



# BIRD-FRIENDLY RECOMMENDATIONS FOR BOTTOMLAND FORESTS IN THE CAROLINAS

A LOOK BACK FROM 5 YEARS DOWN THE ROAD

2016-2021

Timothy L. Evans  
Director of Land Conservation  
&  
Brandon Heitkamp  
Silver Bluff Center and Sanctuary  
Lands Manager

Forest Stewards Guild 25<sup>th</sup> Anniversary  
National Gathering  
August 19-21  
Asheville, NC



Audubon

SOUTH CAROLINA



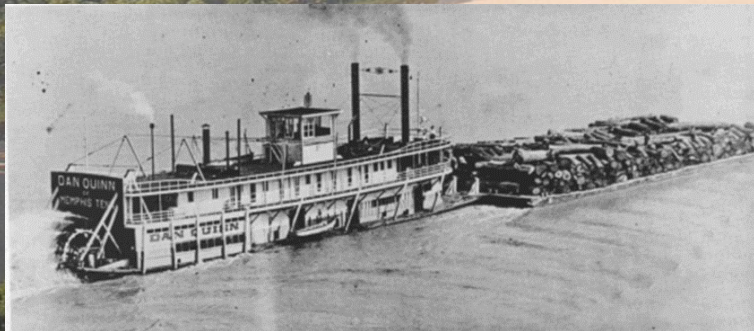


OFFICE & FACTORY, NORTH 24<sup>TH</sup> STREET.

**Anderson-Tully Co.**  
MANUFACTURERS OF  
**Fruit and Vegetable**  
**BOXES**  
BASKETS,  
PACKING BOXES,  
EGG CASES.

G. J. TULLY,  
SUPY.

 Audubon



The Post and Courier

COLLEGE FOOTBALL NATIONAL CHAMPIONSHIP  
Clemson 35 - Alabama 31

# CHAMPIONS

Clemson defeats Alabama to claim  
first national championship since 1981





18<sup>th</sup> Biennial Southern Silviculture  
Research Conference  
2016

Breeding Bird  
Field Manual



Anderson Tully Company  
*A Guide for Bottomland  
Hardwood Forest Managers*



FIRST EDITION

ANDERSON-TULLY COMPANY

IN HOUSE PUBLICATION

1994

**SILVICULTURE FOR A DECLINING SPECIES,  
CERULEAN WARBLER: 10-YEAR RESULTS OF  
A PILOT STUDY IN THE MISSISSIPPI  
ALLUVIAL VALLEY**

*Paul B. Hamel, Mike Staten, Ray Souter,  
Carl G. Smith III, and Gene Holland* ..... 122

**BIRD-FRIENDLY RECOMMENDATIONS FOR  
BOTTOMLAND FORESTS IN THE CAROLINAS:  
BIRDS AND PEOPLE ON COMMON GROUND**

*Norman Brunswig, Sharon Richardson,  
Matthew Johnson, and Brandon Heitkamp* ..... 132

