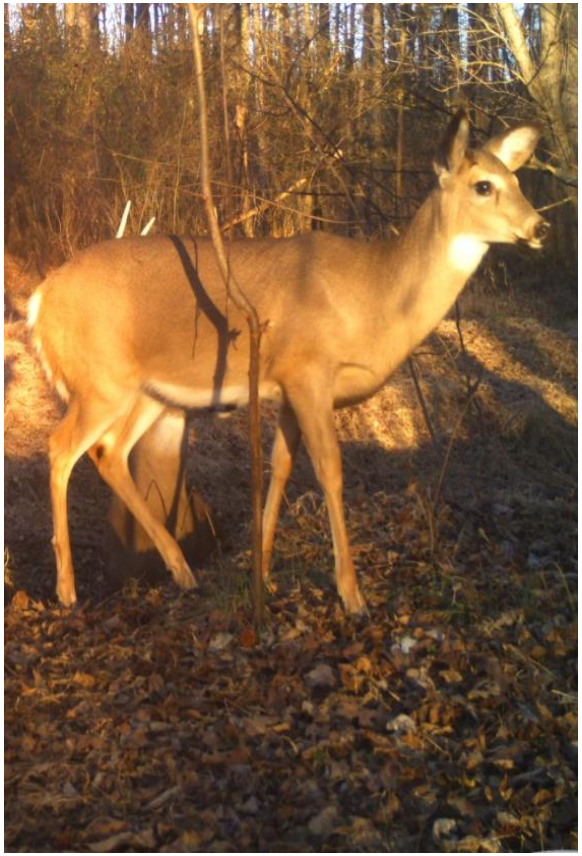
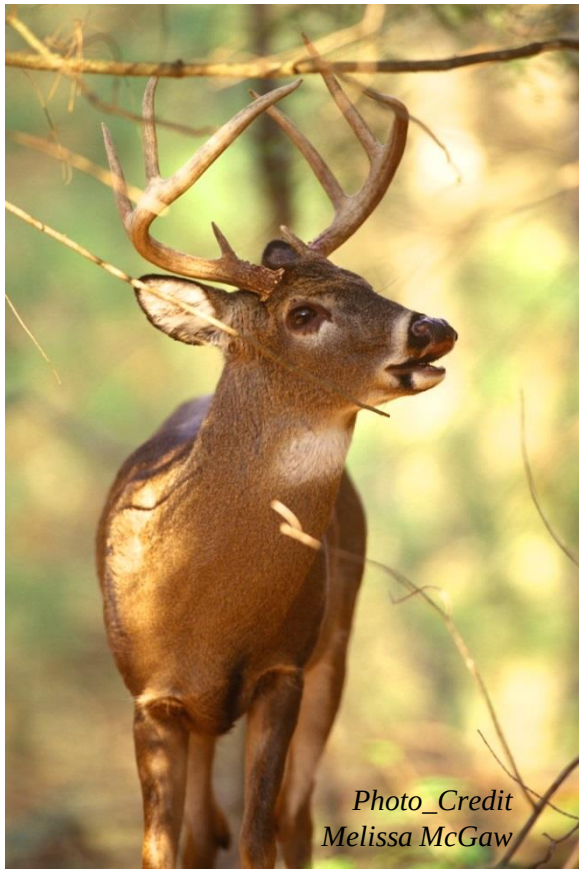
Status & Management of White-tailed Deer in NC



NORTH CAROLINA Wildlife RESOURCES COMMISSION



Photo_Credit Melissa McGaw

So What is Tonight About?

1. Share biological information about our deer.
2. Share results from a 3 year data analysis (2011-2013).
3. Discuss concerns & ideas with hunters.
4. We need your input on the future of deer management!

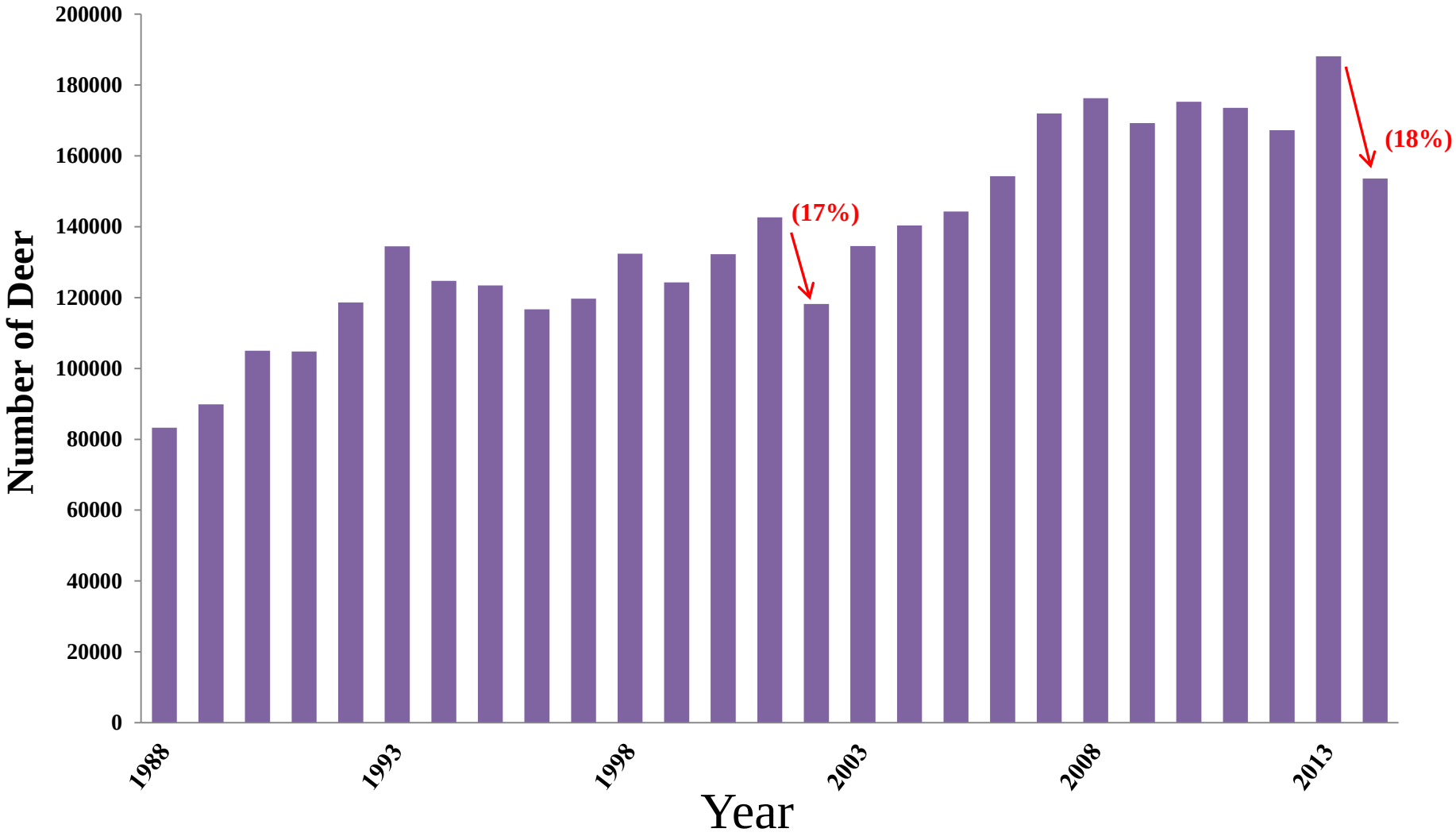
Data

- This presentation was designed to convey current information and statistics compiled by the NCWRC biological staff concerning certain aspects of the deer population across the state.
- The information is provided at a very large scale (statewide/deer seasons). Individuals interested in information at a smaller scale (County, etc.) should contact the wildlife biologist for their area (see link below).

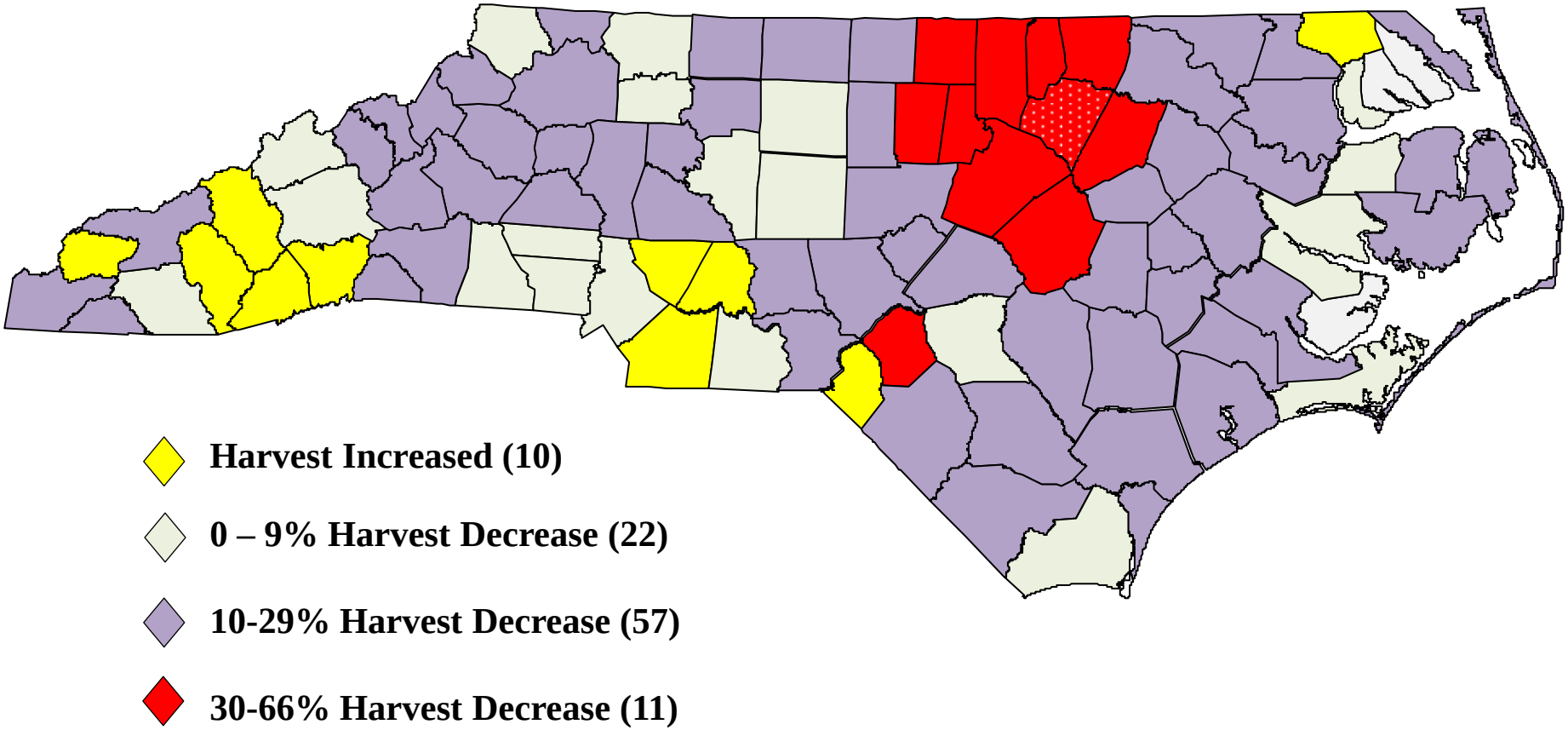
http://www.ncwildlife.org/Portals/0/Hunting/Documents/WMDistrictBiologistContacts.pdf

Evaluation of North Carolina's Deer Population

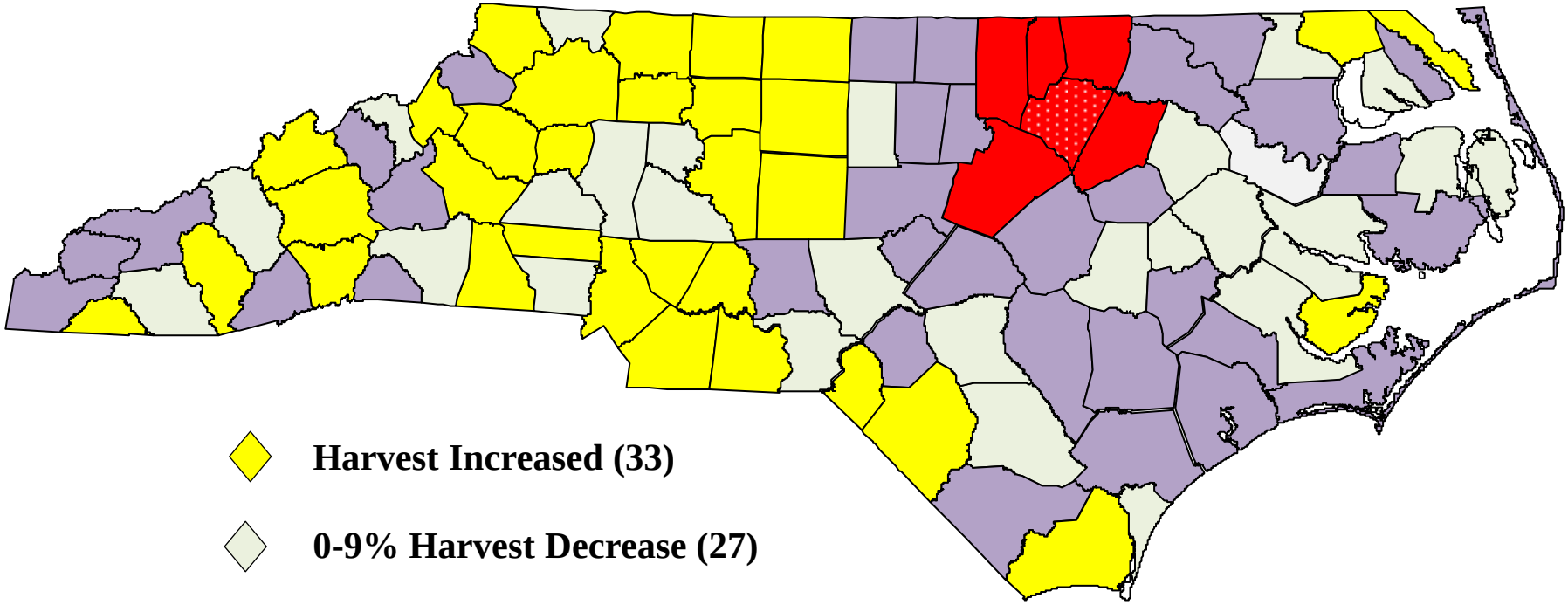
Statewide Reported Deer Harvest (1988-2014)



% Harvest Decline from 2013 to 2014



Comparing the Deer Harvest of 2012 and 2014



Harvest Increased (33)

