

FGDC Cooperative Agreement Program Category 1
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Hands-on Metadata Training for National Park Service Personnel in the New England
Region

Final Report

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The Environmental Data Center (EDC) at the University of Rhode Island (URI) and the National Park Service (NPS) collaborated to provide hands-on metadata training to NPS staff and cooperators in the Northeast Region. A broad range of creators and users of GIS data were involved in this training program, including five National Parks, staff and graduate students at URI, and other NPS staff within the Northeast Region. Additional NPS staff and cooperators will receive assistance through new online training materials developed through this grant. The parks that received assistance were Cape Cod National Seashore, Fire Island National Seashore, Acadia National Park, and Gateway National Recreation Area. In addition, University of Rhode Island graduate students participating in a GPS course were trained in proper data documentation before they collected GPS data within Minute Man National Historical Park. The results of this project were presented before an audience of NPS Data Managers and GIS Specialists from across the United States at a conference in Fort Collins, CO March 31 – April 3, 2008.

One of the strengths of this hands-on training program was that it allowed NPS staff to dedicate several days exclusively to documenting and organizing their GIS data. In mid-October, the GIS Specialist for Cape Cod National Seashore (CACO) traveled to the EDC to receive training in using ArcCatalog and the NPS Metadata Editor to write FGDC- and NPS-compliant records. The GIS Specialist created metadata for 35 datasets in preparation for online distribution through the NPS Data Store. Rebecca Bannon of the EDC reviewed these records and provided specific advice for improving the clarity and compliance of these metadata documents. The EDC continues to provide CACO with support and instruction as the park moves forward in documenting and posting data.

In November, the EDC provided training and oversight to Gateway National Recreation Area (GATE). The GIS Specialist at GATE and a student intern had created metadata for a number of datasets, but they were not confident that these records were compliant. Rebecca traveled to GATE to review existing records, identify errors, and provide training in posting records to the NPS Data Store. During Rebecca's time at GATE, metadata were completed for 68 datasets and these records were posted to the

NPS Data Store for online distribution. Where appropriate, the GIS data files were also posted to the Data Store. The GATE GIS Specialist was able to move from a moderate level to a high level of competency in data documentation. The timing of this training was particularly important, as this GIS Specialist recently transferred to another National Park. Her proficiency in writing metadata will ease the transition to a new GIS Specialist at GATE and will ensure that good metadata practices are established throughout the National Park Service as she moves into her new position. The student intern at GATE plans to pursue a career in GIS; the training he received will provide him with a strong foundation in proper data management, including documentation.

A third park that has improved its metadata practices as a result of this project is Acadia National Park (ACAD). The GIS Specialist at ACAD is already proficient in writing metadata, but a relatively small amount of data has been documented and posted to the Data Store. Funding of this CAP project prompted the formulation of a Five Year Metadata Production Plan at ACAD that will result in continued and increasing posting of metadata from the park. This project encouraged the park to develop new strategies that will make metadata completion and posting a priority for the GIS Specialist. This will ultimately be more fruitful than a single week dedicated to metadata training. During this year, ACAD plans to document and post 30 new datasets to the Data Store; to date, 19 datasets have been documented and posted. The EDC will continue to provide support to ACAD as they work to implement this new metadata plan.

Fire Island National Seashore (FIIS) received metadata training during a preliminary phase of this project. During this preliminary phase, the FIIS Park Planner traveled to the EDC lab to dedicate several days exclusively to writing metadata and organizing the Park's database. The Park Planner had minimal prior experience in preparing FGDC-compliant metadata, and the training she received was highly effective in communicating the necessity of documenting legacy and future datasets as well as providing her with the skills necessary to do this work. Metadata templates were created and applied to existing datasets, and FGDC-compliant records were created for multiple datasets related to Fire Island. Through the 2007 FGDC award, we have been able to continue to provide support to the Park Planner at FIIS. We reviewed records and assisted her in distributing metadata and data through the NPS Data Store. We were also able to identify some weaknesses in the Data Store's documentation and to suggest improvements to the Data Store system.

Throughout this project, the EDC worked with the parks in the Northeast Region to answer questions, to review documents, and to assist in posting data and metadata. The NPS Data Store, available at URL <http://science.nature.nps.gov/nrdata/index.cfm>, is a portal for data and metadata from all National Parks. Currently, over 100 records have been posted or are being prepared for posting online as a result of this FGDC funded project. The EDC is committed to follow-up support and quality control as the parks in the Northeast Region continue to improve the documentation of their GIS datasets.

