

The Grasslands of Mongolia

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The vastness of Mongolia's sky and grasslands cannot be overstated; they present an expansive landscape of complexity, evolution, and history. During a research trip to Mongolia in the summer of 2013, I traveled from the northern forest steppe to the edge of the desert steppe of the Gobi Desert. I became fascinated by the myriad ecologies – specifically the dominant grasslands, their diversity and beauty. These legacy landscapes represent the co-evolution of humans and nature over thousands of years where nomadic pastoralism has been the dominant form of land management and way of life.



The grasslands of Mongolia are multifaceted, reflecting diverse climates, ecologies, and cultures across geographic gradients of precipitation, vegetation, and topography. Grasses have evolved under sustained grazing pressure from wild and domestic animals over thousands of years. 80 percent of the country is covered by grasslands where approximately 35 million horses, sheep, goats, cattle, and

camels graze. Local adaptations to Mongolian ecosystems across these environmental gradients have resulted in nomadic lifestyles and specialized grass species.

The integrated complexity of grassland, wildlife, and livestock reflect the long term relationship of nomadic pastoralism in Mongolia. Grasses evolved approximately 65 million years ago with specific adaptive traits that protect them from grazing animals. Many are high in silica, making them hard to chew and digest. Grasses generally grow from the base or “crown,” which is located near the soil surface, protecting the growth zone from grazers. The domesticated livestock of Mongolia – the “5 snouts” – were introduced by migrating people from areas that are now Russia, Kazakhstan, and China, beginning in the Bronze Age. Each species of grazer has their own adaptive mechanisms to take best advantage of the grasses, including unique mouths, teeth, and digestive systems. Camels prefer thorny plants and can store vegetative materials as water for long periods of time; cattle consume taller grasses; sheep and horses are considered selective grazers with the ability to graze close to the soil surface; and goats are browsers of multiple types of vegetation.

The relationship of land and livestock has always been linked to livelihoods, politics, and economies. Land management has spanned feudal, communist, and capitalist approaches over the rich and lengthy history of Mongolia where herding has been increasingly constrained. Local cashmere markets linked to the global economy have created pressures on the composition and number of herds, which has impacted pasture quality and community relationships. Mongolia has experienced a dramatic shift of rural to urban populations, leading to a decline in nomadic pastoralism practices nationwide. Changing land use, such as increasing urbanization and mining for precious metals, are further fueling social, cultural, and environmental transformations. The virtual world is evident in the network of cell towers and the presence of satellite television in many *gers* – the traditional tent structure of nomadic Mongolia.

While the Mongolian landscape appears timeless, nomadic pastoralism is threatened. Rapid societal change is occurring in a time where Mongolia is on the leading edge of climate change. Herd-killing *dzud* (severe winter storms) wreak economic havoc on the global market for cashmere and impact local economies for subsistence needs. Changing livelihoods, with herders leaving the grasslands, have resulted in a pattern of unemployment and poverty where alcoholism rates are three times higher than in Europe. A pattern of increased alcoholism in Mongolia started with the Manchus in the 1870s, followed by the Russians in the 1900s and economic liberalization in the latter part of the twentieth century. Alcoholism increased in urban areas because of the social upheaval associated with urban migration and manufacturing plant closures. During the long and unforgiving Mongolian winters, intoxicated people often freeze to death and the urban *ger* communities of Ulaanbaatar are littered with empty vodka bottles.

What is the future of nomadic culture in Mongolia? Significant change due to the intersection of climate, economy, and global culture have resulted in an increase in farming in Mongolia's countryside, absentee pastoralism, and a rise in tourist camps in well-outfitted *gers*. The importance of the cashmere trade cannot be overlooked and fuels an economic pastoralism linked to global demand, the national economy, and export earnings. These changes have resulted in different herd composition – more goats, fewer cows or camels – on grasslands that have evolved under conditions of heterogeneous herds. What are the implications of these changes for biodiversity, environmental sustainability, and cultural identity? Central to pastoralism has been mobility – the ability to follow good pastures, water supply, and markets across boundaries all based upon concepts of common resources. These activities have maintained the grasslands of Mongolia in ways that have facilitated complex landscapes and lifestyles adapted to the vagaries of rainfall and climate patterns. Pastoralism is a “quiet” system where the subtleties associated with management are inextricably linked to local knowledge of an extensive ecological and social network over time and place. The rhythm of the grasslands is connected to seasonal change and cycles of life and death no less dynamic than the virtual world. However, the temporal scale is out of sync with the instantaneous timeframe of global economies and virtual markets. The grasslands of Mongolia – these living legacy landscapes – have been molded by pastoralists and climate over thousands of years. This is the central question to consider as we face the increasing decline of pastoralism across the globe – the known and unknown contributions that grasslands and these specific livelihoods provide to the global commons of a healthy environment.