

2014 Nonpoint Source Conference

Guess Creek Watershed

Paul Freeman & Steve Northcutt

The Nature Conservancy

GUESS CREEK
RESTORATION PROJECT

ADAM

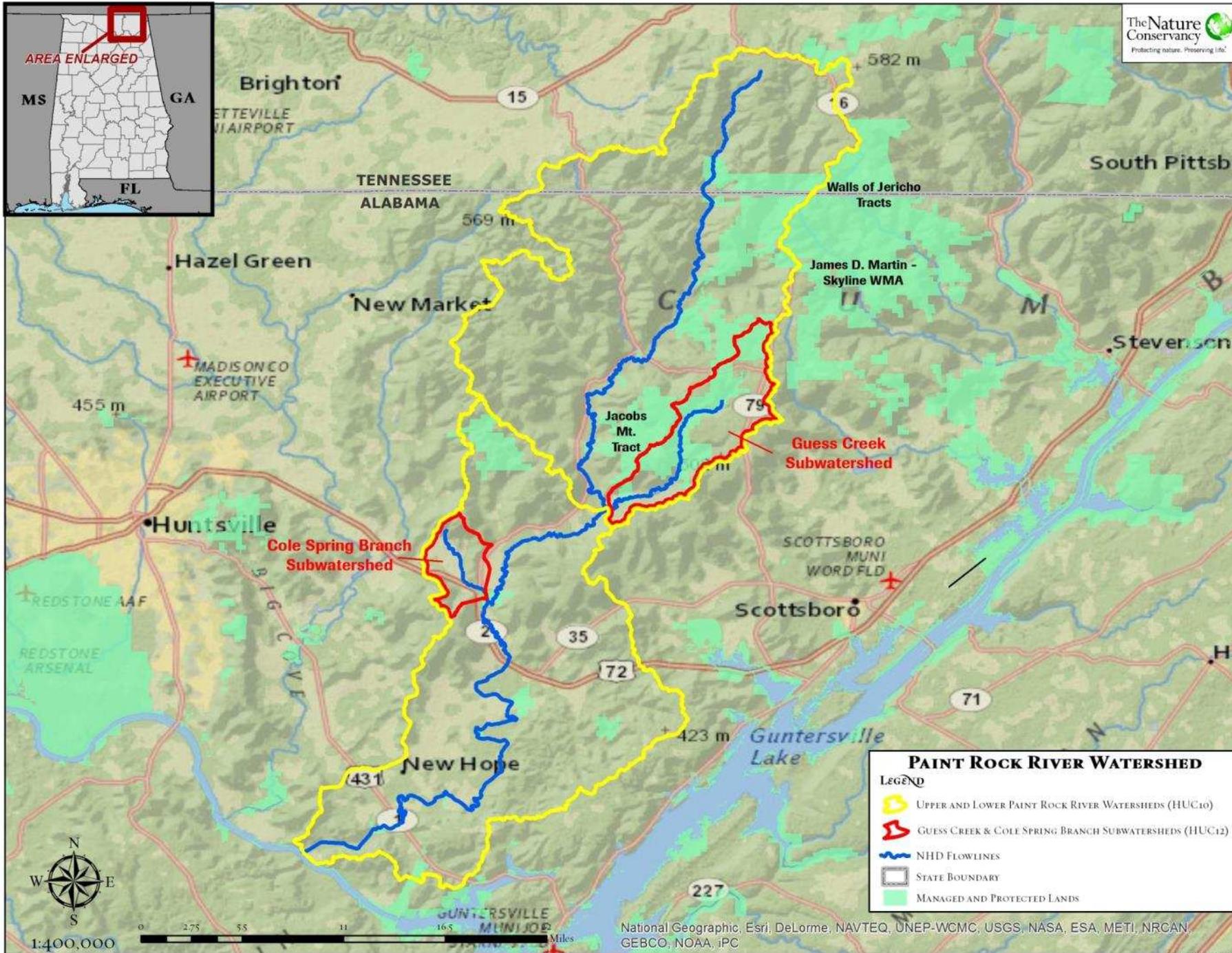


8

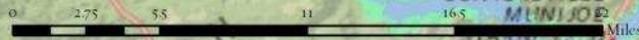
The Nature
Conservancy



Protecting nature. Preserving life.™



1:400,000

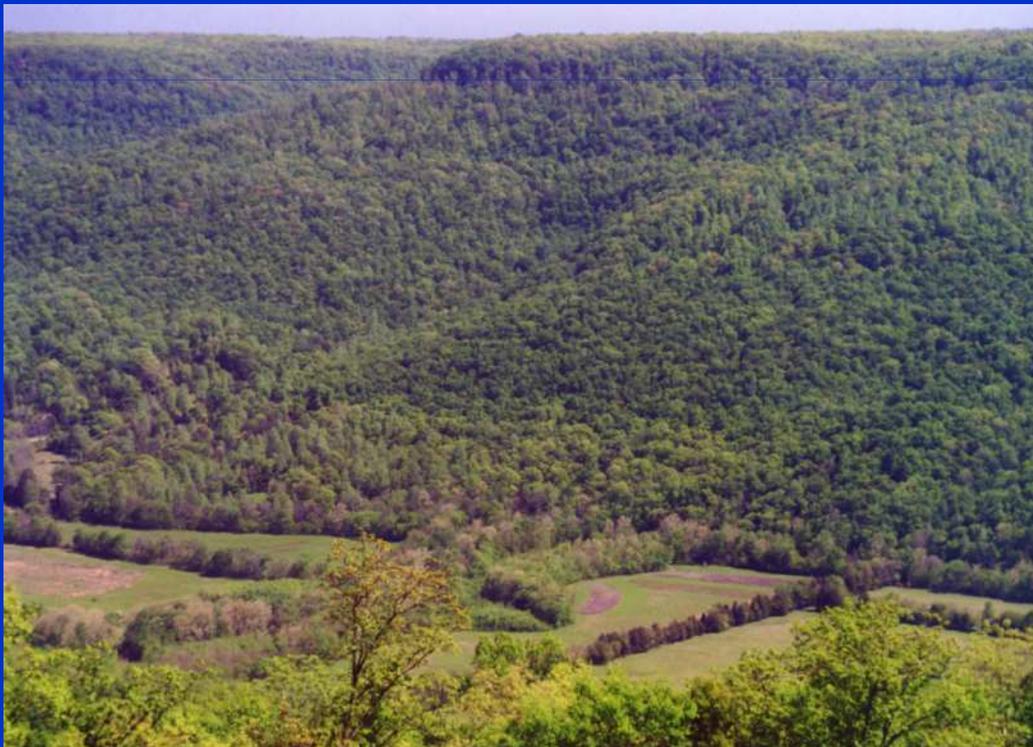


National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC

The Paint Rock River

Watershed drains 460 square miles of Cumberland's and S. Ridge and Valley in NE Alabama and SE Tennessee

