

Rebalancing Shoreline Uses on Lake Murray: The DNR Perspective

South Carolina Department of
Natural Resources



Lake Issues Related to Shoreline Classification

- Wildlife and Fisheries
- Habitat Protection
- Water Quality
- Recreation
- Aesthetics



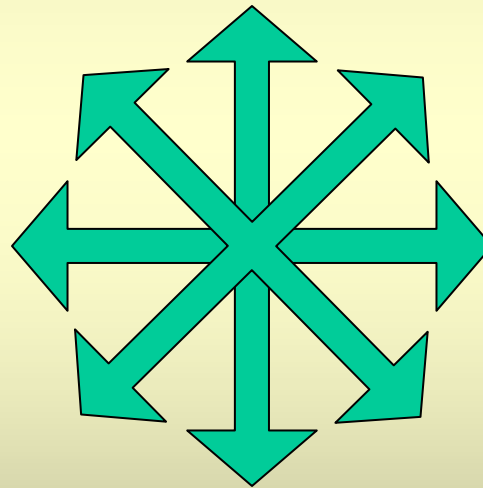
What constitutes a “good” lake shore?

Ecology

- Diverse flora and fauna
- Good breeding, foraging and nursery habitat
 - Refuge for wildlife
- Rare, T & E species (sometimes)

Values

- Hunting and fishing
- Aesthetics



Functions

- Filtration
- Flood attenuation

Water Quality

- Pollution free
- Appropriate temperature
- Adequate DO levels
- No pesticides, herbicides, oil, etc...

Morphology

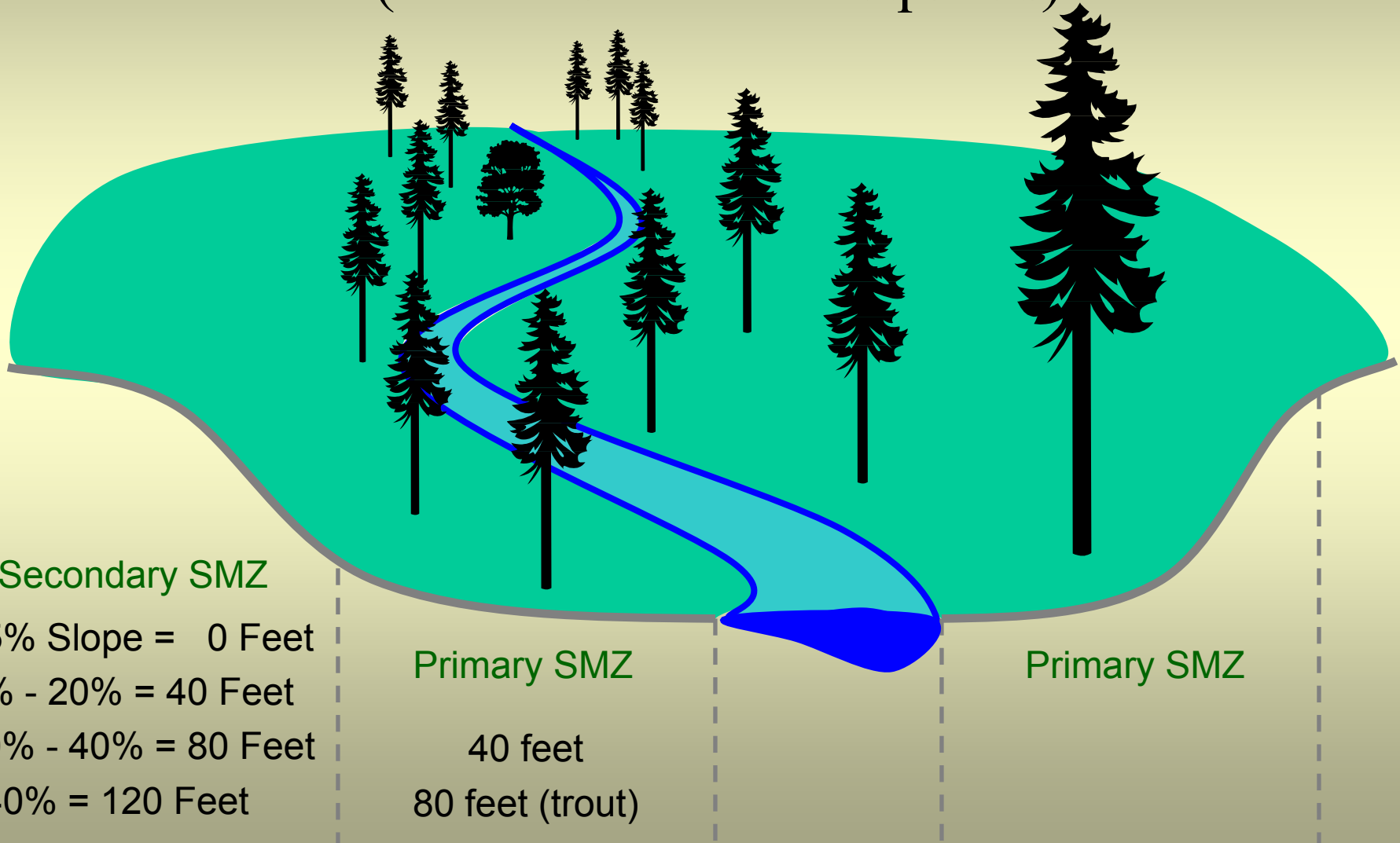
- Stable shoreline
- Diverse near-shore habitat

