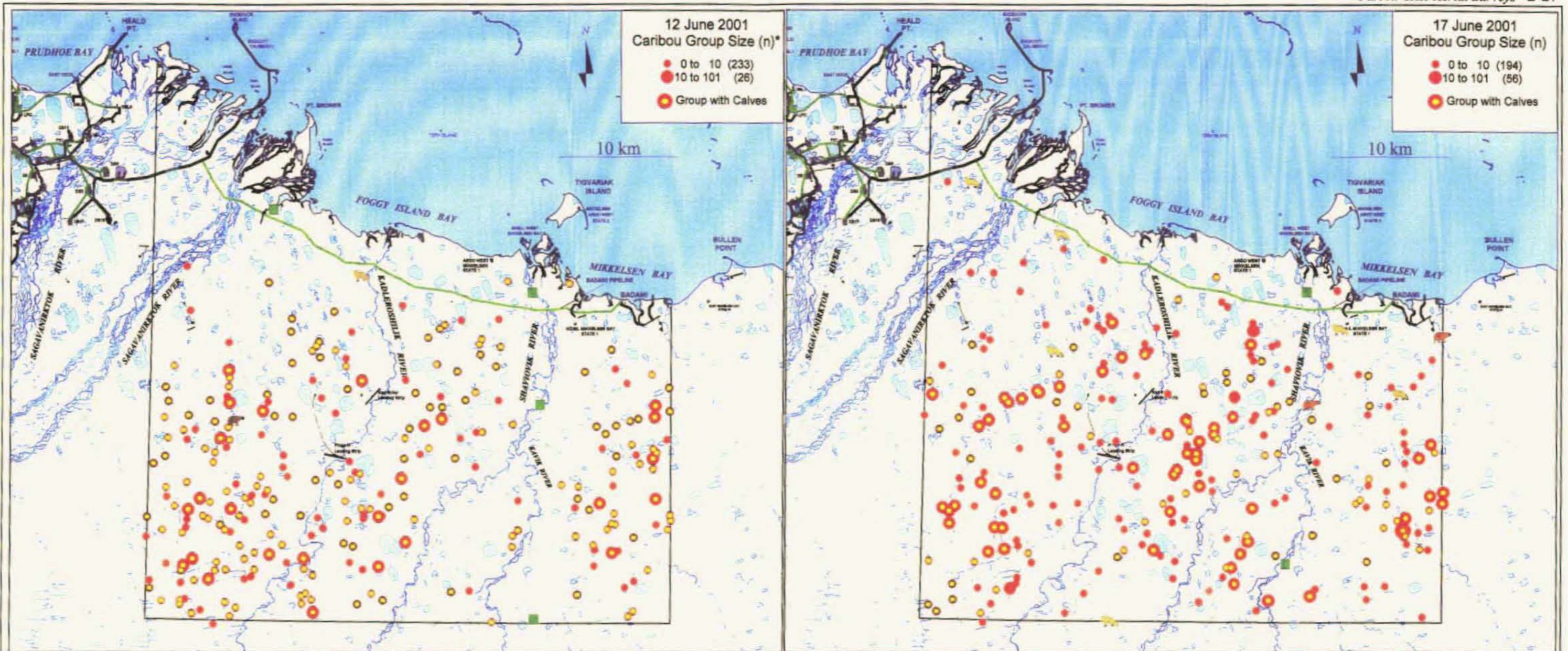


Figure 2. Caribou distribution during calving period surveys in the Milne Point Unit study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.

