1 Executive Summary

The LTER Network is comprised of 26 sites funded by NSF to conduct fundamental research on ecological patterns, processes, and interactions within and among major ecosystems of the U.S. and beyond. More than 1500 scientists at LTER sites are collectively engaged and dedicated to multi- and interdisciplinary long-term research in environmental science. A Network Office facilitates LTER research by supporting and coordinating collaboration among sites.

The collective vision of the LTER Network is a society in which exemplary science contributes to the advancement of the health, productivity, and welfare of the global environment that, in turn, advances the health, prosperity, welfare, and security of our nation [alternate text: …of the global environment, thereby advancing human well-being].

The mission of the Network is to provide the scientific community, policy makers, and society with the knowledge and predictive understanding necessary to conserve, protect, and manage the nation's ecosystems, their biodiversity, and the services they provide. Six goals follow:

- **Understanding**: to understand a diverse array of ecosystems at multiple spatial and temporal scales;
- **Information**: to inform the LTER and broader scientific community by creating well-designed and well-documented databases;
- **Synthesis**: to create general knowledge through long-term, interdisciplinary research, synthesis of information, and development of theory;
- **Legacies**: to create a legacy of well-designed and documented long-term observations, experiments, and archives of samples and specimens for future generations;
- **Education**: to promote training, teaching, and learning about long-term ecological research and the earth’s ecosystems, and to educate a new generation of scientists; and
- **Outreach**: to reach out to the broader scientific community, natural resource managers, policymakers, and the general public by providing decision support, information, recommendations and the knowledge and capability to address complex environmental challenges.

Progress in achieving the LTER Mission begins with the work of individual scientists and educators at individual sites. It is work at the site level that forms the foundation of knowledge, data, observational and experimental legacies, and training that will ensure a lasting impact of the overall LTER program. Data and knowledge gained from intensive field experience are also
key to developing cross-site syntheses that allow the development of new theory and predictions of long-term change and responses to human and other disturbances. Site-level synthesis activities often lead to new insights that feed back to affect the future course and evolution of site-level research.

Long-term research demands long-term data. The creation, curation, and dissemination of long-term databases are needed to assure that the data resources needed by researchers will continue to be available. By adopting policies that promote the timely sharing of data (both inside and outside the LTER Network), scientists can use the data in a variety of ways not anticipated by the original collector, including regional, national, and global syntheses, thus providing a rich resource for the broader scientific community.

Many ecological phenomena change at decadal to century and longer time scales, and it is essential to maintain experiments and observations across periods appropriate to the questions addressed. The orderly transfer of experiments and interim results from one generation of scientists to the next requires a research design and setting that allows for multiple samplings (some unanticipated), long-term protection from competing uses, and meticulous documentation of experimental protocols. Also essential is a means to store protocols and observations in a manner that is secure and consistently accessible to the scientific community.

The LTER approach to research, coupled with the ability to implement long-term educational initiatives, allows for unique approaches to training of future researchers and to learning and teaching ecological concepts. Evaluating and disseminating this approach through the involvement of graduate and undergraduate students, postdoctoral and international scientists, K-12 educators and students, and the general public will help ensure the success of long-term ecology in the future.

Increasingly, LTER research is finding applications in the work of federal, state, and local agencies that manage environmental resources. The synoptic and detailed knowledge of individual LTER sites, and the opportunities for multidimensional comparisons among sites, also represent significant opportunities for informing other decision makers as well as scientists in other disciplines. Knowledge from this breadth of views permits LTER scientists to identify and anticipate new issues and challenges, test existing ideas about causation, and help provide the science that underpins the processes of open, participatory and forward-looking decision-making.

ISSE research for coming decade. (to be abstracted from section 2 when finished)

Human capital. (to be abstracted from section 3)

Outreach (to be abstracted from section 4)

IM (to be abstracted from section 5)
Relationship to other observatories. (to be abstracted from section 6)

1.1 LTER Network Management

The LTER network currently consists of 26 sites, and is governed by a Science Council that delegates authority for most business matters to the Executive Board. A National Advisory Board provides external advice, and a Network Office performs a variety of tasks that support network operations. The details of network governance are spelled out in the LTER network bylaws (revised 5/2008), which are posted on the LTER intranet.

The scientific direction and vision of the LTER Network is established by the Science Council. The Science Council is composed of a Chairperson, a Chair-Elect (when active), the Lead Principal Investigator from each LTER Site, the Chair of each Standing Committee, and the Executive Director of the Network Office. The Science Council has ultimate authority for all decisions affecting the Network. Minutes of Science Council meetings are posted on the LTER intranet.