Benefits Of Riparian Setbacks

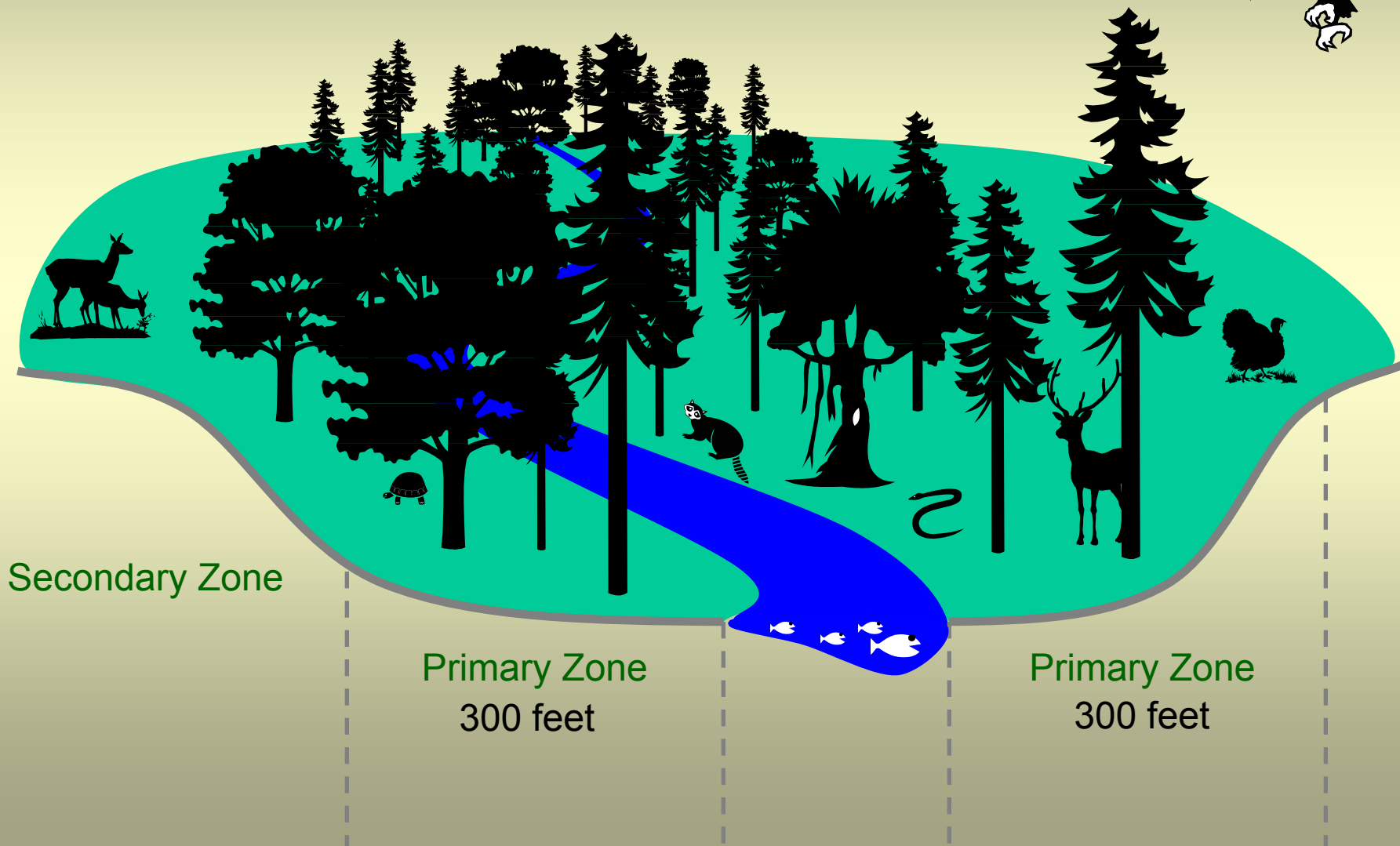
- Erosion control and sediment retention by slowing runoff.
- Surface and ground water quality protection through nutrient cycling through nitrogen fixation and the storage of sediment bound phosphorus.
- Ecosystem protection by providing habitats for resident and transient plant and animal populations.
- Recreational services including hiking, picnicking, and the protection of resources for sport fishing.
- Cultural services by providing opportunities for noncommercial uses such as aesthetic, artistic, educational, or scientific uses.

