

South Carolina Maps and Aerial Photographic Systems



John R. Wagner – Professor of Geology – Clemson University - USA

What is SC MAPS?

- Award-winning curriculum supplement
- Different perspective (aerial view)
- Fully integrated, interdisciplinary lessons
- Thematic study of human & natural history
- Inquiry-based student activities
- Teacher background information
- Case studies and problem-solving focus

To Whom is the Program Geared?

- Social Studies (grades 3, 4, 5, 8)
- Science (grades 3, 5, 6, 7, 8)
- Language Arts (grades 3, 7, 8)
- Mathematics (grades 6, 7, 8)
- Optimal use in team-taught middle school classrooms with correlations to art, music, home economics and industrial arts

What is the Premise for Developing SC MAPS?

-  SC Maps was developed to embrace the many heritages that comprise South Carolina and to include the following:
-  Native American legends
-  land grants from kings
-  pirating escapades along the coast
-  Scotch-Irish ballads similar to their homeland

South Carolina – a unique state



SC has diverse:

 landforms

 historical
development

 and culture.

Thus, the SC MAPS curriculum was designed to help students make:

-  geological
-  economical
-  historical
-  mathematical
-  and environmental connections to our state.

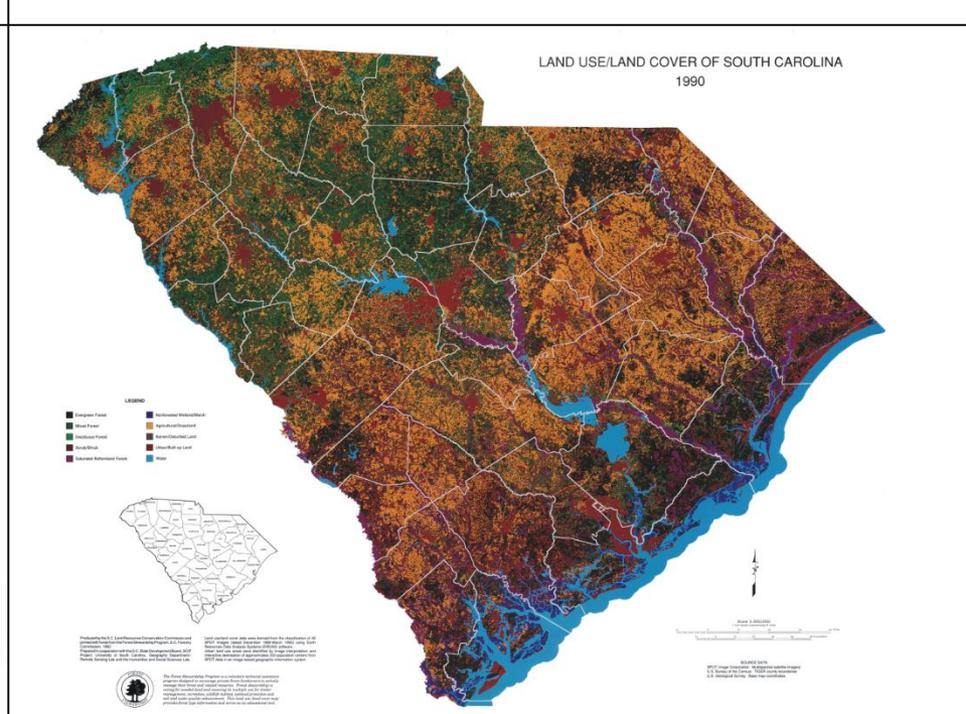
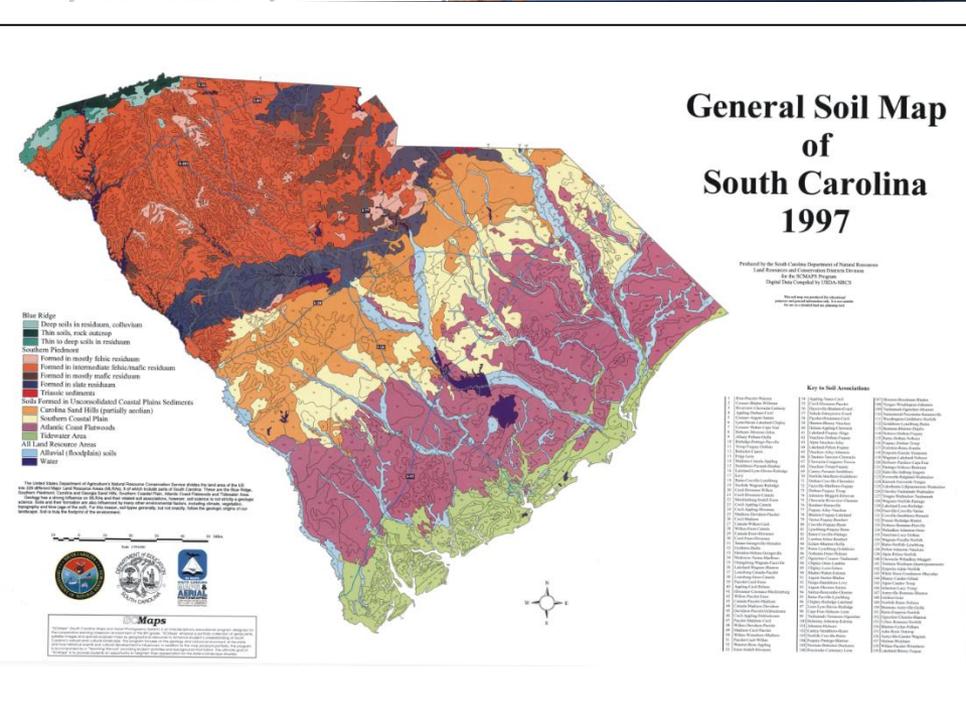
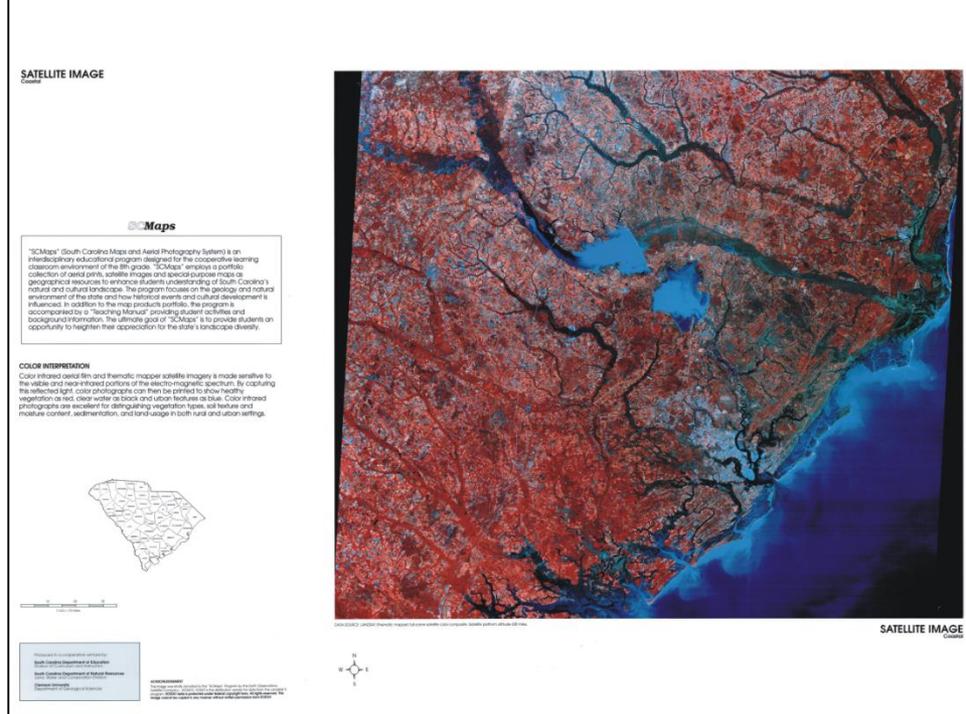


