

Wildlife and Freshwater Fisheries Division

Presented by:
Emily Cope
Deputy Director



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Division Goal

- Monitor and Protect the wildlife and inland aquatic species and their habitats throughout the state and provide recreational hunting and fishing opportunities to the public



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WFF Deliverables (All Required)

- Conduct continuous investigations regarding the game and fish conditions of the state.
- Manage and regulate wildlife and freshwater fisheries.
- Restore and stock wildlife, and operate fish hatcheries.
- Provide public access for hunting and fishing.
- Issue permits related to Wildlife and Freshwater Fisheries.



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Potential Harm

- Populations could decline unnoticed thereby impacting or eliminating fish and wildlife populations and the associated recreation opportunities and economic benefits.
- Recreation opportunities with those fish and wildlife populations supported by these activities would be significantly diminished which would have dramatic impacts not only to the resource but also to the economy of the state. Restoration of at-risk species would be significantly diminished leading to reduction of or loss of recreational opportunities and increased federal restrictions on the state.
- Exploitation could exceed the ability of populations to persist and recreational opportunities to enjoy fish and wildlife resources could be excessively restricted. Either outcome would adversely impact recreational opportunities, quality of life and rural economies. Lack of proper management would reduce habitat quality and also therefore impact populations, lack of road maintenance would reduce ability to manage and public accessibility.



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Potential Harm (cont.)

- Loss of areas available for the general public to engage in hunting and fishing activities, a loss of recreation opportunities, reduction in quality of life and negative economic impacts, especially to rural economies.
- A loss of opportunity for recreation and scientific research. Potential increase in human/wildlife conflict. A loss of oversight and control which ensures that business practices pose a minimal threat to the natural resources and public waters. Unregulated practices could result in escape and introduction of species that could threaten native communities and public safety.



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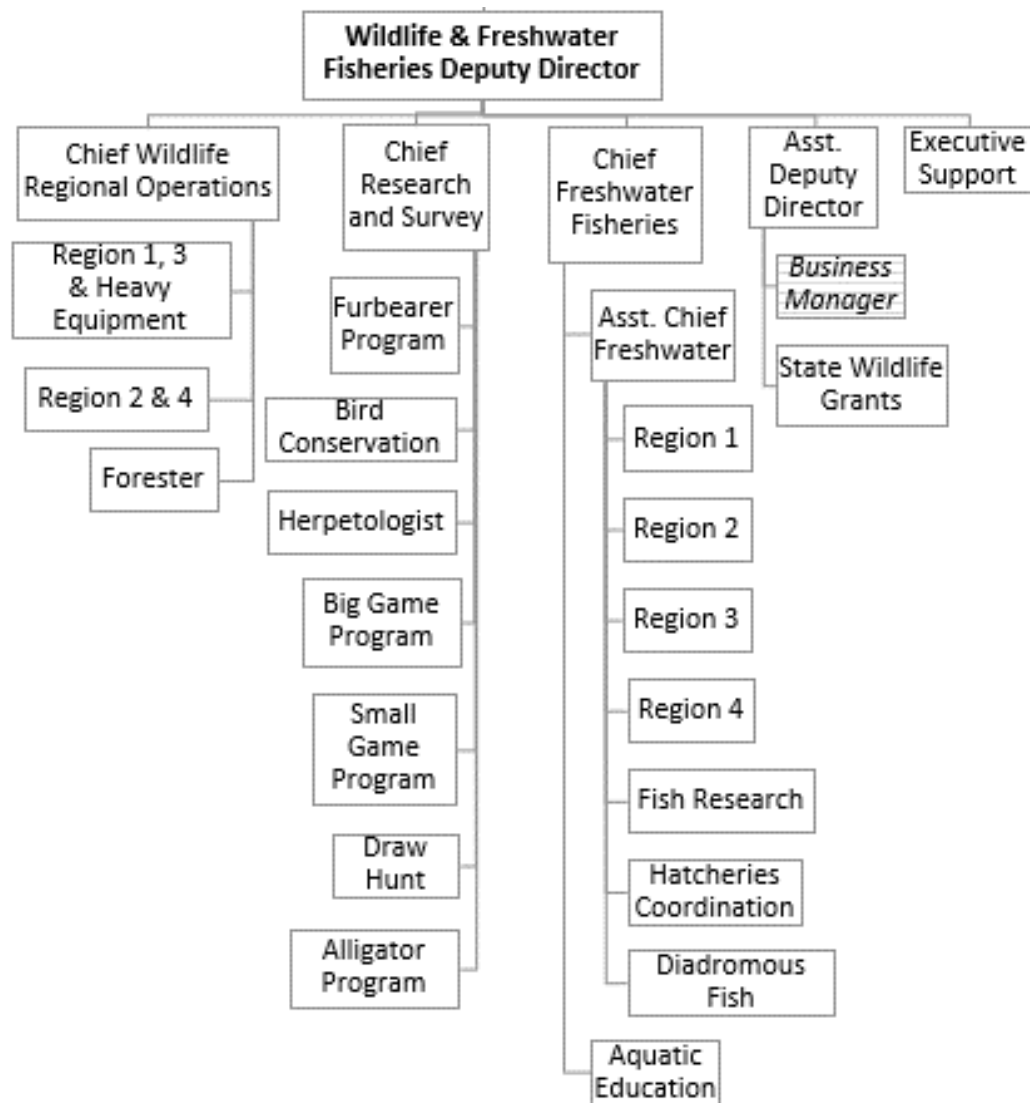
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Wildlife and Freshwater Fisheries Details

<u>Details:</u>	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>
What is the turnover rate?	6.19%	9.43%	10.95%
Is employee satisfaction evaluated?	No	No	No
Is anonymous employee feedback allowed?	No	No	No
Do any positions require a certification (e.g., teaching, medical, accounting, etc.)	Yes	Yes	Yes
Did the agency pay for, or provide classes/instruction needed to maintain all, some, or none of required certifications?	All	All	All



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Strategy 4.1 - Conserve freshwater fish and wildlife species in SC.	<u>2016-17</u>		<u>2017-18</u>	
	FTE equivalent s utilized	Total spent	FTE equivalents utilized	Total budgeted
<ul style="list-style-type: none"> Objective 4.1.1 - Conduct research and monitoring activities of wildlife and freshwater fish. <ul style="list-style-type: none"> Partner(s), by segment: Federal and state government; and higher education institutions 	35.49 FTE 11.78 TG	\$4,605,850 (4.16%)	35.99 FTE 12.78 TG	\$5,354,473 (4.84%)
<ul style="list-style-type: none"> Objective 4.1.2 - Provide and enhance habitats for wildlife and freshwater fish. <ul style="list-style-type: none"> Partner(s), by segment: Federal government 	57.77 FTE 7.49 TG	\$13,135,565 (11.88%)	57.77 FTE 8.49 TG	\$14,965,499 (13.53%)
<ul style="list-style-type: none"> Objective 4.1.3 - Protect and manage at risk, threatened and endangered species. <ul style="list-style-type: none"> Partner(s), by segment: Federal government 	7.22 FTE 5.83 TG	\$1,092,487 (0.99%)	7.22 FTE 5.16 TG	\$1,275,072 (1.15%)
<ul style="list-style-type: none"> Objective 4.1.4 - Provide technical assistance and educational workshops to private landowners. <ul style="list-style-type: none"> Partner(s), by segment: State government 	18.99 FTE 2.40 TG	\$2,016,907 (1.82%)	18.99 FTE 5.17 TG	\$3,457,530 (3.13%)



