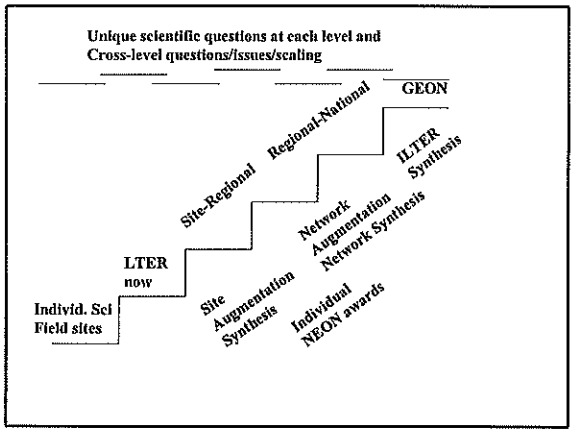
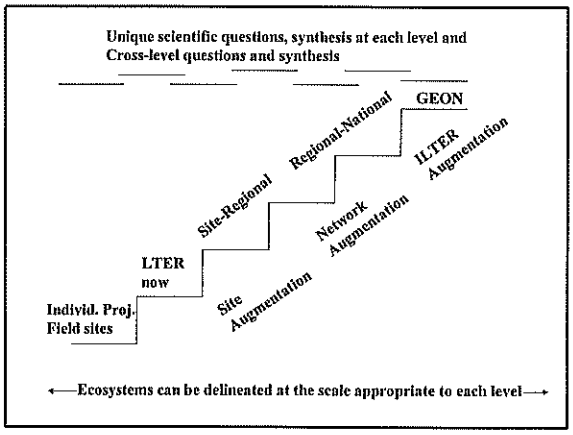
*1. Intellectual Goals of the Network (Hayden, Shaver)
   Questions for X-site synthesis, interdisciplinary collaboration
   What is our niche?
2. Primary Activities essential to site and network function
   Monitoring, modeling, informatics, synthesis,
      experiments, standing committee efforts, management,
      communication, etc.
*3. Core Areas revisited (Grimm, Gosz, Waide)
   What does a core area do?
   Should they be changed or expanded?
   Do we organize the network by core areas, questions,
      interdisciplinary collaboration?
4. Funding Strategy, other directorates?
*5. Appropriate balance between site and network priorities
   (Knapp, McCartney)
   Strategies for Synthesis
   Facilitating Network Science and synthesis through
      information management (NIS)
6. Network Governance

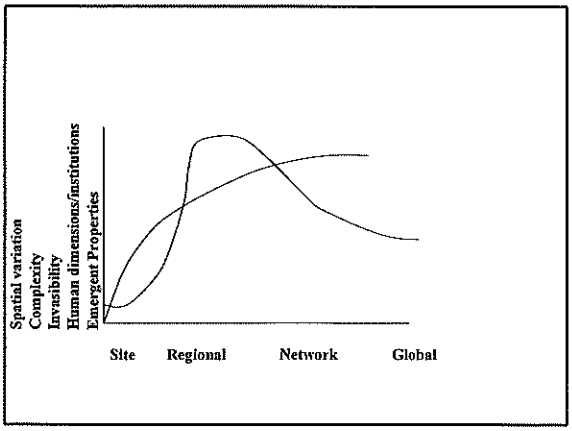
Working Group Charge:
Develop material for the Coordinating Comm. and Exec. Comm. to use to formulate a response to the 20-yr review, and propose next steps to NSF (including budget). Additional group meetings may be required to develop a full strategic plan

For each group;
First ½ hr brainstorming
Next 1 hr, split into two subgroups to evaluate and write up consensus points

Plenary session will allow 10 minutes for each group to report back. These oral reports should concentrate on 2-3 primary points