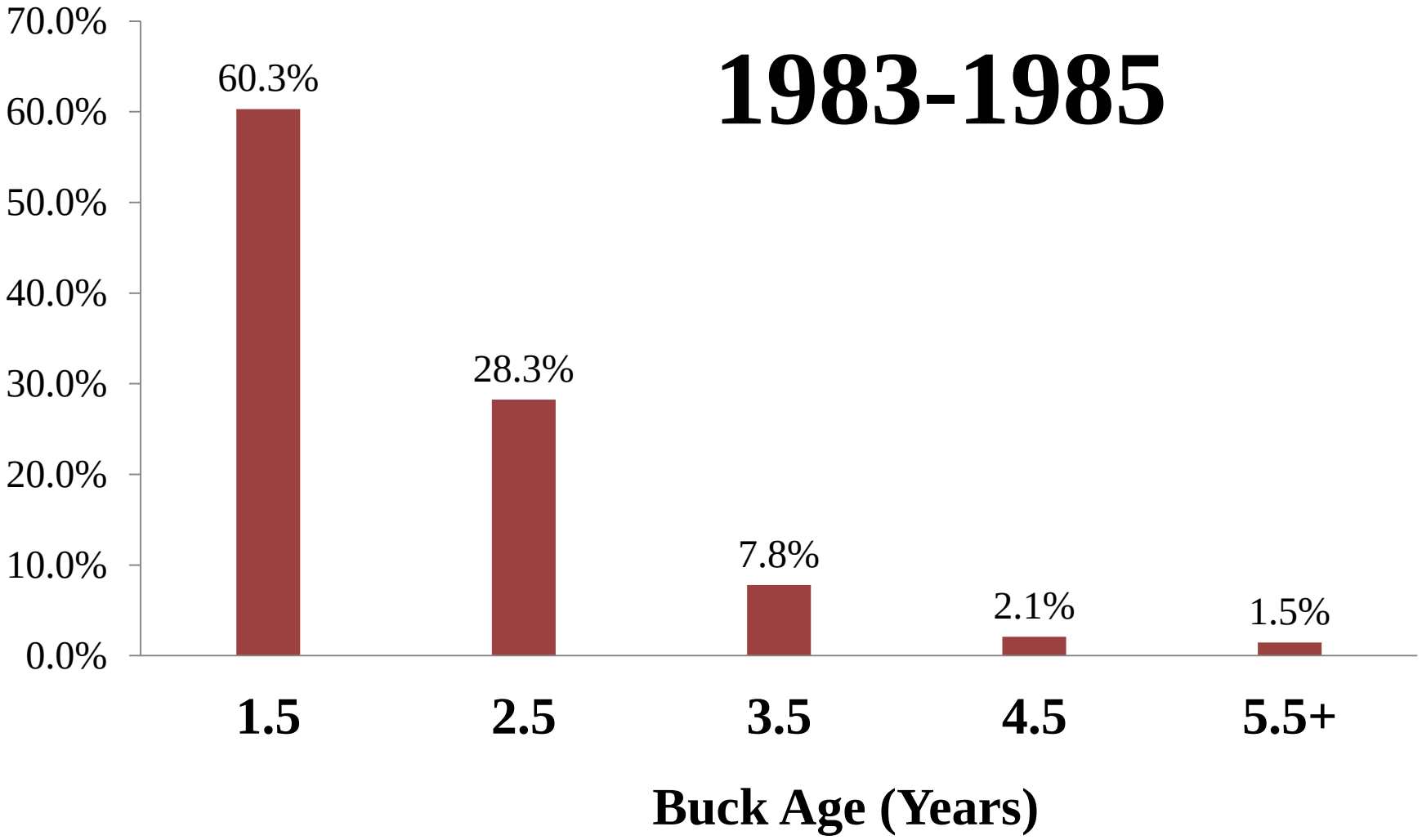
0-9% Harvest Decrease (27)

10-29% Harvest Decrease (34)

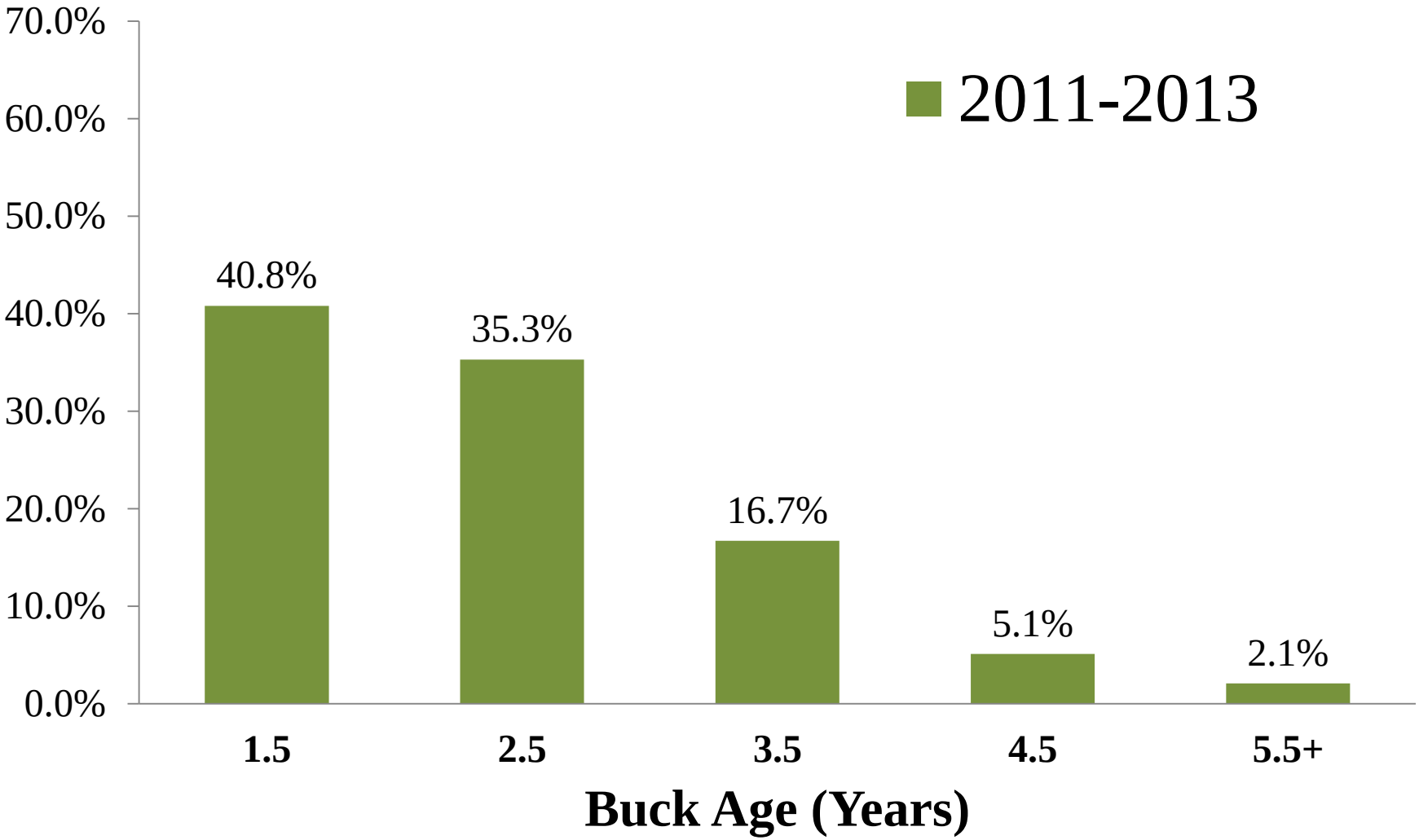
30-56% Harvest Decrease (6)

Buck Age Structure!

