

# 2017 Deer Forums



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## *Hunter Survey Results and Management Options*

*Jonathan Shaw, NCWRC Deer Biologist*

## District, Date, Location, and Number of Constituents at 2017 Deer Forums

| District     | Date   | Location    | Attendees  |
|--------------|--------|-------------|------------|
| 1            | 1-Jun  | Williamston | 57         |
| 2            | 31-May | New Bern    | 56         |
| 3            | 30-May | Rocky Mount | 60         |
| 4            | 25-May | Dublin      | 32         |
| 5            | 24-May | Graham      | 41         |
| 6            | 23-May | Albemarle   | 88         |
| 7            | 18-May | Wilkesboro  | 31         |
| 8            | 17-May | Morganton   | 16         |
| 9            | 16-May | Clyde       | 20         |
| <b>Total</b> | -      | -           | <b>401</b> |

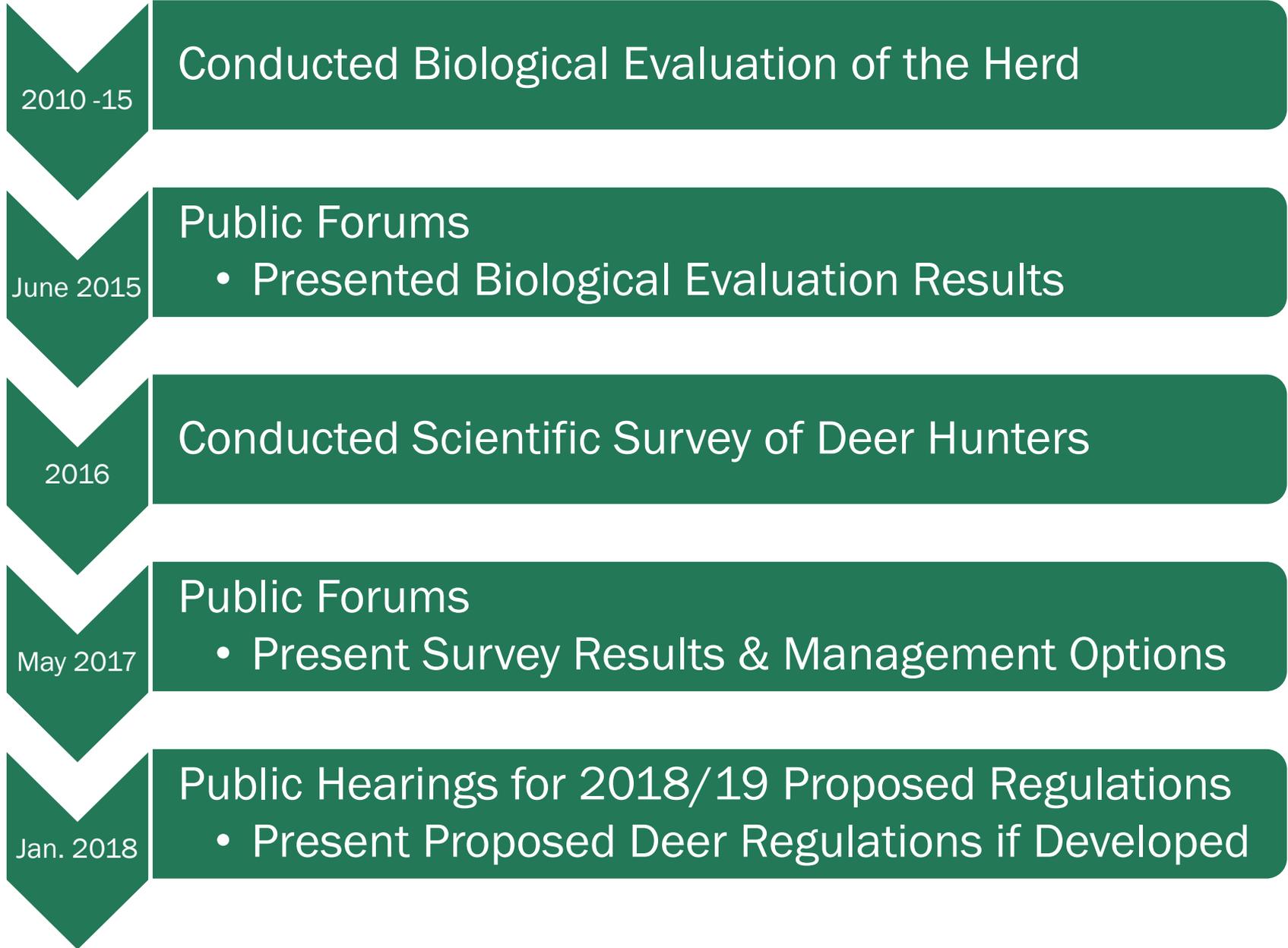


# Purpose of these Forums

**These are not public hearings; management options discussed are ideas, not proposed regulations.** Staff Biologists presented results from the 2016 Survey of Deer Hunters and discussed potential management options developed from the survey and the 2015 Biological Evaluation of Deer Hunting Season Structures and Management Units. Development of proposed regulations will be based on all information gathered through this multi-year evaluation. If developed, they will be presented at public hearings in January 2018, and if approved by the Commission will be effective for the 2018/19 season.



# Deer Season Frameworks Evaluation Timeline



# Biological Findings

Presented at 2015 Deer Forums

[www.ncwildlife.org/deerstudy](http://www.ncwildlife.org/deerstudy)

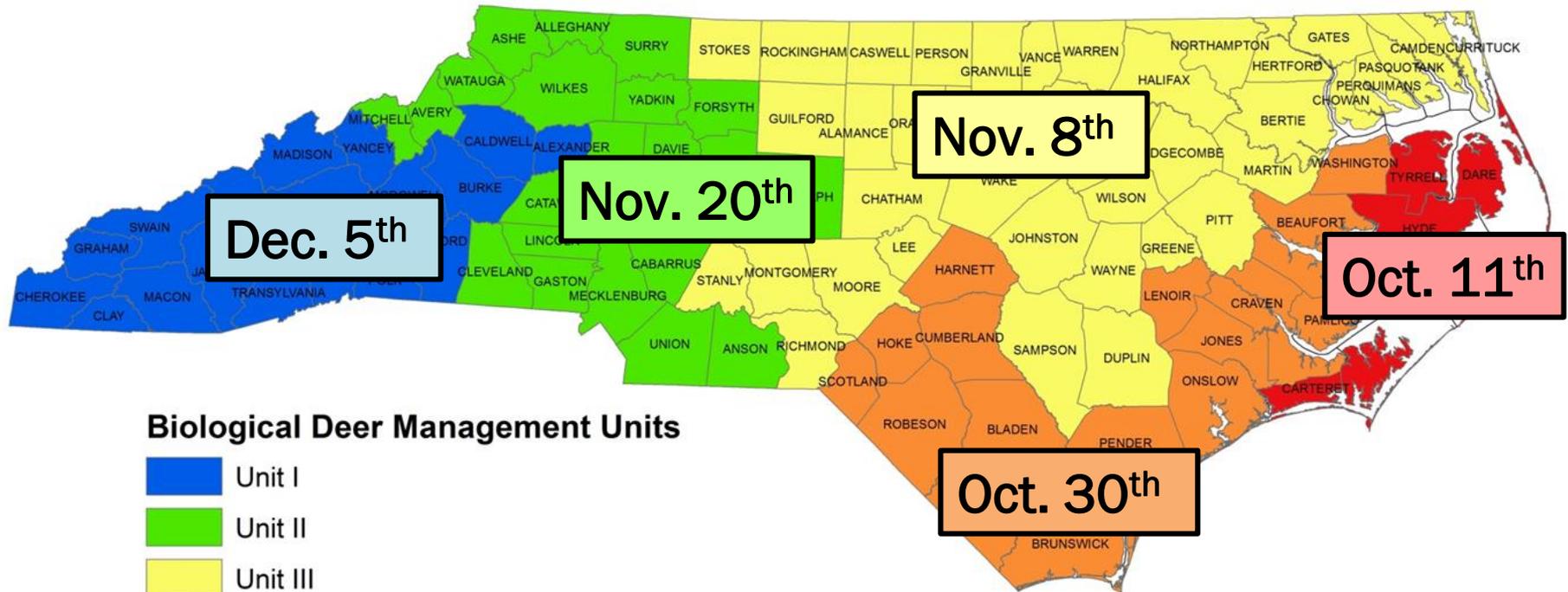
- The condition of the herd can be improved by varying degrees across the state by:
  - Reducing young buck harvest
  - Shifting time of buck harvest later
  - Adjusting doe harvest rate
- Developed Biological Deer Management Units



*Aileen Devlin/The Daily Reflector*



# Biological Deer Management Units with Peak Breeding Dates



## Biological Deer Management Units

-  Unit I
-  Unit II
-  Unit III
-  Unit IV
-  Unit V



## Timing of harvest should be anchored around peak breeding

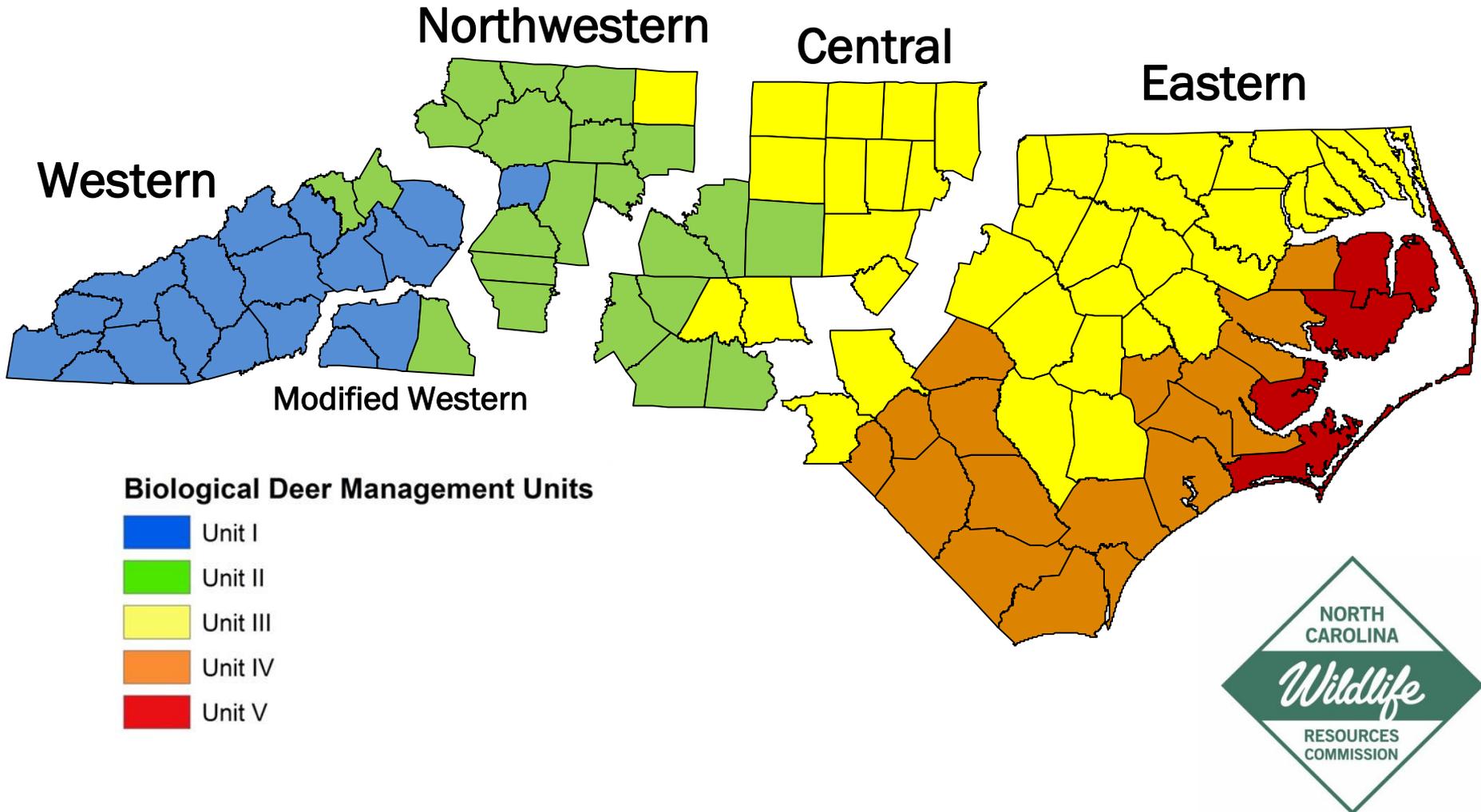
- Most 1.5-year-old bucks disperse or leave the area they grow up in prior to peak breeding and move 2-30+ miles to establish a permanent home-range elsewhere. Limiting antlered buck harvest prior to peak breeding ensures that this exchange of young bucks across the landscape takes place, and allows interested landowners to more effectively protect young bucks from harvest on their property.
- A balanced adult sex ratio prior to peak breeding ensures most does are bred at the biologically correct time and fawns are born at an optimal time, during spring green-up. This also ensures fawning dates occur in the narrowest time frame which could improve their odds of surviving predation.
- Limiting buck harvest prior to peak breeding increases competition between bucks which can lead to exciting activity in the deer woods!