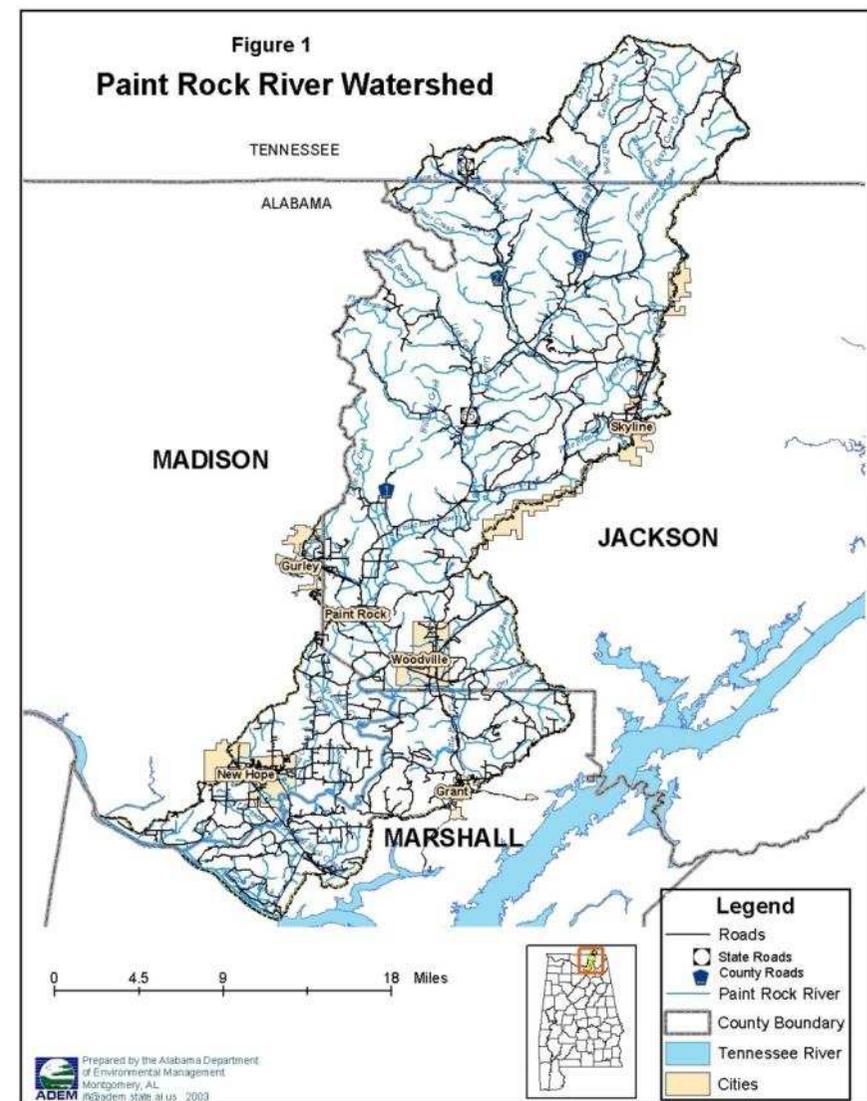
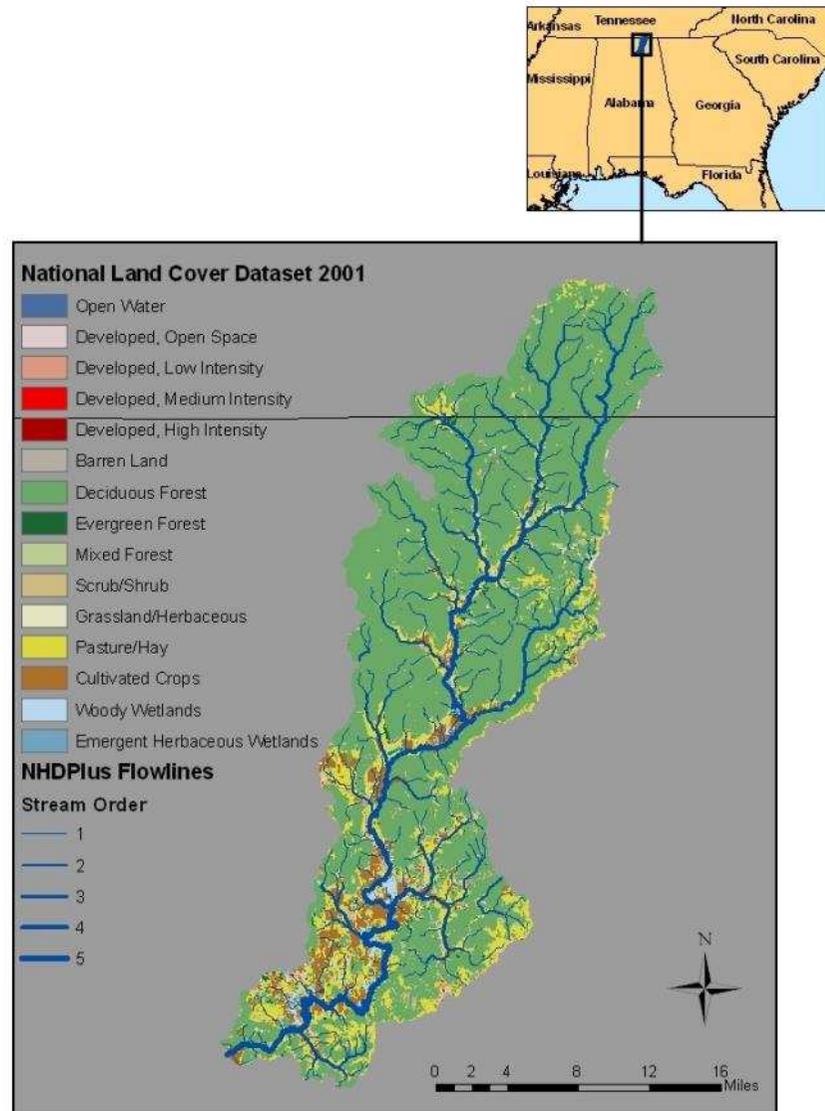
60 miles of free-flowing