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ALTER-Net

A Long-Term Biodiversity, Ecosystem and Awareness Research Network

Communicating long-term change

**A strategy for making best use of LTER information and
knowledge in public communication of environmental issues**

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Communicating long-term change

A strategy for making best use of LTER information and knowledge in public communication of environmental issues

Summary

There is a demand for clear and accurate information about the state of ecosystem, the threats they face and how they are changing.

Long-Term Ecosystem Research (LTER) can provide much of this information. LTER has many unique characteristics to offer in terms of public communication.

The short- to medium-term objectives of this strategy are:

1. To foster a more integrated approach to communicating LTER with the public
2. To increase public exposure to LTER-related work
3. To increase the quality of public engagement in relation to LTER
4. To help increase scientific literacy, particularly amongst young people
5. To help raise awareness amongst the public of the importance of LTER in understanding major environmental issues.

The long-term aim of the strategy is:

- To enable LTER to contribute optimally to increasing public scientific literacy about issues of environmental change.

There are several key messages which this strategy can help convey.

Key public audiences are: School students/young people and their teachers, journalists and the mass media, and science communicators in relevant visitor attractions.

There are key actors who would be at the forefront of delivering this strategy. These include people operating at a range of scales, from local to regional and internationally.

This strategy can be delivered more effectively if efforts can be coordinated and individuals can support one another. LTER and its regional networks have a key role to play in delivering this strategy, particularly in relation to Objective 1 (fostering integration).

A number of activities have been identified, which would help deliver on the five objectives of this strategy. A number of activities are already underway; the challenge is to link these together.

Introduction

Why is this strategy needed?

Public concern about environmental issues is increasing. So too is the demand for clear and accurate information about the state of ecosystems, the threats they face and how they are changing. Policymakers and other decision-makers require sound evidence upon which to base decisions. The public also require information they can understand and trust. Long-Term Ecosystem Research (LTER) can provide much of this information.

LTER is undertaken by many countries to detect and understand how environments change over time. LTER has many applications. For example, it has been used to identify the impacts of climate change and of air pollution on species and habitats, to demonstrate the recovery of lakes from 'acid rain' and to advise management strategies for land and water.

"Global concerns are rising about ... long-term environmental and socio-economic problems such as climate change, water scarcity, biodiversity loss, and sustainable development. Policymakers, scientists, and the public increasingly seek scientifically-based information about the global environment ..."
- ILTER Strategic Plan

LTER has many unique characteristics to offer in terms of public communication. Already some organisations involved in European LTER communicate their science with the public. However, this is done mainly at the local or national level. LTER activities are science programmes, coordinated – in most cases – by research institutes, national environmental agencies or similar bodies. Traditionally such organisations do not have a strong track record in communicating with the public, though there are exceptions.

LTER in more detail

LTER is long-duration research or and monitoring of ecosystems or components of ecosystems (such as habitats, species of plants and animals, soils, air and water chemistry). The meaning of 'long-term' can vary, but may be defined as the time scale which best allows us to discriminate environmental signals from background 'noise'. In many instances, LTER activities often run for an indefinite period, building up long duration datasets that may reveal changes that would not otherwise be detected.

Increasingly, LTER is incorporating long-term studies of human societies, for example by conducting repeat surveys of public attitudes and behaviours, or by analysing socio-economic data such as economic data or census information. In Europe, the closely-related concept of *LTSER* – Long-Term Socio-Ecological Research – sets out criteria for larger-scale LTSER platforms (within which LTER sites are nested), designed to facilitate this interdisciplinary approach. The need to engage with a range of actor groups in LTSER implies particular communication requirements.¹

LTER operates at a range of scales from the local (e.g. a single site) to global (international collaboration). Many countries have national networks of sites and long-term research facilities. There are increasing efforts to integrate national initiatives into regional and global networks. The International Long-Term Ecological Research Network (ILTER, www.ilternet.edu) is the principal international LTER network. The European regional network of ILTER is LTER-Europe (www.lter-europe.net).

¹ Throughout this document, 'LTER' is taken to include LTSER.

ILTER: Potential to engage public audiences

Long-term ecosystem research and monitoring has much to offer when it comes to communicating biodiversity issues with the public, for example:

- Long-term datasets reveal trends in biological, physical and chemical variables
- Relevance to many contemporary issues, such as impacts of pollution, climate change and land use change
- Provides evidence of human impacts on species and ecosystems
- Offers many positive messages (e.g. examples of species' population recovery, or improvements in freshwater quality)
- Addresses issues at a range of scales from global to local. Site-based monitoring and research can be very useful in making an issue meaningful and relevant to people. Setting a local issue into a wider context adds to the message. LTSER in particular seeks to address issues relevant to a range of stakeholders in an area, and to engage people in better understanding the environment
- Many useful case studies can be offered
- Provides credibility to models and predictions
- Potential for site visits, online data feeds, web cam feeds, etc.
- Potential to engage people in monitoring and research (participatory approaches).

