APALACHICOLA RIVER SLOUGH RESTORATION PROJECT

NATIONAL FISH & WILDLIFE FOUNDATION

GULF ENVIRONMENTAL BENEFIT FUND

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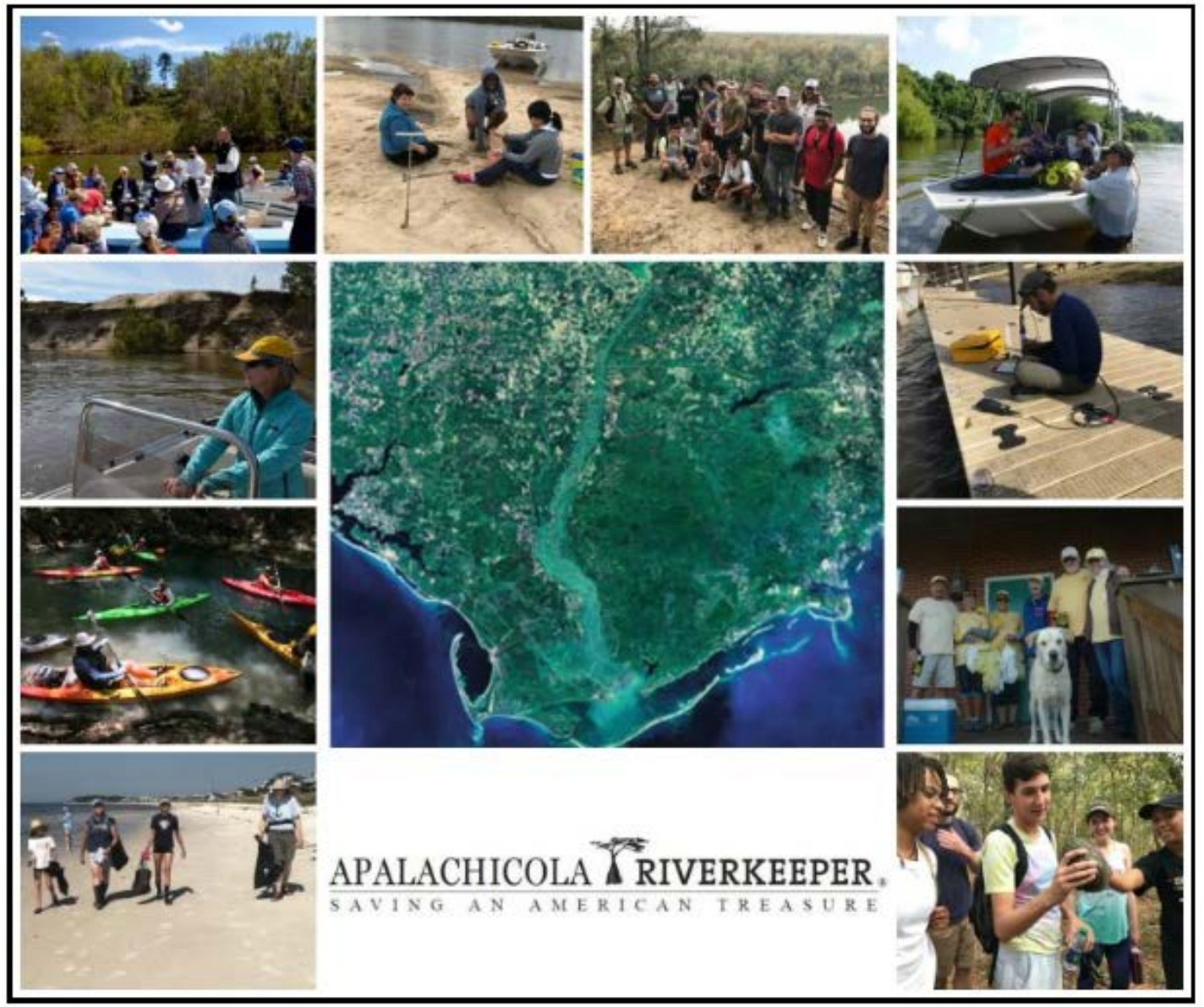


