Water, Aquatic and Riparian Habitat and Restoration

Streams and Rivers

- The 1996 plan had no management area or direction for rivers and steams.
  - Blowdown from Hurricane Hugo .
  - Previous plan allows removal of wood debris from streams.
  - Hydrologic modification were not addressed

Ponds

- Only aquatic objective in the 1996 plan was to maintain game species in ponds.

Ponds

- The proposed plan:
  - 15 ponds on 41 acres
  - provide high-quality sustainable angling opportunities in managed recreational fishing ponds.

Streams and Rivers

- Proposed direction includes:
  - Emphasis is placed on recruitment of critical on large wood debris in streams.
  - Two aquatic ecosystems: Streams & Rivers, Ponds (lentic)
- The proposed objectives include:
  - Riparian area restoration
  - Improvement of stream habitat and aquatic communities
  - Assessment of streams for effects of past ditching and effects of drainage.
  - Restoration or improvement relative to stream permanence, floodplain hydration and adjacent riparian and wetland restoration

Management tools

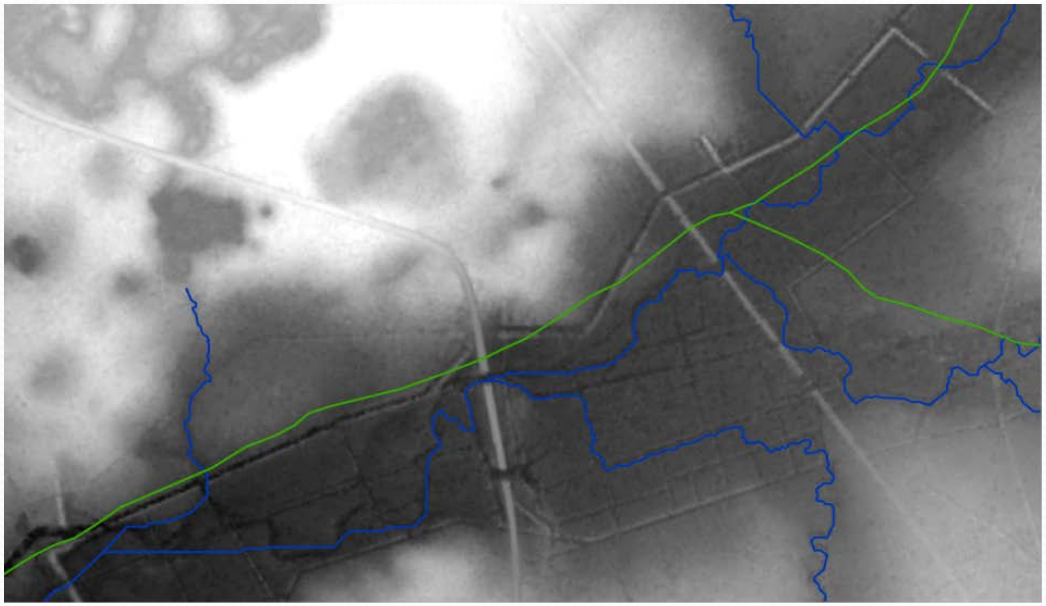
The new knowledge from LiDAR data improves our ability to:

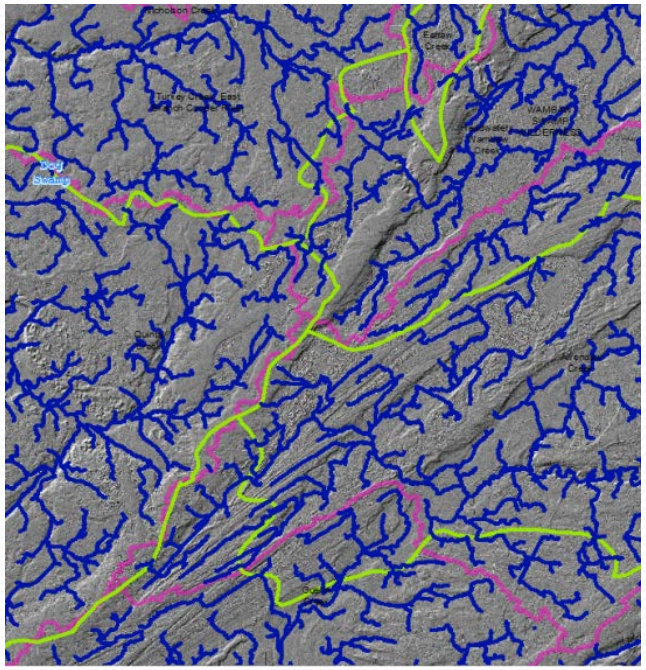
- Compile riparian information during desk review of project areas.
- Identify areas of concern from past management of land
- Identify areas for ecological restoration to pre-settlement conditions