Agenda

7:05 NAB membership (Gosz)
7:15 All Scientist's Meeting status (Waide)
7:45 2003 CC meeting in Alaska status (Chapin)
8:15 EC election (Gosz)
8:45 Next, annual Science Theme at NSF in Feb. (Gosz)
annual CC mtg. Theme(s) (Gosz),
proposal with NCEAS on synthesis (RCN)
Research Coordination Networks (Waide)
9:30 ILTER activities (Gosz)
Canada Mtg. (new members)
Network Office proposal for funding
Baltic States effort (Waide)
European LTER Network (Gosz)
China ILTER annual mtg. (4 US speakers
On theory, methodology and applications for
Ecosystem Management)
9:45 BioScience articles/status (Hobbie)

8:00 Twenty Year Review (Gosz/Waide)
Strategic plan development, budget development
Preparation for the.Exec. Comm. meeting at NSF in Feb.
Working group formation
10:00 break
10:15 Working groups if needed
11:15 Increasing the rate of synthesis and network-scale publishing (Waide)
11:30 NIS working group/oversight committee effort (McCartney)

NAB Membership

Bartuska, Ann	abartuska	
Firestone, Mary	mfirestone	
Heal, O.	oheal	
Krishtalka, Leonard	lkrishtalka	
MacMahon, James	jmacmahon	
Murdoch, Bill	bmurdoch	
Pulliam, Ron	rpulliam	
Risser, Paul	prisser	
Robbins, Robert	rrobbins	
Sharitz, Rebecca	rsharitz	

All Scientist's Meeting (Waide)

2003 Science Meeting, Alaska (Chapin, et al.)

"Climate Disturbance Interactions"

schedule

Aug. 16 EC arrive Fairbanks
Aug. 17 EC mtg., CC arrive Fairbanks
Aug. 18 Science Theme
Aug. 19 CC mtg. (morning),
Bonanza tour (afternoon)
Aug. 20 travel to Toolik
Aug. 21 CC business meeting (morning)
field trips (afternoon)
Aug. 22 travel to Prudhoe airport/Anchorage, evening departure for lower 48 or departure the following morning

EC election

Nominated:
Dan Childers
John Hobbie
Chuck Hopkinson
Gene Kelly

Science Theme for NSF Feb. meeting ?

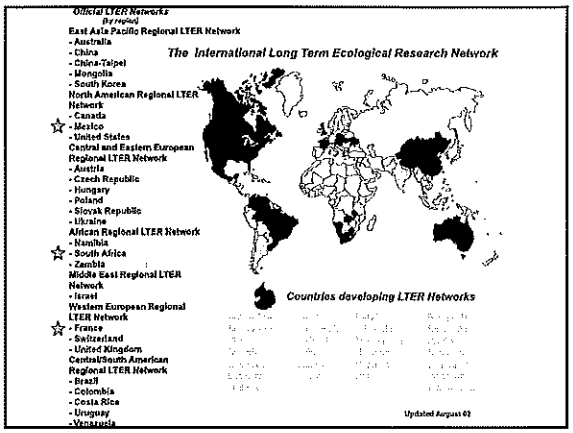
"Invasive Species Theme from fall mtg."
"Biogeochemistry"

Annual CC meeting Theme(s)

2005

"DOM dynamics in freshwater and coastal systems" (Childers)

Research Coordination Networks (RCN) proposal (Waide)

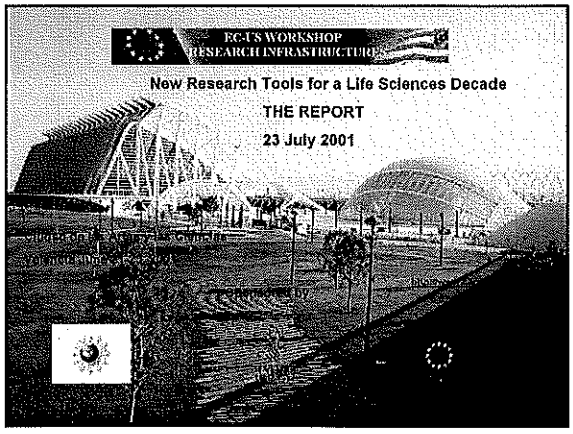


ILTER Developments

Net Office Proposed funding (Waide)