APALACHICOLA RIVERKEEPER®

UF West Florida Research and Education Center

MILTON, FL

NATIONAL WILDLIFE FEDERATION

Riparian County Stakeholder Coalition

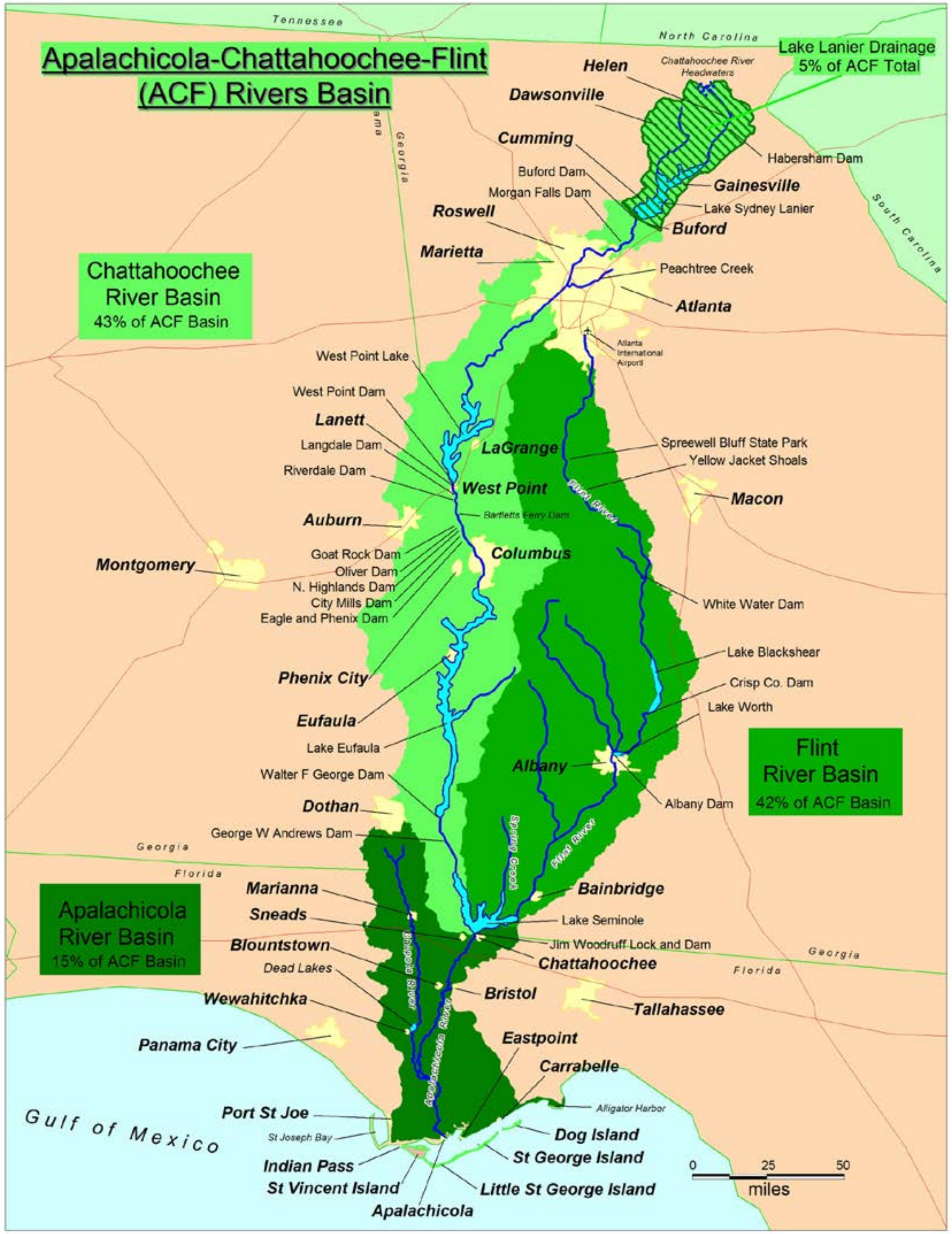
FLORIDA WILDLIFE FEDERATION

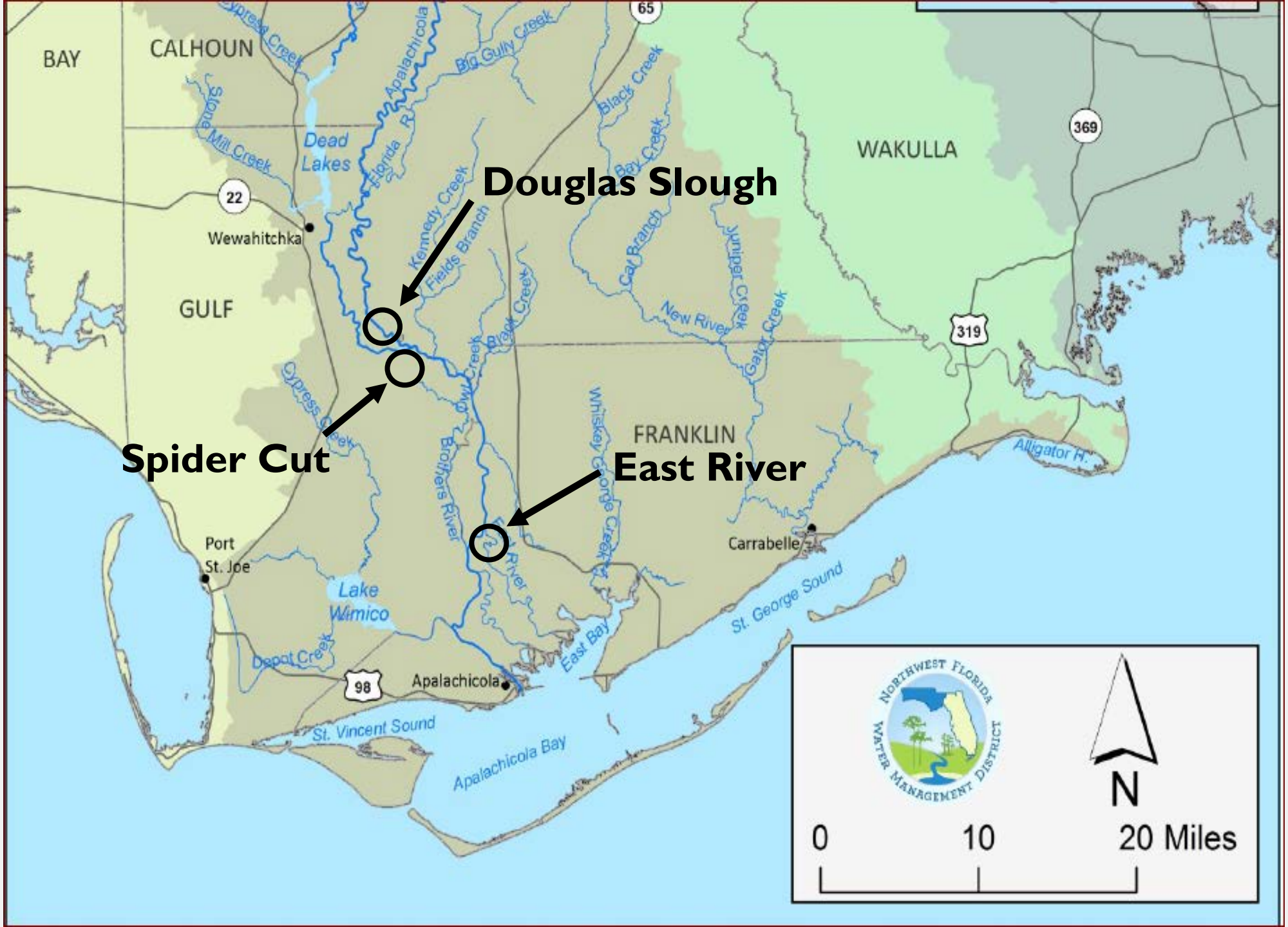
Florida Wildlife Federation

Keeping the Wild in Florida since 1936!

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Apalachicola National Estuarine Research Reserve


Apalachicola-Chattahoochee-Flint
(ACF) Rivers Basin
Tennessee
North Carolina
South Carolina
Georgia
Alabama
Florida
Lake Lanier Drainage
5% of ACF Total
Chattahoochee River Headwaters
Helen
Dawsonville
Cumming
Habersham Dam
Buford Dam
Morgan Falls Dam
Gainesville
Lake Sydney Lanier
Roswell
Buford
Marietta
Peachtree Creek
Atlanta
Atlanta International Airport
Chattahoochee
River Basin
43% of ACF Basin
West Point Lake
West Point Dam
Lanett
Langdale Dam
Riverdale Dam
LaGrange
Spreewell Bluff State Park
Yellow Jacket Shoals
West Point
Macon
Bartletts Ferry Dam
Auburn
Goat Rock Dam
Oliver Dam
N. Highlands Dam
City Mills Dam
Eagle and Phenix Dam
Columbus
Montgomery
White Water Dam
Flint River
Lake Blackshear
Crisp Co. Dam
Lake Worth
Phenix City
Eufaula
Lake Eufaula
Walter F George Dam
Albany
Albany Dam
Flint
River Basin
42% of ACF Basin
Dothan
George W Andrews Dam
Spring Creek
Marianna
Sneads
Bainbridge
Lake Seminole
Jim Woodruff Lock and Dam
Apalachicola
River Basin
15% of ACF Basin
Blountstown
Chattahoochee
Dead Lakes
Chipola River
Bristol
Tallahassee
Wewahitchka
Apalachicola River
Eastpoint
Panama City
Carrabelle
Alligator Harbor
Port St Joe
Gulf of Mexico
St Joseph Bay
Dog Island
St George Island
Indian Pass
St Vincent Island
Little St George Island
Apalachicola
0 25 50
miles


Douglas Slough
Spider Cut
East River
BAY
CALHOUN
GULF
FRANKLIN
WAKULLA
Wewahitchka
Port St. Joe
Apalachicola
Carrabelle
Dead Lakes
Lake Wimico
Apalachicola Bay
St. Vincent Sound
St. George Sound
East Bay
Alligator H.
Florida R.
Apalachicola
Big Gully Creek
Black Creek
Bay Creek
Cat Branch
Juniper Creek
Gator Creek
New River
Kennedy Creek
Fields Branch
Owl Creek
Brothers River
Whiskey George Creek
Depot Creek
Mill Creek
Cypress Creek
22
65
98
319
369
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
N
0
10
20 Miles

