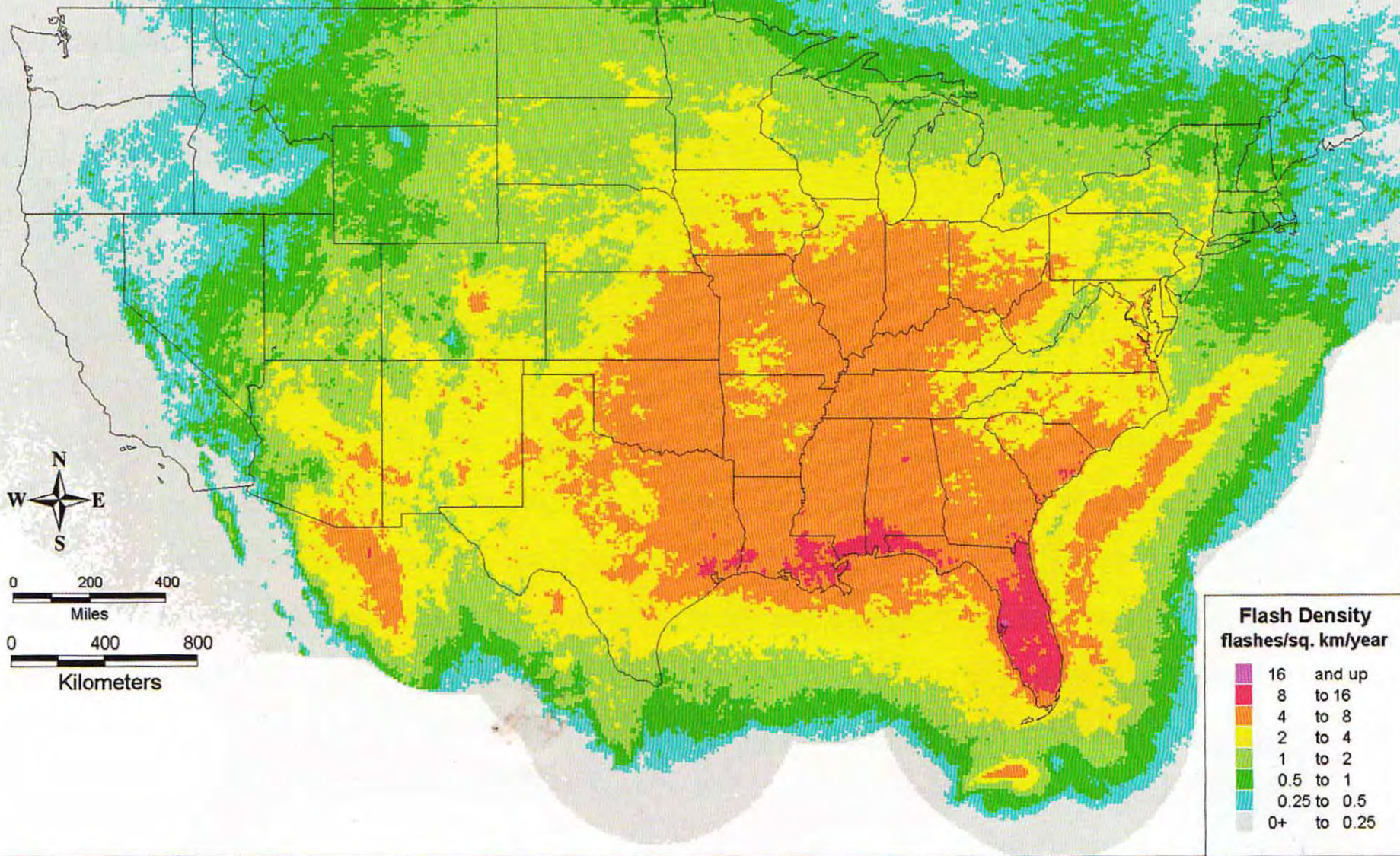


428 Years of Change in Forested Wetlands: an Accelerating Rollover

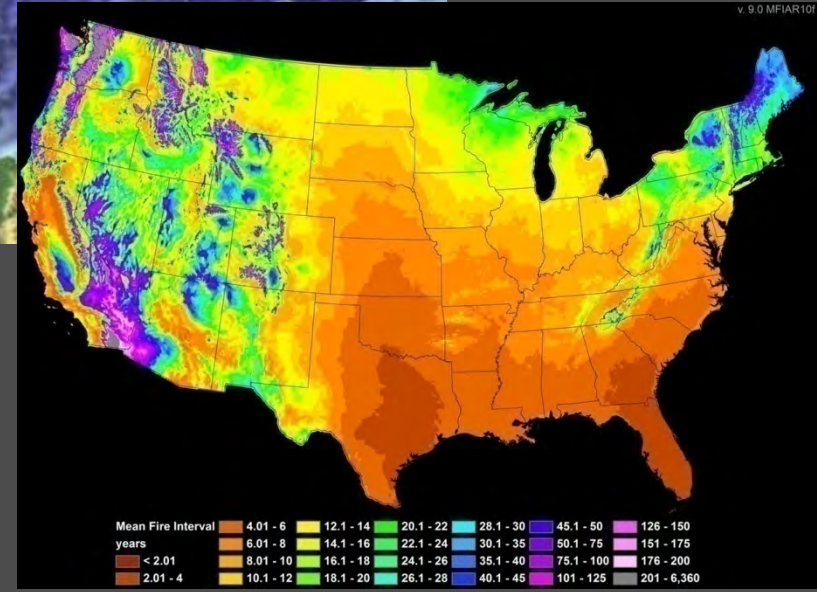
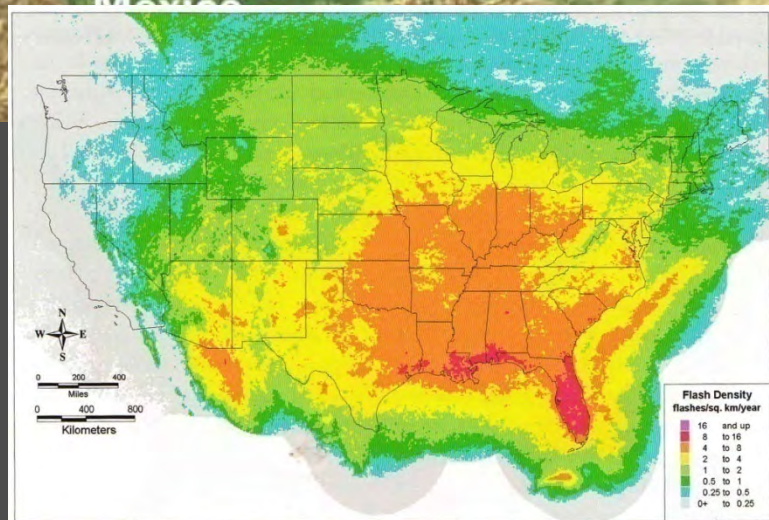
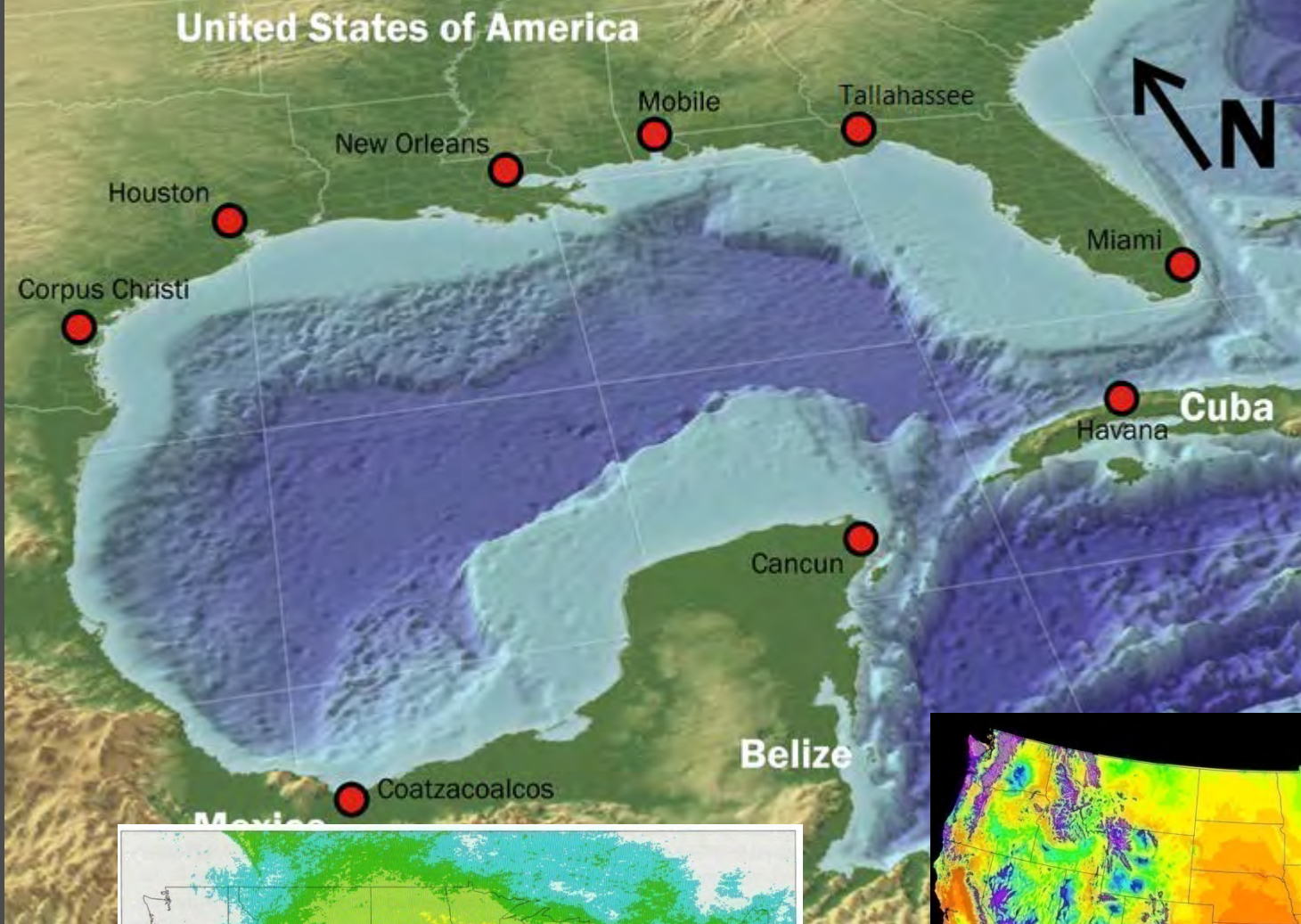
Objectives -- Create fine-scale maps of:

- Presettlement Vegetation
- Pre-European Fire Regimes

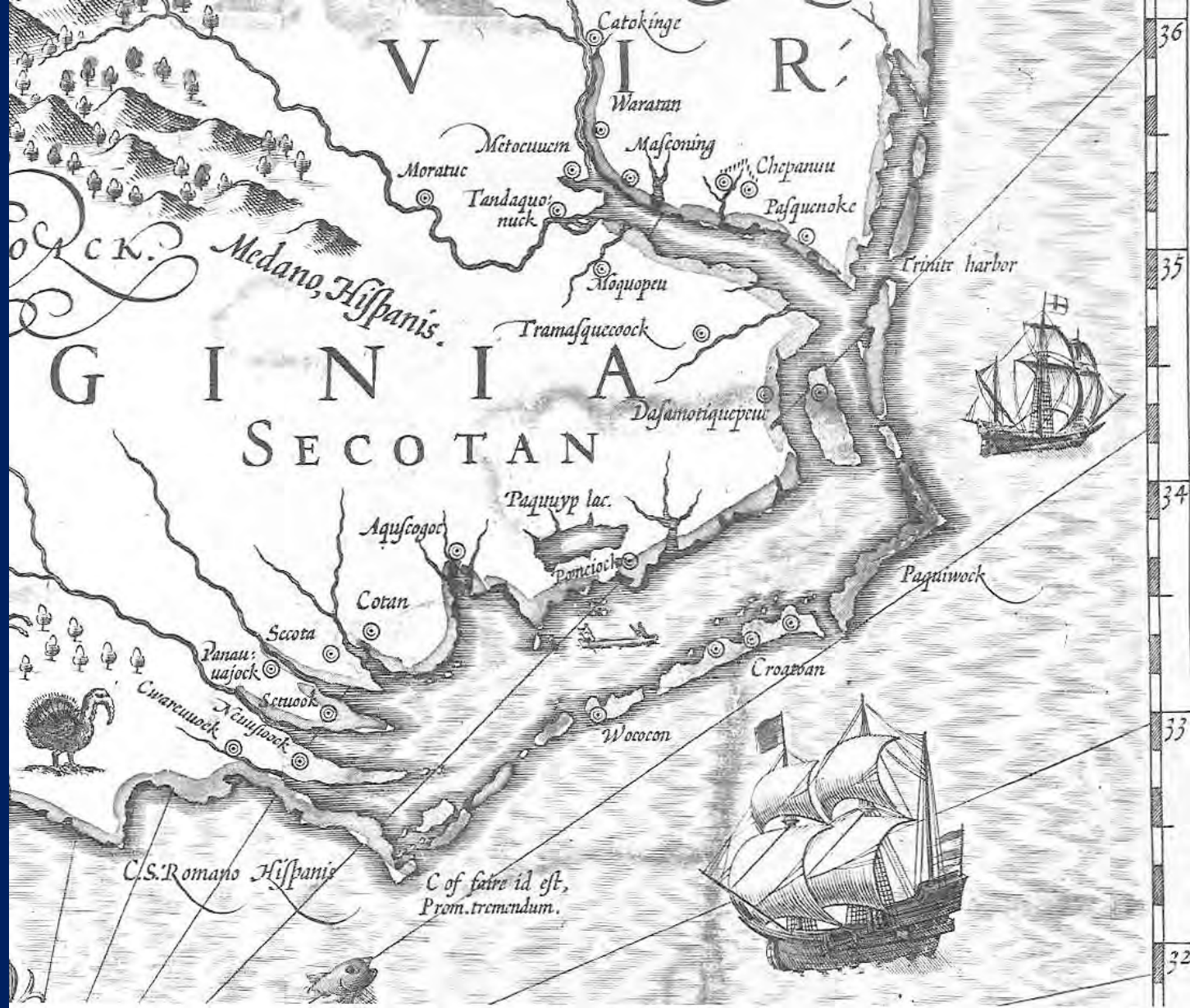
Cecil Frost
Landscape Fire Ecologist



United States of America



v. 9.0 MFIAR10F



Mercator-Hondius map of 1606

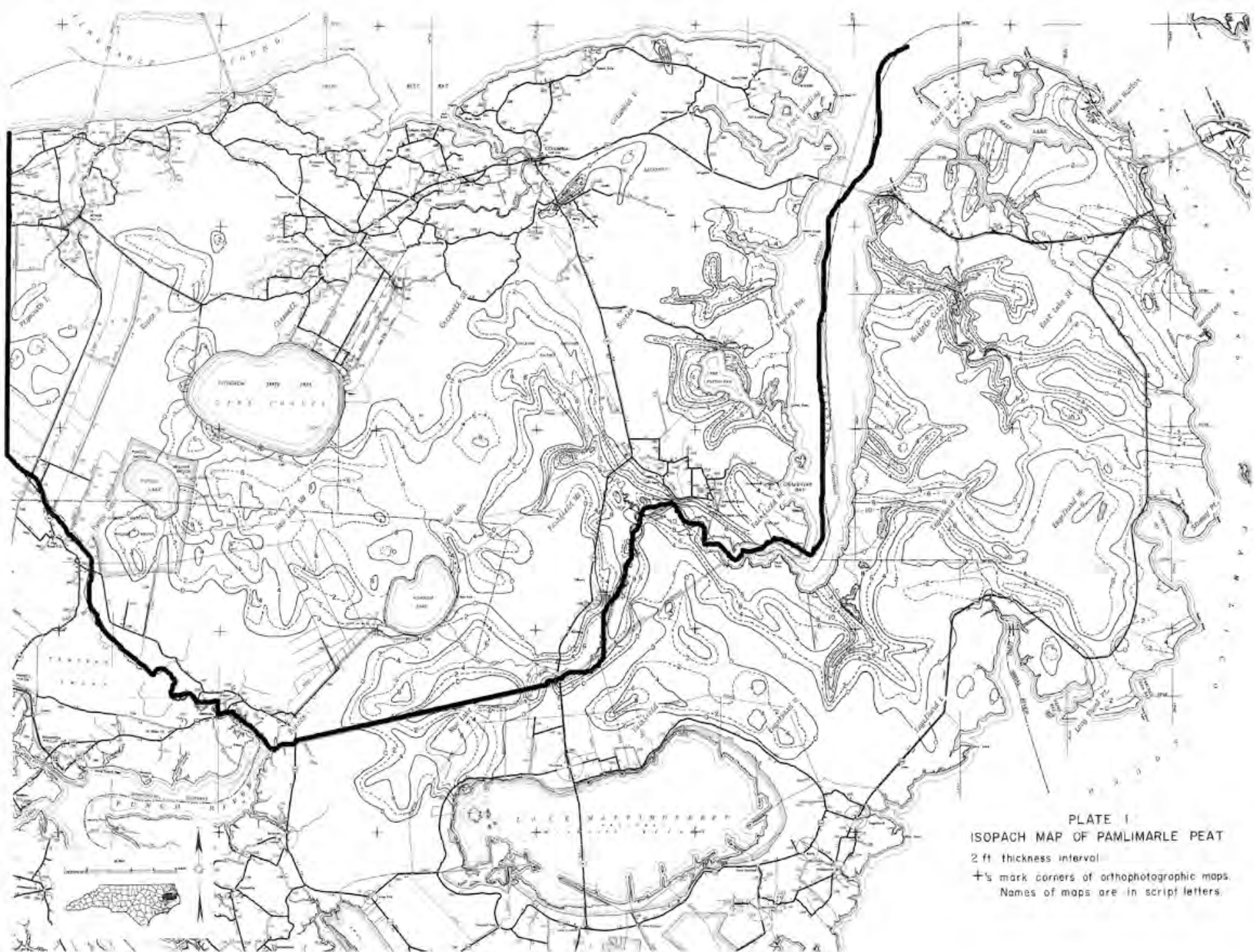


PLATE I
ISOPACH MAP OF PAMLIMARLE PEAT
2 ft thickness interval
+'s mark corners of orthophotographic maps.
Names of maps are in script letters.

Indian Fadeout

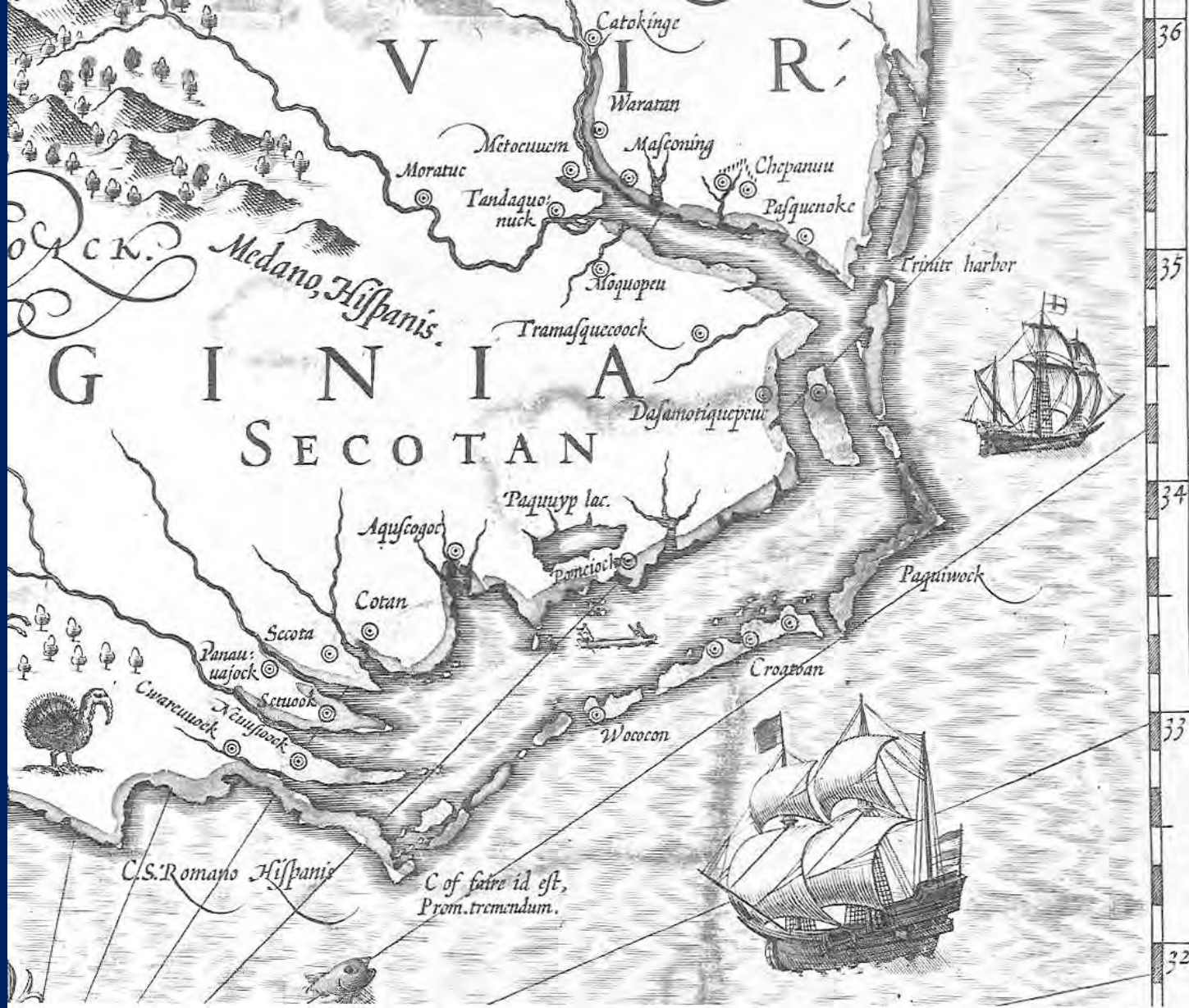
1585 Indians devastated by introduced European diseases
(Harriott 1590)

1700 (map of settlements) most Indians long gone, 115 yrs

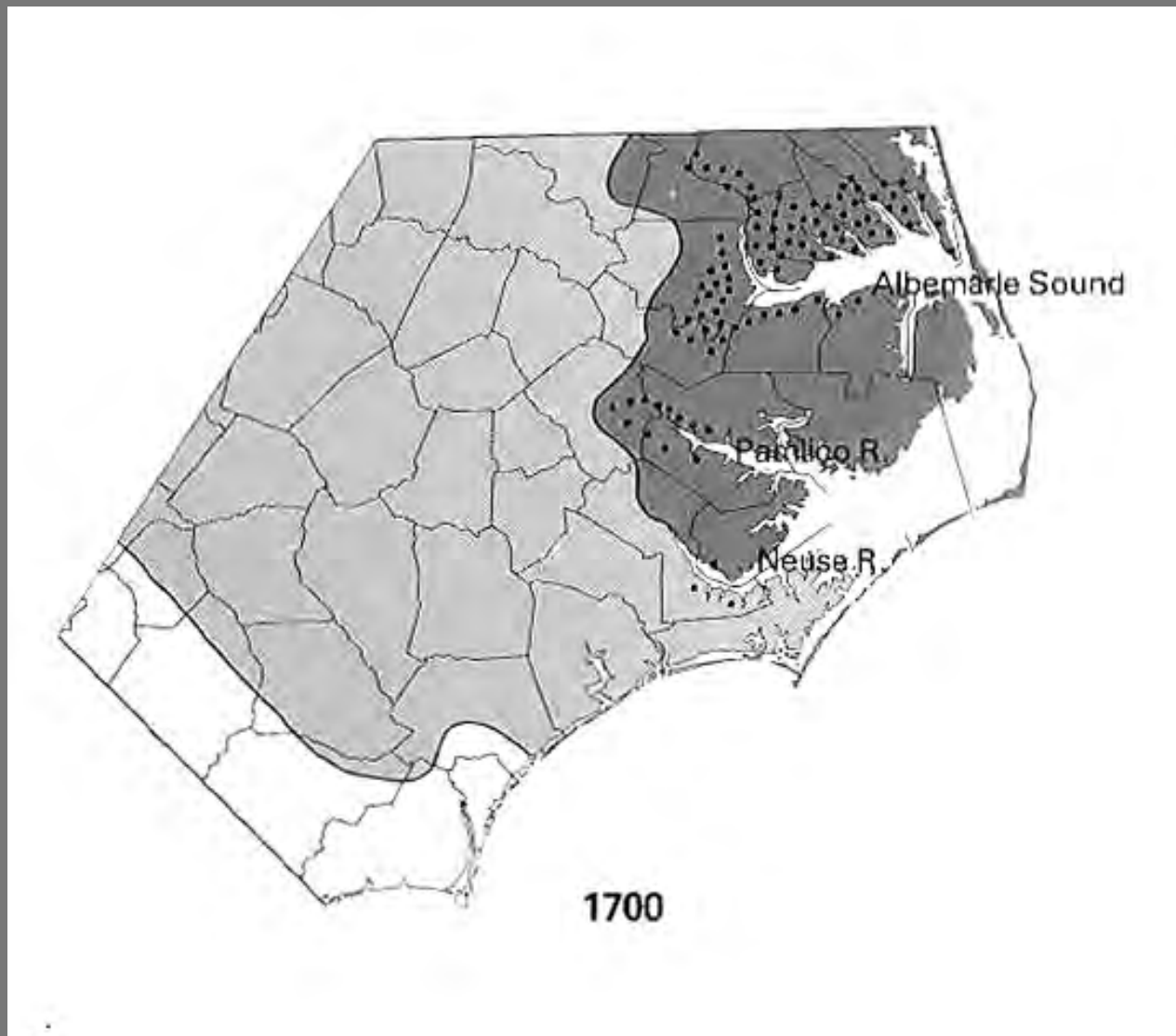
1733 Moseley map – Indians displaced by planters. Only one remaining Indian town, on south side of Mattamuskeet

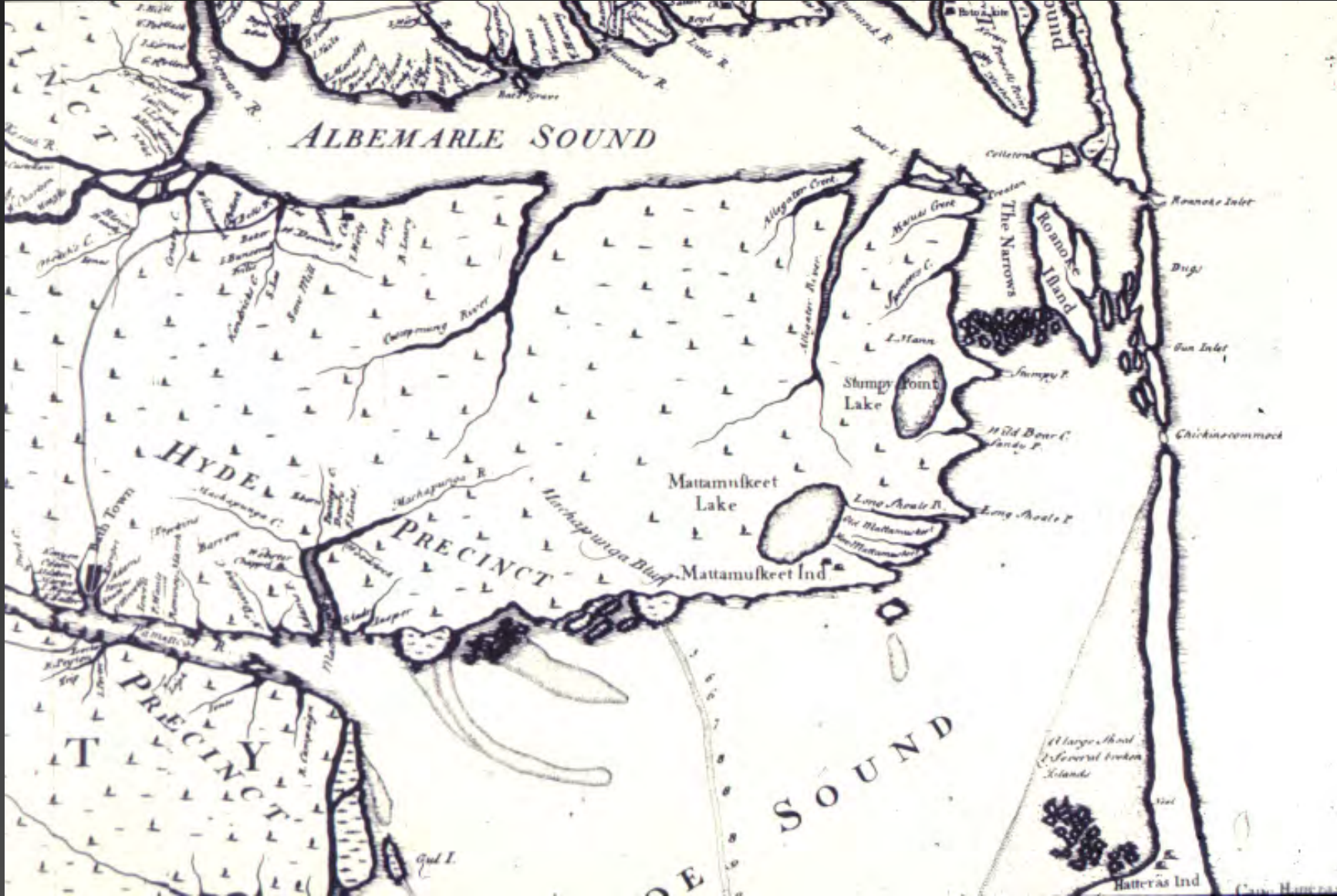
1791 Pettigrew mentions place called “Indian Town”