Baltic States Effort (Waide)

European LTER Network (Gosz)



Preamble

Many of today's major societal and scientific concerns are intimately related to the Life Sciences, including especially health, the environment, and the preservation of biodiversity. Life Sciences are helping to provide solutions to the problems we are facing: preservation and sustainable management of the environment, conservation of biodiversity, prediction of global changes, new therapies and preventive health strategies, and safer and more abundant food.

Moving across scales - The circle of Life Sciences

There is an evident added value in moving across scales of complexity and integrating the knowledge already achieved in the different levels. Life Sciences must be capable of building new understanding on higher scales from smaller ones and vice-versa.

Modelling life, compiling gene functions, or assessing the planet's status are all challenges that require the integration of knowledge from the nano-scale to the ecosystem. Integrating scales of complexity and interfacing among the Life Sciences will be the research paradigm for the next decade.

Those grand objectives may be exemplified by the formulation of three major initiatives addressing those goals:

- **The Model of Life**
- **The World Genome Annotation Project**
- **The Global Ecological Observatory Network**

ALTER-EUROPE

An LTER-Network for Detecting, Forecasting and Managing Change in European Socio-Environmental Systems

- To create a European Network of Long Term Ecosystem Research (LTER) sites, based on existing national programmes and practical network design principles, to implement long-term policy-relevant monitoring, research, modelling, assessment and forecasting of ecosystem vulnerability to global change across Europe
- To integrate the study of ecological and human dimensions of environmental change in order to better understand and manage the integrated socio-environmental systems concerned, and in particular to determine the relationship between governance and sustainable development
- To develop an integrated information system and clearing-house linking distributed data-bases to enable data exchange between LTER scientists and delivery of information products to users across Europe

- To analyse and compare data from a network of sites in order to identify, quantify and better understand natural and man-induced environmental changes and to provide a sound basis for adaptive management and policy development
- To harmonise observational and experimental programmes across Europe, to exploit existing comparable long-term data-sets and generate new ones, to identfy ecosystem vulnerabilities and to deal with them sustainably
- To improve the relationship between the science and the policy-making communities and to enhance the synergy between research and policy-making
- To spread excellence in LTER through the expansion of the network to cover new countries, ecosystems and biogeogrphical regions across Europe.

ILTER annual meeting, Beijing, China, Sept. 2003

"Theory, Methodology and Applications for Ecosystem Management"

(4 US speakers)

BioScience Issue Status (Hobbie)

8:00	Twenty Year Review (Gosz/Waide) Strategic plan development, budget development Preparation for the.Exec. Comm. meeting at NSF in Feb. Working group formation
10:00	break
10:15	Working groups if needed
11:15	Increasing the rate of synthesis and network-scale publishing (Waide)
11:30	NIS working group/oversight committee effort (McCartney)

Twenty-Year Review

Site-based Perspectives

vs.

Network Perspectives

Although site-specific research should remain strong and focused, the LTER program needs to seize opportunities to develop broader, more network-level experimental frameworks and include other networks and agencies in their design and implementation.

The LTER program is caught in the tensions of a cultural shift from historically independent sites to collaborative systems. For individuals and the network the tensions reside between core areas and new ideas, between site-level and network-level activities, and between resources and expectations.

The transition from individual site-based research and science projects to a broader, more integrative research platform has not been sufficient to address large-scale, interdisciplinary environmental issues.

Although NSF has supported a number of inter-site and synthesis science activities...,the level and nature of this support are perceived by the LTER community as not being sufficient, consistent, or focused enough to meet expectations.