Streamside Management Zones

(Minimum BMP Required)



Buffers Maximized for Wildlife



Secondary Zone

Primary Zone
300 feet

Primary Zone
300 feet

Table 4: Recommended Buffer Width for Birds

Article	Width Studies (feet)	Minimum Width Recommendation (feet)
Hodges and Krementez (1996)	118-6849	328
Keller et al (1993)	82-2624	328
Kilgo et al (1998)	82-1640	Both Narrow and Wide
Kinley and Newhouse (1997)	46-230	230
Smith and Schaefer (1992)	65-492	No Recommendation
Spackman and Hughes (1995)	82-656	492-574
Thurmond et al (1995)	49-164	49
Triquet et al (1990)	49-75	No Recommendation

(Wenger, 1999)

Federal Power Act Considerations

Section 4(e) requires the Commission, before making a decision on land sales, to consider if the hydropower project has given "equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality."

Section 18 CFR § 2.7 (a) states that the licensee must "include within the project boundary enough land to ensure the optimum development of recreational resources afforded by the project including those for sport fishing and hunting".

Current Shoreline Protection Measures

- Protection of emergent vegetation below the 360 elevation
- 75 foot setback
- Conservation areas
- Environmentally sensitive areas
- Shoreline erosion management
- Lake elevation



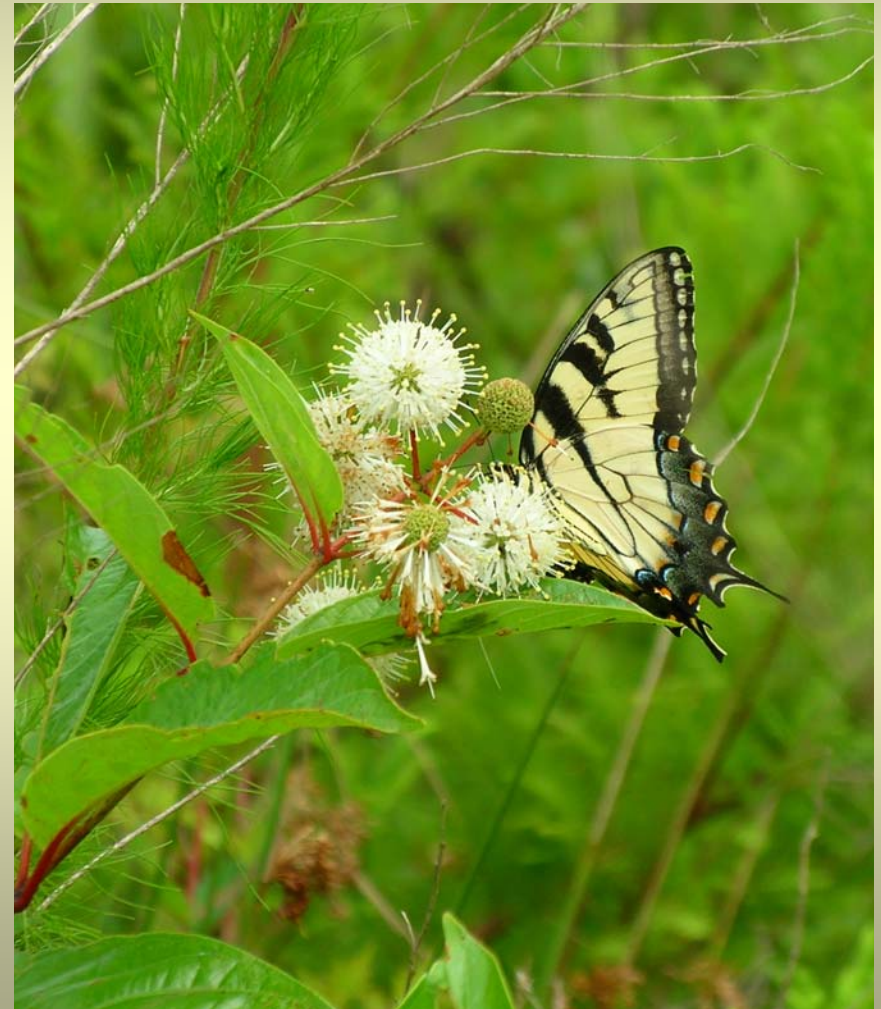
Setback after years of understory clearing and diseased and hazardous tree removal

Can the 75 foot setback be improved?