Streams and Rivers

Our knowledge for stream density and type has greatly improved. Particularly changes in stream miles:

	Current	Modeled	% increase
Admin. Area	1043 miles	2502 miles	140.0
NF Ownership	526 miles	1553 miles	195.0





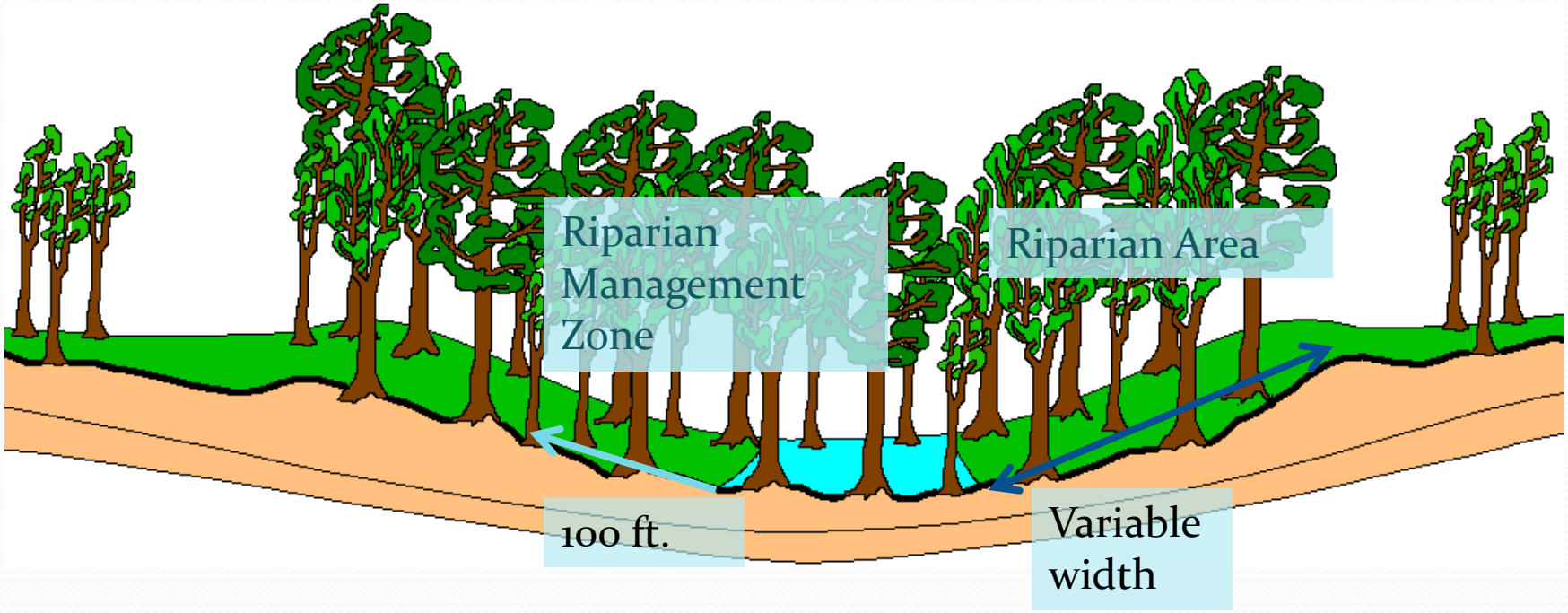
2012 Planning Rule

- *Riparian Management Zone* ~ Portions of a watershed where riparian-dependent resources receive primary emphasis, components to maintain or restore riparian functions and ecological functions
  - 100 ft from all perennial streams and lakes
  - 50 ft from all intermittent streams

2012 Planning Rule

- *Riparian Areas* ~ includes terrestrial and aquatic ecosystems that extend down into the groundwater, above ground, outward across the floodplain, up the near-slopes that drain to the water, laterally into the terrestrial ecosystem, and along the water course at variable widths