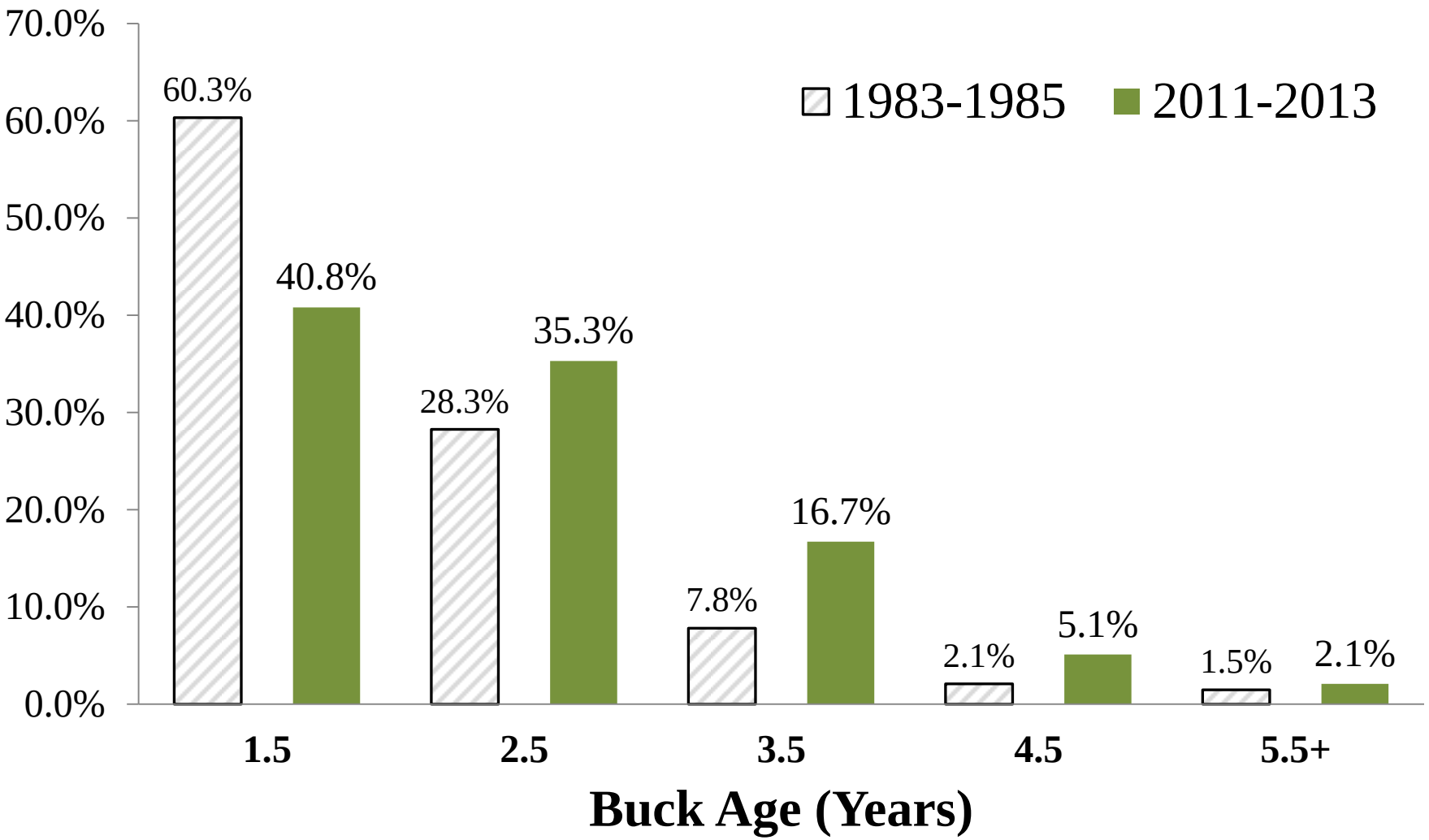
Statewide Buck Age Structure



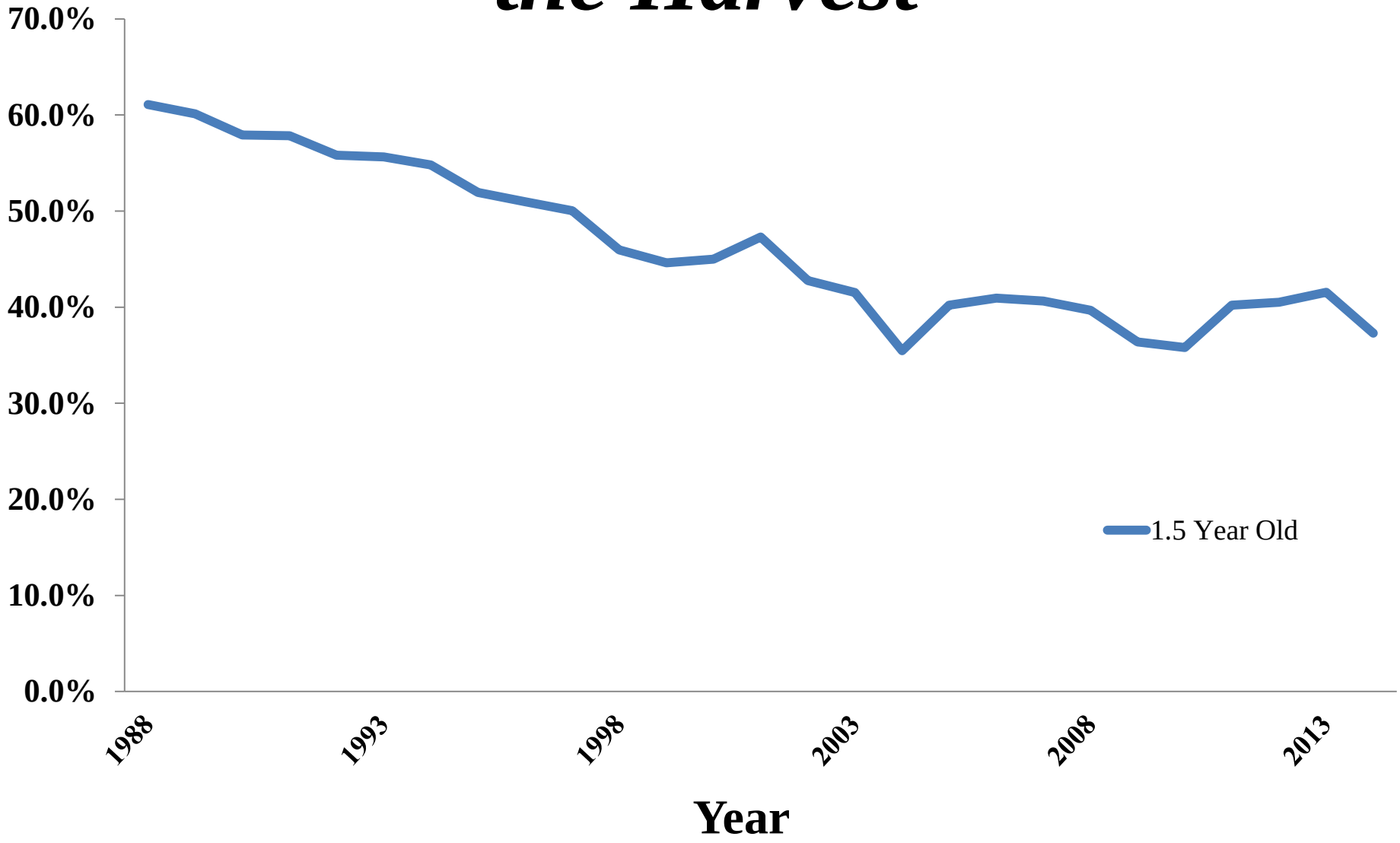
Statewide Buck Age Structure



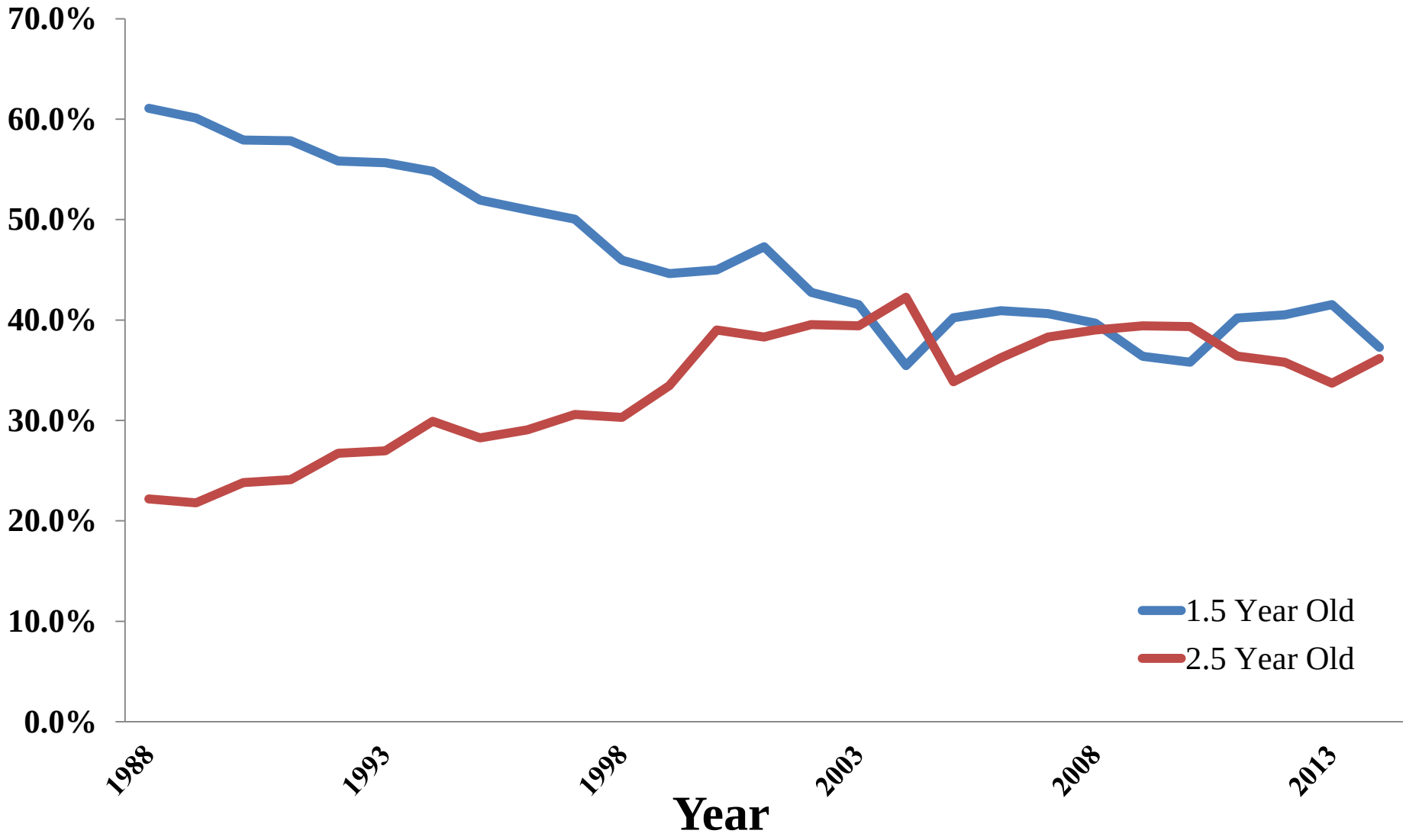
Statewide Buck Age Structure



Statewide % 1.5 Year Old Bucks in the Harvest



Statewide % 1.5 & 2.5 Year Old Bucks in the Harvest



Indices to Population Status

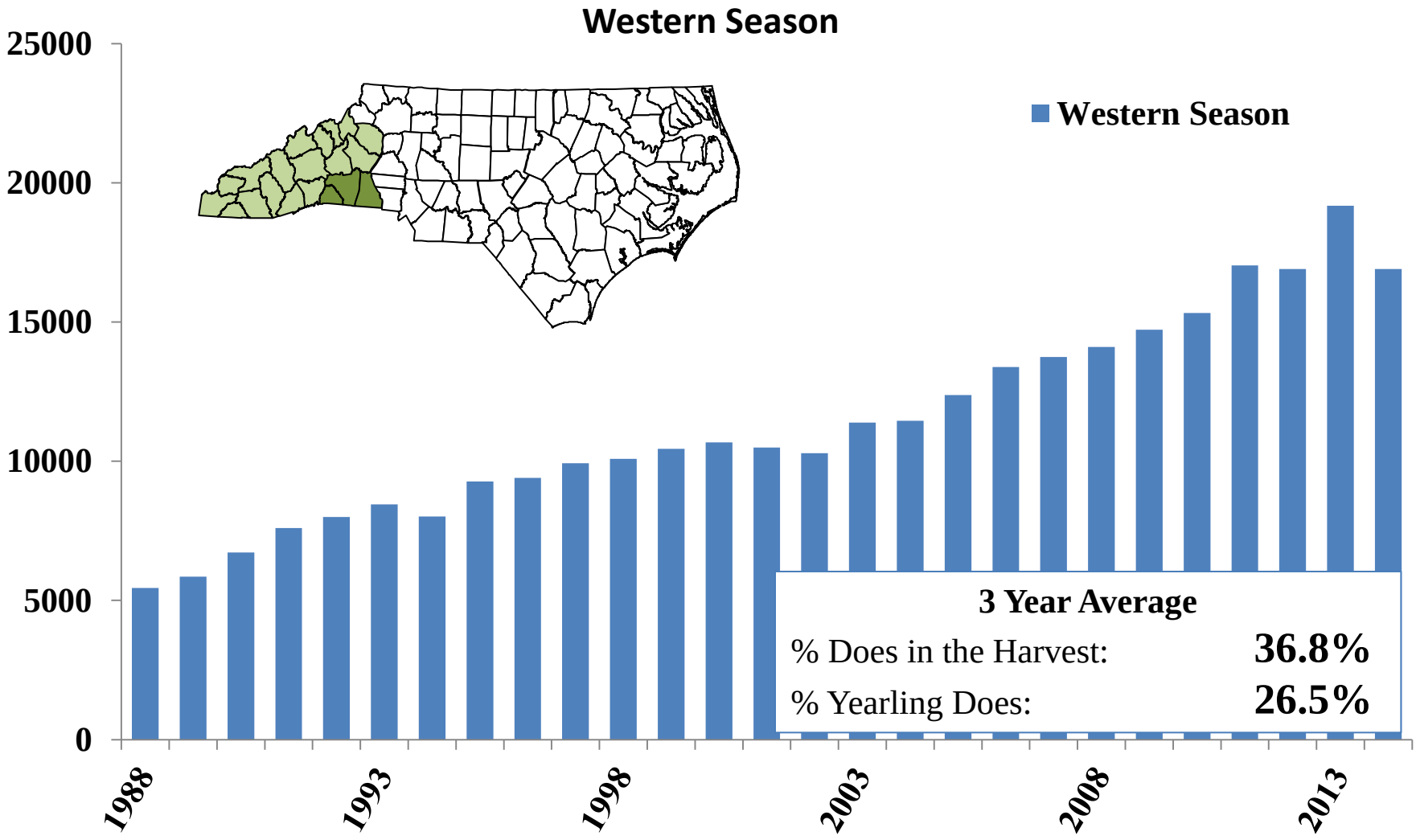
- Biologist track a number of things to assist in monitoring trends in deer populations.
  1. The annual reported harvest
     - This is a long term trend (upward, stable, decline)

  2. The Percent does in the reported harvest
     - Deer are born at 50/50 male to female ratios, doe harvest >50% would likely lead to some level of population decline.
     - % doe can change either by shooting more does OR shooting fewer bucks!

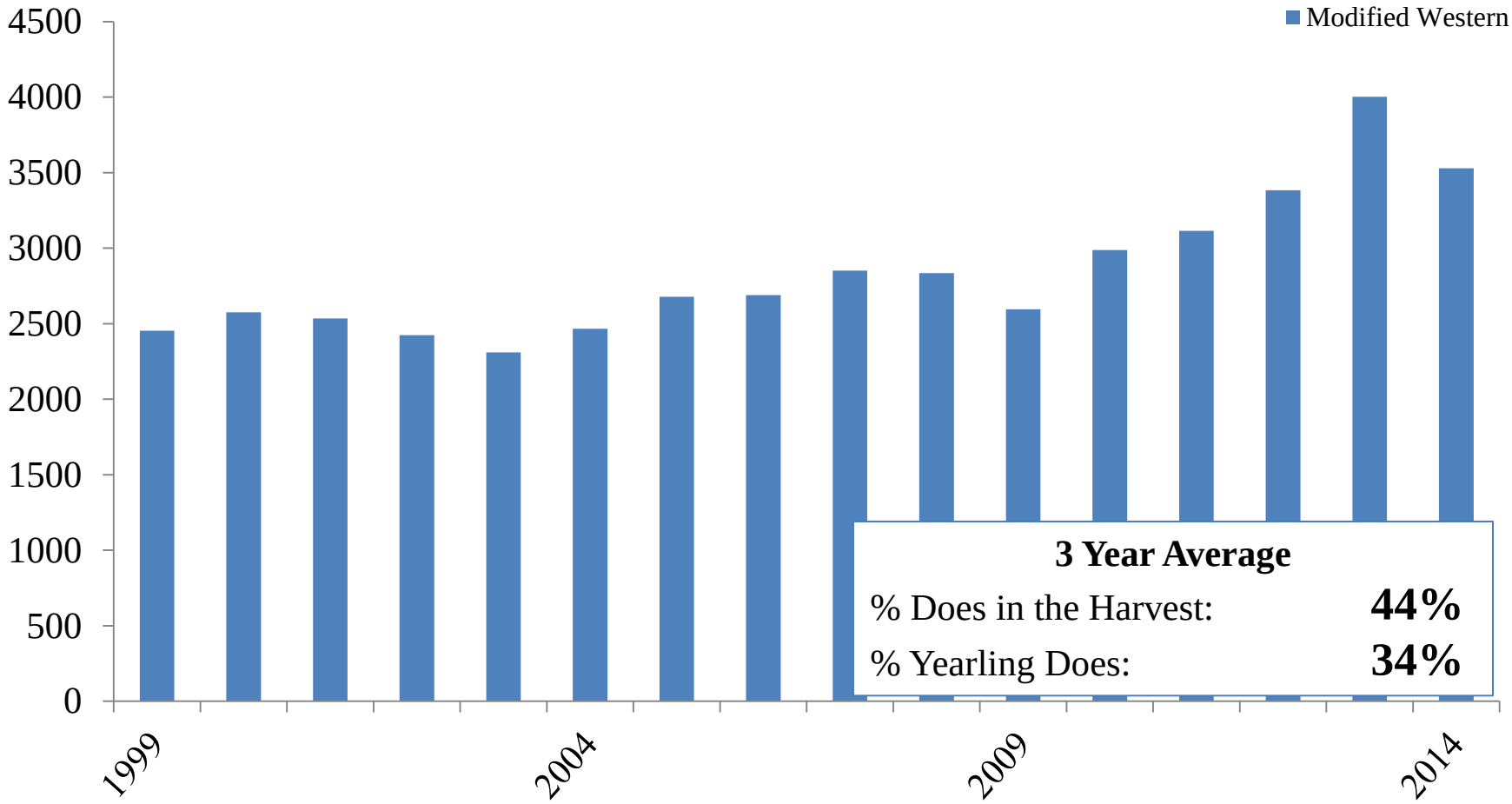
  3. The Percent Yearling (1.5 year old) does in the harvest.
     - This number is a measure of the hunting pressure placed on the doe segment of the population.
     - Around 30% generally indicates a stable population trend

- These 3 indices of the harvest can assist biologists in determined the trend in deer populations over large areas.

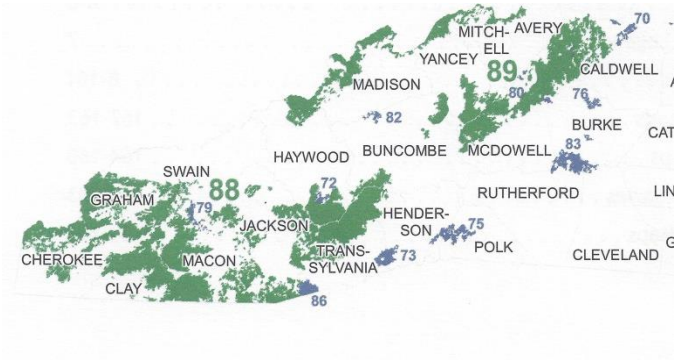
Western Deer Season Harvest Trend (1988-2014)



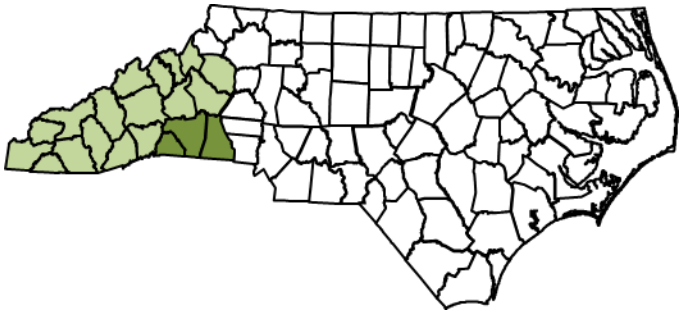
"Modified" Western Deer Season (Rutherford & Cleveland Counties) Harvest Trend (1999-2014)



Western Region Game Lands Harvest Trend (1988-2014)



