Grand Canyon National Park

Geologic Resources Inventory

GIS Data Explanation, September 27, 2013

Geologic-Geographic Information Systems (GIS) data related to Grand Canyon National Park is delivered in WinZip (zip) archive files. These data are a product of the NPS Geologic Resources Inventory (GRI) program which is funded by the Inventory and Monitoring (I&M) Division, and administered by the NPS Geologic Resources Division (GRD).

Geologic-GIS data for Grand Canyon National Park consist of a dedicated park map providing complete coverage of the park and surrounding area, as well as individual component maps. Data files for the dedicated park map are named using the park four letter code (GRCA) as a prefix. Component maps are identified by the following prefixes: GLCD - Glen Canyon Dam 30' x 60' Quadrangle, TCTY - Tuba City 30' x 60' Quadrangle, FRDN - Fredonia 30' x 60' Quadrangle, WUPA - Wupatki National Monument, PESP - Peach Springs 30' x 60' Quadrangle, VALLE - Valle 30' x 60' Quadrangle, MTRB - Mount Trumbull 30' x 60' Quadrangle, GRAC - Grand Canyon 30' x 60' Quadrangle.

Geologic-GIS data are provided in ESRI 10.0 file geodatabase format, as well as 2.2 KML/KMZ format for use with Google Earth software, and upon request in ESRI 10.0 shapefile format (contact Stephanie O'Meara, see contact information below, to acquire shapefile format data). WinZip (map download) files containing geodatabase GIS data are identified with a "gdb.zip" suffix, whereas those containing KML data have a "kml.zip" suffix. The geodatabase WinZip (map download) file has a 10.0 file geodatabase, and a 10.0 map document (.mxd) file, as well as individual data layer 10.0 layer (.lyr) files. The map document presents all GRI map components, data layers and GIS tables, in a user-friendly format complete with data layer naming, symbology and labeling for viewing and data analysis. The layer (.lyr) files are provided so data layers can be added to new or existing map document files with their associated layer naming, symbology and labeling. Each WinZip (map download) file also contains FGDC-compliant metadata files (in .txt and FAQ .html formats), this file (grca_gis_readme.pdf), and a GRI ancillary map information document (.pdf) file (grca_geology.pdf) that contains geologic unit descriptions, as well as other ancillary map information and graphics from the source maps used by the GRI in the production of this park's GRI digital geologic-GIS data.

For each GIS dataset the GRI recommends extracting all map files for a particular map to a single folder. This is particularly of importance for the file geodatabase, map document and layers files as relative file paths to the geodatabase (i.e., GIS data) in the map document and layer files are maintained. When extracting the file geodatabase (folder) from its WinZip file use "extract" or "extract here", and not a "drag and drop of files" as the latter may not correctly preserve the file geodatabase folder and component file structure.

Detailed information concerning the source data used by the GRI is listed in the Source Citation sections(s) of the included map metadata record (e.g., grca_metadata.txt). Information concerning source data is also in the Source Map Information GIS table (grcamap), and repeated in the GRI ancillary map information document (.pdf) file.

The Google Earth KMZ file, grca_geology.kmz, contains a limited version of the full spatial dataset (limited features and symbology). Google Earth software is available for free at: http://www.google.com/earth/index.html. The KMZ file possesses on-line links to the GRI program and its products, as well as to this readme document (on-line version), the FGDC-compliant FAQ metadata (in .html format), and the GRI ancillary map information (.pdf) document pertaining to this dataset. The

readme (.pdf) document, .html FAQ metadata file, and ancillary map information (.pdf) document are also included with the KMZ WinZip file, and users are encouraged to use these files (outside of Google Earth) should accessing the on-line versions via Google Earth be an issue. Users can also download Google Chrome (free at: http://www.google.com/chrome/) to view these files should their default browser not open these files from Google Earth.

Users of this data are cautioned about the locational accuracy of features and should not assume that features are exactly where they portrayed in Google Earth, ArcGIS or other software used to display the data. Refer to the positional accuracy report and use constraints within a map metadata record for additional information concerning the positional accuracy of features in a GRI dataset. Users are also encouraged to only use the Google Earth data for basic visualization, and to use the GIS data for any type of data analysis or investigation.

For detailed information regarding GIS parameters such as data attribute field definitions, attribute field codes, value definitions, and rules that govern relationships found in the data, refer to the NPS Geology-GIS Data Model document, gri_gdb_ggdm_v2dot1.pdf (available at: http://science.nature.nps.gov/im/inventory/geology/GeologyGISDataModel.cfm).

Digital geologic-GIS data in these WinZip files, as well as other GRI digital geologic-GIS datasets prepared as products of the GRI program are available to download from the NPS Data Store Search Application: http://irma.nps.gov/App/Reference/Search. To find GRI data for a specific park or parks select the appropriate park(s), enter "GRI" as a Search Text term, and then select the Search Button.

For a complete listing of Geologic Resources Inventory products and direct links to the download site, visit the GRI publications webpage: http://go.nps.gov/gri_products.

For more information about the Geologic Resources Inventory Program, visit the GRI webpage: http://www.nature.nps.gov/geology/inventory, or contact:

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To provide feedback or to inquire about the use of GRI products, contact Bruce Heise (contact information listed above). For information about the status of GRI digital geologic-GIS data for a park, contact:

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For information about using and/or obtaining GRI digital geologic-GIS data, contact:

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