

The National Map Corps

The USGS Volunteer Geographic Information Program
Position Paper

Morgan J. Bearden
U.S. Geological Survey
National Geospatial Technical Operations Center
Rolla, Missouri

Introduction

The National Map Corps uses citizen volunteers to help the Geospatial Information Office of the U.S. Geological Survey (USGS) obtain data for *The National Map*.

The National Map Corps

Originally named the Earth Science Corps and administered from the Mapping Applications Center in Reston, Virginia, the USGS mapping volunteer program has undergone many changes in the recent past.

In its earliest form, the Earth Science Corps had volunteers identify and annotate topographic map corrections through an "adopt-a-map" program. The volunteers provided annotated maps to the USGS at a rate of 50 to 100 per year. The intention was to incorporate the changes identified by the volunteers into future topographic map revisions. There were approximately 3300 Earth Science Corps volunteers when management of the program moved from Reston, VA to Rolla, MO in 2001.

Unfortunately, because of our revision cycle, the tedious, time consuming annotation work that the volunteers performed rarely was used. Between 1992 (official end of the 7.5-minute mapping program) and 2000, fewer than 1,000 maps per year were revised. One result of this situation was that volunteers would become alienated when they realized that their meticulous work would not be used in the foreseeable future.

In 2003 a supplemental volunteer program was started that invited volunteers to collect map-worthy structures. The structures were to be located with a Global Positioning System (GPS) receiver and identified with their proper name. The data created by the "GPS procedure" were sent to the mapping center in Rolla, where they were processed and ultimately incorporated into *The National Map*. In the summer of 2005 all volunteers were notified that the map annotation program had been terminated, and that only data collected via the GPS procedure would be supported in the future.

It soon became apparent that the volume of data submitted by volunteers would overwhelm the program's resources. Since most features collected by the volunteers were accompanied by coordinates from a sidewalk or street, USGS technicians were required to move the submitted

point to the center of the respective feature by superimposing the submitted point on an orthoimage.

To address the time consuming process of point processing, a new web-based map and image viewer was developed (<http://ims.er.usgs.gov/vfs/faces/index.jsp>). The web-based approach was inspired by the NASA Clickworker project (<http://clickworkers.arc.nasa.gov/top>) that used citizens to identify and collect craters on Mars.

The National Map Corps presently (2007) supports both the GPS and the web-based procedures. However, with the current (2007) 16 month backlog of GPS-collected points increasing almost daily, managers of the program are likely to halt GPS-based collection in the future, and rely solely upon the web-based procedure with only occasional direct GPS coordinate entry.

During the next few months a new web site will be developed that will incorporate an improved user interface and navigation tools. Other enhancements such as the ability to view GNIS features, a help option, and on-line training similar to the NASA Clickworker site are also being considered.

The GPS procedure has resulted in 21,096 structure points (10,894 waiting to be processed) by 1,152 GPS volunteers. A total of 3,352 structure points have been collected by the 359 web-based volunteers.

Future

After the new web-based viewer is completed later this year, the *National Map Corps* managers plan to promote *The National Map Corps* through all appropriate channels: magazines, newsletters, professional publications, and direct mail via map purchases from the USGS Store.

Summary

We believe that *The National Map Corps* can provide quality information for several feature types that change frequently on the landscape. The volunteer approach is particularly suited to data themes that:

- have a great need for increased coverage;
- have few existing geo-referenced databases; and
- are difficult to collect remotely, but easy to collect on-site.

It is important to keep in mind that for our purposes we are interested only in a pre-defined set of map-worthy features, their precise location, and their precise name.

I would like to attend the Specialist Meeting on VGI to share our experiences and learn what others are doing in this field. Our program has evolved considerably during the past few years; we have amassed a significant amount of data and are looking forward to developing this new approach to mapping.