Bottomland hardwoods
Swamps
Marsh

Wewahitchka

Douglas and Spiders Cut

Drying of swamps is documented in area with no channel erosion

la Cecilia et al. 2016

Sumatra gage

Map of tupelo honey apiaries locates Ogeechee tupelo stands down to Mile 10

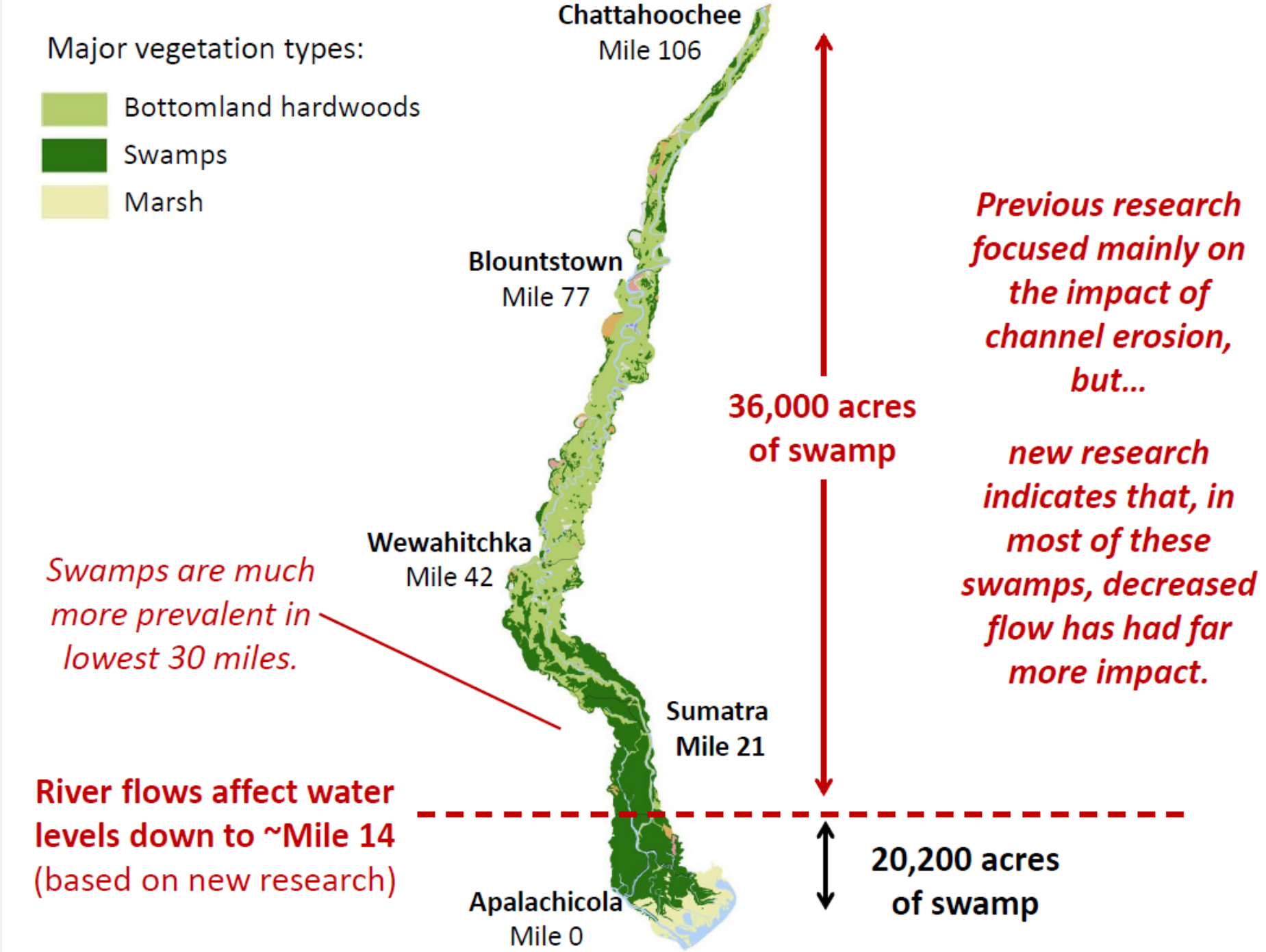
Watson 2010

Riverine-tidal boundary for swamps is now established at Mile 12

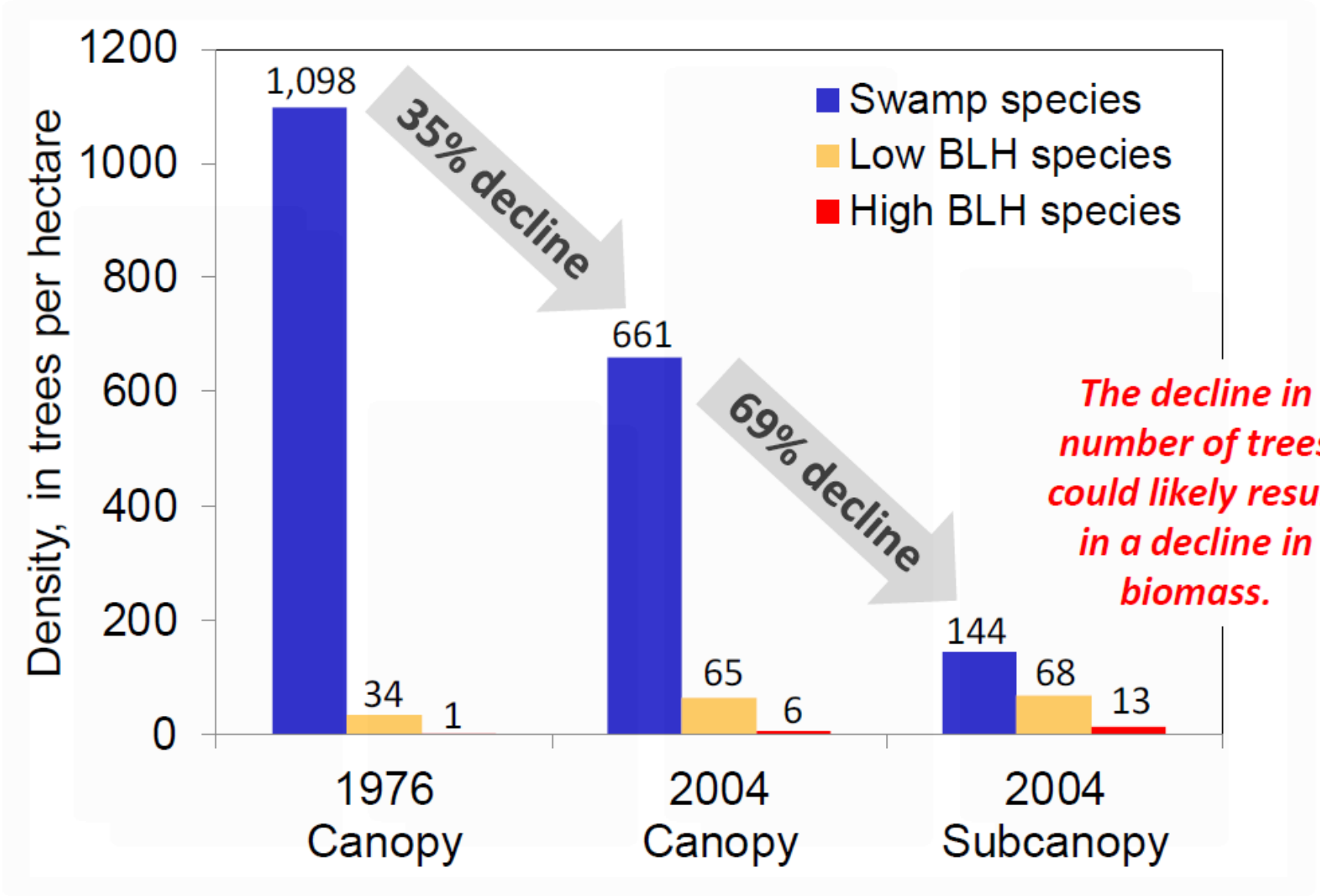
Anderson and Lockaby 2011

East River

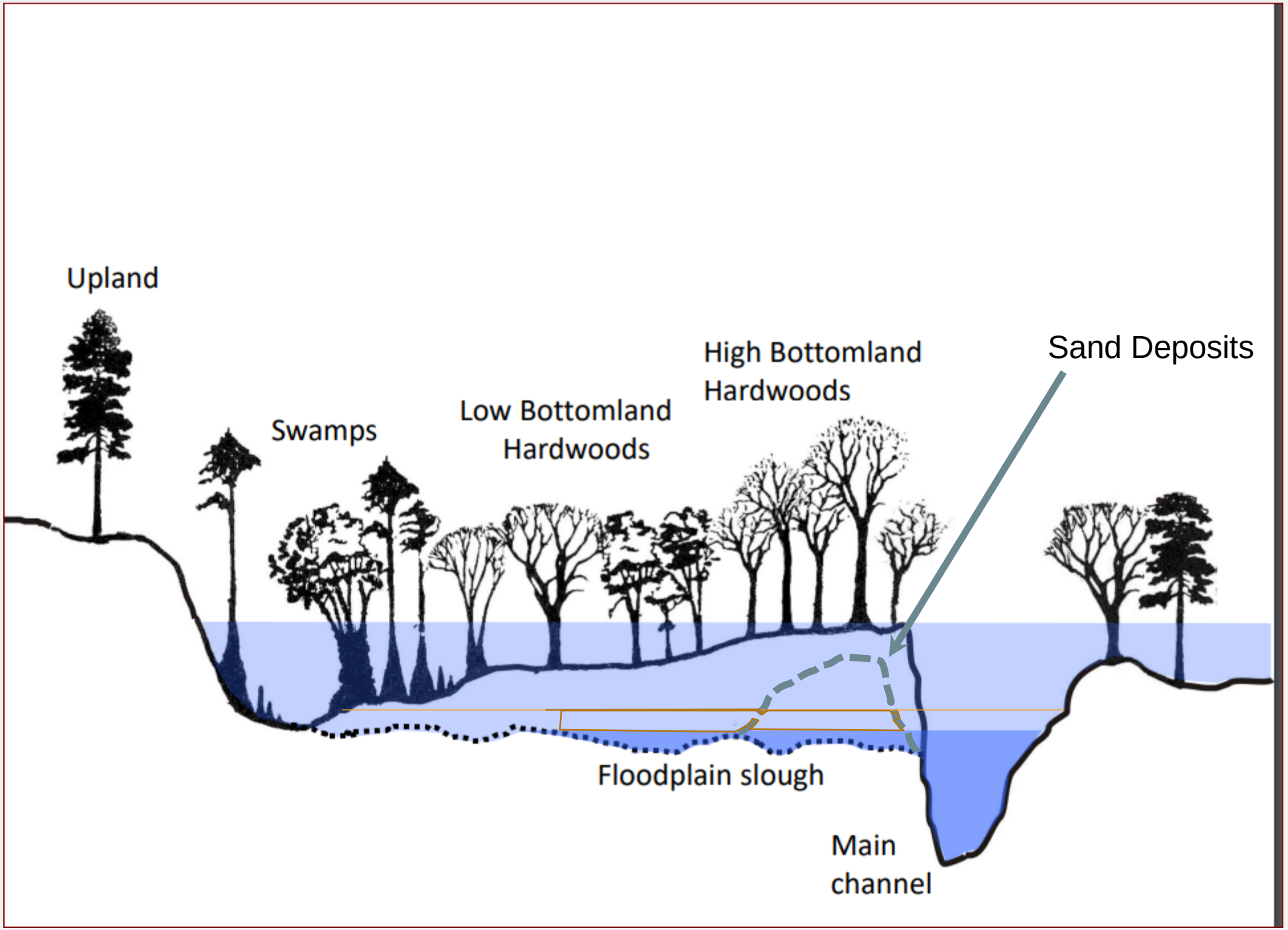
Apalachicola

