



Preliminary geologic map of the San Bernardino 30' x 60' quadrangle, California

(includes preliminary GIS database)

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Readme, version 1.0

Open-File Report 03-293
Online version 1.0

<http://geopubs.wr.usgs.gov/open-file/03-293>

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DATABASE LIMITATIONS

Content

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

This database, identified as "Preliminary Geologic map of the San Bernardino 30' x 60' quadrangle, California", has been approved for release and publication by the Director of the U.S. Geological Survey. Although this database has been technically reviewed, and is substantially complete, it has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. The USGS reserves the right to revise the data pursuant to further analysis and review. Furthermore, it is released on the condition that neither the USGS nor the United States Government may be held responsible for any damages resulting from its authorized or unauthorized use.

Spatial Resolution

Use of this digital geologic map should not violate the spatial resolution of the data. The San Bernardino 30' x 60' database was compiled from many sources including: (1) 1:62,500-scale reconnaissance mapping, (2) mapping from 1:24,000-scale USGS Open-File releases, (3) unpublished 1:24,000-scale mapping (4) Quaternary mapping from interpretation of 1:24,000-scale aerial photography, and (5) detailed 1:9,600-scale and 1:12,000-scale mapping from California Geological Survey Open-File releases. See Sheet 5, figure 3 for detailed sources of mapping. Any enlargement beyond the spatial resolution of the original geologic source data violates the spatial resolution of the data. Similarly, the digital topographic base data are derived from the U.S. Geological Survey, 1:100,000-scale San Bernardino 30' x 60' Digital Line Graphs (DLGs); any enlargement beyond this scale may be misleading. Where this database is used in combination with other data of higher resolution, the resolution of the combined output will be limited by the lower resolution data. No part of the database is intended to serve for site-specific studies.

Examination of a plot of the geologic map (Sheet 1) indicates detail in some areas that is far too fine to show well at 1:100,000-scale. This detail is purposely maintained to draw attention to areas where detailed information, compiled from large-scale maps is available. This detail may be viewed by on-screen examination of the digital map coverage or by plotting selected areas at larger scales. However, any enlargement beyond the spatial resolution of the original geologic source data violates the spatial resolution of the data.

INTRODUCTION

Open-File Report 03-293 is a digital geologic data set that maps and describes the geology of the San Bernardino 30' x 60' quadrangle, San Bernardino, Los Angeles, and Riverside Counties, southern California. The San Bernardino quadrangle database is one of several 30' x 60' quadrangle databases that are being produced by the Southern California Areal Mapping Project (SCAMP). These maps and databases are, in turn, part of the nation-wide digital geologic map coverage being developed by the National Cooperative Geologic Map Program of the U.S. Geological Survey (USGS).

The San Bernardino data set consists of a digital geologic map database accompanied by graphics, map plot, and explanatory files. The digital database was created using ARC/INFO, version 8.1, commercial Geographical Information System (GIS) software designed by Environmental Systems Research Institute (ESRI), Redlands, California (<http://www.esri.com>). The database includes ARC/INFO geospatial coverages and supporting SCAMP symbolsets. PostScript and 508-compliant Portable Document Format files include (1) a geologic map generated from the database, (2) a fault map, (3) a Correlation of Map Units (CMU), (4) a list of map units, (5) a sheet containing three figures, and (6) a pamphlet containing a regional geologic synthesis and a detailed Description of Map Units. Other PDF and ASCII text files contain metadata, and this readme document.

WHERE TO OBTAIN THE DATABASE

The San Bernardino 30' x 60' quadrangle data set is available on the USGS Western Region Geologic Publications Server. The data set may be downloaded from the website

<http://geopubs.wr.usgs.gov/open-file/03-293>

The San Bernardino geologic map and database can also be accessed through links to the Western Region Geologic Publication Server by any of the following paths:

<http://scamp.wr.usgs.gov/scamp.html>

This website provides links to SCAMP-related digital geologic mapping in southern California.

<http://geopubs.wr.usgs.gov/>

This website provides links to USGS Western Region digital geologic maps, including Open-File. The site lists new releases series and number.

<http://geology.usgs.gov/open-file/index.html>

This website provides links to all digital USGS Open-File Reports that contain digital map databases. The site lists the Open-File Reports by number along with the title and author(s) of the report

<http://geo-nsdi.er.usgs.gov/cgi-bin/publication/open-file>

This website provides links to all digital USGS Open-File Report maps via their metadata files. The site lists the Open-File Reports by number along with the title of the report (see 'How to obtain metadata' below).

DATABASE INFORMATION AVAILABLE ON USGS GEOPUBS SERVER

On the USGS Western Region Geologic Publications Server (geopubs) website for the San Bernardino geologic map and digital database, information is arranged as follows:

Title

Preliminary Geologic map of the San Bernardino 30' x 60' quadrangle, California

Authors

Douglas M. Morton (comp.)

Fred K. Miller (comp.)

