



Preliminary Geologic Map of the Big Bear City 7.5' Quadrangle, San Bernardino County, California

By Fred K. Miller¹

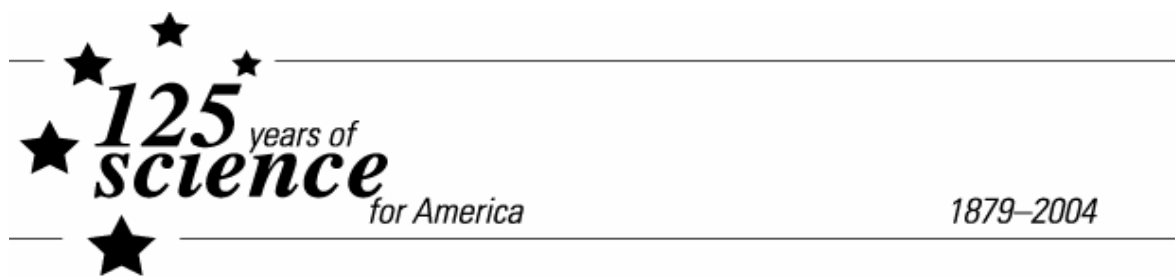
Digital preparation by P.M. Cossette¹

Prepared in cooperation with

U.S. Forest Service (San Bernardino National Forest) and the California Geological Survey

Readme and metadata to accompany

Open File Report 2004-1193



2004

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U.S. Geological Survey

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INTRODUCTION

General

Open File Report 2004-1193 contains a digital geologic map database for the Big Bear City 7.5' quadrangle that includes:

1. ARC/INFO (Environmental Systems Research Institute, <http://www.esri.com>) version 8.1 (service pack 1) geospatial coverages (in interchange file format .e00) of the various components of the geologic map database, supporting INFO tables (in interchange file format .e00) and a tarred and zipped folder containing Southern California Areal Mapping Project (SCAMP) and USGS symbolsets used to display the geologic data.
2. PostScript file to plot:
 - The geologic map on a topographic base, along with a Correlation of Map Units diagram, a list of map units, and an index map.
3. Portable Document (508-compliant) Format (.pdf) files of:
 - a. This Readme; including in Appendix I, a copy of bbc_met.txt
 - b. The same page as described in 2 above.

In the geologic map data package, map units are identified by standard geologic map criteria such as formation-name, age, and lithology.

The data set for the Big Bear City 7.5' quadrangle has been prepared by SCAMP in cooperation with the U.S. Forest Service (San Bernardino National Forest) and the California Geological Survey as part of an ongoing effort to utilize a Geographical Information System (GIS) format to create regional digital geologic databases. These regional databases are being developed as contributions to the National Geologic Map Database of the National Cooperative Geologic Mapping Program of the USGS.

The digital geologic map database for the Big Bear City 7.5' quadrangle has been created as a general-purpose data set that is applicable to other land-related investigations in the earth and biological sciences. The database is not suitable for site-specific geologic evaluations.

This Readme document describes the digital data, such as types and general contents of files that comprise the database and includes information on how to extract and plot the map sheet. Metadata information can be accessed at <http://geo-nsdi.er.usgs.gov/cgi-bin/publication/open-file> and are included in Appendix I, Readme.

HOW TO OBTAIN PAPER PLOTS

For those having access to large-format plotters such as HP2500, plots may be made directly from the included plot files. For those needing paper plots of the geologic map and accompanying text, but who do not have access to large-format plotters, please contact the U.S. Geological Survey Print-on-demand facility.

Phone: 1-800-USA-MAPS (1-800-872-6277)

HOW TO OBTAIN THE DIGITAL FILES

The export files, and subsequently the data and plot files, constituting the geologic map database of this Open File Report may be obtained over the Internet via the Web from Western Region Geologic Information Server. Go to the web page at <http://geopubs.wr.usgs.gov/open-file/2004-1193> and follow the directions to download the files.

DATABASE CONTENTS

The files constituting the geologic map database of this Open File Report are listed below along with the interchange files from which they may be extracted.

Data Package

All files listed below are in a compressed tar file named **bbc-city.tar.gz** (~3.6 MB); see section below titled, SOFTWARE UTILITIES.

<u>ARC/INFO</u> <u>interchange files</u>	<u>Big Bear City</u> <u>coverages/INFO files</u>	<u>Contains</u>
bbc_geo.e00 bbc_str.e00	bbc_geo bbc_str	Contacts, faults, and geologic unit labels Structural point data. Dip and plunge values plotted as annotation.
bbc_fa.e00 bbc_anno.e00	bbc_fa bbc_anno	Fold axes Map annotation elements
polycolor.lut.e00	polycolor.lut	Rock unit color look-up INFO table
lines.rel.e00	lines.rel	Line dictionary contains all SCAMP line codes (Matti and others, 1998a)
points.rel.e00	points.rel	Point dictionary, contains all SCAMP point codes (Matti and others, 1998b)

<u>Raster file</u>	<u>Resultant image</u>	<u>Contains</u>
bbc.tif	Big Bear City	Topographic base from 500dpi scan of USGS base map Big Bear City 7.5' quadrangle, 1971. Geotiff format

** An additional folder, **symbols.zip** is included in the data package, which contains SCAMP and USGS symbolsets and fonts necessary to produce derivative maps that emulate the original map product.

ASCII text file

readme.txt	Readme text (this file)
-------------------	-------------------------

The directory, info/, is produced in the process of importing interchange files to ARC coverages in ARC/INFO. The **bbc** (Big Bear City) info/ directory contains ARC/INFO feature attribute tables (as indicated above in the list of coverages) along with the supporting INFO tables and files (listed above).