mainstem



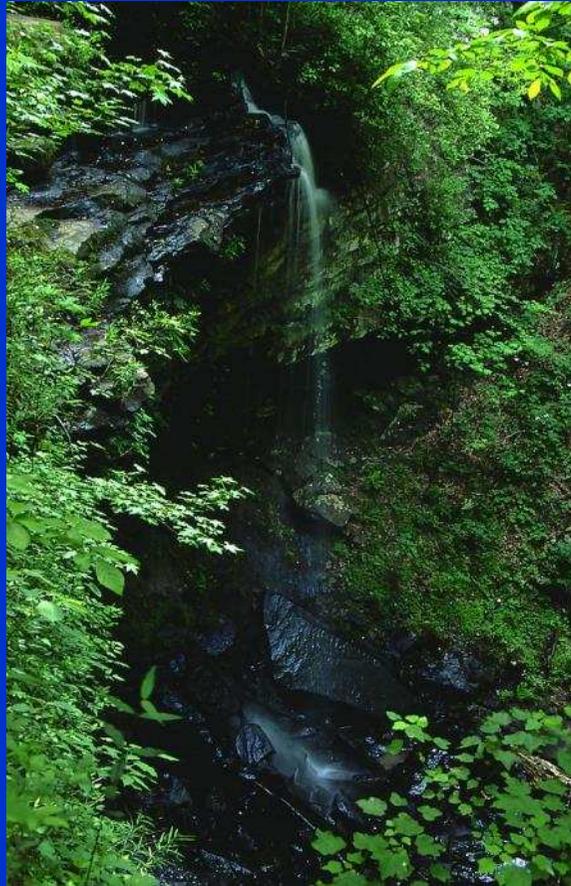
Headwaters and tributaries in cove forests

