Little River Canyon National Preserve

GRI Ancillary Map Information Document

Produced to accompany the Geologic Resources Inventory (GRI) Digital Geologic Data for Little River Canyon National Preserve

liri_geology.pdf

Version: 6/12/2018
Geologic Resources Inventory Map Document for Little River Canyon National Preserve

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  2018 NPS Geologic Resources Inventory Program
Geologic Resources Inventory Map Document

Little River Canyon National Preserve, Alabama

Document to Accompany Digital Geologic-GIS Data

liri_geology.pdf

Version: 6/12/2018

This document has been developed to accompany the digital geologic-GIS data developed by the Geologic Resources Inventory (GRI) program for Little River Canyon National Preserve, Alabama (LIRI).

Attempts have been made to reproduce all aspects of the original source products, including the geologic units and their descriptions, geologic cross sections, the geologic report, references and all other pertinent images and information contained in the original publication.

This document contains the following information:

1) **About the NPS Geologic Resources Inventory Program** – A brief summary of the Geologic Resources Inventory (GRI) program and its products. Included are web links to the GRI GIS data model, and to the GRI products page where digital geologic-GIS datasets, scoping reports and geology reports are available for download. In addition, web links to the NPS Data Store and GRI program home page, as well as contact information for the GRI coordinator, are also present.

2) **GRI Digital Maps and Source Citations** – A listing of all GRI digital geologic-GIS maps produced for this project along with sources used in their completion. In addition, a brief explanation of how each source map was used is provided.

3) **Map Unit List** – A listing of all geologic map units present on maps for this project, generally listed from youngest to oldest.

4) **Map Unit Descriptions** – Descriptions for all geologic map units. If a unit is present on multiple source maps the unit is listed with its source geologic unit symbol, unit name and unit age followed by the unit's description for each source map.

5) **Geologic Cross Sections** – Geologic cross section graphics with source geologic cross section abbreviations.

6) **Ancillary Source Map Information** – Additional source map information presented by source map. For each source map this may include a stratigraphic column, index map, map legend and/or map notes.
7) **GRI Digital Data Credits** – GRI digital geologic-GIS data and ancillary map information document production credits.

For information about using GRI digital geologic-GIS data contact:

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About the NPS Geologic Resources Inventory Program

Background

Recognizing the interrelationships between the physical (geology, air, and water) and biological (plants and animals) components of the earth is vital to understanding, managing, and protecting natural resources. The Geologic Resources Inventory (GRI) helps make this connection by providing information on the role of geology and geologic resource management in parks.

Geologic resources for management consideration include both the processes that act upon the Earth and the features formed as a result of these processes. Geologic processes include: erosion and sedimentation; seismic, volcanic, and geothermal activity; glaciation, rockfalls, landslides, and shoreline change. Geologic features include mountains, canyons, natural arches and bridges, minerals, rocks, fossils, cave and karst systems, beaches, dunes, glaciers, volcanoes, and faults.

The Geologic Resources Inventory aims to raise awareness of geology and the role it plays in the environment, and to provide natural resource managers and staff, park planners, interpreters, researchers, and other NPS personnel with information that can help them make informed management decisions.

The GRI team, working closely with the Colorado State University (CSU) Department of Geosciences and a variety of other partners, provides more than 270 parks with a geologic scoping meeting, digital geologic-GIS map data, and a park-specific geologic report.

Products

Scoping Meetings: These park-specific meetings bring together local geologic experts and park staff to inventory and review available geologic data and discuss geologic resource management issues. A summary document is prepared for each meeting that identifies a plan to provide digital map data for the park.

Digital Geologic Maps: Digital geologic maps reproduce all aspects of traditional paper maps, including notes, legend, and cross sections. Bedrock, surficial, and special purpose maps such as coastal or geologic hazard maps may be used by the GRI to create digital Geographic Information Systems (GIS) data and meet park needs. These digital GIS data allow geologic information to be easily viewed and analyzed in conjunction with a wide range of other resource management information data.

