



## IGC-IRC 2008 Pre-conference workshop/tour



## Inventory, Assessment, and Monitoring of the Ecological Status of Rangelands: A Practical Approach

Workshop registration at <http://www.igc-irc2008.org/>

**Period:** 5 days - June 24 - 28, 2008

**Location:** Dalinor Lake National Natural Reserve, Keshiketeng Banner, and Grassland Ecosystem Research Station, Institute of Botany (CAS), Inner Mongolia (Xilinhot Airport is 1.5 hours). We will stay at a hotel in the Reserve near the lake surrounded by grasslands. We provide transport from Xilinhot to Dalinor June 22 and 23, and from Dalinor to Hohhot on June 28.

**Overview:** This workshop will provide participants with a practical, integrated inventory, assessment and monitoring approach based on the "ecological site" and "state-and-transition" approaches. It will include classroom presentations and daily field trips. Ecological sites allow grassland and rangeland managers to evaluate and monitor land relative to its unique potential, based on soils, landscape context, and climate. This information is used to adjust stocking rates, to decide where to control invasive species, manage off-road vehicle traffic and develop restoration strategies. The workshop will include an introduction to both qualitative and quantitative indicators of rangeland health based on the "Interpreting Indicators of Rangeland Health" and "Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems". It will also include techniques for stratifying the landscape and developing models of ecosystem change. Training materials and PowerPoint presentations will be provided in Chinese, English, Mongolian, and Spanish.

**Cost:** \$US 375 per person, including food, accommodation, and bus transportation from Xilinhot to Dalinuor and from Dalinuor to Hohhot. Xilinhot is easily accessible from Beijing by train and plane.

### Detail

- **Inventory.** The "ecological site" approach divides the land into units based on potential to produce similar types and amounts of vegetation. This depends on soils and climate. Workshop participants will learn how to stratify landscapes based on ecological potential, and to use state and transition models that describe the dynamics.
- **Assessment.** The "Interpreting Indicators of Rangeland Health" protocol assesses the status of three attributes (soil and site stability, hydrologic function and biotic integrity).

17 *qualitative* indicators (optionally supplemented by quantitative indicators) are assessed relative to unique standard for each ecological site. Workshop participants will learn how to apply this method anywhere in the world.

- **Monitoring.** The “Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems” is a “toolbox” of quantitative methods. Workshop participants will learn how to select the best methods to address the issues identified using the inventory and assessment protocols. Participants will also receive a copy of a simple Access database and field data entry system that generates automated reports.
- **Application to management.** Workshop participants will learn how the three tools can be used together to help managers to decide *where* and *what* management changes are necessary.

## **Agenda**

***(Participant transportation from Xilinhote to Dalinor at XXXPM on Monday, June 23)***

### **Tuesday, June 24**

8:00 Registration

8:30-9:30 Introductions and brief workshop overview

9:30-11:30 Ecological sites and state and transition models (classroom)

11:30-12:00 Ecological site system used in China (Guodong)

12:00-1:30 Lunch

1:30-6:00 Field – ecological site and state identification

### **Wednesday, June 25**

8:30-11:00 Qualitative assessment of rangeland health (classroom)

11:30-12:00 Supplementary quantitative indicators for qualitative indicators

12:30-2:00 Lunch

2:00-6:00 Field introduction to 17 indicators and quantitative measurements (includes ecological site identification)

### **Thursday, June 26**

8:30-6:00 Field Rangeland health assessment (2 locations including ecological site identification)

### **Friday, June 27**

8:30-10:00 Quantitative indicator for monitoring selection based on assessments and state & transition models

10:00-11:00 Review

11:00-12:00 Application to livestock management

1:30-6:00 Field rangeland health assessment and application to management (1-2 locations including ecological site identification)

### **Saturday, June 28**

Travel to Hohhot via bus through several of Inner Mongolia’s ecosystems, including several stops. Participants will discuss how methods presented during the workshop would be applied to these areas.