1808 Price-Strother map shows Lake Mattamuskeet ringed with plantations



Mercator-Hondius map of 1606



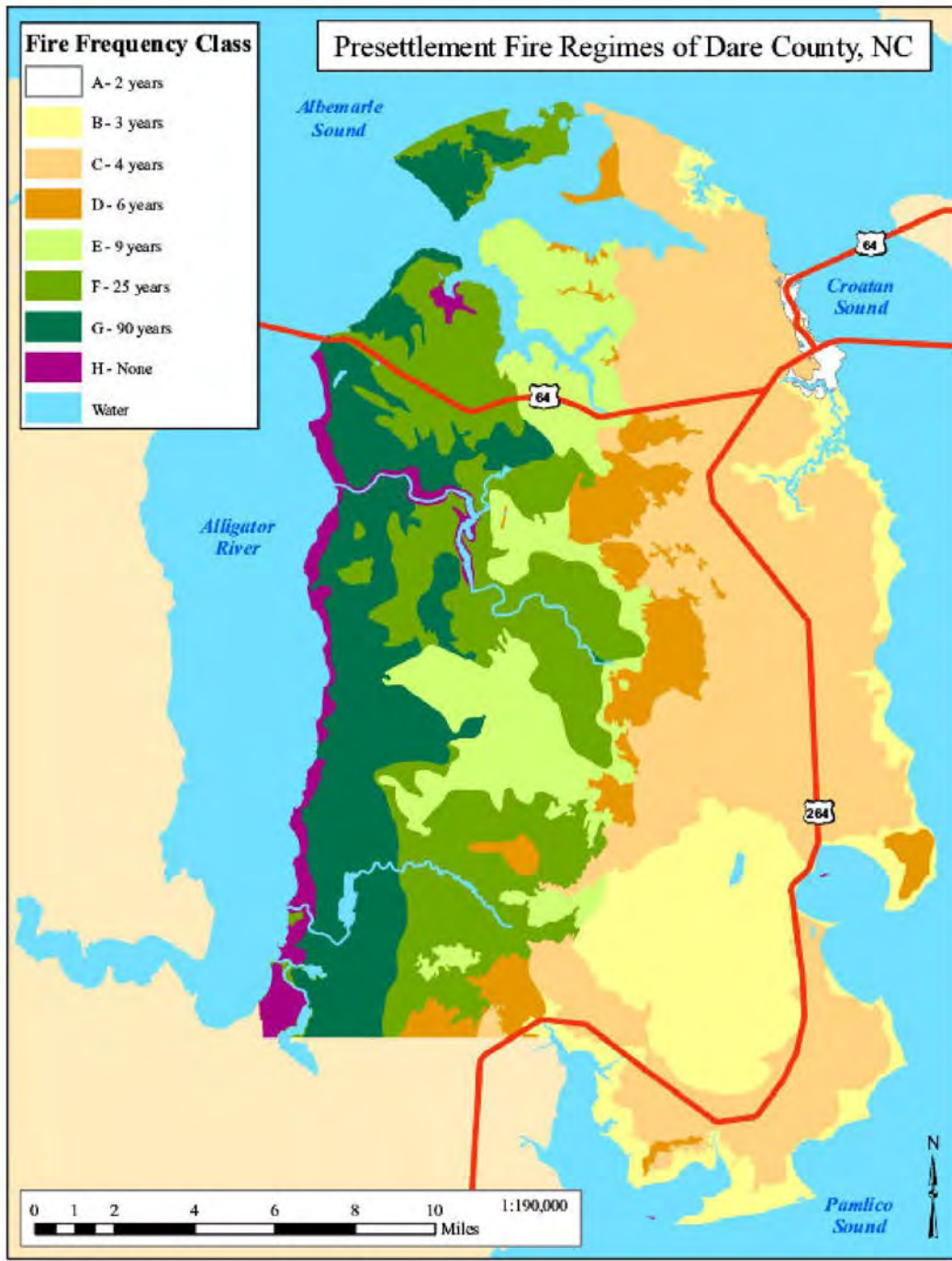


Moseley 1733

Price-
Strother
map
1808



75 yrs later, 223
since 1585



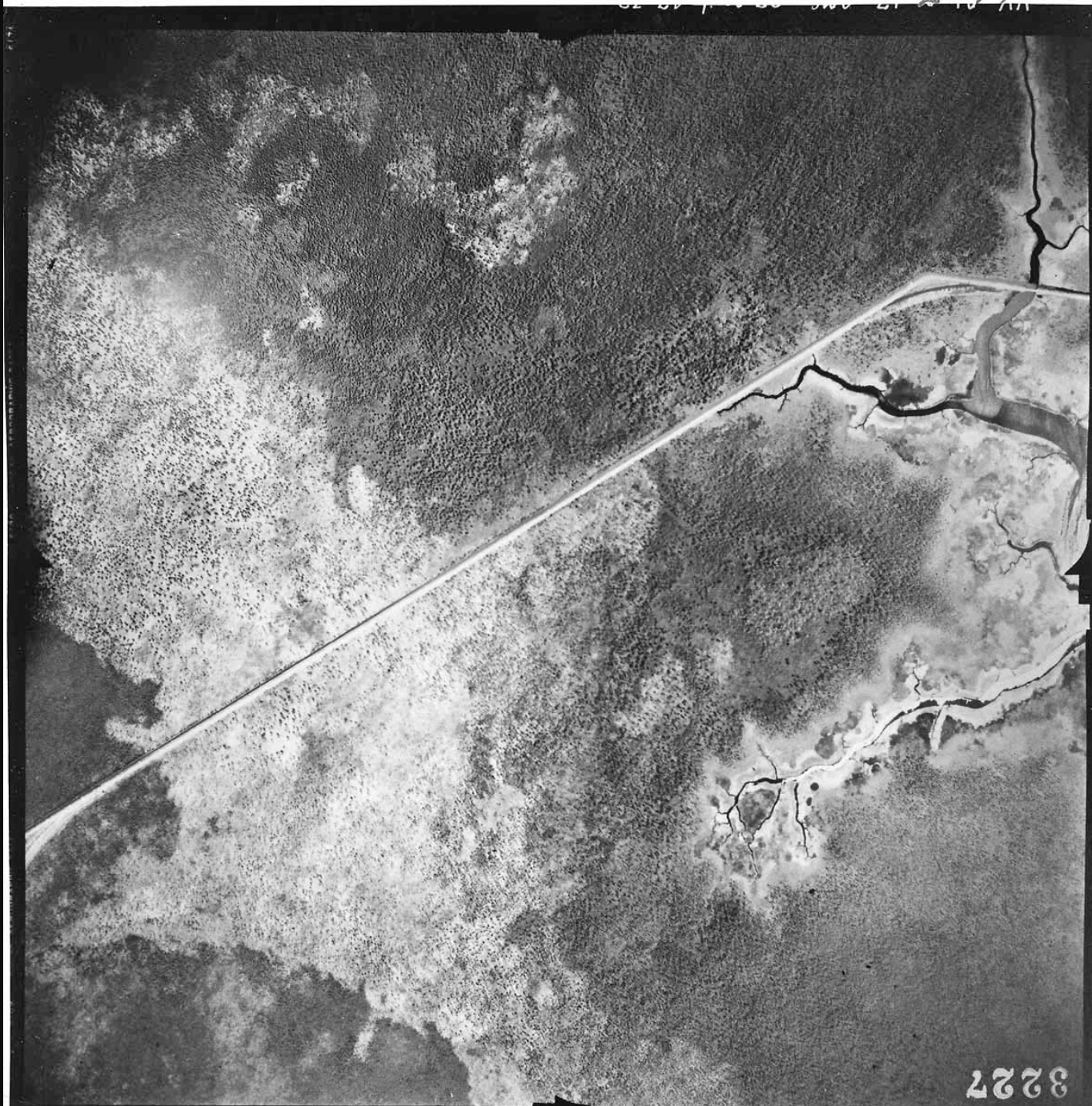
Stumpy Point





Long Shoal River



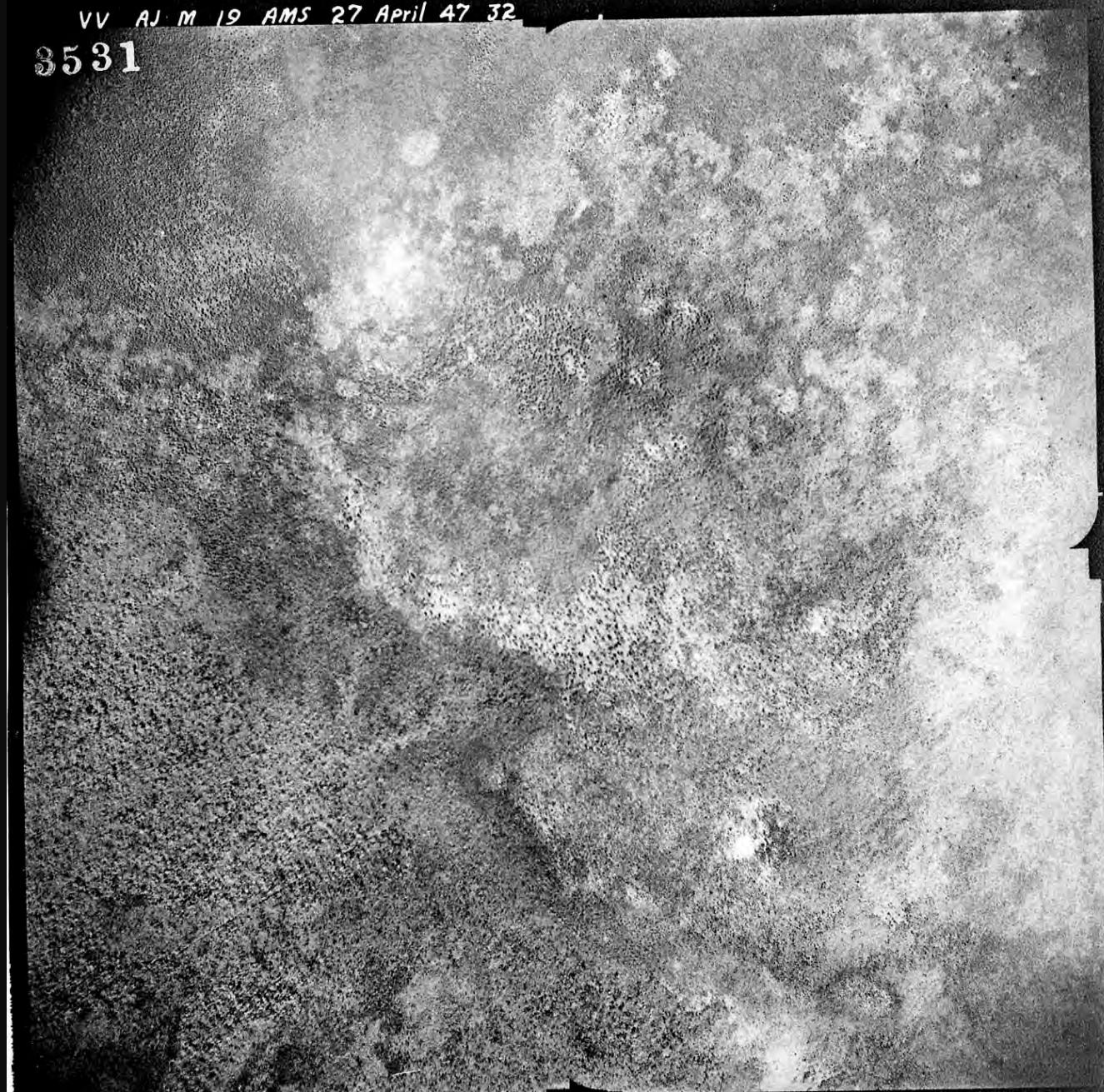


VV A1 M 17 AMS 27 April 47 32

3227

VV AJ M 19 AMS 27 April 47 32

3531

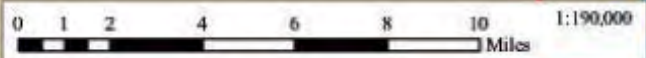


VV AJ M 19 AMS 27 April 47 32

Presettlement Vegetation of Dare County, NC

Vegetation Class

- 1 - Estuarine Fringe
Beaches, Sand Berms
and Low Dunes,
Sparsely Vegetated
- 2 - Xeric and Dry-Mesic
Longleaf Pine/Winggrass
Savanna
- 5 - Wet-mesic Longleaf
Pine/Winggrass Savanna
- 7 - Mesic Mixed Pine
Savanna and Pycnophytic
Hardwood Woodland
- 8 - Pine-Gum Flats,
Pine Exposed
- 9 - Oak-Loblolly Pine
Flats, Pine Sheltered
- 10 - Maritime Pine-Live
Oak Forest
- 12 - Pond Pine Savanna
and Forest
- 13 - Canebrake
- 14 - Pond Pine Poconin
- 16 - Palustrine Low
Poconin
- 17 - Peatland Long Pine
Interval Pycnomosaic
(Multiple Species
Patch Dominants)
- 18 - Peatland Very Long
Pine Interval Pycnomosaic
(Atlantic White Cedar
dominant)
- 20 - Tidal Cypress-
Gum Swamp
- 22 - Pine Marsh and
Spartan Scrub
- 23 - Oligohaline Marsh
- 24 - Oligohaline to
Brackish Marsh
- 25 - Brackish and
Salt Marsh
- Water