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 available at: http://science.nature.nps.gov/im/inventory/geology/GeologyGISDataModel.cfm

Geologic Reports: Park-specific geologic reports identify geologic resource management issues as well as features and processes that are important to park ecosystems. In addition, these reports present a brief geologic history of the park and address specific properties of geologic units present in the park.

For a complete listing of Geologic Resource Inventory products and direct links to the download site visit the GRI publications webpage http://www.nature.nps.gov/geology/inventory/gre_publications.cfm

GRI geologic-GIS data is also available online at 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 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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The Geologic Resources Inventory (GRI) program is funded by the National Park Service (NPS) Inventory and Monitoring (I&M) Division.
GRI Digital Maps and Source Map Citations

The GRI digital geologic-GIS maps for Little River Canyon National Preserve, Alabama (LIRI):

The GRI compiled park extent and vicinity map (sources are listed with the individual 7.5’ quadrangle component maps below).

Digital Geologic-GIS Map of Little River Canyon National Preserve and Vicinity, Alabama and Georgia (GRI MapCode LIRI)

Individual 7.5’ quadrangle GRI maps with source publications. These maps were compiled to produce the park and vicinity (LIRI) map.

Digital Geologic-GIS Map of the Dugout Valley Quadrangle, Alabama (GRI MapCode DUVA)


Digital Geologic-GIS Map of the Valley Head Quadrangle, Alabama and Georgia (GRI MapCode VAHE)


Digital Geologic-GIS Map of the Fort Payne Quadrangle, Alabama and Georgia (GRI MapCode FOPA)


Digital Geologic-GIS Map of the Jamestown Quadrangle, Alabama and Georgia (GRI MapCode JMST)

Ma, Chong, and Steltenpohl, Mark, 2018, Bedrock Geologic Map of the Jamestown 7.5’ Quadrangle, Dekalb and Cherokee Counties, Alabama, and Chattanooga and Walker Counties, Georgia: GSA and Auburn University, Open-File Report 1805, plate 4, scale 1:24,000 (Jamestown Quadrangle). (GRI Source Map ID 76237).

Digital Geologic-GIS Map of the Little River Quadrangle, Alabama (GRI MapCode LIRV)

Ma, Chong, and Steltenpohl, Mark, 2018, Bedrock Geologic Map of the Little River 7.5’ Quadrangle, Cherokee and Dekalb Counties, Alabama: GSA and Auburn University, Open-File Report 1805, plate 5, scale 1:24,000 (Little River Quadrangle). (GRI Source Map ID 76238).

Digital Geologic-GIS Map of the Gaylesville Quadrangle, Alabama (GRI MapCode GAYL)

scale 1:24,000 (Gaylesville Quadrangle). (GRI Source Map ID 76239).

The GRI used the full extent of the source maps above. Source digital GIS data, as well as prominent map components present on the source maps (e.g., related report, unit colors, unit descriptions, cross sections and other ancillary map graphics and text) were incorporated into the GRI digital geologic-GIS dataset and product.

*Note, area strip mines present on the source base maps of the above publications were not captured because these were not easily delineated, and because its is not known if these features actually still exist as the dates of these base maps are very old.

Additional information pertaining to each source map is also presented in the GRI Source Map Information (LIRIMAP) table included with the GRI geologic-GIS data.

**Index Map**

The following index map displays the boundary for Little River Canyon National Preserve (in dark green, as of June, 2018). The extent of the GRI digital geologic-GIS map for Little River Canyon National Preserve is outlined in red and includes the Dugout Valley, Valley Head, Fort Payne, Jamestown, Little River, and part of the Gaylesville 7.5’ Quadrangles.
Map Unit List