# Biological Deer Management Units

overlaid with

## Current Deer Season Zones



Two primary questions were posed following the 2015 Biological Evaluation of Deer Hunting Season Structures and Management Units, and 2015 Deer Forums:

1. Can we re-align deer season zones to match BDMUs to better account for biological variability across NC?
2. Can we improve management within season zones to improve the condition of the herd while increasing hunter satisfaction?

To answer these questions, a rigorous scientific survey was conducted in 2016, the results of which are statistically representative of the desires, expectations, and level of support for management strategies of the larger deer hunter population.



# 2016 Survey Implementation and Response

- 196,770 big-game license holders contacted
- 136,609 by email
- 87,235 by post-card
- 33,750 (17%) responded
- Avg. 307 deer hunter responses per county
- Results analyzed at county, regional, and state level
- Reasons for nonresponse:
  - “Forgot to get around to it” (33%)
  - “Didn’t receive invitation” (25%)
  - “Do not deer hunt” (20%)
  - “Do not have device/internet” (6%)

Dear Jonathan C Shaw,

A few weeks ago we sent an invitation asking for your participation in an important hunter survey. Your response assists the Wildlife Resources Commission as it evaluates the future deer hunting opportunities within the state.

The deadline to participate in this survey is September 30, 2016.

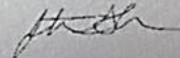
Carefully type this entire link into your web address bar (not your search box):

[nchunter.sawtoothsoftware.com](http://nchunter.sawtoothsoftware.com)

And then enter your access code (case sensitive) to begin the survey: XXXXX

We sincerely appreciate your participation. If you have questions, please feel free to contact me at [jonathan.shaw@ncwildlife.org](mailto:jonathan.shaw@ncwildlife.org).

Many thanks,



Jon Shaw, Deer Biologist, NCWRC  
Wildlife Management Division



The 2016 Survey of Deer Hunters included 35 questions in all, and several of those questions had multiple parts.

Most of the questions were general survey type questions (multiple choice or ranking questions). In interest of time, the one hour forum presentation only included a statewide summary of the key deer management questions for those type questions.



# General Survey Results

## Summary of Key Management Questions

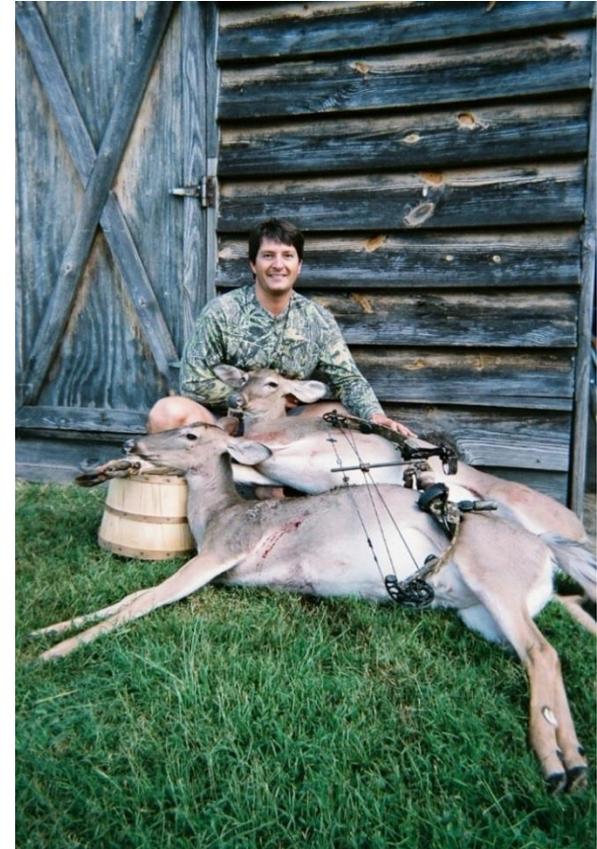
- **Buck management**
  - 88% hunt on properties <1,000 acres; minimum need to meet their objectives
  - 68% think we have too few mature bucks (2.5+)
  - 55% oppose further restricting buck harvest on private lands



# General Survey Results

## Summary of Key Management Questions

- Hunter satisfaction declined from the last statewide survey of deer hunters (2006)
- Doe management
  - Hunters perceive deer numbers declining in areas
  - 48% want increase; 31% want numbers to remain stable
  - Doe harvest reduction needed to increase or stabilize numbers
  - Support for reduction on either-sex days or bag limits is unclear



# Acceptance to Change?

- Hunters are willing to make minor or any changes necessary to improve herd condition (81%)
- We hunters want to have our cake and eat it too...
- Trade-off evaluations are key



# Explanation of Trade-Off Evaluations Technique

A portion of the survey (Question 5) involved trade-off evaluations, or technically speaking, choice-based-conjoint analysis. This technique is commonly used in marketing and is increasingly being used in scientific surveys for natural resources. For this portion of the survey, NCWRC biologists selected five of the most important regulatory attributes (gun season length, blackpowder season length, gun season timing, antlered bag limit and antlerless bag limit), and identified a range of levels for those attributes based on current levels across the state, and the levels needed to achieve the agency's biological objectives.

The software used to conduct the survey (Sawtooth) randomly selected from this range of levels for each of the 5 attributes to create 3 random hypothetical options. The participant was asked to choose the option they most prefer. This was repeated for each participant providing each hunter a unique random set of 3 options 8 times. This technique enabled staff to determine which attribute was most important to hunters, which levels were most and least desired for each attribute, and assess what trade-offs hunters may be willing to make to improve the condition of the herd.

Survey results presented in the presentation from this point forward were based on the trade-off evaluations portion of the survey (Question 5). Other regulatory attributes that are less impactful on the resource (example: archery season) are not included in the trade-off evaluations portion of the survey, but were addressed in the general survey questions.



# Trade-Off Evaluations

- Marketing technique
  - What is most important?
  - What is preferred?
  - What are potential trade-offs?



**Question 5.** Choose the option you most prefer, even if you consider none to be ideal.

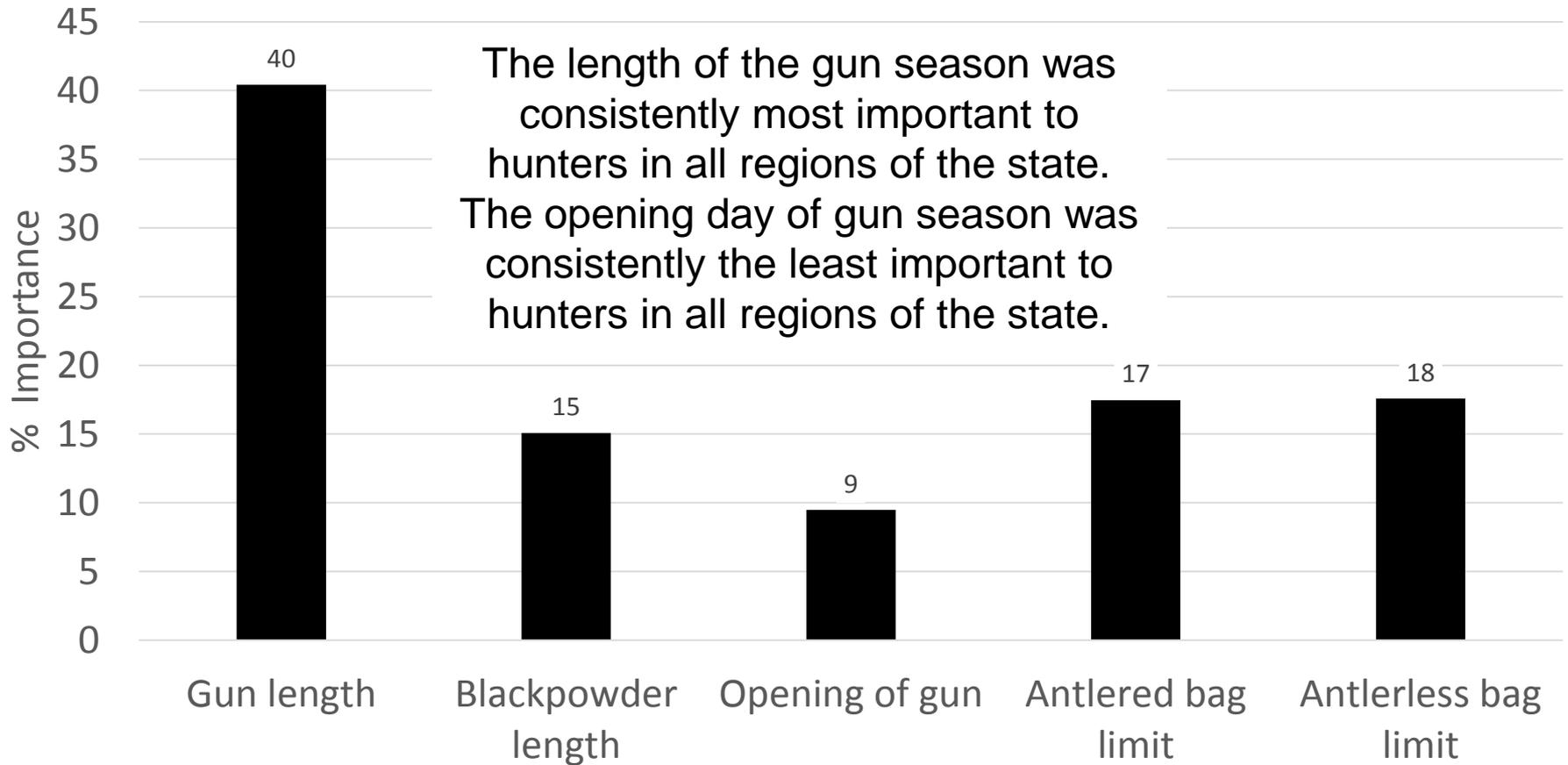
1 of 8)

|  | Option A              | Option B              | Option C              |
|--|-----------------------|-----------------------|-----------------------|
| Gun Season Length                          | 3 weeks               | 11 weeks              | 7 weeks               |
| Blackpowder Season Length                  | none                  | 1 week                | 2 weeks               |
| Opening of Gun Season (later than current) | no change             | 3 weeks               | 2 weeks               |
| Antlered Buck Bag Limit                    | 2                     | 1                     | 4                     |
| Antlerless Bag Limit                       | 2                     | 4                     | unlimited             |
|  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Each hunter was presented with a unique random set of 3 options 8 times