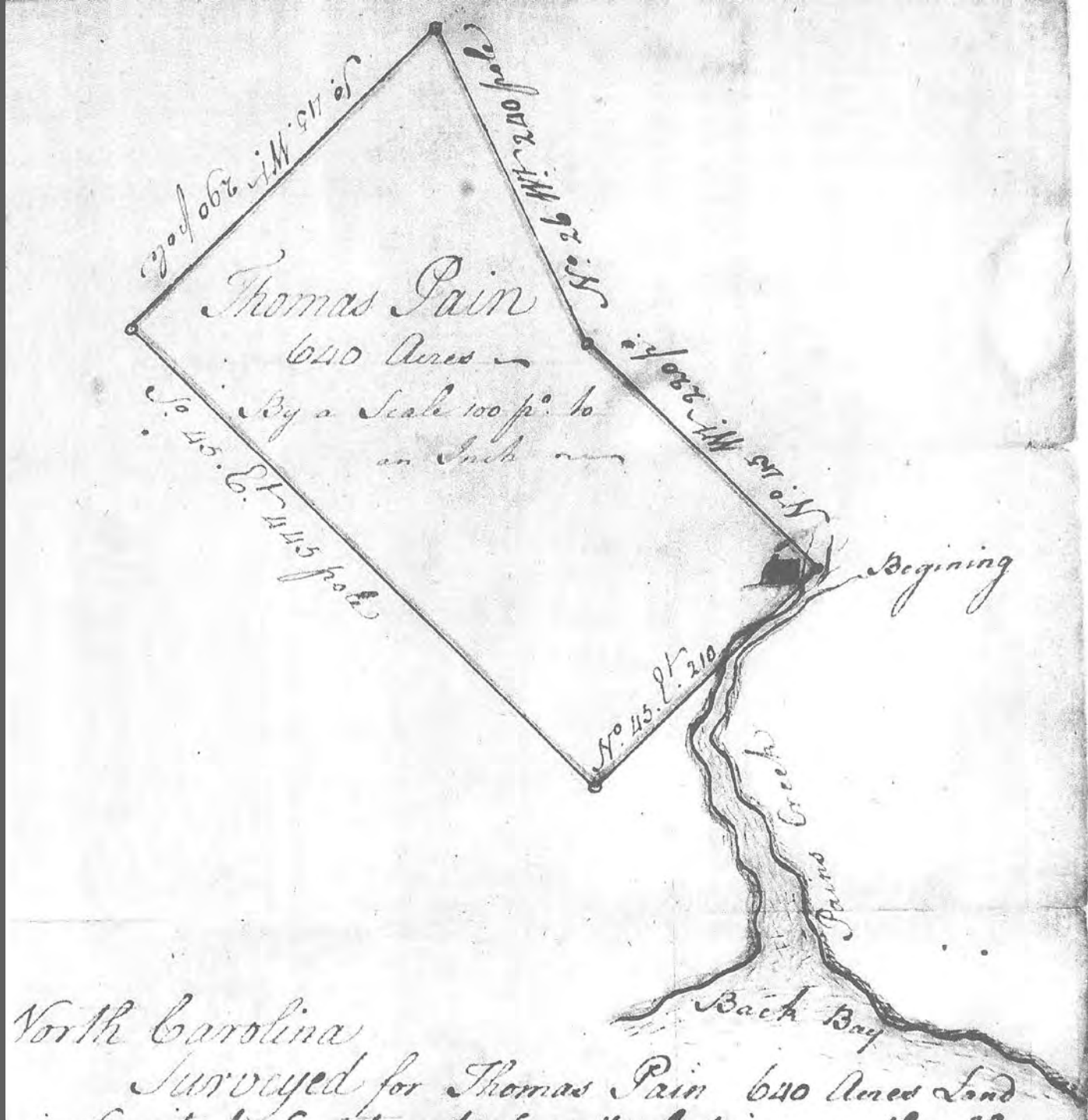


Presettlement Fire Frequencies, Mainland Dare

Fire Frequency Class	Mean Fire Interval (years)	Estimated Historic Range of Variation (90% of Fires) (years)	ACRES	PERCENT
A	2	1-4	1,192	0.6
B	3	1-6	28,727	14.7
C	4	2-10	63,468	32.5
D	6	3-20	12,484	6.4
E	9	4-50 depending upon vegetation type and location in the landscape	21,993	11.3
F	25	10-100 depending upon vegetation type and location in the landscape	35,116	18.0
G	90	35-300+ depending on landscape position along the fire frequency gradient	26,357	13.5
H	None	Nonflammable, tidal cypress-tupelo swamp	4,712	2.4
Water			1,239	0.6
TOTAL			195,288	100

200k @ 5k/yr = 40 yr rotation

Pain's Bay, 1765





LONG SHOAL RIVER

HoA

PoA

HyA

BvA

PoA

Muddy Creek

HoA

BvA

PoA

CuA

HoA

Clark Creek

CuA

BvA

BvA

CuA

Pains Creek

CuA

CuA

BvA

CuA

CuA

Pains Point

CuA

CuA

PAINS BAY

1765 - 2013

Rawls Island
CuA

CuA

CuA



US 264 at drain to Pain's Bay



Hyde soils,
Pain's Bay





Typic Udipsamments

Arenic Hapluduults

Typic Paleuduults

Typic Hapluduults

Aquic Udipsamments

Aquic Hapluduults

Aeric Ochraquults

Typic Ochraquults

Typic endoaquepts

Typic Humaquepts

Typic Umbraquepts

Cumulic Humaquepts

Typic Humaquepts

Histic Humaquepts

Terric Haplosaprists

Terric Medisaprists

Typic Medisaprists

+ soil pH & texture





LONG SHOAL RIVER

HoA

PoA

HyA

BvA

PoA

Muddy Creek

HoA

BvA

PoA

CuA

HoA

Clark Creek

Creek

CuA

BvA

CuA

BvA

BvA

CuA

Pains Creek

CuA

CuA

CuA

CuA

Pains Point

BAY

PAINS

CuA

1765 - 2013

Rawls Island
CuA

CuA

CuA

Piney Island

USMC

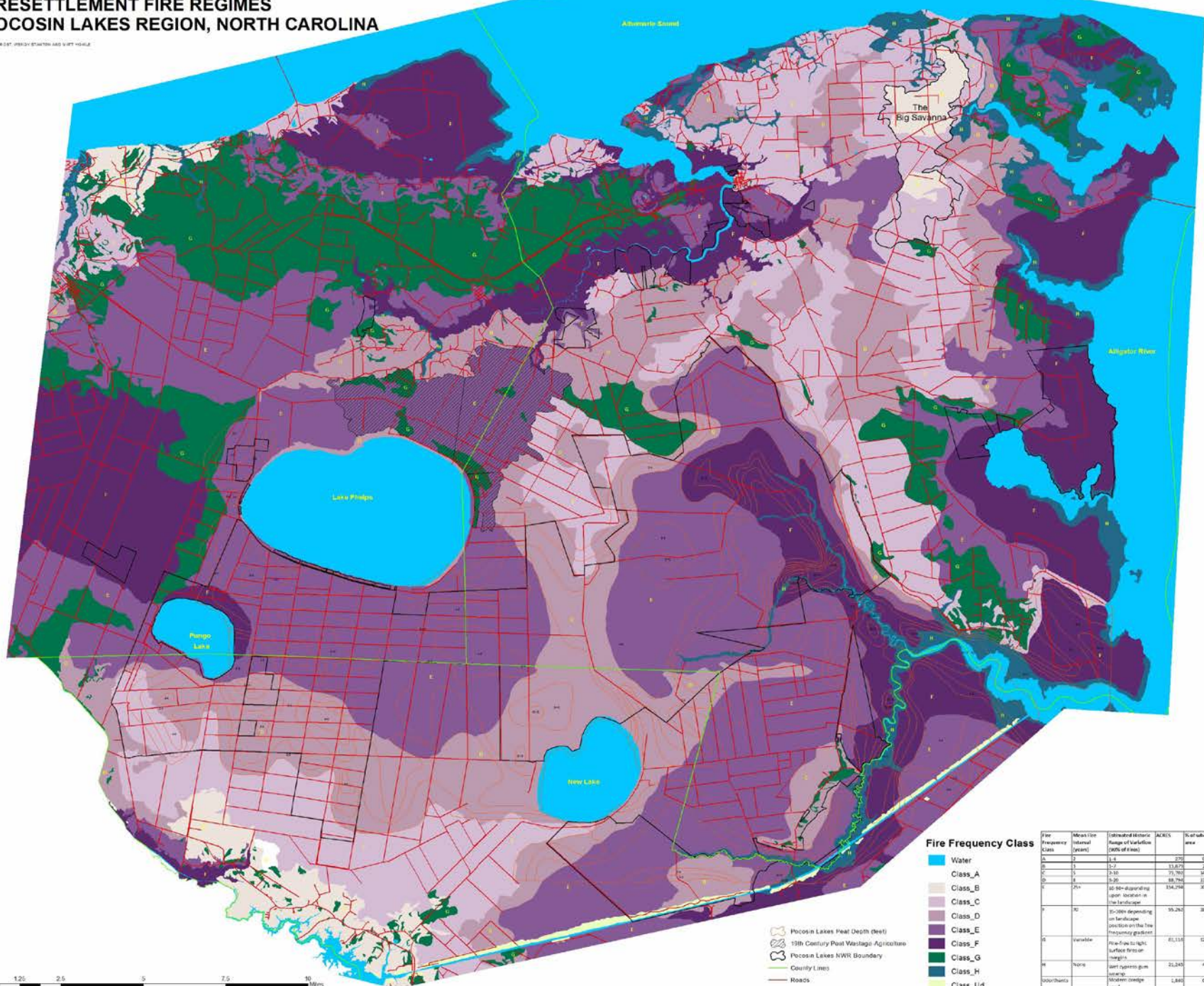




The last 11 pines on Piney Island

PRESETTLEMENT FIRE REGIMES POCOSIN LAKES REGION, NORTH CAROLINA

CELLS PRIOR TO 1930 BY STARTING AND DIRT SCALE



- Pocosin Lakes Heat Depth (feet)
- 19th Century Post Vestage Agriculture
- Pocosin Lakes NWR Boundary
- County Lines
- Roads

Fire Frequency Class

- Water
- Class_A
- Class_B
- Class_C
- Class_D
- Class_E
- Class_F
- Class_G
- Class_H
- Class_Ud

Fire Frequency Class	Mean Fire Interval (years)	Estimated Annual Range of Surface (pct of Area)	ACRES	% of Substrate Area	Acres Burned Annually	Damage Acres	Relight Acres Burned Annually
A	2	1-4	270	0.3%	130	0	0
B	3-7	5-10	11,874	2.7%	8,628	0	0
C	8	11-20	75,767	18.4%	14,743	5,515	1,111
D	8	21-30	88,794	21.4%	11,689	28,912	3,353
E	10	31-40 depending upon location in the landscape	134,796	32.3%	8,371	50,351	2,341
F	10	41-50 depending on landscape position on the fire frequency gradient	19,293	4.8%	1,261	17,031	240
G	Variable	Fire-free to light surface fires on "dry" wet systems gum wetlands	61,113	15.2%	1,000	901	181
H	None	Fire-free to light surface fires on "dry" wet systems gum wetlands	21,243	5.2%	70	8,862	70
Unclassified		Unclassified (water)	1,840	0.5%	n/a	200	n/a
TOTAL			332,483	100%	41,131	107,548	6,833



The
Frying
Pan
1982





The Frying Pan

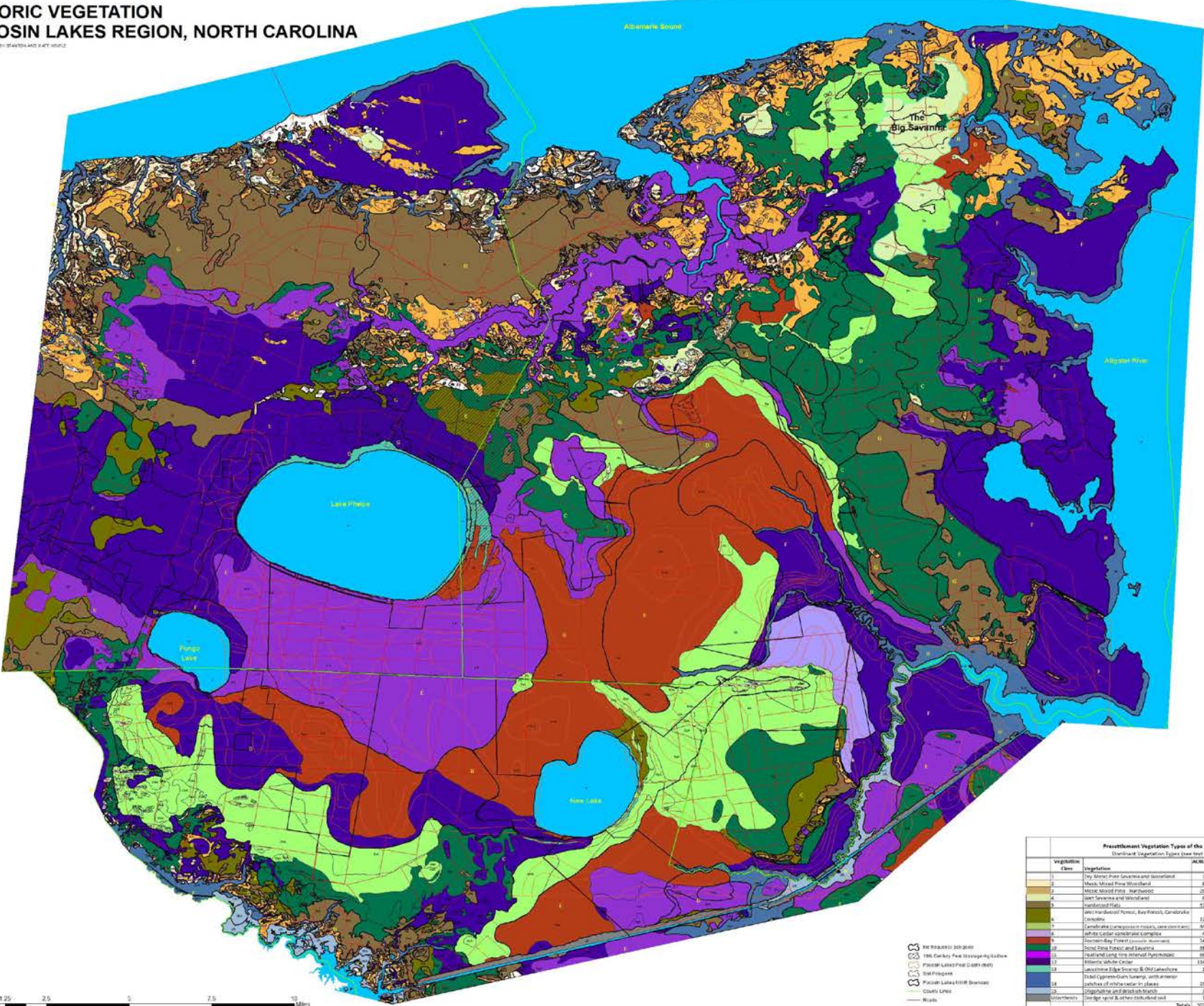
Sea level white
cedar

1984



HISTORIC VEGETATION POCOSIN LAKES REGION, NORTH CAROLINA

2003, 2007, 2010, 2011, 2012



Present-day Vegetation Types of the Pocosin Lakes Region
(Dominant Vegetation Types (see text for included types))

Vegetation Class	Vegetation	ACRES	Percent of Study Area	Percent of Range Land
1	Dry Short-Pine Scrub and Associates	6,187	0.6%	0.3%
2	Wet Short-Pine Scrubland	8,155	1.7%	0.3%
3	Moist Mixed-Pine Hardwood	29,577	3.4%	0.8%
4	Wet Short-Pine and Hardwood	6,117	1.3%	0.3%
5	Hardwood Hills	37,888	4.6%	0.8%
6	Wet Hardwood-Pine, Bay Forest, Carolina Sandhills			
7	Carolina Longleaf-Pine, Low Swamps	65,280	7.5%	4.9%
8	Wet Short-Pine/Carolina Sandhills	43,719	5.0%	3.3%
9	Deciduous Forest (various species)	149,532	16.9%	13.3%
10	Short Pine Forest and Savanna	88,810	10.2%	6.2%
11	Wetland/Long-Term Intermittent Pocosin	86,889	10.0%	13.6%
12	Atlantic White Pine	134,930	15.5%	16.0%
13	Late-Human Tillon Swamps & Old Lanes	3,721	0.5%	0.0%
14	Wet Cypress-Swamp, with Intermittent patches of white water swales	25,891	3.0%	6.7%
15	Shaded Wetland/Intermittent Pocosin	8,122	0.9%	0.6%
16	Wetland/Intermittent Pocosin	1,564	0.2%	0.0%
Totals		303,383	100.0%	100.0%