Riparian Diagram

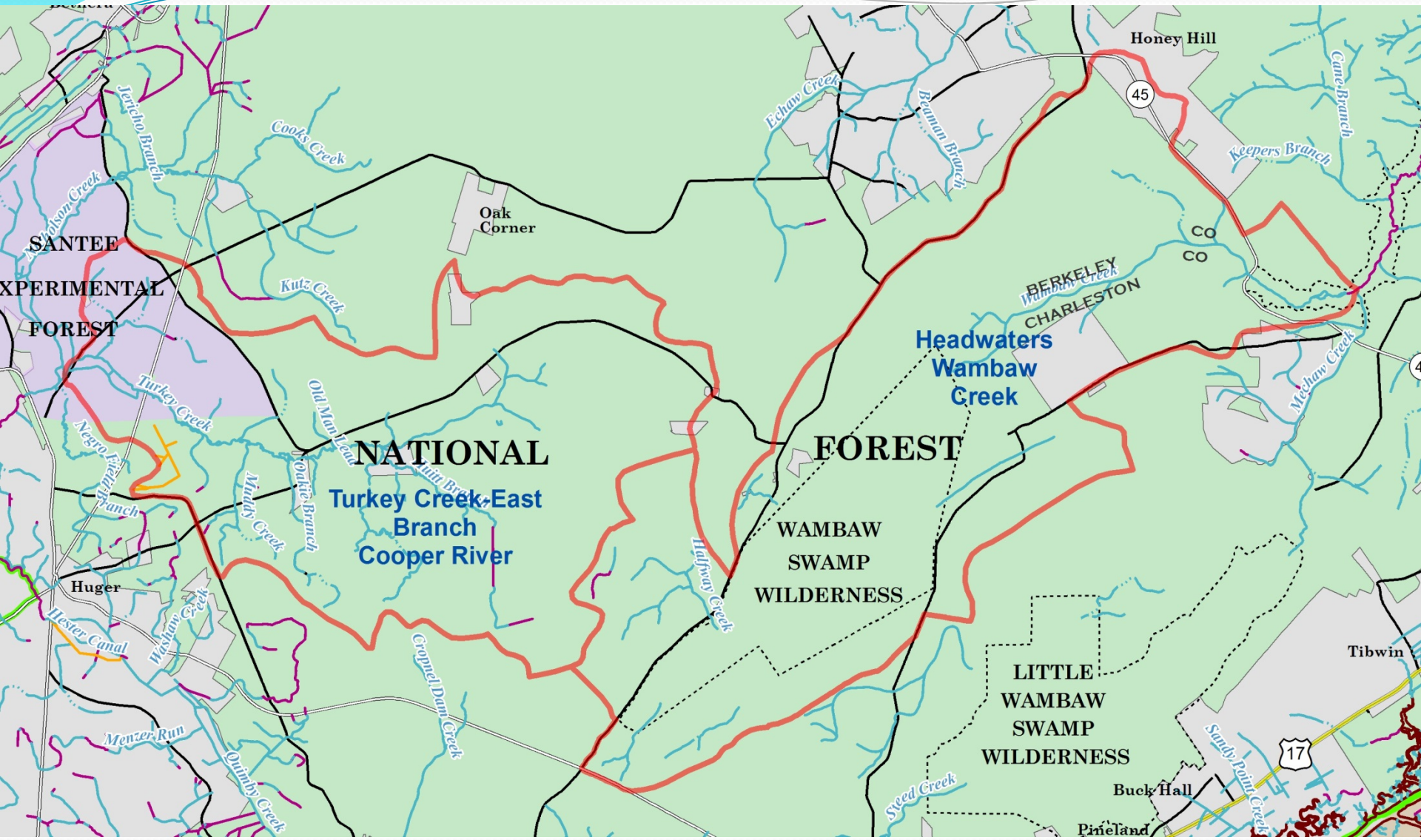


Restoration

- The 2012 planning rule emphases:
  - All lands approach
  - Priority watersheds
  - Restoration to the riparian area

