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TOWARDS SYSTEMATIC APPROACHES FOR INTERDISCIPLINARY GLOBAL CHANGE RESEARCH: THE ALAAS PERMAFROST SOCIO-ECOLOGICAL SYSTEM AS CASE IN POINT

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This paper describes the current state of the art in research on a particular permafrost-based ecosystem: the *alaas* (known as *alas* in Russian). Investigating alaas systems is particularly poignant today because they represent unique physical and sociocultural nexuses in the context of global change research. First, alaas are dynamic physical systems, highly sensitive to climate variability. This is due to both their arctic-subarctic latitude and their Central Yakutian permafrost landscape classification, a type of permafrost with relatively high permafrost temperatures, a deeper active layer, high ground-ice contents, landscape activity, etc. Furthermore, alaas are the foundation of the unique subsistence livelihood of Sakha, an agropastoralist people whose Turkic ancestors migrated to the northern climes in several waves at least 500 and perhaps as far as 800 years ago (Ksentofontov, Gogolev). Alaas, described as a circular lake bordered by hayfields that transition to taiga, proved the perfect conditions for Sakha horse and cattle breeding to flourish. Furthermore, Sakha increased pasture and forage areas and their productivity by manipulating the alaas—draining lakes for more area and also creating dams to hold water in dry periods and release it in wet. To this day, Sakha and other humans continue to utilise the unique conditions of alaas permafrost complexes for making a living. As humans do across the globe, they have learned to live with a highly changeable and changing landscape and, in turn, have also been agents of change in the landscape. However, the recent decades of rapid and extensive global climate alterations threaten the alaas land-use system in its entirety. Already many alaas are flooded, altered, etc., beyond their ability to rebound. This, in tandem with the local socioeconomic responses and effects of post-Soviet development and economic globalization further threatens the physical and sociocultural alaas complex.

Main Argument: Interdisciplinary investigations of the alaas ecosystem is critical to contemporary understandings of global change because of both the long history of human use of and interaction with the system for subsistence and also because of the high plasticity and dynamism of the ecosystem itself. Such investigation provides insight to the extent to which human, global and ecosystem change interact and interdepend.