Correlation to South Carolina State Curriculum Standards

- Grade 8 Science: “Identify and illustrate geologic features of South Carolina and other world regions through the use of imagery (including aerial photography and satellite imagery) and topographic maps”
- All student activities in the SC MAPS Teaching Manual are correlated to one or more state curriculum standards

Cartographic Products

- **Base Maps:**
 - Shaded relief map / political map (USGS)
 - Land use / land cover map (SC DNR)
 - Geology / Soils / Mineral Resources map (SC DNR)
- **Topographic Maps:**
 - Customized 1:24,000 scale quadrangle maps (USGS)
- **Infrared (false-color) Aerial Photographs**
 - NHAP (40,000 ft) & NAPP (20,000 ft) programs (USGS)
- **Satellite Imagery:**
 - LANDSAT & SPOT images
- **Transparent Plastic Math Grid**



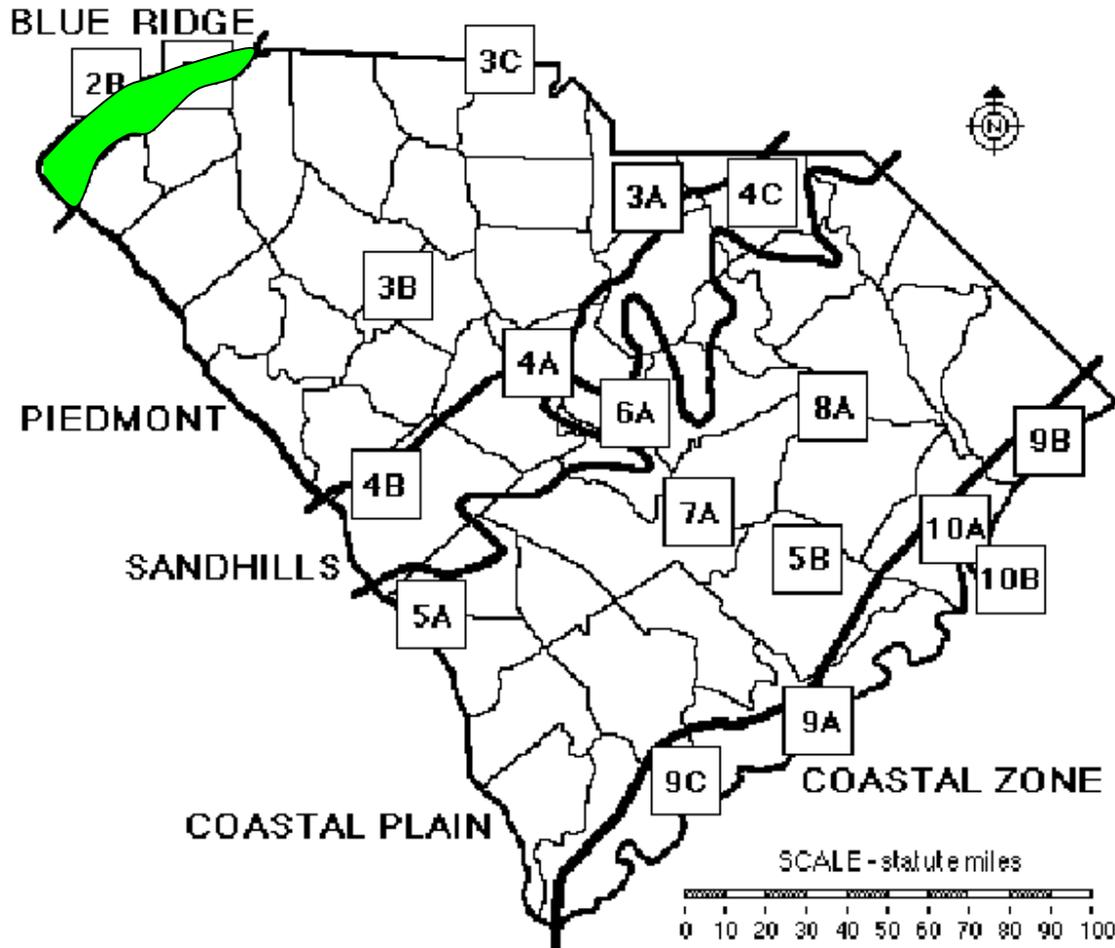
ORGANIZATION OF SC MAPS ACTIVITIES

5 landform regions – 18 study sites

- Blue Ridge
- Piedmont
- Sandhills
- Coastal Plain
- Coastal Zone

study sites are based on different themes
and familiar landmarks around the state

Blue Ridge



Study Sites

2A - Table Rock
(mountains)

2B - Lake Jocassee
(energy
production)

Table Rock

TABLE ROCK
Study Site #2A



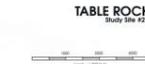
DATA SOURCE: NOAA Color Infrared Film - 1982. Aerial Film Height 40,000 ft. "Look-Up" under conditions.

COLOR INTERPRETATION

Color infrared aerial film and thematic mapper satellite imagery is more sensitive to the visible and near-infrared portions of the electromagnetic spectrum. By coating the reflected light, color photographs can then be printed to show healthy vegetation as red, clear water as black and urban features as blue. Color infrared photographs are excellent for dating, judging vegetation types, soil texture and moisture content, sedimentation, and land usage in both rural and urban settings.

SCMaps

"SCMaps" (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. "SCMaps" employ a portfolio collection of aerial prints, satellite images and special purpose maps as geographical resources to enhance student understanding of South Carolina's natural and cultural landscapes. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products portfolio, the program is accompanied by a "Teaching Manual" providing student activities and background information. The ultimate goal of "SCMaps" is to provide students an opportunity to heighten their appreciation for the state's landscape diversity.



Produced in a cooperative venture by:
 South Carolina Department of Education
 South Carolina Department of Natural Resources
 South Carolina Department of Geological Sciences
 Clemson University
 Department of Earth Sciences

TABLE ROCK
Study Site #2A



SCMaps

"SCMaps" (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. "SCMaps" employ a portfolio collection of aerial prints, satellite images and special purpose maps as geographical resources to enhance student understanding of South Carolina's natural and cultural landscapes. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products portfolio, the program is accompanied by a "Teaching Manual" providing student activities and background information. The ultimate goal of "SCMaps" is to provide students an opportunity to heighten their appreciation for the state's landscape diversity.



Produced in a cooperative venture by:
 South Carolina Department of Education
 South Carolina Department of Natural Resources
 South Carolina Department of Geological Sciences
 Clemson University
 Department of Earth Sciences