Plot Package

PostScript plot file (.ps) of the Big Bear City single geologic map sheet, with CMU, abbreviated DMU diagram, and supporting data; please see section below titled, SOFTWARE UTILITIES for additional information.

<u>Compressed file</u>	<u>Resultant image</u>	<u>Contains</u>
bbc .ps.gz	bbc .ps	PostScript plot file of geologic map and supporting data

PostScript files are compressed UNIX files requiring gzip to uncompress them.

The uncompressed PostScript file **bbc**.ps (approx. 242 MB) will plot a 1:24,000 scale, full color geologic map of the Big Bear City quadrangle on its topographic base. The map sheet has been successfully plotted on Hewlett-Packard large-format plotters, models HP650C, HP755CM, and HP2500C.

Other files

readme.pdf	This document in .pdf format
bbc_met.html	Big Bear City 7.5' map database metadata

SOFTWARE UTILITIES

Files which have .gz file extension were compressed using gzip. Gzip utilities are available free of charge via the internet at the gzip home page, <http://www.gzip.org>

The data package is additionally bundled into a single tar (tape archive) file. Individual files must be extracted using a tar utility, available free of charge via the internet through links on the Common

Internet File Formats page, <http://www.matisse.net/files/formats.html>. One such utility is WinZip, available at <http://www.winzip.com> (WinZip can also decompress files).

Files in the plot package have been prepared to produce optimum plots using the shade, and marker sets listed below. The marker and line sets may be obtained from the included symbols folder or from the web site http://wrgis.wr.usgs.gov/docs/wgmt/scamp/html/sc_gis.html (fonts that are essential to the ability to utilize the SCAMP symbol sets are included in the symbols folder). GeoAge Symbol Font Family is similarly included in the symbols folder.

geoscamp2.lin	Lines
geoscamp2.mrk	Points
scamp2.shd	Colors (shadeset used in this data set)
wpgcmykg.shd	Colors
geology2.shd	Patterns (used in this data set)
GeoAge fonts	Stratigraphic Age Symbols

HOW TO EXTRACT THE GEOLOGIC MAP DATABASE FROM THE TAR FILE

After downloading the files, they must be uncompressed using a gzip utility such as gzip itself or WinZip. The data files must then be extracted using a tar utility.

Digital database

<u>To do this</u>	<u>Type this at the Unix command prompt</u>
Make a 8.5 MB tar file named bbc city.tar	gzip -d bbc city.tar.gz (or use gzip utility of choice)
Go to the directory that will hold the directory bbc city (if different from local_directory)	cd local_directory
Extract the bbc city directory from the tar file	tar -xvbv {path to tar file} bbc city.tar (or use tar utility of choice)

This process will create a directory, **bbc**city/, that contains the ARC/INFO interchange files and supporting files that are created by importing the Big Bear City interchange file format (.e00) files listed in the Database Contents section.

The following are not included in the database tar file, and can be downloaded separately

readme.pdf	This document
bbc_met.html	Big Bear City database metadata

PostScript plot files

Make a 242 MB uncompressed file, **bbc**city.ps by typing **gzip -d bbc**city.ps.gz (or use gzip utility of choice)

Portable Document Format (.pdf) files

PDF files are not stored as gzip files. They are accessed using Adobe Acrobat Reader software, available free from the Adobe website <http://www.adobe.com>. Follow instructions at the website to download and install the software. Acrobat Reader contains an on-line manual and tutorial.

HOW TO CONVERT THE ARC/INFO INTERCHANGE (EXPORT) FILES

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

ARC interchange files can also be read by some other Geographic Information Systems, including ArcView (ESRI) and MapInfo (<http://www.mapinfo.com>) (Environmental Systems Research Institute, Inc, 1991). Please consult your GIS documentation to see if you can use ARC interchange files and the procedure to import them.

DIGITAL GEOLOGIC MAP SPECIFICATIONS

Base map

The base map image (bbc.tif, Geotiff format) was prepared by scanning a scale-stable clear film of the U.S Geological Survey, 1:24,000 Big Bear City 7. 5' quadrangle (1971) topographic map. Scanning was done using an Anatech Eagle 4080 monochrome 800 dpi scanner at a resolution of 500 dpi. The raster scan was converted to a monochromatic image in ARC/INFO, and registered and rectified to the Big Bear City 7.5' quadrangle. No elements of the base layer are attributed. The base map is provided for reference only.

Spatial resolution

Use of this digital geologic map database should not violate the spatial resolution of the data. Although the digital form of the data removes the constraint imposed by the scale of a paper map, the detail and accuracy inherent in map scale are also present in the digital data. The fact that this database was compiled and edited at a scale of 1:24,000 means that higher resolution information may not have been uniformly retained in the dataset. Plotting at scales larger than 1:24,000 will not yield greater real detail, although it may reveal fine-scale irregularities below the intended resolution of the database. Similarly, although higher resolution data is incorporated in most of the map, the resolution of the combined output will be limited by the lower resolution data.

Map accuracy standards

Because uniform National geologic map accuracy standards have not yet been developed and adopted, lines and points on the Big Bear City 7.5' geologic map follow standards currently being used by the Southern California Areal Mapping Project (SCAMP) for 1:24,000 scale maps; lines and points that are located to within ± 50 meters, relative to accurately located features on the base map, are considered to meet map accuracy standards. Published and unpublished mapping used to compile the Big Bear City 7.5' geologic map are known to generally meet this map accuracy standard.

Database specifics

The map database consists of ARC coverages which are stored in Polyconic projection (Table 1). Digital ties define a 7.5-minute grid of latitude and longitude that corresponds to the corners of the Big Bear City 7.5' quadrangle.