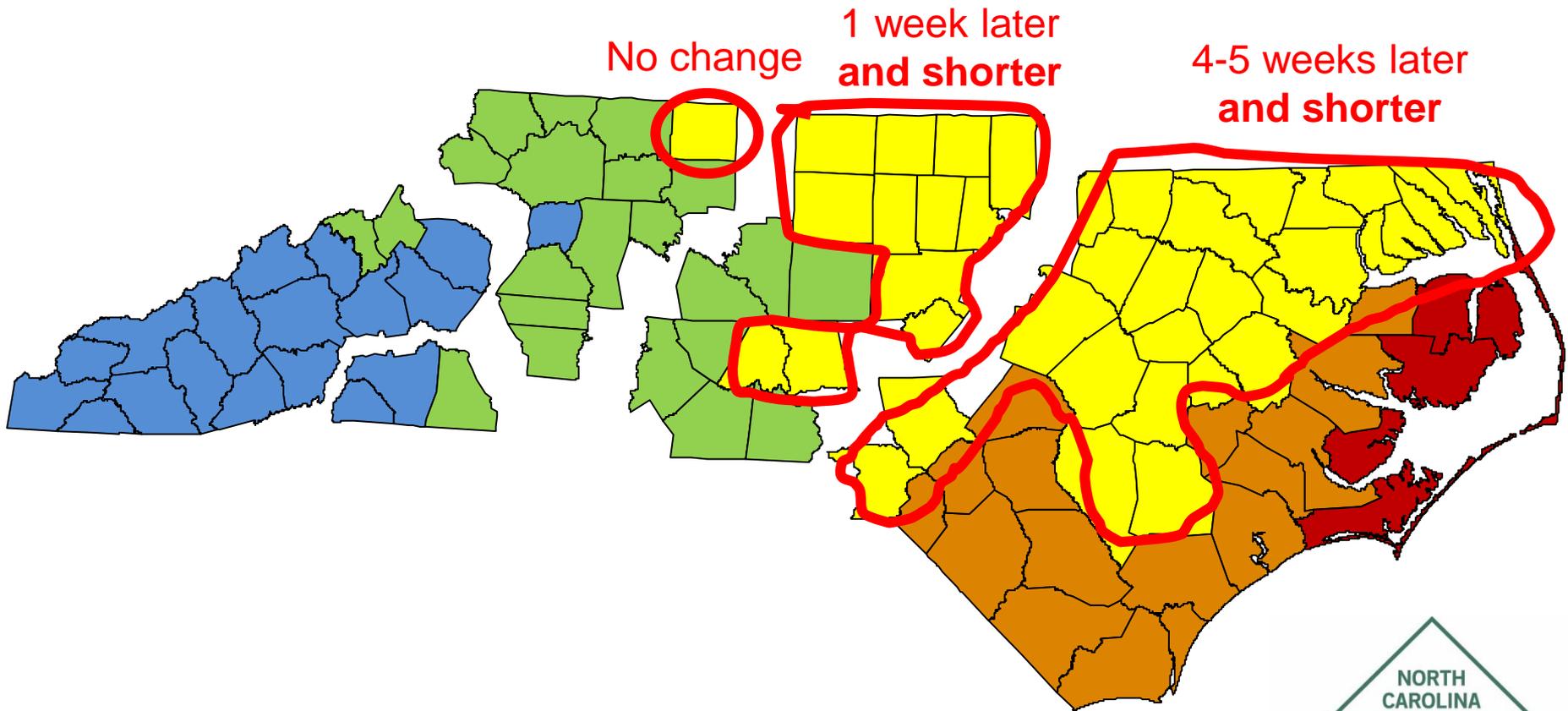


# Importance of Attributes to Hunters Statewide

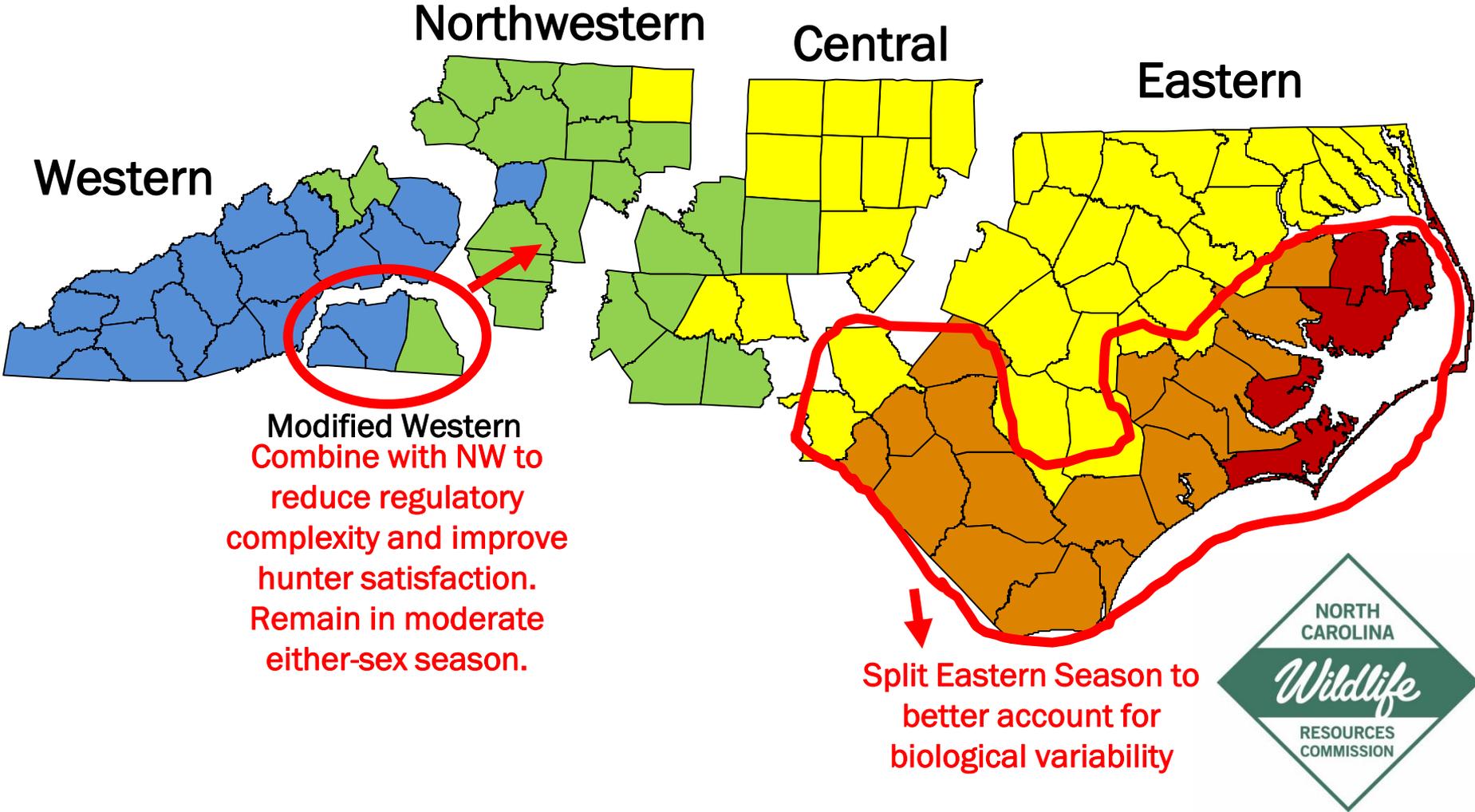


# Can we align Season Zones with BDMUs?

Not without significant trade-offs to season length



# Potential Deer Season Zone Adjustments



# Answers to Primary Management Questions

1. Can we re-align deer season zones to match BDMUs to better account for biological variability across NC?

**Not without significant trade-offs to length of gun season, the most important attribute to hunters. Smaller adjustments to zones to improve overall management may be more feasible.**

2. Can we improve management within season zones to improve the condition of the herd while increasing hunter satisfaction?

**Yes, hunter preference in some cases aligns with biological improvements. Additionally, within zones, there appear to be viable trade-offs in hunting opportunities and traditions that hunters are willing to make to improve herd condition.**

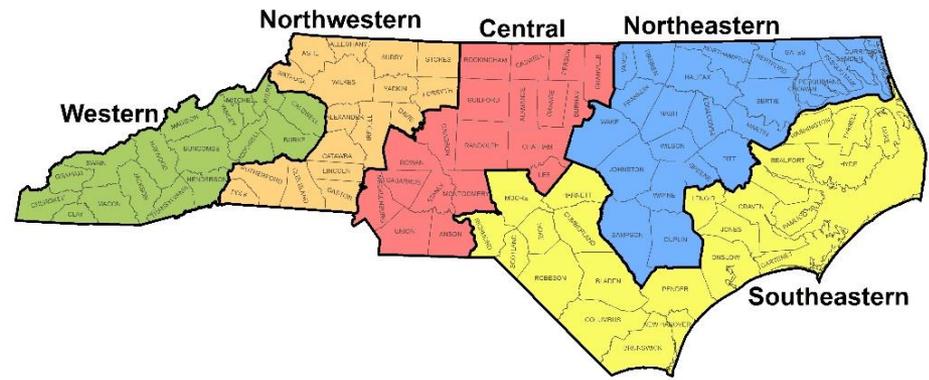




# Season Attributes within Potential Season Zones

## Attributes Analyzed

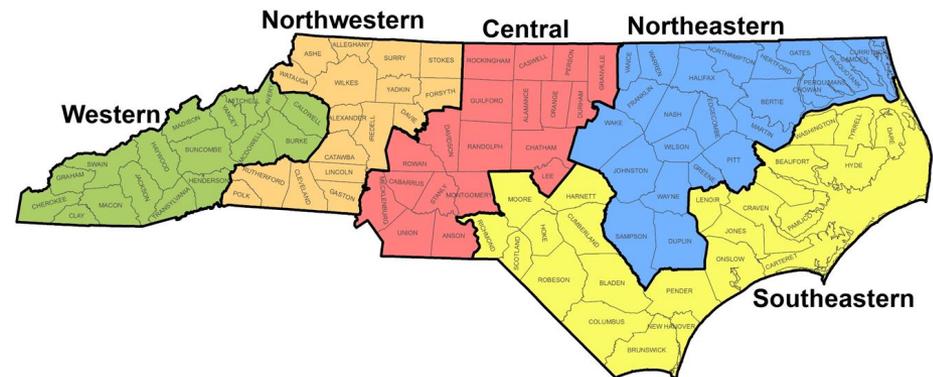
1. Gun Season Length
2. Antlerless Bag Limit
3. Antlered Bag Limit
4. Length of Blackpowder
5. Opening of Gun