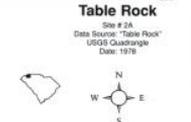
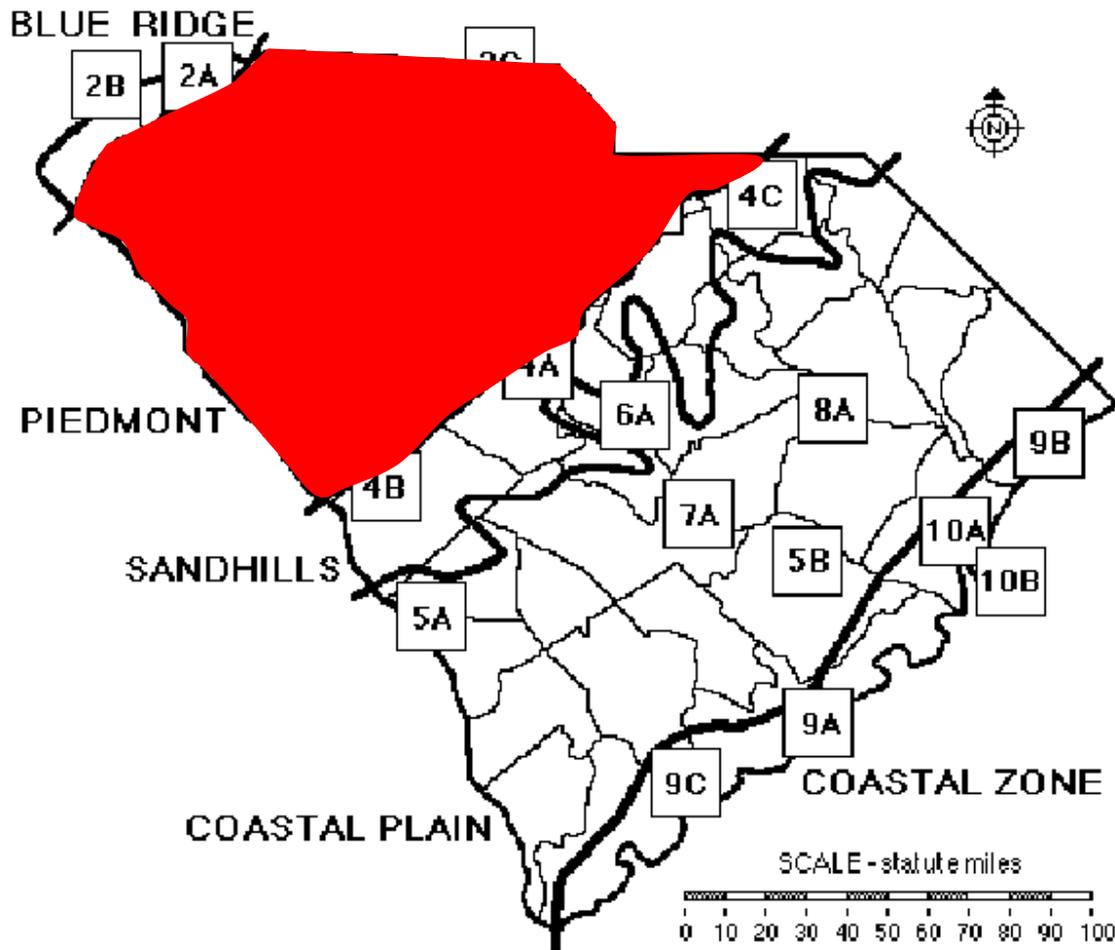


Table Rock
Site # 2A
Data Source: "Table Rock"
USGS Quadrangle
Date: 1978

Piedmont



Study Sites

3A - Forty-Acre Rock

(Granite
Outcropping)

3B - Silverstreet

(Agriculture)

3C - Kings Mountain

(Historical
Battleground)

Silverstreet

SILVERSTREET
Map No. 33B



SILVERSTREET
Map No. 33B

SCMaps

"SCMaps" (South Carolina Maps and Aerial Photographic System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. "SCMaps" merges a portfolio collection of aerial photos, satellite images, and topographic maps on geographical resources to various students, understanding of South Carolina's natural and cultural landscape. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map product portfolio, the program is accompanied by a "Teacher Manual" provides student activities and background information. The ultimate goal of "SCMaps" is to provide students an opportunity to heighten their appreciation for the state's landscape diversity.

COLOR INTERPRETATION

Topographic features are indicated by the brown contour lines. The brown contour lines are labeled with their elevation in feet. The brown contour lines are labeled with their elevation in feet. The brown contour lines are labeled with their elevation in feet.



South Carolina Department of Education
Division of Curriculum and Instruction
Clemson University
Department of Earth Sciences



SCMaps

Produced in its cooperative venture by:
 South Carolina Department of Education
 Division of Curriculum and Instruction
 South Carolina Department of Natural Resources
 Division of Land Reclamation and Conservation Districts
 Clemson University
 Department of Earth Sciences