Table 1—Map Projection

Projection	Polyconic
Datum	NAD27
Units	Meters
Spheroid	Clark 1866

Longitude of central meridian 116° 48' 45"
Latitude of projection's origin 34° 15'

The content of the geologic database can be described in terms of feature classes that include lines, points, and areas that comprise the map. See metadata text file (Appendix I) for detailed descriptions.

REFERENCES

- Environmental Systems Research Institute, Inc, 1991, ARC/INFO command references 6.0: Proprietary software manual
- Matti, J.C., Powell, R.E., Miller, F.K., Kennedy, S.A., Ruppert, K.R., Morton, G.L., and Cossette, P.M., 1998a, Geologic-line attributes for digital geologic map databases produced by the Southern California Areal Mapping Project (SCAMP), Version 1.0: U.S.Geological Survey Open-File Report 97-861
- Matti, J.C., Miller, F.K., Powell, R.E., Kennedy, S.A., Bunyapanasarn, T.P., Koukladas, Catherine, Hauser, R.M., and Cossette, P.M., 1998b, Geologic-point attributes for digital geologic map databases produced by the Southern California Areal Mapping Project (SCAMP), Version 1.0: U.S.Geological Survey Open-File Report 97-859

APPENDIX I

Identification_Information:

Citation:

Citation_Information:

Originator: Fred K. Miller

Publication_Date: 2004

Title:

Preliminary Geologic Map of the Big Bear City 7.5' Quadrangle, San Bernardino County, California

Edition: Version 1.0, 2004

Geospatial_Data_Presentation_Form: vector digital data

Series_Information:

Series_Name: U.S. Geological Survey Open File Report

Issue_Identification: USGS OF 2004-1193

Publication_Information:

Publication_Place: Menlo Park, California

Publisher: U.S. Geological Survey

Online_Linkage: <http://geopubs.wr.usgs.gov/open-file/2004-1193>

Description:

Abstract:

This data set maps and describes the geology of the Big Bear City 7.5' quadrangle, San Bernardino County, California. Created using Environmental Systems Research Institute's ARC/INFO software, the data base consists of the following items: (1) a rock-unit coverage and attribute tables (polygon and arc) containing geologic contacts, units and rock-unit labels as annotation which are also included in a separate annotation coverage, bbc_anno (2) a point coverage containing structural point data and (3) a coverage containing fold axes. In addition, the data set includes the following graphic and text products: (1) A PostScript graphic plot-file containing the geologic map, topography, cultural data, a Correlation of Map Units (CMU) diagram, a Description of Map Units (DMU), an index map, a regional geologic and structure map, and an explanation for point and line symbols; (2) PDF files of the Readme (including the metadata file as an appendix), and a screen graphic of the plot produced by the PostScript plot file.

The geologic map describes a geologically complex area on the north side of the San Bernardino Mountains. Bedrock units in the Big Bear City quadrangle are dominated by (1) large Cretaceous granitic bodies ranging in composition from monzogranite to gabbro, (2) metamorphosed sedimentary rocks ranging in age from late Paleozoic to late Proterozoic, and (3) Middle Proterozoic gneiss. These rocks are complexly deformed by normal, reverse, and thrust faults, and in places are tightly folded.

The geologic map database contains original U.S. Geological Survey data generated by detailed field observation and by interpretation of aerial photographs. The map data was compiled on base-stable cronoflex copies of the Big Bear City 7.5' topographic map, transferred to a scribe-guide and subsequently digitized. Lines, points, and polygons were edited at the USGS using standard ARC/INFO commands. Digitizing and editing artifacts significant enough to display at a scale of

1:24,000 were corrected. Within the database, geologic contacts are represented as lines (arcs), geologic units as polygons, and site-specific data as points. Polygon, arc, and point attribute tables (.pat, .aat, and .pat, respectively) uniquely identify each geologic datum.

Purpose:

The data set for the Big Bear City 7.5' quadrangle has been prepared by the Southern California Areal Mapping Project (SCAMP), as part of an ongoing effort to utilize a Geographical Information System (GIS) format to create regional digital geologic databases. These regional databases are being developed as contributions to the National Geologic Map Data Base of the National Cooperative Geologic Mapping Program.

The digital geologic map database for the Big Bear City 7.5' quadrangle has been created as a general-purpose data set that is applicable to other land-related investigations in the earth and biological sciences. The database is not suitable for site-specific geologic evaluations.

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1977

Ending_Date: 2003

Currentness_Reference: New data

Status:

Progress: Complete

Maintenance_and_Update_Frequency: As Needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -116.8750927

East_Bounding_Coordinate: -116.7499073

North_Bounding_Coordinate: 34.37499995

South_Bounding_Coordinate: 34.24998409

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

Theme_Keyword: geologic map

Theme_Keyword: geology

Theme_Keyword: bedrock geology

Theme_Keyword: surficial geology

Theme_Keyword: thrust faulting

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: California

Place_Keyword: San Bernardino County

Place_Keyword: Big Bear City 7.5' quadrangle

Stratum:

Stratum_Keyword_Thesaurus: None

Stratum_Keyword: Paleozoic rocks

Stratum_Keyword: Carbonate rocks

Stratum_Keyword: Cretaceous granitic rocks

Stratum_Keyword: Late Proterozoic rocks

Stratum_Keyword: Baldwin gneiss

Access_Constraints: None

Use_Constraints:

The Big Bear City 7.5' geologic-map database should be used to evaluate and understand the geologic character of the Big Bear City 7.5' quadrangle as a whole. The data should not be used for purposes of site-specific land-use planning or site-specific geologic evaluations. The database is sufficiently detailed to identify and characterize geologic materials and structures. However, it is not sufficiently detailed for site-specific determinations.