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Strategy 4.2 - Produce freshwater fish and stock in public waters.	<u>2016-17</u>		<u>2017-18</u>	
	FTE equivalents utilized	Total spent	FTE equivalents utilized	Total budgeted
<ul style="list-style-type: none"> ○ Objective 4.2.1 - Operate, restore and upgrade freshwater fish hatchery production facilities. <ul style="list-style-type: none"> ▪ Partner(s), by segment: Federal and state government; and private businesses 	11.87 FTE 1.00 TG	\$1,426,837 (1.29%)	12.37 FTE 1.00 TG	\$2,749,328 (2.49%)
<ul style="list-style-type: none"> ○ Objective 4.2.2 - Produce adequate species and amounts to meet standard stocking needs. <ul style="list-style-type: none"> ▪ Partner(s), by segment: Federal and state government; and private businesses 	11.87 FTE 1.00 TG	\$1,462,291 (1.32%)	12.37 FTE 1.00 TG	\$1,614,398 (1.46%)



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Strategy 4.3 - Administration of hunting and freshwater fishing opportunities.	<u>2016-17</u>		<u>2017-18</u>	
	FTE equivalents utilized	Total spent	FTE equivalents utilized	Total budgeted
<ul style="list-style-type: none"> Objective 4.3.1 - Provide hunting opportunities to the public through the Wildlife Management Area Program. <ul style="list-style-type: none"> Partner(s), by segment: Federal and state government; private businesses; and individuals 	27.39 FTE 4.30 TG	\$9,904,982 (8.96%)	27.39 FTE 4.40 TG	\$8,211,119 (7.42%)
<ul style="list-style-type: none"> Objective 4.3.2 - Provide freshwater fishing opportunities on public water bodies and through the State Lakes Program <ul style="list-style-type: none"> Partner(s), by segment: Federal, state, and local government; private businesses; and individuals 	8.95 FTE	\$962,578 (0.87%)	8.95 FTE	\$820,698 (0.74%)
<ul style="list-style-type: none"> Objective 4.3.3 - Provide wildlife harvest and associated hunting opportunities on public and private lands through permits, tags and public lottery hunts. <ul style="list-style-type: none"> Partner(s), by segment: Federal and state government; and private businesses 	2.80 FTE	\$322,005 (0.29%)	3.30 FTE	\$438,690 (0.40%)
<ul style="list-style-type: none"> Objective 4.3.4 - Provide recruitment and retention activities for hunting and freshwater fishing. <ul style="list-style-type: none"> Partner(s), by segment: State government; and K-12 education institutions 	3.65 FTE 0.20 TG	\$418,644 (0.38%)	3.65 FTE	\$453,345 (0.41%)



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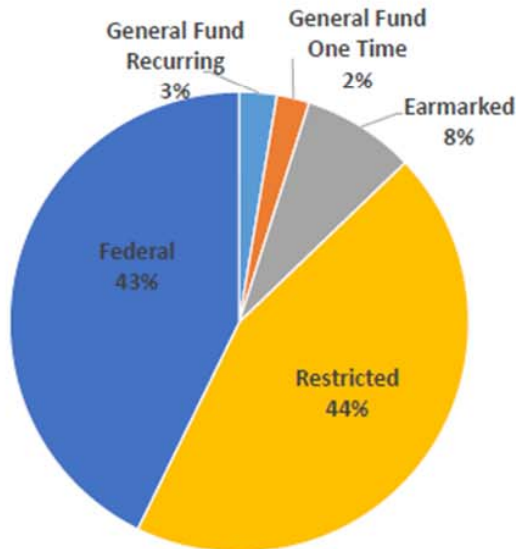
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WFF Budget and Staffing

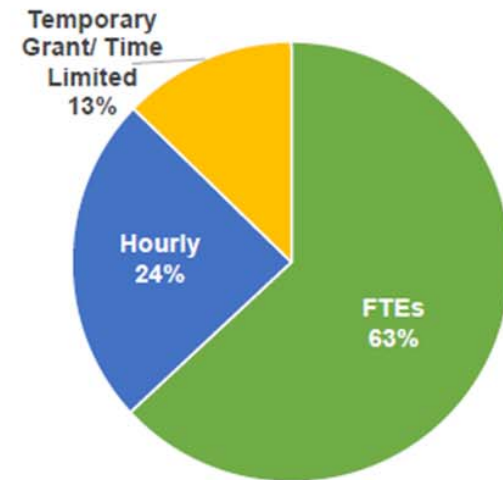
Expenses	Amount
General Fund Recurring	\$681,599
General Fund One Time	595,718
Earmarked	\$2,042,434
Restricted	\$11,491,461
Federal	\$11,043,762
Total Expenses	\$25,854,974

WFF spent \$9,493,172 in capital projects in addition to the annual expenditures.



Employees	
FTEs	186
Temporary Grant/Time Limited	38
Hourly	72
Total	296

WFF averages approximately 50 hourlies at any given time. This number varies slightly throughout the year based on seasonal employment needs.