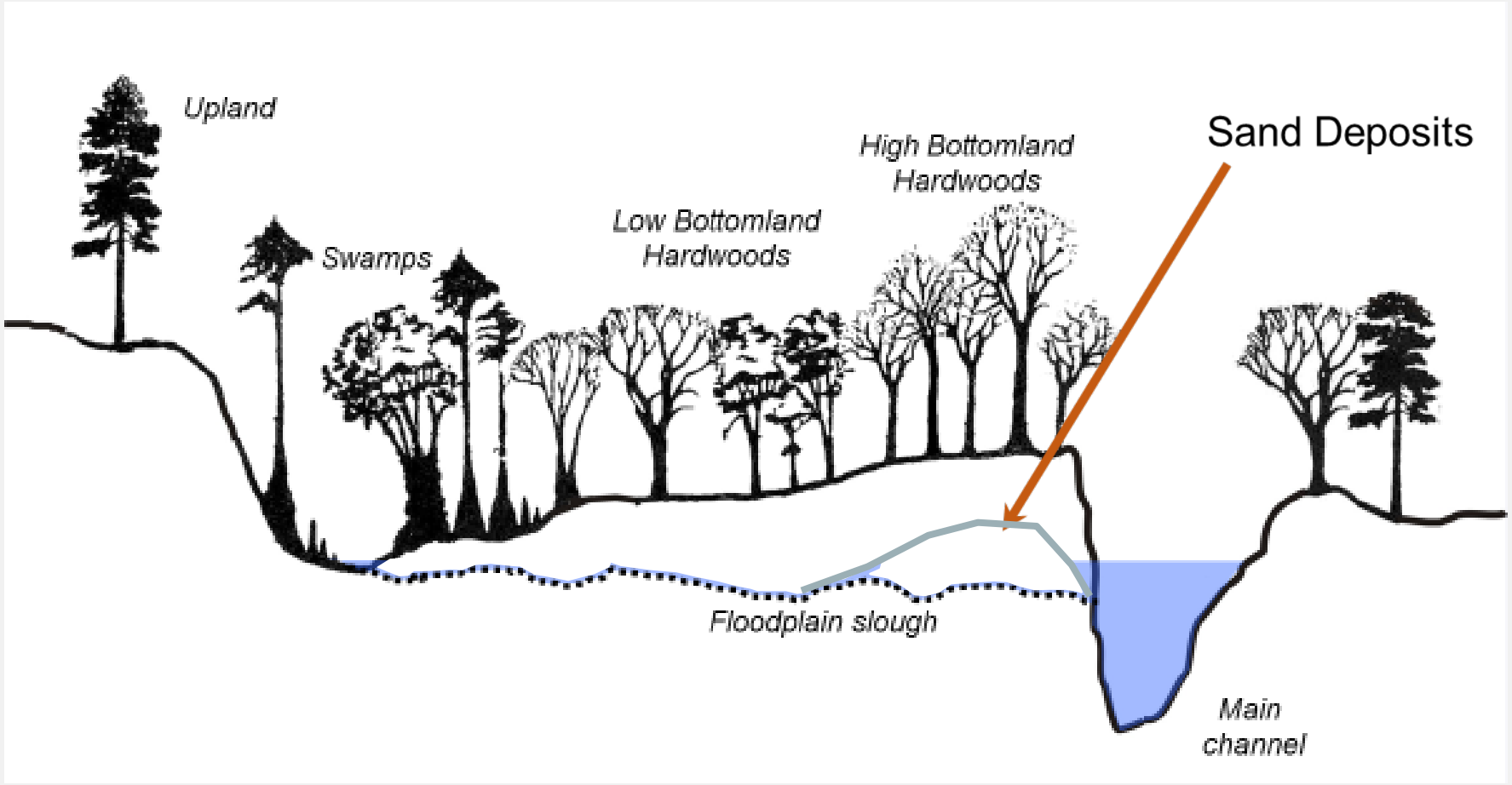

Major vegetation types:
Bottomland hardwoods
Swamps
Marsh
Chattahoochee
Mile 106
Blountstown
Mile 77
Wewahitchka
Mile 42
Sumatra
Mile 21
Apalachicola
Mile 0
36,000 acres
of swamp
20,200 acres
of swamp
Swamps are much more prevalent in lowest 30 miles.
River flows affect water levels down to ~Mile 14
(based on new research)
Previous research focused mainly on the impact of channel erosion, but…
new research indicates that, in most of these swamps, decreased flow has had far more impact.