Comparison of Western Season Harvest Game Lands vs. Private Lands



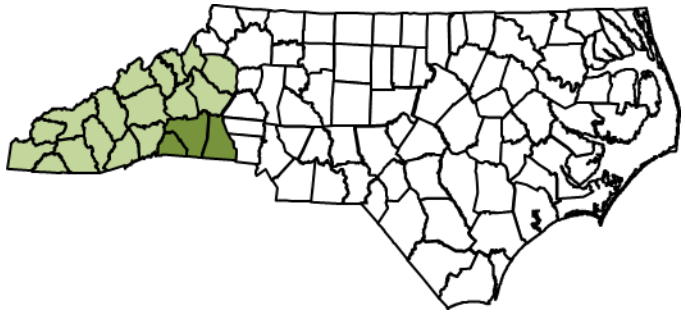
14000
12000
10000
8000
6000
4000
2000
0

1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014

1982

Private Lands
Game Lands

Harvest AB/Mi² Western Season



Game Lands

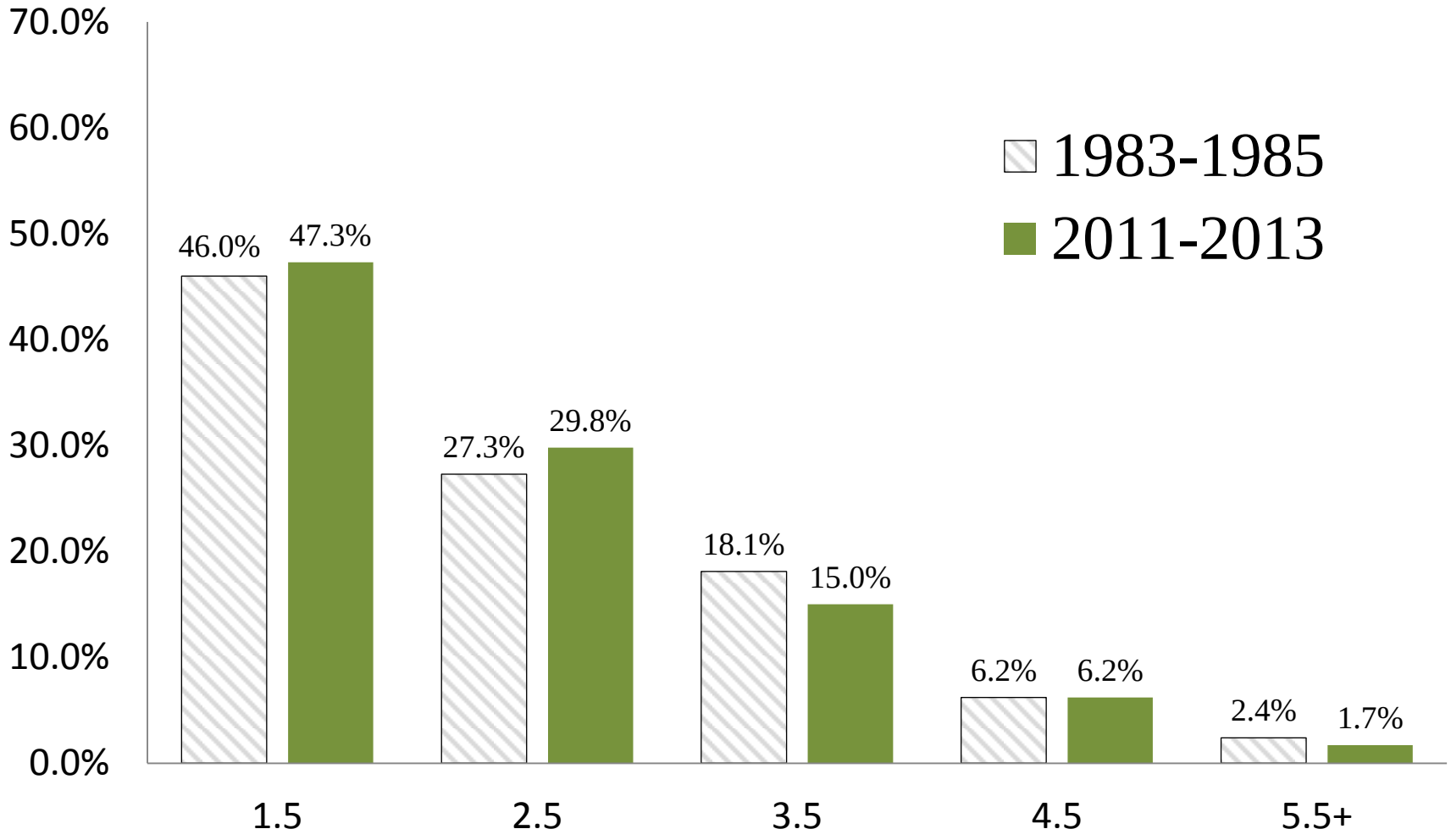
Private Lands

1992

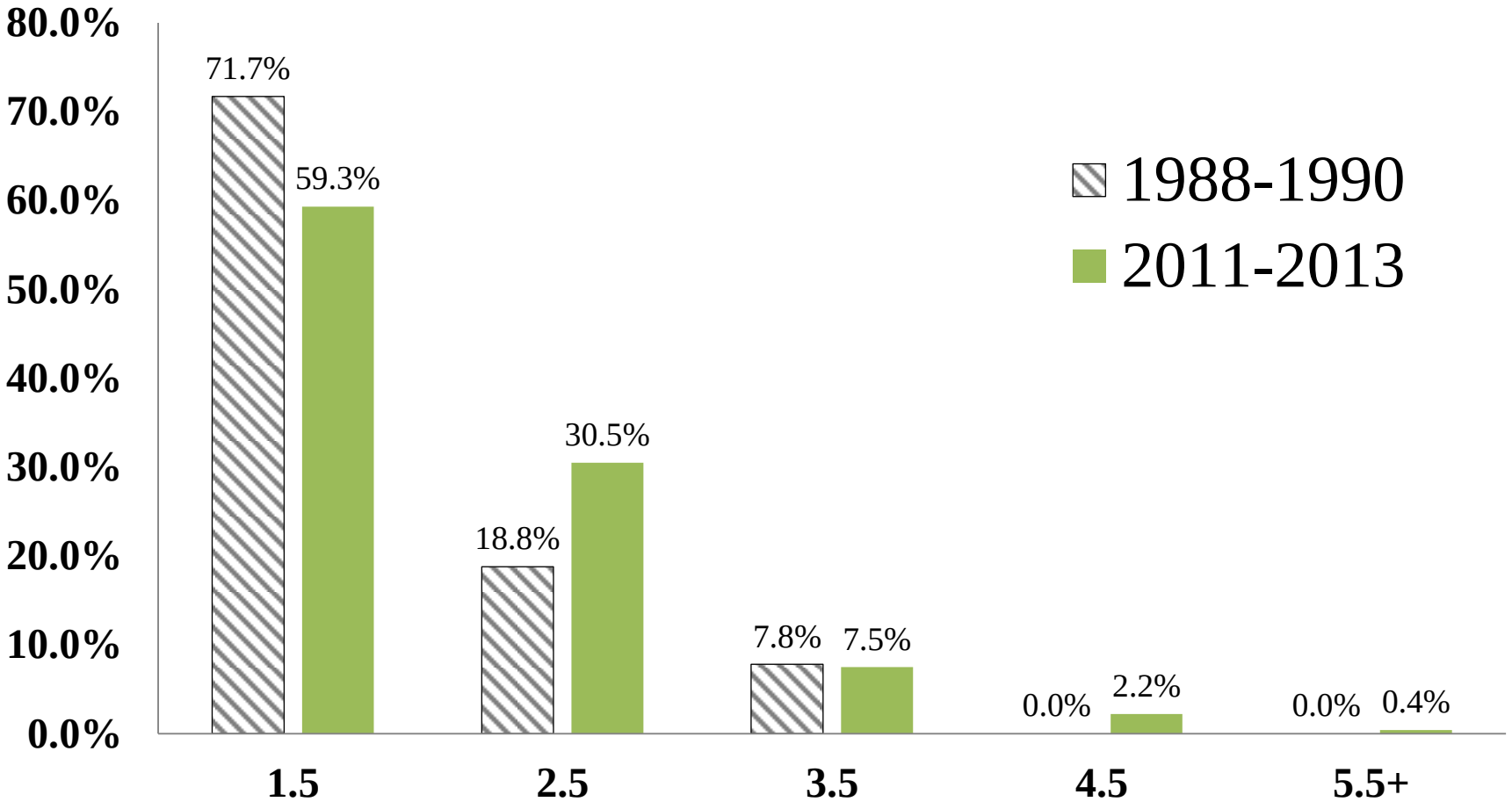
3
2.5
2
1.5
1
0.5
0

1976 1981 1986 1991 1996 2001 2006 2011

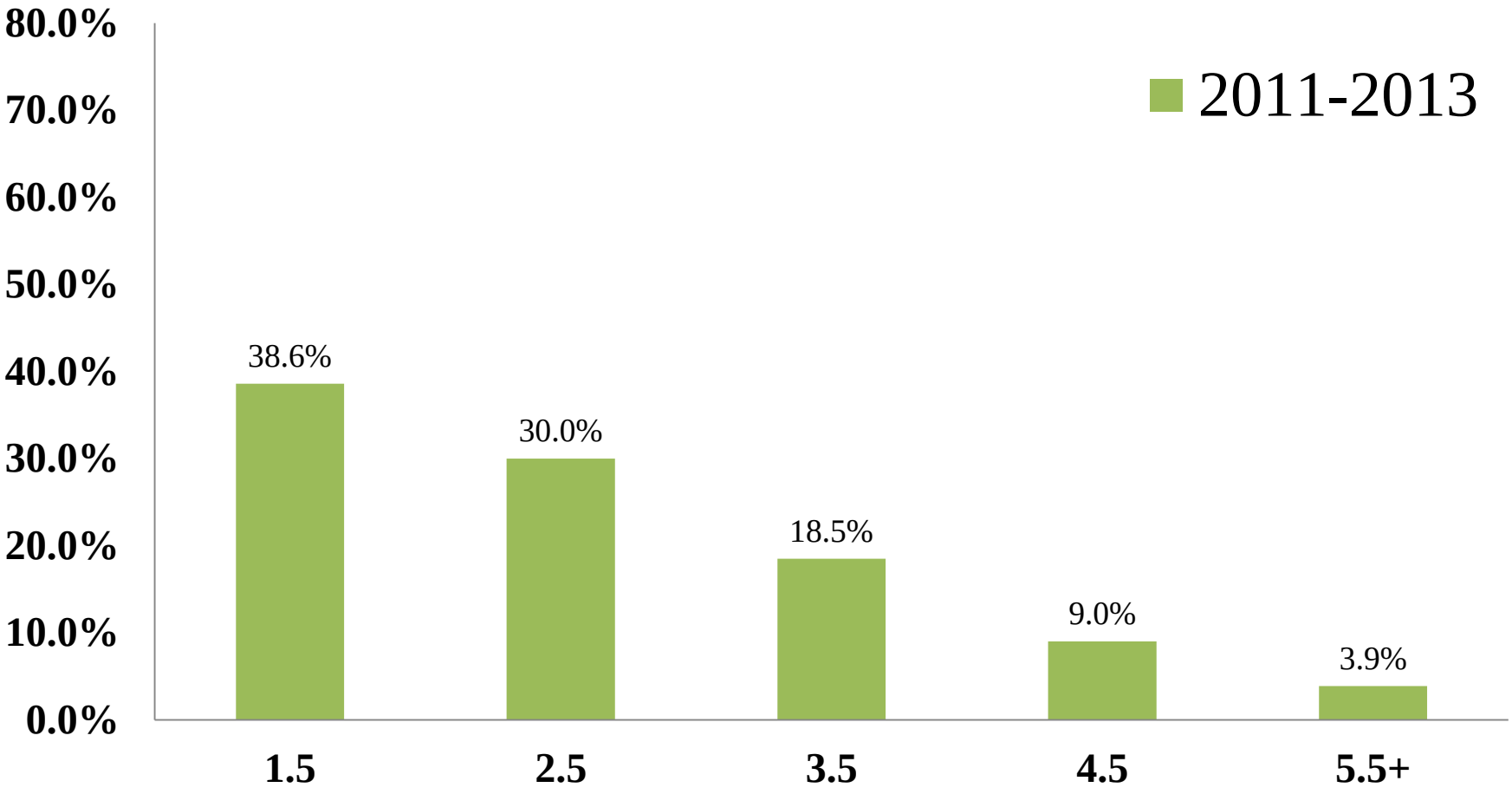
Western Season
Buck Harvest Age Structure



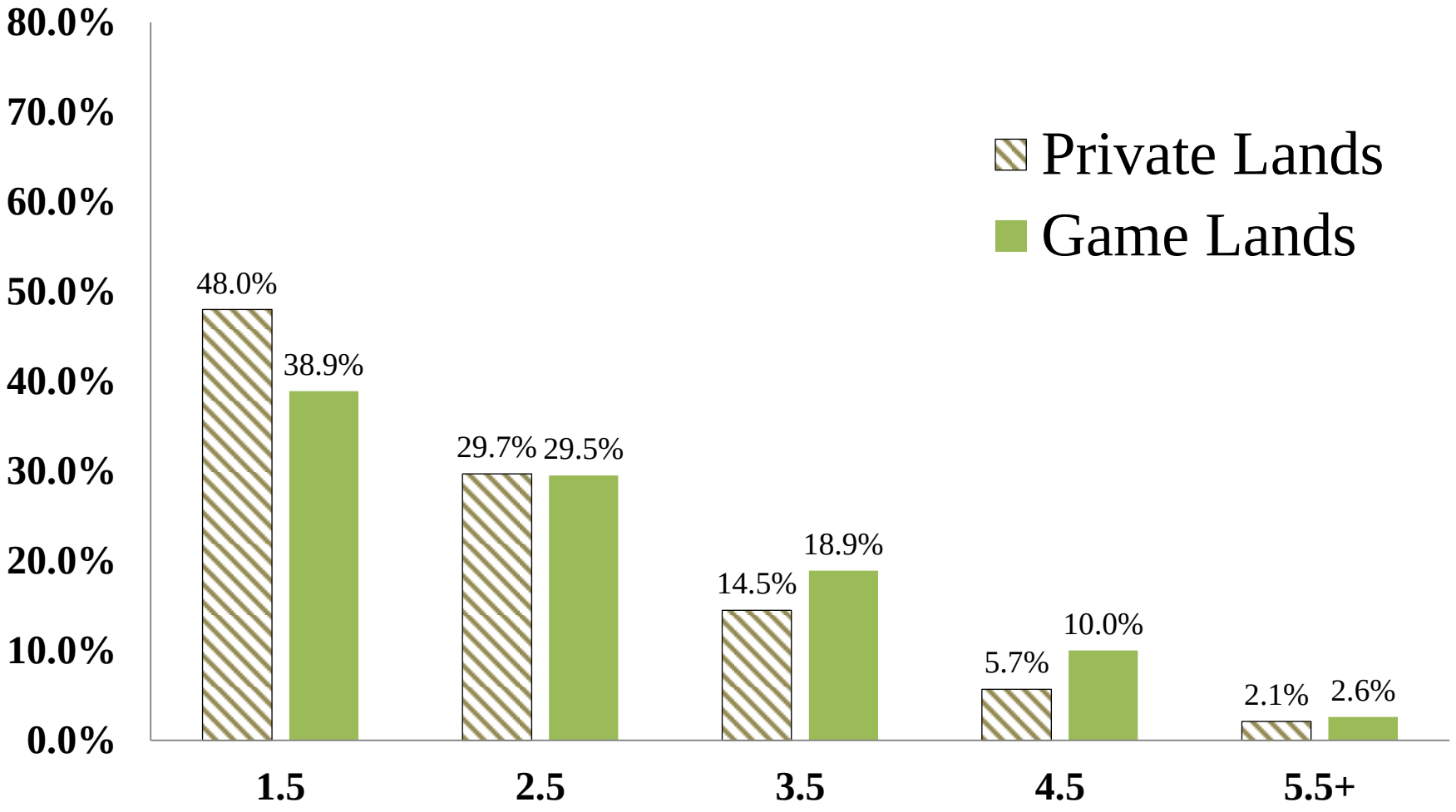
Rutherford/Cleveland – Modified Western Antlered Buck Harvest