PRESETTLEMENT FIRE FREQUENCIES – POCOSIN LAKES REGION

Fire Frequency Class	Mean Fire Interval (years)	Historic Range of Variation (years)	Acres – Whole Region	% of Whole Region	Acres Burned Annually	Refuge Acres	Refuge Acres Burned annually
A	2	1-4	276	0.1%	138	0	0
B	3	2-7	13,879	2.7%	4,626	0	0
C	5	2-10	73,702	14.4%	14,740	5,553	1,111
D	8	5-20	88,794	17.4%	11,099	26,042	3,255
E	25+	10-90+ depending on location in the landscape	154,294	30.2%	6,171	56,017	2,241
F	70	35-300+	95,262	18.6%	1,361	17,391	248
G	Variable	Fire-free to light surface fires on margins	61,116	12.0%	~5,000	991	~81
H	None	Wet cypress-gum swamp	21,245	4.2%	~0	1,602	~0
Ud	n.a.	Dredge spoil	1,840	0.4%	n.a.	350	n.a.
		TOTALS	510,408	100.0%	43,135	107,946	6,855



Evans Road Fire - Hyde County
 Large Fires Overlay
 NC-NCS-08-048-065
 Map Created on July 5, 2008
 41,543 acres (Evans Rd.)
 95,000 acres (Allen Rd. 04/12/85)
 +/- 15,500 acres (Bull Hill 04/09/82)
 Fire Perimeters Approximate

Brian VanDruten, GISS
 Richard Cockerham, GISS
 Jamie Dunbar, GISS-T
 NC DFR Willis IMT

ALLEN ROAD FIRE AREA
 04/12/85

Lake Phelps

Pungo Lake

EVANS ROAD FIRE AREA
 07/05/08

New Lake

BULL HILL FIRE AREA
 04/09/82



1981 – Pungo Fire, 12,500 a.
1963 another large peatland fire

Pungo River

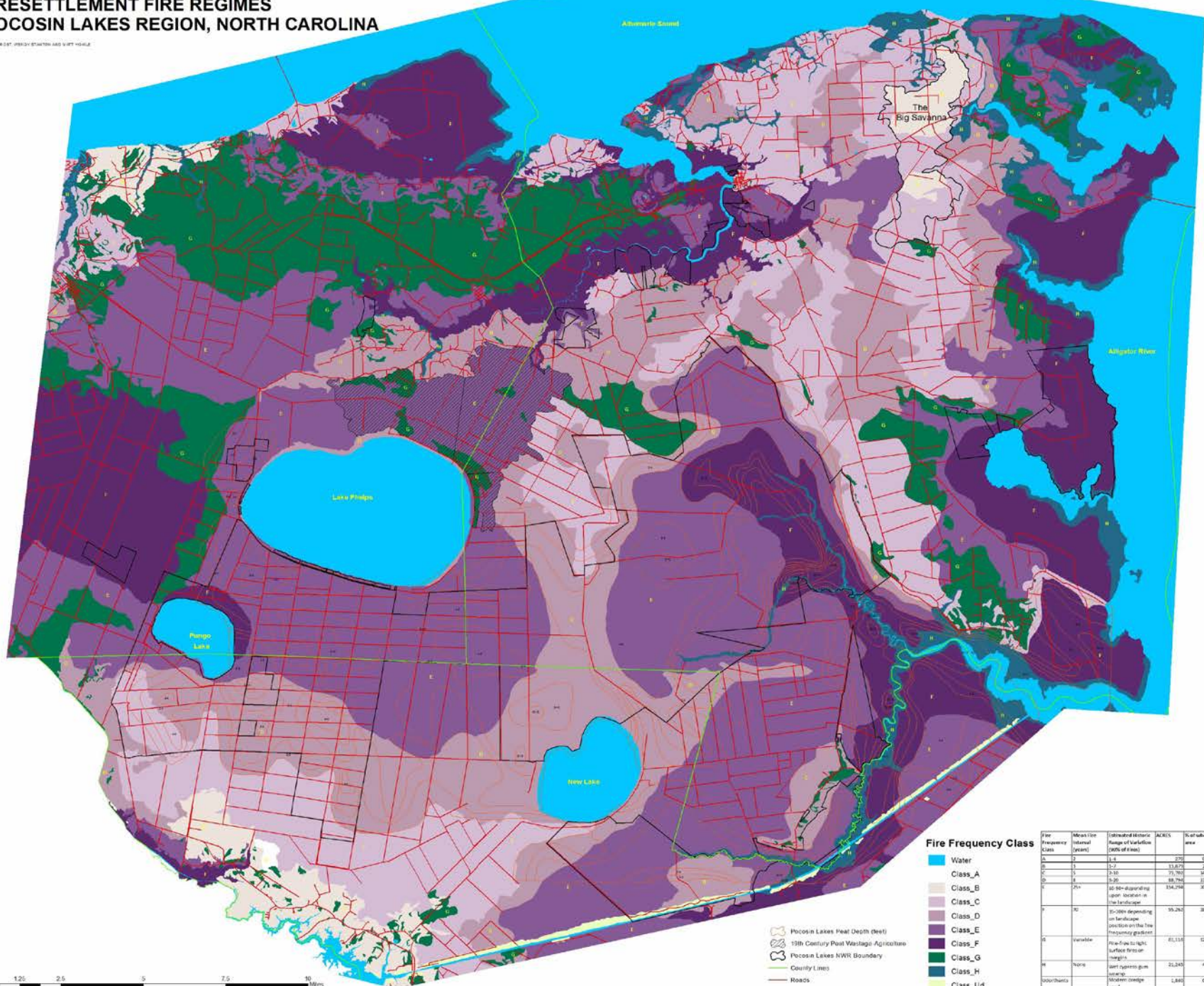
Lake Mattamuskeet

Legend

- Evans Road Fire 07/05/08 @ 1000
- Digitized Bull Hill Fire 04/09/82
- Digitized Allen Road Fire 04/12/85
- Hydro_Polys
- Bad Road
- Road Closed
- County Boundaries

PRESETTLEMENT FIRE REGIMES POCOSIN LAKES REGION, NORTH CAROLINA

CELLS FIRST PRIORITY STARTING AND LEFT HIGHER



- Pocosin Lakes Heat Depth (feet)
- 19th Century Past Vastage Agriculture
- Pocosin Lakes NWR Boundary
- County Lines
- Roads

Fire Frequency Class

- Water
- Class_A
- Class_B
- Class_C
- Class_D
- Class_E
- Class_F
- Class_G
- Class_H
- Class_Ud

Fire Frequency Class	Mean Fire Interval (years)	Estimated Annual Range of Surface (pct of Area)	ACRES	% of Substrate Area	Acres Burned Annually	Damage Acres	Relight Acres Annually
A	2	1-4	270	0.3%	190	0	0
B	3-7	5-10	11,874	2.7%	8,628	0	0
C	8	11-20	75,767	16.4%	14,743	5,515	1,111
D	8	21-30	88,794	17.4%	11,689	28,012	3,353
E	10	31-40 depending upon location in the landscape	134,796	28.2%	8,371	50,217	2,341
F	10	41-50 depending on landscape position on the fire frequency gradient	19,293	3.8%	1,243	17,051	240
G	Variable	Fire-free to light surface fires on "dry" wet systems gum wetlands	61,113	12.8%	10,000	901	183
H	None	Fire-free to light surface fires on wet systems gum wetlands	21,243	4.2%	70	8,862	70
Unclassified		Unclassified (water pool)	1,840	0.4%	n/a	200	n/a
TOTAL			332,480	100%	41,131	107,548	6,833



First Colony Farms peat mining office



CANEBRAKE

Allen Road Fire
April 1985

Western Road,
looking west



Synthesis of multiple kinds of evidence for mapping original fire regimes

BIOTIC EVIDENCE

- **Fire frequency indicator species** (proxies for fire frequency)
- **Fire frequency indicator communities** (proxies for fire frequency)
- Reduction in fire frequency by native grazers

LANDSCAPE AND ENVIRONMENT FACTORS

- Original fire compartment size
- Presence of fire barriers, **fire pathways** and fire filters
- **Presence of Landscape-scale Fire Frequency Gradients**
- Topographic position of fire frequency indicator trees
- Effects of soil productivity on fire behavior (mediated by vegetation)
- Lightning generators, strike density and ignition records

HISTORICAL EVIDENCE

- **Witness trees from early surveys**
- Fire scar chronologies
- Vegetation types mentioned by early travelers or surveyors
- Herbarium records of fire frequency indicator species or communities
- Historical photos or paintings done in the presettlement landscape
- Historical references to use of fire by Native Americans
- **Original Native American population centers**
- Vegetation types on old aerial photos or topo maps.



Atamasco lily response to fire –Hyde Co.

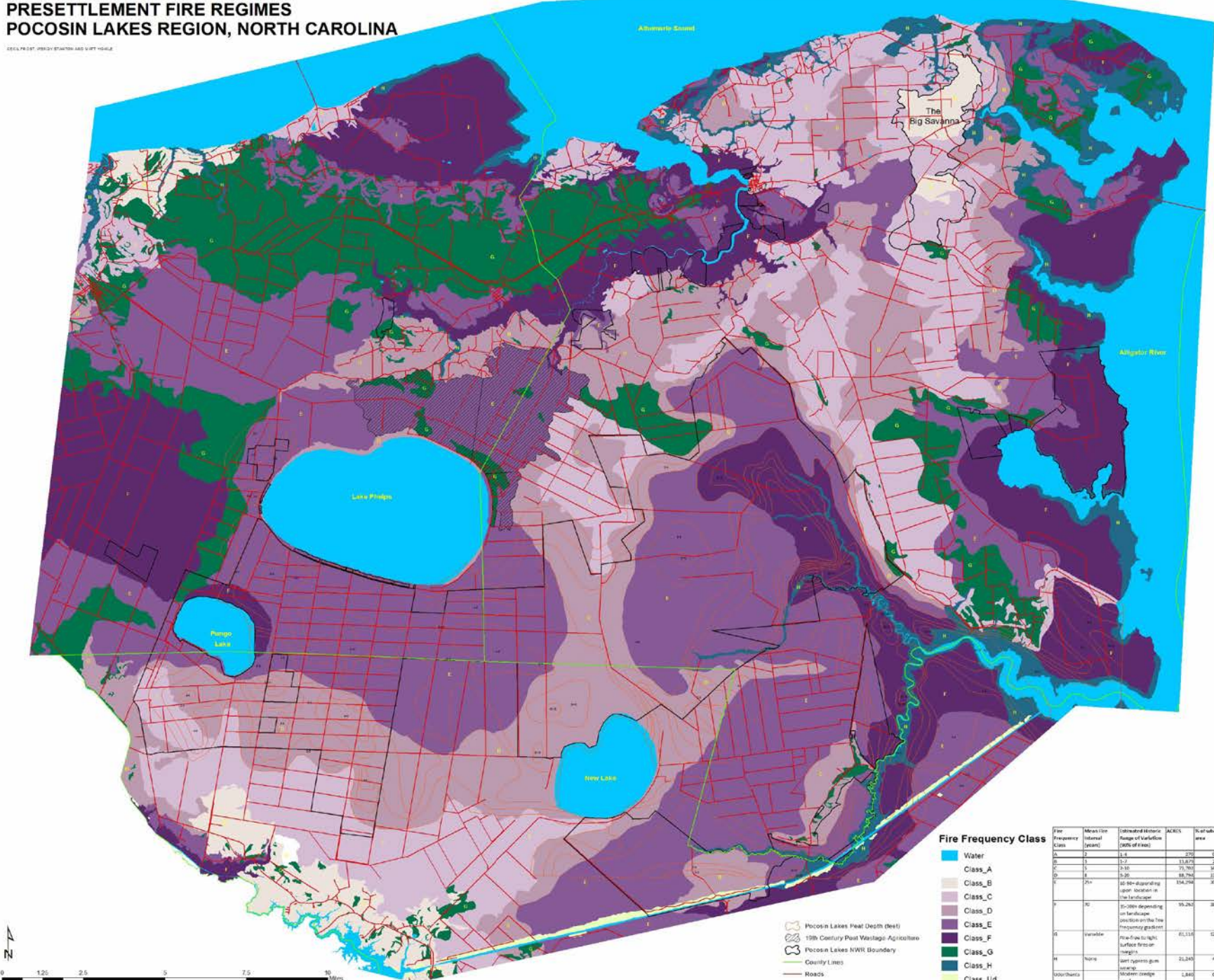


Belhaven
1941



PRESETTLEMENT FIRE REGIMES POCOSIN LAKES REGION, NORTH CAROLINA

CELLS FIRST SPECIFY EXTENT AND UNIT SCALE



- Pocosin Lakes Heat Depth (best)
- 19th Century Past Vastage Agriculture
- Pocosin Lakes NWR Boundary
- County Lines
- Roads

Fire Frequency Class

- Water
- Class_A
- Class_B
- Class_C
- Class_D
- Class_E
- Class_F
- Class_G
- Class_H
- Class_I