There are additional benefits of this project beyond the creation and distribution of metadata. This training opportunity encouraged the parks to organize and prioritize their data. As a result, the datasets documented and distributed through this project are core datasets that are vitally important to the park and the Northeast Region GIS community. Another benefit of this effort is the increased awareness of the importance of metadata on the part of NPS Park Supervisors. Supervisors such as David Manski

(ACAD), Carrie Phillips (CACO), Mike Reynolds (FIIS), and Doug Adamo (GATE) have become more familiar with the arguments in favor of maintaining current metadata and now they all explicitly support their staff's efforts in this direction.

In February 2008, Rebecca Bannon of the EDC conducted a workshop entitled "An Introduction to Metadata for GPS Field Data Collection." The workshop presented the value, concepts, and methodology of metadata in the context of GPS field data collection. An overview of the content and structure of the Federal Geographic Data Committee (FGDC) Content Standard for Digital Spatial Metadata (CSDGM) was provided as well as an overview of the National Park Service (NPS) Metadata Profile. Methods for writing quality metadata for GPS data were outlined, and resources for collecting pertinent information in the field were provided. Metadata creation was demonstrated using ESRI's ArcCatalog and the NPS Metadata Tools and Editor. This afternoon workshop was conducted as part of the course, "Applications in GIS", a course focusing on GPS technology offered through the University of Rhode Island (URI) Department of Natural Resources. Five students attended the class, as well as the Data Manager for the NPS Northeast Region Coastal and Barrier Network. "Applications in GIS" is co-taught by Nigel Shaw, the NPS Northeast Region GIS Coordinator, and staff of the Environmental Data Center at URI.

The GPS course culminated in a field trip to Minute Man National Historical Park (MIMA) to collect GPS field data requested by the park. The students provided FGDC-compliant metadata along with their datasets at the conclusion of the course in May 2008. Rebecca Bannon provided additional instruction and assistance to individual students as they prepared their final data and metadata products. The completed datasets will be added to the park's GIS database, and will be posted to the NPS Data Store. The graduate students who attended the workshop are pursuing careers in which they will use GIS. This metadata training will enable them to document data according to FGDC standards throughout their careers. The training materials developed for the GPS course workshop are currently in active use within the Northeast Region. "Applications in GIS" is offered at URI annually, and the metadata training materials will be utilized as part of this course as well as in other future training opportunities within the Northeast Region.

In addition to workshops and hands-on training, another goal of this CAP project was to update the online metadata assistance provided through the NPS Field Technical Support Center Website, <http://www.edc.uri.edu/ftsc>. The Metadata assistance section is also available directly at <http://www.edc.uri.edu/ftsc/metadata>. This website was updated to reflect the needs of National Park Service staff identified through this project as well as changes in technology since the website was created. The updated site includes step-by-step guides to editing metadata using ESRI's ArcCatalog and the National Park Service Metadata Tools & Editor. There are also links to the FGDC and NPS standards for metadata, sample documents from a variety of sources, answers to common questions, general tips for data management, and links to other tools and assistance websites. This online help will increase the reach and longevity of the efforts funded through this CAP grant.

On April 3, 2008, Rebecca Bannon gave a presentation on this CAP project at the 2008 NPS GIS and Data Management Conference in Ft. Collins, CO. The conference was attended by GIS Specialists and Data Managers from National Parks and Programs throughout the US. In addition to NPS staff, the audience included representatives of

Department of the Interior, NOAA and other government agencies, and a number of universities. Rebecca's presentation highlighted the updated Metadata Assistance website. This presentation extended the benefits of the training program to a national audience.

Following the success of our pilot program with FIIS and the training provided using this CAP grant, the EDC and NPS are seeking ways to apply this model of hands-on training to additional Parks and cooperators. This year we plan to host Dave Frederick, the GIS Specialist and Data Steward for Colonial National Historical Park (COLO), at the EDC for a metadata workshop. By working with COLO, located in Jamestown and Yorktown, Virginia, we will expand this important training program to the southern extent of the NPS Northeast Region. We will continue to seek ways to implement this training model and the materials created during our CAP project as resources become available.

The efforts funded through this CAP grant have succeeded in removing barriers to data documentation among a broad range of creators of GIS data, including five National Parks in the Northeast Region, staff of the EDC, graduate students studying GIS, NPS staff stationed at URI, and additional NPS staff and cooperators who will make use of the online training materials. Thirteen people received training or outreach assistance through this project, including 12 metadata creators and one program manager. Data management needs and methods vary greatly among the National Parks, and this FGDC funding has allowed the EDC to provide training tailored to the needs, abilities and situational barriers to the metadata process represented by each participant. This flexibility has allowed us to achieve our goal of enabling NPS GIS staff and cooperators to be independent and proactive metadata creators and to post significant additional volumes of metadata to the NPS Data Store. As a Field Technical Support Center for the Northeast Region, the EDC is committed to providing continuing support for all those who have been trained through this CAP program.