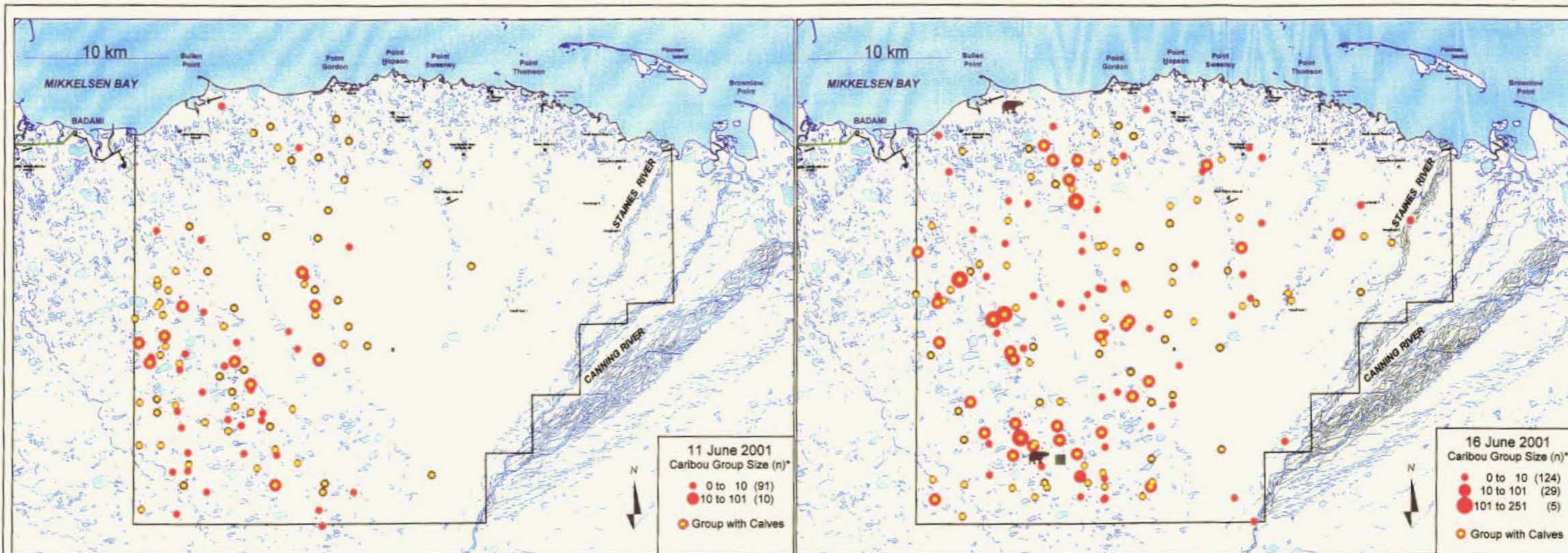


- Brown Bear
- Arctic Fox
- Muskoxen

- Pipelines
- Roads
- Gravel Production and Exploration Facilities
- Study Area Boundary

Figure 3. Caribou distribution during calving period surveys in the Badami study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.



- Pipelines
- Roads
- Oil Production and Service Facilities
- Study Area Boundary
- Brown Bear
- Muskoxen

Figure 4. Caribou distribution during calving period surveys in the Bullen-Staines study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.