The geologic units present in the digital geologic-GIS data produced for Little River Canyon National Preserve, Alabama (LIRI) are listed below. Units are listed with their assigned unit symbol and unit name (e.g., Qal - Alluvium and low terrace deposits). Units are listed from youngest to oldest. No description for water is provided. Information about each geologic unit is also presented in the GRI Geologic Unit Information (LIRIUNIT) table included with the GRI geologic-GIS data. Some source unit symbols, names and/or ages may have been changed in this document and in the GRI digital geologic-GIS data. This was done if a unit was considered to be the same unit as one or more units on other source maps used for this project, and these unit symbols, names and/or ages differed. In this case a single unit symbol and name, and the unit's now recognized age, was adopted. Unit symbols, names and/or ages in a unit descriptions, or on a correlation of map units or other source map figure were not edited. If a unit symbol, name or age was changed by the GRI the unit's source map symbol, name and/or age appears with the unit's source map description.

Cenozoic Era

Quaternary Period
Qal - Alluvium and low terrace deposits

Tertiary Period
Tal - Fluvial deposits

Paleozoic Era

Pennsylvanian Period
PNpv - Pottsville Formation

Pennsylvanian and Mississippian Periods
PNMwpw - Parkwood and Pennington Formations, undifferentiated

Mississippian Period
Mbmt - Bangor, Monteagle, and Tuscumbia Limestones, undifferentiated
Mfpm - Fort Payne Chert and Maury Formation, undifferentiated

Devonian Period
Dc - Chattanooga Shale

Silurian Period
Srm - Red Mountain Formation

Ordovician Period
Os - Sequatchie Formation
Qc - Chickamauga Limestone
Oca - Chickamauga Limestone, Attalla Chert Conglomerate Member
On - Newala Limestone
Olv - Longview Limestone

Ordovician and Cambrian Periods
OCchcr - Chepultepec and Copper Ridge Dolomites, undifferentiated
OCK - Knox Group undifferentiated
Cambrian Period
Cc - Conasauga Formation
Map Unit Descriptions

Descriptions of all geologic map units, generally listed from youngest to oldest, are presented below.

Qal - Alluvium and low terrace deposits (Quaternary)
Unconsolidated deposits of dark-brown to reddish-brown clay and sand and gravel composed of quartz and chert. (GRI Source Map IDs 76234, 76235, and 76236) (Dugout Valley Quadrangle, Valley Head Quadrangle, and Fort Payne Quadrangle).

Tal - Fluvial deposits (Tertiary)

Pal - Fluvial deposits (Paleogene)
Yellowish-orange to white, thick-bedded conglomerate of subangular to subrounded, predominantly chert pebbles and cobbles and a few white and pink, well-rounded quartzite pebbles; contains white, lavender, and yellowish-orange sandy clay lenses. Underlain by thick bed of unconsolidated, white to very pale orange to lavender, fine- to medium-grained quartz sand. (GRI Source Map ID 76234) (Dugout Valley Quadrangle).

PNpv - Pottsville Formation (Lower Pennsylvanian)
Primarily two pebbly to conglomeratic sandstone units informally referred to as the lower and upper conglomerates separated by a shale-dominated interval. Sandstone is dominantly light gray, medium to coarse grained and quartzose and contains variable amounts of quartz pebbles and locally is quartz pebble conglomerate. Between the lower and upper conglomerates, dark-gray shale contains interbeds of light-gray, sublithic to quartzose sandstone and several coal beds and associated underclays. Locally preserved at the top of the unit above the upper conglomerate are interbedded gray shale, coal, and sandstone. (GRI Source Map IDs 76234, 76235, 76236, 76237, 76238, and 76239) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, Jamestown Quadrangle, Little River Quadrangle, and Gaylesville Quadrangle).