The Network Chair is elected by the Science Council at least one year before the term of the current chair expires. The Network Chair serves a two-year term, once renewable (total of 4 consecutive years). The Network Chair leads meetings of the Science Council and Executive Board, and is the lead administrator of the LTER network.

The Executive Board is composed of the LTER Network Chair, a Chair-Elect (when active), nine members selected by individual sites on a rotating basis, an information manager selected by the Network Information Management Committee on a rotating basis, and the Executive Director of the Network Office. The Executive Board meets approximately monthly, usually by videoconference but 1-3 times/y in person, to handle network business. The Executive Board establishes Network-wide Standing, Targeted Standing, and Ad Hoc committees to advise the network on various scientific or administrative issues. Minutes of Executive Board meetings are posted on the LTER intranet. The National Advisory Board (NAB) provides independent review and advice to the LTER Network through the Executive Board, usually on an annual basis. Members of the NAB serve three-years terms, once renewable, and the chair of the NAB is selected by consultation between the Executive Board and the outgoing chair to serve a two-year term, once renewable.

Individual LTER sites are funded by NSF and evaluated by NSF every three years through mid-term site reviews and renewal proposals. Each site has its own governance policies and appoints its own PI. Individual LTER sites may represent collaborations between LTER and other government agencies (e.g., US Forest Service).
The LTER Network Office is funded by NSF through cooperative agreements, and performs a wide variety of tasks to support the LTER Network, including guiding network IM development, facilitating collaborations within and outside LTER, hosting network meetings, and conducting LTER communications. The Executive Director of the Network Office serves on the Science Council and Executive Board. The Executive Board conducts an annual review of the LNO and assists in preparation of LNO proposals.

The U.S. LTER network is the founding member of the International LTER network, and is represented to the ILTER by an appointed committee (the U.S. ILTER committee).

Figure 1. Organizational chart for the LTER network. Green lines denote reporting lines, blue lines denote services provided, and black lines (from member sites) denote membership pools.
1.2 Succession Plan

Succession of the governing and advisory bodies of the LTER network, and the leaders of these groups, are specified in the LTER Bylaws. The Network Chair may serve one subsequent two-year term (total of four consecutive years). The Chair may resign by giving written notice to the Science Council, Executive Board, and Executive Director of the Network Office. The Chair can also be removed by a two-thirds (2/3) vote of the Science Council. In the event of a vacancy in the Chair, the Chair-Elect shall assume the office immediately. If no Chair-Elect exists, the Science Council will elect an interim Chair to serve out the remainder of the term, with the Executive Board electing one of its members to fill the duties of the Chair in the interim.

The Principal Representatives to the Science Council are the Lead PIs or their delegates. A Second Representative from each site serves for the duration of the annual Science Council meeting and may change at site discretion depending on the science theme of each SC meeting.

Executive Board members serve three-year terms on a rotating basis among the Sites. Each Site selects its representative to the EB.

Network-wide Standing Committees have representatives selected by each Site, with terms as defined by the Committees and Sites.

The Chair of the National Advisory Board is recommended by the EB and invited to perform this service by the Network Chair. The Chair of the NAB selects approximately one-half of the NAB members from a list provided by the SC. The remainder of the NAB is chosen by the NAB Chair to ensure outside, independent review. NAB membership is for 3 years once-renewable at the Chair’s discretion, with the potential replacement of at least 1/3 of the membership each year.

With the exception of the Network Chair, who stands for election every 2 years, all members of these LTER Committees serve on a volunteer, rotating, non-compensated basis. Given this governance structure, formal evaluation of personnel performance is not useful or appropriate, although the Network Chair may be removed by the SC if needed.

1.3 Evaluation Plan

(Note that this paragraph proposes new tasks:) The performance of the LTER Network and its component bodies toward the goals and objectives of the Strategic Plan is evaluated annually by the Science Council and Executive Board, with support from the Network Office. The Network Office collects data on network metrics (described in detail in the following sections) on an annual basis, and provides an annual report to the EB and SC showing current performance and long-term trends. The EB conducts a self-evaluation based on these data and any other
information deemed pertinent, and provides an annual written report to the SC with a copy to the NAB. Following acceptance of the report by the SC, the report (with any amendments requested by the SC) is posted to the LTER intranet and disseminated to the LTER community by email.

NSF commissions an external review of LTER every decade (currently conducted by the advisory committee for BIO). The focus and extent of this review is determined by NSF. The EB and Network Office provide NSF with materials to assist the review team as directed by NSF.