In this version of the "Preliminary geologic map of the Big Bear City 7.5' quadrangle", identification and correlation of some Quaternary and late Tertiary units on the north side of the San Bernardino Mountains have not been reconciled with more recent and detailed work on the Quaternary and late tertiary units to the north in the Cougar Buttes 7.5' quadrangle (Powell and Matti, 2000). The extent of necessary reconciliation is not known at the time of this Open-File release, but necessary corrections, possibly involving additional field studies, will be made in a later version of this map database.

Use of this digital geologic map database should not violate the spatial resolution of the data. Although the digital form of the data removes the constraint imposed by the scale of a paper map, the detail and accuracy inherent in map scale are also present in the digital data. The fact that this database was compiled and edited at a scale of 1:24,000 means that higher resolution information may not have been uniformly retained in the dataset. Plotting at scales larger than 1:24,000 will not yield greater real detail, although it may reveal fine-scale irregularities below the intended resolution of the database. Similarly, although higher resolution data is incorporated in most of the map, the resolution of the combined output will be limited by the lower resolution data.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Fred K. Miller

Contact_Organization:

U.S. Geological Survey, Western Region,
Earth Surface Processes Team

Contact_Position: Project geologist

Contact_Address:

Address_Type: mailing address

Address:

U.S. Geological Survey

Room 202

West 904 Riverside Avenue

City: Spokane

State_or_Province: Washington

Postal_Code: 99201-1087

Country: United States of America

Contact_Voice_Telephone: (509) 368-3121

Contact_Facsimile_Telephone: (509) 368-3199

Contact_Electronic_Mail_Address: fmiller@usgs.gov

Data_Set_Credit:

Technical review by D. M. Morton and Kelly R. Bovard led to significant improvements that eventually were reflected in aspects of the database, the plot file, and in the description of the geologic units of the Big Bear City 7.5' quadrangle.

Geologic mapping and digital preparation of this report were sponsored jointly by (1) the National Cooperative Geologic Mapping Program of the U.S. Geological Survey, and (2) the Southern California Areal Mapping Project (SCAMP),

Native_Data_Set_Environment:

SunOS, 5.8, sun4u UNIX

ARC/INFO version 8.1

Cross_Reference:

Citation_Information:

Originator: Robert E. Powell

Originator: Jonathan C. Matti

Publication_Date: 2000

Title:

Geologic Map and Digital Database of the Cougar Buttes 7.5' quadrangle, San Bernardino County, California

Geospatial_Data_Presentation_Form: vector digital data

Series_Information:

Series_Name: U.S. Geological Survey Open File Report

Issue_Identification: USGS Open File Report 00-175

Publication_Information:

Publication_Place: Menlo Park, California

Publisher: U.S. Geological Survey

Online_Linkage: <http://geopubs.wr.usgs.gov/open-file/of00-175>

Cross_Reference:

Citation_Information:

Originator: F. K. Miller

Originator: J.C. Matti

Originator: H.J. Brown

Originator: R.E. Powell

Publication_Date: 1998

Title:

Digital Geologic Map of the Fawnskin 7.5' Quadrangle, San Bernardino County, California

Geospatial_Data_Presentation_Form: vector digital data

Series_Information:

Series_Name: U.S. Geological Survey Open File Report

Issue_Identification: USGS Open File Report 98-579 Version 1.1

Publication_Information:

Publication_Place: Menlo Park, California

Publisher: U.S. Geological Survey

Online_Linkage: <http://wrgis.wr.usgs.gov/open-file/of98-579>

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Geologic-map units in the Big Bear City quadrangle database were described using standard field methods. Consistent with these methods, the database author has assigned standard geologic attributes to geologic lines, points, and polygons identified in the database.

Nation-wide geologic-map accuracy standards have not been developed and adopted by the U.S. Geological Survey and other earth-science entities. Until such standards are adopted, the SCAMP project has developed internal

map-accuracy standards for 1:24,000-scale geologic maps produced by the project.

Geologic lines and points on 1:24,000 scale geologic maps are judged to meet SCAMP's internal map-accuracy standards if they are located to within 15 meters, relative to topographic or cultural features on the base map.

Lines and points that meet (or may not meet) this SCAMP internal map-accuracy standard are identified both in the digital database and on derivative geologic-map plots. Within the database, line and point data that are judged to meet the SCAMP internal map-accuracy standard are denoted by the attribute code .MEE. (meets) in the appropriate data table; line and point data that may not meet the SCAMP internal map-accuracy standard are denoted by the attribute code .MNM. (may not meet).

On any derivative geologic-map plot, line data that are judged to meet the SCAMP internal map-accuracy standard are denoted by solid lines; line data that may not meet the SCAMP internal map-accuracy standard are denoted by dashed or dotted lines. There is no cartographic device for denoting the map-accuracy for geologic-point data (eg. symbols representing bedding, foliation, lineations, etc.).

Logical Consistency Report:

Polygon and chain-node topology present.

The areal extent of the map is represented digitally by an appropriately projected (polyconic projection), mathematically generated box. Consequently, polygons intersecting the lines that comprise the map boundary are closed by that boundary. Polygons internal to the map boundary are completely enclosed by line segments which are themselves a set of sequentially numbered coordinate pairs. Point data are represented by coordinate pairs.

Completeness Report:

The geologic map and digital database of the Big Bear City 7.5' quadrangle contain new data that have been subjected to rigorous review and are a substantially complete representation of the current state of knowledge concerning the geology of the area.

Positional Accuracy:

Horizontal Positional Accuracy:

Horizontal Positional Accuracy Report:

The maximum transformation RMS error acceptable for 7.5' quadrangle transformation and data input is 0.003 (1.8 meters). Horizontal positional accuracy was checked by visual comparison of hard-copy plots with base-stable source data.