# Season Attribute Levels within Potential Season Zones

## Levels of Attributes

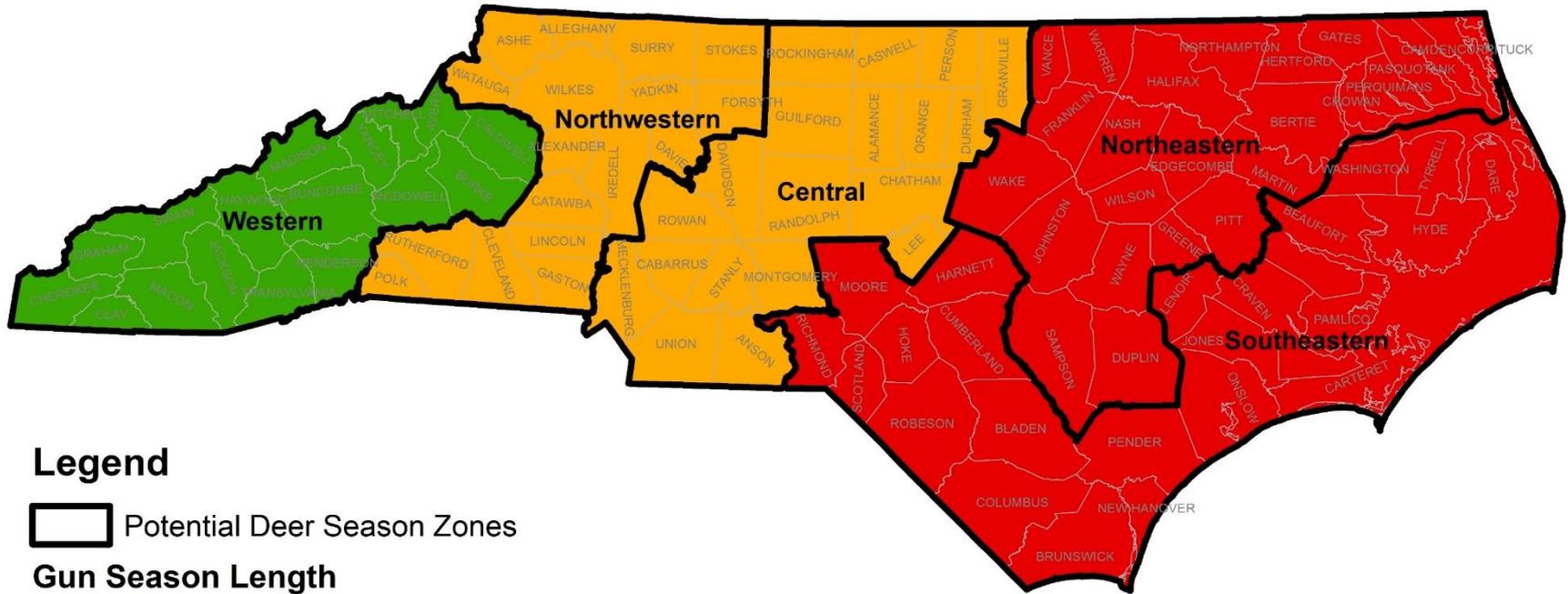
- Hunter Preference
- Biological Optimum
  - Level required to meet identified biological objectives of well-managed herd
- Balanced Option
  - A balance between hunter preference and biological optimum; depending on the attribute could lean one way or the other



# 1. Gun Season Length



# Gun Season Length - Hunter Preference



## Legend

 Potential Deer Season Zones

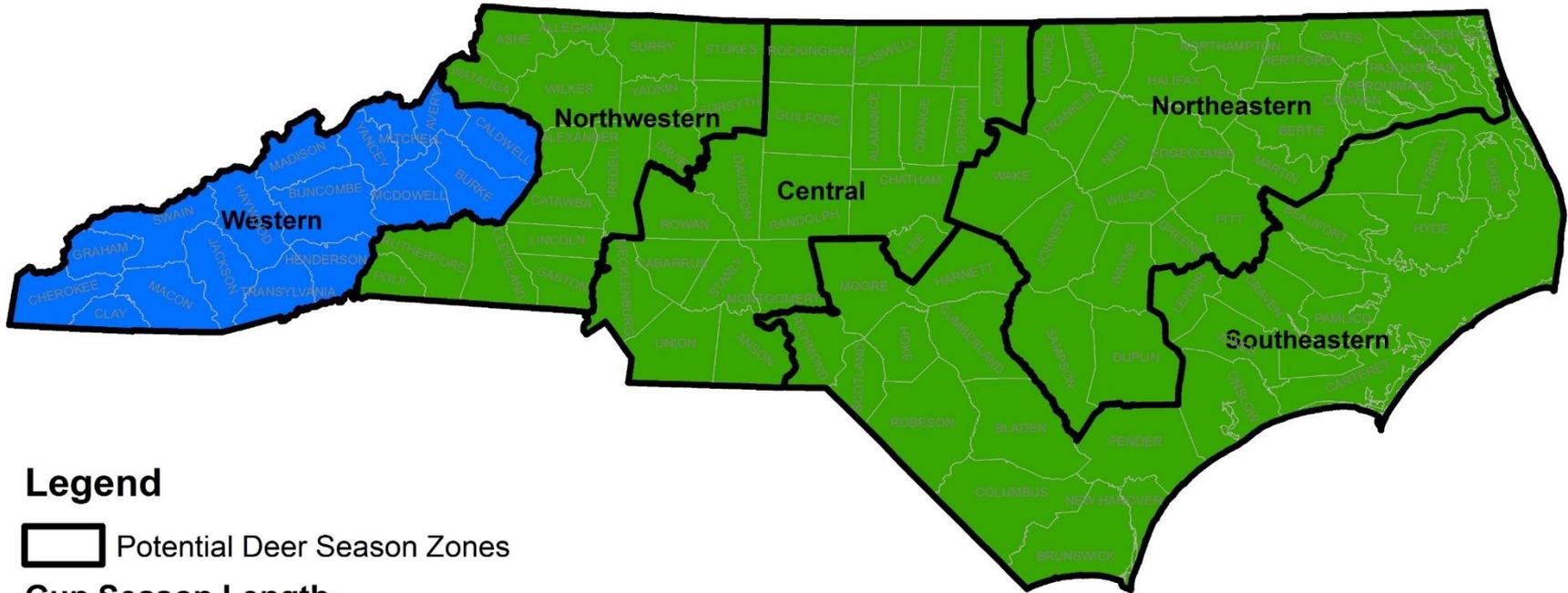
## Gun Season Length

-  11 weeks
-  9 weeks
-  5 weeks

(Range of Attribute Levels: 3 – 11 weeks)



# Gun Season Length - Biological Optimum



## Legend

 Potential Deer Season Zones

## Gun Season Length

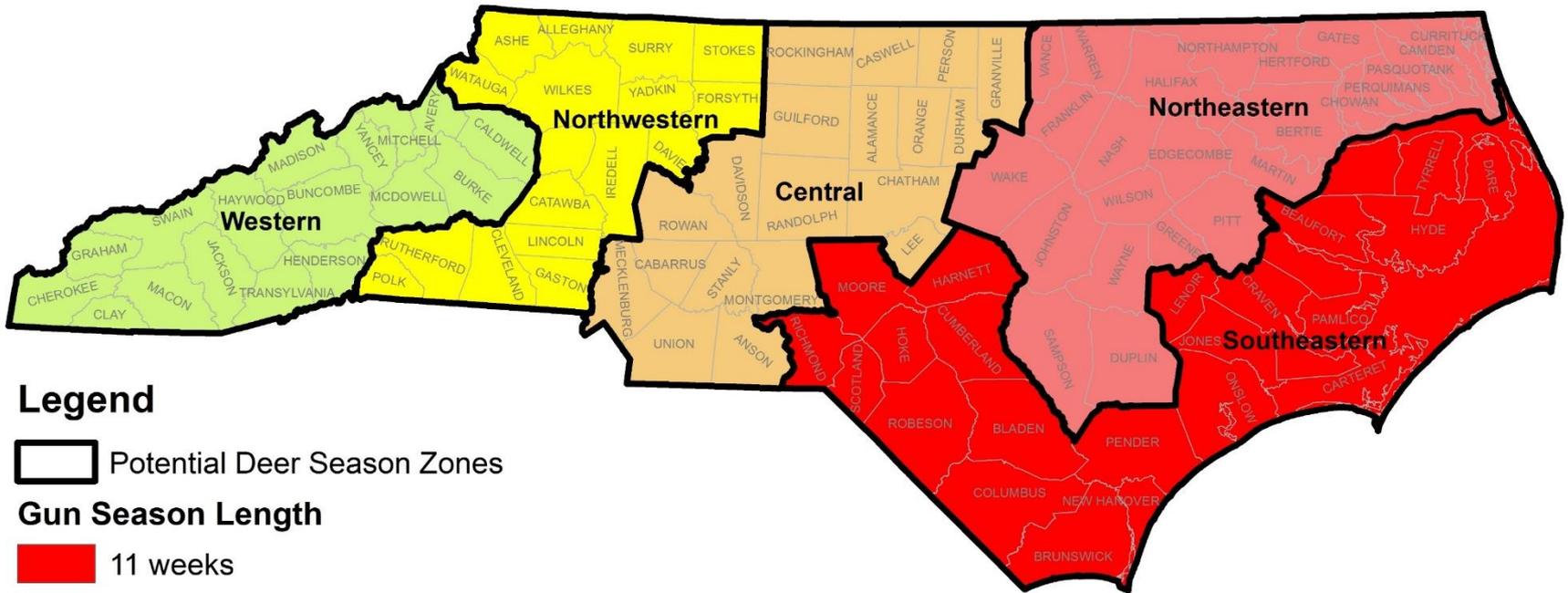
 3 weeks

 5 weeks

Biological optimum season length provides opportunity for adequate and sustainable doe harvest while maintaining balance in the sex-ratio of the harvest. Longer seasons tend to result in sex-ratios skewed towards males in the harvest.