Bottomlands in agriculture

460 sq Mi; 294K acres; 119K hectares
 12% TN (Franklin Co); 88% AL (Jackson, Madison, Marshall Co)
 82% Forested, 12% Ag, 4% Urban



Unique Ecological Systems



**Large Forest Blocks
and Headwaters**

**Paint Rock
River and
Riparian
Zone**



**Cave and
Karst
System**



The Paint Rock River

Fish Assemblage

- 98 species of fish
- 2 federal protection
- 4 globally imperiled fish
- One species found only in one other stream



The Paint Rock River Mussel Diversity

- 48(50) of 58 historic species of mussels, extant
- 9 listed or candidate for ESA, 22 rare in AL
- 1 species found nowhere else on Earth
- 2 species have been reintroduced
- 8 that are missing include 2 extinct, 2 ES



The Paint Rock River

Some Stresses with Non Point Sources



Sedimentation, Habitat Destruction, Nutrient Loading, Pesticides, Temperature

Current Agricultural, Livestock, Forestry, Urban land uses

Historic channelization and dredging operations.

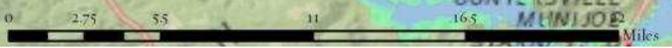
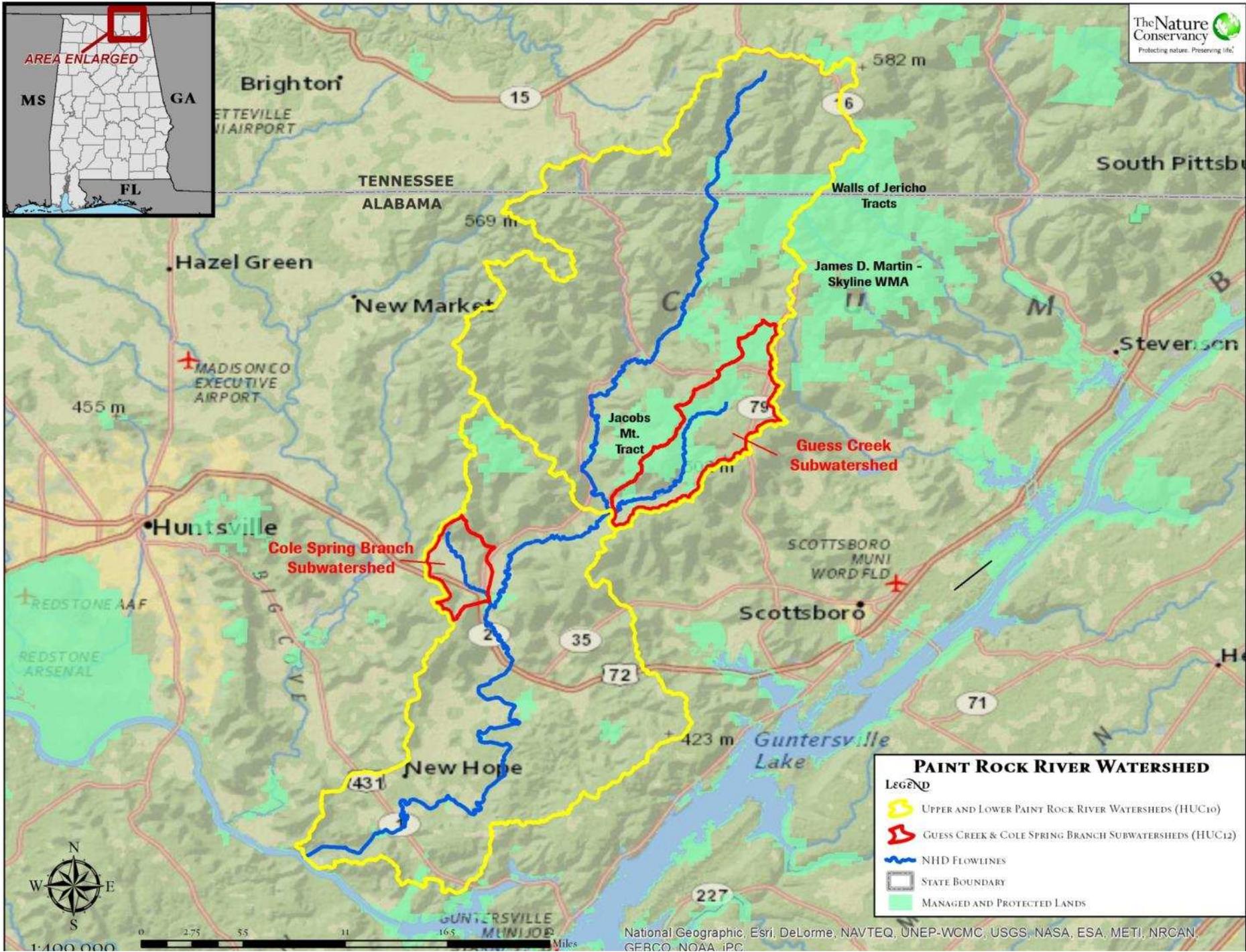
Future conversions of large forest blocks and ag lands.