Lineage:

Process Step:

Process Description:

Field mapping and aerial photograph interpretation; iterative process (F.K. Miller, J. C. Mattiand R. E. Powell.)

Process Date: 1977 - 1993

Process Step:

Process Description:

Transfer of geologic linework and point data from field maps and aerial photographs

to a scale-stable, greenline chronoflex and scribe-guide for geologic compilation
(F.K. Miller)

Process_Date: 1996

Process_Step:

Process_Description:

The geologic map information was hand digitized from a base-stable, scribe-guide using an Altek Datatab digitizing tablet.

Process_Date: 2002

Process_Step:

Process_Description:

ARC/INFO database revised; polygon, arc and point attribute tables updated using model established for SCAMP coverages. Digitizing and editing artifacts significant enough to display at a scale of 1:24,000 were corrected (P.M. Cossette).

Process_Date: 2003

Process_Step:

Process_Description:

Science reviews completed by D. M. Morton and Kelly R. Bovard; technical/digital review completed by Rachel Alvarez.

Process_Date: 2004

Process_Step:

Process_Description:

First draft of metadata created by cossette using FGDCMETA.AML ver. 1.2 05/14/98 on ARC/INFO data set /pool5/c/cossette2/bbcity/bbc1217a

Process_Date: 20040102

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Point

Point_and_Vector_Object_Count: 1439

SDTS_Point_and_Vector_Object_Type: String

Point_and_Vector_Object_Count: 3905

SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains

Point_and_Vector_Object_Count: 1440

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Planar:

Map_Projection:

Map_Projection_Name: Polyconic

Polyconic:

Longitude_of_Central_Meridian: -116.8125

Latitude_of_Projection_Origin: 34.2500

False_Easting: 0

False_Northing: 0

Planar_Coordinate_Information:

Planar_Coordinate_Encoding_Method: coordinate pair

Coordinate_Representation:

Abscissa_Resolution: 0.003

Ordinate_Resolution: 0.003

Planar_Distance_Units: Meters

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1927

Ellipsoid_Name: Clarke 1866

Semi-major_Axis: 6378206.4

Denominator_of_Flattening_Ratio: 294.98

Entity_and_Attribute_Information:

Overview_Description:

Entity_and_Attribute_Overview:

Version 1.0 of the Big Bear City 7.5' quadrangle comprises four ARC/INFO coverages, of which three contain geologic data, and one contains cartographic features: bbc_geo (geology), bbc_fa (fold axes data and geologic line ornamentation), bbc_str (structural point data), and bbc_anno (geologic unit annotation, label leaders, and locality names). One INFO lookup table, polycolor.lut, contains rock unit data and color codes for rock units.

Detailed_Description:

Entity_Type:

Entity_Type_Label: bbc_geo.pat

Entity_Type_Definition:

Geologic units (LABL) and their corresponding names (NAME) identified in the Big Bear City 7.5' quadrangle.

Attribute:

Attribute_Label: LABL

Attribute_Definition: geologic map unit label, in plain text

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Cb

Enumerated_Domain_Value_Definition: Bonanza King Formation, undivided

Enumerated_Domain:

Enumerated_Domain_Value: Cba

Enumerated_Domain_Value_Definition: Bonanza King Formation, argillaceous marker unit

Enumerated_Domain:

Enumerated_Domain_Value: Cbdg

Enumerated_Domain_Value_Definition: Bonanza King Formation, gray dolomite member

Enumerated_Domain:

Enumerated_Domain_Value: Cbdw

Enumerated_Domain_Value_Definition: Bonanza King Formation, white dolomite member

Enumerated_Domain:

Enumerated_Domain_Value: Cbl

Enumerated_Domain_Value_Definition: Bonanza King Formation, lower member

Enumerated_Domain:

Enumerated_Domain_Value: Cbm

Enumerated_Domain_Value_Definition: Bonanza King Formation, middle member

Enumerated_Domain:

Enumerated_Domain_Value: Cc

Enumerated_Domain_Value_Definition: Carrara Formation

Enumerated_Domain:

Enumerated_Domain_Value: Cw

Enumerated_Domain_Value_Definition: Wood Canyon Formation

Enumerated_Domain:

Enumerated_Domain_Value: Cwb

Enumerated_Domain_Value_Definition: Wood Canyon Formation, biotite schist unit

Enumerated_Domain:

Enumerated_Domain_Value: Cwc

Enumerated_Domain_Value_Definition: Wood Canyon Formation, coarse-grained quartzite unit

Enumerated_Domain:

Enumerated_Domain_Value: Cws

Enumerated_Domain_Value_Definition: Wood Canyon Formation, siltite-quartzite unit

Enumerated_Domain:

Enumerated_Domain_Value: Cz

Enumerated_Domain_Value_Definition: Zabriskie Quartzite
Enumerated_Domain:
Enumerated_Domain_Value: Dsc
Enumerated_Domain_Value_Definition: Sultan Limestone, Crystal Pass Member
Enumerated_Domain:
Enumerated_Domain_Value: Dsv
Enumerated_Domain_Value_Definition: Sultan Limestone, Valentine Member
Enumerated_Domain:
Enumerated_Domain_Value: KJdg
Enumerated_Domain_Value_Definition: Mixed mafic diorite and gabbro
Enumerated_Domain:
Enumerated_Domain_Value: Ka
Enumerated_Domain_Value_Definition: Garnetiferous alaskite
Enumerated_Domain:
Enumerated_Domain_Value: Kb
Enumerated_Domain_Value_Definition: Monzogranite of John Bull Flat
Enumerated_Domain:
Enumerated_Domain_Value: Kbd
Enumerated_Domain_Value_Definition: Biotite quartz diorite
Enumerated_Domain:
Enumerated_Domain_Value: Kcf
Enumerated_Domain_Value_Definition: Monzogranite of Cactus Flat
Enumerated_Domain:
Enumerated_Domain_Value: Kcfm
Enumerated_Domain_Value_Definition: Monzogranite of Cactus Flat, muscovite-bearing unit
Enumerated_Domain:
Enumerated_Domain_Value: Kh
Enumerated_Domain_Value_Definition: Granodiorite of Hanna Flat
Enumerated_Domain:
Enumerated_Domain_Value: Km
Enumerated_Domain_Value_Definition: Muscovite-biotite monzogranite
Enumerated_Domain:
Enumerated_Domain_Value: Kmb
Enumerated_Domain_Value_Definition: Monzogranite, undifferentiated
Enumerated_Domain:
Enumerated_Domain_Value: Kmy
Enumerated_Domain_Value_Definition: Mylonite
Enumerated_Domain:
Enumerated_Domain_Value: Kp
Enumerated_Domain_Value_Definition: Porphyritic monzogranite
Enumerated_Domain:
Enumerated_Domain_Value: Kqd
Enumerated_Domain_Value_Definition: Quartz diorite
Enumerated_Domain:
Enumerated_Domain_Value: Ks
Enumerated_Domain_Value_Definition: Monzogranite of Stanfield Cutoff
Enumerated_Domain:
Enumerated_Domain_Value: Ksr
Enumerated_Domain_Value_Definition: Monzogranite of Smarts Ranch Road
Enumerated_Domain:
Enumerated_Domain_Value: Kts
Enumerated_Domain_Value_Definition: Monzogranite of Top Spring
Enumerated_Domain:
Enumerated_Domain_Value: Mmb
Enumerated_Domain_Value_Definition: Monte Cristo Formation, Bullion Member
Enumerated_Domain:

Enumerated_Domain_Value: Mml
Enumerated_Domain_Value_Definition: Monte Cristo Formation, lower member
Enumerated_Domain:
Enumerated_Domain_Value: Mmy
Enumerated_Domain_Value_Definition: Monte Cristo Formation, Yellowpine Member
Enumerated_Domain:
Enumerated_Domain_Value: MzPrg
Enumerated_Domain_Value_Definition: Granitic orthogneiss
Enumerated_Domain:
Enumerated_Domain_Value: MzPrpm
Enumerated_Domain_Value_Definition: Mixed plutonic and metasedimentary rocks
Enumerated_Domain:
Enumerated_Domain_Value: Mzdg
Enumerated_Domain_Value_Definition: Diorite and gabbro
Enumerated_Domain:
Enumerated_Domain_Value: Pblc
Enumerated_Domain_Value_Definition: Bird Spring Formation, lower carbonate member
Enumerated_Domain:
Enumerated_Domain_Value: Pbmc
Enumerated_Domain_Value_Definition: Bird Spring Formation, middle carbonate member
Enumerated_Domain:
Enumerated_Domain_Value: Pbu
Enumerated_Domain_Value_Definition: Bird Spring Formation, undifferentiated
Enumerated_Domain:
Enumerated_Domain_Value: Pbuc
Enumerated_Domain_Value_Definition: Bird Spring Formation, upper carbonate member
Enumerated_Domain:
Enumerated_Domain_Value: Prbga
Enumerated_Domain_Value_Definition: Baldwin Gneiss, augen gneiss
Enumerated_Domain:
Enumerated_Domain_Value: Prbgo
Enumerated_Domain_Value_Definition: Baldwin Gneiss, orthogneiss
Enumerated_Domain:
Enumerated_Domain_Value: Prsc
Enumerated_Domain_Value_Definition: Stirling Quartzite, carbonate member
Enumerated_Domain:
Enumerated_Domain_Value: Prsl
Enumerated_Domain_Value_Definition: Stirling Quartzite, lower quartzite member
Enumerated_Domain:
Enumerated_Domain_Value: Prsq
Enumerated_Domain_Value_Definition: Stirling Quartzite, quartzite member
Enumerated_Domain:
Enumerated_Domain_Value: Prwh
Enumerated_Domain_Value_Definition: Quartzite of Wild Horse Meadows
Enumerated_Domain:
Enumerated_Domain_Value: PzPru
Enumerated_Domain_Value_Definition: Bedrock, undifferentiated
Enumerated_Domain:
Enumerated_Domain_Value: Pzm
Enumerated_Domain_Value_Definition: Marble, undifferentiated
Enumerated_Domain:
Enumerated_Domain_Value: QTbb
Enumerated_Domain_Value_Definition: Basal breccia
Enumerated_Domain:
Enumerated_Domain_Value: QTbrg
Enumerated_Domain_Value_Definition: Breccia, granitic rocks

Enumerated_Domain:
 Enumerated_Domain_Value: QTbrs
 Enumerated_Domain_Value_Definition: Breccia, carbonate rocks

Enumerated_Domain:
 Enumerated_Domain_Value: QTcc
 Enumerated_Domain_Value_Definition: Conglomerate of Cushenbury Springs

Enumerated_Domain:
 Enumerated_Domain_Value: QTs
 Enumerated_Domain_Value_Definition: Sedimentary rocks of Lone Valley area

Enumerated_Domain:
 Enumerated_Domain_Value: QTsb
 Enumerated_Domain_Value_Definition: Slide breccia

Enumerated_Domain:
 Enumerated_Domain_Value: QTsc
 Enumerated_Domain_Value_Definition: Sandstone and conglomerate

