

FGDC Cooperative Agreement Program 2003
Category 2: Metadata Trainer Assistance
Project Agreement Number: 03HQAG0131
Final Report

Organization: NatureServe
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Collaborating Organizations:

National Biological Information Infrastructure (NBII), Vivian Hutchison
SMMS Metadata Consultant, Bruce Westcott

Project Narrative:

Summarize the project activities. Include its accomplishments, successes, strengths and weaknesses, further challenges, and collaboration activities as appropriate. What are the organizational practices that have developed to support metadata creation and maintenance for the future?

NatureServe was awarded funding (\$25K) under the FGDC CAP for metadata trainer assistance, Category 2, in the 2003 program year. These funds were applied to multiple training sessions, two of which were offered during NatureServe Regional Conferences, the other held at the NatureServe home office facility in Arlington, Virginia. Participants for these training sessions included members of NatureServe's network of member programs who work with and/or apply metadata within their programs and needed further education and assistance.

As a partner, the National Biological Information Infrastructure (NBII) offered multiple resources including the co-creation, production, and packaging of training materials, supplemental "fun" resources (ducks, etc.), matching travel funds (airfare) for member program participants, a Metadata trainer to collaborate on preparing and providing training sessions, and assistance obtaining additional copies of the SMMS 5.1 product for our use and trial versions of the software for training purposes.

The original goals of the Metadata Trainer Assistance project plan included the following:

- Train member programs on the values of recurrent metadata development;
- Provide tools for ongoing metadata development within programs;
- Improve access to metadata related resources;
- Educate programs on the Biological Data Profile; and,
- Build a NatureServe network of integrated FGDC compliant metadata development.

Over the course of this project, NatureServe successfully trained fifty-three individuals from within the Natural Heritage Network and external partner agencies. The training course was a full-day class, and some workshop sessions included an optional extra half-day for hands-on practice developing metadata. The metadata training covered topics including a definition of metadata and its value throughout organizations; overview of National Spatial Data Infrastructure and the development of standards; the

FGDC Content Standard for Digital Geospatial Metadata (CSDGM) and the Biological Data Profile; tools and resources available for metadata creation and management; creation of quality metadata; hands-on metadata creation; as well as discussing challenges implementing a metadata program. Specific training needs were assessed using a survey of the participants several weeks before the training session, and the training materials were customized as appropriate.

Feedback received from training participants was incredibly positive with each metadata training session generating more interest from member programs and partner organizations for future sessions. These training workshops served as a mechanism for relationship building for all participants and provided them with a solid foundation of knowledge and resources to develop metadata within their organizations.

The most significant weaknesses and challenges are the lack of options in metadata creation and management tools, particularly those that include the Biological Data Profile; the need for ongoing follow-up to the training workshops; lack of multi-lingual resources; and better communication and collaboration among trainers and CAP recipients.

Training participants are always very eager to learn about software tools for creating metadata, and are disappointed to find out that their software options are very limited. As a trainer, it is a difficult situation to have a room full of participants excited and energized about metadata creation as a valuable and integral part of their work, and then let them know that the software options for including the Biological Data Profile are very few and in some cases more expensive than programs can afford.

As follow-up to the training, we encourage participants to contact their trainers with any questions and/or participate in the metadata listserv hosted by GeoCommunity, but are never sure how many people take advantage of these resources and successfully implement metadata creation within their organizations. It would be very beneficial to the over-all FGDC metadata training program and development to send a post-training survey to discover whether they are creating FGDC compliant metadata (and how many records), the extent that metadata has been incorporated into their organizational practices, any challenges or obstacles, and additional training or support needs.

It would be very beneficial to have the resources and capacity to offer metadata training and materials available in several languages. The Latin American and Caribbean partners within NatureServe's Network voiced interest in metadata training yet due to insufficient resources, NatureServe was unable to offer multi-lingual training during the 2003 agreement. In addition, the NatureServe member program in Quebec, Canada would require training and materials available in French.

As a FGDC CAP participant, it would have been helpful to have greater communication with the community of metadata trainers and CAP recipients. This would provide broader opportunities for collaboration and allow trainers to more easily share training materials, tips and techniques to strengthen the entire metadata training program.