Guess Creek



303d listed impairments: organic loading, low dissolved oxygen, pathogens, unknown toxicity

Source of Organic Loading: pasture/hay fields, row crops, animal operations, runoff from pastures, improper land application of animal wastes, and animals with access to streams



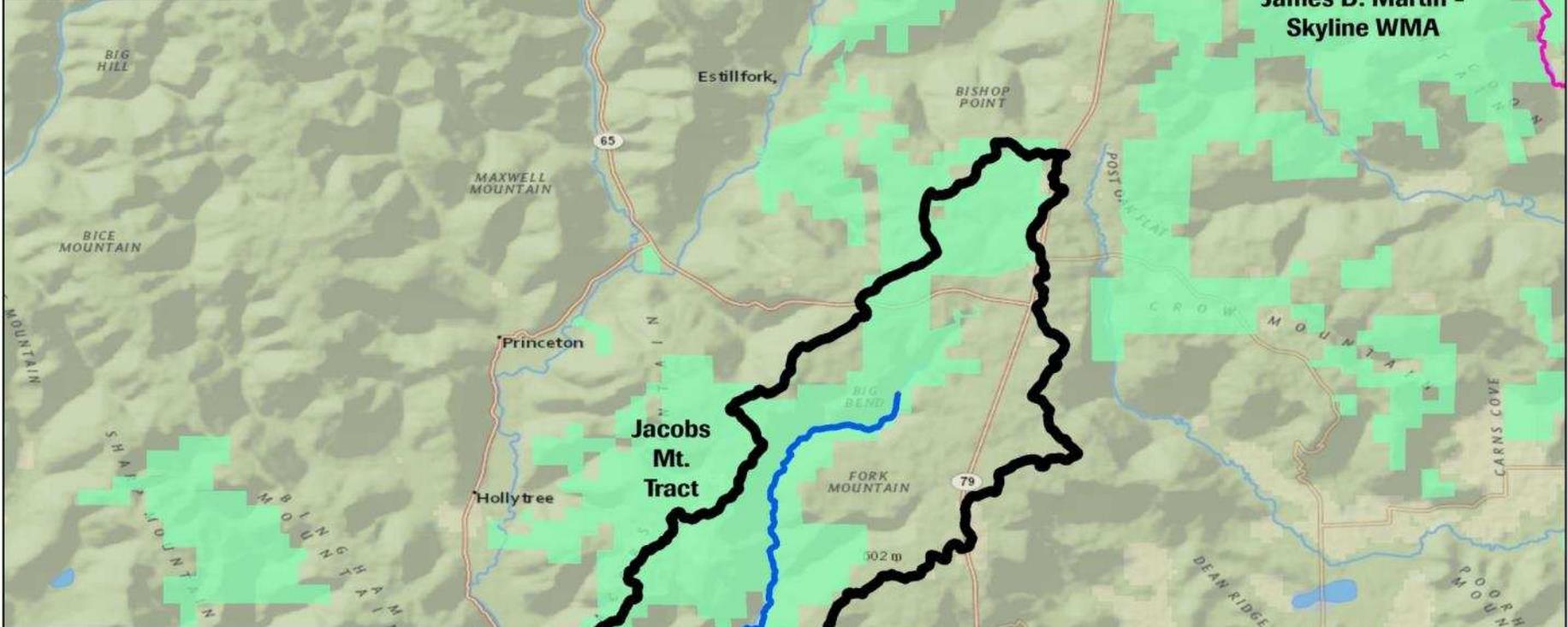


TENNESSEE
ALABAMA

Walls of Jericho
Tracts



James D. Martin -
Skyline WMA



**GUESS CREEK RESTORATION
JACKSON COUNTY, ALABAMA**

LEGEND

-  RESTORATION SITES
-  GUESS CREEK
-  GUESS CREEK WATERSHED (HUC12)
-  ADEM IMPAIRED WATERS (2012)
-  MANAGED AND PROTECTED LANDS
-  STATE BOUNDARY



