

Social-Ecological Transformations: HUMAN-ANIMAL Relations Under Climate Change in NORthern Eurasia (HUMANOR)

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Project Summary:

Climate warming will instigate societal transformations in the 21st century. The Arctic has undergone profound climatic fluctuations in past centuries, when indigenous Saami, Nenets and Evenki shifted from hunters to herders. People and wild or semi-domestic reindeer have maintained a constant presence in the northern taiga and tundra zones from Fennoscandia to Eastern Siberia. Some indigenous social-ecological systems (SESs) have proven resilient in space and time, yet most are considered at risk. With the Arctic warming faster than lower latitudes, there is an urgent need to increase our understanding of response capacities locally, regionally and internationally. This calls for a long-term perspective to place human-animal relations in their respective contexts. In recent decades and centuries drivers of social-ecological transformations have gone beyond climate variation to encompass land use change, governance institutions, legislation and markets. An ancient livelihood still practiced across vast areas of N Eurasia, reindeer herding is a nexus for feedbacks between humans, animals and environment. Truly integrative studies on societal transformation in reindeer-related SESs across several scales and sectors can provide key insights into humans as active agents or passive receptors of change. Comparative analyses in the post-WWII era are needed for innovative solutions to complex SESs experiencing multiple stresses. Even at low human population densities, large reindeer herds can alter ecosystem structure and function. Projecting future transformations requires the retrospective partitioning of: (1) socio-economic and political from climate drivers over decadal scales; and (2) human-animal agency from climate drivers over centennial scales. Robust analyses must: (1) be made in contrasting SESs across diverse geographic scales; and (2) account for heterogeneous

perceptions of risk concerning the future viability of reindeer herding in the European Research Area.