# Gun Season Length - Balanced Option



## Legend

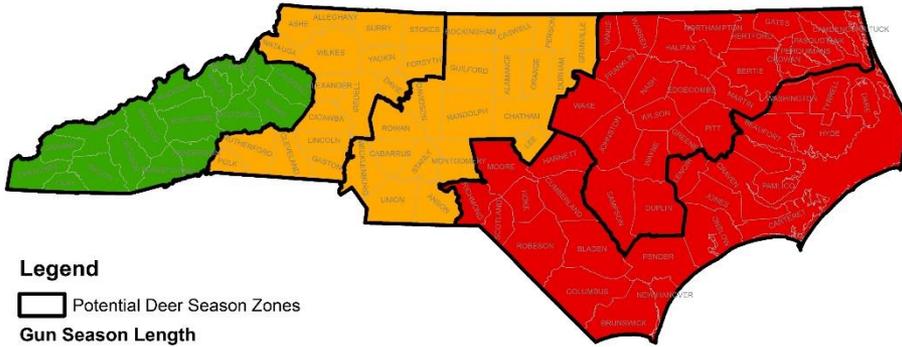
 Potential Deer Season Zones

## Gun Season Length

-  11 weeks
-  10 weeks
-  8 weeks
-  7 weeks
-  6 weeks

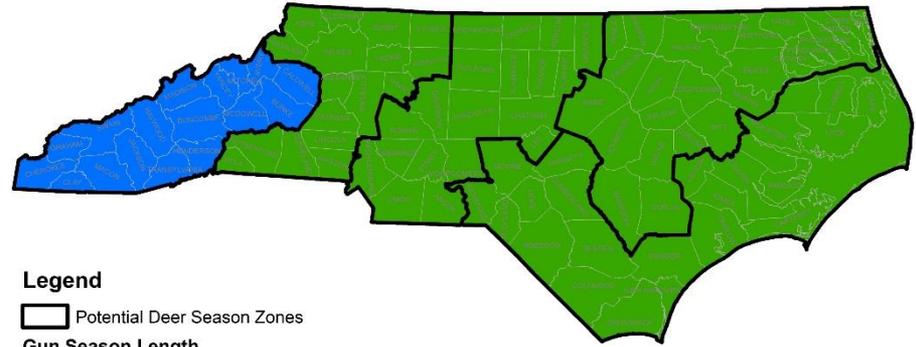


Gun Season Length - Hunter Preference



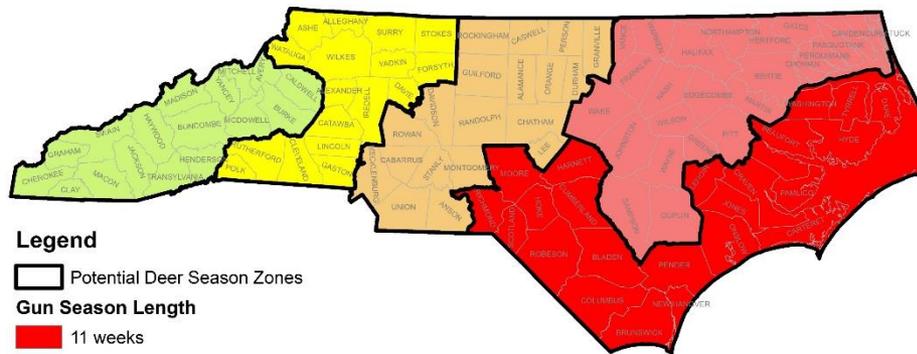
- Legend**
- Potential Deer Season Zones
  - Gun Season Length**
  - 11 weeks
  - 9 weeks
  - 5 weeks

Gun Season Length - Biological Optimum



- Legend**
- Potential Deer Season Zones
  - Gun Season Length**
  - 3 weeks
  - 5 weeks

Gun Season Length - Balanced Option



- Legend**
- Potential Deer Season Zones
  - Gun Season Length**
  - 11 weeks
  - 10 weeks
  - 8 weeks
  - 7 weeks
  - 6 weeks



# Preference and Potential Trade-offs for Gun Season Length

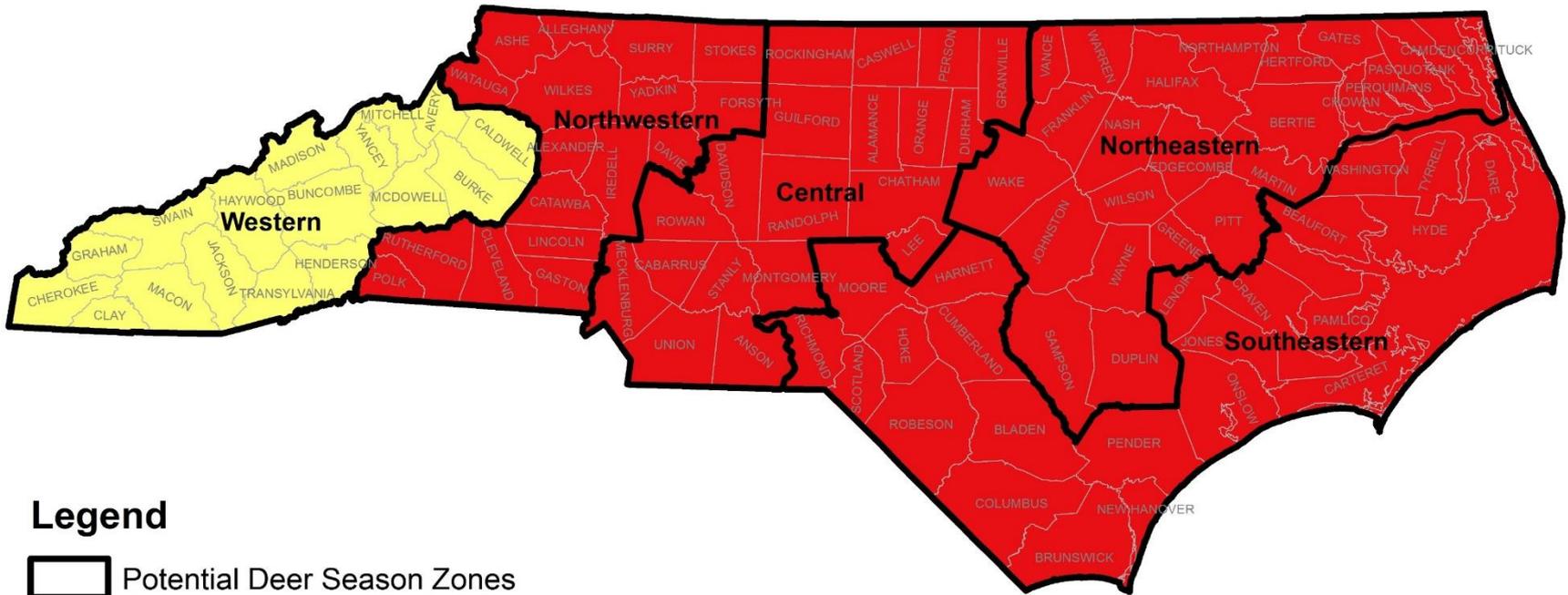
- Most important attribute to hunters
- Preference for current or longer season
- Biological optimum requires shorter seasons
- Based on survey responses, trade-offs to improve herd condition may be limited
- Balanced option increases opportunity in some areas without significant biological impact



## 2. Antlerless Bag Limit



# Antlerless Deer Bag Limit - Hunter Preference



## Legend

 Potential Deer Season Zones

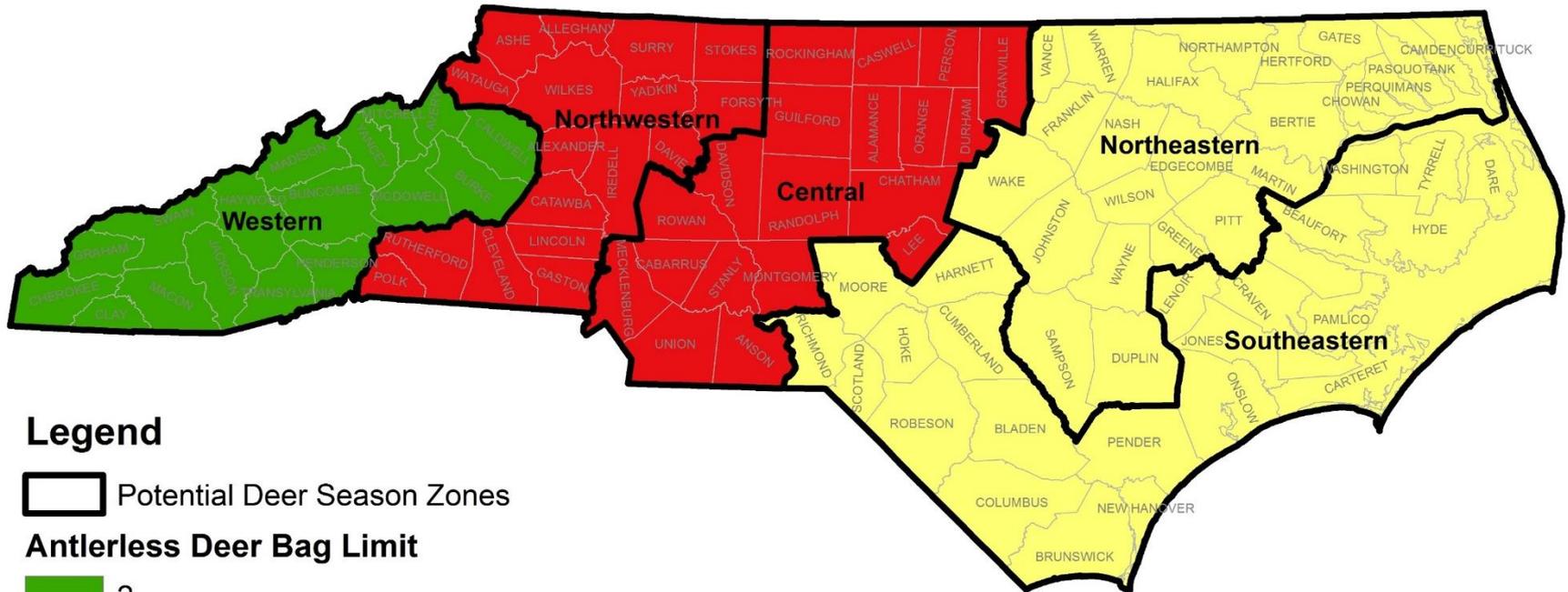
## Antlerless Deer Bag Limit

-  4
-  6

(Range of Attribute Levels: 2 - Unlimited)