PNMpwp - Parkwood and Pennington Formations, undifferentiated (Lower Pennsylvanian and Upper Mississippian)
Parkwood Formation: Medium- to dark-gray shale and mudstone containing interbedded units of light- to medium-gray quartzose to sublithic sandstone; wavy- and lenticular-bedded sandstone and mudstone are common; interbeds of dark-gray limestone and maroon and green shale are present in the lower part; a coal bed of laterally variable thickness is commonly present at the top of the formation. Pennington Formation: Medium- to dark-gray shale containing interbeds of dark-gray, argillaceous, fossiliferous limestone; very fine- to fine-grained argillaceous sandstone; and carbonaceous claystone to thin, shaly coal. Intervals of maroon and olive-green mudstone are common. (GRI Source Map IDs 76234, 76235, 76236, 76237, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, Jamestown Quadrangle, and Little River Quadrangle).
Mbmt - Bangor, Monteagle, and Tuscumbia Limestones, undifferentiated (Upper Mississippian)

**Bangor Limestone**: Light- to mostly dark-gray, crossbedded, bioclastic and lesser oolitic, limestone in medium to massive beds; nodules, stringers, and nodular interbeds of dark-gray chert are common in parts of the unit. **Monteagle Limestone**: Primarily light-gray, medium- to massive bedded oolitic and bioclastic limestone locally containing interbeds of dark-gray, fossiliferous shaly limestone and shale. **Tuscumbia Limestone**: Light- to medium-gray, medium- to massive-bedded, predominantly bioclastic limestone locally containing chert nodules. (GRI Source Map IDs 76234, 76235, 76236, 76237, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, Jamestown Quadrangle, and Little River Quadrangle).

Mfpm - Fort Payne Chert and Maury Formation, undifferentiated (Middle and Lower Mississippian)

**Fort Payne Chert**: Light- to dark-gray siliceous limestone containing interbeds and nodules of chert typically weathered in outcrops to light-gray to grayish-orange, thin- to medium-bedded, variably fossiliferous chert; quartz-lined vugs (geodes) are common in the lower part. **Maury Formation**: Light-olive-gray to yellowish-green shale and mudstone containing small phosphatic concretions. (GRI Source Map IDs 76234, 76236, 76237, and 76238) (Dugout Valley Quadrangle, Fort Payne Quadrangle, Jamestown Quadrangle, and Little River Quadrangle).

Dc - Chattanooga Shale (Upper Devonian)

Dark-gray to black, pyritiferous, carbonaceous shale and mudstone; thin beds of dark-gray to black, coarse-grained, partly pebbly sandstone are locally present at the base. (GRI Source Map IDs 76234, 76235, 76236, 76237, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, Jamestown Quadrangle, and Little River Quadrangle).

*On the Valley Head and Little River Quadrangles unit Dc (Chattanooga Shale) only appears as a linear geologic unit.*

Srm - Red Mountain Formation (Upper and Lower Silurian)

Srm - Red Mountain Formation (Lower and Upper Silurian)

Primarily olive-gray, partly silty shale and interbedded olive-gray and dark-reddish brown sandstone containing minor amounts of fossiliferous limestone and hematitic sandstone. The lower part includes light-gray, coarse-grained limestone and partly sandy and hematitic limestone previously mined as iron ore. (GRI Source Map IDs 76234, 76235, 76236, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, and Little River Quadrangle).

Srm - Red Mountain Formation (Lower and Upper Silurian)

Primarily olive-gray, partly silty shale and interbedded olive-gray and dark-reddish brown sandstone containing minor amounts of fossiliferous limestone and hematitic sandstone. (GRI Source Map ID 76237) (Jamestown Quadrangle).
Os - Sequatchie Formation (Upper Ordovician)

Mottled yellowish-green to olive-gray and dusky-red to reddish-gray calcareous shale; brown fine-grained sandstone; and light- to dark-gray, fine- to coarse-grained fossiliferous limestone. The basal part includes olive-gray and grayish-red, partly fenestral limestone; near the middle is a prominent fine- to very coarse-grained, fossiliferous sandstone that weathers reddish-brown; the uppermost part includes greenish-gray shale overlain by very fine-grained tan sandstone. (GRI Source Map IDs 76234, 76235, 76236, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, and Little River Quadrangle).