## **Languages**

English - Translation and simultaneous PowerPoint projection in English, Chinese, and Mongolian.  
Chinese translation - Training materials will be available in Chinese, English, Mongolian, and Spanish (see below).

## **Training Materials:**

All participants will receive the following at no charge:

- Training manual (book): Interpreting Indicators of Rangeland Health, Version 4 (English)
- Compact disk that includes the following:
  - Pellant et al. 2006. Interpreting Indicators of Rangeland Health, Version 4 (Chinese (all), English, Mongolian (part or all?) and Spanish)
  - Herrick et al. 2005. Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems (English, Spanish)
  - Rangeland Database and Field Data Entry System (English – requires Microsoft Access)
  - Training video for quantitative methods
  - Scientific papers describing the approach

These materials are also available at:

[http://usda-ars.nmsu.edu/JER/Monit\\_Assess/monitoring.htm](http://usda-ars.nmsu.edu/JER/Monit_Assess/monitoring.htm)

## **Workshop organizers**

USDA ARS (Agricultural Research Service)  
USDI BLM (Bureau of Land Management)  
Chinese Grassland Monitoring Center  
Inner Mongolia Agriculture University  
Inner Mongolia Monitoring Center  
USDA NRCS (Natural Resource Conservation Service)  
USDI USGS (United States Geological Survey)

## **Workshop instructors**

Brandon Bestelmeyer is a rangeland scientist at the USDA-ARS Jornada Experimental Range in Las Cruces, New Mexico. He has developed strategies for the creation of ecological sites and state and transition models which are being implemented by the USDA Natural Resource Conservation Service (NRCS).

Maria Fernandez-Gimenez is a professor in rangeland ecology at Colorado State University. She has published on Mongolian rangelands and is a leader in the integration of Local Ecological Knowledge into rangeland assessment systems.

Guodong Han is a professor in the Department of Grassland Science at the Inner Mongolia Agriculture University in Hohhot, Inner Mongolia. He has been conducting rangeland management research for more than 20 years and has collaborated with several ecological site-based inventory, assessment and monitoring projects in the region.

Kris Havstad is the supervisory scientist at the USDA-ARS Jornada Experimental Range in Las Cruces, New Mexico. He has been conducting rangeland management research for more than 30 years and has extensive experience with livestock production and monitoring systems throughout the world.

Jeff Herrick is a rangeland scientist at the USDA-ARS Jornada Experimental Range in Las Cruces, New Mexico. He is a co-author of "Interpreting Indicators of Rangeland Health" and the "Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems".

Mike Pellant is a rangeland scientist with the Bureau of Land Management (BLM) in Boise, Idaho where he directs the Great Basin Conservation Initiative and is based in Boise, Idaho. He is a co-author of "Interpreting Indicators of Rangeland Health".

George Peacock is the Grazinglands Team Leader at the NRCS Central National Technology Support Center. He has been instrumental in the integration of new tools and technologies for inventory, assessment and monitoring of US rangelands.

David Pyke is a rangeland scientist with the USGS Forest and Rangeland Ecosystem Science Center in Corvallis, Oregon. He is a co-author of "Interpreting Indicators of Rangeland Health" and recently developed a protocol for post-fire monitoring of rangelands.

Pat Shaver is a rangeland scientist with the USDA Natural Resource Conservation Service in Corvallis, Oregon. He is a co-author of "Interpreting Indicators of Rangeland Health".and has extensive conservation planning experience.

#### **Additional field instructors**

George Peacock and Homer Sanchez are rangeland scientists and Dennis Thompson is the national program leader for rangelands for the USDA Natural Resource Conservation Service (NRCS).

Tamzen Stringham is a professor at Oregon State University in Corvallis, Oregon. She has contributed to the development of state and transition models and teaches a number of courses on rangeland ecology and management.

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