Some LTER sites and networks carry out public communication initiatives. However, there is enormous potential to develop further activities, particularly involving sites/networks in more than one country.

Evolution of this strategy: the role of ALTER-Net

This strategy has been developed by the European ALTER-Net project (www.alter-net.info). ALTER-Net is an EC Framework 6 Network of Excellence; 24 partners were funded by the EC from 2004-2009, with the objective of developing durable integration of their research and communication. ALTER-Net is expected to continue as a network beyond March 2009. Among ALTER-Net's achievements has been the establishment of the LTER-Europe network, the development of the LTSER approach and the formation of a partnership between ALTER-Net research scientists and science communicators, particularly in science visitor centres, museums and similar establishments. ALTER-Net will continue to develop this strategy, working closely with the LTER community and other key partners.

Although developed in Europe, and being implemented by the LTER-Europe network, it is hoped that this strategy – perhaps with some adaptation – will have a broader applicability in other regions of the world.

The strategy

Objectives

The short- to medium-term objectives are this strategy are:

1. To foster a more integrated approach to communicating LTER with the public
2. To increase public exposure to LTER-related work
3. To increase the quality of public engagement in relation to LTER
4. To help increase scientific literacy, particularly amongst young people
5. To help raise awareness amongst the public of the importance of LTER in understanding major environmental issues

The long-term aim of the strategy is:

- To enable LTER to contribute optimally to increasing public scientific literacy about issues of environmental change.

What this strategy is not

This strategy aims to improve LTER communication with the wider (or lay) public. It does not address other equally important communication, such as with policymakers and other decision-makers. Within Europe, development of a broader strategy encompassing these other audience groups is on-going.

Key messages

Individual public communication activities will have specific messages, e.g. relating to a particular scientific finding. This communication strategy as a whole also has a number of key messages:

- Humanity is affecting natural environments in many different ways, revealed by long-term studies
- Ecosystems, and elements of ecosystems change in different ways from place-to-place. Some changes are slow, some are fast; there is value in comparing and contrasting change
- Ecosystems are complex and understanding them (e.g. how they are impacted by drivers, how resistant they are to change, etc.) is challenging
- There is a large scientific effort aimed at detecting and understanding change in ecosystems.

Key audiences

There is not one public but many publics. Individual communication activities may have specific audiences. This strategy proposes that effort should, wherever possible, concentrate on these key audiences within the wider public:

- School students/young people and their teachers – important for Objective 4
- Journalists, the mass media and organisations at the interface between scientists and the media – important for Objective 2
- Science communicators in organisations whose primary aim is to communicate about science with the visiting public – important for Objectives 2 and 3
- Key stakeholders in LTER sites/LTSER platforms.

Key actors

The following are the key actors who could deliver this strategy:

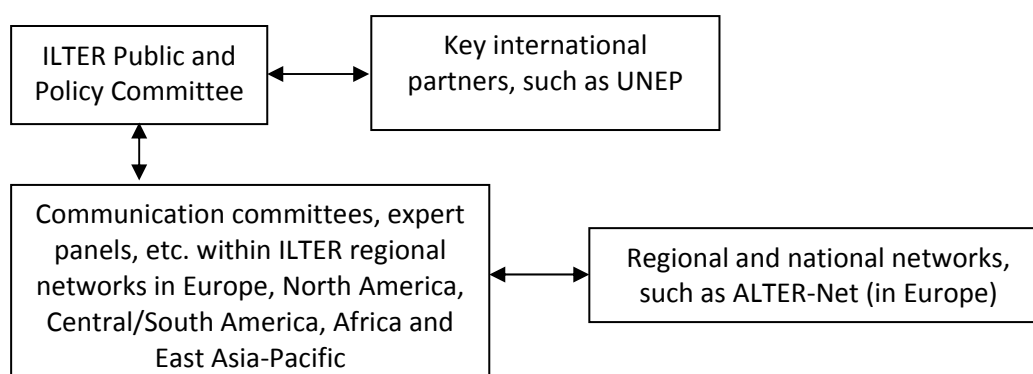
- LTER networks, particularly active researchers, site managers and science communicators/press relations officers
- People involved in research and communication in relation to LTSER platforms
- People responsible for data management and data sharing technologies
- Web managers aligned to LTER networks
- ILTER and its regional networks (particularly individuals in those networks responsible for communication issues)
- Other science communicators, working in partnership with ALTER-Net and LTER networks.

The ILTER network and its five regional networks have a key role to play in developing a more integrated approach to public communication. ILTER has a Public and Policy Committee (PPC). This group should take the lead in delivering the integration component of this strategy.

In Europe, ALTER-Net has developed partnerships between scientists and science communicators, in particular with science visitor centres and museums. The focus is on communication of issues concerned with biodiversity and 'nature'.

LTER-Europe has established a Communication Expert Panel, which will encourage and oversee the implementation of this strategy and develop further communication strategies for LTER.