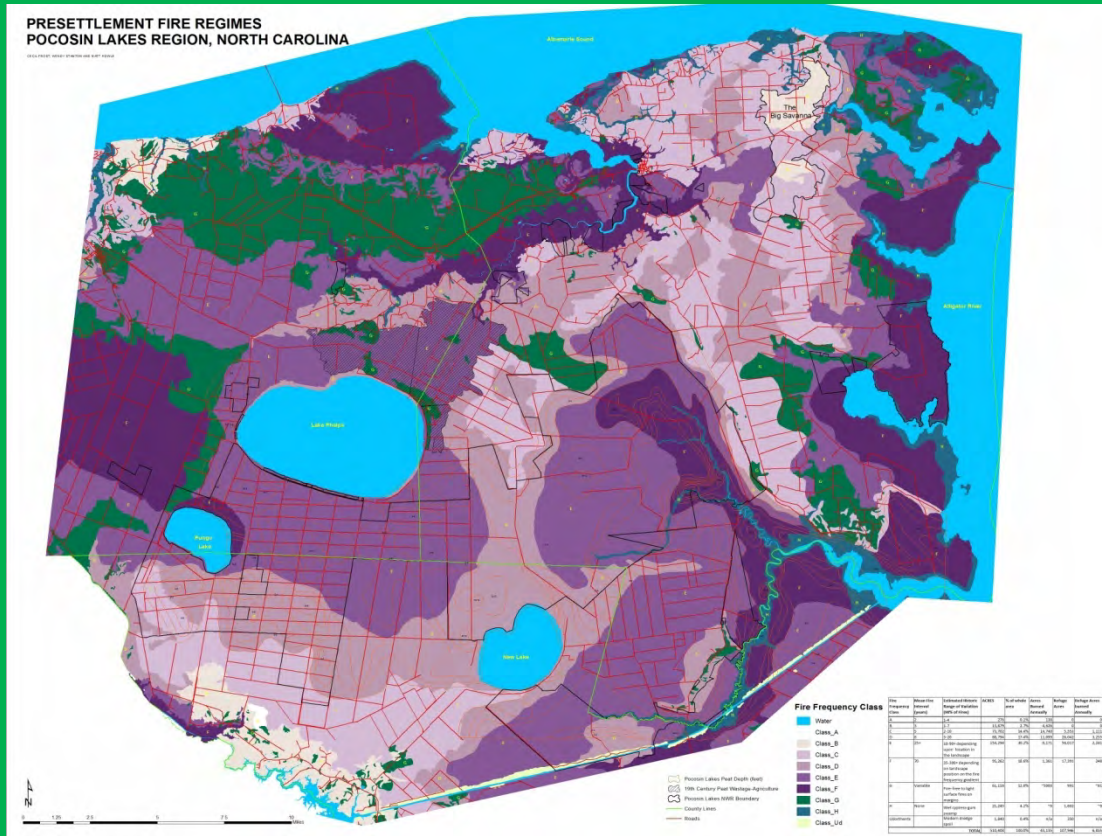
Fire Frequency Class	Mean Fire Interval (years)	Estimated Annual Range of Surface (pct of Area)	ACRES	% of Substrate Area	Acres Burned Annually	Damage Acres	Relifer Acres Burned Annually
A	2	1-4	270	0.3%	130	0	0
B	1-2	1-4	11,874	2.2%	6,028	0	0
C	1	1-10	75,767	14.4%	14,743	5,515	1,111
D	1	1-20	88,794	17.1%	11,089	28,012	3,353
E	1-2	10-100 depending upon location in the landscape	134,796	26.2%	6,371	50,217	2,341
F	10	10-100 depending on landscape position on the fire frequency gradient	19,293	36.8%	1,241	17,051	240
G	Variable	Fire-free to light surface fires on "dry" sites	61,114	12.0%	1,000	901	181
H	None	Open systems with surface fires on "dry" sites	21,243	4.2%	70	4,862	70
I	None	Open systems with surface fires on "dry" sites	1,840	0.4%	n/a	200	n/a
TOTAL			130,480	100.0%	41,131	107,348	6,833



Two fires

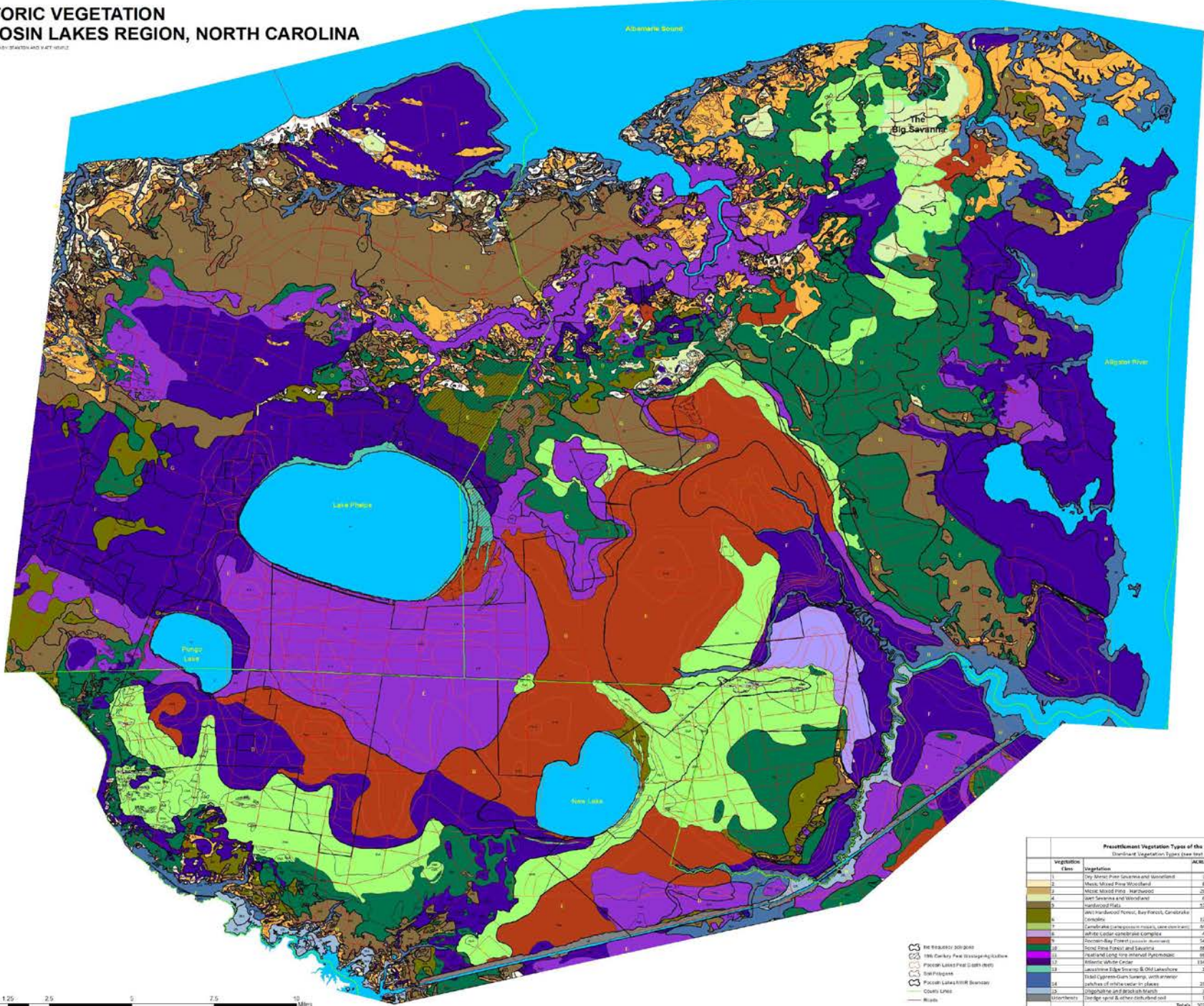
“We have for some time past seen fire-lights toward the New land, also the Little Lake, & to the southward. It had, night before last , got round to the Eastward, as far as the burnt grounds, & looked dreadful. It was met yesterday by a fire, which some body at the instigation of the Devil, had set out from Indian Town. I shall not attempt a full Description of the fire, & the Thunder & smoke that issued from it”

___Charles Pettigrew letter to Nathaniel Allen, March 2, 1791



HISTORIC VEGETATION POCOSIN LAKES REGION, NORTH CAROLINA

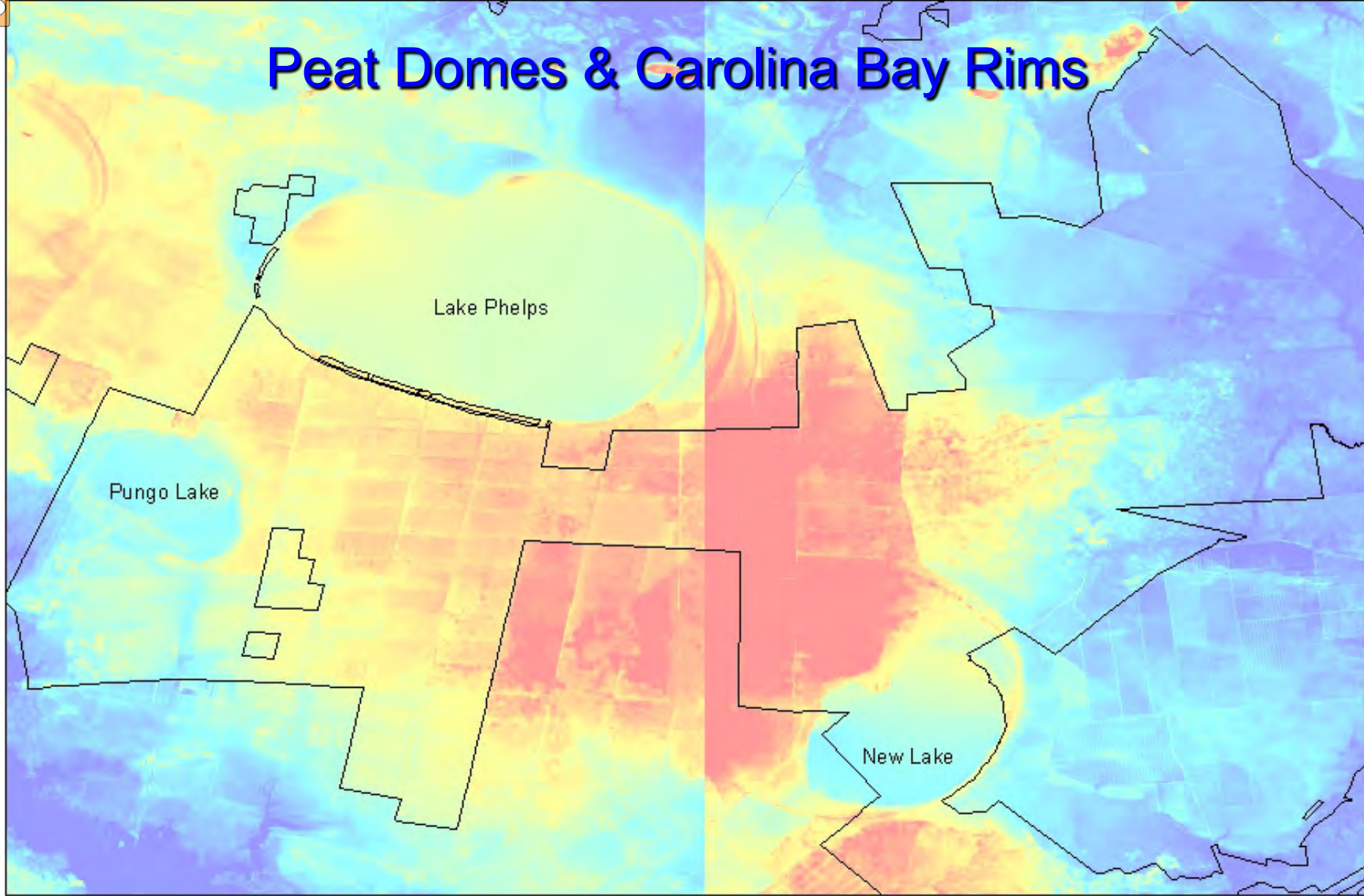
©2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012



Present-Day Vegetation Types of the Pocosin Lakes Region				
Dominant Vegetation Types (see text for included types)				
Vegetation Class	Vegetation	ACRES	Percent of Study Area	Percent of Ecologic Load
1	Dry Short Pine Scrubland and Shortleafed Pine	1,187	0.4%	0.1%
2	Wet Short Pine Scrubland	8,355	3.1%	0.2%
3	Mixed Short Pine, Hardwood	29,327	10.9%	0.7%
4	Wet Short Pine and Hardwood	6,157	2.3%	0.4%
5	Hardwood Hills	32,886	12.3%	0.8%
6	Wet Hardwood Pocosin, Bay Forest, Carolina Sandhills	22,885	8.6%	0.5%
7	Carolina Sandhills Pocosin, Low Swamps	85,282	31.8%	2.1%
8	Wet Hardwood Carolina Sandhills Complex	4,178	1.6%	0.2%
9	Deciduous Bay Forest Carolina Sandhills	54,522	20.2%	1.3%
10	Short Pine Forest and Savanna	88,812	33.2%	2.2%
11	Wetland Long-Term Interval Pocosin	88,859	33.2%	2.2%
12	Wetland Pocosin	154,912	58.1%	3.8%
13	Wetland Pocosin Swamps & Old Laneshow	3,721	1.4%	0.2%
14	Wetland Pocosin Swamps, with Interior Swamps of other water bodies	25,891	9.7%	0.6%
15	Wetland Pocosin and other swamps	8,122	3.1%	0.2%
16	Wetland Pocosin and other swamps	1,944	0.7%	0.0%
Totals		303,500	100.0%	100.0%

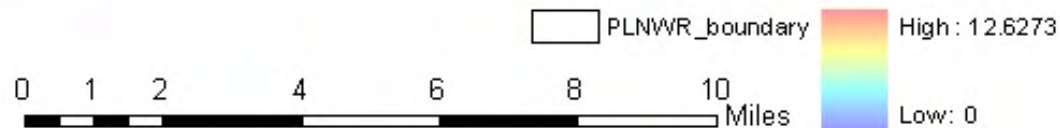
- Ⓕ 1870-1900
- Ⓖ 1900-1950
- Ⓗ 1950-2000
- Ⓘ 2000-Present
- Ⓜ Pocosin Lakes FWS (South)
- Ⓜ Pocosin Lakes FWS (North)
- Ⓜ Pocosin Lakes FWS (East)
- Ⓜ Pocosin Lakes FWS (West)
- Ⓜ Pocosin Lakes FWS (South)
- Ⓜ Pocosin Lakes FWS (North)
- Ⓜ Pocosin Lakes FWS (East)
- Ⓜ Pocosin Lakes FWS (West)