Regional Fisheries Activities



Survey and Inventory: Backpack Electrofishing



Gillnetting and Trap Netting



Survey and Inventory: Age & Growth Studies



Survey and Inventory

Age & Growth Studies: Otoliths



Survey and Inventory Mark/Recapture



Mark/Recapture Studies: Coded Wire and PIT Tags





Mark/Recapture Studies: Transmitters



Survey and Inventory

Mark/Recapture Studies: Acoustic Tracking



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Survey and Inventory

Diet Studies



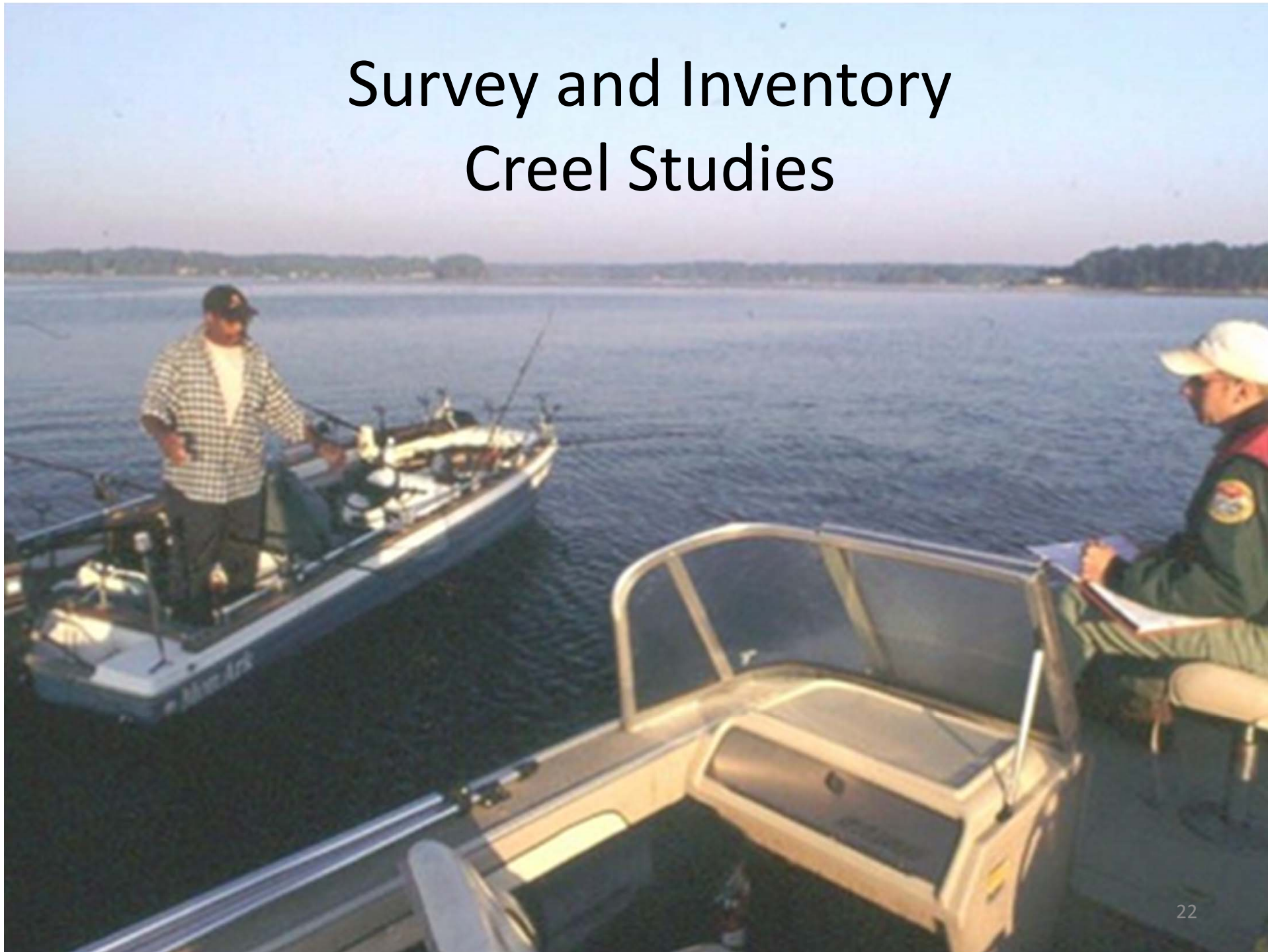
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Survey and Inventory Creel Studies



Technical Guidance: Fish Kill Investigations



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Technical Guidance Pond Consultations