Number of trees in swamps has declined dramatically



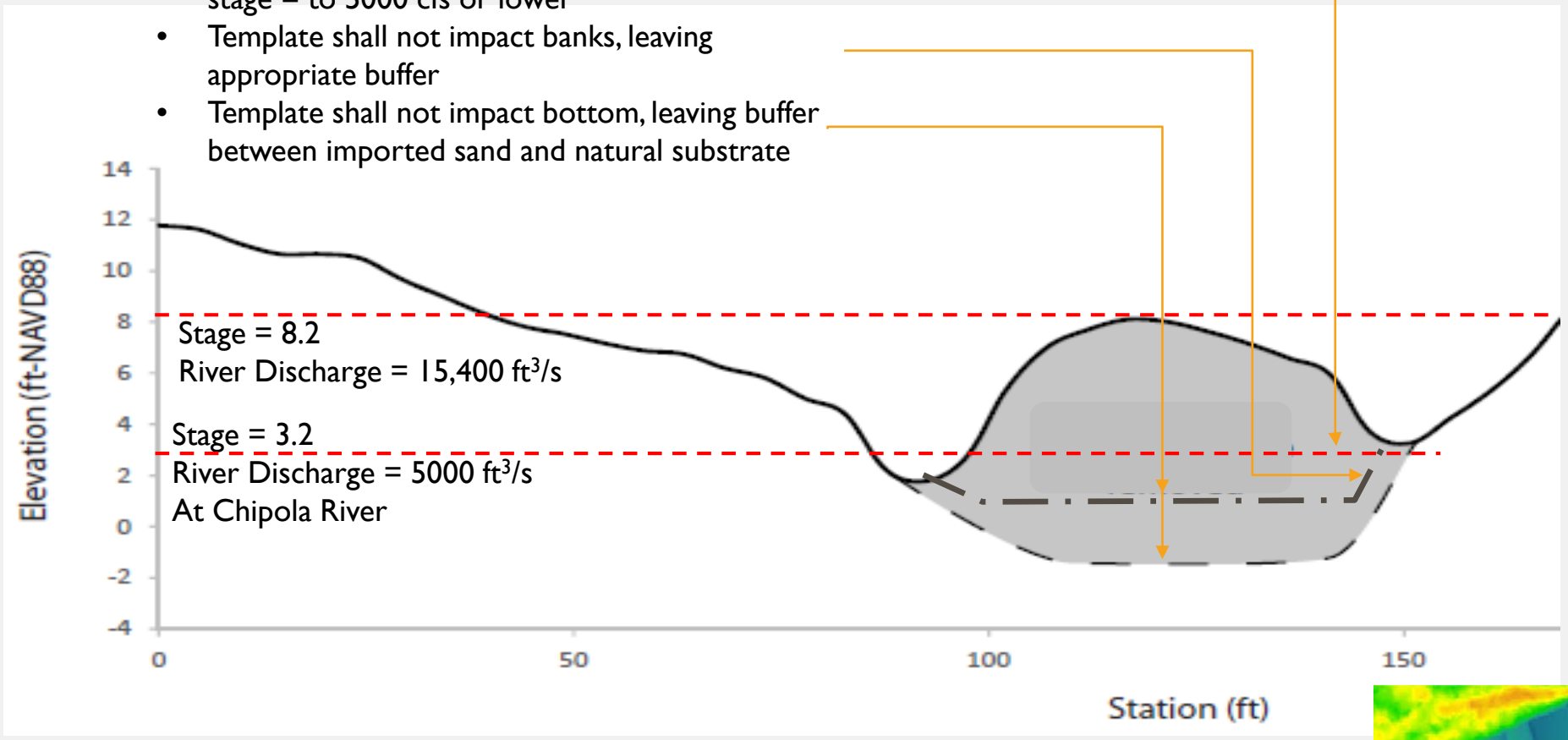
Darst & Light 2008


Upland
Swamps
Low Bottomland
Hardwoods
High Bottomland
Hardwoods
Sand Deposits
Floodplain slough
Main
channel

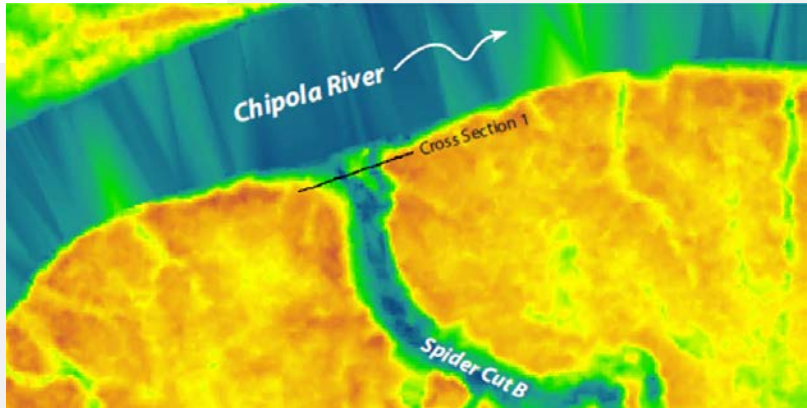

Upland
Swamps
Low Bottomland Hardwoods
High Bottomland Hardwoods
Sand Deposits
Floodplain slough
Main channel

Sediments to be removed

- Template shall be below the river discharge stage = to 5000 cfs or lower
- Template shall not impact banks, leaving appropriate buffer
- Template shall not impact bottom, leaving buffer between imported sand and natural substrate