- Widen to 100 feet
- Increase the “no clearing zone”
- Maintain a closed canopy by replacing diseased and hazardous trees.
- Increase penalties and fines
- Improve educational outreach
- Involve stakeholders in monitoring

Environmentally Sensitive Areas

- Shallow Coves
- Bottomland Hardwood and Wet Flats
- Vegetated shoreline

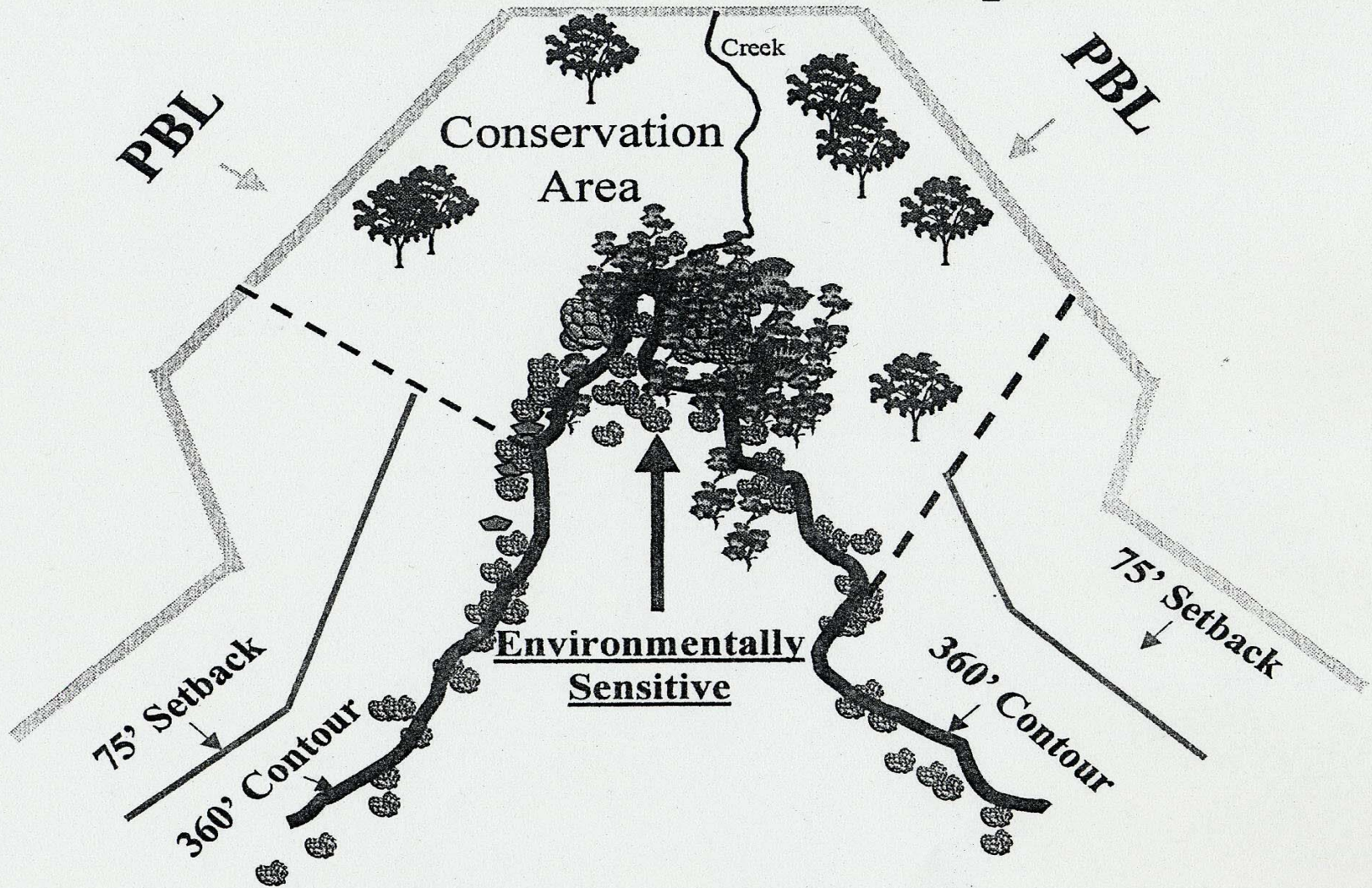




Can the Vegetation be protected?



