



Our Vision for LTER

- 1. The LTER network will contribute crucial information toward answering the most important questions in ecology today and in the future
- 2. LTER will continue to provide strong and insightful leadership in science infrastructure.
- 3. LTER will play an increasingly important role in the incorporation of scientific information into national and international decisions





Our Vision

- *The LTER network is uniquely positioned to contribute to the future of ecological science and national/international environmental policy:*
 - long term research and monitoring lead to different kinds of understanding and more relevant information for policy makers than shorter term data
 - cross-site, network-oriented science products lead to the development and testing of generalizations/theories about ecological structure and processes



Our Vision

- *We are only beginning to reap the benefits of the long-term experiments and measurements and cross-site synthesis activities.*
- *The contributions of LTER over the next decade will be of a different character and magnitude than those of the past decade and a half as we begin to realize these returns...*



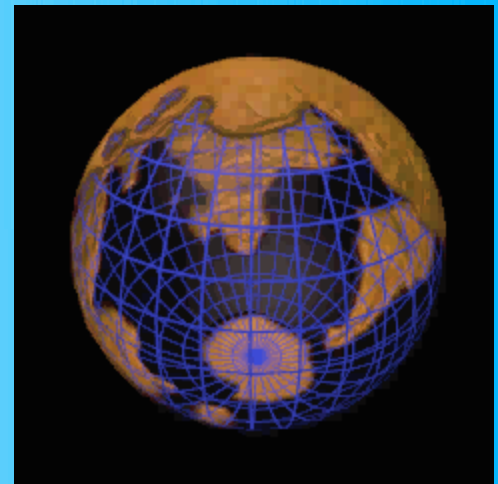
What ARE the most important questions of the discipline today?

And how is LTER positioned to answer these questions?



How will climatic change and enhanced nitrogen availability alter ecological structure and processes?

- Long-term measurements are underway;
- Cross-site syntheses are being planned to address this question with respect to:
 - Climatic variability
 - Biological diversity
 - Carbon storage/biogeochemical cycling



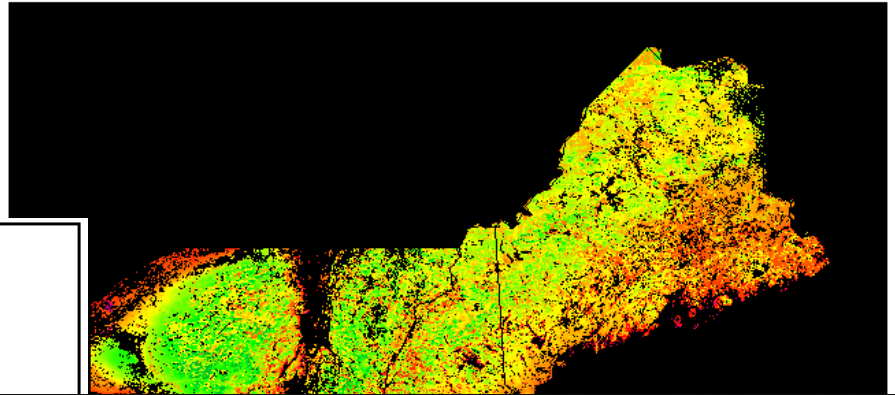


What are the local and regional-scale consequences of disturbances -- including human landuse -- on ecological structure and processes?