Conceptual X-Section for Slough Excavation



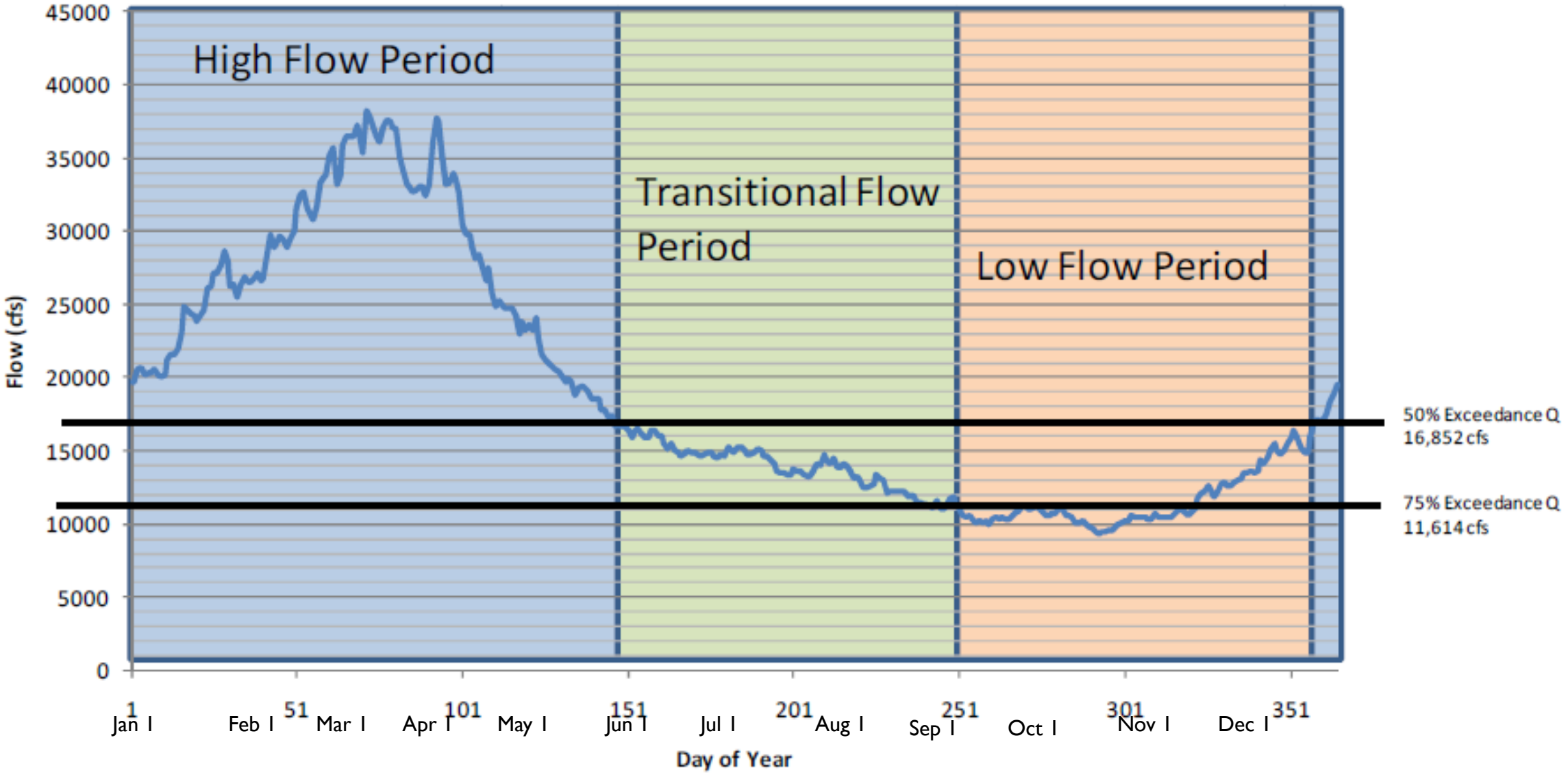
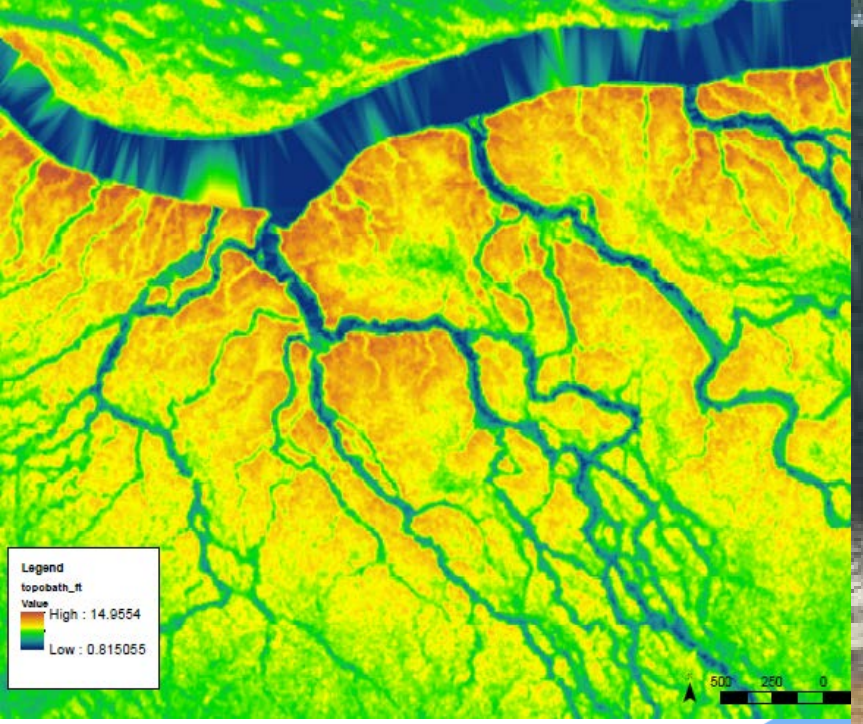
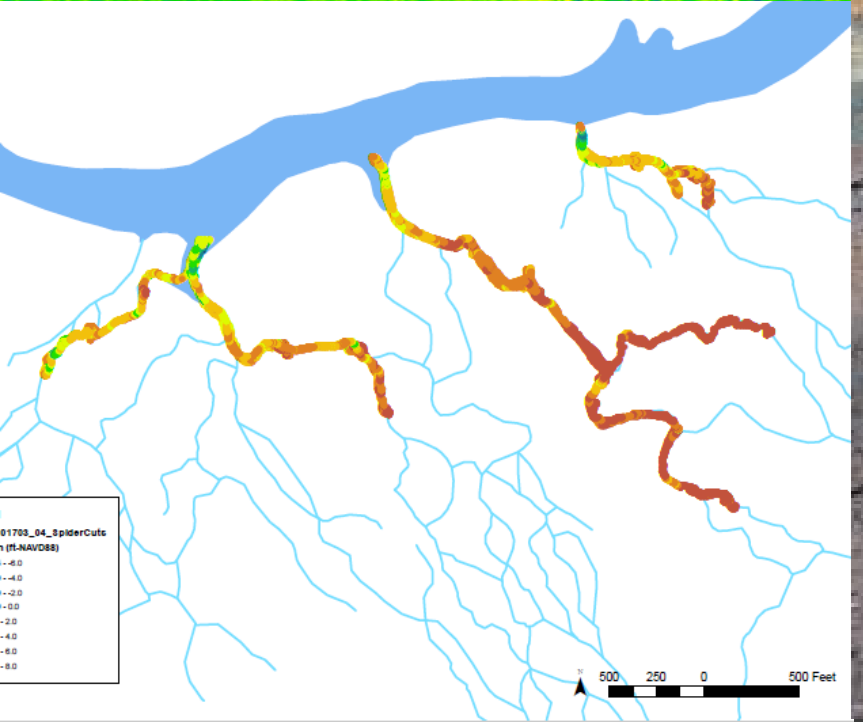


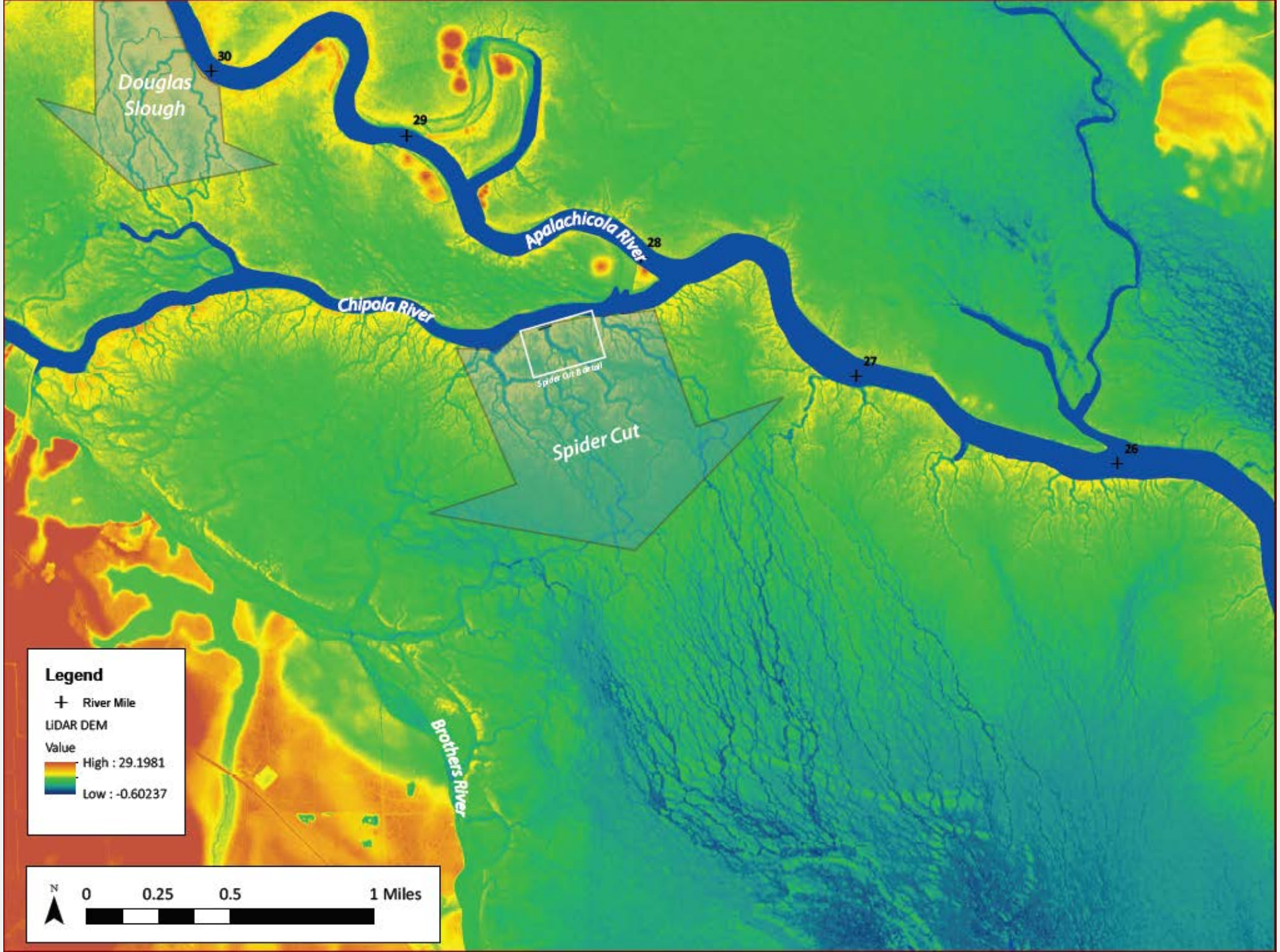
Figure 6. Illustration of high, transitional (medium), and low flow period designations (Median Daily Flow –Apalachicola at Chattahoochee for POR 1939-2008).