Habitat Improvement Fish Attractors



Habitat Improvement In-Stream Restoration



Habitat Improvement In-Lake Habitat



Habitat Improvement Shoreline Stabilization



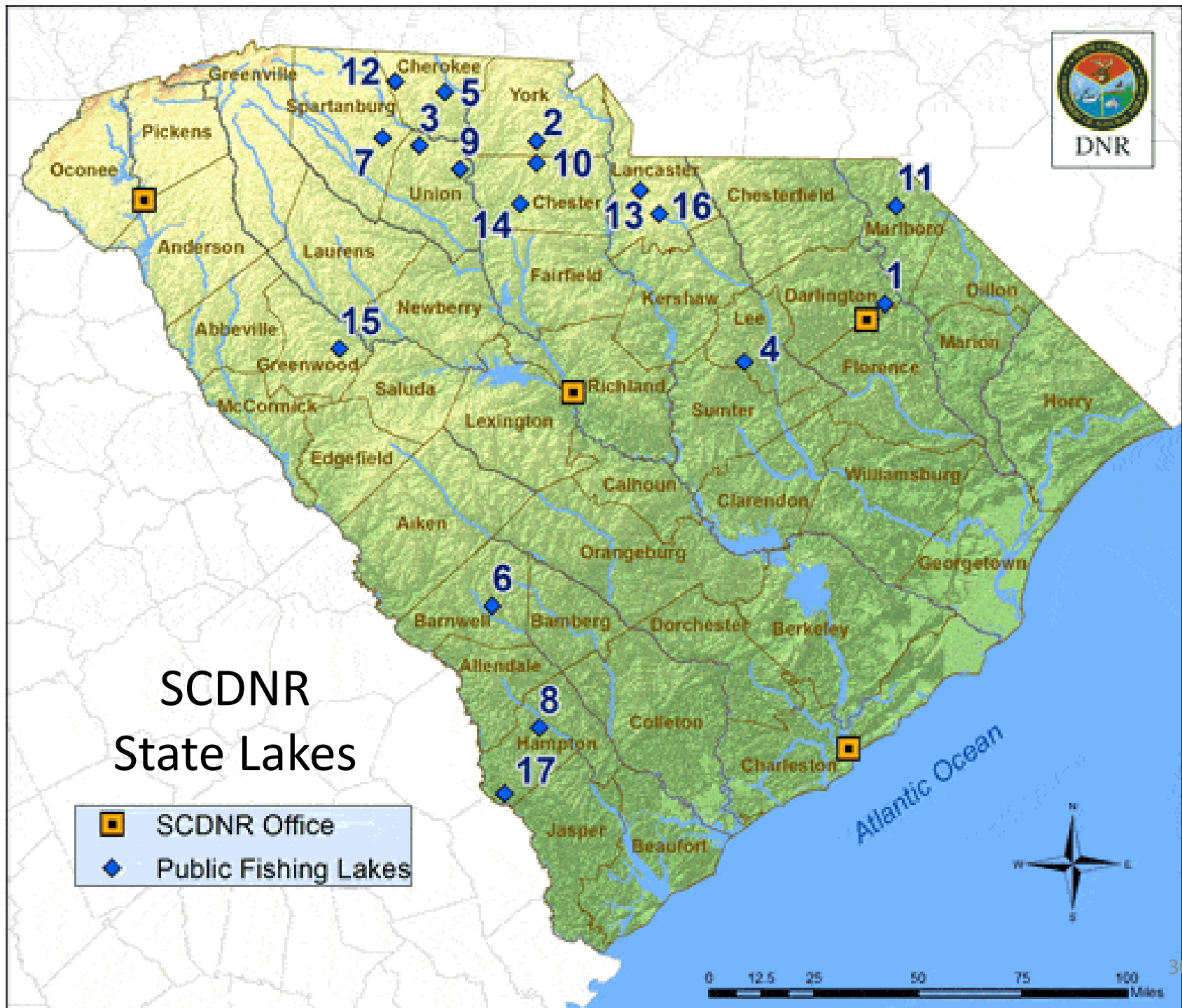
Provide Angling Opportunities



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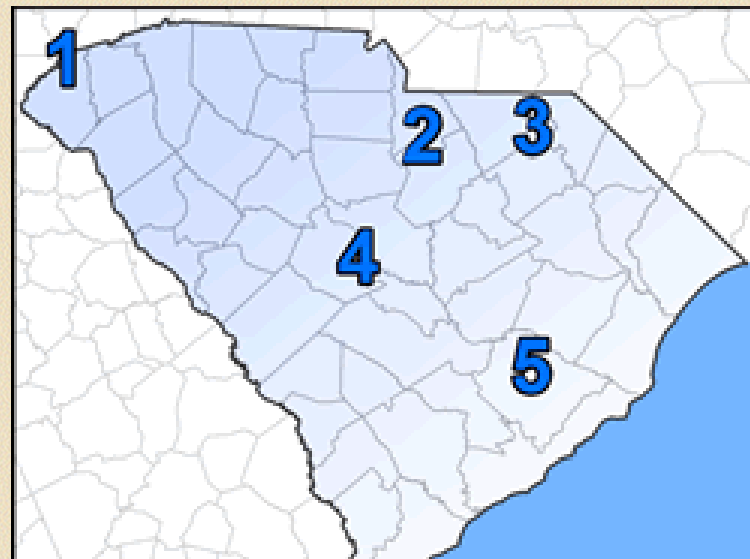
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Hatcheries

1. **Walhalla State Fish Hatchery**
Coldwater Trout Facility
2. **Spring Stevens State Fish Hatchery**
7 Production Ponds
3. **Cheraw State Fish Hatchery**
31 Production Ponds
4. **Cohen Campbell Fisheries Center**
14 Production Ponds
5. **Dennis Wildlife Center**
55 Production ponds
Bayless Hatchery
Hatching/Spawning Facility
Open Seasonally
- (*) **Barnwell State Fish Hatchery**
10 (Potential) Production Ponds



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Freshwater Hatchery Facts

- Average about 9-11 million fish per year (25 year avg)
- Public waters stocked statewide
- Average over 1,400 stocking trips per year
- Routinely produce 14 species each year

- Largemouth Bass, Smallmouth Bass
- Striped Bass, Striped Bass Hybrids
- Brook Trout, Rainbow Trout, Brown Trout
- Bluegill, Red-ear Sunfish, & Redbreast
- American Shad
- Channel Catfish
- Robust Redhorse
- Threadfin Shad



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Triploid Grass Carp Certification



Freshwater Mussel Culture

- Setting up heelsplitter culture systems now
- Goals of Program
 - Temporary mussel refuge
 - Stocking infested fish
 - Mussel reproduction, growout, marking and stocking



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Aquatic Education

- Fishing Tackle Loaner Program
- Fishing Rodeos
- Trout in the Classroom
- Youth Bass Fishing Clubs
- Family Fishing Clinics
- Certified DNR Fishing Instructor Program



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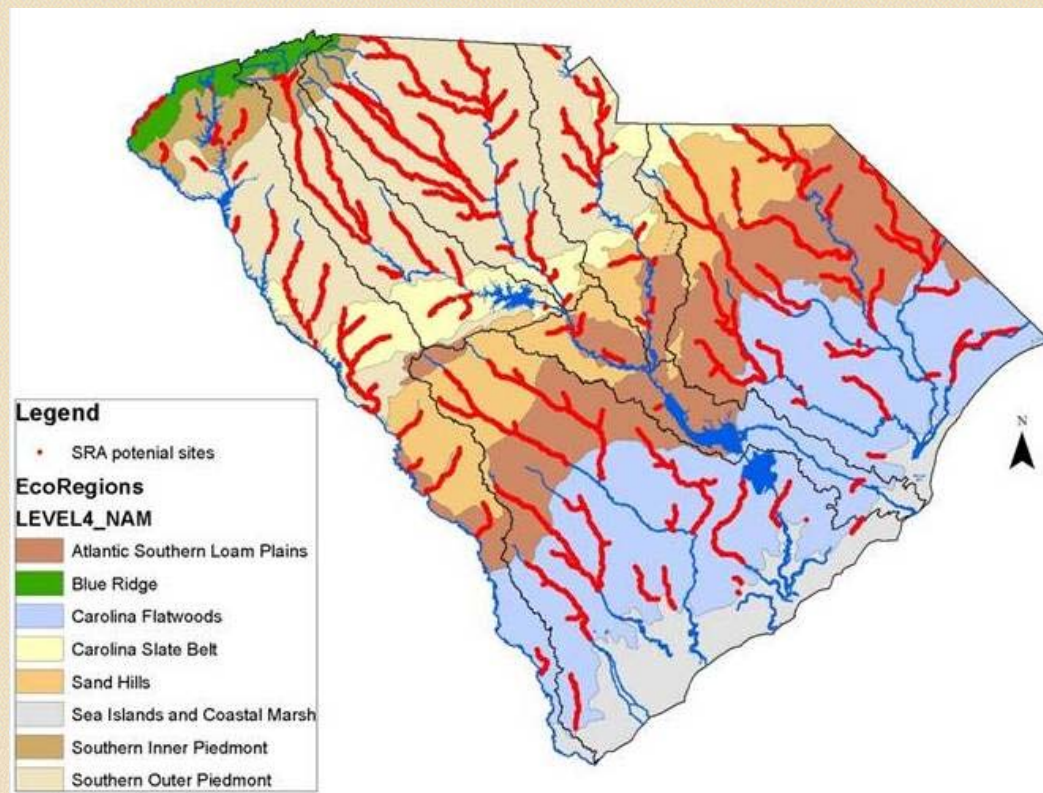
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Statewide Research

- Investigate aquatic fish and invertebrates
- Develop new technologies
- Collaborate with other agencies and universities
- Provide technical assistance to Regions



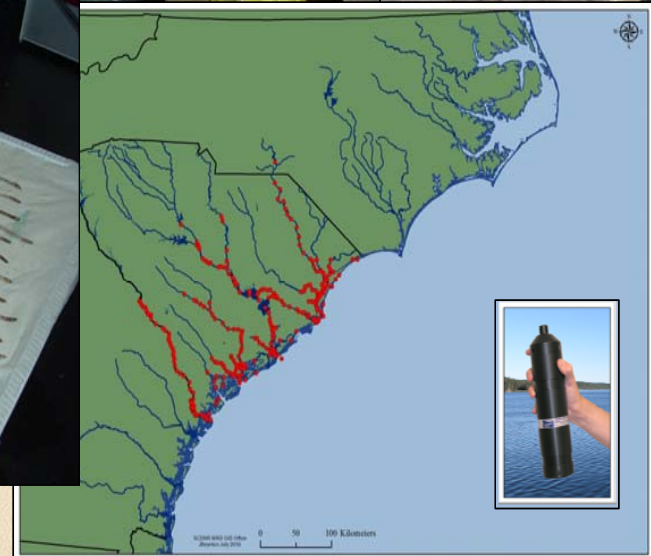
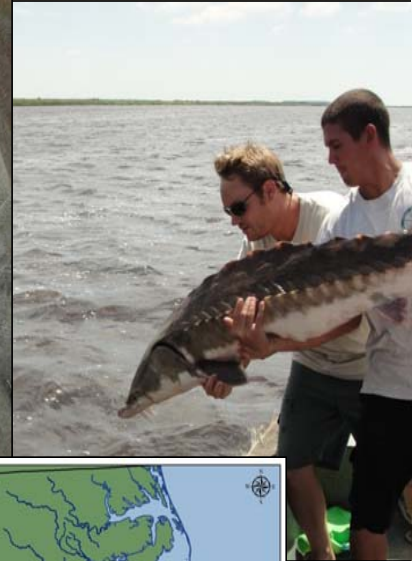
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Diadromous Program

