DIGITAL MAPPING TECHNIQUES 2014

The following was presented at DMT'14
(June 1-4, 2014 - Delaware Geological Survey,
Newark, DE)

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2014)

http://ngmdb.usgs.gov/info/dmt/

Stardate NCGMP09: To boldly go where no standard has gone before

By Patricia E. Gallagher

Alaska Division of Geological & Geophysical Surveys (DGGS)
3354 College Road
Fairbanks AK 99709-3707
Telephone: (907) 451-5039
Fax: (907) 451-5050
email: patricia.gallagher@alaska.gov

ABSTRACT

Until recently, the Alaska Division of Geological & Geophysical Surveys (DGGS) did not have formal, well-defined data or map standards. Implementing new standards and workflows can be an intimidating and frustrating process, for those who are not already "in the know". DGGS offers special training sessions for geologists and GIS users to make the transition from "do whatever works" to consistent use of the NCGMP09 standard. Training sessions highlight the benefits of using a standard, provide a solid background of the geodatabase design, and explain the details of creating, loading, and editing data in NCGMP09 format. Training sessions are designed to be fun, engaging, and interactive. They also include hands-on activities, practice data sets, and helpful resources. This article includes a summary of training methodology and a few examples. This information was presented at the DMT'14 meeting as a poster (see http://ngmdb.usgs.gov/Info/dmt/DMT_presentations.html#dmt14).

PREPARE TO ENGAGE

Planning ahead and being prepared are critical to a successful training session. Three weeks before the scheduled training, a "save the date" email was sent to the division's GIS users; this allowed colleagues to schedule other events without conflicting with training sessions, which greatly increased attendance. The emails were purposely designed to be eye catching, funny, and a little kooky! People tend to read emails that are entertaining and fun and the notes helped them to not dread the upcoming training.

Another reminder was sent out a week prior to the training session. This second email gave people a more detailed description about what material would be covered and requested an RSVP (Figure 1). An accurate headcount allowed for better preparation and organization of the practice data used for the hands-on exercises. In a welcome action before the training session, the DGGS director and section chiefs made the NCGMP09 standard mandatory (resistance is futile). Additionally, IT staff was asked to ensure that the wireless network in the conference room could support the many users accessing ArcMap on laptops during the training.
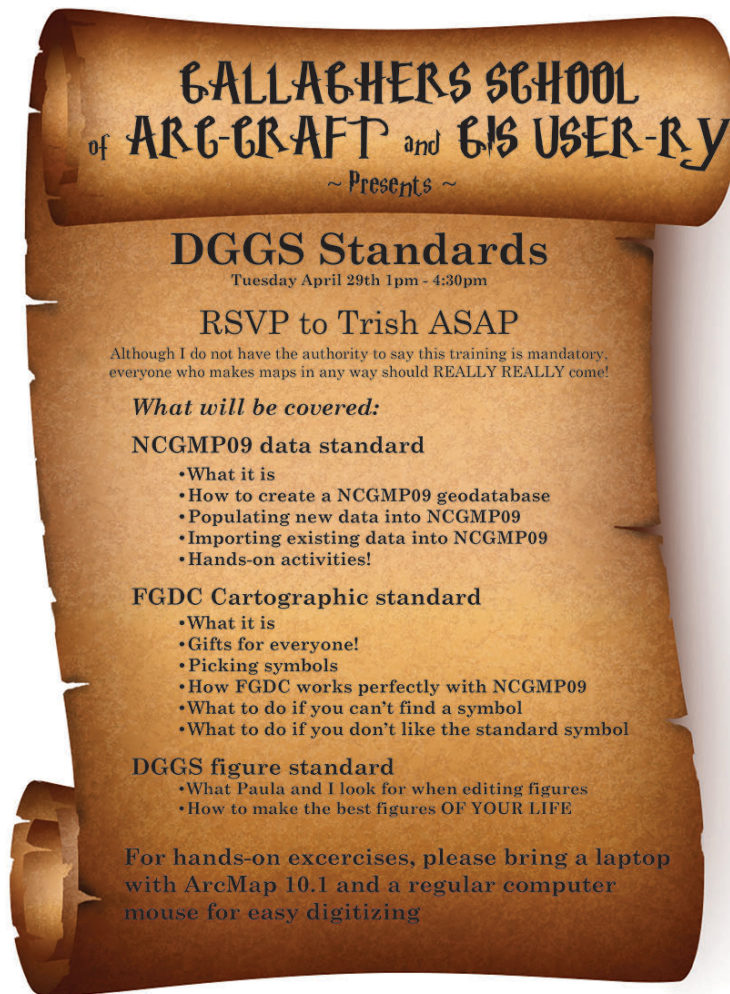
Figure 1. Designed to be entertaining and informative, this second training announcement gives a brief description of what will be covered and requests that people RSVP.

