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Long Term Ecological Research - Reports

Long Term Ecological Research (LTER)

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11-1986

### **Coordinating Committee Meeting, Denver, Colorado, November, 1986**

Long Term Ecological Research Network

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LTERR Coordinating Committee Meeting  
November 8-9, 1986  
Denver, Colorado

MINUTES

ATTENDEES: Pat Webber, John Magnuson, Don Kaufman, Dak Crossley, Bob Hodson, Fred Swanson, John Vernberg, David Tilman, Bill Lauenroth, Bob Woodmansee, Jerry Franklin, Tom Callahan, Frank Harris, John Brooks, and Judy Brenneman

ECOLOGICAL REPOSITORIES: John Magnuson

We need to be utilizing museums to store samples from the LTER studies. How are the sites proceeding along these lines? Could we possibly hold a workshop including systematics and ecological community to discuss what needs to be done to store/save samples. One problem is finding museums with staff that can maintain samples after they are gathered. The cost of maintenance is also a problem. Magnuson will pursue details (also write up for newsletter).

CONDUCT OF WORKSHOPS: Walt Whitford

Guidelines need to be developed on how to successfully run a workshop. Before funds are approved by the Coordinating Committee it should be proven that the organizers are following the guidelines. Two and one-half days should be a maximum length for workshops. Workshops should be required to produce a "product". Whitford will draft guidelines to circulate among the CC, with the potential that it be included in the newsletter.

Jerry Franklin: The next CC grant will not have its central focus on workshops.

NSF BRIEFING:

See attached material on the briefing.

NEW LTER PROPOSALS: Tom Callahan

As of the deadline, 11-3-86, 20 proposals have been received from sites wishing to become LTER sites. One-to-three more are expected. The proposals will be reviewed by a special panel of 10-12 individuals (a couple from existing LTER's will be included). There will be no ad hoc review. At the end of February or the first of March some proposed sites will be visited. Selection will hopefully be made by the first of August, with funding to begin October 1, 1987. No definite figure for funding has been decided. Breakdown of site types submitting proposals: 2 tundras; 7-8 agro; 2 tropical; 4 wetlands; 3-4 forests; and 1 lake.

NSF COMMENTARIES: John Brooks

Five years ago NSF started a new kind of grant (long-term, coordinated with other sites). Implicit goal: develop integrated comparative study of ecosystems, going one step beyond what was established during IBP (which established large-scale ecosystem studies).

What were major achievements during past 5 years? Responses to this question that were sent to NSF (Callahan requested in earlier letter) should be shared between sites. Please send copies of your response to the other 10 sites.

Perceptions of LTER. Ours: business at our own sites. John's: high hopes in position to move ecosystem science to new level. Elsewhere in NSF (Kingsberry): viewed as big biology.

Concern expressed that by 1990 we demonstrate that we can do something. NSF has spent \$15 million dollars on eleven sites during the past five years and now are asking "What have we gotten for it?" Need to develop an approach to comparative ecosystem analysis. Must have a "definite" result each year. NSF is willing to put \$60K each year into the CC award to buy 6 months of senior investigators time to develop a product. Only with definite, step-by-step goals, will we accomplish this. The National Science Board feels that there is not enough NSF control over LTER projects and their coordination. There is widespread interest in LTER -- Great Britain, Germany, etc. -- and we don't have any products to show them!!

In 1990 the whole program needs to be assessed to see if its worthwhile, and if we are getting unique results that could not have been obtained in another way. By 1990 we need to incorporate greater time spans, and demonstrate comparative capability. Should be geared up to include larger spatial dimension as well - landscape level.

#### BIOSPHERE OBSERVATORIES:

Future has caught up with us, and we are faced with an enormous challenge. LTER sites could be the Biospheric Observatories on the North American continent.

#### NEWSLETTER:

CC feels positive about the newsletter. Will need an editor in addition to Judy Breneman, and someone to choose lead articles. See attached sheet with list of what is to be included in the first issue.

#### IGBP BRIEFING (Global Change Program):

Question - Is this group prepared to attempt to take a leadership role in the IGBP program? After discussion, the general opinion is that we should take as much lead as possible. Bob Woodmansee is prepared to devote a large portion of time to putting together a program on where we are and how to use that and expand to a global scale.

#### OTHER ITEMS:

Plans are proceeding with establishment of a Long-Term Research section in the Ecological Society of America.

Plans for the next all-scientist meeting are on hold. South Carolina and Colorado are both under consideration.

Next meetings are: January 24-25, 1987 in Albuquerque, New Mexico  
May 14-15, 1987 in Washington, D.C.

AGENDA ITEMS AT THE LTER COORDINATION COMMITTEE MEETING IN DENVER  
COLORADO ON NOVEMBER 8-9, 1986

1. Ecological repositories (Magnuson)
2. Conduct of workshops (Whitford)
3. Callahan comments on the new round of LTER solicitations
4. NSF perspectives on the LTER program (Brooks)
5. Newsletter concept
6. IGBP Briefing (Woodmansee)
7. Planning for the next public briefing in Washington DC
8. Development of a section on longterm research in ESA
9. Next LTER proposal; all-scientist meeting
10. Supplement to existing grant to support work in CY 1987
11. Miscellaneous
  - a. Production of meteorological standards
  - b. Patten proposal
  - c. CSU modeling workshop
  - d. Date of next meetings: Jan. 24-25 in Albuquerque  
May 14-15 in DCy

11/9/86  
Outline

### LTER NETWORK NEWS ISSUE 1

8 printed pages, double column format (?), 6000-7000 words.  
(One double-spaced page estimated at 300 words)