Western Game Lands Buck Age Structure

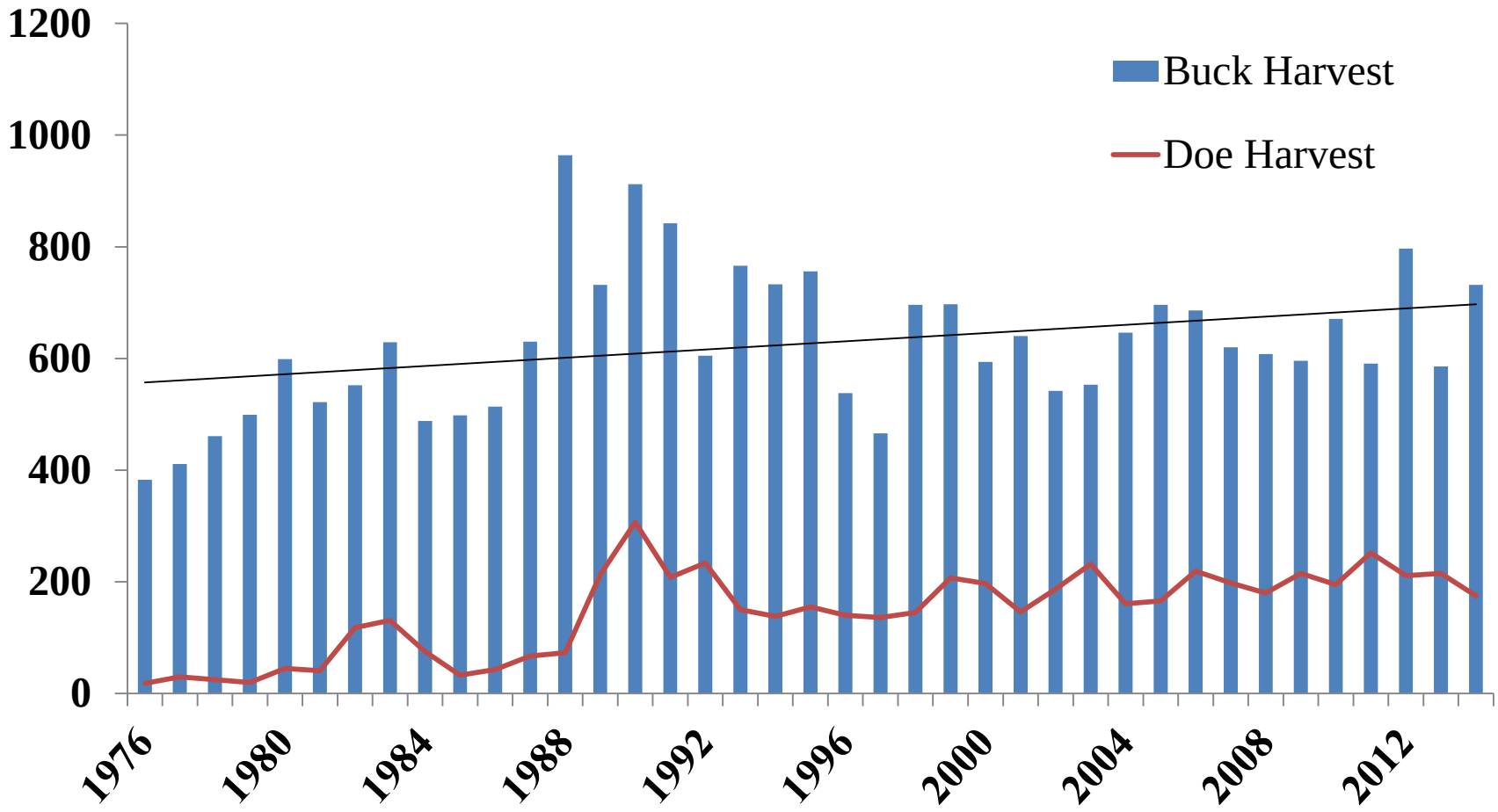


Western Game Lands vs. Private Lands Buck Age Structure



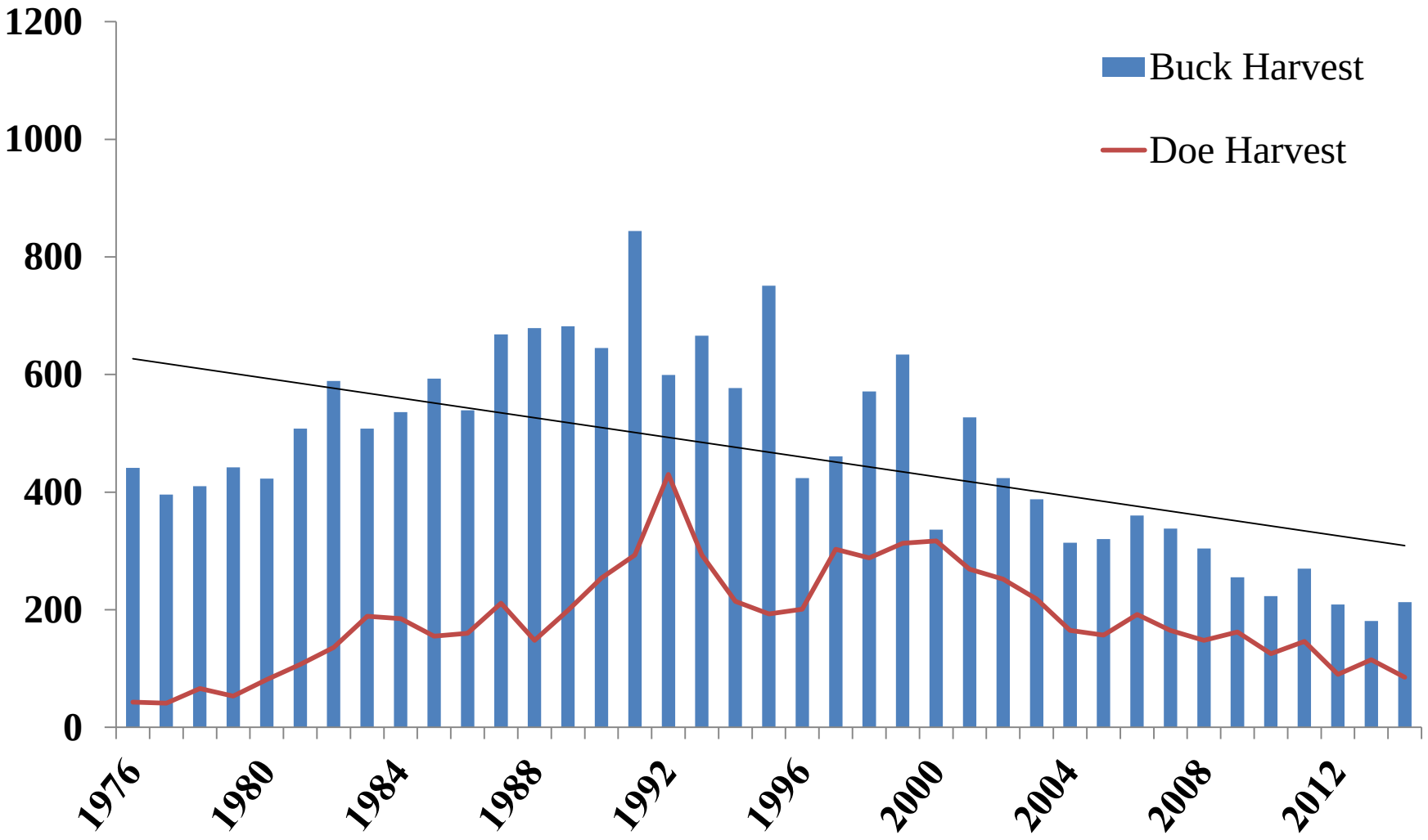
District 9 Game Lands

Primarily Nantahala National Forest



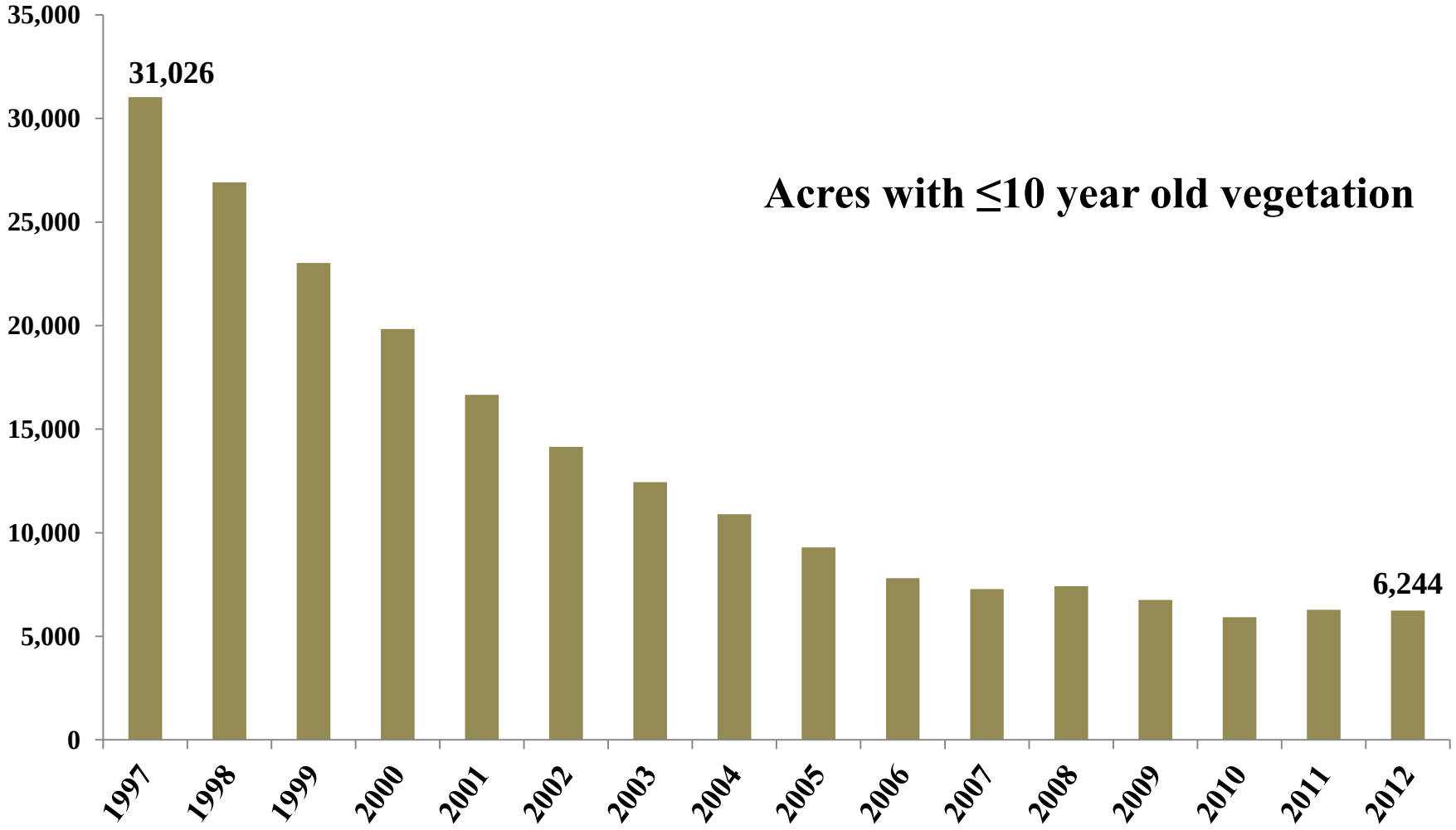
District 8 Game Lands

Primarily Pisgah National Forest

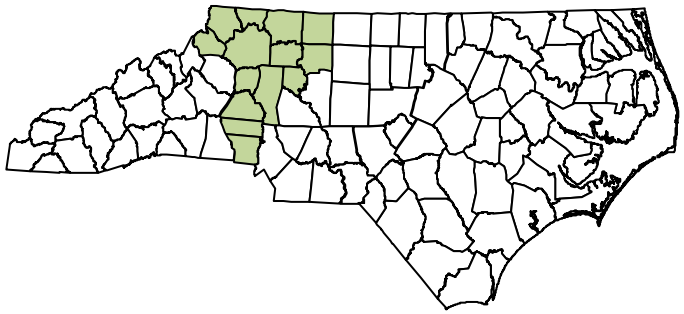


Early Successional habitat!

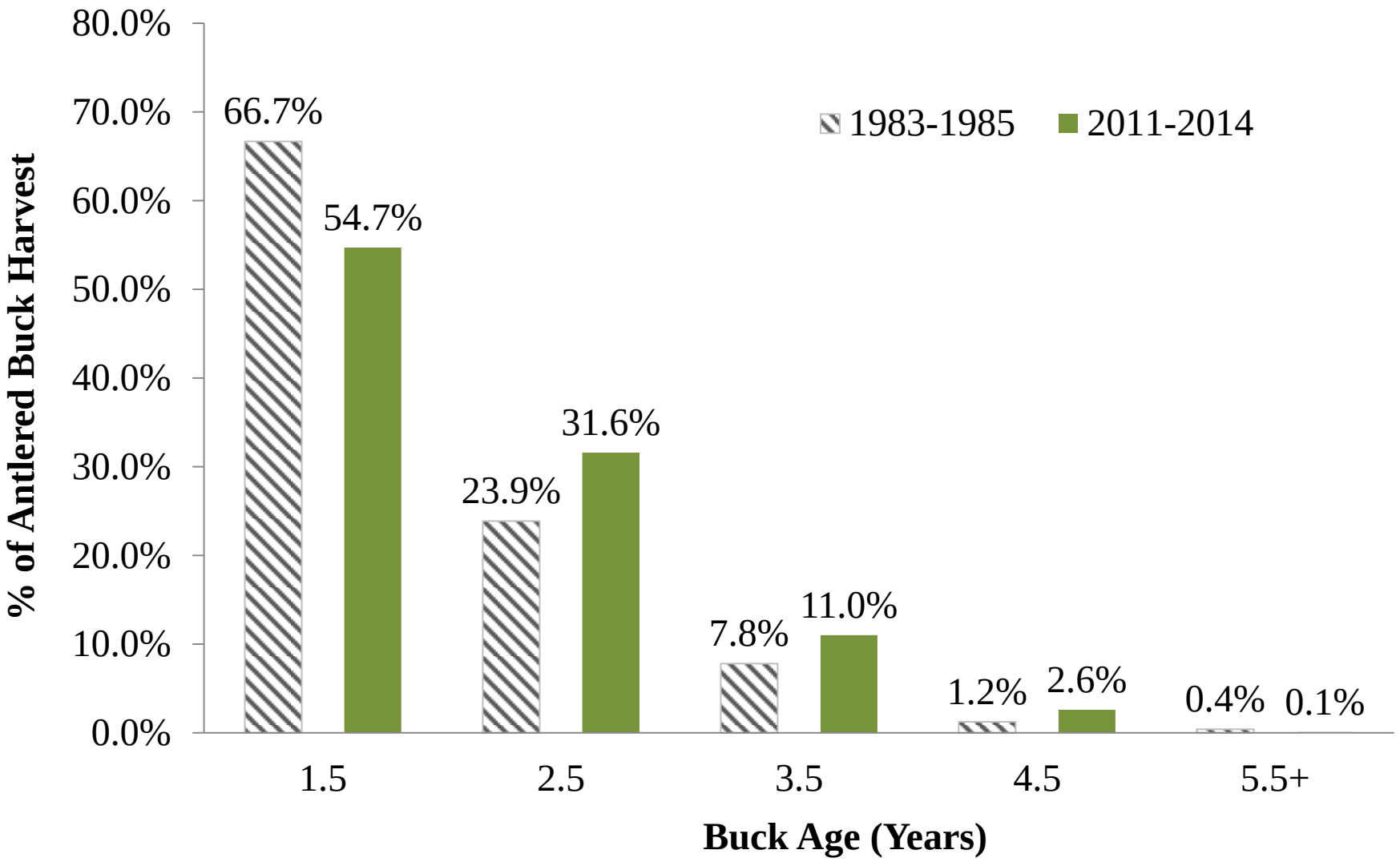
Acres in Early Successional Habitat on Pisgah & Nantahala National Forest



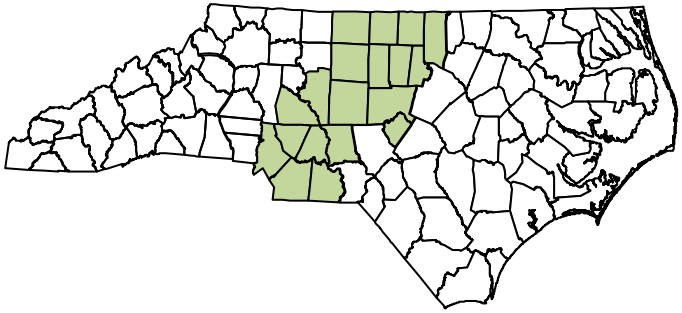
Northwestern Deer Season Harvest Trend (1988-2014)



