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**PROGRAM &  
ABSTRACTS**

## Arctic foxes at their southern breeding edge on the Yamal Peninsula, Russia

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We have conducted extensive Arctic fox monitoring at our long-term international field station, Erkuta, since 2007. The study area lies near the middle of the shrubby-tundra zone (bio-climatic subzone E), covering approximately 220 km<sup>2</sup>. Annually, we survey 50–75 dens, each has from 1 to over 30 entrances. Breeding litters were confirmed at 35 of these. Annual breeding den occupancy ranges from 0% (observed once, in 2008) to 47%, with an average litter size of 5.6 (range: 1–9). In late winter (late February to mid-April), we monitor Arctic foxes and other scavengers using 10 baited timelapse camera traps along a 50-km transect extending inland from Yamal's west coast. Camera data suggest a decline in Arctic fox abundance in recent years, while red fox detections show an increasing trend; wolverines remain stable at low numbers. Over 25 years of small rodent monitoring at Erkuta, we documented declining lemming occurrence—particularly the Siberian lemming (*Lemmus sibiricus*), last detected in 2011. Collared lemmings (*Dicrostonyx torquatus*) exhibit stable, low-amplitude annual dynamics. Voles (*Microtus* spp.) have remained relatively stable, though high-amplitude peaks have been absent in recent years. New species have emerged: the water vole (*Arvicola amphibius*) appeared in 2020 and is now detected annually at relatively high densities. As a low-Arctic site, Erkuta provides abundant alternate prey. Willow ptarmigans and snowshoe hares have increased since 2007 without steep declines or cyclic patterns. Together with diverse waterfowl (waders and ducks) and growing domestic reindeer herds—now experiencing frequent mass mortality events due to rain-on-snow—they form a rich food subsidy for foxes and other scavengers. These conditions likely facilitated red fox regular detections and breeding events since 2014. We aim that future research at Erkuta experiencing fauna borealization and growing human presence (both reindeer herders and hydrocarbon exploration) will quantify drivers of change affecting the local Arctic fox population. While Erkuta has site-specific peculiarities as with any field site, we believe that its location at the tundra ecotone and uninterrupted long-term dataset provide critical insights for researchers studying other Arctic fox populations across its southern breeding range, the first encountering borealization.

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