# Antlerless Deer Bag Limit - Biological Optimum



## Legend

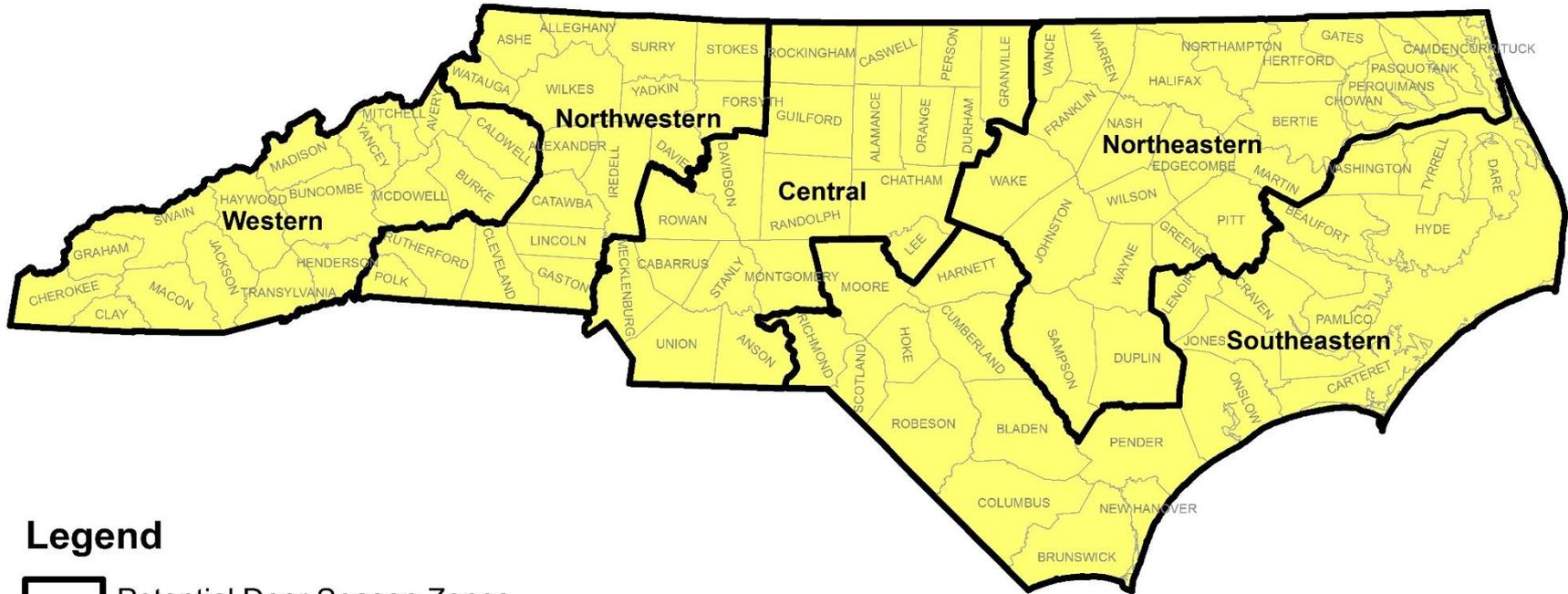
 Potential Deer Season Zones

## Antlerless Deer Bag Limit

-  2
-  4
-  6



# Antlerless Deer Bag Limit - Balanced Option



## Legend

 Potential Deer Season Zones

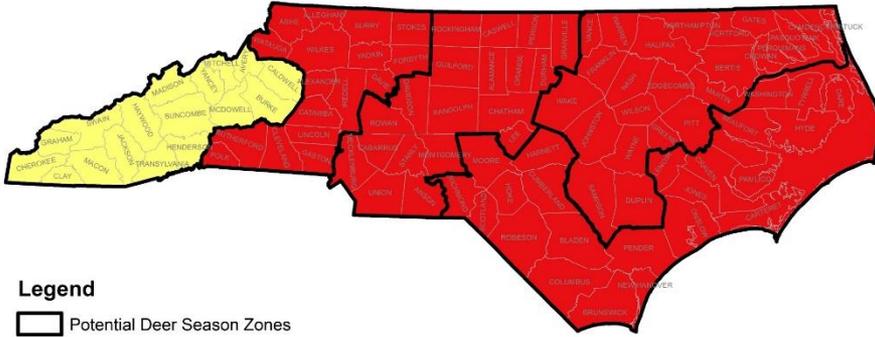
## Antlerless Deer Bag Limit

 4

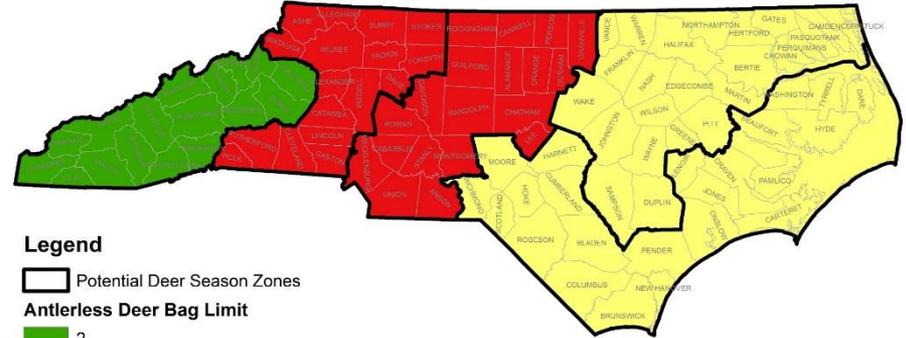
The balanced option includes a statewide antlerless bag limit of 4. This provides regulatory consistency, aligns with the NE and SE biological optimum, and the predicted future (4 rather than 6) biological optimum for NW and Central Zones. This also moves towards the biological optimum and aligns with hunter preference in the Western Zone.



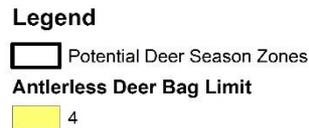
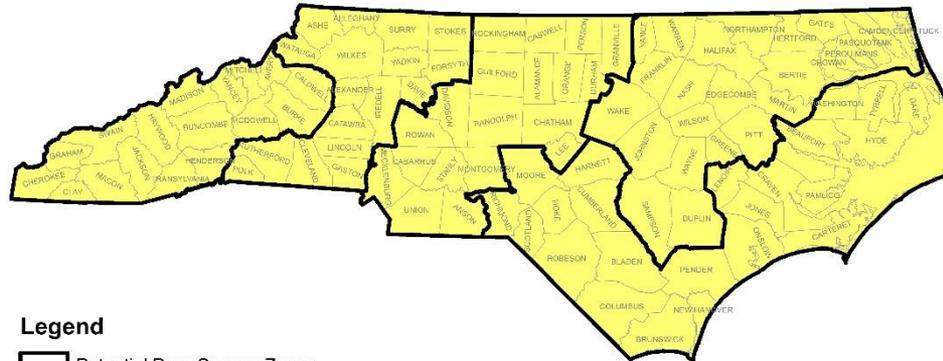
### Antlerless Deer Bag Limit - Hunter Preference



### Antlerless Deer Bag Limit - Biological Optimum



### Antlerless Deer Bag Limit - Balanced Option



# Preference and Potential Trade-offs for Antlerless Bag Limit

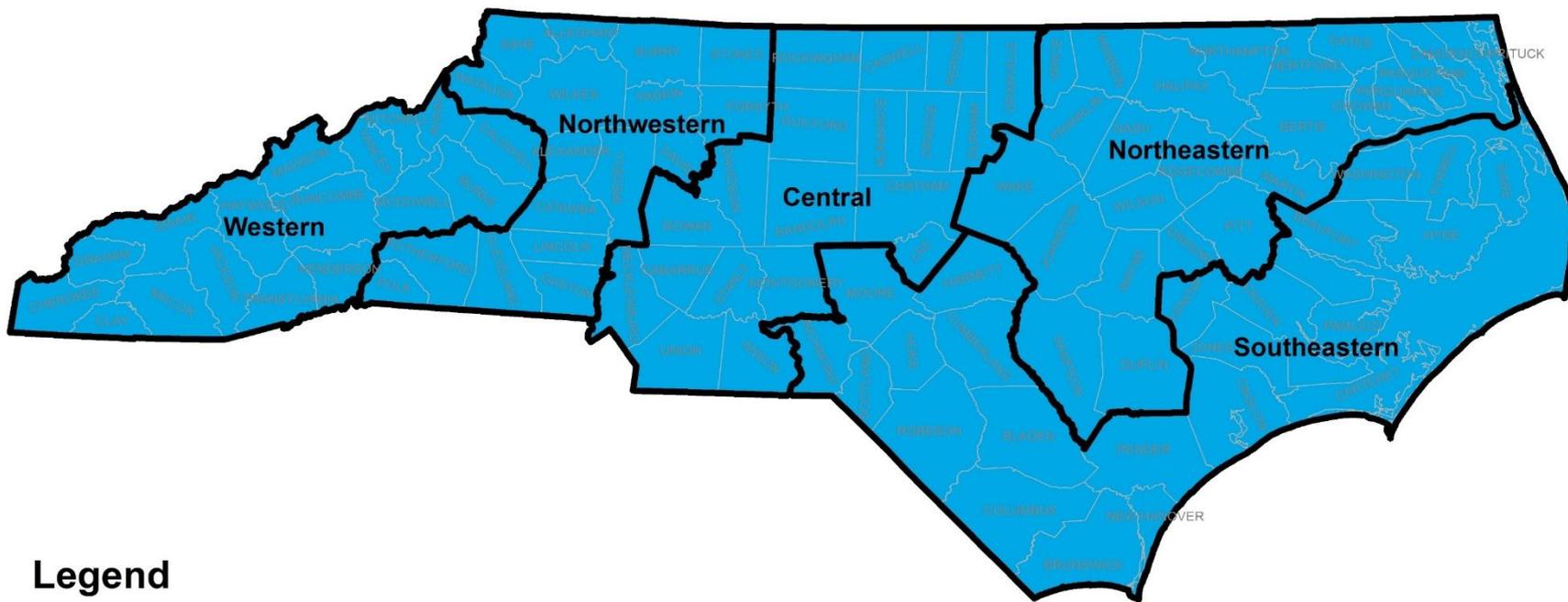


- 2<sup>nd</sup> to 3<sup>rd</sup> most important attribute
- Preference for 6 or 4
- Eliminate bonus report cards with statewide antlerless limit of 4
- Viable trade-off to stabilize or increase deer numbers in areas

# 3. Antlered Buck Bag Limit



# Antlered Buck Bag Limit - Hunter Preference



## Legend

 Potential Deer Season Zones

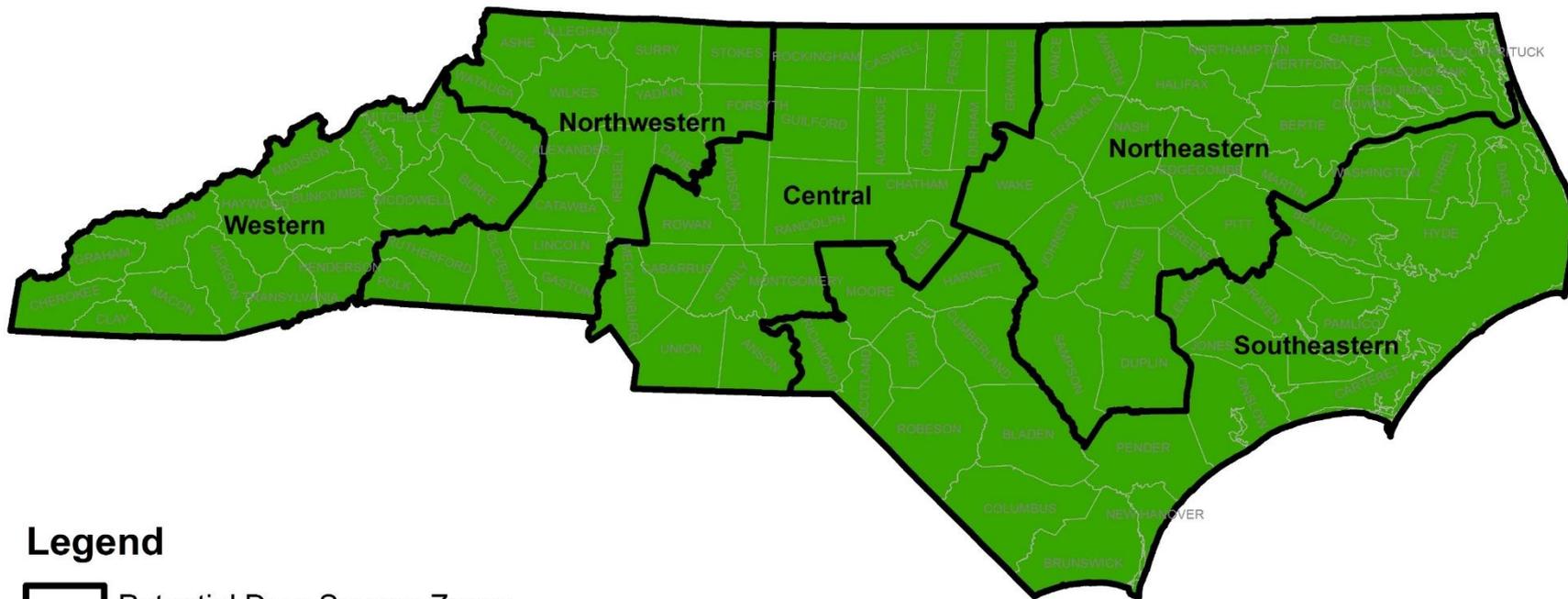
**Antlered Buck Bag Limit**

 2

(Range of Attribute Levels: 1 - 4)