Conservation Area Example



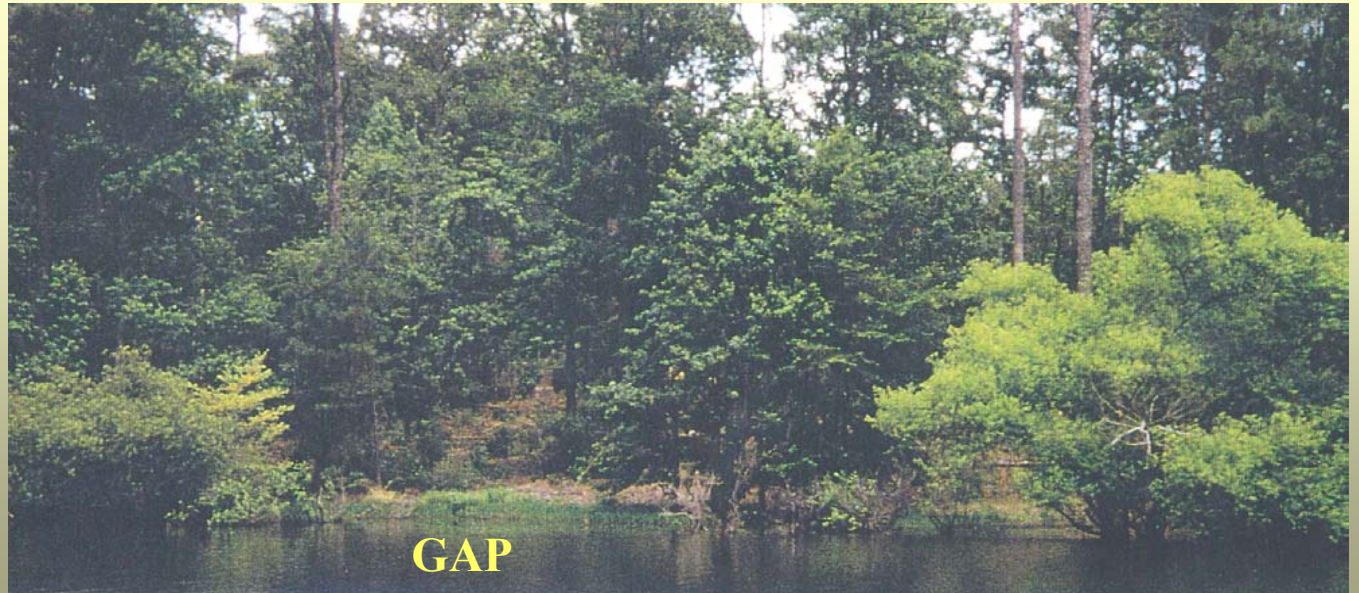
Future Development Fringeland Classification
Lake Murray (FERC Project 516)

Vegetated Shoreline



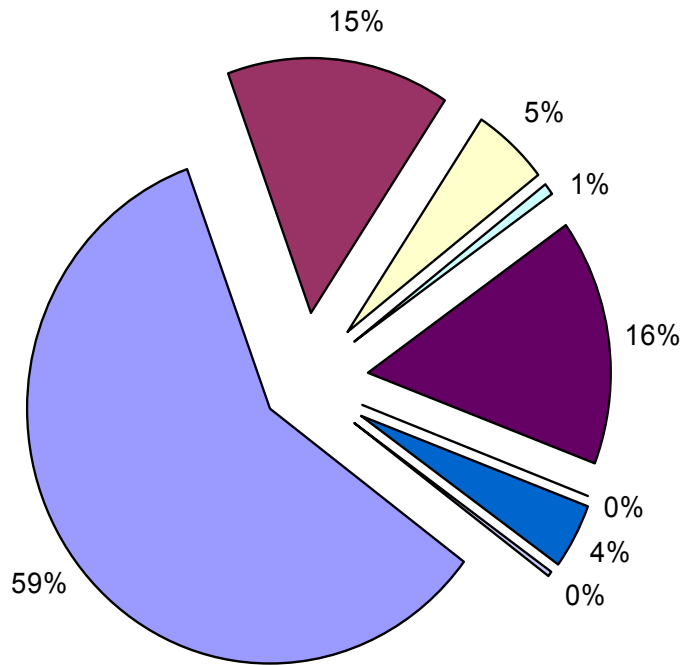
Continuous

Intermittent
(Gap = 8' to 20')