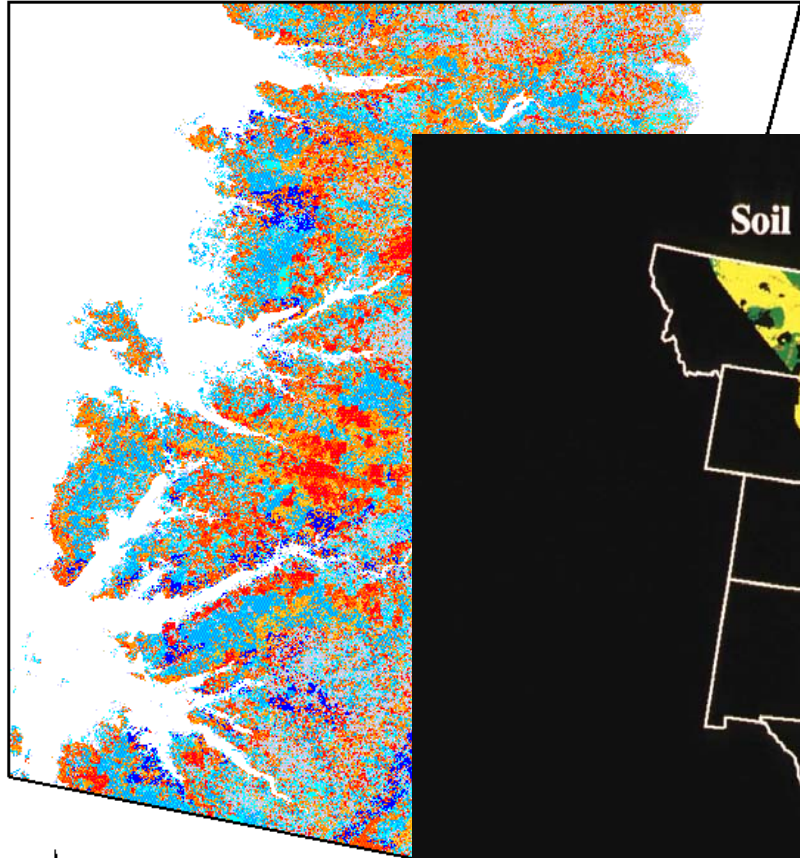
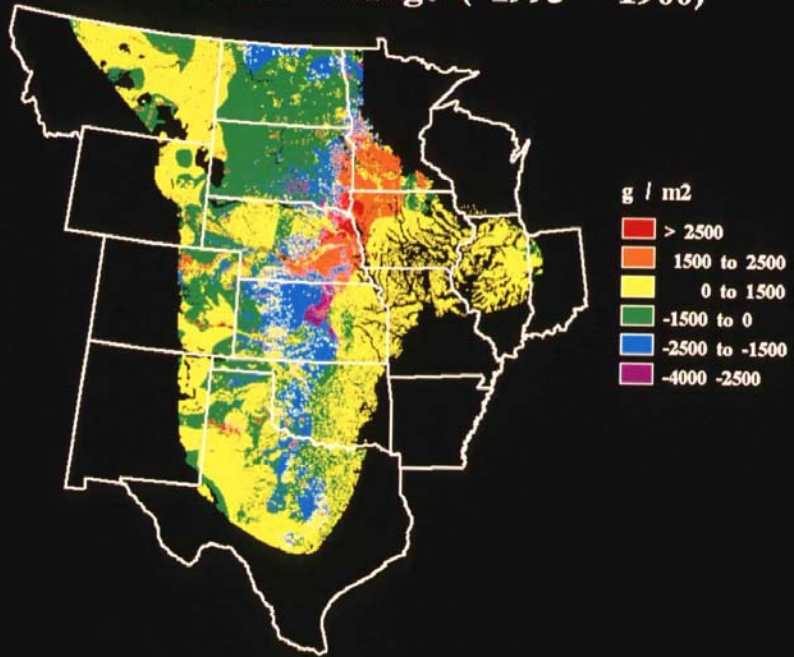
- Long-term, regional scale analyses are underway;
- Cross-site syntheses of disturbance and regional-scale responses to human activities are being initiated



Annual Net Ecosystem Production



Soil Carbon Change (1995 - 1900)



0 20
Kilometers

Other
□ Nonforest

What are the crucial interactions
between social/cultural/economic
processes and ecological
processes?

Are there tractable theories and
predictable relationships?