# Antlered Buck Bag Limit - Biological Optimum



## Legend

 Potential Deer Season Zones

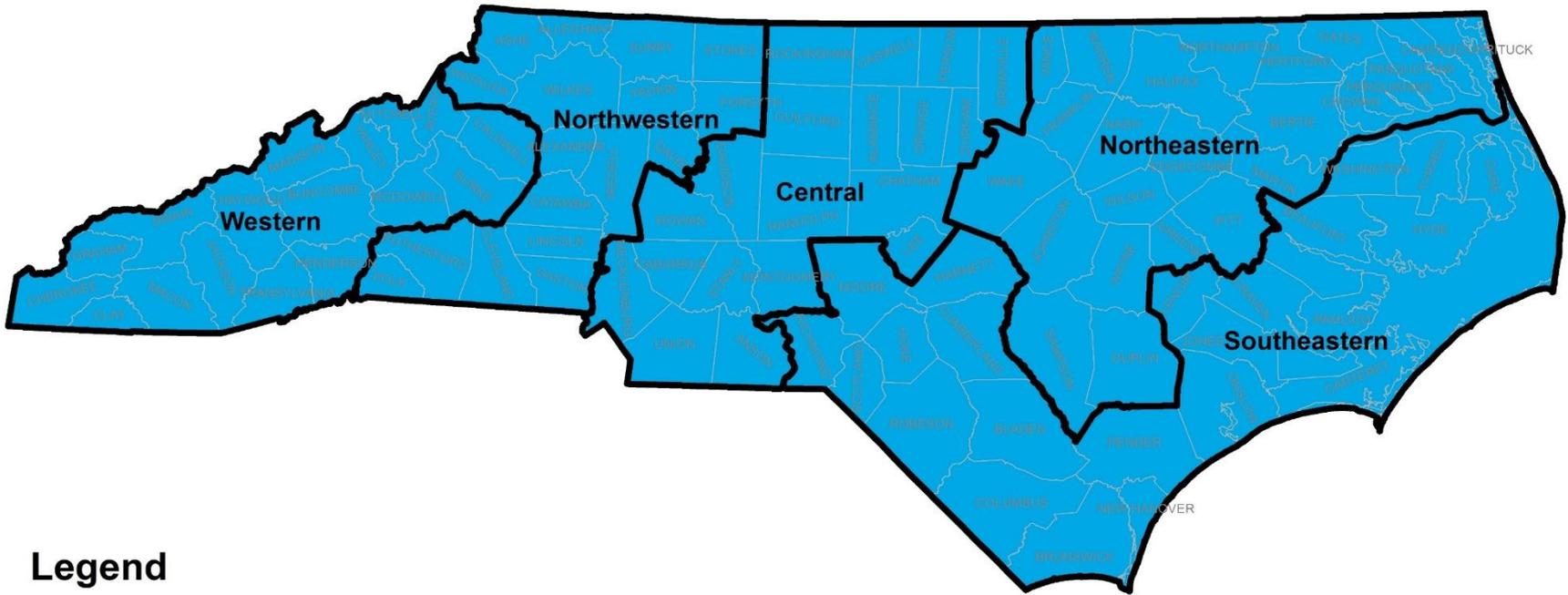
## Antlered Buck Bag Limit

 1

Antlered buck bag limit addresses 2 biological objectives related to sex-ratio of the harvest in addition to a buck age-structure objective.



# Antlered Buck Bag Limit - Balanced Option



## Legend

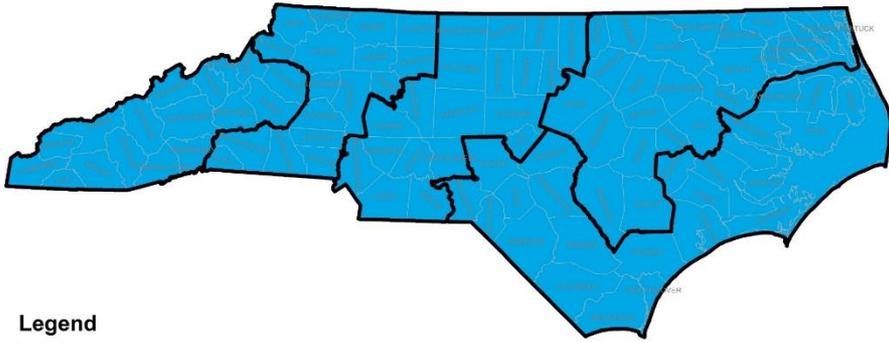
 Potential Deer Season Zones

**Antlered Buck Bag Limit**

 2

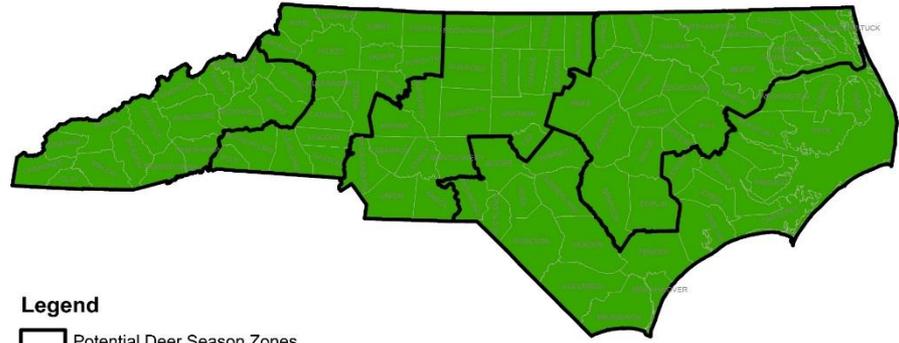


### Antlered Buck Bag Limit - Hunter Preference



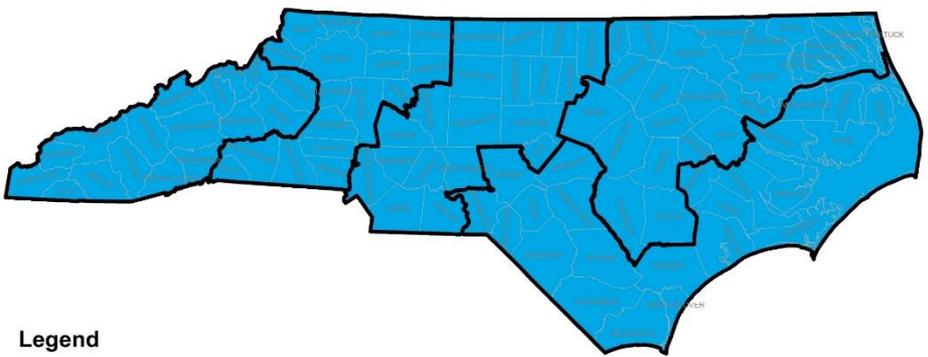
**Legend**  
Potential Deer Season Zones  
**Antlered Buck Bag Limit**  
2

### Antlered Buck Bag Limit - Biological Optimum



**Legend**  
Potential Deer Season Zones  
**Antlered Buck Bag Limit**  
1

### Antlered Buck Bag Limit - Balanced Option



**Legend**  
Potential Deer Season Zones  
**Antlered Buck Bag Limit**  
2



# Preference and Potential Trade-offs for Antlered Bag Limit

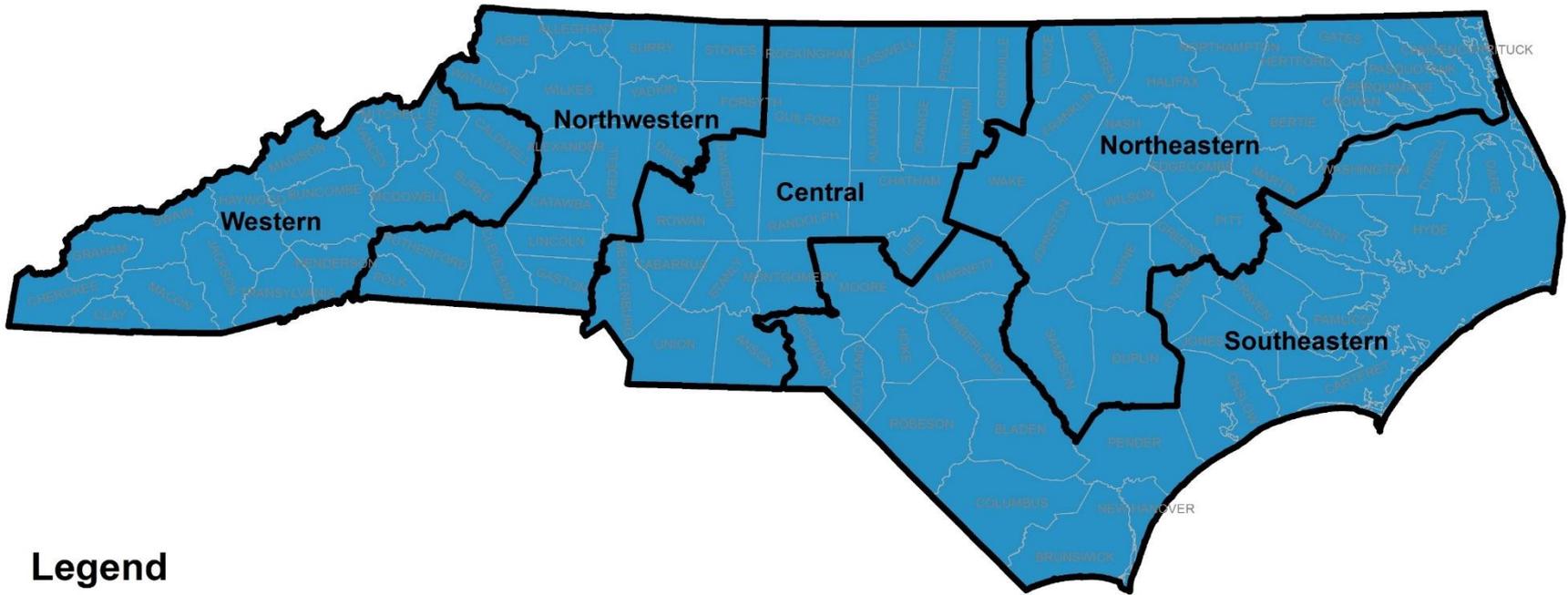
- 2<sup>nd</sup> - 3<sup>rd</sup> most important attribute
- Highest preference for 2 antlered buck limit statewide
- 1 antlered buck limit likely not a viable trade-off in any zone
- Preference aligns with biological improvements in East