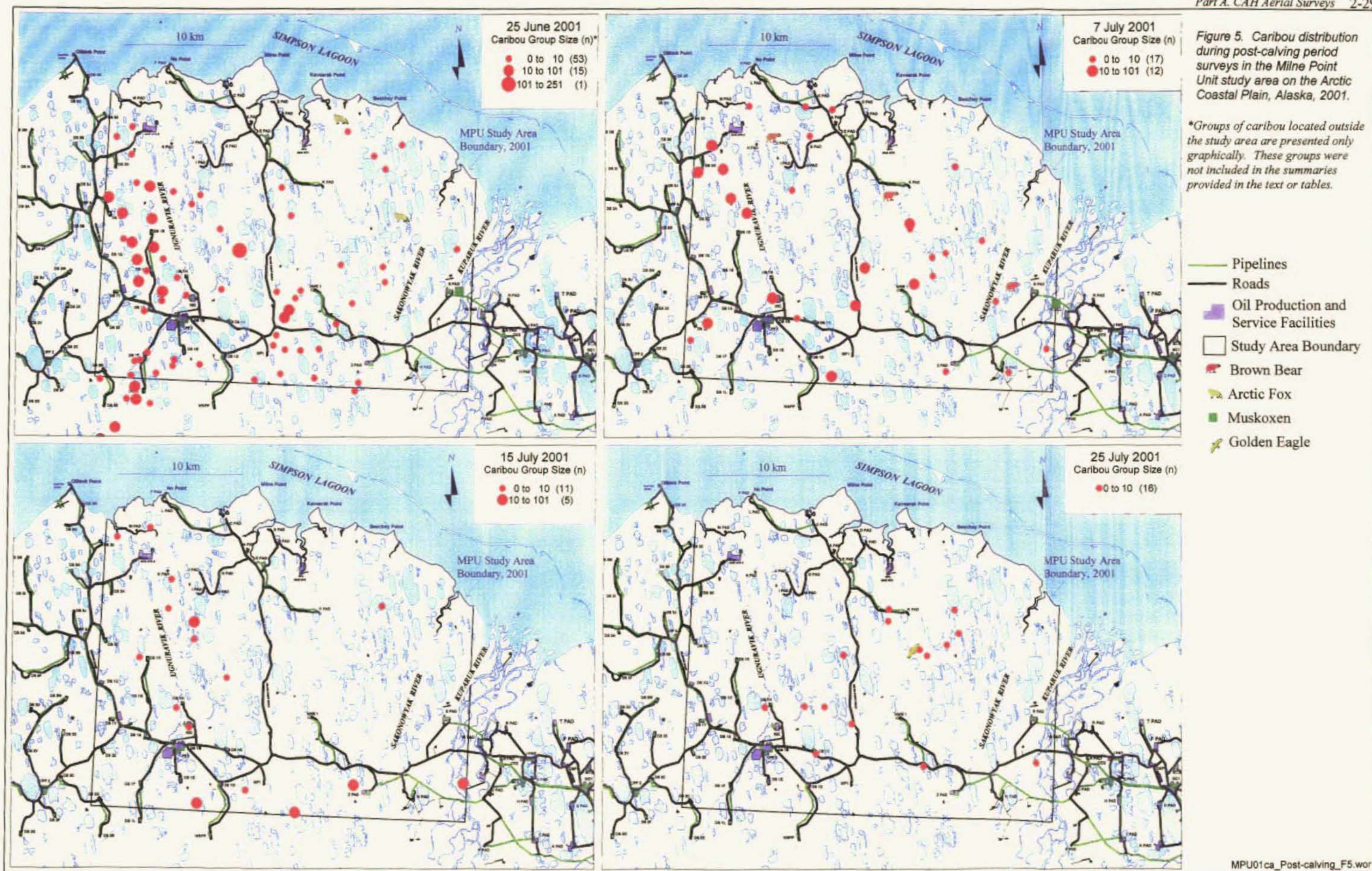
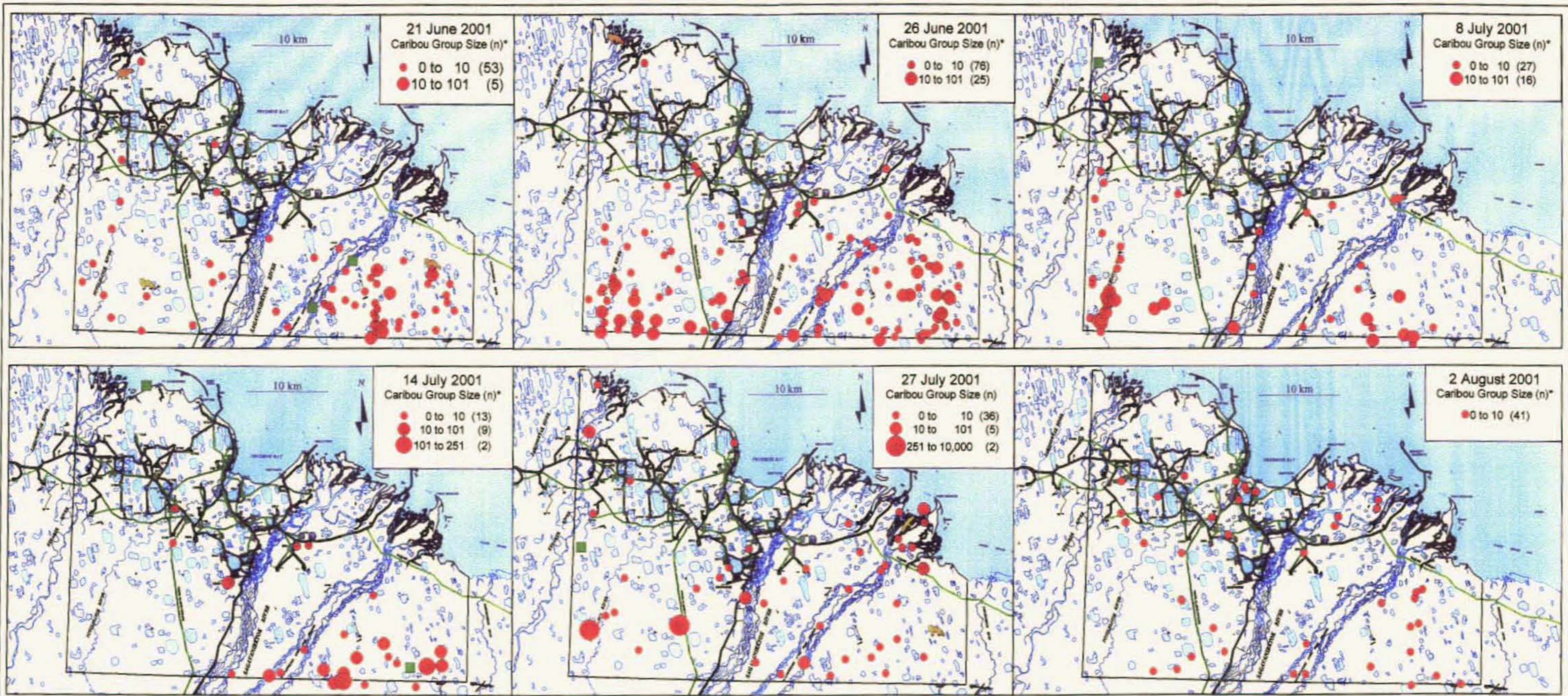


Figure 5. Caribou distribution during post-calving period surveys in the Milne Point Unit study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.