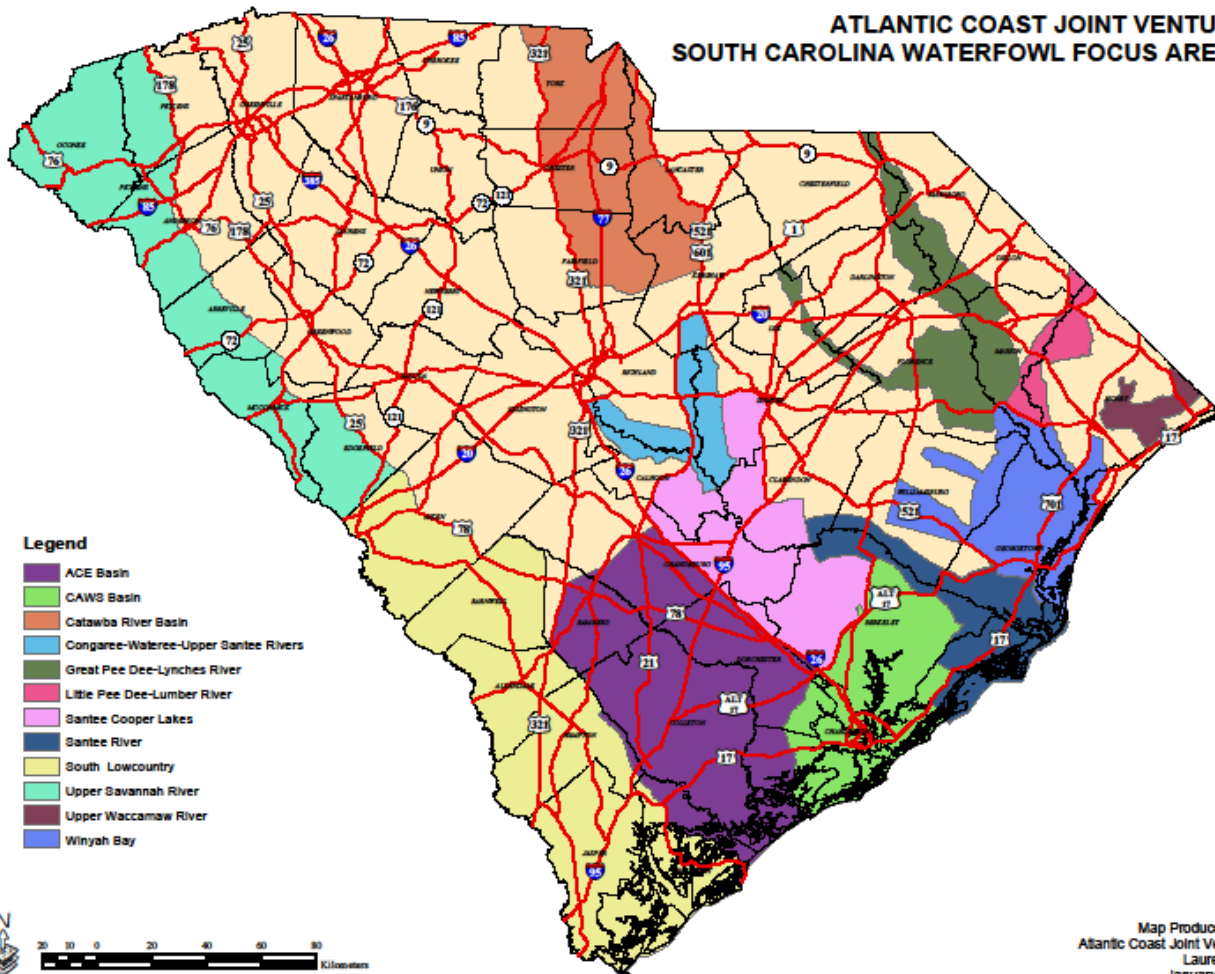


# What, When, Where, How & Why?

**A Little Background  
Information to Set the  
Stage**



# ATLANTIC COAST JOINT VENTURE SOUTH CAROLINA WATERFOWL FOCUS AREAS



Where do we work?

ACE/Santee Cooper  
Lakes Basins

South Lowcountry  
Basin

COWASEE Basin

CAWS Basin

7 County Pee Dee  
Region



# Traditional Bottomland Hardwood Forestry in South Carolina

**Traditional management of bottomland forests was to either:**

- A. Treat bottomland as sacrosanct, never to be managed.**
- B. Clearcut without regard to advanced regeneration, often for conversion to pine plantation.**





# Bird Friendly Bottomland Forestry



## Small Patch Clearcuts

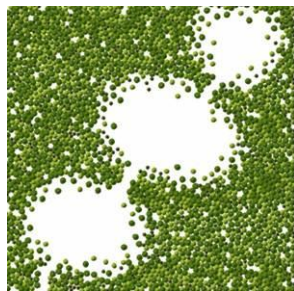
2-10 acres with <10% of the  
bottomland in regenerative state