1. Lead scientific article. Achievements during the first five years of the LTER program (based on project achievement statements). Callahan. 1500-2000 words.
2. Editorial. Outlines purposes of the newsletter, outlines the kind of material that we expect to include, invites contributions or comments on the contents. Magnuson. 300 words.
3. NSF column. [Developing geosciences initiative in NSF] Harris. 300 words.
4. Introduction to LTER, i.e., what is LTER. Outlines objectives of the program and briefly identifies and characterizes the LTER sites. Weber. 500 words.
5. LTER publications of interest (with paragraph length capsule summaries. 500 words total.
  - a. Data management book Franklin
  - b. Meteorological standards Franklin
  - c. Role of groundwater Magnuson
6. News from each LTER site 11 x 300 words = 3300 words
  - a. Accomplishments at site/in program
  - b. Personnel changes
  - c. Positions available
  - d. Other items of interest
7. Calendar of activities--upcoming meetings Brenneman
  - a. LTER CC meeting May 24-25, 1987
  - b.
8. Short report on plans to develop long-term research section in Ecological Society of America 300 words. Franklin.

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Proposed lead scientific article for issue #2 is a report on the IGBP initiative by Woodmansee

Short communication on ecological repositories from Magnuson

Communication from Whitford on running workshops?

DEVELOPMENT OF MATERIAL FOR THE PUBLIC BRIEFING ON THE LTER PROGRAM PLANNED FOR NOVEMBER, 1987

The strategy for this session will be to demonstrate the relevance of the LTER research programs and sites to issues associated with global change.

The global issues about which we are thinking include:

- Climatic change (temperature, CO<sub>2</sub>, ocean levels)
- Biological diversity
- Genetically engineering organisms
- Maintenance of global productivity
- Pollutants
- Water quality, including groundwater

We will develop a series of papers which will identify important ecological components of these problems and demonstrate, through use of selected examples, how LTER and lter-like science is essential to their solution.

These papers will become the basis for a published volume and will, in some form, be the basis for the presentations. A principle in the verbal presentations will be simplicity; simple, clear identification of the key idea that we want the audience to hear and carry away with them.

Audience will potentially include: personnel from agencies such as Forest Service, Bureau of Land Management, Fish & Wildlife Service, National Park Service, NASA, DOE; NSF staff; Nat. Science Board Members; representatives of private foundations; congressional staffers; Nat. Academy representatives; selected embassy scientific attaches; and other invited members of scientific community (e.g., key people asso. with IGBP).

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Topics which are being considered for inclusion

Themes throughout: importance of spatial/temporal issues/concepts  
Use of system analysis, modeling, remote sensing, GIS  
Importance of landscape (larger scale perspectives)  
Inclusion of ecosystem, population, physiological, landscape etc perspectives in the LTER program

I. Introductory paper

Scopes out some of global issues, introduces LTER network and program, identifies our roots (e.g., IBP) but makes clear that LTER has moved beyond older style of ecosystem science.

## II. Productivity

LAUENROTH

Maintenance of site productivity. Spatial patterns of productivity at several scales. Regional/Local/small scale patterns

Productivity is not uniformly distributed in space and time and why it isn't. How our view of productivity is scale dependent.

## III. Biosphere X atmosphere interactions. GOSZ, Schmiel, Swank, R. Harris

Role of plant canopies in inputs of materials into system. Importance of condensation, precipitation in material cycles--water, nutrients, pollutants.

Spatial patterns in the scale of the interactions--cloud forests, etc.

Trace gas fluxes and the importance of organisms in these fluxes methane, other nitrogenous gasses, sulfurous gasses

## IV. Disturbance and change. Dynamics of ecosystems FROST

Dynamics of change in ecosystems. Time lags. Major aperiodic disturbances in ecosystems. Complexity, importance of time view.

The essentiality of longterm view points and data in interpreting disturbance and change in ecosystems.

## V. Soil/sediment dynamics SWANSON, Parton, Garadner, Whitford

Importance of soil organic matter and sediments and sinks and sources of CO<sub>2</sub>. Erosion and transfer phenomena at the landscape level. Soil OM model CSU as organizing device.

## VI. Heterotrophic controls on ecosystem processes Whitford, Sesteadt, HODSON, Magnuson

Importance of heterotrophs in controlling key ecosystem processes. The essentiality of considering animals and microbes in any consideration of global issues.

Examples from lakes, terrestrial grazing systems, functions of microbes.

## VII. Biological diversity MAGNUSON, TILMAN, KAUFMAN, Franklin

Fragmentation, critical sizes and shapes of reserves, maintenance of system structural and functional features.

Genetic impoverishment, unseen changes resulting in losses of future options, inadapt selection, alteration of selective/mutative

processes

Bioengineered organisms (TILMAN)

VIII. Aquatic x terrestrial interactions      KRATZ, SEDELL, Bowser,  
   Williams

Surface waters. Interfaces between land and water.

Groundwaters. The link between surface waters and the oceans.  
quality of groundwaters. Role of groundwater in supply to lakes,  
effects such as in delay of acid rain effects.

IX. Geosphere      SWANSON

Landforms variety of scales  
What landforms tell us about processes  
e.g., lake productivity, river X floodplain interactions

X. Summary paper      WOODMANSEE

Synthesis incorporating the above material. A Science article to  
be complete about the same time as the symposium is held  
providing convincing overview of how science, as carried out at  
the LTER and similar sites, is relevant and essential in  
addressing the global issues