GAP

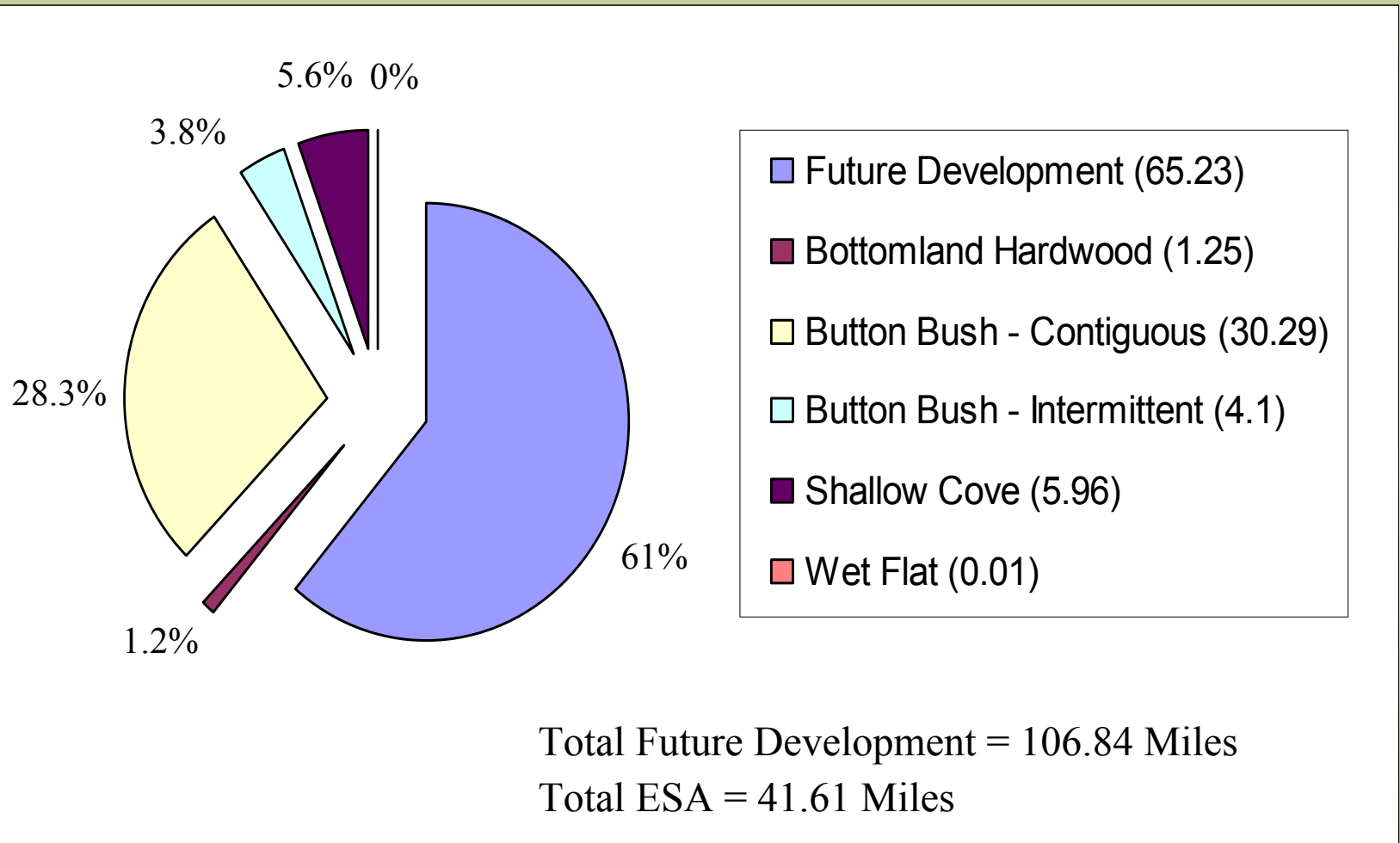
Shoreline Classification



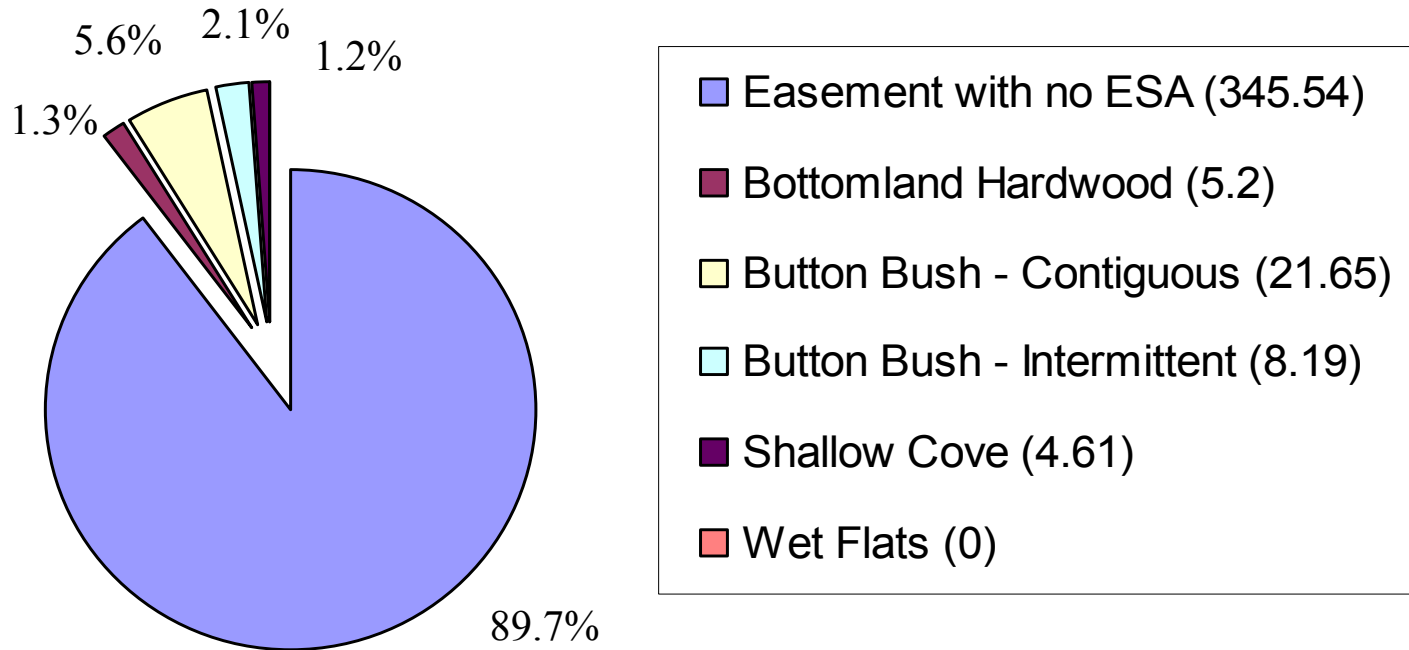
- Easement (385.19)
- Forest & Game Mngt (98.23)
- Public Recreation (32.14)
- Commercial Recreation (5.81)
- Future Development (101.33)
- Conservation Areas (0.71)
- 75-Foot Setback (27.3)
- Project Operations (1.63)