Invasive Lionfish

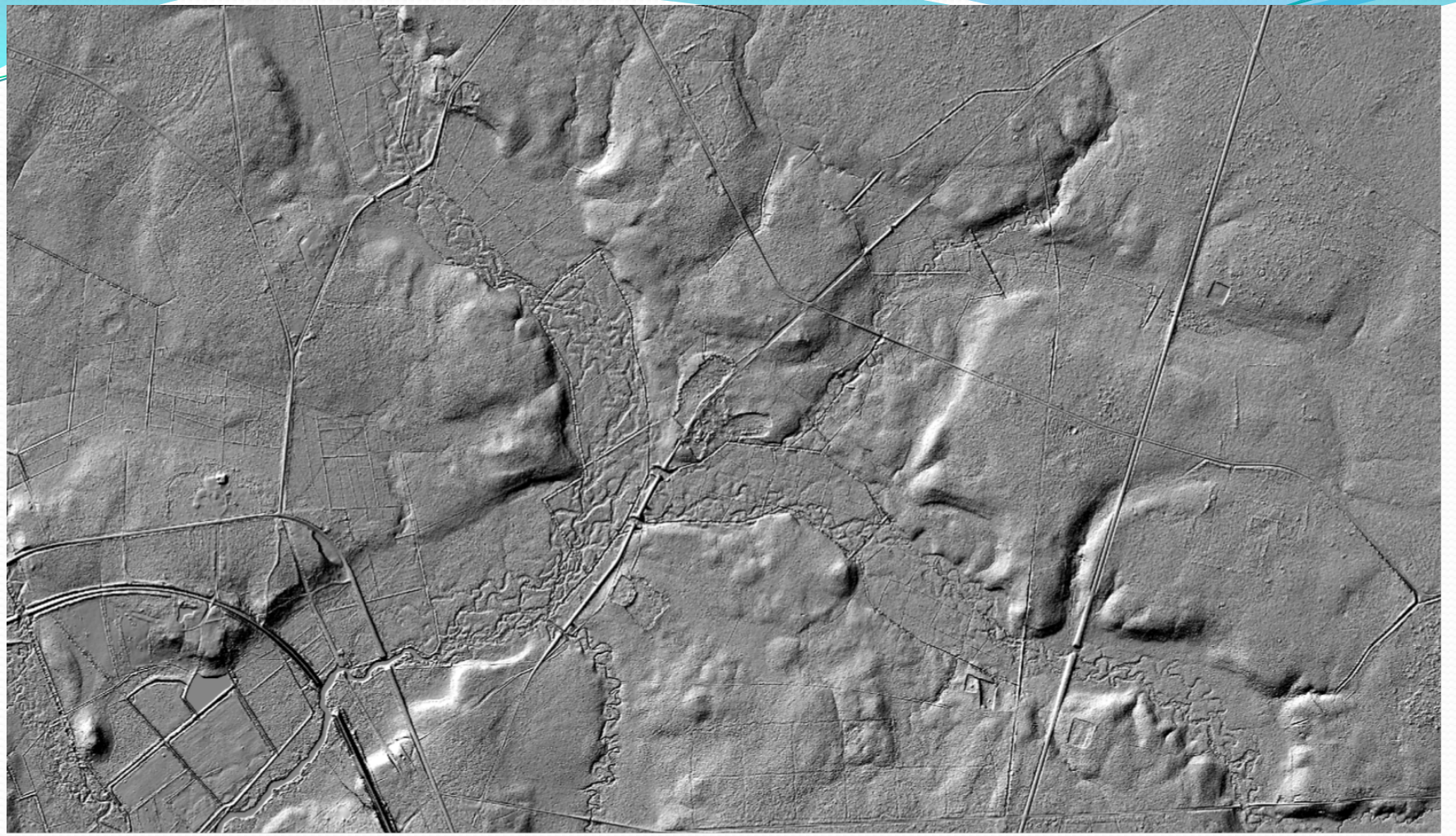
- Invasive fish from the Indo-Pacific region
- It was spread by aquarium hobbyist
- This saltwater fish will decimate any local ecosystem
- The concern for the Francis Marion is the ability to tolerate low salinities present in tidal stream systems.