To save time during the training session, personalized practice data was prepared for each participant in custom training folders on the shared network. Each folder had a simplified NCGMP09 geodatabase that contained part of the GeologicMap feature dataset with three feature classes (Figure 2). The MapUnitPolys feature class was empty to demonstrate how to create new data in the NCGMP09 format; and the Orientation Points feature class was empty to show how to load existing data. The ContactsAndFaults feature class had four pre-existing lines with complete NCGMP09 attributes as an example of how to choose FGDC symbols. Each folder also contained a shapefile of orientation points, which was used to demonstrate the process of loading existing data.
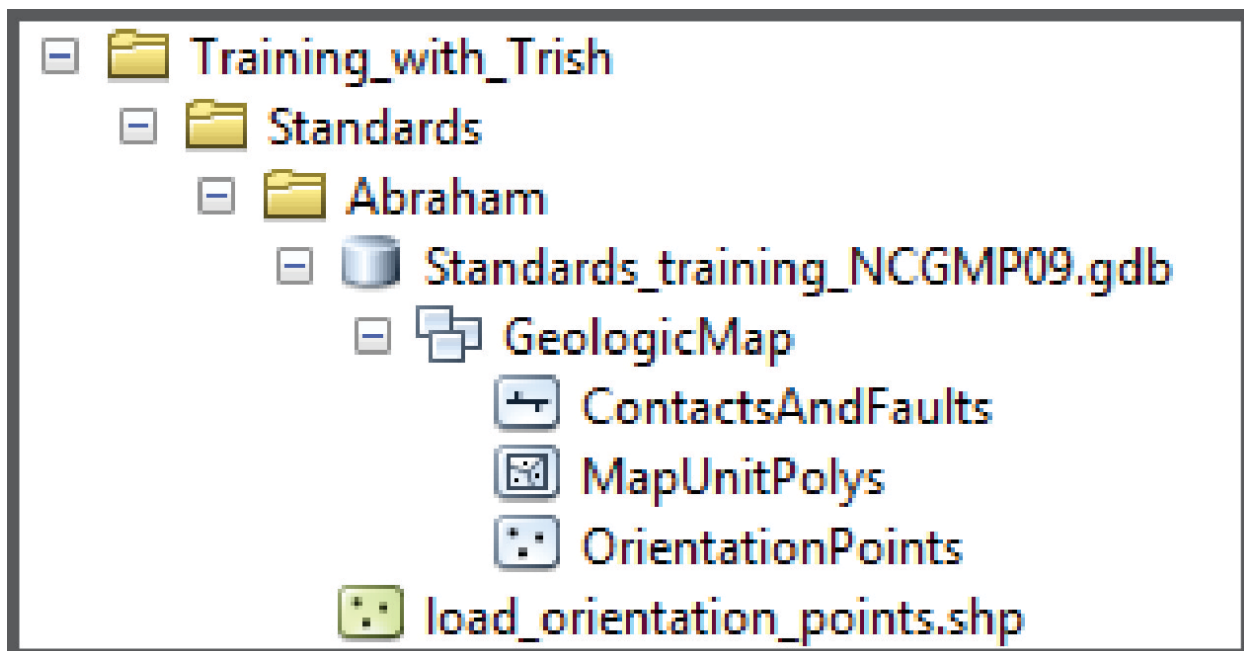
Figure 2. Each participant received a folder with practice data.

MAKE IT SO

The training session began with something fun—a little competition. The participant who could say what the acronyms NCGMP and FGDC stood for won a prize. It's amazing how fast a room full of professional scientists get excited about the prospect of a free candy bar!