To effectively deliver this strategy, the key actors must, wherever possible, work in partnership. Some of the key partnerships are shown in this diagram:



Activities

To deliver this strategy, a number of generic activities are to be encouraged:

- Key actors involved in public communication should, wherever possible, inform one another of their plans, and aim to work in partnership: ILTER and its regional networks, along with networks such as ALTER-Net, can mediate these connections
- The sharing of data and syntheses of results among LTER networks should be encouraged
- Planning of major communication activities should begin early, to allow time for exchange of information and the creation of useful partnerships

- The key actors involved in public communication should contribute to central resource guides, such as the ALTER-Net biodiversity and nature communication good practice guide²

To help meet the objectives of this strategy, a number of more specific activities are listed below:

1. Activities to support integration of effort (Objective 1)

Activity	Who could deliver the activity, and how?	Examples of existing or near-future activities
Create opportunities and tools to share ideas in relation to communication	Top-down: Networks such as ILTER, and its regional networks, via meetings and websites Bottom-up: Communication staff, keen scientists, by getting involved	ALTER-Net communication network (WP I4); ALTER-Net Biodiversity Communication Resource Centre (both biodiversity-focussed)
Increase access to shared data and results within and between networks	Top-down: Networks such as ILTER, and its regional networks by driving data sharing initiatives Bottom-up: Individual data owners by providing data	ILTER data sharing initiative; LTER-Europe InfoBase
Create opportunities (e.g. events) for joint public communication	Top-down: Networks (at different scales) by organising meetings, published material, etc. Bottom-up: Individuals by getting involved, and by inviting contributions from other networks	Existing global and regional ILTER meetings could have a public communication component
Increase communication skills base, e.g. by running training courses	Top-down: Networks (at different scales) by organising joint training Bottom-up: Organisations, by running local-level training	Various national level training programmes; ALTER-Net-Ecsite biodiversity science communication training course

² http://www.alter-net.info/POOLED/ARTICLES/BF_DOCART/VIEW.ASP?Q=BF_DOCART_303341

2. Activities to increase public exposure to LTER (Objective 2)

Activity	Who could deliver the activity, and how?	Examples of existing or near-future activities
Increase media engagement	Top-down: ILTER could establish regional and international PR centres Bottom-up: Networks / organisations could produce press releases whenever appropriate, posted to science-specific press centres	Press centres such as IPCB (international), Alpha-Galileo (European)
Develop partnerships with science communicators, science visitor centres, science writers, etc.	Top-down: Regional networks, national networks and organisations Bottom-up: Individuals can cultivate contacts, write popular articles, etc.	ALTER-Net has developed partnerships with science visitor centre networks in Europe, and with International Council of Museums. ALTER-Net <i>News and Views</i> system for online communication
Increase local-level public outreach activities	Top-down: National organisations/networks Bottom-up: Individuals, by taking part in public engagement events. Stakeholder dialogue, e.g. in LTSER platforms	Some existing activities, mainly at local level, such as stakeholder engagement in European LTSER platforms, open science days, etc.

3. Activities to increase the quality of public engagement in relation to LTER (Objective 3)

Activity	Who could deliver the activity, and how?	Examples of existing or near-future activities
Encourage the sharing of best practice	Bottom-up: Share experiences and examples of good practice using networking tools and opportunities (see Obj. 1)	ALTER-Net Biodiversity Communication Resource Centre
Develop science communication skills	Top-down: Networks can create opportunities for key actors to enhance appropriate science communication skills Bottom-up: Individuals can actively seek to gain new communication skills	ALTER-Net-Ecsite biodiversity science communication training course ILTER is looking at capacity-building activities
Present the outputs of LTER research and monitoring in visitor centres, and engage with the public in such centres	Top-down: Networks can foster connections with visitor centre networks	ALTER-Net partnership with science visitor centres

4. Activities to help increase scientific literacy, particularly amongst young people (Objective 4)

Activity	Who could deliver the activity, and how?	Examples of existing or near-future activities
Develop partnerships with schools and the education sector	Top-down: Partnerships with teacher-training programmes and universities Bottom-up: Individuals/national networks could establish links with individual schools	Climate Change Explorer was an innovative project co-organised by the UK ECN network. It helped young people to understand climate change through combining science and creative practice
Develop content on relevant websites (e.g. LTER-Europe, ILTER) specifically aimed at the public, perhaps with a focus on young people	Top-down: Regional networks and ILTER could establish areas on their websites Bottom-up: National networks could establish areas on their websites	
Review potential for using new technologies to engage with young people	Top-down: Networks could undertake a review of web technologies such as social networking sites, videocasts, audio podcasts, etc.	

5. Activities to help raise awareness of the importance of LTER (Objective 5)

Activity	Who could deliver the activity, and how?	Examples of existing or near-future activities
Develop common messages and clear examples of the importance of LTER at a range of scales	Top-down: Networks could develop a set of strong messages coupled to a new LTER 'brand image' Bottom-up: National networks/individuals can assist the higher level networks to create a set of real examples demonstrating the importance of LTER	ILTER is developing a new LTER brand. LTER-Europe is producing a 'best examples' book, which could form an excellent source of case studies

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