NatureServe has developed several organizational practices to support metadata creation and maintenance for the future, including:

- development of metadata templates for use by NatureServe staff and member programs, templates are reviewed and updated as needed on a regular basis;
- implementation of a networked installation of the SMMS software for use by NatureServe staff to maximize efficiency in building on existing metadata records and reusing supporting section information;

- integration of metadata elements into internal data content standards for NatureServe and our member programs;
- collection of metadata information from member programs during our annual data exchange and reconciliation process;
- ongoing support to NatureServe staff and member programs for FGDC metadata development; and
- creation of FGDC compliant metadata with the Biological Data Profile for all NatureServe data products that include species locational information.

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 03HQAG0131, NatureServe hosted four metadata training sessions to a variety of individuals from across our network of member programs and external partner agencies. Please see the table below for a summary of the organizations and number of individuals receiving metadata training, the full list of participants is included as Attachment A. NatureServe provided a total of \$6,347.96 in funding support to participants requesting assistance for their participation in the metadata training sessions.

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

The training sessions were all full day or day and a half workshops that included hands-on metadata creation. The level of trainees’ metadata proficiency was assessed prior to the training sessions through a training needs survey that included questions about their individual level of experience with creating metadata, specific data documentation issues, and their goals for the training session. The participants at each workshop ranged from complete novices to those with experience creating metadata who needed help with specific topic areas.

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

Two training sessions coincided with NatureServe’s regional conferences:

- November 2003 – Southeast Region Conference; Pine Mountain, Georgia
- March 2004 – Midwest Region Conference; La Crosse, Wisconsin

In addition, NatureServe hosted a metadata training session at our home office in Arlington, Virginia in February 2004 and co-sponsored with NBII a training session in Fort Collins, Colorado in April 2004.

Organization	Number of Trainees
NatureServe	11
Alabama Natural Heritage Program	1
Arizona Game and Fish Department	1
Arkansas Natural Heritage Commission	2
Big Thompson Watershed Forum	1
California Department of Fish and Game	1

Organization	Number of Trainees
CIESIN, Columbia University	1
Colorado Department of Natural Resources	1
Colorado Division of Wildlife	3
Colorado Natural Heritage Program	1
Colville Confederated Tribes	2
Florida Natural Areas Inventory	1
IAFWA	1
Kansas Natural Heritage Inventory	1
Louisiana Department of Wildlife and Fisheries	1
Michigan Department of Natural Resources	1
North Carolina Wildlife Resources Commission	1
North Dakota Parks and Recreation Department	1
Northern Arizona University, Merriam-Powell Center for Environmental Research	1
Rocky Mountain Bird Observatory	1
The Nature Conservancy	4
U.S. Fish and Wildlife Service	3
U.S. Geological Survey	3
National Biological Information Infrastructure	3
USGS/NBII Natural Resource Ecology Lab, CO State	1
USGS/NBII Southern Appalachian Information Node (SAIN)	3
Wyoming Natural Diversity Database	2
Total Metadata Training Participants	53

Status of Metadata Service

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

NatureServe is 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 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 make sense to post to a public clearinghouse.

Next Steps

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

NatureServe has received additional support from the NSDI CAP metadata program for activities to continue in program year 2004. In collaboration with NBII, we are currently planning for future metadata training sessions to be held during NatureServe's upcoming regional conferences. Under this award,

NatureServe is also working collaboratively with The Nature Conservancy (TNC) to develop and provide metadata training workshops that are tailored to TNC's specific needs.

- *Describe the next phase in your project.*

NatureServe is currently planning for metadata training sessions to be held during our Western Regional Conference in April 2005, at our Arlington office in spring / summer 2005, for The Nature Conservancy in February 2005, and additional sessions hosted by NBII. Currently in planning stages, we are requesting feedback from our network of member programs to determine interest in the upcoming training and level of funding assistance to be offered to participants. The next phase of NatureServe's metadata training and outreach program also includes developing a manual to help guide metadata implementation for organizations that are not able to attend a training workshop and assisting partner organizations in the development of metadata templates and related materials.

- *Are there issues in metadata management and service?*

NatureServe is working towards becoming a clearinghouse node to serve metadata developed by NatureServe staff and member programs. It would be a great help to receive technical documentation for becoming node and/or a specific technical contact person.