Peat Domes & Carolina Bay Rims



Prepared by Stacy Troumby
For Fire History Project

NAD 1983
StatePlane North Carolina



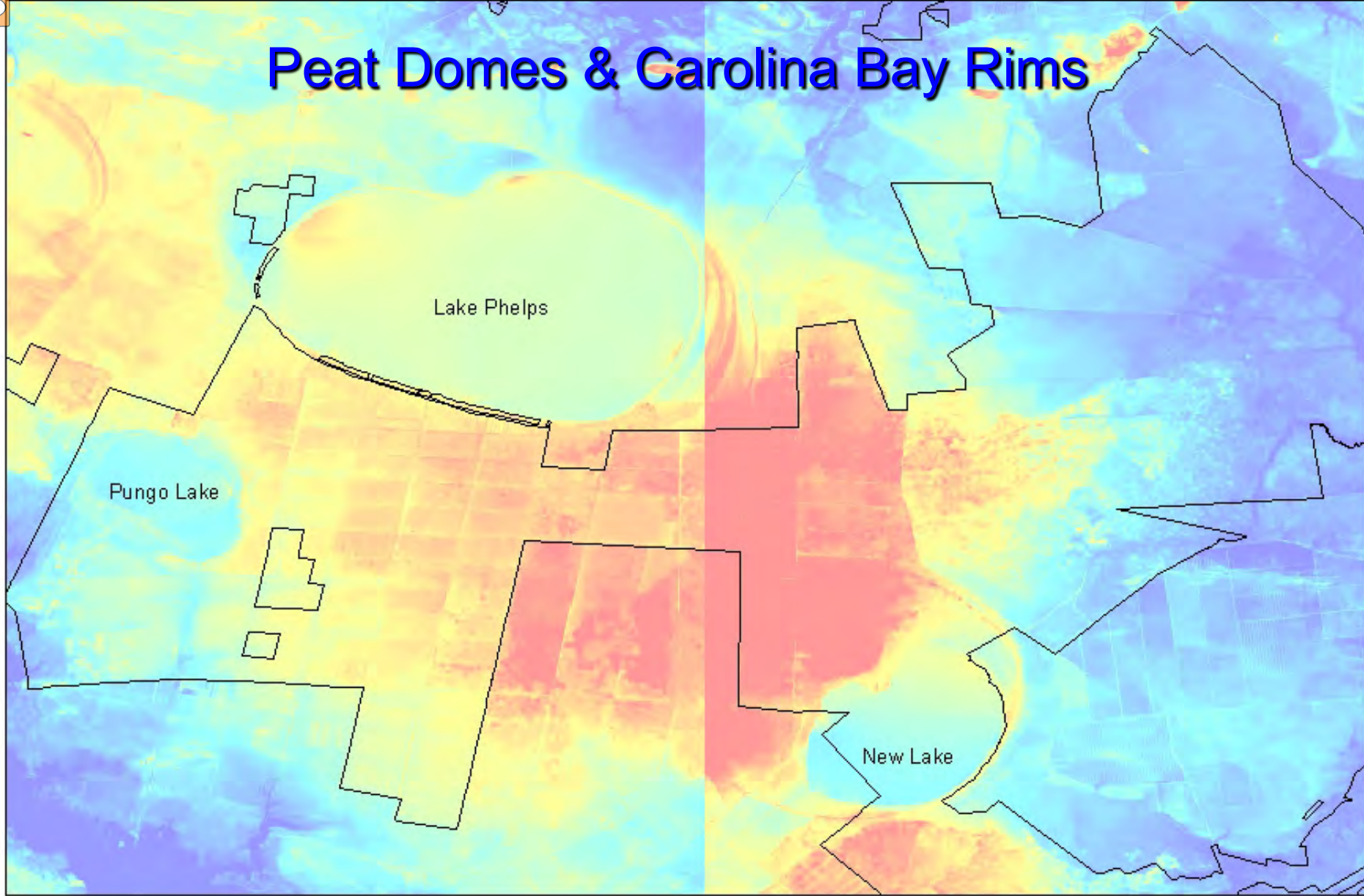
NAD 1983
StatePlane North Carolina



Old lake rims – Phelps Lake

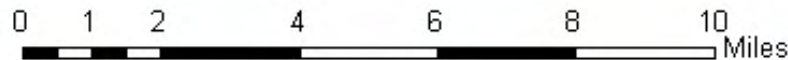


Peat Domes & Carolina Bay Rims



Prepared by Stacy Troumby
For Fire History Project

NAD 1983
State Plane North Carolina



PLNWR_boundary

High : 12.6273

Low : 0

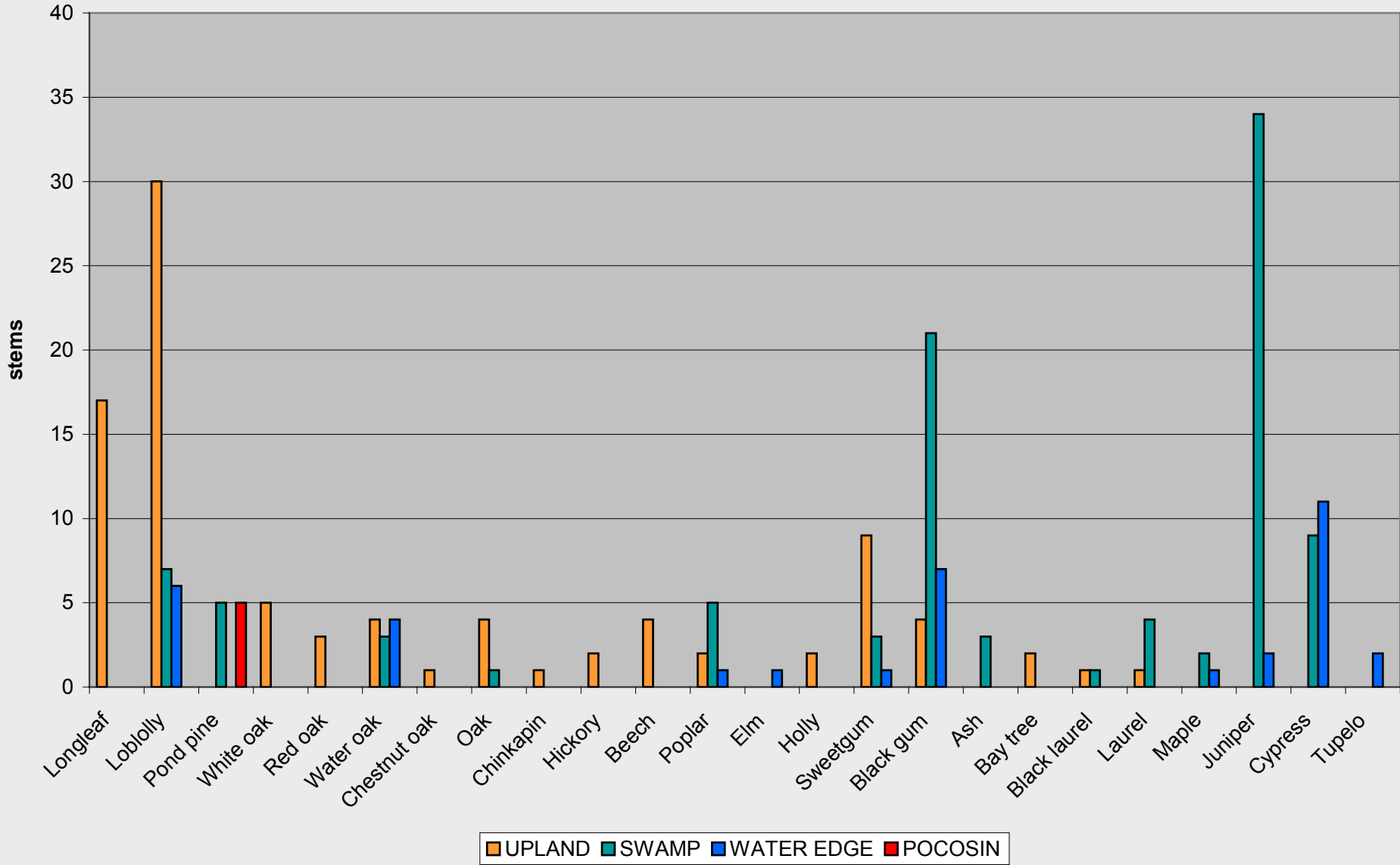
1787-1839-1857



NAD 1983
State Plane North Carolina



TREES ALONG THE ALBEMARLE AND SCUPPERNONG UPLANDS

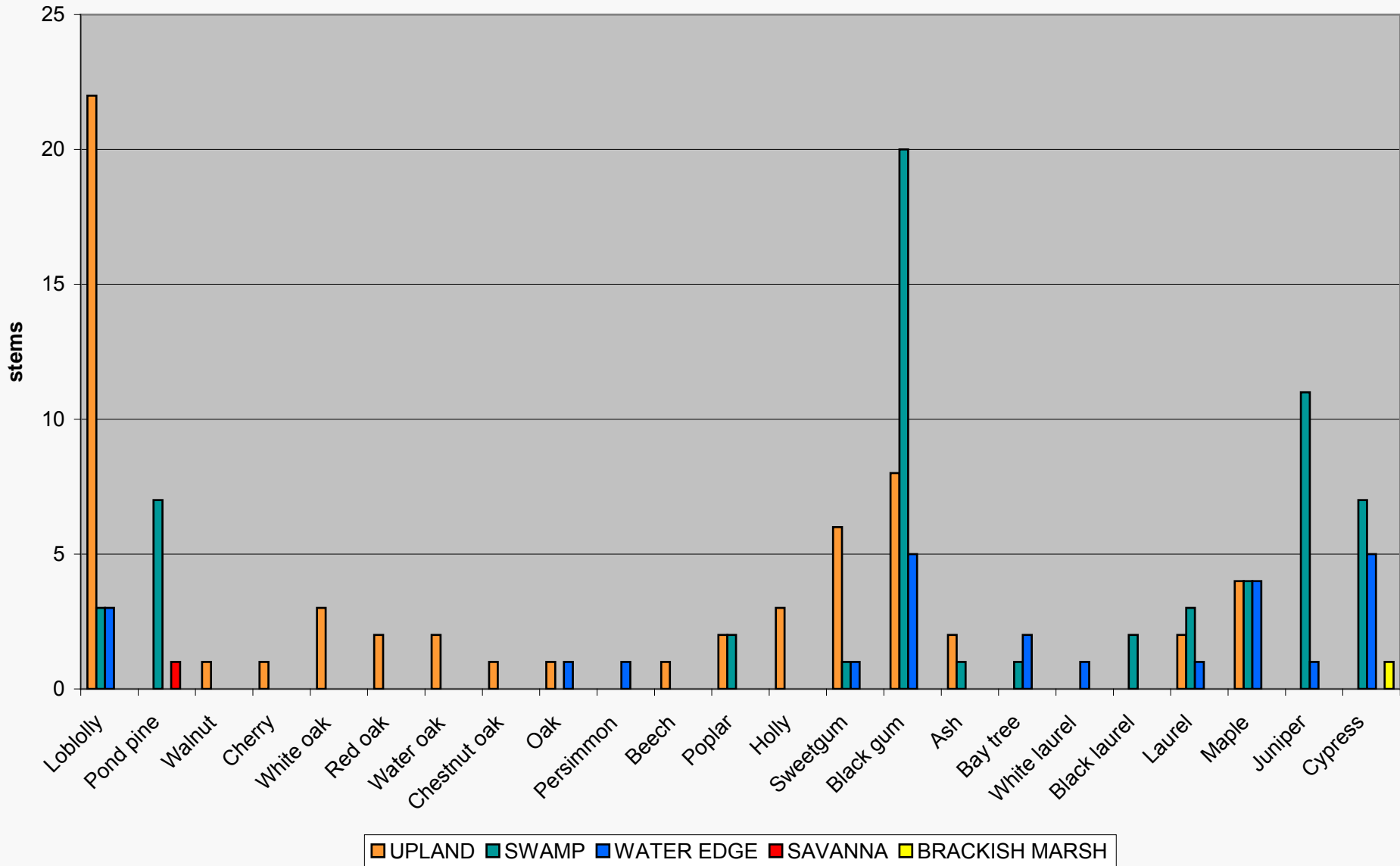


Little Alligator south to Second Creek



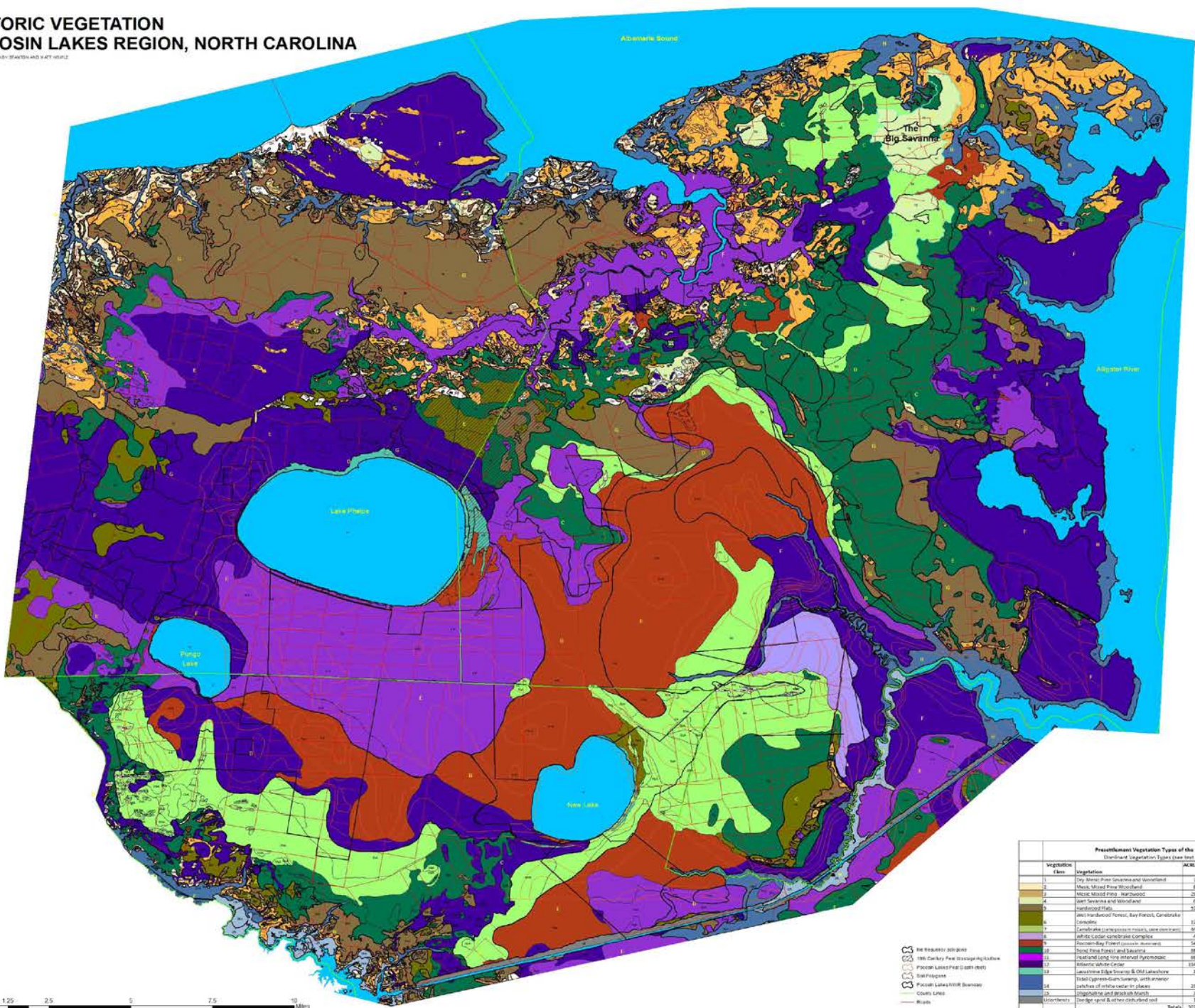


FIRE SHELTERED PENINSULAS ALONG THE ALLIGATOR RIVER



HISTORIC VEGETATION POCOSIN LAKES REGION, NORTH CAROLINA

©2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

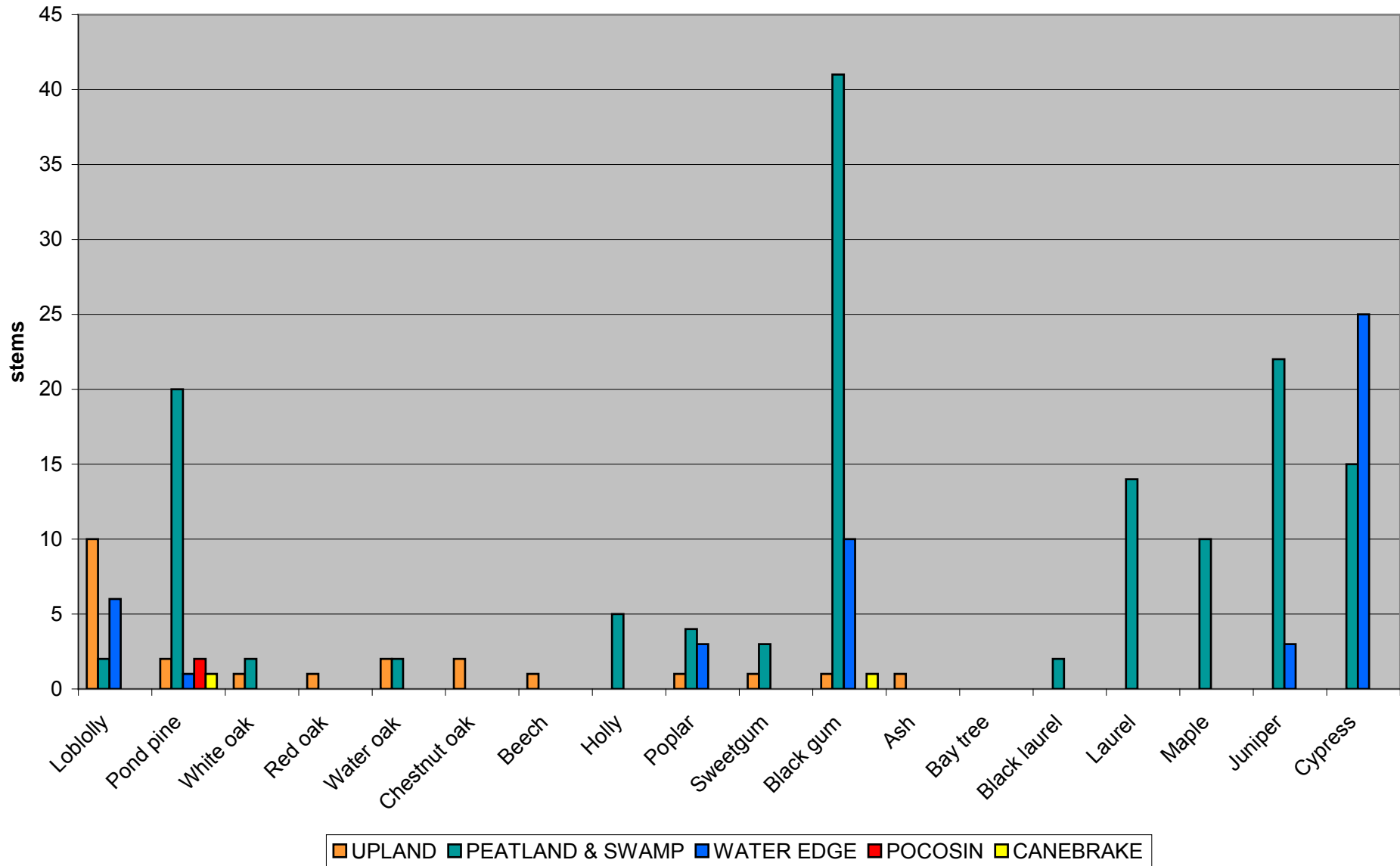


- Rd. Roadway (2010-2015)
- 1965 On-Key Paw Storage Facility
- Pocosin Lakes (Post 2015)
- Salt Ponds
- Pocosin Lakes (Pre 2015)
- County Lines (RR Boundary)
- County Lines
- Roads

Presettlement Vegetation Types of the Pocosin Lakes Region				
Dominant Vegetation Types (see text for included types)				
Vegetation Class	Vegetation	ACRES	Percent of Study Area	Percent of Total Land
1	Dry Short Pine Scrubland and Seralwood	1,187	0.4%	0.3%
2	Wet Short Pine Scrubland	8,105	2.7%	2.3%
3	Mixed Short Pine, Hardwood	29,127	9.4%	8.3%
4	Open Short Pine and Hardwood	6,117	1.9%	0.7%
5	Hardwood Hills	37,886	11.9%	8.8%
6	Wet Hardwood Pocosin, Bay Forest, Carolina Sandhills	13,883	4.2%	3.3%
7	Carolina Longleaf Pine, Low Swamps	85,080	25.9%	19.5%
8	Wet Short Pine, Carolina Sandhills	41,718	12.6%	9.3%
9	Deciduous Forest, Low Swamps	146,322	44.9%	33.7%
10	Short Pine Forest and Savanna	88,810	26.7%	20.2%
11	Wetland Long Pine Interval Pocosin	86,859	26.1%	19.8%
12	Atlantic White Cedar	134,910	40.6%	30.0%
13	Wetland Short Pine Swamp and Old Loblolly	3,721	0.1%	0.0%
14	Wet Longleaf Pine Swamp, Wet Interceptor	25,891	7.7%	5.7%
15	Wet Short Pine and Old Pine Swamp	8,112	2.4%	0.6%
16	Wet Short Pine and Wet Pine Swamp	1,184	0.4%	0.3%
	Totals	303,303	100.0%	100.0%



INTERIOR PEATLANDS AND INCLUDED HARDWOOD FLATS



Newland,
Washington
County

NYBI





Coming into Belhaven mill



White cedar –future ARNWR
1977



Typic Udipsamments

Arenic Hapludults

Typic Paleudults

Typic Hapludults

Aquic Udipsamments

Aquic Hapludults

Aeric Ochraquults

Typic Ochraquults

Typic endoaquepts

Typic Humaquepts

Typic Umbraquults

Cumulic Humaquepts

Typic Humaquepts

Histic Humaquepts

Terric Haplosaprists

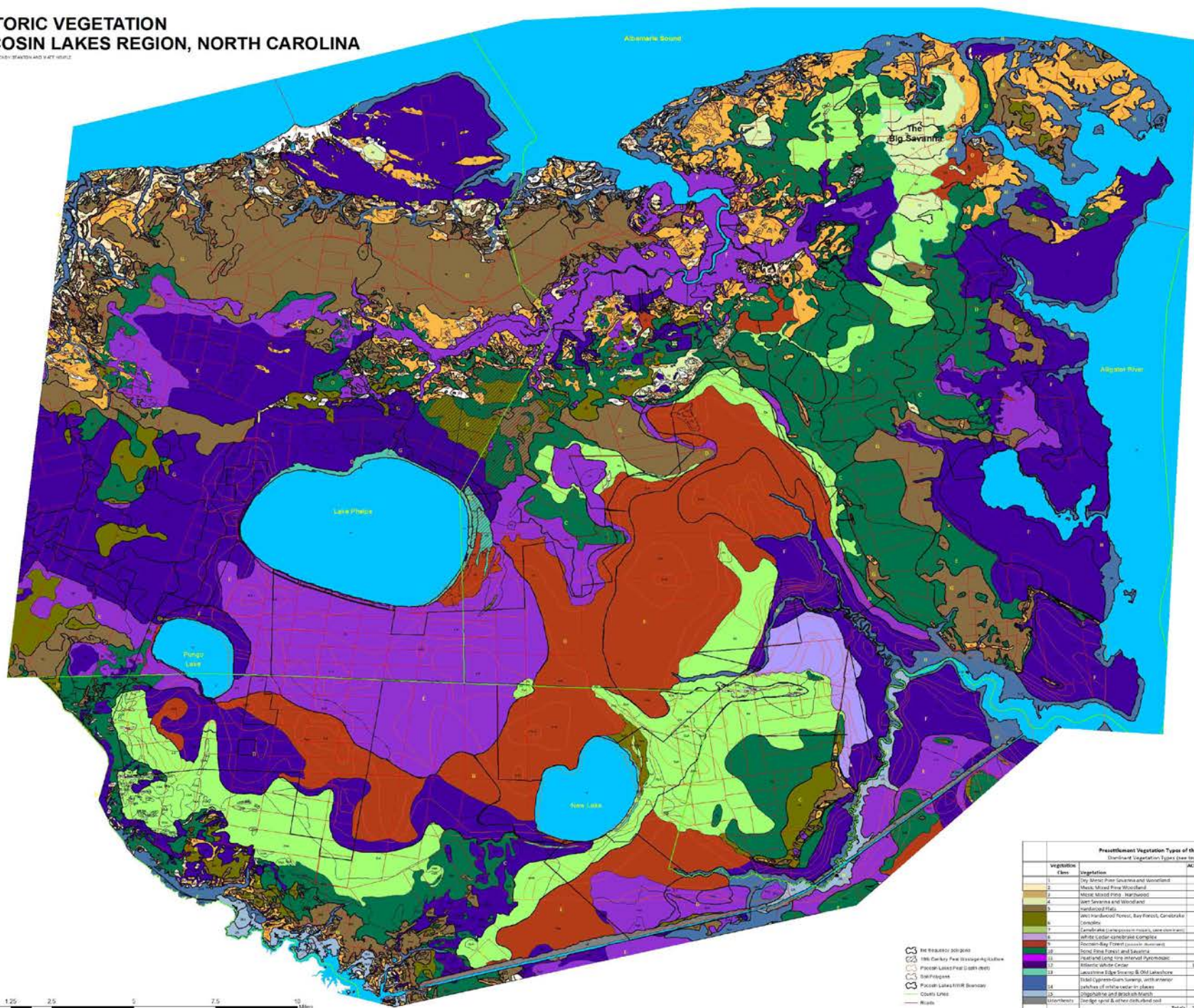
Terric Medisaprists

Typic Medisaprists

+ soil pH & texture

HISTORIC VEGETATION POCOSIN LAKES REGION, NORTH CAROLINA

© 2013, 2015, 2017, 2019, 2020, 2021, 2022, 2023, 2024



Pre-settlement Vegetation Types of the Pocosin Lakes Region
Dominant Vegetation Types (see text for included types)

Vegetation Class	Vegetation	ACRES	Percent of Study Area	Percent of Rangeland
1	Dry Short Pine Scrubland and Associates	1,187	0.4%	0.7%
2	Wet Short Pine Scrubland	8,105	3.1%	5.1%
3	Mixed Short Pine, Hardwood	29,227	11.4%	18.7%
4	Long Pine Scrubland and Associates	6,117	2.4%	3.7%
5	Hardwood Forest	17,488	6.8%	11.5%
6	Wet Hardwood Forest, Bay Forest, Carolina Sandhills	13,881	5.4%	9.1%