- Manage shad, herring, eel and sturgeon
- Work closely with ASMFC, NMFS, USACE
- Collect essential life history and behavioral data on all diadromous species



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Wildlife Section Activities



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Wildlife Restoration Activities



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SCDNR WMA Program

- Approximately 1 M Acres
 - 275,000 ac. owned
 - 750,000 ac. leased
- Hunting Programs – user fee based
- Game and non-game management
- Protection of rare habitats and elements (incl. archeological/cultural sites)
- Over 3000 acres of agriculture
- Thousands of miles of roads, dikes and trails.
- Hundreds of structures, including water control structures and historically-significant dwellings



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Jocassee Gorges



Botany Bay Plantation

FY 2017:

- 43,728 Visitors
- 12,101 Vehicles

2017 Season

- 44 public dove fields (27 counties)
- 1,666 acres total
- 3,233 hunters on monitored fields (31/44)
- 11,528 doves harvested opening day

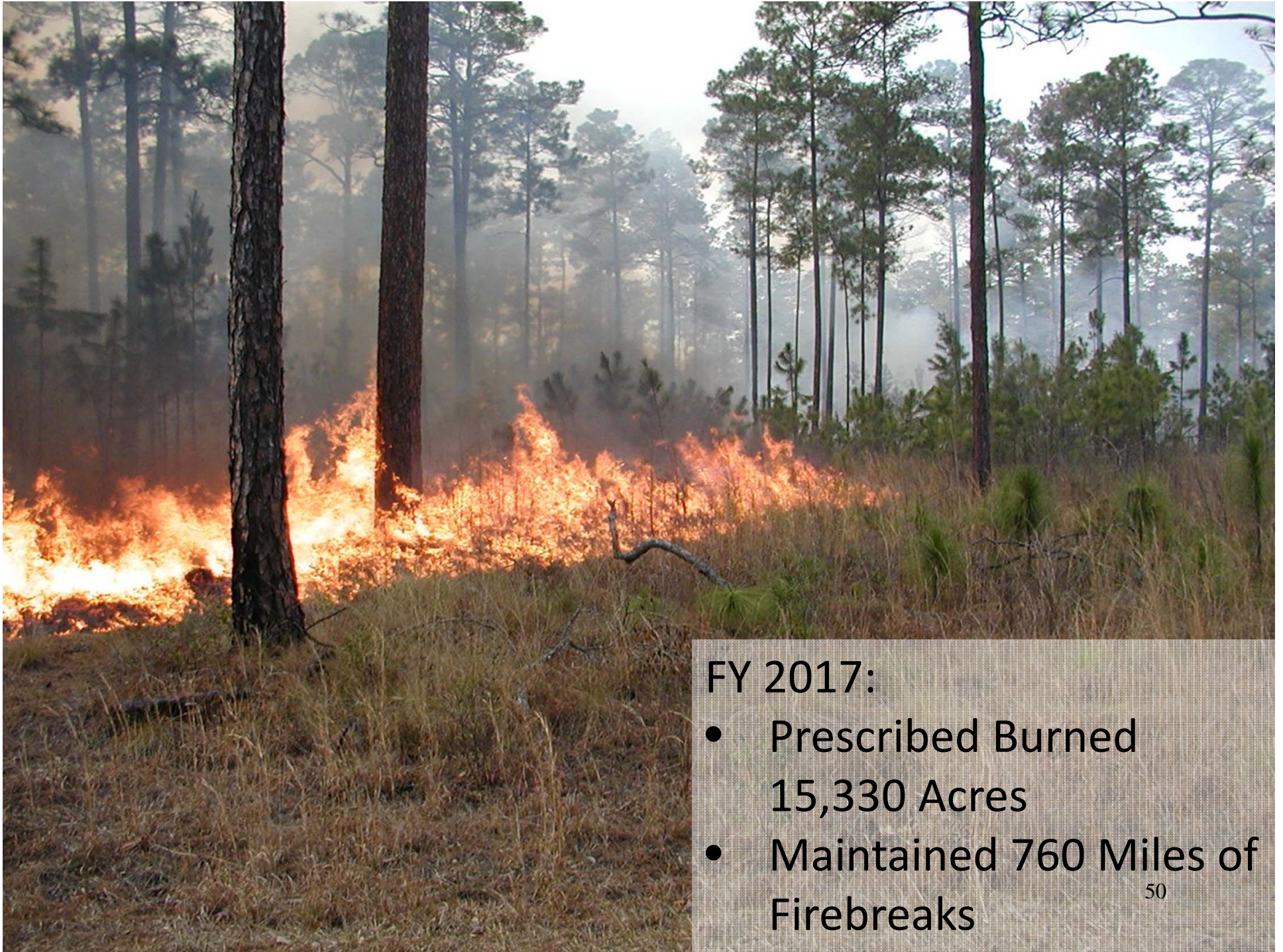




In FY 2017:

- **Planted 2,356 acres of annuals and 25 acres of perennials**
- **Mowed and disked over 11,311 acres**





FY 2017:

- Prescribed Burned
15,330 Acres
- Maintained 760 Miles of
Firebreaks

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FY 2017:

- Mowed 768 miles of roads
- Graded 627 miles of roads
- Re-topped 54 miles with gravel
- Maintained 513 miles of trails







Performance Measures

<p>At-risk, threatened and endangered species protected, monitored and managed following state and/or federal law</p> <p><u>Assoc. Objective:</u> 4.1.3 <u>Required by:</u> Federal and state government <u>Best in the Country:</u> Unknown</p>	Outcome	<p><u>Target:</u> 122 species protected <u>Actual:</u> 122 species protected</p>	<p><u>Target:</u> 122 species protected</p>
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SWAP Species of Greatest Conservation Need

SOUTH CAROLINA

- **Nationally**, over 12,000 species of greatest conservation need (SGCN) appear in states' SWAPs!
- **South Carolina** has 494 animals and 332 plants for a total of 826 species.
- Since the program began, **South Carolina** has had 79 SWG projects. We have been involved in 6 C-SWG grants.