Os - Sequatchie Formation (Upper Ordovician)

Mottled yellowish-green to olive-gray and dusky-red to reddish-gray calcareous shale; brown fine-grained sandstone; and light- to dark-gray, fine- to coarse-grained fossiliferous limestone. (GRI Source Map ID 76237) (Jamestown Quadrangle).

Oc - Chickamauga Limestone (Middle Ordovician)

Light- to dark-gray, variably fossiliferous limestone interbedded with minor light- to medium-gray, fine- to medium-crystalline dolomite; contains two thin bentonitic intervals in the upper part. The lower part of the formation includes light-greenish-gray, argillaceous dolomite; moderate-orange-brown and maroon-brown silty clay and olive shale; light-gray fenestral lime mudstone; fossiliferous cherty limestone; and rare sandstone and chert breccia (Pond Spring facies). (GRI Source Map IDs 76234, 76235, 76236, and 76238) (Dugout Valley Quadrangle, Valley Head Quadrangle, Fort Payne Quadrangle, and Little River Quadrangle).

Oc - Chickamauga Limestone (Middle Ordovician)

Light- to dark-gray, variably fossiliferous limestone interbedded with minor light- to medium gray, fine- to medium-crystalline dolomite; contains two thin bentonitic intervals in the upper part. (GRI Source Map ID 76237) (Jamestown Quadrangle).

Oca - Chickamauga Limestone, Attalla Chert Conglomerate Member (Middle Ordovician?)

Grayish-orange chert pebble conglomerate and breccia. (GRI Source Map ID 76238) (Little River Quadrangle).

On - Newala Limestone (Lower Ordovician)

Light-gray, thin- to massive-bedded micritic limestone and interbedded light-gray, very finely to medium crystalline, dominantly thin bedded dolomite; contains minor dark-gray chert nodules and stringers. (GRI Source Map IDs 76234, 76235, and 76236) (Dugout Valley Quadrangle, Valley Head Quadrangle, and Fort Payne Quadrangle).
**Olv - Longview Limestone (Lower Ordovician)**

Light- to medium-gray, thin- to thick-bedded micritic limestone and finely to medium crystalline dolomite containing nodules and discontinuous stringers of chert; residual chert commonly preserves the texture of intraclastic carbonate and locally contains quartz sand and chert pebbles. *(GRI Source Map IDs 76234, 76235, and 76236)* *(Dugout Valley Quadrangle, Valley Head Quadrangle, and Fort Payne Quadrangle).*

**OCchcr - Chepultepec and Copper Ridge Dolomites, undifferentiated (Lower Ordovician and Upper Cambrian)**

**Chepultepec Dolomite:** Light- to medium-gray, very fine- to medium crystalline, thin to massive-bedded siliceous dolomite and probable interbedded limestone; weathers to dominantly light-colored residual chert in an orange-brown to dark-reddish-brown clay matrix; residual chert commonly preserves the features of the original carbonate rocks (stromatolites, thrombolites, ooids, intraclasts, vugs, disseminated quartz sand). **Copper Ridge Dolomite:** Predominantly stromatolitic chert residuum apparently weathered from siliceous dolomite. *(GRI Source Map IDs 76234, 76235, and 76236)* *(Dugout Valley Quadrangle, Valley Head Quadrangle, and Fort Payne Quadrangle).*

**OCk - Knox Group undifferentiated (Lower Ordovician and Upper Cambrian)**

Light- to medium-dark-gray, fine- to coarse-crystalline, thin- to massive-bedded dolomite containing irregular nodules, stringers, and thin beds of light-gray to yellow-orange, dense locally oolitic chert; weathers to dominantly light-colored residual chert in an orange-brown to dark-reddish-brown clay matrix; residual chert commonly preserves the texture of the original carbonate rocks. *(GRI Source Map IDs 76237 and 76238)* *(Jamestown Quadrangle and Little River Quadrangle).*

**Cc - Conasauga Formation (Upper and Middle Cambrian)**

Dark-gray, stylolitic to stylonodular, micritic limestone commonly containing trilobite fragments. *(GRI Source Map ID 76237)* *(Jamestown Quadrangle).*
Geologic Cross Sections

The geologic cross sections present in the GRI digital geologic-GIS data produced for Little River Canyon National Preserve, Alabama (LIRI) are presented below. Note that some cross section abbreviations (e.g., A - A') may have been changed from their source map abbreviation in the GRI data so that each cross section abbreviation in the GRI data is unique. Cross section graphics were scanned at a high resolution and can be viewed in more detail by zooming in (if viewing the digital format of this document).

