

NSDI Cooperative Agreements Program 2004
Category 2: Metadata Outreach and Training
Agreement Number: 04HQAG0157
Final Report

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Collaborating Organizations:

National Biological Information Infrastructure (NBII), Vivian Hutchison
The Nature Conservancy, Tyrone Guthrie

Project Narrative

NatureServe was awarded funding (\$30K) under the NSDI Cooperative Agreements Program in 2004 for metadata outreach and training assistance. NatureServe provided training and outreach assistance to State Natural Heritage Programs, The Nature Conservancy, and partners in state and federal agencies who are interested in sharing their biological metadata records with the broader scientific community. This outreach and training assistance was primarily targeted towards organizations that are in the preliminary stages of learning about the FGDC metadata standard, creating metadata for their data collections, and integrating metadata creation and management into standard business practices.

The NatureServe metadata outreach and training project provided assistance in the establishment or enhancement of partners' metadata programs by:

1) Conducting three FGDC Metadata Workshops, including the Biological Data Profile.

The workshops provided instruction in the creation of metadata in compliance with FGDC Content Standard for Digital Geospatial Metadata, Version 2 (CSDGM), FGDC-STD-001-1998 and the Biological Data Profile of the Content Standard for Digital Geospatial Metadata, FGDC-STD-001.1-1999. The workshops adhered to the draft FGDC Metadata Workshop Core Curriculum and included developing a basic understanding of metadata and its importance, learning how to navigate the FGDC standard with the Biological Data Profile, creating high quality metadata, exploring a variety of metadata software tools and other available resources, and implementing metadata creation and maintenance programs. Participants received a notebook with training materials and resources, and a CD-ROM with an electronic version of all training materials as well as software tools where applicable and available for free distribution.

Three metadata training workshops for metadata creators were conducted:

- a) Date: February 22-23, 2005
Location: The Nature Conservancy, Boulder, Colorado
Participants: The Nature Conservancy GIS and Data Management staff

- b) Date: April 14, 2005
Location: Blaine, Washington

- Participants: Staff members from Natural Heritage Programs/Federal Agencies/NatureServe
- c) Date: June 16-17, 2005
 Location: NatureServe, Arlington, Virginia
 Participants: Staff members from Natural Heritage Programs/Federal Agencies/NatureServe

2) *Creating a manual to help guide metadata implementation.*

Since it may not be possible for all interested organizations to participate in a training workshop, NatureServe was working on developing a manual incorporating material from the training workshops and building on existing training materials and metadata resources. Towards the end of the award period, it appeared that the ISO metadata standard would be approved soon so NatureServe focused efforts on contributing to efforts related to the ISO metadata standard and training materials rather than creating training materials that at the time seemed as if they would soon be obsolete. NatureServe has been an active participant in ISO metadata workshops and conference calls; for additional information about the NatureServe contributions, please contact Sharon Shin (USGS) and Vivian Hutchison (NBII).

3) *Assisting partner organizations in the development of metadata templates.*

NatureServe provided assistance to partner organizations in the development of FGDC metadata “templates” that include standardized organization or project-wide metadata elements to help ensure the development of quality metadata records as well as increasing efficiency. The most significant example of a metadata template developed with NatureServe assistance is The Nature Conservancy's creation of a metadata template that was incorporated as part of organizational data management standards.

As a collaborative partner, the National Biological Information Infrastructure (NBII) is provided multiple resources for metadata training workshops including the co-creation, production, and packaging of training materials, supplemental “fun” resources (ducks, etc.), matching travel funds (airfare) for training workshop participants, a Metadata trainer to collaborate on preparing and providing training sessions, and assistance obtaining the Metavist 2005 software from USFS for training purposes.

The collaboration with The Nature Conservancy included developing a customized metadata training curriculum specific to their organizational and staff needs, as well as work on the TNC metadata template.

Metadata training and outreach assistance

- *List organizations and number of individuals receiving metadata training and outreach assistance as appropriate*

Under the scope of Assistance Award 04HQAG0157, NatureServe hosted three metadata training sessions to a variety of individuals from across our network of member programs and external partner organizations. Please see the table below for a summary of the organizations and number of individuals who received metadata training.

Organization	Number of Individuals
Centro de Datos para la Conservacion de Guatemala - CECON	1
Department of Defense	1
Idaho Conservation Data Center	2
Kentucky Natural Heritage Program	2
Montana Natural Heritage Program	1

Organization	Number of Individuals
NASA Goddard Space Flight Center	1
National Biological Information Infrastructure (NBII)	4
NatureServe	5
Oregon Natural Heritage Information Center	2
Pennsylvania Game Commission	1
Pennsylvania Natural Heritage Program	1
Southern Appalachian Information Node (SAIN)	2
Saskatchewan Conservation Data Centre	1
Texas Wildlife Diversity Branch	1
USGS Alaska Science Center	1
USGS Biological Resources Discipline	2
Utah Natural Heritage Program	1
The Nature Conservancy – Alaska	1
The Nature Conservancy - Colorado	4
The Nature Conservancy – Costa Rica	1
The Nature Conservancy - Missouri	1
The Nature Conservancy - Montana	1
The Nature Conservancy - Ecuador	1
The Nature Conservancy – South Carolina	1
The Nature Conservancy – Worldwide Office, Arlington Virginia	2
The Nature Conservancy - Washington	2
Virginia Division of Natural Heritage	1
West Virginia Natural Heritage Program	1
TOTAL	45

- *At what level of proficiency are the trainees or training*

The majority of the trainees had some previous familiarity with metadata, as assessed before the workshop through a training needs survey that included questions about individual level of experience with creating metadata, specific data documentation issues, and goals for the training session. The training needs survey was instrumental for identifying particular topics for the training workshop.

