National Biological Information Infrastructure

Biological Metadata – An Invaluable Information Tool

The NBII Biological Data Profile supports increased access to and use of biological data and information among users on a national and an international basis.

Science and information are interdependent. Whether the need is to manage biodiversity and ecosystems, increase agricultural productivity, or ensure adequate water supplies, decision-makers need the right science, and the right data and information "behind" the science, to support them in their work.

The National Biological Information Infrastructure (NBII) <www.nbii.gov> provides information related to biological resources in the United States and around the world. The NBII is a Web-based system coordinated by the U.S. Geological Survey that provides access, at no charge, to data and information on plants, animals, and other biological issues. NBII success is rooted in data and information products maintained by partners in government agencies, academic institutions, non-government organizations, and private industry. NBII partners also work on new standards, tools, and technologies that make it easier to find, integrate, and apply biological resources information.

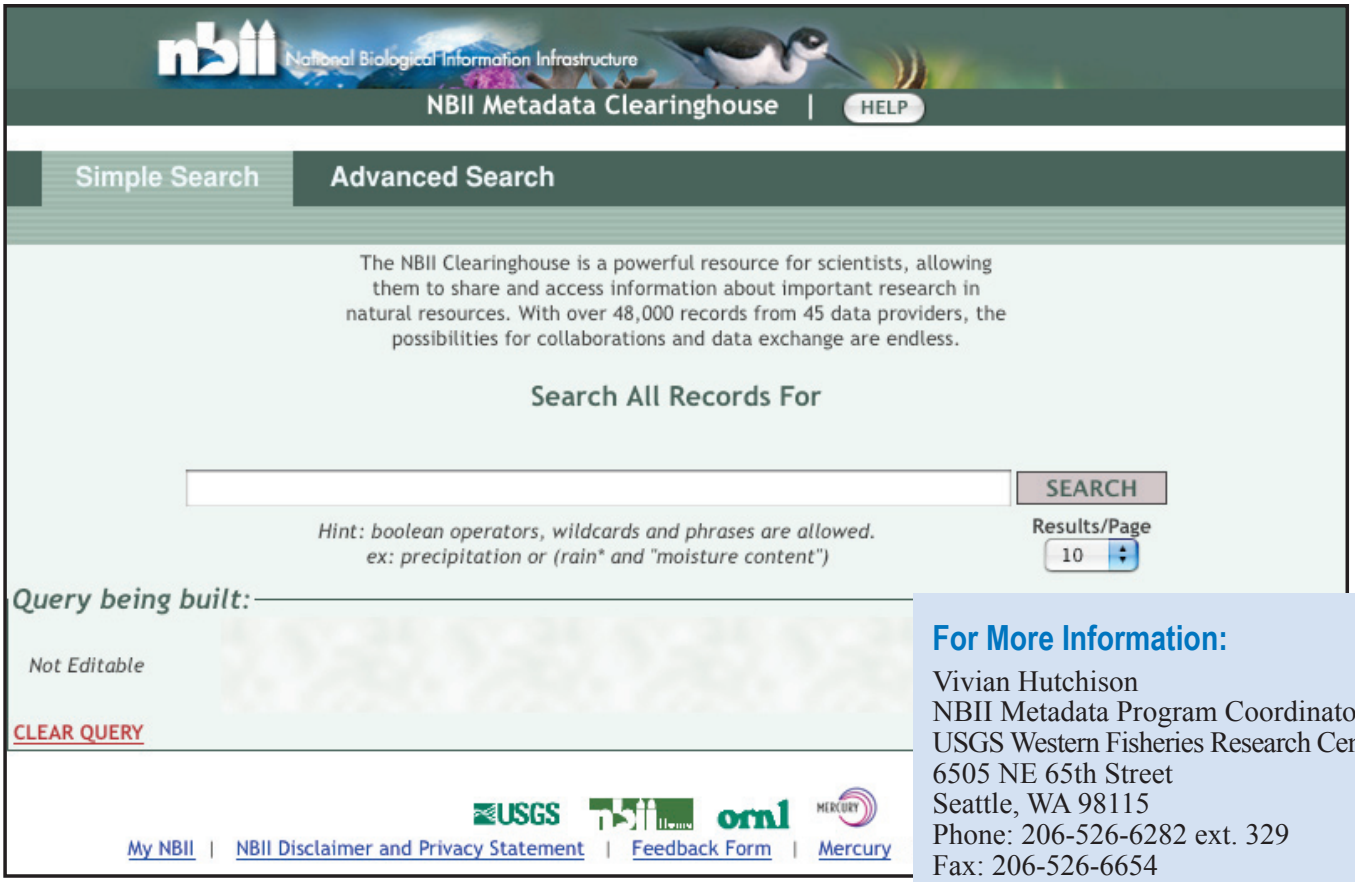
Data About Data

Describing data and information in a standardized way is a key step in the organization of information. These "data about data" called metadata can include subject matter; how, when, where, and by whom the data were collected; accuracy; availability; how to access the database or information products; and persons to contact for more information. Metadata standardization makes it possible for people to compare and contrast different sources to choose those that best meet their needs. A standard metadata format works in the same way that the uniformly presented information in a library's "card catalog" helps you find a particular book or magazine article – quickly and reliably!

For the NBII, this metadata standard is known as the NBII Biological Data Profile <http://www.fgdc.gov/metadata/geospatial-metadata-standards>. It supports increased access to and use of biological data and information among users. It encompasses biological data that are geographically referenced, as well as data that are not specific to a geographic area, such as taxonomic data, research reports, field notes, or specimen collections.

NBII Metadata Clearinghouse

Metadata created according to the Biological Data Profile can be added to the NBII Metadata Clearinghouse <http://mercury.ornl.gov/nbii>, one of the most important NBII components. NBII users can search the online card catalog of metadata from many different agencies and organizations to find a particular item of interest.



For More Information:

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Find us on the Web at: <http://www.nbii.gov>.

Accessing Taxonomic Information Through the NBII

Having a system for classifying and naming organisms ("taxonomy") is a prerequisite for conducting biological inventories, monitoring, research, and management of living resources. There are many different taxonomic names and classifications in the world, and when using information from disparate sources, scientists must look at alternative names that have been used to describe the same species in different geographic regions or at different times. A major obstacle to the collection, exchange, and use of information is the lack of easy access to standardized information on the alternative names of organisms. It is difficult — if not impossible — to compare, combine, and exchange biological information from different information sources without such a standard. Institutions worldwide have made significant investments in gathering species-specific information according to their particular nomenclature, and are reluctant to change to a new classification that is common to all. Development of a standardized authority is a resource-intensive enterprise that individual institutions working on their own have not been able to support. Thus, the NBII has cooperated with partner organizations to create the Integrated Taxonomic Information System (ITIS, accessible to all at <http://www.itis.usda.gov>). ITIS provides a common vocabulary for linking disparate biological information and a standard reference for information on species, including species names and authors, their hierarchical classification, commonly used synonyms, common names, and general distribution. The partner organizations collaborate with taxonomic specialists throughout the world who develop, review, and verify the quality of the information.

ITIS