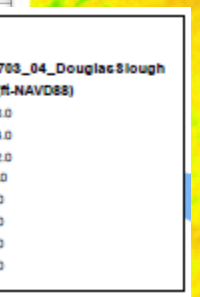

Legend
topobath_ft
Value
High : 14.9554
Low : 0.815055
500 250 0


500 250 0 500 Feet

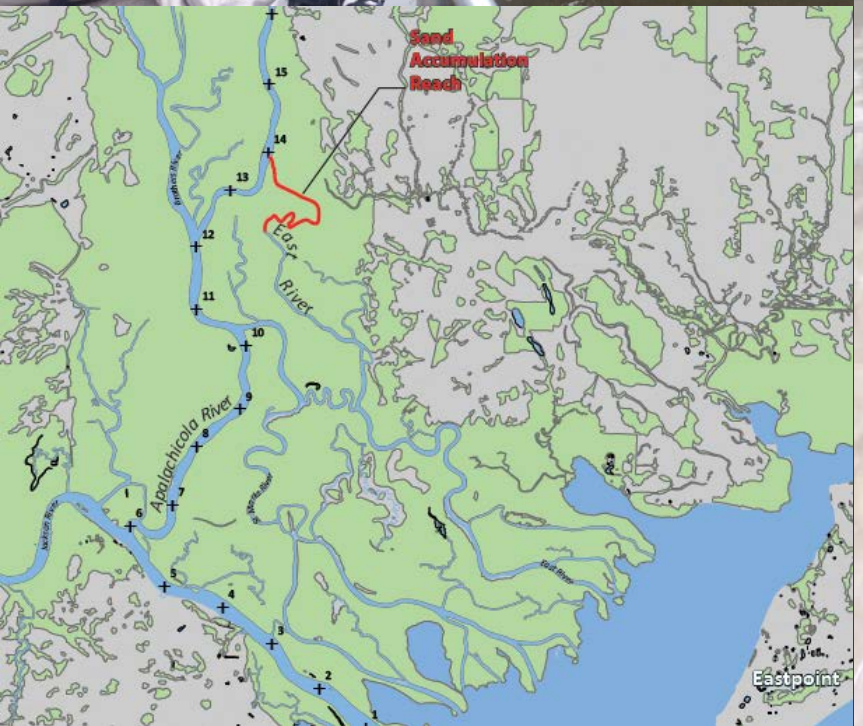
Spiders Cut

Spiders Cut


Douglas Slough
30
29
Apalachicola River
28
Chipola River
Spider Cut Detail
Spider Cut
27
26
Brothers River
Legend
River Mile
LiDAR DEM
Value
High : 29.1981
Low : -0.60237
N
0
0.25
0.5
1 Miles