- *Indicate the number and character of workshops conducted as appropriate*

The three metadata training workshops conducted were for metadata creators with some previous experience or familiarity with metadata. The workshops were conducted at an intermediate level with an emphasis on FGDC compliance, high quality metadata, exploration of various tools, and discussion of various implementation strategies. One session was a full day class, and the other two were a day and a half with additional time for hands-on practice and one-on-one help.

Status of Metadata Service

- *Site names where metadata is served; clearinghouse node or Geospatial One-Stop harvestable web folder.*

NatureServe and NatureServe member programs are currently serving metadata through the National Biological Information Infrastructure (NBII) Metadata Clearinghouse Principal Node (<http://mercury.ornl.gov/nbii/>).

- *Approximately how many metadata entries have resulted from this project?*

The majority of the metadata records that have been created by NatureServe and NatureServe member programs are provided to clients as part of the deliverable of sensitive data products. While these metadata are not themselves sensitive, they are closely linked to specific products that have been provided under a data license agreement and would not be appropriate for posting to a public clearinghouse.

- *Do you need assistance in providing for metadata service to organizations you have assisted?*

As trainer, I feel comfortable in my ability to answer questions about the FGDC metadata standards based on my personal knowledge and ability to use a variety of content resources. The two areas that would most benefit from additional assistance are more options for metadata creation and management software and a post-training survey to identify follow-up needs.

It is an ongoing challenge to as a trainer to inspire people to want to create high quality metadata, yet leave them disappointed by the slim options for software tools, particularly for the creation of metadata with the Biological Data Profile.

To best follow up with and support trainees after they have attended a metadata workshop, it would help to have a survey to be sent several months after the training sessions that asked whether they are currently creating FGDC compliant metadata (and how many records), the extent that metadata has been incorporated into their organizational practices, what challenges or obstacles they have encountered, and additional training or support needs. This could be used to efficiently target ongoing assistance as well as track the success of the metadata training and outreach program.

Next Steps

- *Will this project's activities continue in the future?*

Yes - NatureServe has made a commitment to integrate FGDC metadata into our organizational processes and data standards. Where possible, we will continue to provide support to both member programs and partners for metadata training and creation. We plan to work with our member programs to improve the quantity and quality of their metadata, with the eventual goal of developing a NatureServe metadata node on the NBII metadata clearinghouse.

- *What formal or informal organizational relationships established to sustain activities beyond performance period?*

NatureServe provides many support services to its network of member programs across the United States and Canada; ongoing metadata help is one of the services offered. NatureServe has an ongoing relationship with NBII and USGS metadata staff which results in both formal and informal collaboration and ongoing metadata training and support.

- *Describe the next phase in your project*

Project has been completed.

- *Are there issues in metadata management and service*

None at this time.

- *Requirements (more technical assistance, software, other?)*

See comments above – additional software tools that include the Biological Data Profile, automatically read the spatial attributes from a GIS file, allow the use of templates and repeating elements, and the import of taxonomic information would greatly benefit metadata creation efforts.

- *What areas need work?*

Ensuring that trainees receive needed follow up and support to ensure success with the creation of metadata and integration of metadata into their organizational processes.

- *What do you anticipate will be the activities of metadata training, outreach, creation and posting (to clearinghouse or other locations) after the project performance period ends?*

See comments above – NatureServe has made an institutional commitment to integrate FGDC metadata into our organizational processes and data standards and will continue to provide training and conduct outreach as time and more importantly funding permit.

Feedback on Cooperative Agreements Program

- *What are the program strengths and weaknesses?*

One of the major strengths is the emphasis on encouraging collaborative projects that involve a variety of partners. This concept could perhaps be extended to encourage collaboration among all CAP awardees in a given category. For example – I feel that my skills as a trainer would be enhanced by learning from others' experiences and sharing materials developed for training presentations, exercises, and handouts.

- *Where does the program make a difference?*

There is an ongoing and urgent need for metadata training and support to help organizations learn how to navigate the FGDC metadata standard and to learn how to share information about their data collections with the larger community. The assistance provided by CAP has allowed us to provide the needed training workshops and support to meet this need.

- *Was the assistance you received sufficient or effective?*

Yes – the assistance was sufficient to accomplish our metadata training goals, and will make a significant difference for all the people and organizations who participated in training sessions.

- *What would you recommend doing differently?*

Create mechanisms that facilitate and encourage communication and collaboration among all CAP metadata training and outreach award recipients, beyond the existing collaborations that are inherent in the individual projects. For example – setting up an email listserve, hosting occasional conference calls,

encouraging trainers to share their training presentations and materials. There are many people listed as FGDC metadata trainers, but very little communication among this group.

- *Are there factors that are missing or need to consider that were missed?*

None apparent.

- *Are there program management concerns that need to be addressed? Time frame?*

No concerns about the program management or time frame. The materials and information provided at the kick-off workshop in September 2004 continue to be very helpful, as well as the information about CAP on the FGDC website. I greatly appreciate the occasional program reminders sent about project reports and deadlines.

- *If you were to do this again, what would you do differently?*

I would be more proactive about contacting other metadata outreach and training award recipients to develop collaborative programs and learn from each other.