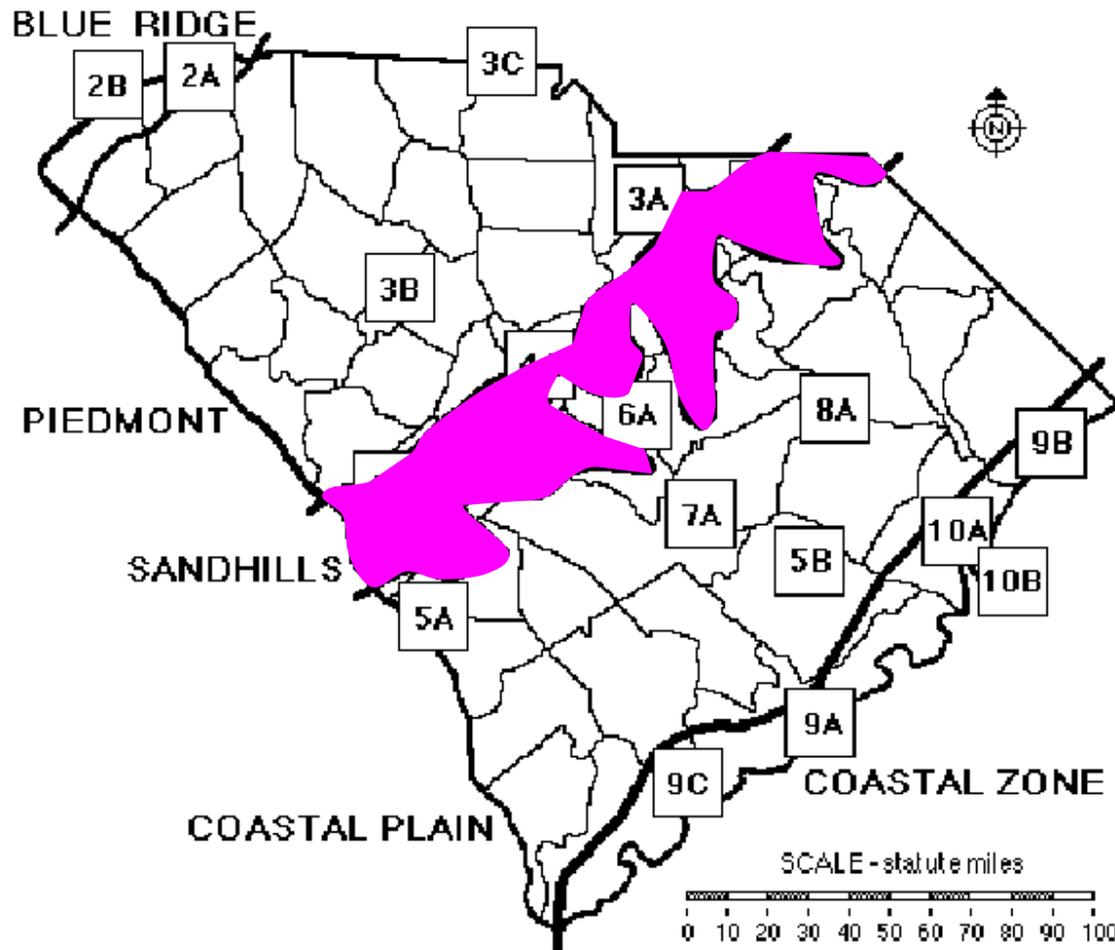
Silverstreet
 Site # 33B
 Data Source: "Meadow View"
 USGS Quadrangle
 Date: 1968

SCALE 1:24,000
 0 100 200 300 400 500 600 700 800 900 1000 FEET
 0 100 200 300 400 500 600 700 800 900 1000 METERS

Produced in its cooperative venture by:
 South Carolina Department of Education
 Division of Curriculum and Instruction
 South Carolina Department of Natural Resources
 Division of Land Reclamation and Conservation Districts
 Clemson University
 Department of Earth Sciences



Sandhills



Study Sites

4A - Columbia
(metropolitan area)

4B - Graniteville
(mining area)

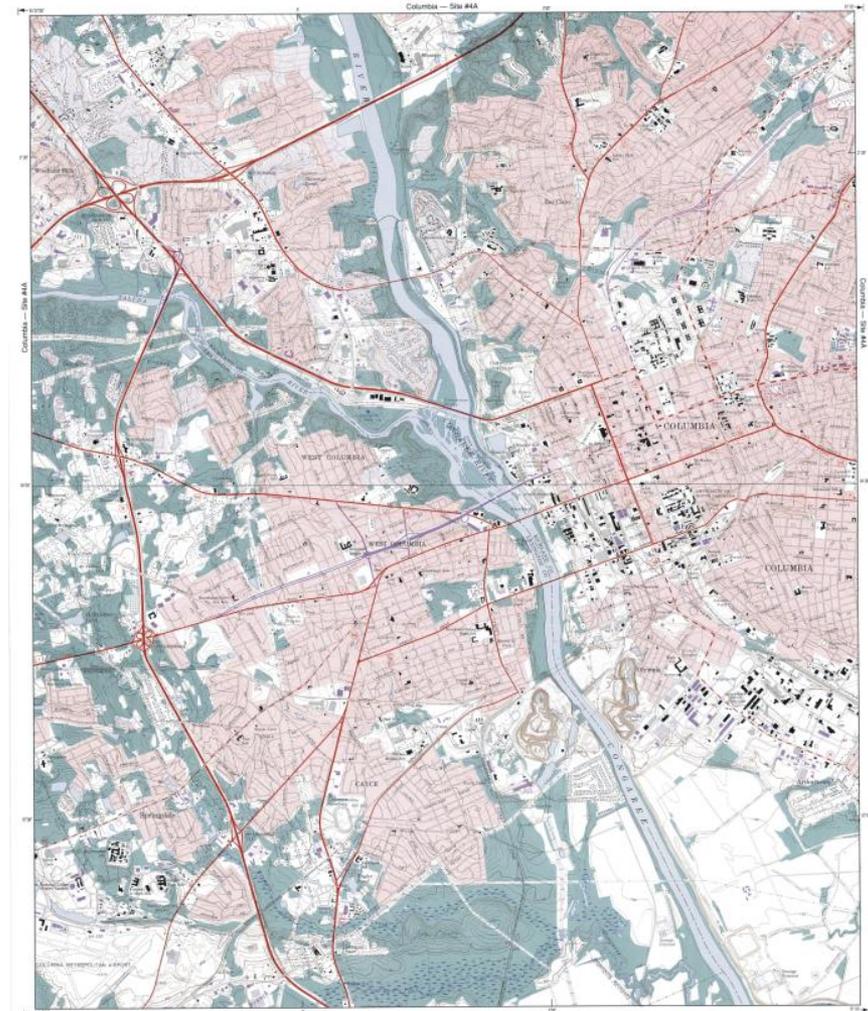
4C - Sugarloaf Mountain
(wildlife refuge)