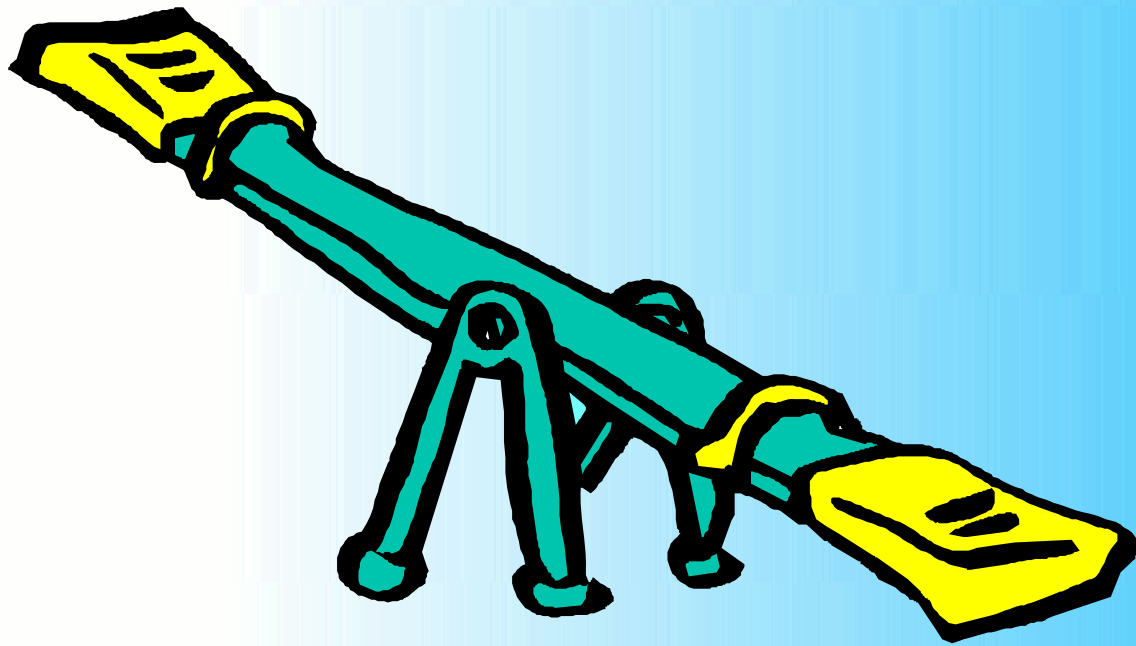
Socio-economic linkages

- LTER sites are beginning to incorporate social sciences: our vision is that these linkages with social sciences will continue to grow.
- New long term data collections are underway, with synchronous measurements of human and ecological processes.
- Our vision is that new cross-site syntheses will be developed.



The crucial questions of the future

Long-term monitoring
and measurements



Hypothesis-driven
research:
Long term
experimentation on
the current crucial
questions



Future Scientific contributions

- Insightful long-term measurements provide the opportunity to address the unknown, important questions of the future.



Long-term Intensive Measurements

- Current measurements at sites in core areas and other, site-specific indicator variables
- Initiation of Microbial Observatories
- Intensive Environmental Measurement Sites

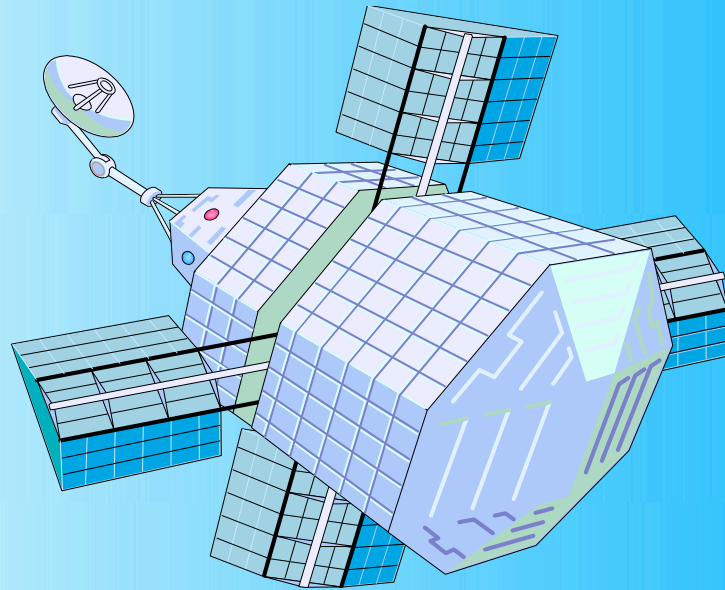


2. LTER will continue to
provide strong and insightful
leadership in science
infrastructure



LTER will lead the ecological community in the application of new technologies to long-term ecological problems