SC's SWAP and Supplemental Volume:
<http://www.dnr.sc.gov/swap/index.html>

Taxa	No. of Species
Mammals (Terrestrial and Marine)	32
Birds	162
Reptiles and Amphibians	53
Freshwater Fish	57
Diadromous Fish	6
Crayfish (Freshwater and Terrestrial)	24
Freshwater Shrimp	1
Freshwater Mussels	28
Freshwater Snails	3
Leeches	4
Marine Fish	37
Marine Invertebrates	55
Insects	32
Plants (<i>not eligible for funding under SWG</i>)	332
Total Number of Animal Species	494
Grand Total of All Species (including plants)	826



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By the Numbers...

- Number of petitioned and candidate species: **>450**
- Number of species considered “ESA successes” (as of Sept. 2017): **122**
 - 107: 29 not-substantial 90-day findings, 34 not-warranted findings, 45 withdrawals
 - 15: 5 delisted, 4 down-listed and 6 listed as threatened or proposed with 4d rule
- Number of species still on the USFWS radar found in South Carolina: **59**

Spotted turtle



*Current federally listed species in SC:
25 endangered, 13 threatened, 51 at-risk*



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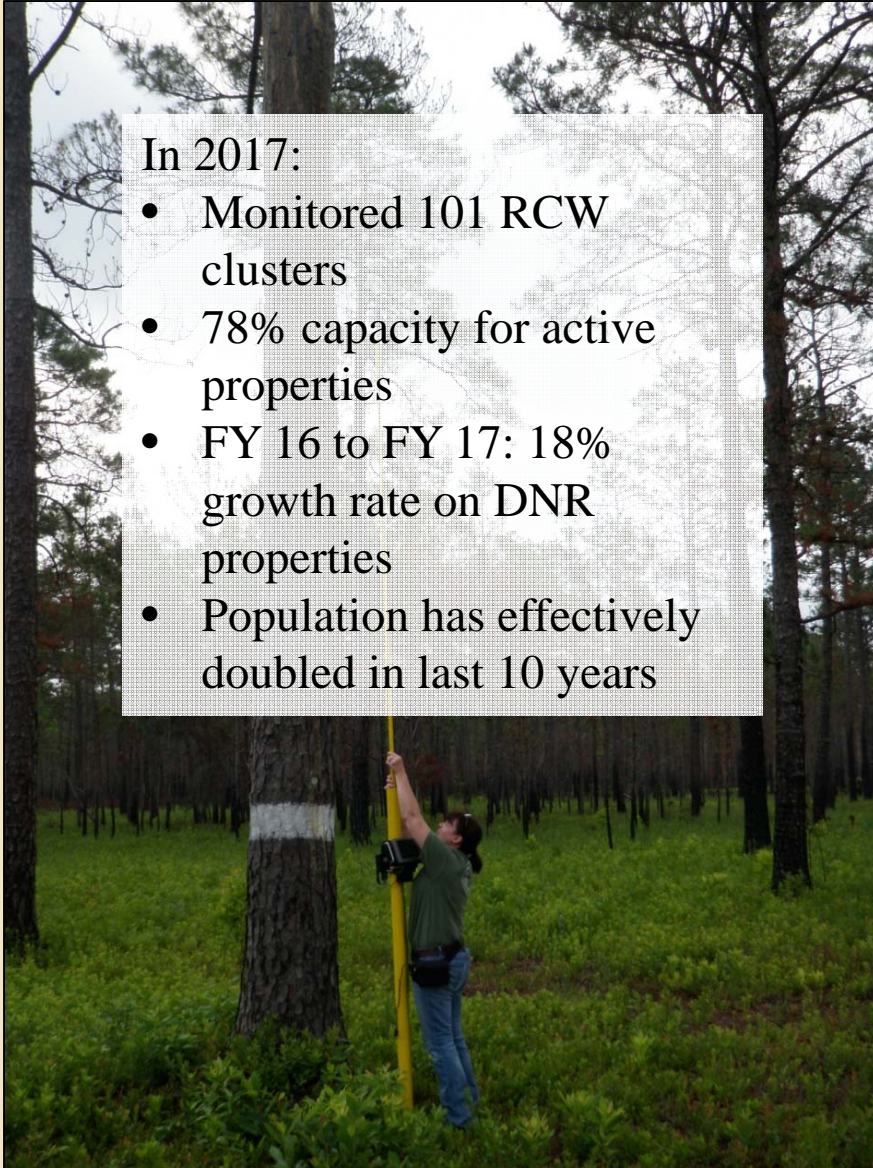
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Research, Inventory and Monitoring

In 2017:

- Monitored 101 RCW clusters
- 78% capacity for active properties
- FY 16 to FY 17: 18% growth rate on DNR properties
- Population has effectively doubled in last 10 years



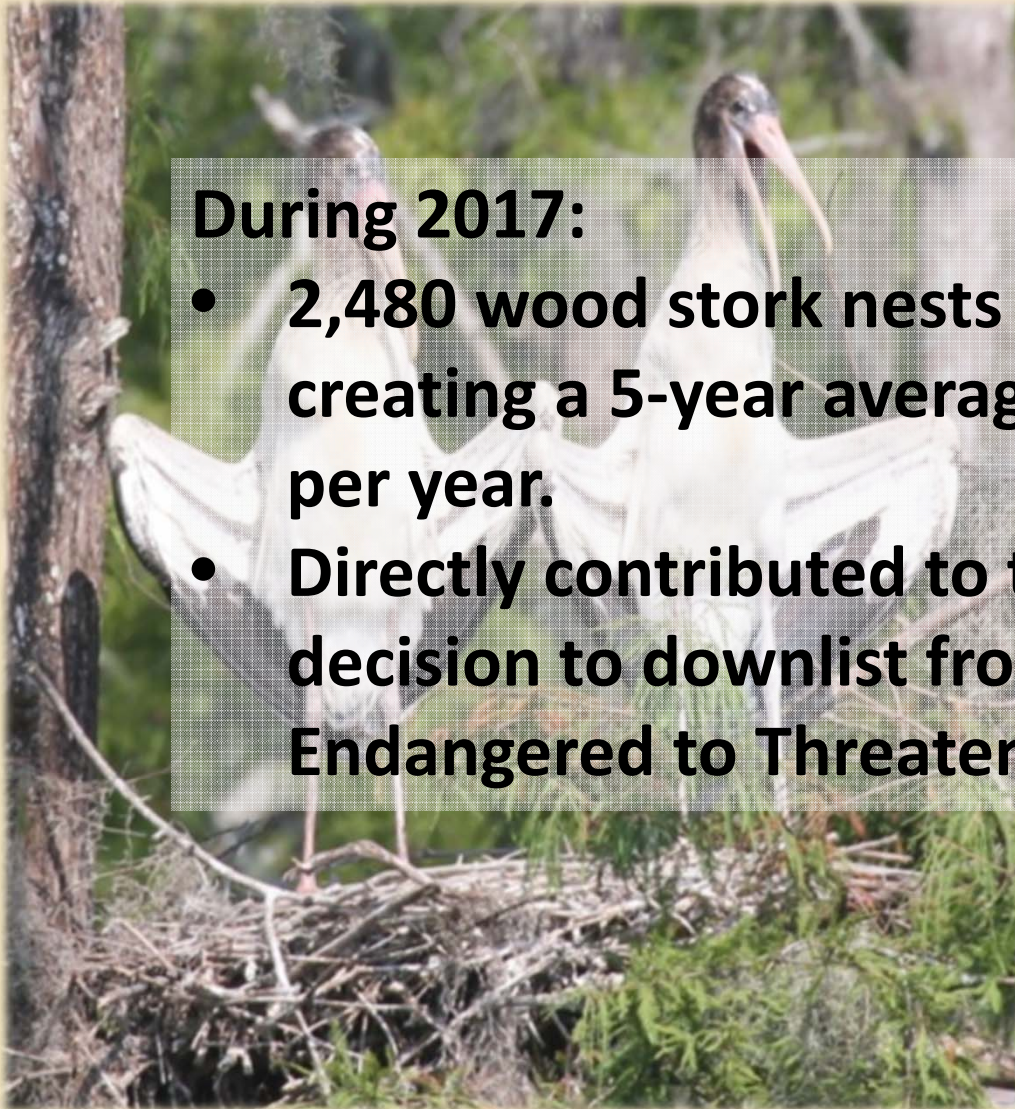
Nesting success and migration patterns
of Wilson's plover from coastal SC –
SCDNR and Trent University