1:170,000

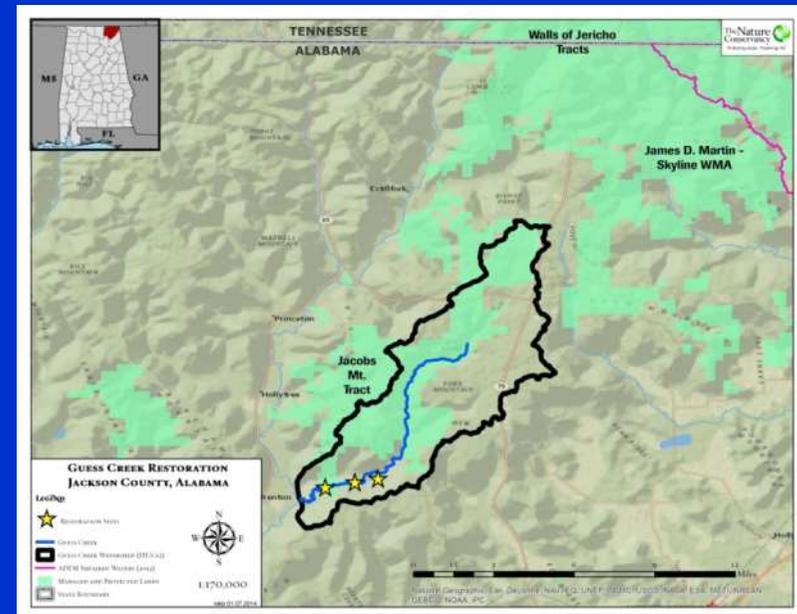
mkb 01.07.2014



National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC

Stream bank stabilization	435 feet
Cattle exclusion fencing	5300 feet
Wells	3
Water trough	5
Stream crossing for livestock	4
Hardened feeding areas	10
Cattle shade structures	2
Swinging stream gates	2

5 Guess Creek restoration projects



Keys to restoration action:

2012-2013

- Guess Creek Partners:
- 5 Landowners*
- Alabama Department of Environmental Management
- Environmental Protection Agency
- USDA Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Alabama Department of Conservation and Natural Resources
- Tennessee Valley Authority
- Geological Survey of Alabama
- University of Tennessee at Chattanooga



























**GUESS CREEK
RESTORATION PROJECT**

The project is fully or partially funded
by the Alabama Department of Environmental
Management through a Clean Water Act Section
106(b) Cleanable water grant awarded by the
U.S. Environmental Protection Agency - Region 4

