

Ecological Information Management Using Ecological Metadata Language

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Abstract

Long-term ecological research attempts to answer complex questions, to engage in interdisciplinary collaborations, and to manage data in large spatial and temporal scales. The aims of long-term ecological research are not only to provide policy makers with environmental information, but also to create a data legacy for future uses. Documentation, so-called metadata, of research data is the key to achieve the data legacy goal. EML, developed by the ecological community and establishing a standard for documentation, is a significant step forward in ecological research. Herein, based on EML, a framework of an ecological information management prototype of tools is introduced.

The framework was developed by the Ecological Informatics Working Group of the Taiwan Forestry Research Institute (TFRI) to aid with editing, storing, and using documents in the multiple languages of Asian cultures that comprise the East-Asia Pacific International Long-Term Ecological Research (EAP-ILTER) Network.

The conceptual framework of the system can be divided into three tiers. The first tier deals with sensor network. The second tier relates to information management. Once datasets and other related information have been described, they are stored in a schema-independent database. The third tier is comprised of grid computing and scientific workflow that allows easy access and use data from the second tier.