7	Carolina Longleaf Pine, Live Oak	85,080	33.2%	53.8%
8	White Oak-Cedar Complex	41,719	16.3%	26.3%
9	Deciduous Forest Complex	146,111	57.6%	91.7%
10	Short Pine Forest and Savanna	88,816	34.7%	55.2%
11	Wetland Long Pine Interval Pocosin	88,816	34.7%	55.2%
12	Wetland Short Pine Interval Pocosin	124,912	49.0%	75.0%
13	Wetland Long Pine Interval Pocosin	3,721	1.5%	2.3%
14	Wetland Short Pine Interval Pocosin	25,891	10.1%	15.7%
15	Wetland Long Pine Interval Pocosin	8,117	3.2%	5.1%
16	Wetland Short Pine Interval Pocosin	1,187	0.5%	0.7%
Totals		303,303	100.0%	100.0%

- RR Roadway (2010s)
- 1984 Farley Paw Strategy (2010s)
- Pocosin Lakes FFR (2010s)
- State Highway
- Pocosin Lakes FFR Boundary
- County Lines
- Roads



0 1.25 2.5 5 7.5 10 Miles

PRESETTLEMENT DISTRIBUTION OF PEATLAND VEGETATION OF THE SOUTHEASTERN U.S. ALONG MASTER GRADIENTS OF FIRE FREQUENCY AND DEPTH OF ORGANIC SOIL
CELLS 1-32: MODERATELY FERTILE SITES

FIRE FREQUENCY

		1-3 YEARS	4-6 YRS	7-12 YRS	13-25 YRS	26-50 YRS	51-100 YRS	100-300 YRS	NEVER BURNED
O R G A N I C M A T T E R D E P T H	Seasonally wet mineral soils ROW 1	Species-rich wet prairie with graminoids and grass-leaved forbs CELL 1	Species-rich wet prairie, with dwarf shrubs CELL 2	ANGL, ARG1, CLJA, ILGL, CYRA, CLMO, tree saplings CELL 3	Small ACRU, NYBI, LIST, PISE, PITA, PIEL, TAAS CELL 4	Dense ACRU, NYBI, TAAS, LIST, PISE, PITA, PIEL/ ARG1, Shrubs CELL 5	PITA, PIEL, TAAS, QUMI, PISE, ACRU, LIST/ sparse ARG1, ferns CELL 6	TADI, FRPE, LIST, ACRU, NYBI, QUMI other bottomland oaks/mesophytic herbs CELL 7	TADI, NYBI, FRPE, LIST, ACRU, bottomland oaks CELL 8
	Soils with thin organic layers, 10-30 cm thick ROW 2	Wet prairie and bog graminoids and forbs, patches of ARG1, ANGL CELL 9	Dense canebrake CELL 10	Alternating canebrake and pocosin CELL 11	PISE, ACRU, PITA, PIEL, TAAS, LIST/ ARG1 CELL 12	PISE, PITA, PIEL, TAAS, LIST, NYBI/ PEPA, MAVI CELL 13	PISE forest, PITA, PIEL, TAAS, bottomland hardwoods, bay forest CELL 14	TADI, NYBI, FRPE, LIST, PITA/ ACRU, FRCA/ Carex, swamp herbs CELL 15	TADI, NYAQ, NYBI/ ACRU, FRCA, ULAM/ swamp shrubs, herbs CELL 16
	Shallow histosols, 30-100 cm thick ROW 3	Open bog with dwarf shrubs, graminoids, pitcher plants, short cane, mosses CELL 17	Dense canebrake CELL 18	Alternating canebrake and pocosin CELL 19	PISE/ canebrake, alternating with PISE-ACRU tall pocosin CELL 20	Patch mosaic: PISE forest, ACRU forest, CHTH forest, bay forest with PEPA, MAVI CELL 21	Patch mosaic: CHTH forest, TADI/ACRU forest, PISE forest, NYBI forest, bay for. CELL 22	Extensive CHTH forest and patch mosaic as in Cell 22 CELL 23	TADI in wet swamps, cycling ACRU forest in peatlands (hypothetical) CELL 24
	Deep histosols, peat deeper than 1 m ROW 4	Open bog with low shrubs, pitcher plants, grasses and sedges CELL 25	Canebrake or Low pocosin with ANGL, and bog herbs CELL 26	Alternating canebrake and pocosin, or medium to tall pocosin CELL 27	Tall pocosin with PISE, GOLA, ACRU; PISE forest, bay forest, CHTH patch mosaic CELL 28	Patch mosaic of types seen in Cell 22 CELL 29	Extensive CHTH forests and patch mosaic of types seen in cell 22 CELL 30	Extensive old growth CHTH forests and patch mosaic of types in cell 22 CELL 31	TADI in wet swamps, cycling ACRU forest in peatlands (hypothetical) CELL 32

ACKNOWLEDGMENTS & THANKS!

- ❖ Wendy Stanton, FWS
- ❖ Matt Howle, FWS
- ❖ Bob Mickler
- ❖ Stan Riggs

Painting Phillip Juras