MOR2 is a collaborative, interdisciplinary, research, education and outreach project that seeks to understand the impacts of climate change on Mongolian rangelands and identify the practices and institutions that build rural community resilience and improve rangeland sustainability.

The MOR2 Project was launched in 2011 with initial funding from the US National Science Foundation, the World Bank, and the USAID Livestock and Climate Change CRSP.

Your contribution can help support:

- High quality graduate training for Mongolian and US students at CSU to develop the scientific and problem-solving skills to address climate change and other natural resource challenges in Mongolia and around the world.
- Development of short-courses, on-line curricula and in-service training to improve and update the research skills of Mongolian scientists and practitioners.
- Creation of handbooks, videos, radio programs and other materials to communicate research results to herders and policy makers.
- Travel for herders and local government to participate in project workshops.
- Internships for students at Mongolian universities to participate in MOR2 training and field activities as part of their education.

Mongolian Rangelands and Resilience (MOR2)

Assessing Impacts of Climate Change on Mongolia’s Rangelands and Rural Communities

Linking Science and Action for Sustainability
### Mongolian Rangelands & Resilience Project

Mongolia’s grasslands cover 75% of its land area, and support globally important wildlife populations as well as a vibrant nomadic culture whose herds depend on the steppe for their sustenance. The average annual temperature in Mongolia has risen by 1.6°C over the past 60 years, one of the steepest increases on earth. Since the transition to a democracy and market economy in 1992, poverty in rural areas has grown from zero to over 35% of the population. As a result, herding families are increasingly vulnerable to severe climate disasters, such as the winters of 1999-2002 and 2009-2010, as well as volatility in world markets. At the same time, the number of livestock grazing Mongolia’s steppes has increased, leading to concern for the future sustainability of the steppes and the people and animals that depend on them.

To address these concerns, over 2000 herder groups have organized since 1999 to help empower and educate herders to manage their lands and herds more sustainably. This movement, called community-based rangeland management, is unprecedented in the world and offers an unparalleled opportunity to learn from the outcomes of grassroots collective action, and put this knowledge to work designing better policies and practices.

### Objectives

1. Assess the vulnerability of Mongolian pastoral systems to climate change
2. Evaluate the effects of community-based rangeland management on the resilience of Mongolian pastoral systems
3. Strengthen linkages between natural resource science and policy-making in Mongolia
4. Build the capacity of Mongolian and US scientists and students to analyze the dynamics of complex natural-human systems

### Project Significance

Sustainable use and stewardship of natural resources is essential to the long-term persistence of human societies and the natural world we inhabit. Understanding the interdependent behavior of social and natural systems and the factors that affect how these linked systems respond to sudden shocks or ongoing stresses is a major challenge for science.

Resilience is the ability of a system to absorb or adapt to change without altering its basic parts and functions. An important area of research, therefore, is to investigate the resilience of coupled human-natural systems in the face of major stresses, and to understand how environmental governance, including both formal policies and informal institutions, affects resilience. Theory suggests that local resource management institutions may contribute to resilience and enable communities to adapt more successfully to climate change, a major stress affecting earth today.

### Expected Outcomes

- Provide a rigorous and credible scientific basis for rangeland policy-making in Mongolia
- Identify successful strategies for adaptation to climate change
- Empower rural people to participate in scientific and policy dialogues that affect their futures
- Train researchers and decision-makers in interdisciplinary collaboration and problem solving
- Foster resilient communities and adaptive, accountable governance for the sustainability of Mongolia’s rangelands

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Herders discuss the impacts of the 2009-2010 dzud (severe winter) on their livestock and livelihoods.

Herders’ growing reliance on cashmere income makes them vulnerable to both market and climate shocks.

Herders learn to take pictures to document climate change impacts on their lives.

Herders discuss the impacts of the 2009-2010 dzud (severe winter) on their livestock and livelihoods.