Individuals receiving metadata training: 12

- Diane Abell, *Park Planner, Fire Island National Seashore*, diane_abell@nps.gov
- Mark Adams, *GIS Specialist, Cape Cod National Seashore*, mark_adams@nps.gov
- Kathryn Mellander, *GIS Specialist, Gateway National Recreation Area*,
kathryn_mellander@nps.gov
- Patrick Kiprotich, *Student Conservation Association Intern, Gateway National Recreation Area*
- Nigel Shaw, *GIS Coordinator, NPS Northeast Region*, nigel_shaw@nps.gov
- Dennis Skidds, *Data Manager, Northeast Coastal and Barrier Network*,
dennis_skidds@nps.gov
- Mark Christiano, *Research Associate, Environmental Data Center, University of Rhode Island*
- Tracey Daly, *Research Associate, Environmental Data Center, University of Rhode Island*
- Marisa Thompson, *Graduate Student, University of Rhode Island*
- Eric Akins, *Graduate Student, University of Rhode Island*
- Kendall Gadowski, *Graduate Student, University of Rhode Island*
- Suzanne Cox, *Graduate Student, University of Rhode Island*

Individuals receiving outreach assistance: 1

- Karen Anderson, *GIS Specialist, Acadia National Park*, karen_anderson@nps.gov

Workshops: 3

- Hands-on training with NPS staff from Cape Cod National Seashore (CACO), conducted at the University of Rhode Island, September 17-19, 2007
- Hands-on training with NPS staff from Gateway National Recreation Area (GATE), conducted at GATE, October 22-24, 2007
- “An Introduction to Metadata for GPS Field Data Collection”, conducted at the University of Rhode Island, February 28, 2008

Organizations Involved:

- National Park Service
- University of Rhode Island
- Environmental Data Center, Natural Resources Department, University of Rhode Island

Feedback on the Cooperative Agreements Program:

- What are the program strengths and weaknesses?

One of the strengths of this program is the flexibility allowed to those receiving funds. The barriers to proper data documentation vary among parks. Some parks need training, some need motivation, and others need help prioritizing the work to be done. This program allowed us to provide all of these forms of assistance to parks in our region.

With a larger amount of funding, we could have provided training to a number of other parks that expressed interest in this opportunity.

- Where does the program make a difference?

This program provides much-needed funds for projects that might otherwise not be funded. In the case of the EDC and NPS, it can be difficult to find money for documentation of legacy data and for ongoing maintenance of high-quality metadata. This CAP grant has made this important work possible. The website developed through this grant will make metadata training and assistance available to a wide audience long after the conclusion of this original funding.

- Was the assistance you received sufficient or effective?

Yes, Sharon Shin and others we have worked with at FGDC have been helpful and knowledgeable.

- What would you recommend doing differently?

This program is geared heavily toward large training workshops, which is different than the approach we have taken in our project. In working with the National Park Service, the EDC has found that more individualized training is more productive than a large class format in actually getting metadata records written. Perhaps FGDC could encourage more small-scale projects as well as the large-scale seminars.

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

Nothing appeared to have been overlooked or missed in this program.

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

The time frame of the project is appropriate for the size of the grant, and the deadlines were manageable. One aspect of the management of this program that could be changed is the spring kick-off meeting. It was interesting to learn about the projects planned by the other CAP participants. However, the projects in this category were so divergent in terms of target audience and approach that there was little collaboration between participating groups during the time frame of the grant. Therefore the benefits of meeting together in person at the start of the program did not outweigh the considerable cost of travel to Colorado. A conference call in which participants shared PowerPoint presentations of their projects might be a more cost-effective kick-off for the Category 1 projects.

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

I don't think we would change our approach. We have been able to tailor our training and oversight to the needs of the parks, which has allowed us to be highly successful in completion and distribution of metadata records. We received positive feedback from all of the parks and the workshop participants, as well as from colleagues at the GIS and Data Manager's Conference where this project was presented.

Final note submitted July 2, 2008.

Fire Island National Seashore - The Park Planner for Fire Island has completed metadata for 25 datasets, 7 of which have been posted to the NPS Data Store. The remaining 18 datasets will be posted very shortly, pending some very minor edits.