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

Ongoing access to demonstration copies of the SMMS software for use during the hands-on portion of training workshops.

- *What areas need work?.*

Please see comments under "weaknesses and challenges" in the first section above.

Attachment A - Metadata Training Participants
NatureServe CAP 2003 - FINAL

NatureServe Staff (11)

Information Division (1)

Lori Scott, Project Manager

Natural Heritage Network Operations Division (4)

Nancy Benton, Project Manager
Mary Klein, VP Natural Heritage Network
Jason McNeese, Database Project Specialist
Marcos Robles, Senior Conservation Database Specialist

Science Division (6)

Stephanie Lu, Botanical Research Assistant
Carl W. Nordman, Regional Vegetation Ecologist
Leah Oliver, Associate Botanist – Information Scientist
Margaret Ormes, Director, Science Information Resources
Mary J. Russo, Ecology Information Manager
Lesley Sneddon, Senior Regional Ecologist

Alabama Natural Heritage Program (1)

Michael S. Barbour, Science Information Program Manager

Arizona Game and Fish Department (1)

Joyce Francis, GIS Senior Analyst

Arkansas Natural Heritage Commission (2)

Jasa Holt, Assistant Data Manager
Cindy Osborne, Data Manager

Big Thompson Watershed Forum (1)

Barb Maynard, Program Manager

California Department of Fish and Game (1)

William Patterson, GIS Specialist

CIESIN, Columbia University (1)

Robert C. Worrest, Senior Research Scientist

Colorado Department of Natural Resources (1)

Heather Hicks, GIS Coordinator

Colorado Division of Wildlife (3)

Dawn Brownne, GIS Specialist
Michelle Cowardin, GIS Specialist
Katy Oakes, Vertebrate Modeling Coordinator

Colorado Natural Heritage Program (1)

Amy Lavendar, GIS Coordinator

Colville Confederated Tribes (2)

Richard Rooney, GIS Analyst
Grant Timentwa, GIS Manager

Florida Natural Areas Inventory (1)

Amy Knight, GIS Program Specialist

IAFWA (1)

Sally L. Benjamin, NBII/IAFWA Coordinator

Kansas Natural Heritage Inventory (1)

Jennifer M. Delisle, Information Manager

Louisiana Department of Wildlife and Fisheries (1)

Jill Kelly, Louisiana Natural Heritage Program Data Manager

Michigan Department of Natural Resources (1)

Roger Parsons, Information Technology Specialist

North Carolina Wildlife Resources Commission (1)

Scott Anderson, Data Manager

North Dakota Parks and Recreation Department (1)

Chris Dirk, Data Manager/GIS Specialist

Northern Arizona University, Merriam-Powell Center for Environmental Research (1)

Jill Rundall, GIS Coordinator

Rocky Mountain Bird Observatory (1)

Megan McLachlan, Prairie Conservation Biologist/GIS Specialist

The Nature Conservancy (4)

Aliya Ercelawn, Conservation Planner/Information Manager
Tyrone Guthrie, Rocky Mountain Division Data Manager/GIS Specialist
Irina Levshina, Cartographer
Kei Sochi, GIS Manager

U.S. Fish and Wildlife Service (3)

Andrey Andreyev, Database Specialist
Anne Roy, Librarian
Michael Winfree, Wildlife Biologist

U.S. Geological Survey (3)

Jon French, Programmer
Leanne Hanson, Biologist
Kathryn Holland, Software Specialist

National Biological Information Infrastructure (3)

Nichole McNeely, NBII Technical Project Coordinator
Julie Prior-Magee, NBII SWIN Node Coordinator
Vivian Nolan, Program Coordinator

USGS/NBII Natural Resource Ecology Lab, CO State (1)

Greg Newman, Ecologist

USGS/NBII Southern Appalachian Information Node (SAIN) (3)

Andy Carroll, Research Associate
Chris Hayes, Research Assistant
Pamela Nabors, Biogeographer/GIS Coordinator

Wyoming Natural Diversity Database (2)

Tessa Dutcher, Assistant Data Manager
Alan Redder, Data Manager

Total Metadata Training Participants = 53