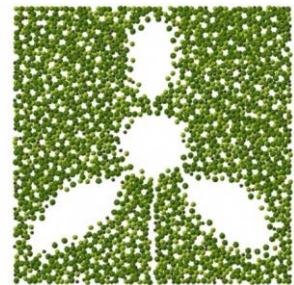


How the clearcut patches could be arranged was basically at the landowners discretion. And subject only to the constraints of their imagination

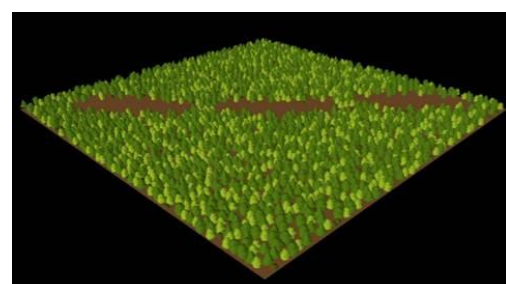
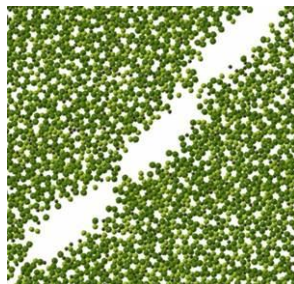
With one important caveat



**“String of Pearls”**



**“Spokes of a Wheel”**



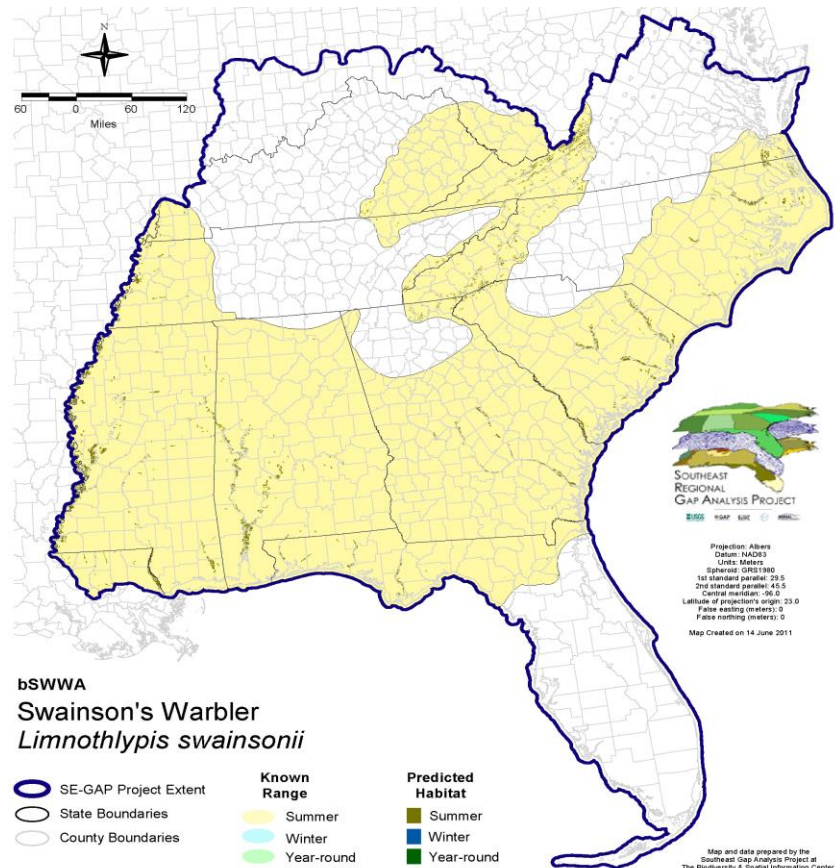
**“String of Pearls,  
Take 2”**



# Swainson's Warbler



12.2  
%



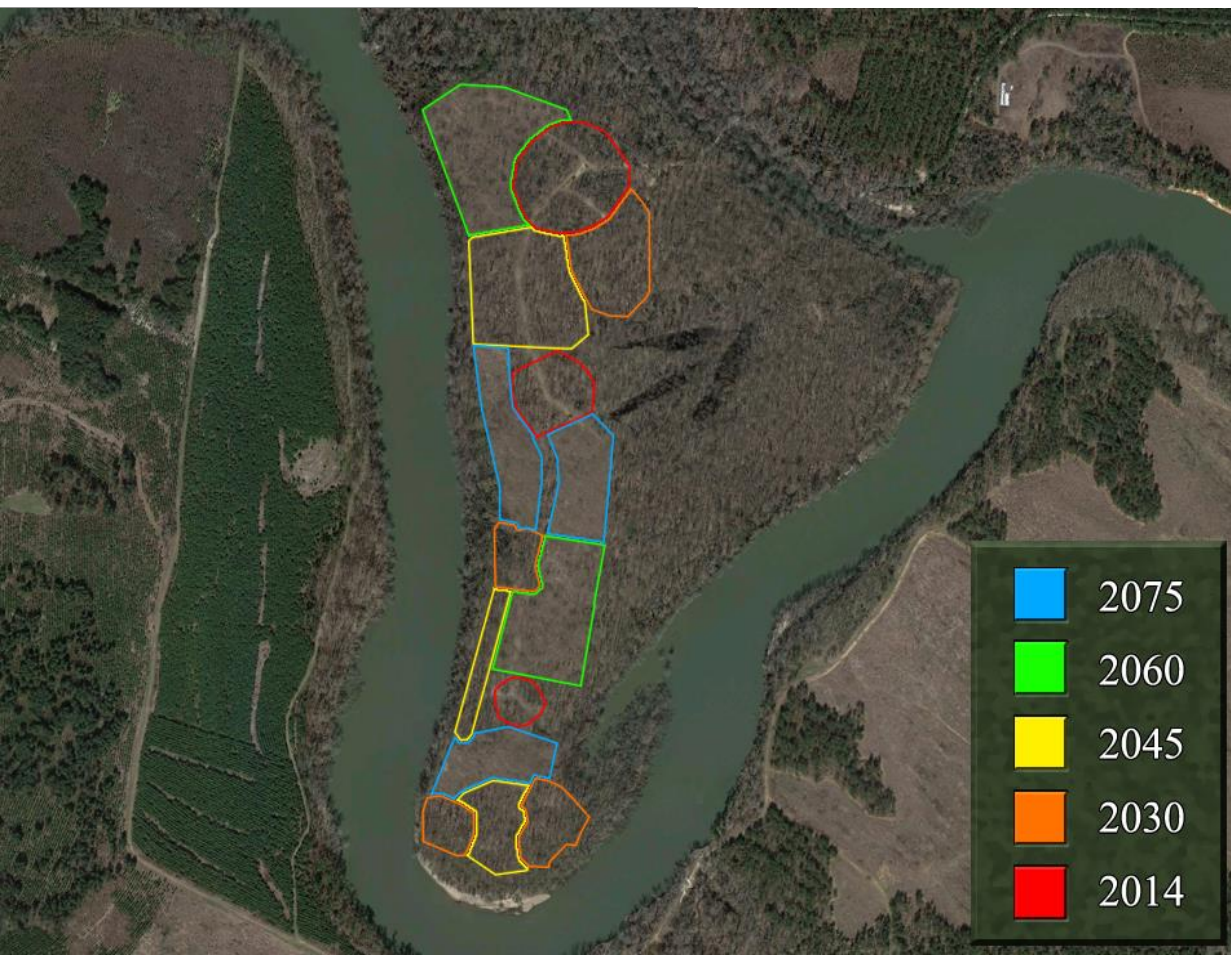
(Disclaimer: This is a migratory species in the Southeast; only breeding season data is presented here)