Cross Section A-A'

Extracted from: [Dugout Valley Quadrangle](#).

Cross Section B-B'

Extracted from: [Valley Head Quadrangle](#). Cross section A-A' on source map.

Cross Section C-C'

Extracted from: [Fort Payne Quadrangle](#). Cross section A-A' on source map.
Symbols for Cross Sections

SYMBOLS FOR CROSS SECTIONS

--- Stratigraphic contact

Fault, showing relative movement
Ancillary Source Map Information

The following section presents ancillary source map information associated with sources used for this project.

Dugout Valley Quadrangle

The formal citation for this source.


Prominent graphics and text associated with this source.

Correlation of Units

Extracted from: (Dugout Valley Quadrangle). Note, unit Mbm does not exist on the source map, and
therefore is an error on the above correlation of units figure.

Quadrangle Location

Extracted from: [Dugout Valley Quadrangle].

Map Legend

SYMBOLS FOR GEOLOGIC MAP

- - - - - Contact, dashed where located very approximately, showing location of control point
  (contact exposed or closely located)

- - - - - Contact, concealed beneath mapped units

- - - - - Thrust fault, located very approximately, sawteeth on upper plate

- - - - - Thrust fault, concealed beneath mapped units

- - - - - Normal fault, located very approximately

- - - - - Trace of anticline axis, located approximately, arrow showing direction of plunge

- - - - - Trace of syncline axis, located approximately, arrow showing direction of plunge

- - - - Strike and dip of bedding

- - - - Strike and dip of overturned bedding

- - - - Location of horizontal bedding

- - - - Strike of vertical bedding

Extracted from: [Dugout Valley Quadrangle].
Valley Head Quadrangle

The formal citation for this source.


Prominent graphics and text associated with this source.

Correlation of Units

Extracted from: (Valley Head Quadrangle). Note, unit Mbm and MFpm do not exist on the source map, and therefore are errors on the above correlation of units figure.
Quadrangle Location

Extracted from: (Valley Head Quadrangle).

Map Legend

SYMBOLS FOR GEOLOGIC MAP

- - X - - Contact, dashed where located very approximately, showing location of control point (contact exposed or closely located)

- - - - Contact, concealed beneath mapped units

- - - - - Thrust fault, located very approximately, sawteeth on upper plate

- - - - - Thrust fault, concealed beneath mapped units

- - - - Normal fault, located very approximately

< - - - Trace of anticline axis, located approximately, arrow showing direction of plunge

| 15  |

| 15  |

Strike and dip of bedding

Strike and dip of overturned bedding

Location of horizontal bedding

Strike of vertical bedding

Extracted from: (Valley Head Quadrangle).
Fort Payne Quadrangle

The formal citation for this source.


Prominent graphics and text associated with this source.

Correlation of Units

Extracted from: (Fort Payne Quadrangle). Note, unit Mbm does not exist on the source map, and therefore is an error on the above correlation of units figure.
**Quadrangle Location**

Extracted from: (Fort Payne Quadrangle).