Survival and movement of wood stork nestlings from SC

During 2017:

- **2,480 wood stork nests were counted creating a 5-year average of 2,496 nests per year.**
- **Directly contributed to the USFWS decision to downlist from Federally Endangered to Threatened in 2013**



Herpetology





Development of a comprehensive management program for American Alligators - SCDNR and Clemson University

Movement and survival of
black bears in the Coastal
Plain of SC

Population estimation of
black bears in SC





Effects of supplemental feeding on movements of Eastern Wild Turkey Gobblers-SCDNR and LSU

Nesting phenology and gobbling chronology of Eastern Wild Turkeys – SCDNR and LSU

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Wildlife Monitoring

- Banding programs for mourning doves, waterfowl, migrant songbirds, shorebirds and waterbirds
- Red-cockaded woodpecker nest monitoring
- Breeding bird surveys-game and non-game
- Mid-winter waterfowl and bald eagle surveys
- Brood surveys for quail and turkey
- Biennial fox squirrel sighting survey
- Harvest surveys for game species



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SCDNR Lottery Hunt Program

- All hunts are on a preference point system
- Must build points to be selected
- If you fail to apply, points will remain the same
- Nonrefundable application fee
- Opportunities include: Deer, Quail, Turkey, and Waterfowl
- Total number (for past year) = 471 hunts accommodating 2876 hunters



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SCDNR Lottery Hunt Program

ALLIGATOR ALONE GENERATED 5704 APPLICANTS – 1000 TAGS AWARDED

BREAKDOWN OF HUNTS:

MULTI-SITE – 1547 APPLIED, 1154 SUCCESSFUL, 41 HUNTS

- WEBB STILL GUN – 1307 APPLIED, 288 SUCCESSFUL, 12 HUNTS
- WEBB ARCHERY – 158 APPLIED, 20 SUCCESSFUL, 1 HUNT
- TURKEY – 719 APPLIED, 105 SUCCESSFUL, 25 HUNTS
- YOUTH ONLY TURKEY – 314 APPLIED, 127 SUCCESSFUL, 29 HUNTS
- WATERFOWL – 4026 APPLIED, 906 SUCCESSFUL, 87 HUNTS
- YOUTH ONLY WATERFOWL – 630 APPLIED, 276 SUCCESSFUL, 33 HUNTS

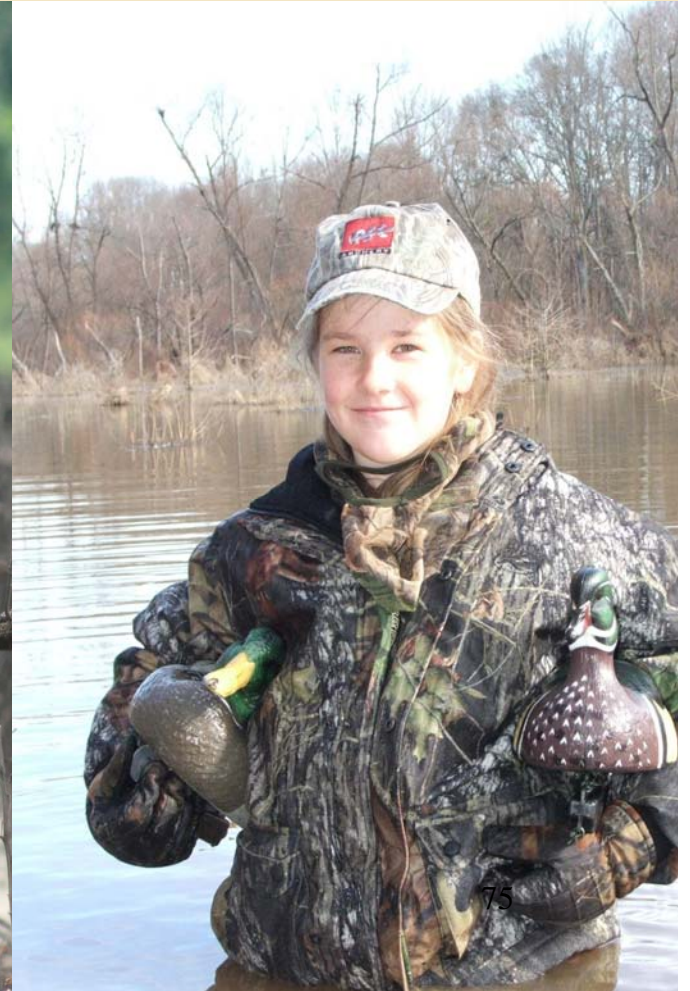


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Youth Hunts for: Deer, Doves, Waterfowl, Raccoon, Turkey