Enumerated_Domain:
 Enumerated_Domain_Value: QTsu
 Enumerated_Domain_Value_Definition: Old Woman Sandstone, sandstone member

Enumerated_Domain:
 Enumerated_Domain_Value: Qa
 Enumerated_Domain_Value_Definition: Very young alluvial-valley deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qc
 Enumerated_Domain_Value_Definition: Very young colluvial deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qf
 Enumerated_Domain_Value_Definition: Very young alluvial-fan deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qf1
 Enumerated_Domain_Value_Definition: Very young alluvial-fan deposits, Unit 1

Enumerated_Domain:
 Enumerated_Domain_Value: Ql1
 Enumerated_Domain_Value_Definition: Very young lacustrine deposits, Unit 1

Enumerated_Domain:
 Enumerated_Domain_Value: Ql2
 Enumerated_Domain_Value_Definition: Very young lacustrine deposits, Unit 2

Enumerated_Domain:
 Enumerated_Domain_Value: Qmof
 Enumerated_Domain_Value_Definition: Moderately old alluvial-fan deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qmolsc
 Enumerated_Domain_Value_Definition: Moderately old landslide breccia, carbonate rocks

Enumerated_Domain:
 Enumerated_Domain_Value: Qmolss
 Enumerated_Domain_Value_Definition: Moderately old landslide breccia, strata of Blackhawk

Canyon

Enumerated_Domain:
 Enumerated_Domain_Value: Qoc
 Enumerated_Domain_Value_Definition: Old colluvial deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qof
 Enumerated_Domain_Value_Definition: Old alluvial-fan deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qof3
 Enumerated_Domain_Value_Definition: Old alluvial-fan deposits, Unit 3

Enumerated_Domain:

Enumerated_Domain_Value: Qols
Enumerated_Domain_Value_Definition: Old landslide deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qolsc
Enumerated_Domain_Value_Definition: Old landslide breccia, carbonate rocks

Enumerated_Domain:
Enumerated_Domain_Value: Qolss
Enumerated_Domain_Value_Definition: Old landslide breccia, strata of Blackhawk Canyon

Enumerated_Domain:
Enumerated_Domain_Value: Qos
Enumerated_Domain_Value_Definition: Old surficial deposits, undifferentiated

Enumerated_Domain:
Enumerated_Domain_Value: Qs
Enumerated_Domain_Value_Definition: Very young surficial deposits, undifferentiated

Enumerated_Domain:
Enumerated_Domain_Value: Qt
Enumerated_Domain_Value_Definition: Very young talus deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qvof
Enumerated_Domain_Value_Definition: Very old alluvial-fan deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qvof1
Enumerated_Domain_Value_Definition: Very old alluvial-fan deposits, Unit 1

Enumerated_Domain:
Enumerated_Domain_Value: Qvof2
Enumerated_Domain_Value_Definition: Very old alluvial-fan deposits, Unit 2

Enumerated_Domain:
Enumerated_Domain_Value: Qvof3
Enumerated_Domain_Value_Definition: Very old alluvial-fan deposits, Unit 3

Enumerated_Domain:
Enumerated_Domain_Value: Qw
Enumerated_Domain_Value_Definition: Very young wash deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qw1
Enumerated_Domain_Value_Definition: Very young wash deposits, Unit 1

Enumerated_Domain:
Enumerated_Domain_Value: Qya
Enumerated_Domain_Value_Definition: Young alluvial-valley deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qyao
Enumerated_Domain_Value_Definition: Young alluvial and slope-wash deposits, oxidized

Enumerated_Domain:
Enumerated_Domain_Value: Qyc
Enumerated_Domain_Value_Definition: Young colluvial deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qydf
Enumerated_Domain_Value_Definition: Young debris-flow fan deposits, oxidized

Enumerated_Domain:
Enumerated_Domain_Value: Qyf
Enumerated_Domain_Value_Definition: Young alluvial-fan deposits

Enumerated_Domain:
Enumerated_Domain_Value: Qyf1
Enumerated_Domain_Value_Definition: Young alluvial-fan deposits, Unit 1

Enumerated_Domain:
Enumerated_Domain_Value: Qyf2
Enumerated_Domain_Value_Definition: Young alluvial-fan deposits, Unit 2

Enumerated_Domain:
 Enumerated_Domain_Value: Qyf3
 Enumerated_Domain_Value_Definition: Young alluvial-fan deposits, Unit 3

Enumerated_Domain:
 Enumerated_Domain_Value: Qyf4
 Enumerated_Domain_Value_Definition: Young alluvial-fan deposits, Unit 4

Enumerated_Domain:
 Enumerated_Domain_Value: Qyf5
 Enumerated_Domain_Value_Definition: Young alluvial-fan deposits, Unit 5

Enumerated_Domain:
 Enumerated_Domain_Value: Qyls
 Enumerated_Domain_Value_Definition: Young landslide deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qyp
 Enumerated_Domain_Value_Definition: Young playa deposits

Enumerated_Domain:
 Enumerated_Domain_Value: Qys
 Enumerated_Domain_Value_Definition: Young surficial deposits, undifferentiated

Enumerated_Domain:
 Enumerated_Domain_Value: Tlv
 Enumerated_Domain_Value_Definition: Sedimentary strata of Lucerne Valley

Enumerated_Domain:
 Enumerated_Domain_Value: Tos
 Enumerated_Domain_Value_Definition: Old Woman Sandstone

Enumerated_Domain:
 Enumerated_Domain_Value: Ts3
 Enumerated_Domain_Value_Definition: Sedimentary rocks south of Bertha Ridge and John Bull

Mountain

Enumerated_Domain:
 Enumerated_Domain_Value: Ts4
 Enumerated_Domain_Value_Definition: Sedimentary rocks south of Big Bear Lake