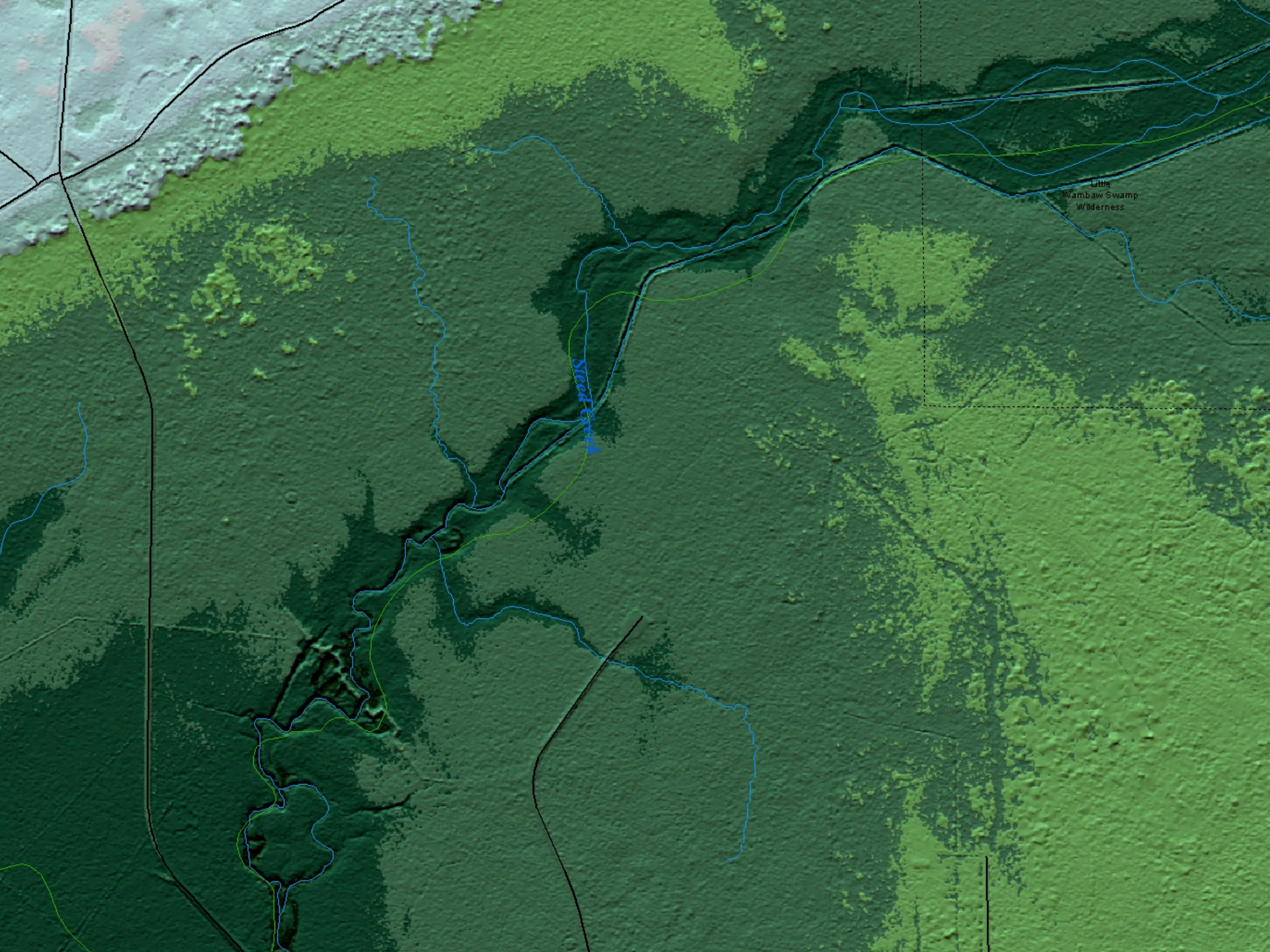
Honey Hill
45
Cane Branch
Keepers Branch
Echaw Creek
Beaman Branch
Cooks Creek
Jericho Branch
Nicholson Creek
Oak Corner
SANTEE
XPERIMENTAL
FOREST
Kutz Creek
CO
CO
BERKELEY
CHARLESTON
Wambaw Creek
Headwaters Wambaw Creek
Mechaw Creek
Turkey Creek
Old Man Lead
Negro Field Branch
NATIONAL
FOREST
Muddy Creek
Oakie Branch
Turkey Creek-East Branch Cooper River
WAMBAW SWAMP WILDERNESS
Halfway Creek
Huger
Hester Canal
Washaw Creek
Cropnel Dam Creek
Tibwin
LITTLE WAMBAW SWAMP WILDERNESS
Menzer Run
Quimby Creek
Sandy Point Creek
17
Buck Hall
Steed Creek
Pineland

Hydrological Modifications

- Historical dikes and ditches
- Current roads



Turkey and Nicholson Creek confluence with hillshade LiDAR showing roads, dikes, diversions, and rice fields


Little
Wambaw Swamp
Wilderness
Sweet Creek

Headwaters
Wambaw
Creek

Management Strategies

Activities to improve aquatic habitats and passage:

- Fall trees to create downed woody debris in streams
- Recruit hardwoods in riparian management zones
- Use culverts that allow passage.
- Remove dikes and dams to improve genetic diversity