# Audubon Silver Bluff Center and Sanctuary Aiken Co., SC



**Planned harvests at Audubon's Silver Bluff property on the Savannah River in Aiken Co., SC**

**2014 Harvests have already closed canopy on the smallest patch and will likely need to be re-entered before 2030. On these sites, the 15 year re-entry cycle looks to be more in the 7-10 year range.**



## Lesson Learned Number 1.

Never let the stated plan interfere with doing the right thing. Initial plans were to utilize a 15 year re-entry cycle on our site. First, the 1Ac patch was completely enclosed and beginning to shade out by year 5. The 3Ac is there now. A 7-10 year re-entry is looking more feasible for all but the largest patches.



## 2014-2021 5Ac clearcut stand development





## How do we decide where to put these openings?

Indicator species like Palmetto, Switch Cane, Oaks, American Elm, Loblolly Pine and Persimmon are all indicators of higher drier conditions within otherwise wet forests. These sites are the most likely to respond favorably.

Further the presence of “flippable” leaf litter is important for foraging birds.





## Lesson Learned Number 2.

Without adequate advanced regeneration of desirable species these patch clearcuts can and likely will develop into stands of lesser economic value than the stand that was just harvested.



## Lesson Learned Number 3.

Treat invasives before harvest not after.  
Chinaberry will sprout vigorously and what  
was 100 stems can become 1000 after  
resprouting under full sunlight.