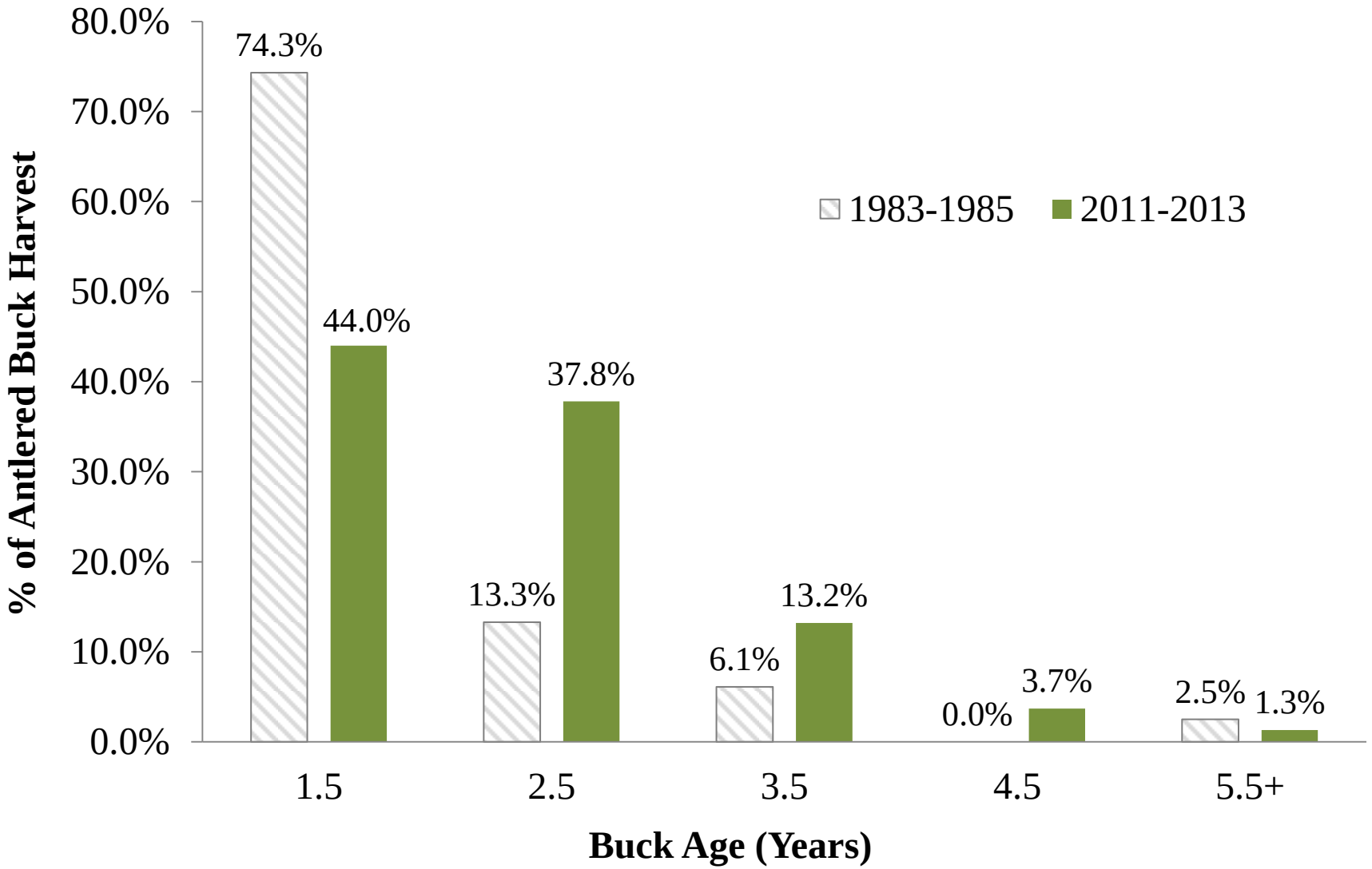
Northwestern Season Buck Ages



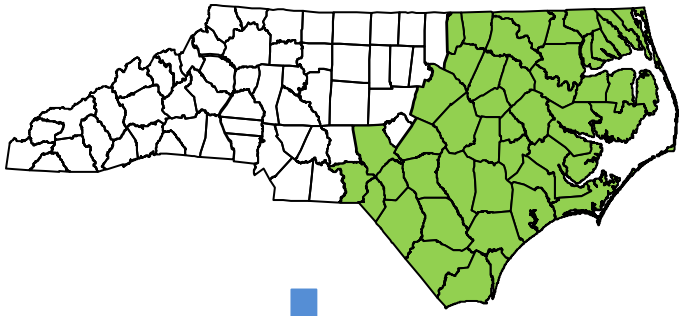
Central Deer Season Harvest Trend (1988-2014)



Central Season Buck Ages



Eastern Deer Season Harvest Trend (1988-2014)



120000
100000
80000
60000
40000
20000

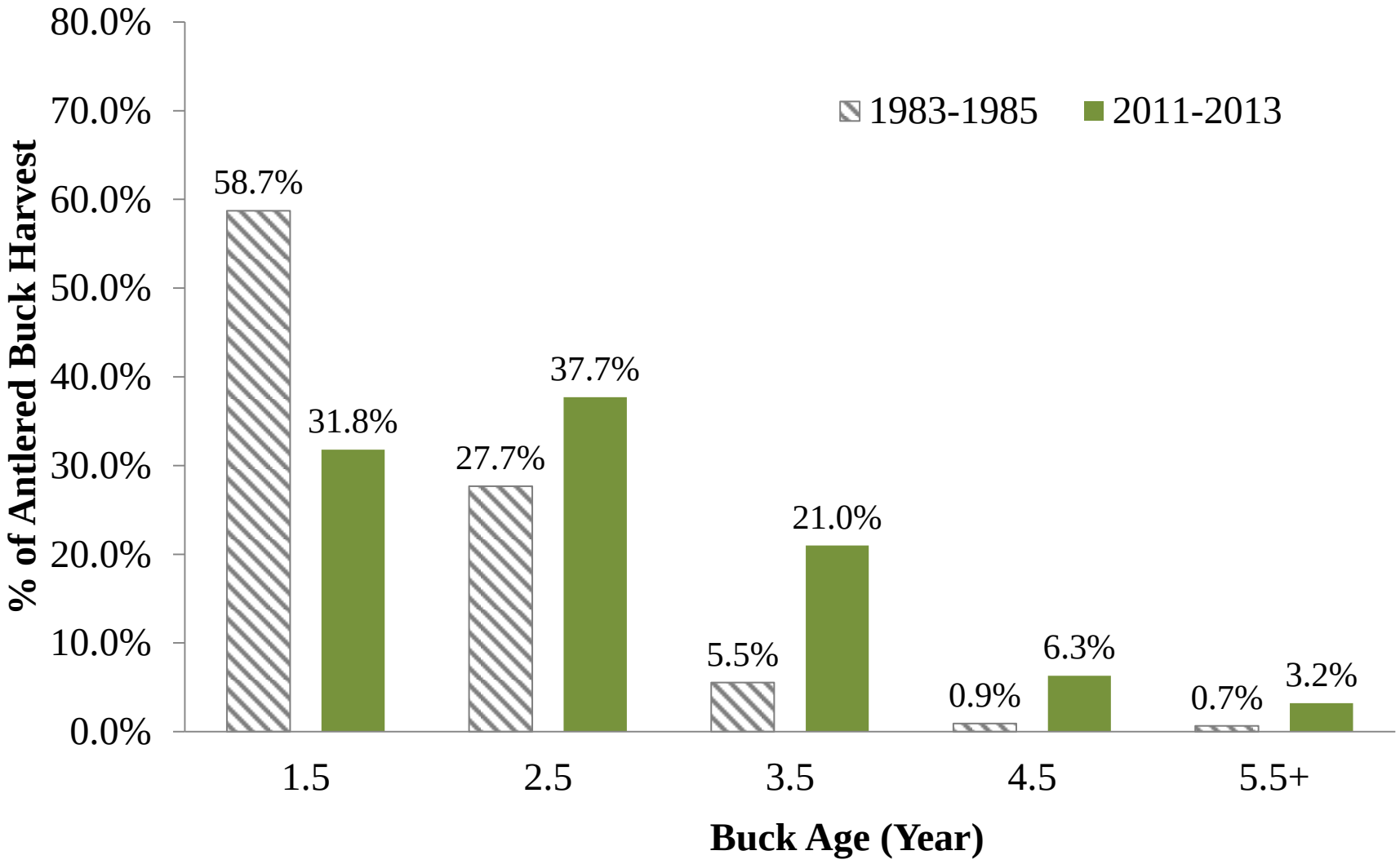
1988 1993 1998 2003 2008 2013

3 Year Average

% Does in the Harvest: **42.1%**

% Yearling Does: **26%**

Eastern Season Buck Ages



1.5 Year Old Buck's Antlers

Deer Season	% of Buck Harvest	% Spikes	Average Number of Points
Eastern	32%	61%	3
Central	44%	36%	3.8
Northwestern	55%	32%	4
Western	47%	40%	3.7

So how about the 3.5 Year Olds?

Deer Season	% of the Antlered Buck Harvest	Average Inside Spread	Average Number of Points
Eastern	21%	13 inches	7.3
Central	13%	15 inches	8.1
Northwestern	11%	15 inches	8.1
Western	15%	15 inches	7.7

Recent examination of deer populations & management strategies.

Several years ago, staff began evaluating two deer management questions.

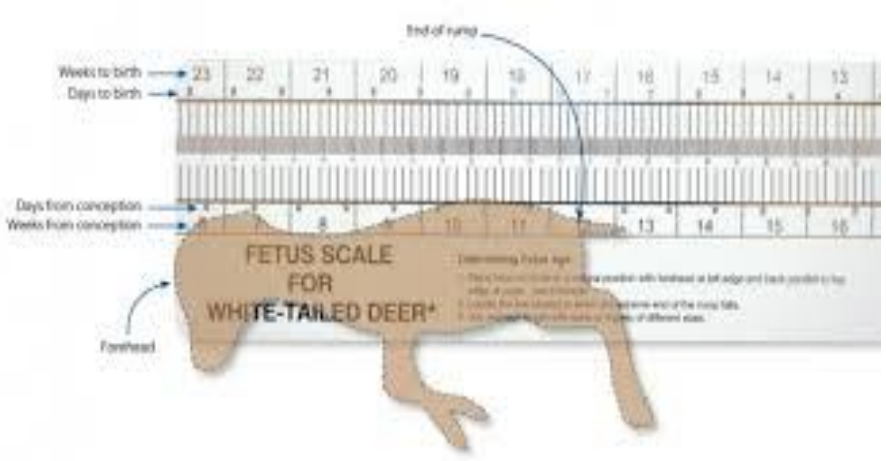
1. Can we develop biological management units to help lead future deer management decisions?

2. Are the current deer seasons the best biological fit for today's deer population?

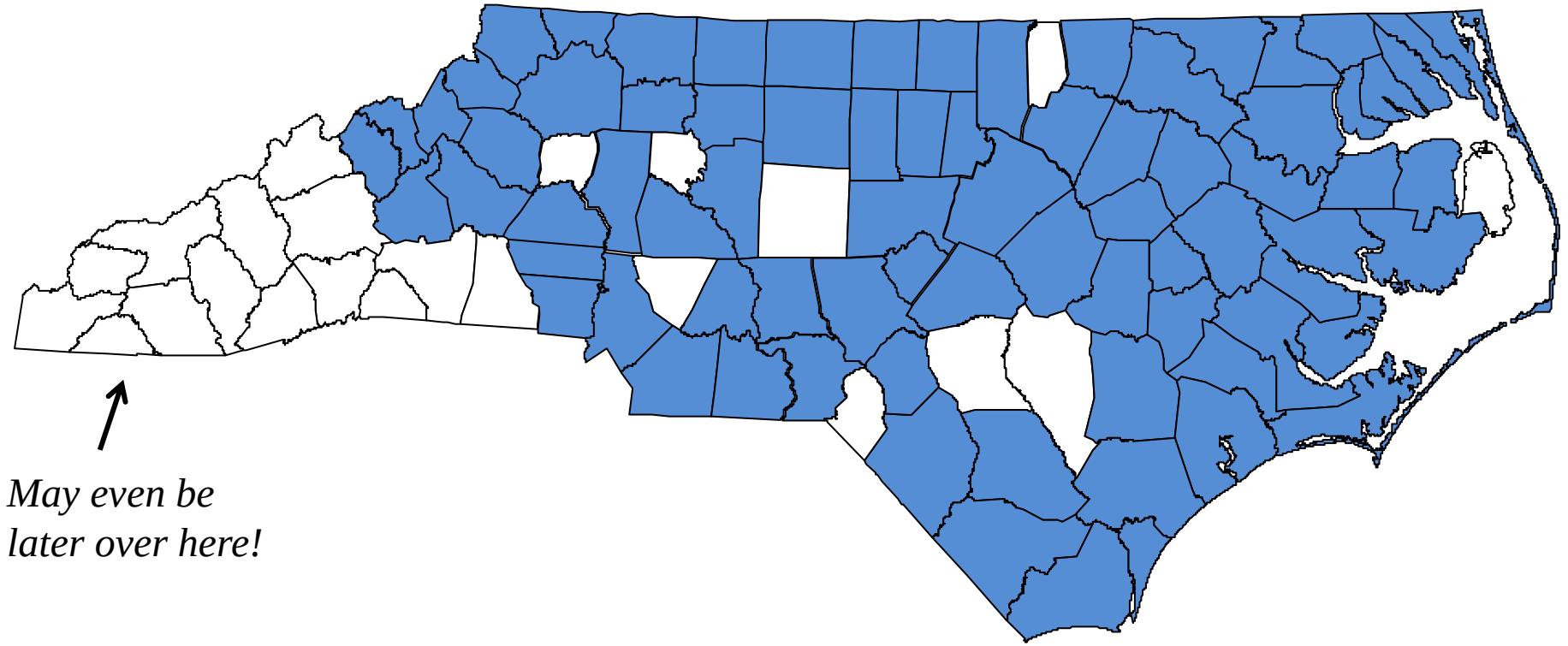
- To answer these, we needed data!!

Biological Data Collected 2011-2013

- Data collected from 16,928 known-age hunter-harvested adult deer (≥ 1.5 yrs.)
- Fetuses were collected from 1,468 does and measured using a conception timing scale to estimate peak conception dates.



Range of Conception Dates
(Peak breeding!)



May even be later over here!

Dec. 6th **Oct. 2nd**

Counties in white represent areas where not enough data was obtained to statistically calculate a county “peak conception date”.

Several years ago, staff began evaluating two deer management questions.

1. **Can we develop biological management units to help lead future deer management decisions?**

2. Are the current deer seasons the best “biological” fit for today’s deer population?

Biological Deer Management Units

Biological Units depicted in this presentation are the results of a 3 year analysis by the Agency to group counties that are biologically similar with respect to deer and deer management.

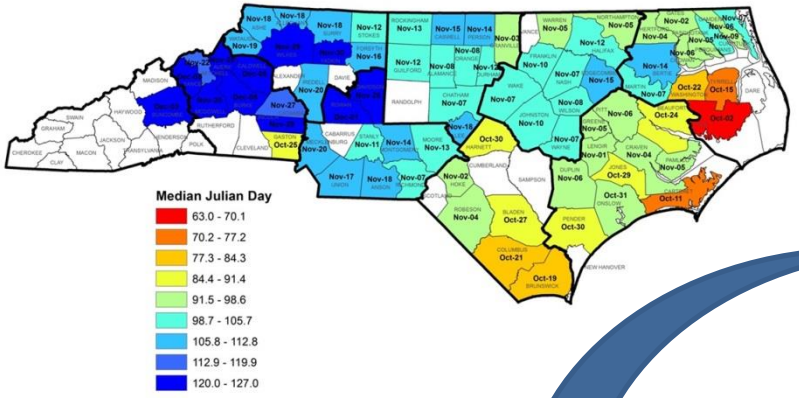
Units were not developed nor are they proposed as deer hunting seasons.