Sandhills

COLUMBIA
Study Site #4A



COLUMBIA
Study Site #4A



Columbia
Site # 4A

Date Source: Columbia North & SW Columbia USGS Quadrangle
Date: 1980 & 1982

COLOR INTERPRETATION

Color infrared aerial film and thematic mapper satellite imagery is made available to the visible and near-infrared portions of the electro-magnetic spectrum. By capturing the reflected light, color photographs can then be filtered to show healthy vegetation as red, clear water as black and urban features as blue. Color infrared photographs are excellent for distinguishing vegetation types, soil texture and moisture content, sedimentation, and land usage in both rural and urban settings.

SCMaps

"SCMaps" (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. "SCMaps" employs a portfolio collection of aerial prints, satellite images and geographic maps of geographical resources to enhance student understanding of South Carolina's natural and cultural landscapes. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products, the program is accompanied by a "teaching Manual" providing student activities and background information. The ultimate goal of "SCMaps" is to provide students an opportunity to heighten their appreciation for the state's landscape diversity.



1:600,000 Scale

Produced in a cooperative venture by:
South Carolina Department of Education
Division of Curriculum and Instruction
South Carolina Department of Natural Resources
Division of Land and Conservation District
Clemson University
Department of Geological Sciences

SCMaps

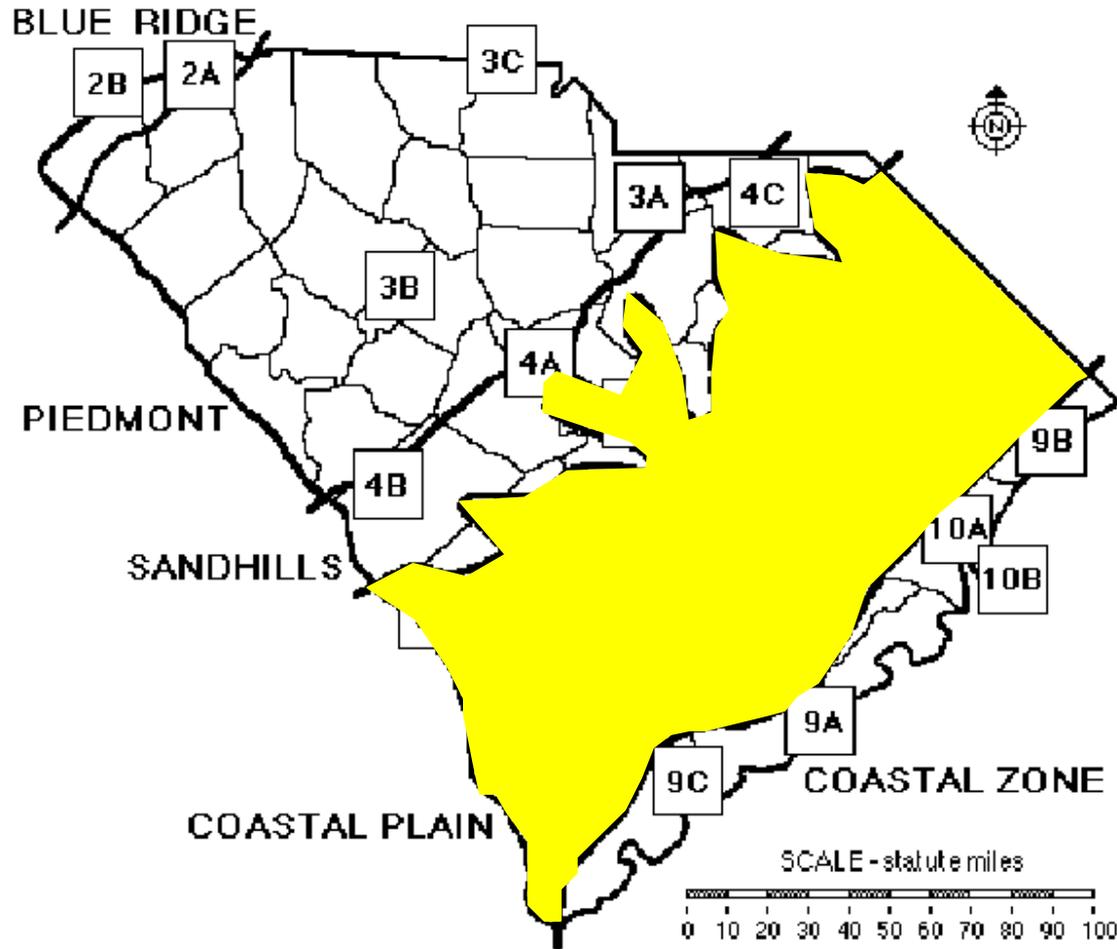
"SCMaps" (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. "SCMaps" employs a portfolio collection of aerial prints, satellite images and special purpose maps as geographical resources to enhance student understanding of South Carolina's natural and cultural landscapes. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products portfolio, the program is accompanied by a "teaching Manual" providing student activities and background information. The ultimate goal of "SCMaps" is to provide students an opportunity to heighten their appreciation for the state's landscape diversity.