Enumerated_Domain:
 Enumerated_Domain_Value: bgm
 Enumerated_Domain_Value_Definition: Mylonitic zones

Enumerated_Domain:
 Enumerated_Domain_Value:
 Enumerated_Domain_Value_Definition: water body

Attribute:

Attribute_Label: SHDPS
 Attribute_Definition:
 Polygon color from shadeset scamp2.shd (included in the data package) and used to generate the map plotfile

Attribute:

Attribute_Label: SHDFIL
 Attribute_Definition: Polygon fill pattern from shadeset geology2.shd (included in the data package)

Attribute:

Attribute_Label: COMMENT
 Attribute_Definition: Additional attribute-qualifying data

Attribute:

Attribute_Label: PLABL
 Attribute_Definition:
 Coded geologic map unit label used to generate plot labels using appropriate replacement characters and stratigraphic symbols from the GeoAge Font Group. Map unit labels will plot on derivative map plots with appropriate stratigraphic symbols if PLABL is used as the source of unit labels.

Attribute:

Attribute_Label: NAME
 Attribute_Definition: Geologic name of map unit (see list under LABL attribute)

Detailed_Description:

Entity_Type:

Entity_Type_Label: polycolor.lut

Entity_Type_Definition:

INFO lookup table that contains additional rock unit attributes including color assignment (CODE - from shadeset scamp2.shd included in data package) for plotting

Detailed_Description:

Entity_Type:

Entity_Type_Label: bbc_geo.aat

Entity_Type_Definition:

Geologic features such as contacts and faults that bound rock-unit polygons

Attribute:

Attribute_Label: SYMB

Attribute_Definition:

Calls up the appropriate line symbol from the lineset geoscamp2.lin (included in the data package)

Attribute:

Attribute_Label: LINEINFO

Attribute_Definition: Geologic line type

Detailed_Description:

Entity_Type:

Entity_Type_Label: bbc_fa.aat

Entity_Type_Definition:

Fold axes

Attribute:

Attribute_Label: SYMB

Attribute_Definition:

Calls up the appropriate line symbol from the lineset geoscamp2.lin (included in the data package)

Attribute:

Attribute_Label: LINEINFO

Attribute_Definition: as in bbc_geo.aat

Detailed_Description:

Entity_Type:

Entity_Type_Label: bbc_fa.pat

Entity_Type_Definition:

Geologic line ornamentation

Detailed_Description:

Entity_Type:

Entity_Type_Label: bbc_pts.pat

Entity_Type_Definition:

Geologic structural point data includes site-specific information describing the types and orientation of bedding, foliation, and lineation. One annotation subclass, ANNO.VALUE, displays the respective dip and plunge values associated with individual point data.

Attribute:

Attribute_Label: TYPE

Attribute_Definition: Type of structural data

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: strain dominated foliation

Enumerated_Domain:

Enumerated_Domain_Value: strain dominated lineation

Enumerated_Domain:

Enumerated_Domain_Value: sedimentary bedding, inclined
 Enumerated_Domain:
 Enumerated_Domain_Value: sedimentary bedding, vertical
 Enumerated_Domain:
 Enumerated_Domain_Value: sedimentary bedding, overturned
 Enumerated_Domain:
 Enumerated_Domain_Value: metamorphic foliation, inclined
 Enumerated_Domain:
 Enumerated_Domain_Value: metamorphic foliation, vertical
 Enumerated_Domain:
 Enumerated_Domain_Value: cleavage, inclined
 Enumerated_Domain:
 Enumerated_Domain_Value: lineation
 Enumerated_Domain:
 Enumerated_Domain_Value: lineation, high-strain
 Enumerated_Domain:
 Enumerated_Domain_Value: lineation, minor fold axis
 Attribute:
 Attribute_Label: PTDIP
 Attribute_Definition: Dip (inclination) of planar feature
 Attribute:
 Attribute_Label: PTSYMB
 Attribute_Definition:
 Calls up the appropriate line symbol from the markerset geoscamp2.mrk (included in the data package)
 Attribute:
 Attribute_Label: PTSOURCE
 Attribute_Definition: Source of geologic datum
 Attribute:
 Attribute_Label: PTSTRIKE
 Attribute_Definition: Azimuthal strike of planar feature
 Attribute:
 Attribute_Label: DIPDIR
 Attribute_Definition: Azimuthal direction of dip of planar feature
 Attribute:
 Attribute_Label: PLUNGE
 Attribute_Definition: Plunge of linear feature
 Attribute:
 Attribute_Label: BEARING
 Attribute_Definition: Azimuthal direction of plunge of linear feature
 Attribute:
 Attribute_Label: DISPLAY
 Attribute_Definition: allows user to chose to draw or not draw datum to map plot
 Attribute:
 Attribute_Label: OBS_STATION
 Attribute_Definition: Identity of a specific datum point
 Distribution_Information:
 Distributor:
 Contact_Information:
 Contact_Organization_Primary:
 Contact_Organization: U.S. Geological Survey Information Services
 Contact_Address:
 Address_Type: mailing address
 Address: Box 25286 Denver Federal Center
 City: Denver
 State_or_Province: CO

Postal_Code: 80225
Country: USA
Contact_Voice_Telephone: 303-202-4700

Contact_Facsimile_Telephone: 303-202-4693

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Metadata_Reference_Information:

Metadata_Date: 20040331

Metadata_Review_Date: 20040108

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: U.S. Geological Survey

Contact_Person: Pamela M. Cossette

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Metadata_Standard_Name: FGDC Content Standard for Digital Geospatial Metadata (version 2.0)

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Access_Constraints: none

Metadata_Use_Constraints: none