

GC33F-06 Divergences of Two Coupled Human and Natural Systems on the Mongolian Plateau (Invited)

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Central to the concept of coupled natural and human (CNH) systems is that humans and nature are organized in interacting sub-systems that make a cohesive whole at multiple spatial and temporal scales. Following an overview of the challenges in implementing the CNH concept at the regional level, we used widely available measures of states in the social, economic, and ecological systems, including gross domestic product, population size, net primary productivity, and livestock and their ratios, to examine the CNH dynamics on the Mongolian Plateau during 1981–2010. Our cross-border analysis of the coupled dynamics over the past three decades demonstrated striking contrasts between Inner Mongolia (IM) and Mongolia (MG), with policies playing shifting roles on the above measures. For prioritizing future research on the CNH concept, we propose the hypothesis that while the divergence of IM and MG for 1981–2010 was largely driven by market economic reforms, the importance of socioeconomic forces relative to climate changes will gradually decrease in IM while they remain important in MG.

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