SCALE 1:24,000

Produced in a cooperative venture by:
South Carolina Department of Education
Division of Curriculum and Instruction
South Carolina Department of Natural Resources
Division of Land and Conservation District
Clemson University
Department of Earth Sciences



Coastal Plain



Study Sites

5A - Savannah River
(Habitat Restoration)

5B - Santee-Cooper
(Engineering/Canals)

6A - Congaree Swamp
(Pristine Forest)

7A - Lake Marion
(Limestone
Outcropping)

8A - Woods Bay
(Carolina Bay)

Coastal Plain

LAKE MARION
Study Site #7A



DATA SOURCE: NOAA/NOAA Center for Environmental and Estuarine Science (Chesapeake Biological Laboratory)

COLOR INTERPRETATION

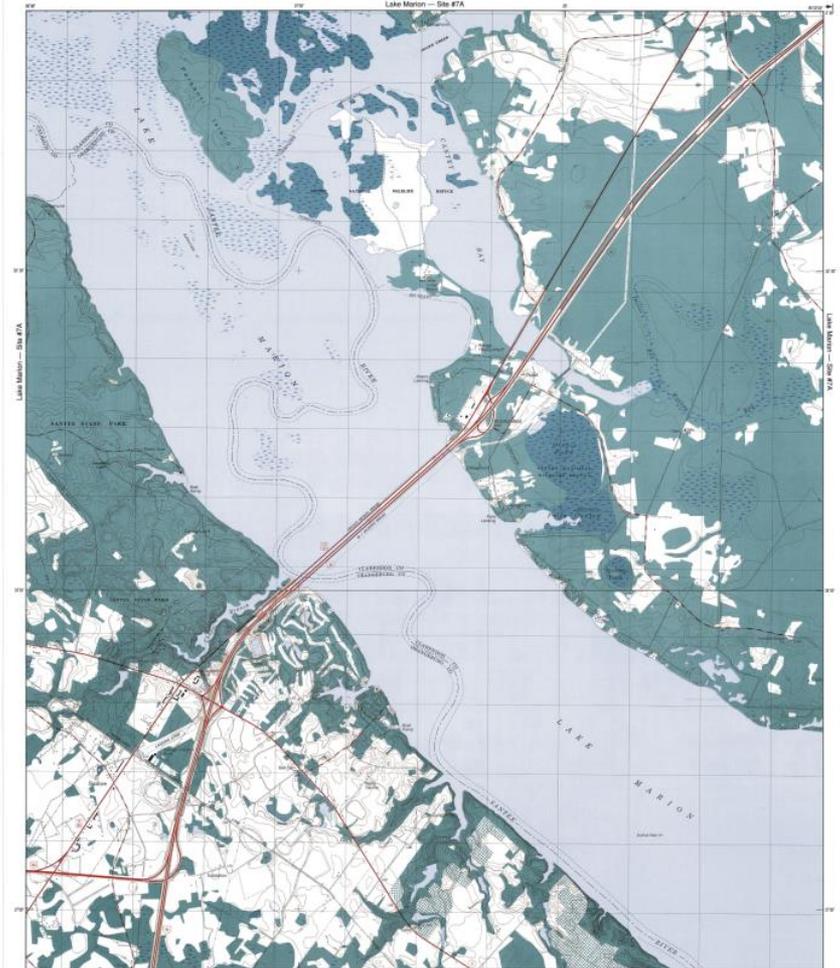
Color infrared aerial film and thematic mapper satellite imagery is made sensitive to the visible and near infrared portions of the electromagnetic spectrum. By capturing the reflected light, color photographs can then be printed to show healthy vegetation as red, clear water as black, and urban features as blue. Color infrared photographs are excellent for distinguishing vegetation types, soil texture and moisture content, sedimentation, and land usage in both rural and urban settings.

SCMaps (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. SCMaps' emphasis is on the collection of aerial prints, satellite images and special purpose maps as geographical resources to enhance students' understanding of South Carolina's natural and cultural landscape. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products portfolio, the program is accompanied by a "teaching manual" providing student activities and background information. The ultimate goal of SCMaps is to provide students an opportunity to "reignite their appreciation for the state's landscape diversity."