The presentation started by addressing the question, "Why do we want to standardize?" It's always helpful for users to know the rationale behind a decision. DGGS's reasoning includes the facts that the NCGMPO9 standard provides a uniform data standard for internal and external users, streamlines metadata creation and cartographic workflow, and facilitates a division-wide geodatabase. Next, the nuts and bolts of NCGMP09 were introduced. Everyone was given a printed copy of the "NCGMP09 bible", which most attendees found very useful to have during training. We also supplied the link to the manual's location on our network so participants could use the digital version if, for example, they wanted to search tables for a specific word. We also emphasized that NCGMP09 is similar to the geodatabases geologists are already using—but with standardized elements.

A large part of getting to know NCGMP09 is determining the tables and feature classes that are required, which varies greatly depending on the project. DGGS has created guidelines and participants walked though a few examples to show which fields are required and which could be left blank (Figures 3a and 3b). Throughout the presentation, we emphasized how using the NCGMP09 standard would be more efficient for everyone in the future. You can never say too many good things about a standard when trying to convince people to adopt it. Participants were generally relieved to hear that field work and data collection practices would only change slightly.
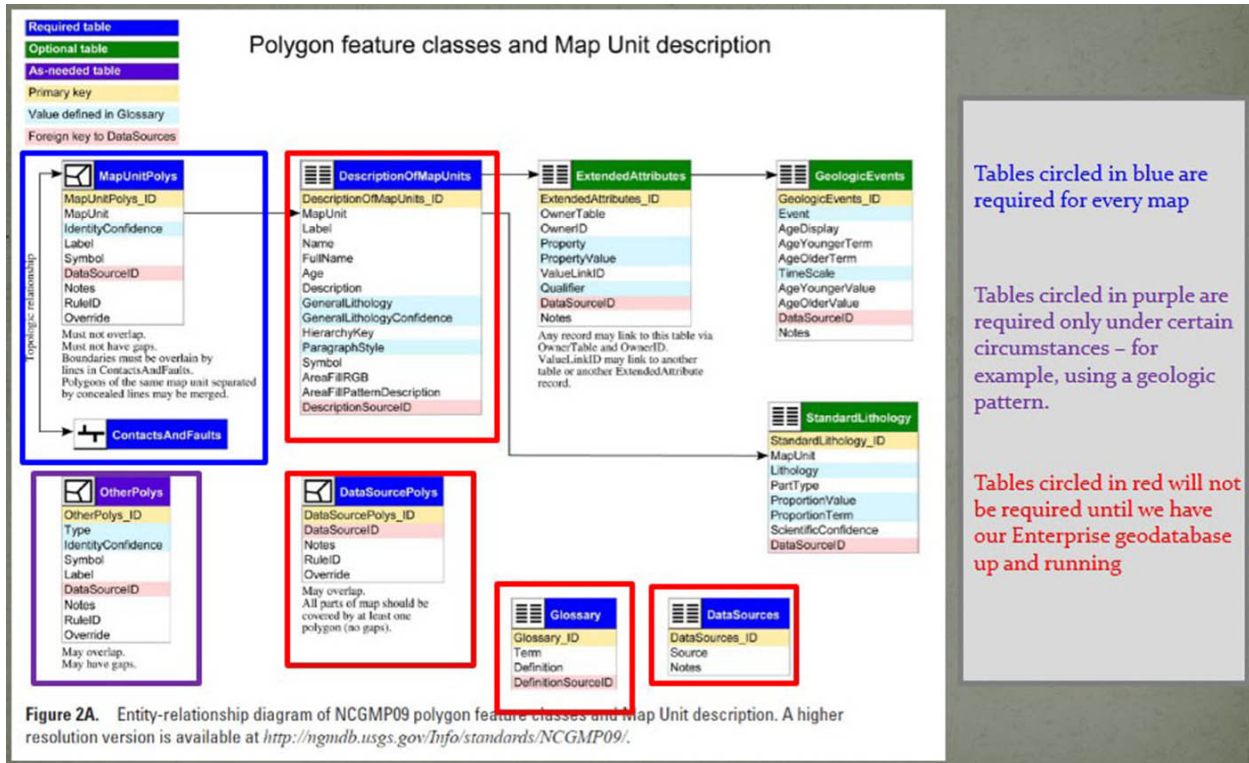
Figure 3a. Example of DGGS's guidelines for required polygon tables.

Figure 3b. Example of DGGS's guidelines for required fields in the MapUnitPolys featureclass.