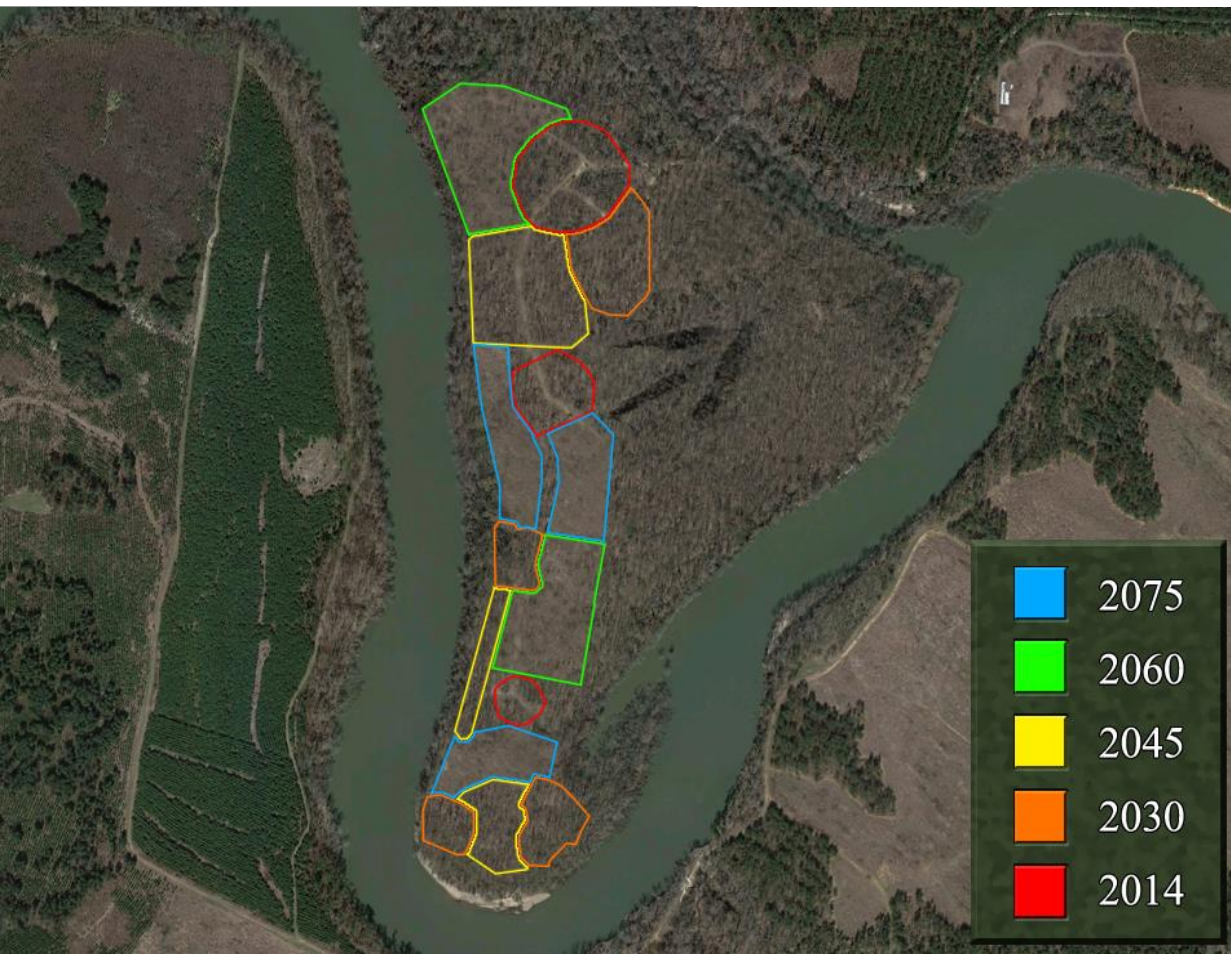
Summer 2021  
Regeneration Survey

Chinaberry was not  
treated prior to harvest.





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**Feathered edge of a small patch opening**





## Brown-headed Cowbird

Preferred habitat is  
open agriculture or  
grassland

Prolific! One female can  
lay as many as 40 eggs a season  
in the nests of other birds!



All things equal,  
thickets as far  
interior as possible



Nest parasites that grow larger  
and compete for adopted mom's resources





# Bird Friendly Bottomland Forestry

**Hardwood Thinning**  
**Thin down to 60-70% canopy Closure**

**Selection criteria should aim to improve species composition for economic and habitat values**





# Bird Friendly Bottomland Forestry

**Hardwood Thinning**  
**Thin down to 60-70% canopy Closure**

**Crown spacing is critical for stand development. Trees will rapidly expand into the new gaps**





## Lesson Learned Number 4.

Every entry into a stand should be seen as a regeneration opportunity. Pine seedlings come from cardboard boxes in the back of a truck. Hardwood seedlings come from the stand you currently have.





## Summer 2021 Regen Survey

2,980 Stems/Ac at least 3' tall and <4.5" dbh.

2,280 of Desirable Species  
(green ash, Am elm, sweetgum, sycamore).

700 Undesirable (Chinaberry, privet, boxelder).



## Lesson Learned Number 5.

It may be convenient to plan and map the placement for patch clearcuts from your desk. But, the most beneficial ones termed “Group Selections” happen organically. When the site offers a good opportunity for a group selection take advantage of it and adjust the plan.



## Epicormic Branching

Epicormic branches are surface branches that arise from adventitious buds on the bole of a tree when it is exposed to full sunlight.

While epicormic branching can degrade log quality, a conservative thinning will close canopy quickly enough to minimize this concern.

Species and location matter. Oaks and Sweetgum are especially prone to epicormics branching.





# Vertical Diversity

The extent to which plants are layered within a stand. It is determined by the arrangement of growth forms (trees, vines, shrubs, etc.), different heights of tree species, and different ages of trees of the same species. More diversity = more habitat for priority birds.





# Why Does This Matter To Audubon?

**Easy, good habitat for birds is good habitat period. And that benefits wildlife and people.**





## Working Lands

Audubon collaborates with landowners, land managers, government agencies, and private industry across the hemisphere to increase the quality of habitat on privately managed lands.





## Water

Audubon engages and involves the public on issues surrounding water rights and water quality; restores habitats along rivers, wetlands, and deltas; and explores and implements market-based solutions that contribute to the achievement of our water goals.





Audubon

SOUTH CAROLINA

Thank you!

