

An International Workshop on Sustainable Management of Grassland Ecosystem in Semi-arid Regions

Hailar, Inner Mongolia, China

July 17-24, 2013

INTRODUCTION & WORKSHOP OBJECTIVES

The Northeast Asia region (NEAR) has been under two major pressures: regional climate change and intensified anthropogenic exploitation of fragile grassland ecosystems, which have significantly impacted the livelihood and environment of the region, resulting in a gradual shift from extensive nomadic grazing systems to confined feeding and modern cropping systems. Recent increases in energy demand have also escalated the commercial exploitation of natural resources, e.g., causing a spread of coal mining, resulting in unexpected socioeconomic and environmental consequences. The complexity of the coupled climate and human impacts on the grassland ecosystems and the livelihood of the locals make the region vulnerable to disturbances, as there is a lack of effective, balanced strategies to cope with increasing extreme climate events and social disturbances due to conflicting societal development.

A project titled “Joint Research on Advanced Techniques for Optimal Management of Grassland Ecosystems” was funded in 2012 to specifically address ecological issues resulting from grassland disturbances and management practices. It is within this context that the workshop is held to specifically examine ways to maximizing human benefits while preserving ecological values of grassland ecosystems. The objective of this workshop is thus to examine advanced technologies and options for optimal grassland management, including modeling of grassland production and carbon cycle at local and regional scale (GEO-Century, GEO-DNDC, Grassgro etc.), assimilation techniques with ecological and remote sensing data. The workshop will (1) summarize research progress of the project, (2) develop a more detailed work plan for the next year, and (3) discuss future scholar exchange and training plans.

The workshop is divided into two segments. The first one from July 17-19 focuses on presentations while the second one is a field trip to witness the changes in grassland ecosystems and practical issues that ranchers and local decision makers are facing.

THEMES

- Drivers and consequences of grassland ecosystem changes
- Modern tools and models of ecosystems assessments
- Management options and conservation strategies
- Low carbon economy and sustainability

ORGANIZATION COMMITTEE

Dr. Xiaoping XIN, CAAS, China,

Dr. Pavel Groisman, NEESPI Project Scientist, USA,

Dr. Jianguo Qi, Michigan State University, USA

Dr. Xu, Bonian, Low Carbon Institute of Inner Mongolia, China

Dr. Dennis Ojima, Colorado State University, USA

MAJOR VENUE: Hailar, Inner Mongolia, China

WORKING LANGUAGE: English

SPONSORS:

- Chinese Academy of Agricultural Sciences, China
- MAIRS Program
- Low Carbon Institute of Inner Mongolia
- Monsod Drought-Resistance, Inner Mongolia, China
- Xiao Wei Yang Livestock Technology Corporation Limited of Inner Mongolia
- Zhejiang University, China

WORKSHOP PROGRAM

PART ONE: *THE WORKSHOP*

Day 1, July 17, 2013

Morning:

- *Opening Ceremony* (Chair – Qi, Jiaguo)

08:30-08:45	Opening comments -Hulunber Municipal Government	HAO, Guijuan
08:45-09:00	Opening comments -International Cooperation Office of CAAS	JIN Ke
09:00-09:30	Overview of Grassland Management Research Project	WANG, Daolong
09:30-09:50	Update of NEESPI	Groisman, Pavel
09:50-10:10	Progresses of MAIRS	Ailikun
10:10-10:30	Tea Break	

- *Session 1: Ecological Processes of Grassland Ecosystems* (Chair – Qi, Jiaguo)

10:30-11:00	Biogeochemical Modeling of Grassland Ecosystems?	Ojima, Dennis
11:00-11:30	Pattern, Change and Control of Soil Organic Carbon Density from 1960s to 2000s in Inner Mongolia Plateau	XIN, Xiaoping
11:30	Lunch Break	

Afternoon:

- *Session 2: Modern Tools and Models of Ecosystems Assessments* (Chair – Ojima, Dennis)

13:30-14:00	Grassland Management Options for Optimal Ecological Benefits	Andrew Moore
14:00-14:30	Carbon Sequestration and Nitrogen Fate in Grassland with SPACSYS	WU, Lianhai
14:30-15:00	Impact Assessment of Ecological Conservation Policies on Herders' Livestock in Inner Mongolia Grassland Transect	ZHEN, Lin
15:00-15:30	Changes of NDVI-based vegetation growth trend in Mongolian Plateau and its responses to climate change during 1982-2010	BAO, Gang
15:30-15:50	Tea Break	