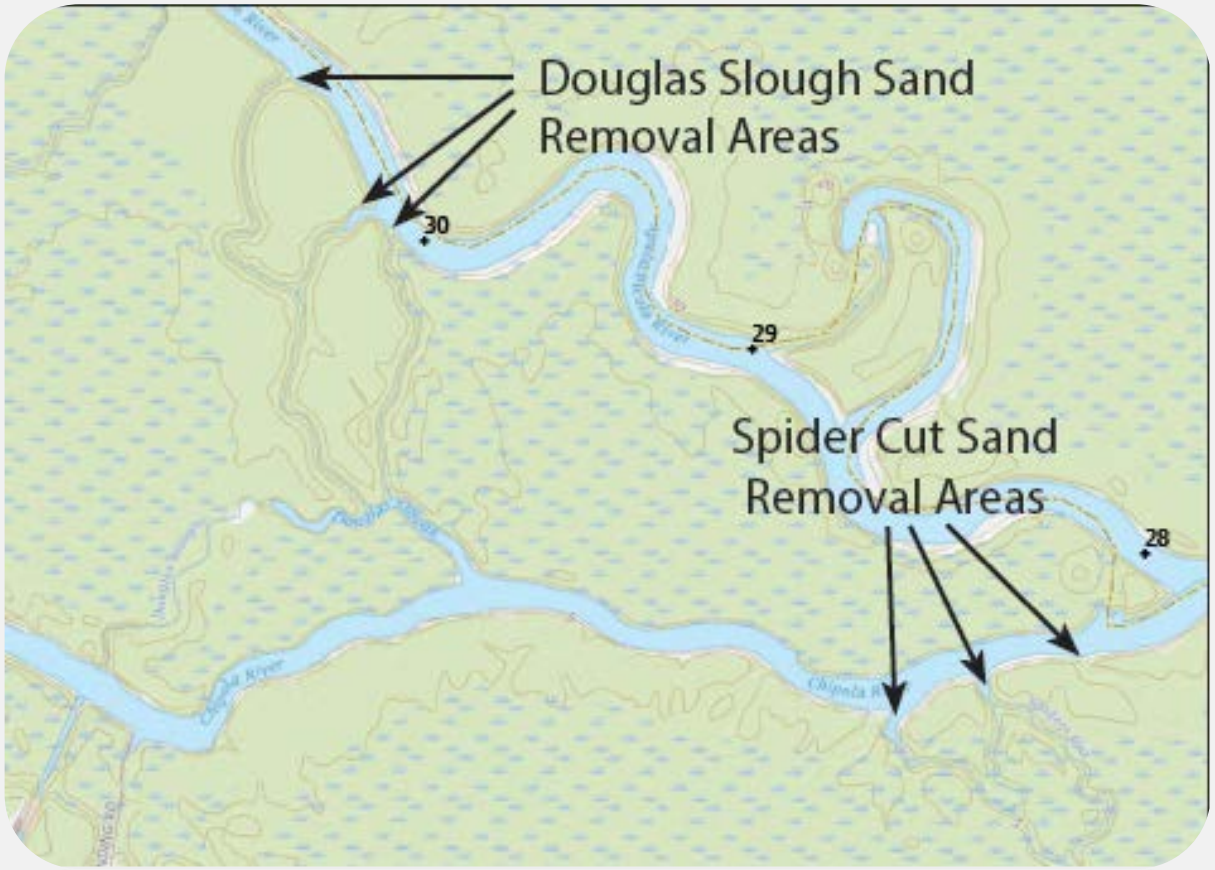
Douglas Slough

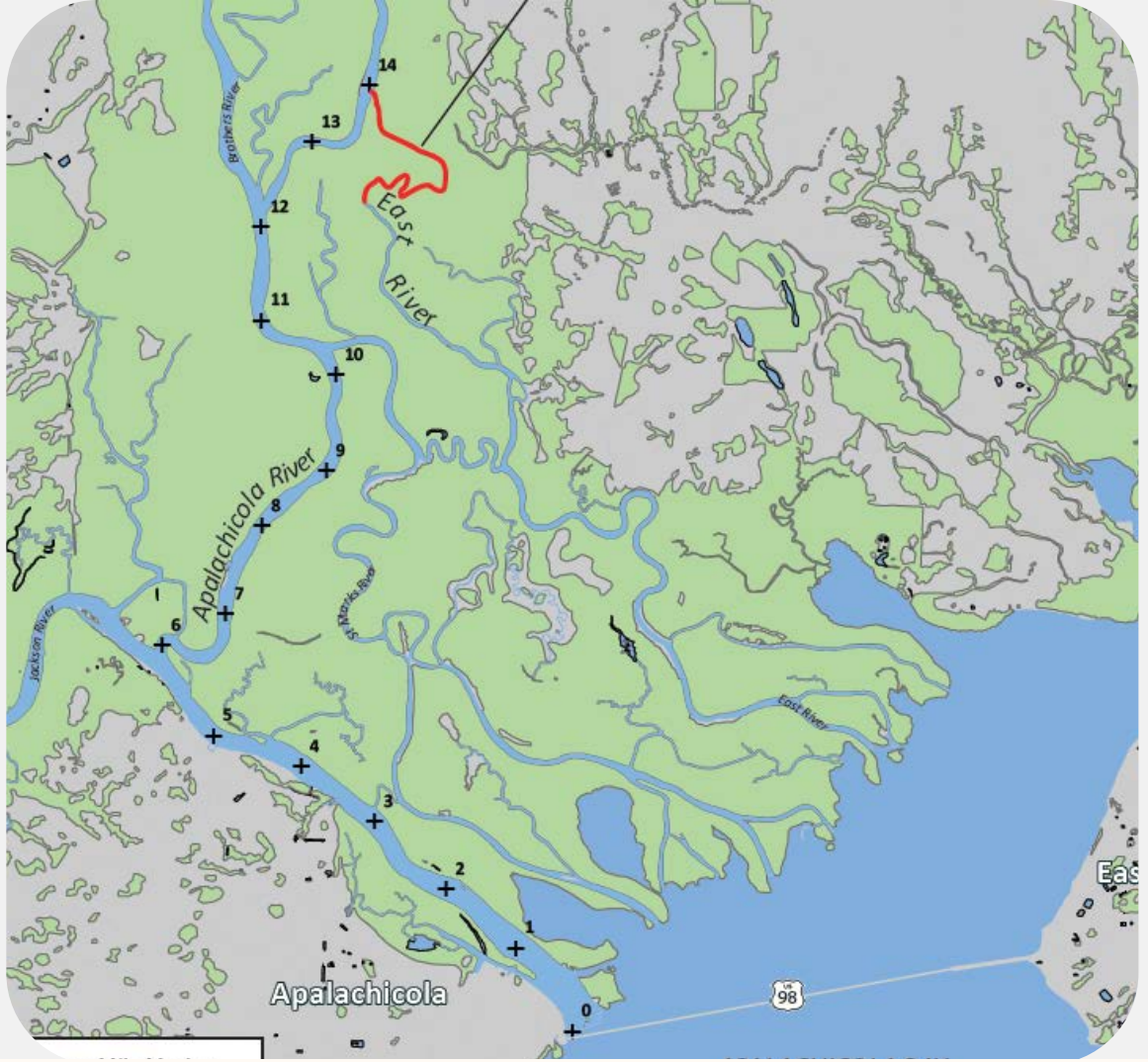

Sand
Accumulation
Reach
East
River
Apalachicola River
Eastpoint
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

East River

What the project will accomplish

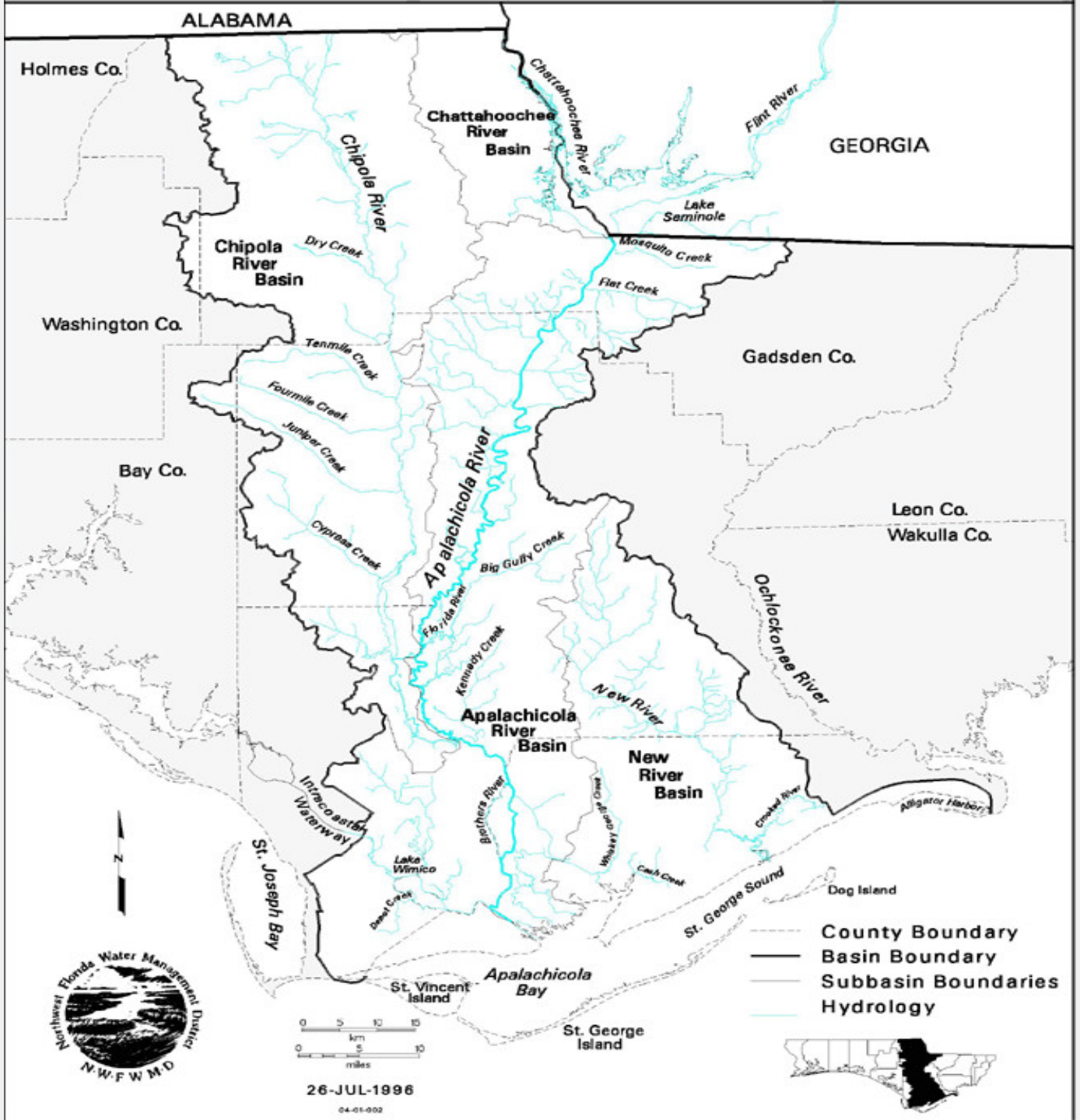
- Sand removal in three sloughs
- Documenting the benefits for this type of restoration
- Develop and test methods for the cost effective and environmentally sound way in which to conduct this work.





- Conduct monitoring and analysis that specifically relates the benefits of slough restoration and hydrologic connectivity of the mainstem of the river to the floodplain
- Develop a Geomorphic/Hydrologic Restoration Plan
- Provide public outreach and education.

The healthy mix of nutrients that come out of this system fuel Eastern Gulf of Mexico fishery.



Project Team

Ken Jones, Georgia Ackerman, Matt Deitch, Michael Gangloff, Andrew Gannon, Matt Kondolf, Melissa Samet, Ajay Sharma, Dan Tonsmeire and Scott Walls

ApalachicolaRiverkeeper.org