Development of the Units

- NC is very different from the Mountains to the Coast, we have:
  - Different habitats (different soils!)
  - Different landownership patterns
  - Different deer densities & breeding dates
- Use information from “the deer” and “the land” to show us where things are similar!

County-based analysis.

Median conception date



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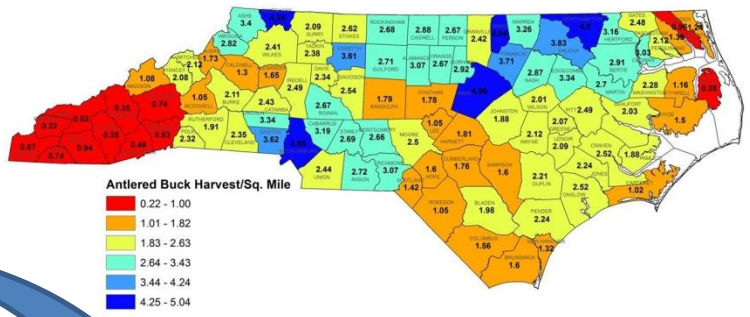
AB/mi^2 Buck Harvest



+

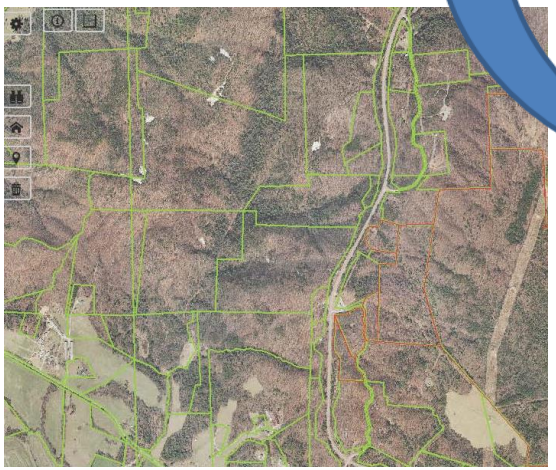
+

=

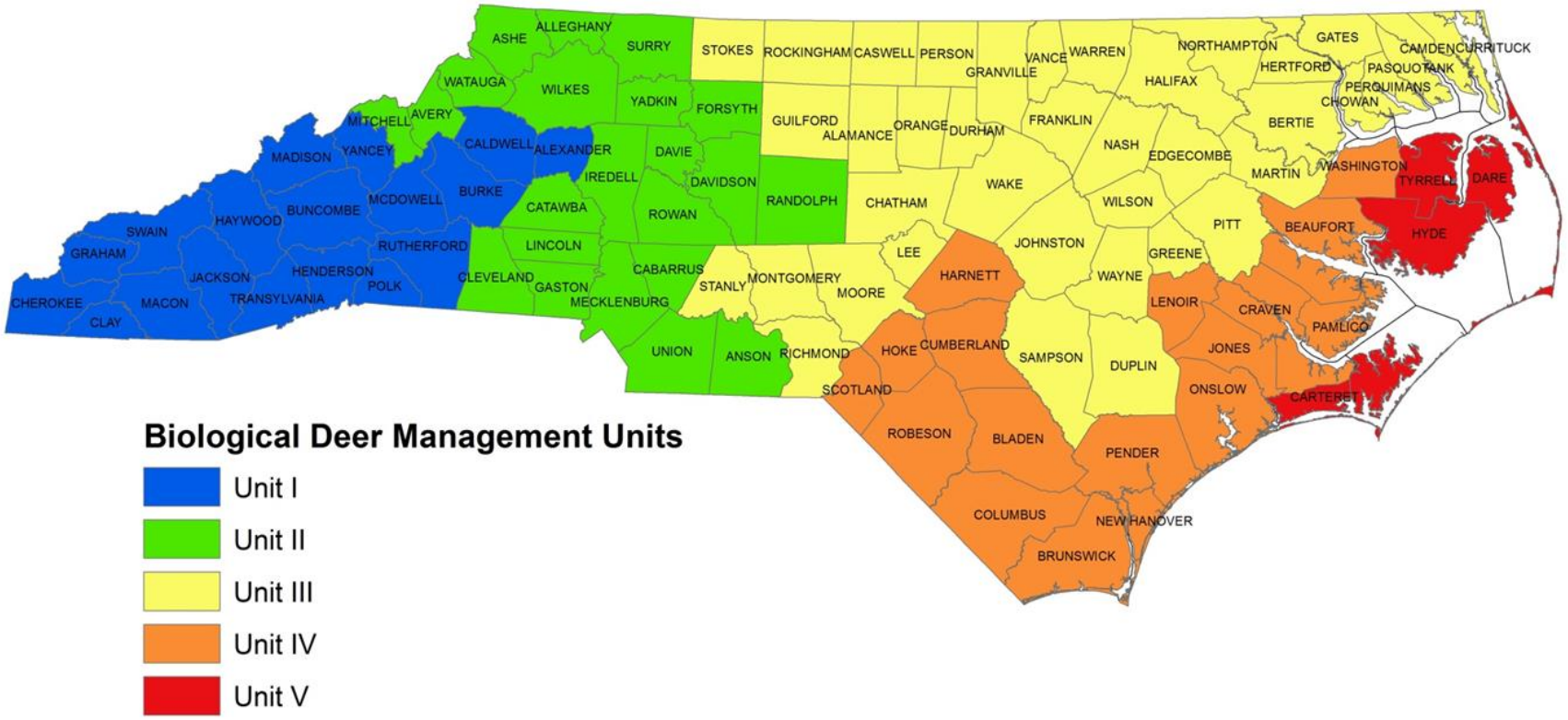
Average weights of 1.5- and 2.5-year-old does

+

Parcel size



Biological Deer Management Units



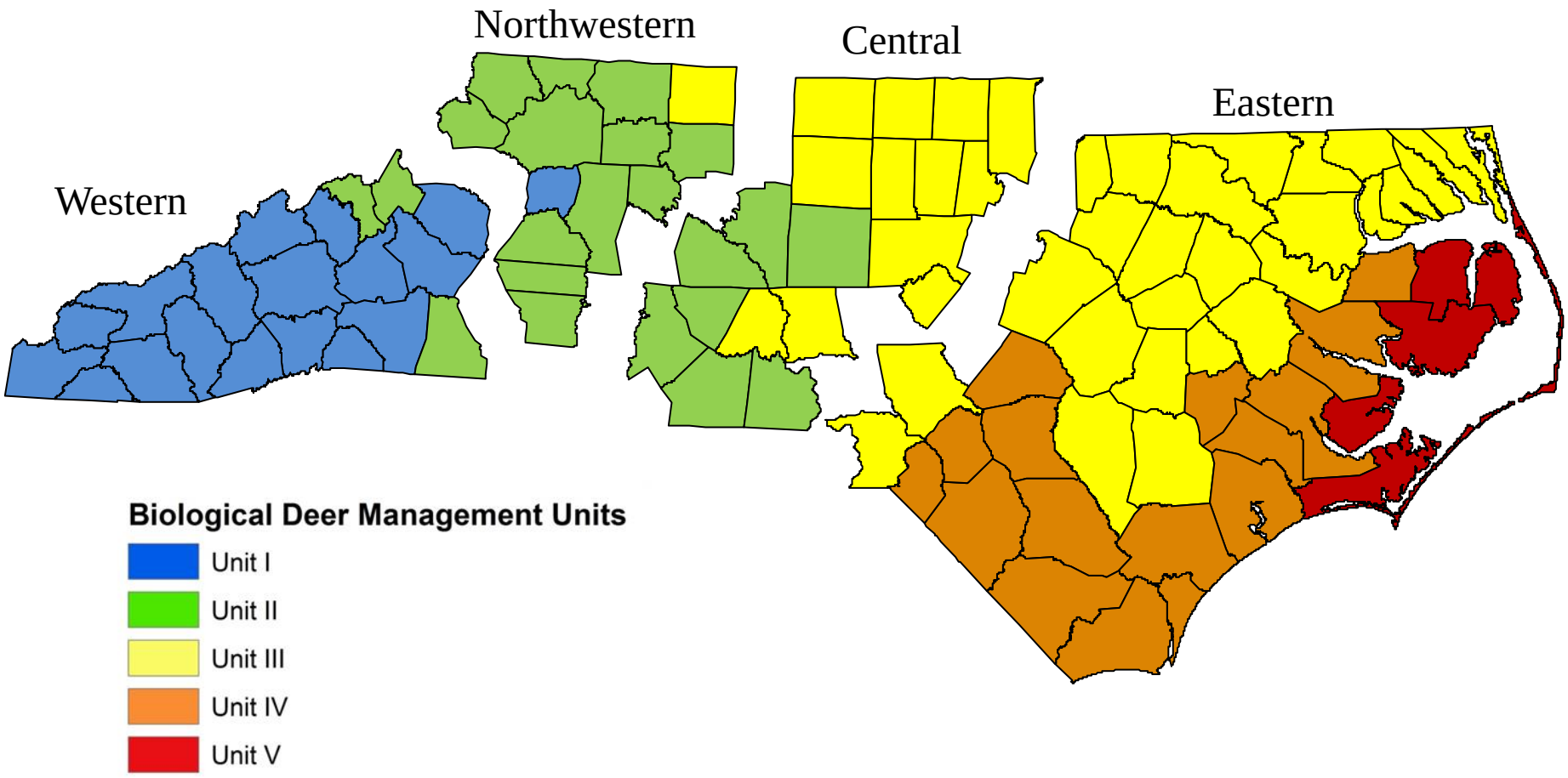
Most Significant Variable was Median Conception Date!
These are biologically similar counties.

Several years ago, staff began evaluating two deer management questions.

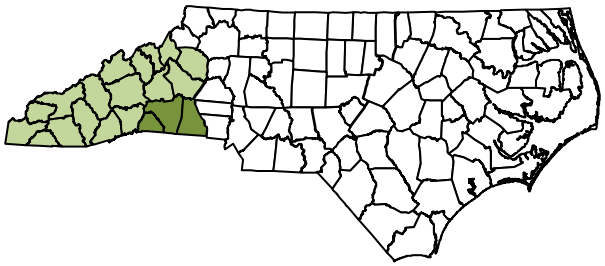
1. Can we develop biological management units to help lead future deer management decisions?

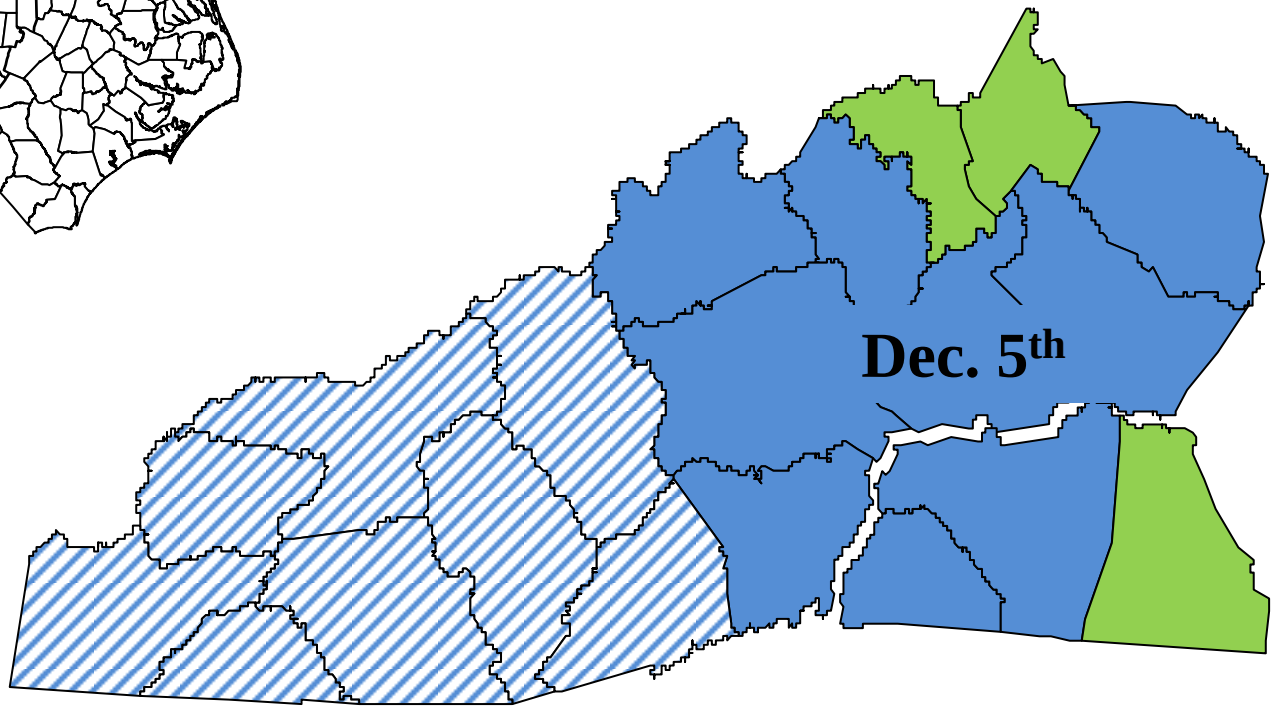
2. **Are the current deer seasons the best "biological" fit for today's deer population?**