- *Session 3: Modern Tools and Models of Ecosystems Assessments* (Chair – Andrew Moore)

15:50-16:10	Remote Sensing Technologies for Grassland Carbon Storage and Grassland Degradation Monitoring	LI, Jianlong
16:10-16:40	DNDC+C-flux Validation, Assimilation, and Scaling up in Grassland Ecosystems	ZHANG, Zhao
16:40-17:10	Mongolia Case Studies Using Remote Sensing	Tsolmon Renchin
18:00	Dinner	

Day 2: July 18, 2013

Morning:

- *Session 4: Climate Change and Ecosystem Processes* (Chair:Ailkun)

08:30-09:00	Uncertainty Quantification of Land Surface Models Using Multi-flux Observations	DUAN, Qinyun
09:00-09:30	Modeling Carbon Sequestration under Changing Climate	Jain, Atul
09:30-10:00	Wind Erosion and Grassland Degradation	YAN, Yuchun
10:00-10:20	Tea Break	

- *Session 4: Climate Change and Ecosystem Processes* (Chair:Ailkun)

10:20-10:50	Contemporary Climate and Hydrological Changes in Northern Eurasia	Groisman, Pavel
10:50-11:20	Validation and Application of GrassGro Model in Hulunber Grassland	DUAN Qingwei
11:20-11:50	Grassland Carbon Sequestration and Cultivation Impacts in Hulunber Region.	XU, Lijun
12:00	Lunch Break	

Afternoon

- *Session 5: Human Activity and Ecosystem Responses* (Chair: Groisman, Pasha)

13:30-14:00	Vulnerability and Resilience of Grassland Ecosystems	Ojima, Dennis
14:00-14:30	Experiment of Grazing Gradient on Meadow Steppe in Hulunber	YAN, Ruirui
14:30-15:00	Influences of Land-Use on Carbon Efflux in Hulunber grasslands	WANG, Xu
15:00-15:30	Hulunber Grassland Ecosystem Research Station	XIN, Xiaoping
15:30-15:50	Tea Break	

- *Session 6: Management Practices and Ecological Consequences* (Chair – Yang, Zhi)

15:50-16:10	UK experience – the North Wyke Farm Platform	Phil / Wu, Lianhai
16:10-16:40	Mongolia Case Studies	Tsolmon, Renchin?
16:40-17:10	USA Case Studies	QI, Jiaguo
17:10-17:40	调整产业结构,打造企业航母	ZHANG, Fuli
18:00	Dinner	

Day 3, July 19, 2013

Morning:

- *Session 7: Grassland vulnerability and sustainable strategies (Chair: Wu, Lianhai)*

08:30-09:00	Introduction to Low Carbon Research Institute	WANG, Yan
09:00-09:30	Sustainability and Socioeconomics	YANG, Zhi
09:30-10:00	Carbon and Sustainability	WANG, Yan
10:00-10:20	Tea Break	

- *Session 7: Grassland vulnerability and sustainable strategies (Chair: Wu, Lianhai)*

10:20-10:50	Sustainability and Social Science	LIU, Zheng
10:50-11:20	Development of Mineral Resources and Ecological Protection of Xilinguole Grassland	ZHANG, Fenglan

- *Session 8: Roles of Enterprise and Private Sectors (Chair: Qi, Jiaguo)*

11:20-11:50	Low Cost Ecological Development	WANG Zhaoming
12:00	Lunch	

Afternoon:

- *Session 9: Discussions and Research Priorities (Chair: Qi, Jiaguo)*

13:30-14:30	Coupled Natural and Human Systems – A framework and Proposal	CHEN, Jiquan
14:30-15:10	Special Issue on: Social dimensions of Coupled Natural and Human Systems	Pasha
15:10-15:30	Tea Break	

- *Session 10: Publications (Lead: Wang, Daolong, Qi Jiaguo)*

15:30-16:30	Proposed Book on Sustainable Management of Grassland Ecosystem	QI, Jiaguo
16:30-17:30	Discussion of Summary Documents to be Reworked into Short Articles and Other Broadly Distributed News Letters.	QI, Jiaguo
18:00	Dinner	

PART Two: *Optional field trip*

- 7/20: Visit experimental sites at the Hulunber Grassland Research station, including a grazing experiment, long term observation sites, carbon cycle observations, field remote sensing experiments, and an artificial grassland experiment.
- 7/21 – 7/22: Visit Xinbaerhuzuoqi (2 days)
- 7/23: Visit Erguna
- 7/24: Return to Hailar