Pamela M. Cossette (digital cartography)

Kelly R. Bovard (digital cartography)

Introduction

Browse-graphic image

Page-sized, non-navigable image of geologic map
(sanbern_map.jpg: JPEG image of geologic map)

Explanatory files

Readme tabulates contents of database and describes how to access them. Provided on website in ASCII text and Portable Document formats

Metadata file contains detailed technical descriptions of structure and content of digital data provided on website as parseable text in ASCII format, and as outline in Hypertext Markup Language format. Also available on the USGS Geologic Division Node of the National Geospatial Data Clearinghouse in these two and other formats (see 'How to obtain metadata' below).

Database files

Database files are packaged as a tarred and gzipped file (sanbern.tar.gz) that bundles and compresses the following information:

Database files: ASCII-formatted ARC/INFO interchange/export format (.e00) file for each ARC/INFO coverage, each base coverage, and symbolset. (See 'Database contents and structure' below)

ASCII text files for readme and metadata

Files for viewing and plotting

Two gzip-compressed PostScript plot-files for generating paper copies of the complete geologic map, and faults

Portable Document Format files containing full-sized, navigable graphic images of the geologic Map, the faults, the Correlation of Map Units (CMU), a List of Map Units, and a separate sheet containing index figures

HOW TO ACCESS THE DATABASE

Extracting the database files

The San Bernardino 30' x 60' database files have been bundled and compressed using tar and gzip utilities. Before attempting to unzip the file after downloading, be sure that the .gz extension is present in the file name.

Extraction creates the directory sanbern/ that contains the database in ARC/INFO interchange (.e00) files, the readme, metadata, and pamphlet in ASCII text files. The database interchange files include eight ARC/INFO coverages, and supporting symbolsets.

Tar and uncompress utilities are included in most UNIX systems, and are available free of charge for all systems at various websites:

- Gnu Software: <http://www.gnu.org/order/ftp.html> (UNIX tar and gzip)
(This web page links to mirror archive sites for Gnu tar and gzip utilities)
- Gnu zip: <http://www.gzip.org> (UNIX gzip)
- CNET Shareware: <http://shareware.cnet.com/> (Macintosh and Windows)
(Search for 'tar' or 'gzip' for any Macintosh or Windows operating system.)
- WinZip: <http://www.winzip.com> (Windows gzip)
- USGS Public Domain Software web page:
<http://edcwww.cr.usgs.gov/doc/edchome/ndcdb/public.html> (UNIX and Macintosh)
(Provides links to Washington University at St. Louis Gnu archive for UNIX tar and gzip; and to AOL mirror site for Macintosh tar and gzip)
- Internet Literacy's Common Internet File Formats:
<http://www.matisse.net/files/formats.html> (Macintosh and Windows tar and gzip)
(Note: this website has not been maintained since December 1995)

Converting the ARC/INFO interchange/export files

The ARC interchange/export (.e00) files are converted to ARC coverages using the ARC command IMPORT.

1. Change directories to the sanbern/ directory
2. At the UNIX command prompt, launch ARC/INFO by typing "arc"
3. From the ARC command line type:
`import <option> <interchange_file> <output>`
(e.g., `import auto sanbern_geo sanbern_geo`; repeat for each interchange file)

Consult the ARC/INFO command references manual in ESRI's software documentation for a complete discussion of the command "import".

DATABASE CONTENTS

This readme section contains a brief overview of the content of the database.

Content

After importing the San Bernardino ARC/INFO interchange files, the sanbern/ directory contains five map coverages, three base-map coverages, one additional reference source containing a 7.5' grid and constituent quadrangles, four symbolsets and one font set (in folder Symbolsets), two lookup tables, and two documentation (.txt) files:

sanbern/	
info/	
sanbern_geo/	Geologic units and contacts
sanbern_dk/	Dikes
sanbernflt/	Faults with ornamentation showing relative movement
sanbern_str/	Planar structure: bedding and foliation
snbrn_carto/	Map unit annotation and leaders
snbrn_quds/	7.5' grid and constituent quadrangles
snbrn_hypso/	Hypsography derived from DLGs
snbrn_hydro/	Hydrography derived from DLGs
snbrn_transp/	Cultural features derived from DLGs

rockunit_color.lut Rock unit colors (wpgcmykg.shd)
rockunit_pattern.lut Polygon fill patterns (geology2.shd)

geoscamp2.lin Lineset (lines)
geoscamp2.mrk Markerset (points)
wpgcmykg.shd Shadeset (colors)
geology2.shd Shadeset (patterns)
geofont.txt GeoAge font set containing stratigraphic symbols

sanbern_readme.txt Readme in ascii text format
sanbern_met.txt Metadata in ascii text format

ARC/INFO interchange files can be read by some other Geographic Information Systems, including ARCVIEW (ESRI) and MapInfo (via ArcLink). Please consult your GIS documentation to see if your system recognizes ARC interchange files and follow the procedure to import them. (NOTE: all symbolsets cannot be read directly in ARCVIEW.)