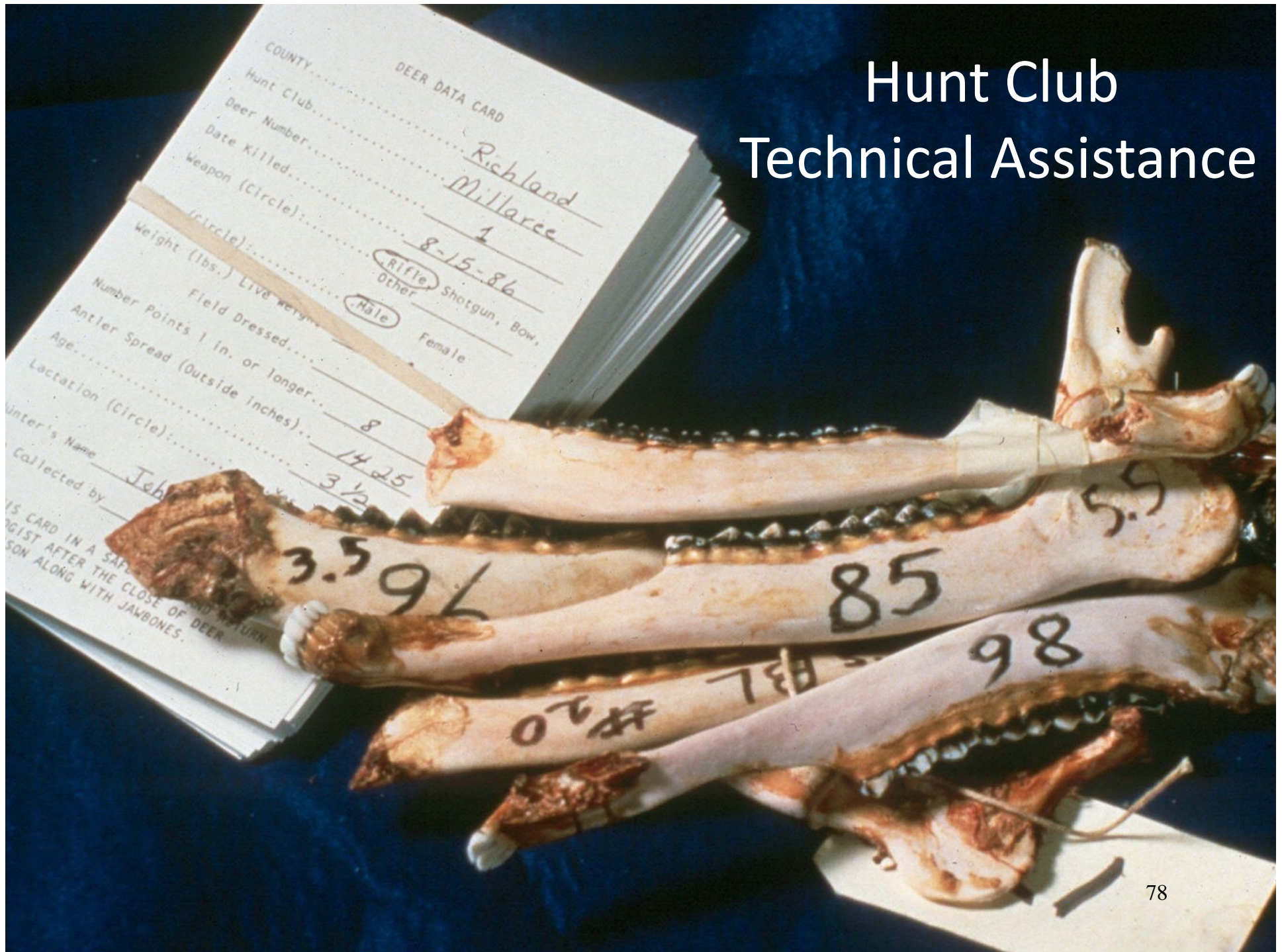
Mobility-Impaired Sportsmen and Wounded Warrior Hunts



Landowner Workshops



Hunt Club Technical Assistance





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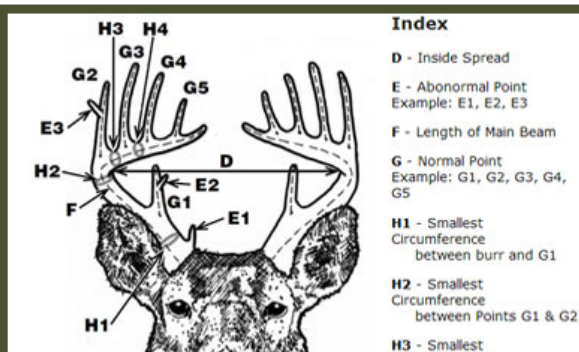
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[Public Lands](#)

[Online Data](#)

[Recreation](#)

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Each year during March, DNR [measures deer antlers](#) around the state.

Play < 1 2 3 4 5 >

Attention Turkey Hunters

If you have not received your tags the SCDNR - Columbia Office at 1000 Assembly Street, Columbia, SC 29201 and the Charleston Office at 217 Ft. Johnson Road, Charleston, SC 29412 will be open Saturday, March 14, 2015 from 9:00 AM - 1:00 PM to distribute Turkey Tags **Only**.

News


- [March Madness is underway for weather observation](#)
- [Spring turkey season forecast fair, youth day March 28](#)
- [Boardwalk at Dungannon Plantation Heritage Preserve closed to protect nesting wood storks](#)
- [DNR gives Upstate fish attractors a 'structure' makeover to enhance fishing experience](#)
- [Antler measuring sessions set across South Carolina](#)

[Additional News](#)



Challenges

JAMES ROSS WILDLIFE RESERVATION
ESTABLISHED IN 1995
AS A WILDLIFE PRESERVE



**A GENEROUS GIFT OF 305 ACRES DONATED TO
THE SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
BY MS. KITTY W. SANDIFER**









Internal Change #1: Increase starting salaries of technicians

WFF Division is working with HR and the Director to increase starting salaries of technicians. We have made great progress under Director Taylor's tenure with providing a pay plan and incentives which encourage employee retention; however our starting salaries are not competitive with other states and the private sector. In order to truly recruit well-qualified candidates, we must work toward increasing these starting salaries. We currently have many candidates turn down job offers with us stating that they simply cannot accept our starting salary.

- a. Stage of analysis: New starting salaries and necessary adjustments have been proposed to the Director and the Office of Human Resources for review and approval. Budget analysis has also been conducted to ensure such costs can be incurred and sustained.
- b. Presented and Approved by Board/Commission: No.
- c. Performance measures impacted and predicted impact: Improved recruiting of qualified staff and reduced turnover rates within these classifications.
- d. Costs of the Objective(s) that will be impacted and the anticipated impact: The total estimated budget impact (across all funding sources) is approximately \$532,000 which is comprised of \$380,000 of direct salary adjustments and \$152,000 of fringe expenses. This is subject to change based on the final approved salary adjustments (as part of preventing salary inversion and compression) for existing technicians.
- e. Anticipated implementation date: TBD.



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Internal Change #2: Full review of all internal forms

Conducting a full review of all internal forms to determine which ones are obsolete and which ones can be updated or combined. Some work has been done on this by the business managers as part of consolidating phone, procurement card, gas card, and email account set-up requests; however, there are still many opportunities to simplify and consolidate. Another key update is to ensure that the forms are requesting relevant information. For example, the titles of certain fields on the forms have changed since the implementation of SCEIS.

- a. Stage of analysis: Idea which has yet to be assigned and implemented.
- b. Presented and Approved by Board/Commission: N/A.
- c. Performance measures impacted and predicted impact: Provide for more efficient and simplified operations.
- d. Costs of the Objective(s) that will be impacted and the anticipated impact: N/A.
- e. Anticipated implementation date: Ongoing.



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Questions.....



I finally remembered—red with hunter, white with fisherman.