Total Shoreline = 652.34 miles

Future Development Classification



Easement ESA

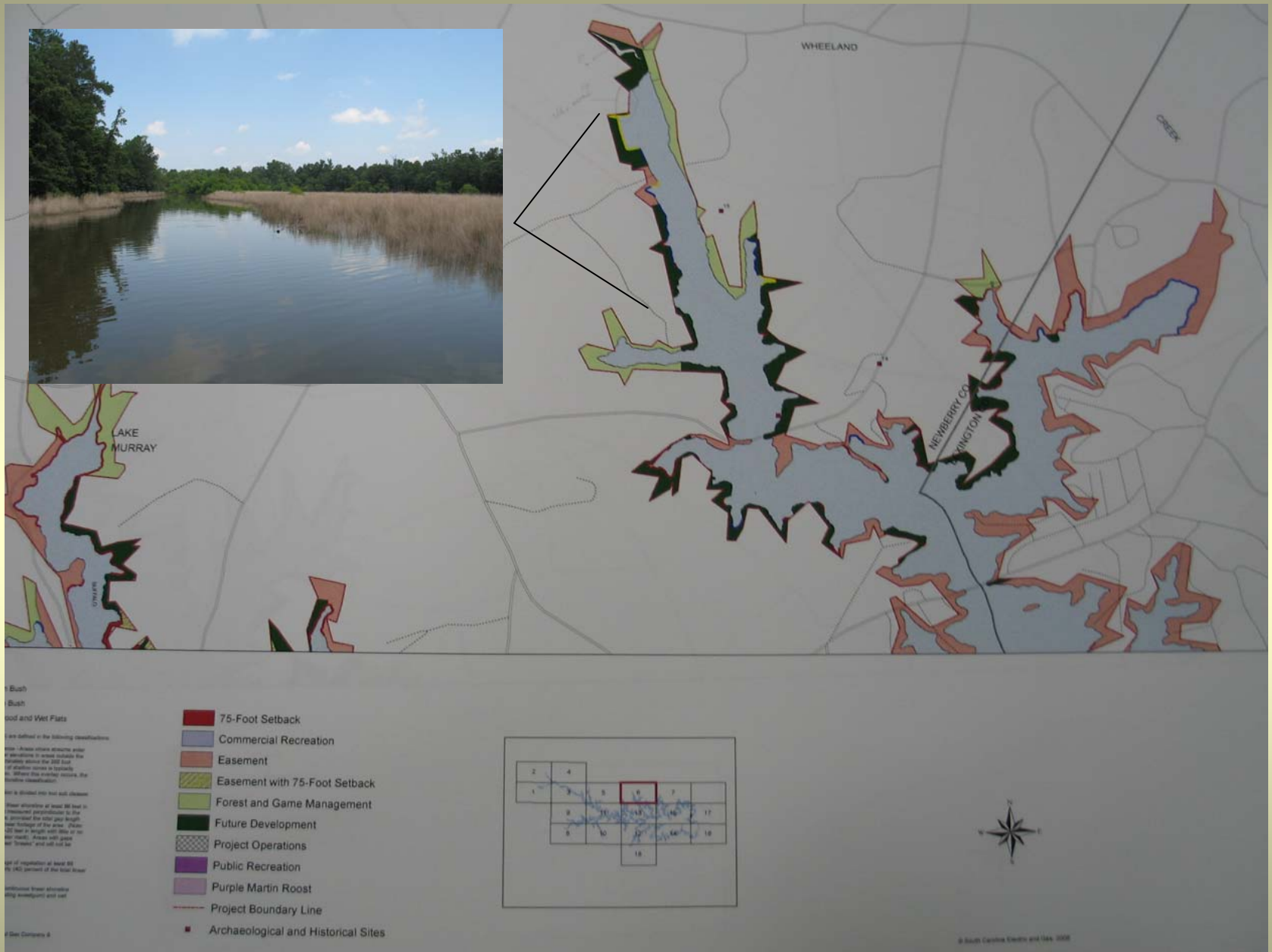


Total Easement Shoreline = 385.19 Miles
Total ESA = 39.66 Miles

SCDNR Land Protection Proposal

Selection Criteria

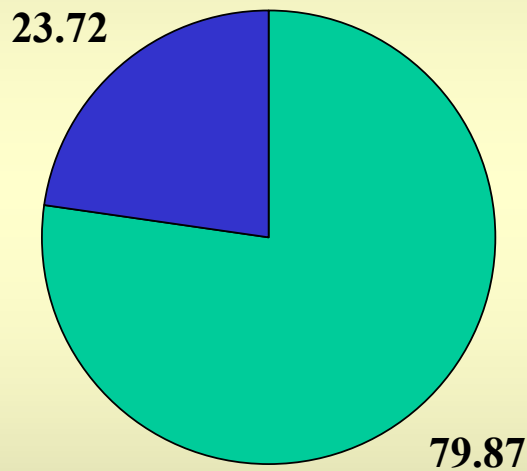
- General habitat quality
- Fish spawning and nursery habitat
- Length and depth of undeveloped shoreline
- Waterfowl hunting opportunities
- Habitat in surrounding region
- Aesthetics
- Recreational values
- Adjacency



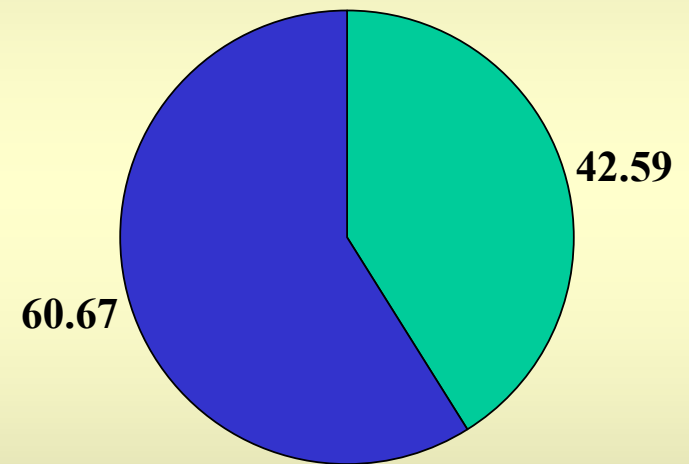
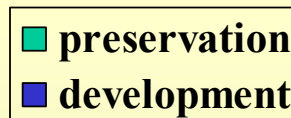
Example of a shoreline management plan (Camping Creek)

Past Rebalancing Efforts

Miles of Shoreline Classified Future Development



DNR proposal
(August 23, 2004)



SCE&G proposal
(April 18, 2005)

Two-bird Cove

SCE&G proposal



SCDNR proposal