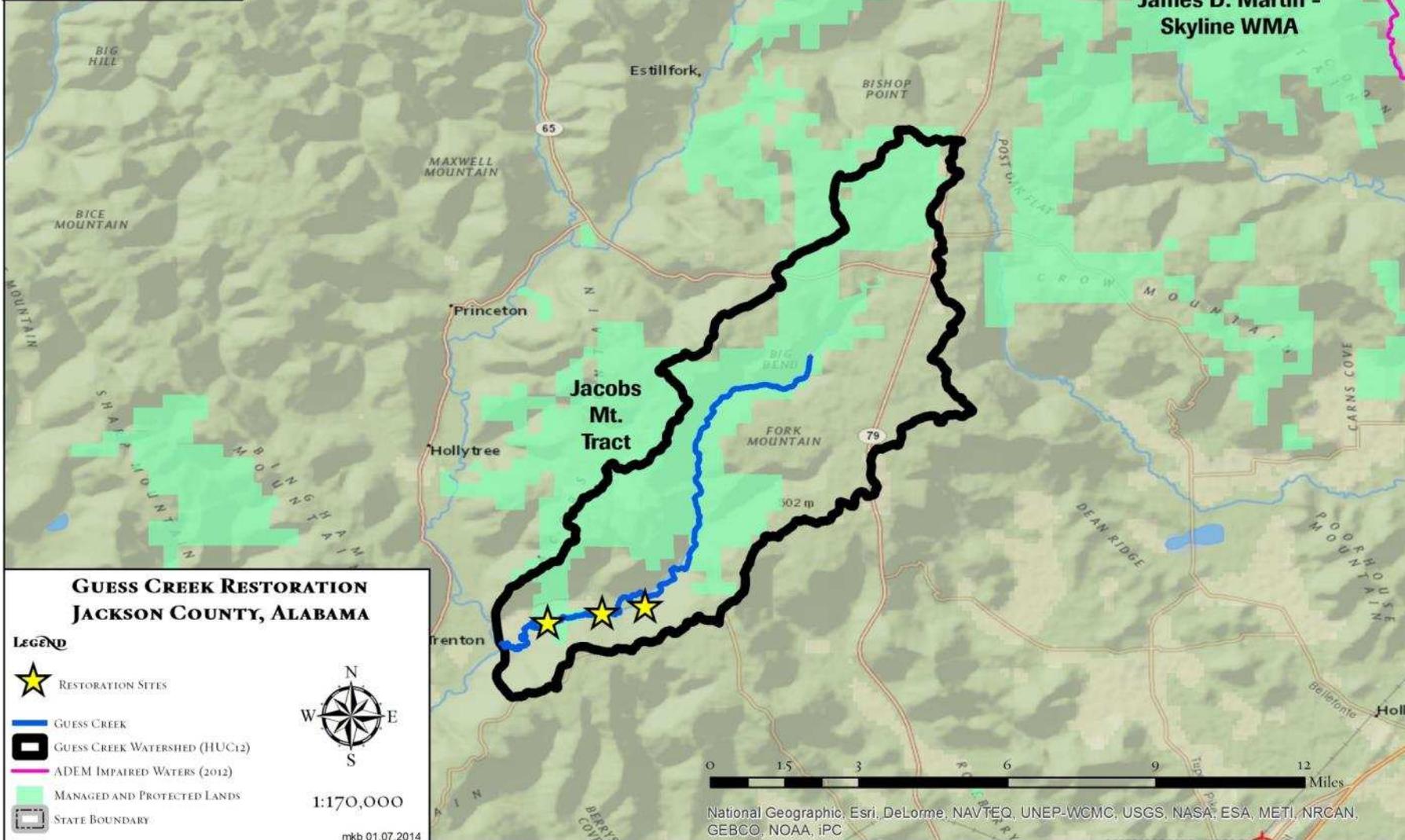
ADEM

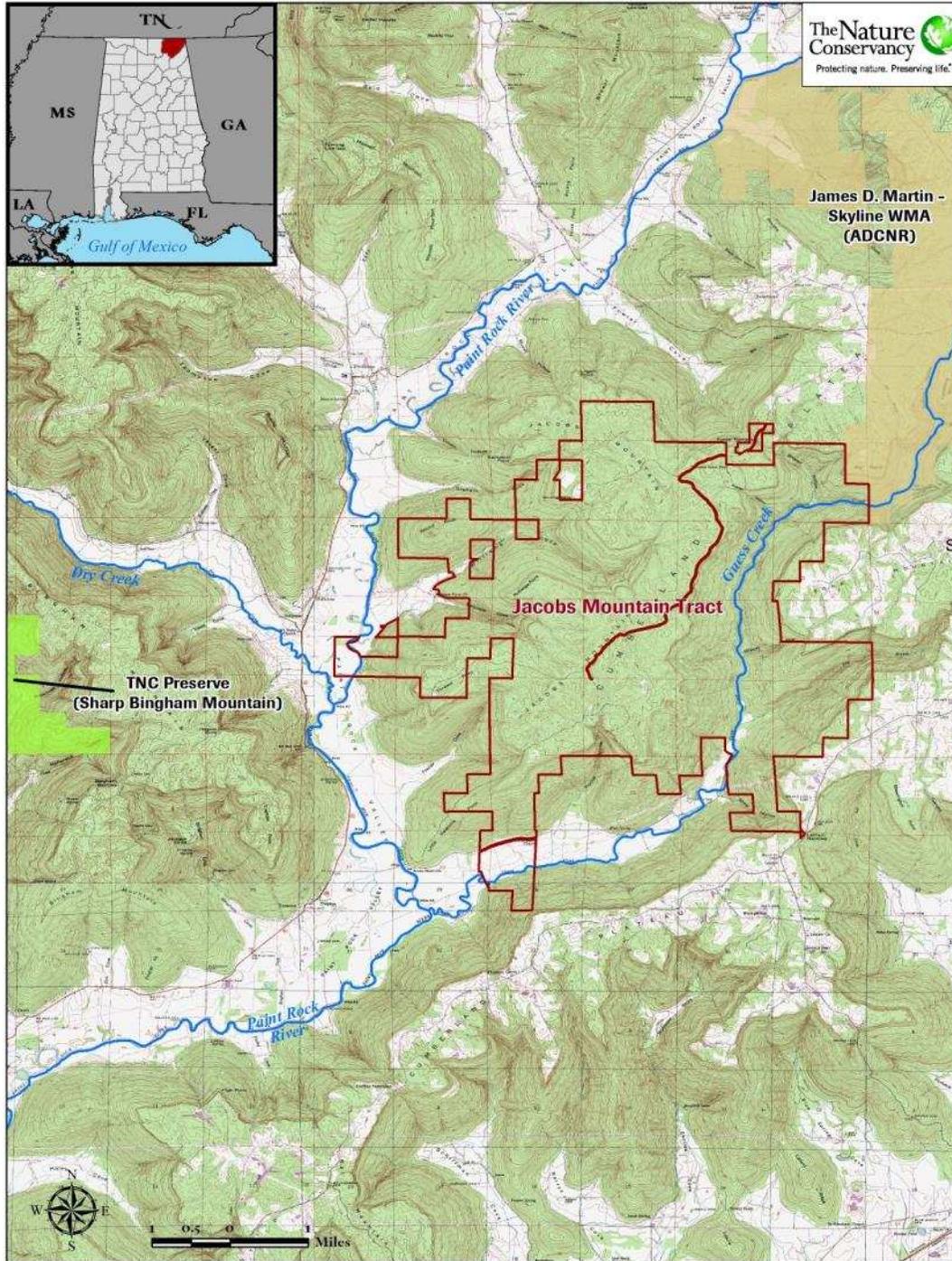
**The Nature
Conservancy**

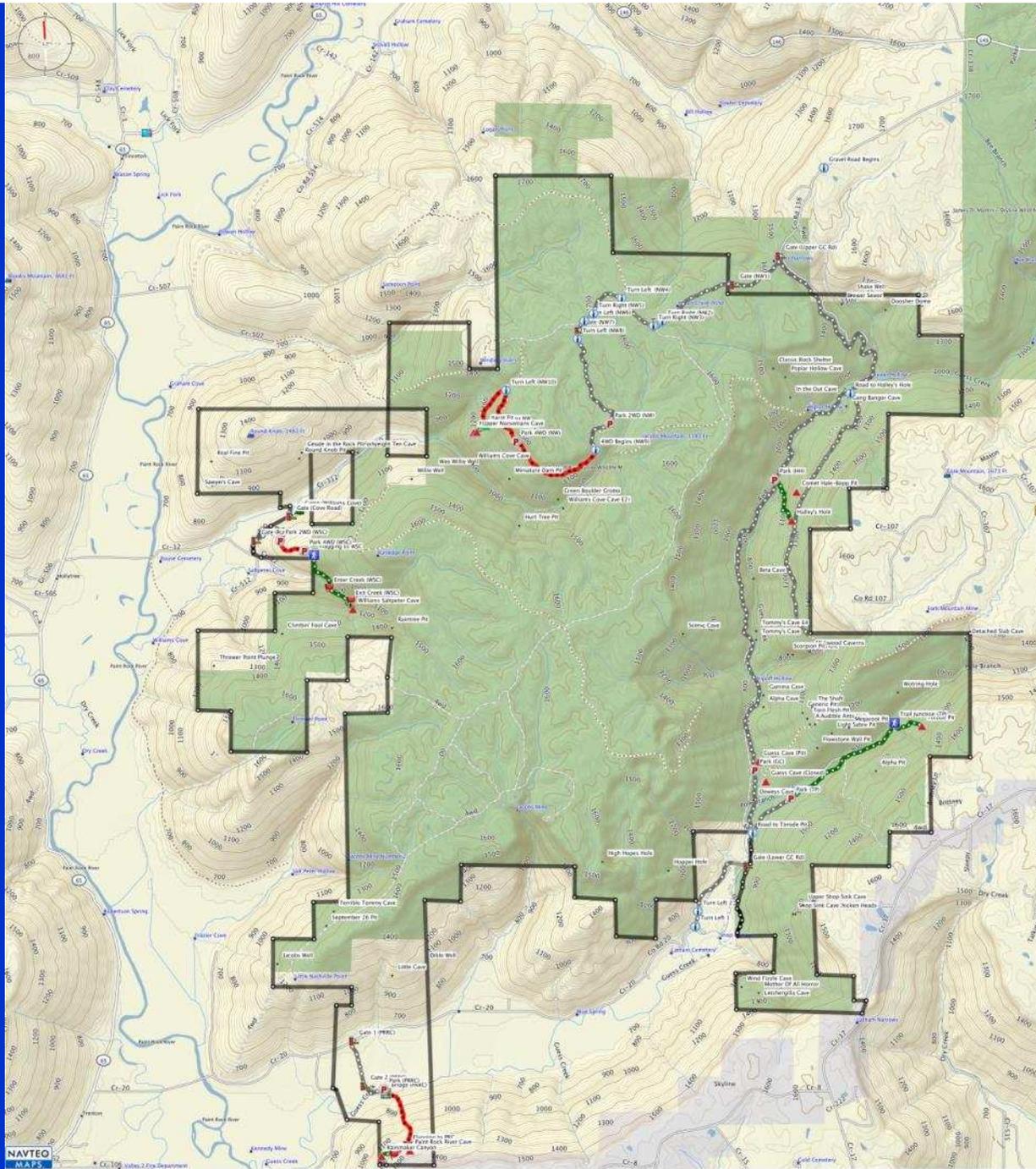
Land protection for freshwater conservation



Forested uplands, bottomlands (cane & hardwoods), terraces , limestone slopes, sandstone plateaus. Caves, sinks and springs.







NAVTEO
MAPS

© 2008 Garmin, Inc. All rights reserved. © 2008 Garmin, Inc. All rights reserved.

Topo U.S. 24K Southeast
© 2008 Garmin, Inc. All rights reserved. © 2008 Garmin, Inc. All rights reserved.

0 0.2 0.4 0.6 0.8 1.0 mi

834 44 43 3 WBL 12 18.7

Jacob's Mountain Preserve

GARMIN



Steve Northcutt
snorthcutt@tnc.org

205-251-1155 x109

Paul Freeman
pfreeman@tnc.org

205-251-1155 x110

**The Nature
Conservancy** 
Protecting nature. Preserving life.™