**Map Legend**

SYMBOLS FOR GEOLOGIC MAP

- - X - -  Contact, dashed where located very approximately, showing location of control point (contact exposed or closely located)

- - - - - - Contact, concealed beneath mapped units

- ▲ - ▲ - ▲ Thrust fault, located very approximately, sawteeth on upper plate

- ▲ - ▲ - ▲ Thrust fault, concealed beneath mapped units

- - - - Normal fault, located very approximately

← ▲ - ▲ ← Trace of anticline axis, located approximately, arrow showing direction of plunge

\[ \text{\textdegree} 15 \] Strike and dip of bedding

\[ \text{\textdegree} 15 \] Strike and dip of overturned bedding

\( \oplus \) Location of horizontal bedding

→ Strike of vertical bedding

Extracted from: (Fort Payne Quadrangle).
Jamestown Quadrangle

The formal citation for this source.

Ma, Chong, and Steltenpohl, Mark, 2018, Bedrock Geologic Map of the Jamestown 7.5’ Quadrangle, Dekalb and Cherokee Counties, Alabama, and Chattanooga and Walker Counties, Georgia: GSA and Auburn University, Open-File Report 1805, plate 4, scale 1:24,000 (GRI Source Map ID 76237).

Prominent graphics and text associated with this source.

Correlation of Units

Extracted from: (Jamestown Quadrangle).
Quadrangle Location

Extracted from: (Jamestown Quadrangle).

Map Legend

SYMBOLS FOR GEOLOGIC MAP

- - - - - - - - - Contact, located very approximately.

- - - - - - - - - Thrust fault, located very approximately, sawteeth on upper plate

Trace of anticline axis, located approximately, arrow showing direction of plunge

Strike and dip of bedding

Location of horizontal bedding

Strike of vertical bedding

Extracted from: (Jamestown Quadrangle).
Little River Quadrangle

The formal citation for this source.

Ma, Chong, and Steltenpohl, Mark, 2018, Bedrock Geologic Map of the Little River 7.5’ Quadrangle, Cherokee and Dekalb Counties, Alabama: GSA and Auburn University, Open-File Report 1805, plate 5, scale 1:24,000 (GRI Source Map ID 76238).

Prominent graphics and text associated with this source.

Correlation of Units

Extracted from: [Little River Quadrangle](Little River Quadrangle).
Quadrangle Location

Extracted from: (Little River Quadrangle).

Map Legend

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>Contact, located very approximately.</td>
</tr>
<tr>
<td>▲▲▲▲</td>
<td>Thrust fault, located very approximately, sawteeth on upper plate</td>
</tr>
<tr>
<td>↑↓</td>
<td>Trace of anticline axis, located approximately</td>
</tr>
<tr>
<td>☐</td>
<td>Location of horizontal bedding</td>
</tr>
<tr>
<td>←</td>
<td>Strike of vertical bedding</td>
</tr>
</tbody>
</table>

Extracted from: (Little River Quadrangle).
Gaylesville Quadrangle

The formal citation for this source.


Prominent graphics and text associated with this source.

Correlation of Units

CORRELATION OF MAP UNITS

Pennsylvanian PALEOZOIC

Extracted from: (Gaylesville Quadrangle).

Quadrangle Location

QUADRANGLE LOCATION

Extracted from: (Gaylesville Quadrangle).

Map Legend

SYMBOLS FOR GEOLOGIC MAP

Strike and dip of bedding

Extracted from: (Gaylesville Quadrangle).
GRI Digital Data Credits

This document was developed and completed by James Winter (Colorado State University) for the NPS Geologic Resources Division (GRD) Geologic Resources Inventory (GRI) Program. Quality control of this document by Stephanie O'Meara (Colorado State University).

The information in this document was compiled from GRI source maps, and intended to accompany the digital geologic-GIS maps and other digital data for Little River Canyon National Preserve, Alabama (LIRI) developed by James Winter and Stephanie O'Meara (Colorado State University) (see the GRI Digital Maps and Source Map Citations section of this document for all sources used by the GRI in the completion of this document and related GRI digital geologic-GIS maps).

GRI finalization by Stephanie O'Meara (Colorado State University).

GRI program coordination and scoping provided by Jason Kenworthy and Tim Connors (NPS GRD, Lakewood, Colorado).