- Brown Bear
- Arctic Fox
- Muskoxen
- Golden Eagle
- Pipelines
- Roads
- Oil Production and Service Facilities
- Study Area Boundary

Figure 6. Caribou distribution during post-calving period surveys in the Prudhoe Bay Oilfield study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.

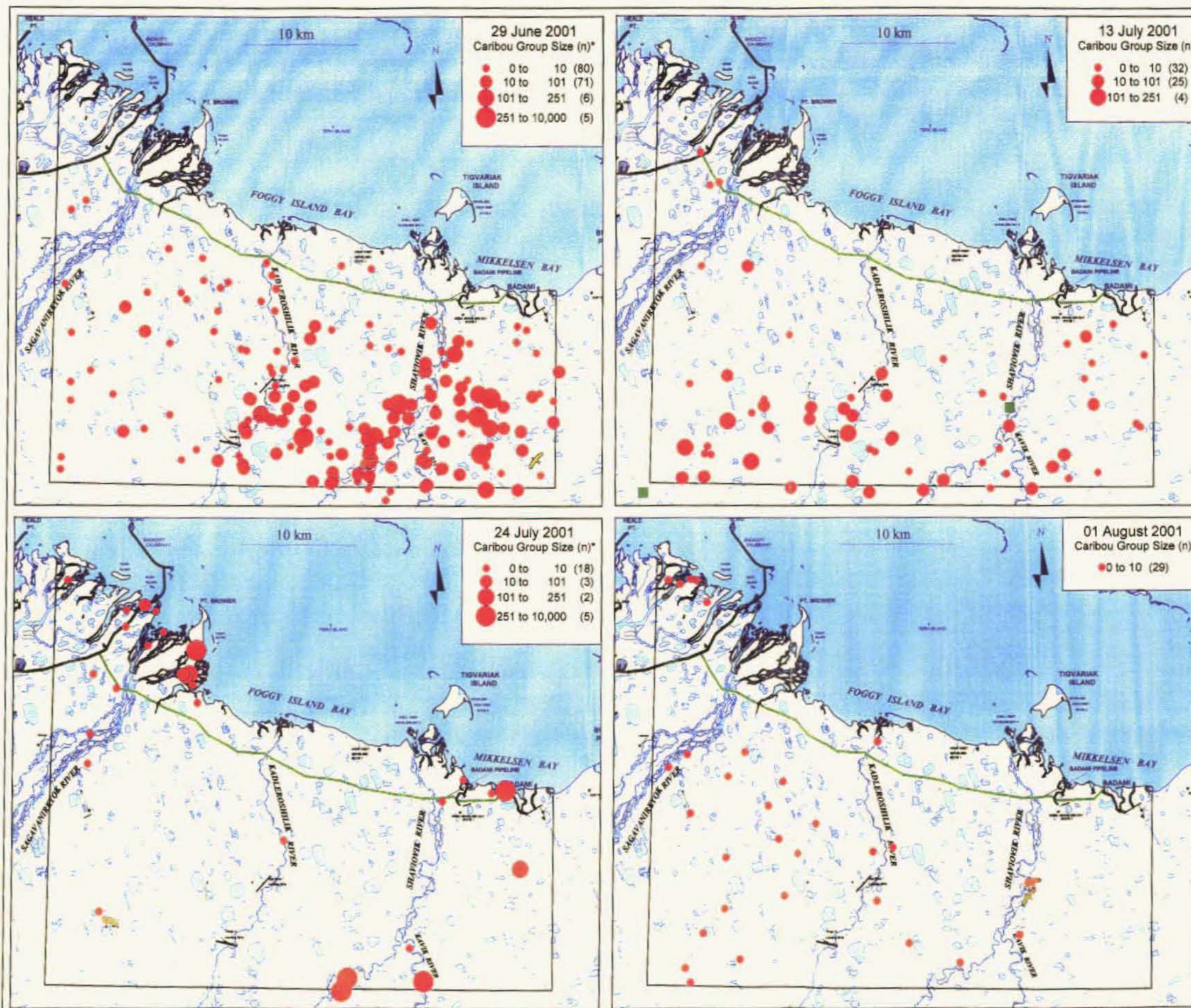


Figure 7. Caribou distribution during post-calving period surveys in the Badami study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.