- Use of hyperspectral, high-resolution satellite imagery;
- Use of eddy covariance techniques to estimate trace gas emissions;
- Genetic probes for determinations of biological diversity...



New tools facilitate new kinds of observations, and so new kinds of science

No, tools don't drive the science!



Education:

- LTER will lead the community in linking ecological research and educational initiatives

Doing Science in your Schoolyard

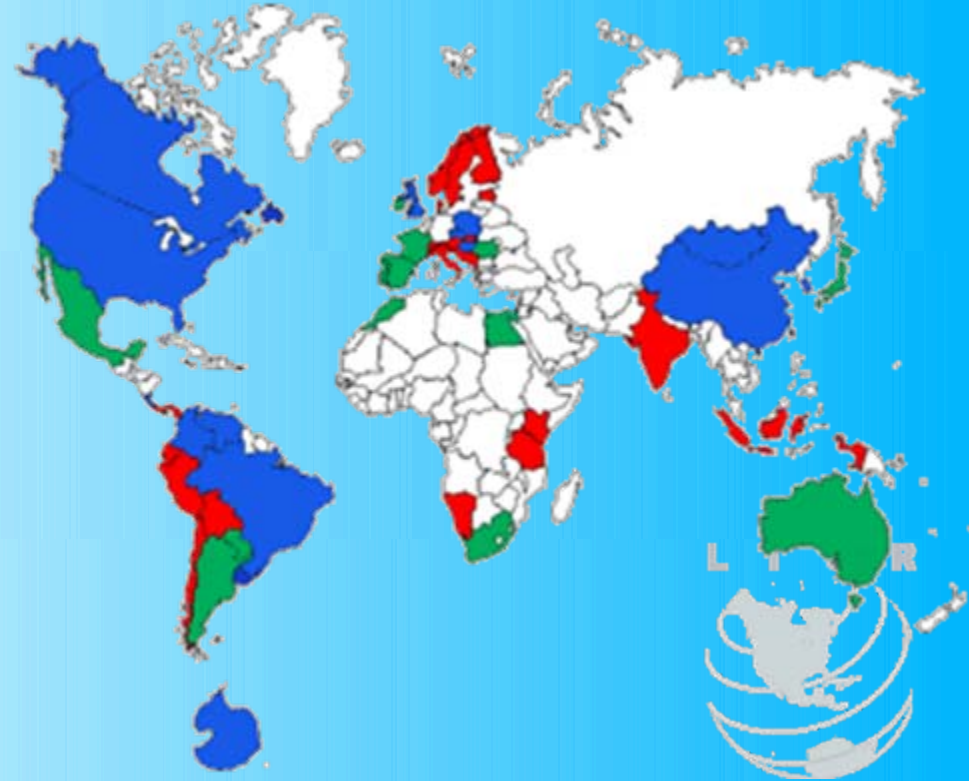


ILTER



LTER will continue to lead the community in building ecological networks

- LTER will build more links among long-term ecological research sites and scientists in the U.S. and throughout the world, to facilitate science and global research perspectives



Leadership in data archiving and management

- LTER will lead the community by developing network level information systems
 - *Technological leadership*
 - *Leadership of culture*



3. LTER will play an important role in the incorporation of scientific information into national and international decisions



How will LTER facilitate the USE of this information?

- Increased exposure of our science through
 - Aggressive outreach efforts by network office personnel with expertise (Patty!);
 - Current strong and increasing connections with mission-oriented federal partners;
 - A Chair who actively promotes LTER results in national and international arenas;
 - Increasing recognition by P.I.s that this is an important role.