Biological Units overlaid with Current Deer Seasons



Western Season
Peak Conception Dates



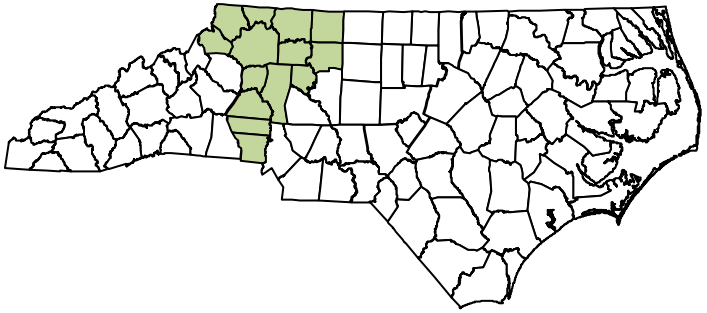


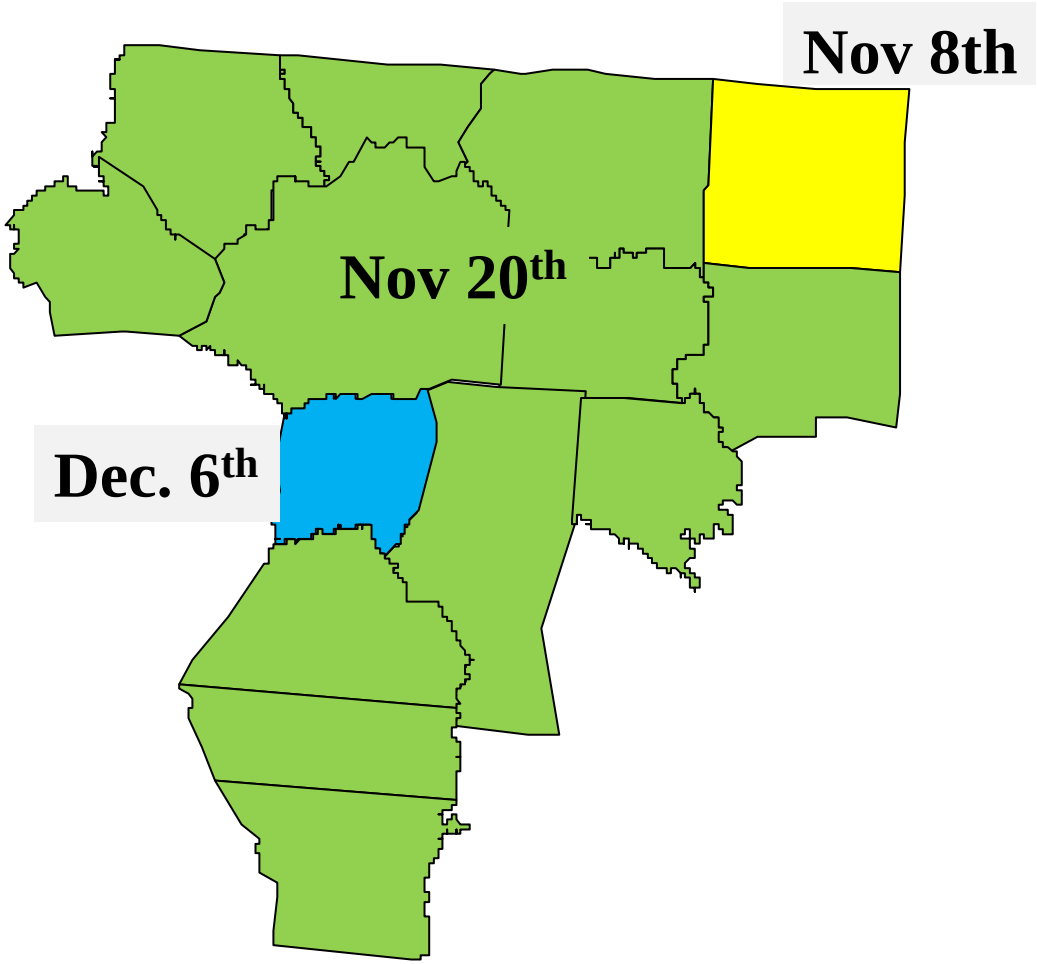
At least Dec. 5th
Perhaps even later

Challenges for collecting Conception Data in the West

1. Timing of deer seasons, all seasons close right at the breeding season. Thus hunter harvested does with a measurable fetus are not possible.
2. Many counties in the far west do not have a gun either-sex day.
3. Deer densities are very low and conducting targeted sampling in the winter was not considered a viable option.
4. Staff will continue to collect conception data via road kills and other occurring mortality types to expand our knowledge in the far west.

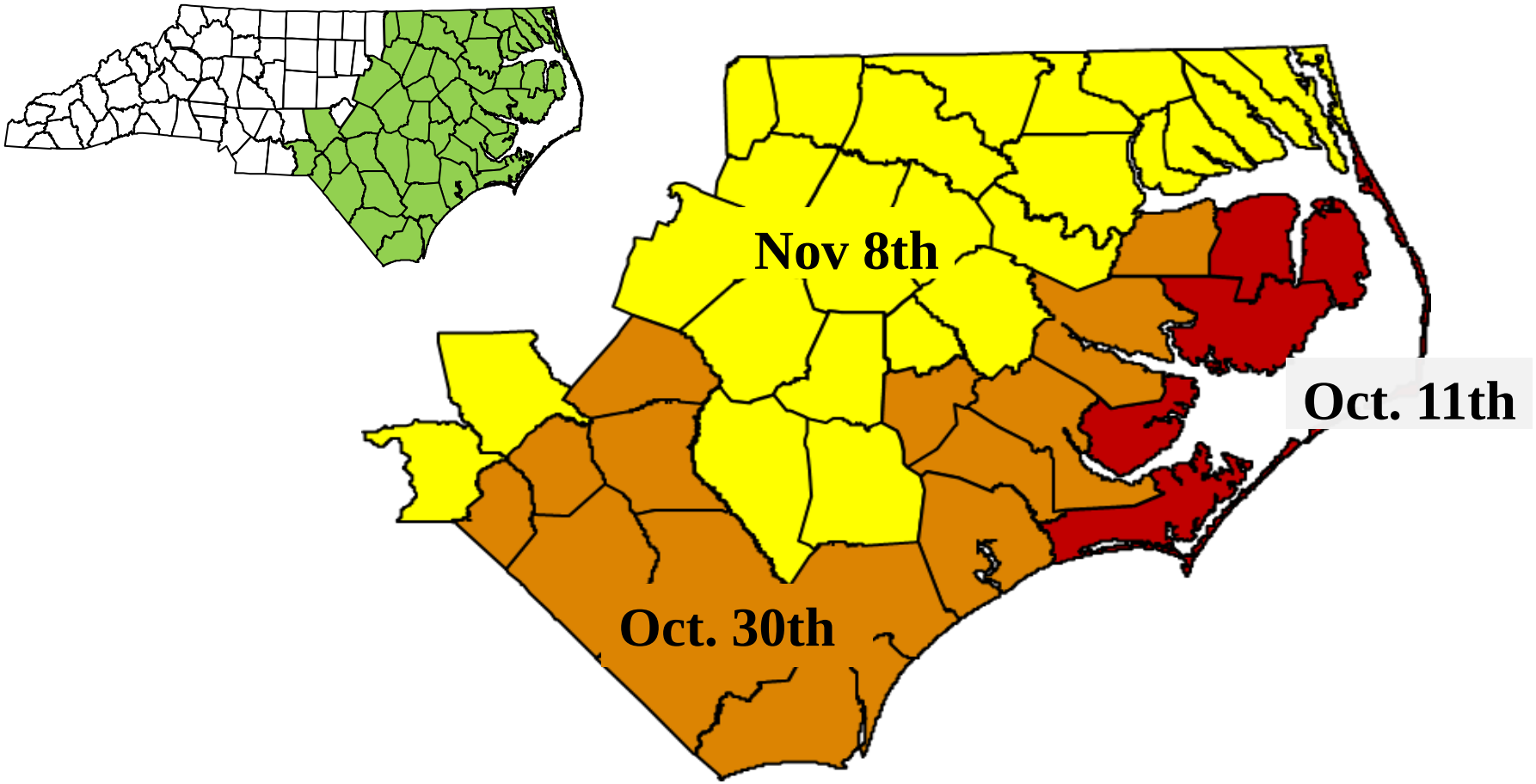
Northwestern Deer Season
Peak Conception Date





Central Deer Season
Peak Conception Dates

Eastern Deer Season
Peak Conception Dates



Why is peak conception important?

- Objectives for Sex Ratios entering the breeding period:
  1. No More than 20% of the Total Buck Harvest Occurs Before the Time of Peak Breeding
  2. At least 50% of the harvest before peak breeding is comprised of does

Good for the deer herd and good for deer hunters!

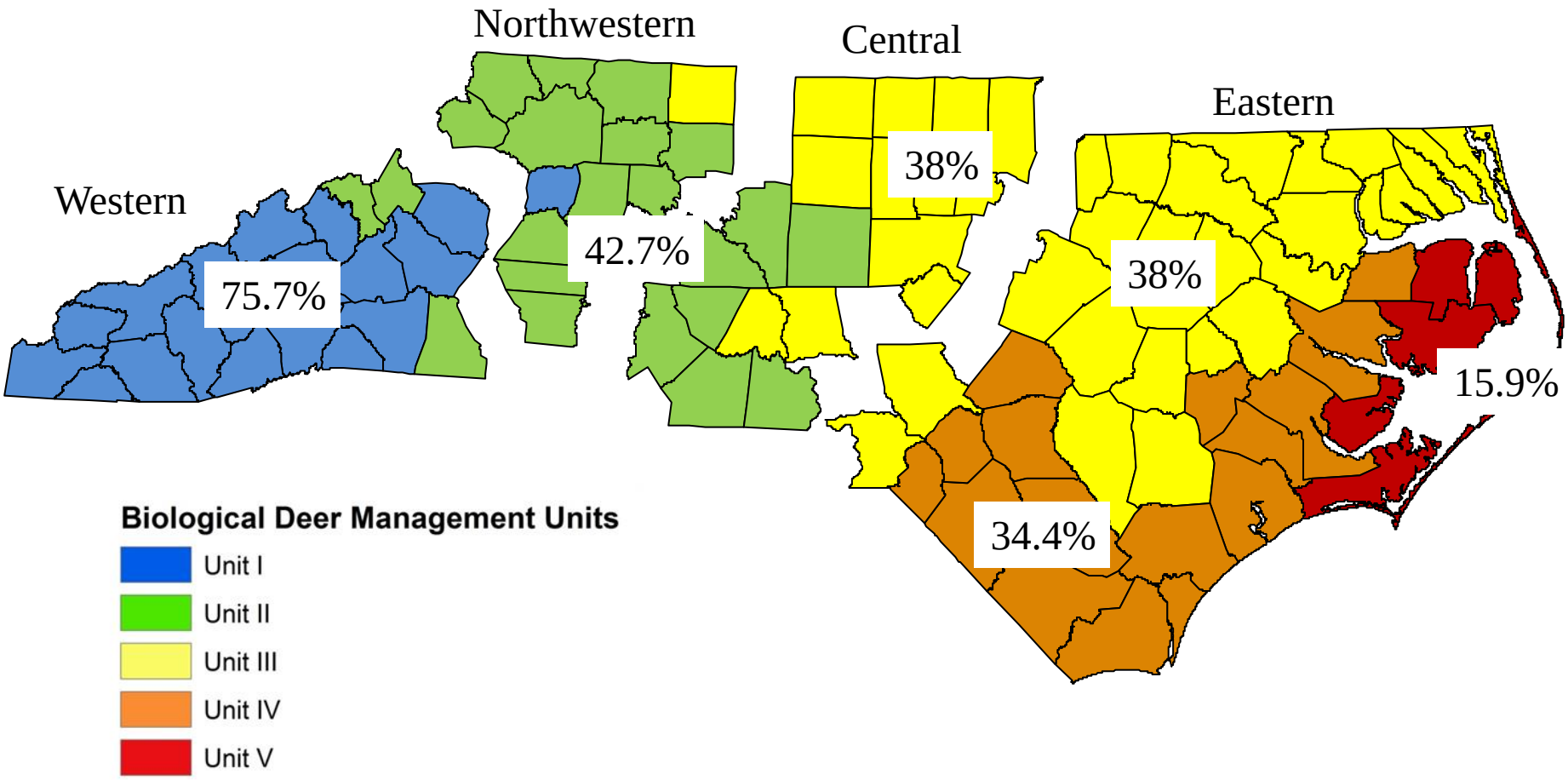
1. Most 1.5 year old bucks disperse or leave the area they grow up in prior to peak breeding and move 2-30+ miles to establish a permanent home range elsewhere. Limiting antlered buck harvest prior to peak breeding ensures that this exchange of young bucks across the landscape takes place, and allows interested landowners to more effectively protect young bucks from harvest on their property.

2. Ensure that most does are bred at the biologically correct time.

3. Ensure fawning dates occur in the narrowest time frame possible and fawns are born at the best time.

4. Competition between bucks can lead to exciting activity in the deer woods!

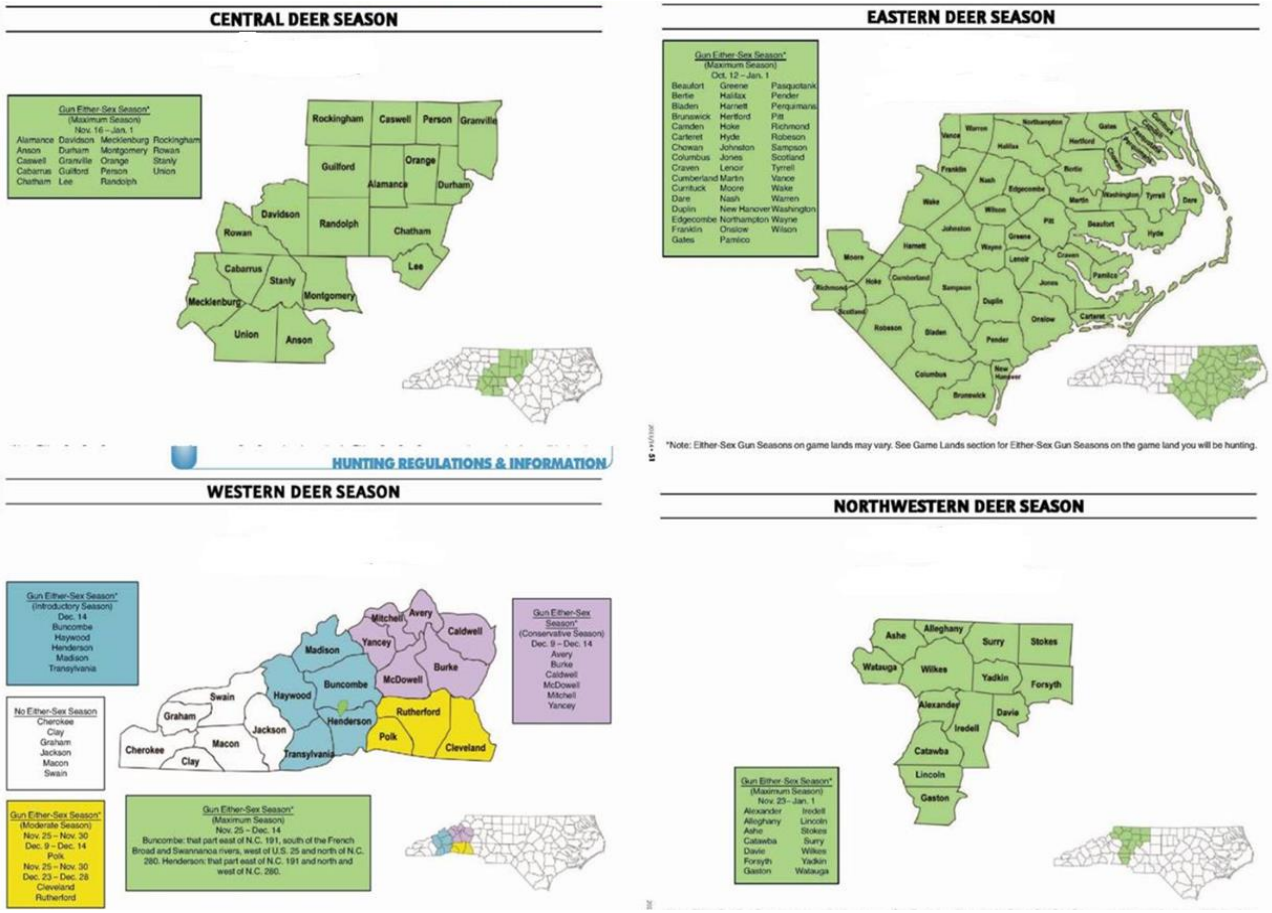
% of Buck Harvest Prior to Peak Breeding



Current seasons were established in a much different time.

1. Primarily administrative areas
2. We were in deer restoration mode with very different deer populations.
3. Deer hunting & deer hunters desires were different?
4. The State was different!

So, are the current deer seasons the best "biological" fit for today's deer population?



The Scientific/Biological Analysis Suggests

No, not really.

We could develop seasons that are a more appropriate biological fit for our deer populations and perhaps improve our deer management.

However,

Successful deer management is the blending of

1. Scientific Management Principles 
2. Limits of the Habitat/Landscape 
3. Desires of People 

What are your desires for deer management?