- Pipelines
- Roads
- Gravel Production and Exploration Facilities
- Study Area Boundary
- 🐻 Brown Bear
- 🦊 Arctic Fox
- 🐃 Muskoxen
- 🦅 Golden Eagle

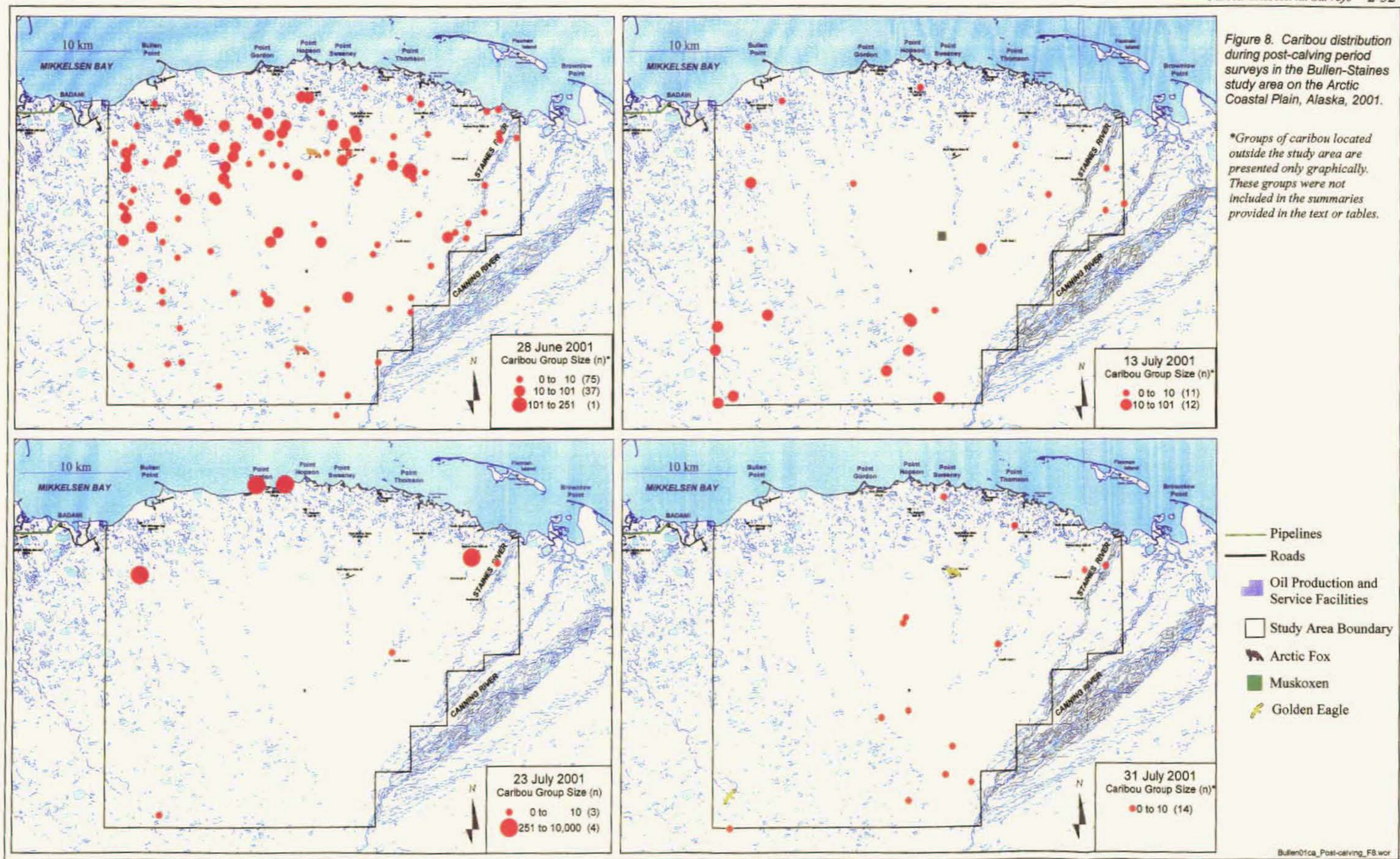


Figure 8. Caribou distribution during post-calving period surveys in the Bullen-Staines study area on the Arctic Coastal Plain, Alaska, 2001.

*Groups of caribou located outside the study area are presented only graphically. These groups were not included in the summaries provided in the text or tables.