Produced in a cooperative venture by:
South Carolina Department of Education
 Division of Curriculum and Instruction
South Carolina Department of Natural Resources
 Division of Land and Recreation and
 Conservation Districts
Clemson University
 Department of Earth Sciences

LAKE MARION
Study Site #7A



SCMaps

SCMaps (South Carolina Maps and Aerial Photography System) is an interdisciplinary educational program designed for the cooperative learning classroom environment of the 8th grade. SCMaps' emphasis is on the collection of aerial prints, satellite images and special purpose maps as geographical resources to enhance students' understanding of South Carolina's natural and cultural landscape. The program focuses on the geology and natural environment of the state and how historical events and cultural development is influenced. In addition to the map products portfolio, the program is accompanied by a "teaching manual" providing student activities and background information. The ultimate goal of SCMaps is to provide students an opportunity to "reignite their appreciation for the state's landscape diversity."

SCALE: 1:24,000
 GRAPHIC SCALE: 0 100 200 METERS
 GRAPHIC SCALE: 0 100 200 FEET
 NATIONAL GRID: NAD 83 UTM ZONE 18Q

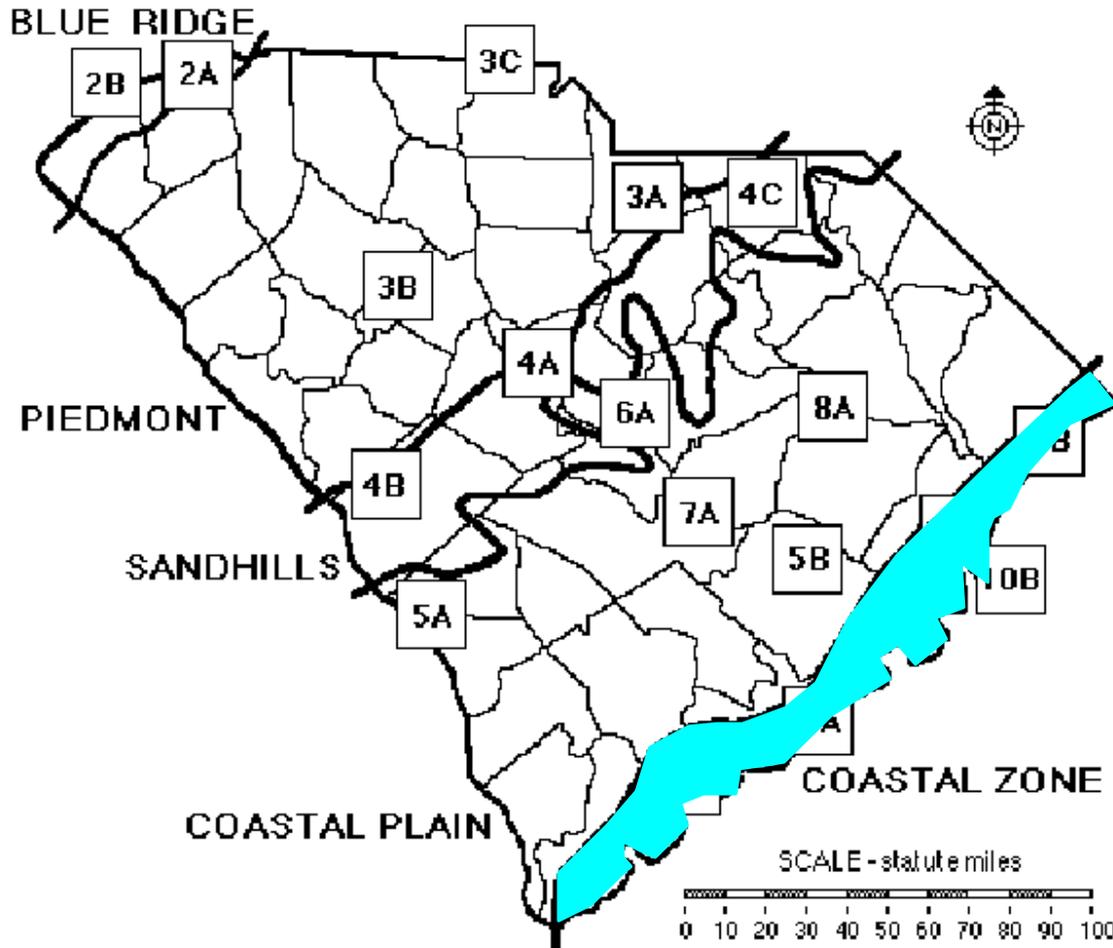
Produced in a cooperative venture by:
South Carolina Department of Education
 Division of Curriculum and Instruction
South Carolina Department of Natural Resources
 Division of Land and Recreation and
 Conservation Districts
Clemson University
 Department of Earth Sciences



LAKE MARION
Study Site #7A
 Data Source: "8, Paul & Varner" USGS Quadrangles
 Date: 1985 & 1975

Coastal Zone

Study Sites



9A – Charleston
(Historic Port)

9B - Myrtle Beach
(Tourist Area)

9C - ACE Basin
(Wildlife Refuge)

10A - Winyah Bay
(Rice Culture)

10B - North Inlet
(Hurricanes)