Where does the LTER program fit into the overall science landscape—what is its niche? How can LTER sites best contribute to our long-term understanding of the ecology of the country? Which complex questions in ecology and environmental biology is the LTER program best suited to address? Which areas...will benefit from a networked and systems approach, which won't?

...establish the scientific niche of the LTER program. What are the scientific priorities of the LTER enterprise? Which complex questions in ecology and environmental biology are best addressed by the network? What larger mission will those questions serve?

Once determined, LTER's scientific niche and priorities will drive strategic planning and decisions governing LTER research, education, personnel, resources, infrastructure and organization.

...A comprehensive strategic plan for the LTER enterprise...must define the LTER program's vision and mission; scientific priorities, goals and the strategies for achieving them; timelines with outcomes and milestones; governance and organizational structure; and a budget that aligns resources with these elements.

...plan must tie the LTER program's scientific priorities, goals and structure to a realistic budget...the enhanced budget should be invested in the strategies discussed...21st century biology and achieving systems level science and ecological forecasting.

...the first and fundamental strategy must be the organization of LTER research *a priori* by hypotheses and theory, with networked data acquisition, analysis and testing by predictive models across broader and broader phenomena.

...LTER synthesis science should adopt and make systemic the components of 21st century biology, including the investigation of complex ecological phenomena using cross-domain approaches and interdisciplinary, collaborative teams.

...the LTER program should become a research collaboratory, namely, a seamless, integrated continuum from site-specific to cross-site to network- and systems-level ecological research.

...the "white paper" identifies *strategies* not what the major scientific questions to be answered should be. Missing is a clear exposition of what synthesis science LTER should accomplish—what should the scientific focus, niche and priorities of the LTER program for the next decade.

..."white paper" is not a strategic plan, falling far short of identifying scientific goals and priorities for the next decade and tying them to a real budget, timeline or accountabilities—justifying the requested doubling of the LTER budget.

...essential that the incorporation of new scientific disciplines, technologies and tools be focused by LTER's scientific priorities for synthesis across knowledge domains...what kinds of of essential LTER research are now not possible because other scientific disciplines (e.g., genomics , mathematical/computational modeling) have not yet been incorporated?

...the comprehensive strategic plan must describe an LTER governance and organizational structure that is as adaptive and unifying as the science it will be asked to enable in the next ten years.

...Planning this structure should be informed by models from other enterprises and by experts from academia, government and the private sector....must specify the locus of authority to implement the strategic plan and manage the LTER program, and it must describe a mechanism for developing governance policies.

...plan should describe a governance and organizational structure appropriate to the goals, scope and scale of the LTER program in the next decade of synthesis science...informed by models from other enterprises and by experts in academia, government and the private sector.

...should not be prisoners of history—not feel constrained by the current LTER governance and organizational structure in developing the strategic plan..past structure might no longer be adaptive for ecological forecasting...

Critical questions:
•Are the 5 cores still the right ones?
•Criteria, theory, scientific bases for selecting, maintaining or modifying the core areas?
•What justifies continued investment in the existing core areas?
•Do existing core areas best serve the specific research questions targeted for synthesis?
•Do core areas enable or hinder incorporation of new tools, paradigms and concepts?
•Are core areas still a useful, viable principle for organizing LTER research?

...could the LTER program develop a strategic plan for nimble responses to appropriate disturbance events by a cadre of trained scientists?

...new sites should not be added until such expansion is justified in the strategic plan...such expansion should be strategic and synoptic.

...the LTER program should expand internationally by building on its collaborations with the ILTER enterprise.

...achieving synthesis science requires that biological diversity be designated a new LTER core area...

Informatics be established as a core function...

...schoolyard LTER should increase its reach and impact by leveraging funds now allocated to individual sites...pool their Schoolyard supplements to develop a suite of modular "suitcase" education programs that target particular biotas, habitats and public issues and that can be used by groups of sites or across the network.

...outcomes of Schoolyard programs should be formally evaluated to inform appropriate growth and improvements.