We thought it important to discuss the FGDC cartographic standards because they mesh perfectly with NCGMP09. Each user was given a copy of the FGDC Digital Cartography Standard for Geologic Map Symbolization and encouraged to read the introductory material. As a group, we reviewed the various codes and symbols, then discussed how FGDC and NCGMP09 work together to let the data drive the symbology (Figure 4). Throughout the session, many great discussions took place; the best of which concerned location confidence. The spirited debate between specific (10 m, 25 m, etc.) and descriptive (certain, approximate, etc.) location confidence could have gone on for hours!
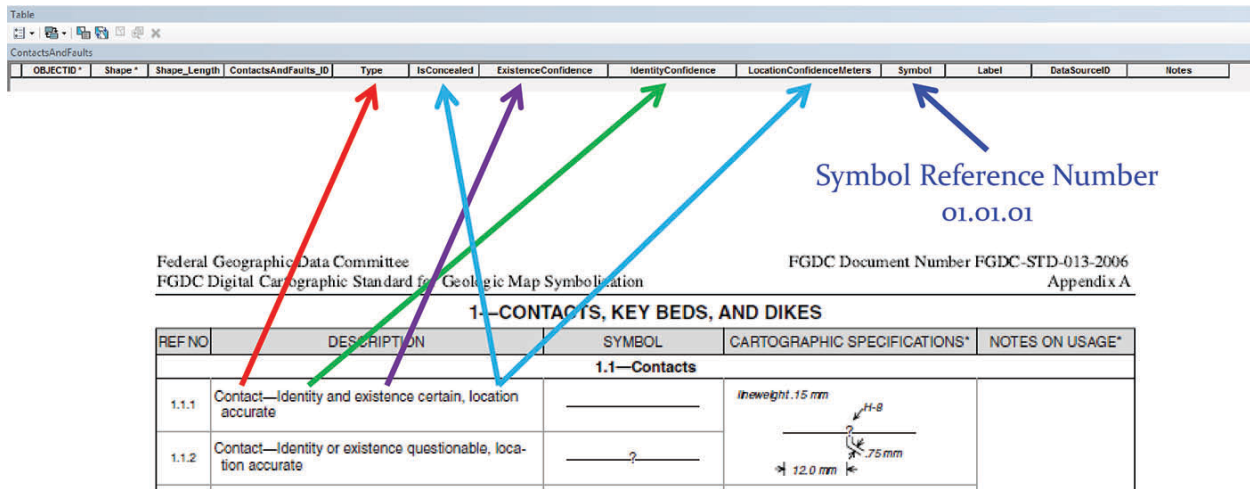

Figure 4. Required NCGMP09 fields correspond to a specific FGDC symbol. The data determine the symbol!

The last half of the training session focused on hands-on activities. A brief demo illustrated the process of creating an NCGMP09 geodatabase using the 10.1 script in the NCGMP09 toolbox. To save time, individual participants did not run the script during the session. In the first exercise participants populated new data into the MapUnitPolys feature class in their practice data folders. Participants were able to practice creating data and filling in the required information. We emphasized using the Create Features window to help set defaults and templates. In the second exercise participants loaded point features from a shapefile into the NCGMP09 Orientation Points feature class, which let them practice using the Simple Data Loader and identifying missing NCGMP09 required data. Last, attendees worked in groups to determine the best FGDC symbol for the pre-populated lines in the ContactsAndFaults feature class. It was interesting to see that groups chose slightly different symbols based on their interpretation of the LocationConfidenceMeters field.

JOURNEY'S END

Division-wide training is integral to the successful implementation of NCGMP09 at DGGS. It was invaluable, for all involved, to gather all GIS users in one room to introduce and practice NCGMP09 workflows (Figure 5). The group-training format and specific exercises allowed participants to work together and, in the long run, will save GIS staff from having to cover the basics multiple times. This training session provided a good frame of reference, introduced a

solid starting point, and spurred a lot of good questions and discussions about the NCGMP09 data standard. We plan additional detailed training sessions in the future, especially further discussion about how to best deal with the LocationConfidenceMeters field! For a copy of the training presentation, materials, and exercises, please contact Patricia Gallagher.

Figure 5. DGGS geologists and GIS users seek out new standards and workflows.