HOW TO OBTAIN A PAPER PLOT OF THE GEOLOGIC MAP

1. Download and, using a gzip utility (see 'Extracting the database files' above), uncompress the file sanbern_map.ps.gz. The 47-MB file sanbern_map.ps is a PostScript plot-file of the geologic map and its explanation. The PostScript file will plot a 1:100,000-scale, full-color geologic map of the San Bernardino quadrangle along with base data including topography, hydrography, and cultural data. The plot has a format similar to the U.S. Geological Survey's Miscellaneous Investigations (MF) map series, and is approximately 34 x 44 inches in size. It has been plotted successfully on Hewlett-Packard large-format plotters, models HP650C, HP755CM, and HP2500C using 36 x 48-in paper.

To add base data to the geologic map, San Bernardino 30' x 60' DLGs of hypsography, hydrography, and cultural features were converted to ARC/INFO coverages. There are no additional data contained in any of the three base coverages. They are included as base reference data only. The combined map is a digital image in which geologic and base lines and points are displayed in their proper geospatial locations, but in which no information other than location is attached to the lines and points of the base data.

The plot files have been prepared using line- and point-symbols and unit colors and patterns located in the following symbolsets:

geoscamp2.lin Lineset
geoscamp2.mrk Markerset
wpgcmykg.shd Shadeset
geology2.shd Shadeset

These sets are included in the sanbern.tar.gz digital data package.

2. Download and plot the file sanbern_map.pdf, which generates a paper map equal in quality to that of the much larger (MB) post-script plot file.

HOW TO ACCESS PORTABLE DOCUMENT FORMAT (.PDF) FILES

The .pdf files are accessed using Adobe Acrobat Reader software, available free of charge

from the Adobe web site (<http://www.adobe.com>).

HOW TO OBTAIN METADATA

Metadata for the San Bernardino geologic map database are available as part of the National Spatial Data Infrastructure through the USGS Geologic Division Node of the National Geospatial Data Clearinghouse (<http://nsdi.usgs.gov/>). Within this site, Open-File Reports are located at

<http://geo-nsdi.er.usgs.gov/cgi-bin/publication/open-file>

where they are listed by OF number along with the title. Metadata at this node are viewable in five formats (ASCII as parseable text; HTML outline, HTML as answers to questions, XML, and DIF).

Metadata for the San Bernardino 100k database is located at

<http://geo-nsdi.er.usgs.gov/metadata/open-file/03-293/metadata.faq.html>

ASCII text and HTML outline versions of the metadata are also available as stand-alone files at the San Bernardino Open File website (<http://geopubs.wr.usgs.gov/open-file/of03-293>) and the ASCII text version is bundled with database files in the tarred and gzipped file.

LIST OF URLS CITED

U.S. Geological Survey websites

San Bernardino 30' x 60' quadrangle

Open-File Report: <http://geopubs.wr.usgs.gov/open-file/03-293>

Metadata: <http://geo-nsdi.er.usgs.gov/metadata/open-file/03-293/metadata.faq.html>

Southern California Areal Mapping Project (SCAMP) website

GIS attributes: http://scamp.wr.usgs.gov/scamp/html/sc_gis.html

Western Region Geologic Publication Server

Open-File Reports:

<http://geopubs.wr.usgs.gov/open-file/of> (followed by the OFR number)

All digital publications

<http://geopubs.wr.usgs.gov/>

U.S. Geological Survey website (<http://geology.usgs.gov>)

Open-File Reports

Digital maps: <http://geology.usgs.gov/open-file/index.html>

Metadata: <http://geo-nsdi.er.usgs.gov/cgi-bin/publication/open-file>

Metadata (USGS Node of the National Geospatial Data Clearinghouse)

<http://nsdi.usgs.gov/>

National Geologic Map Database

<http://ncgmp.usgs.gov/ngmdbproject/standards/>

<http://geology.usgs.gov/dm/>

Software websites

GIS systems

Environmental Systems Research Institute (ESRI): <http://www.esri.com>
MapInfo: <http://www.mapinfo.com>

Compression and tar software

Gnu Software: <http://www.gnu.org/order/ftp.html> (UNIX tar and gzip)
(This web page links to mirror archive sites for Gnu tar and gzip utilities)
Gnu zip: <http://www.gzip.org> (UNIX gzip)
CNET Shareware: <http://shareware.cnet.com/> (Macintosh and Windows)
(Search for 'tar' or 'gzip' for any Macintosh or Windows operating system.)
WinZip: <http://www.winzip.com> (Windows gzip)
USGS Public Domain Software web page:
<http://edcwww.cr.usgs.gov/doc/edchome/ndcdb/public.html> (UNIX, Macintosh)
(Provides links to Washington University at St. Louis Gnu archive for UNIX
tar and gzip; and to AOL mirror site for Macintosh tar and gzip)
Internet Literacy's Common Internet File Formats:
<http://www.matisse.net/files/formats.html> (Macintosh and Windows tar and gzip)
(Note: this website has not been maintained since December 1995)

Portable document reader

Adobe web site: <http://www.adobe.com>