# 4. Blackpowder Season Length



# Blackpowder Season Length - Hunter Preference



## Legend

 Potential Deer Season Zones

### Blackpowder Season Length

 2 weeks

(Range of Attribute Levels: None - 2 weeks)

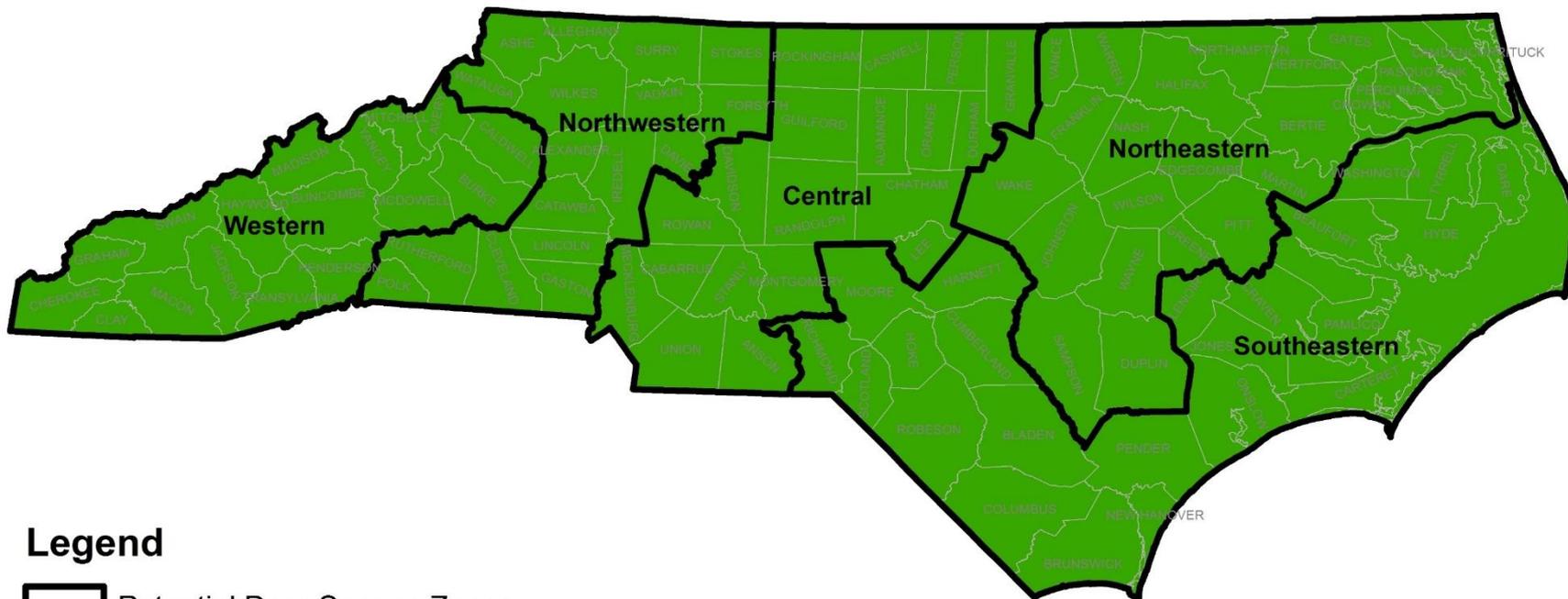


# Blackpowder - Biological Optimum

From a management perspective, blackpowder season is an extension of firearms season, so the biological optimum depends on what we do with gun season. Manipulating the length and timing of blackpowder could be an alternative to manipulating length and timing of gun season.



# Blackpowder Season Length - Balanced Option



## Legend

 Potential Deer Season Zones

## Blackpowder Season Length

 1 week



# Preference and Potential Trade-offs for Blackpowder Season Length

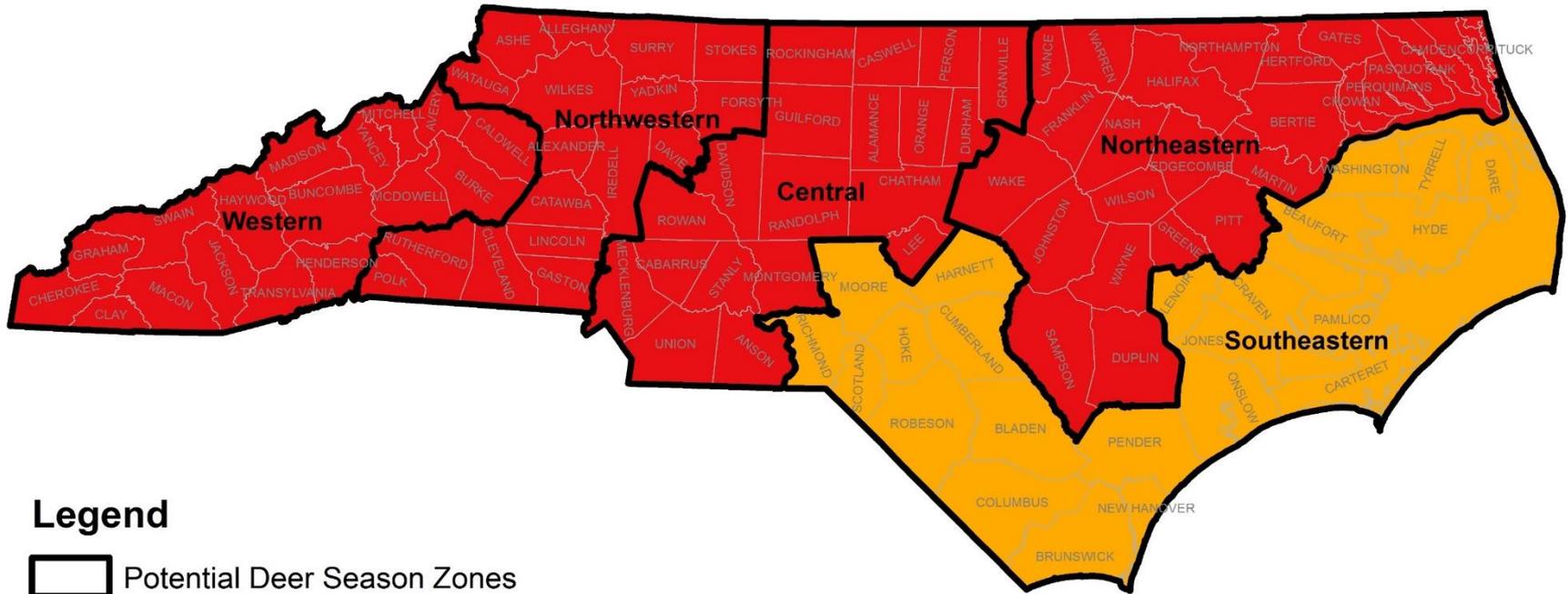
- 3<sup>rd</sup> - 4<sup>th</sup> most important attribute
- Highest preference for 2 week season statewide
- “None” or no season is the least preferred
- 1-week season may be a potential trade-off to improve timing of harvest relative to peak breeding across the state



# 5. Opening of Gun Season



# Gun Season Weeks Later - Hunter Preference



## Legend

 Potential Deer Season Zones

### Gun Season Weeks Later

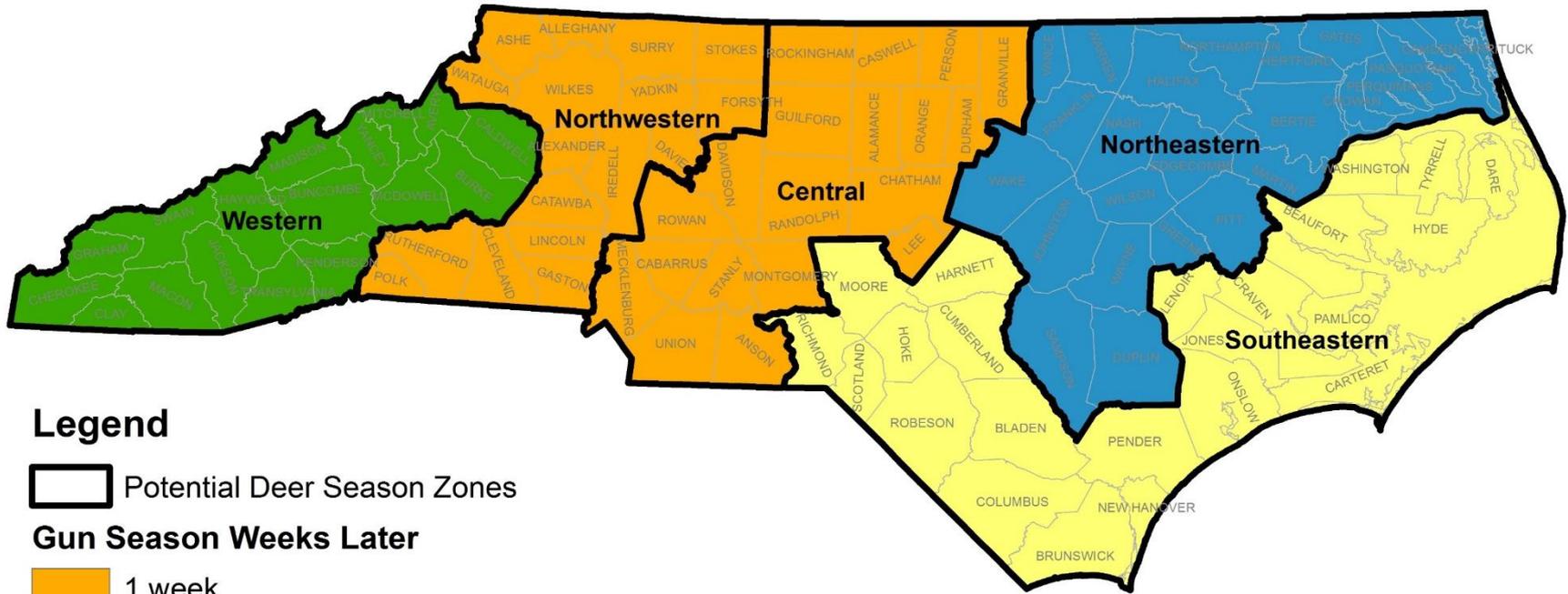
 No Change

 1 week

(Range of Attribute Levels: No Change - 3 weeks)



# Gun Season Weeks Later - Biological Optimum



## Legend

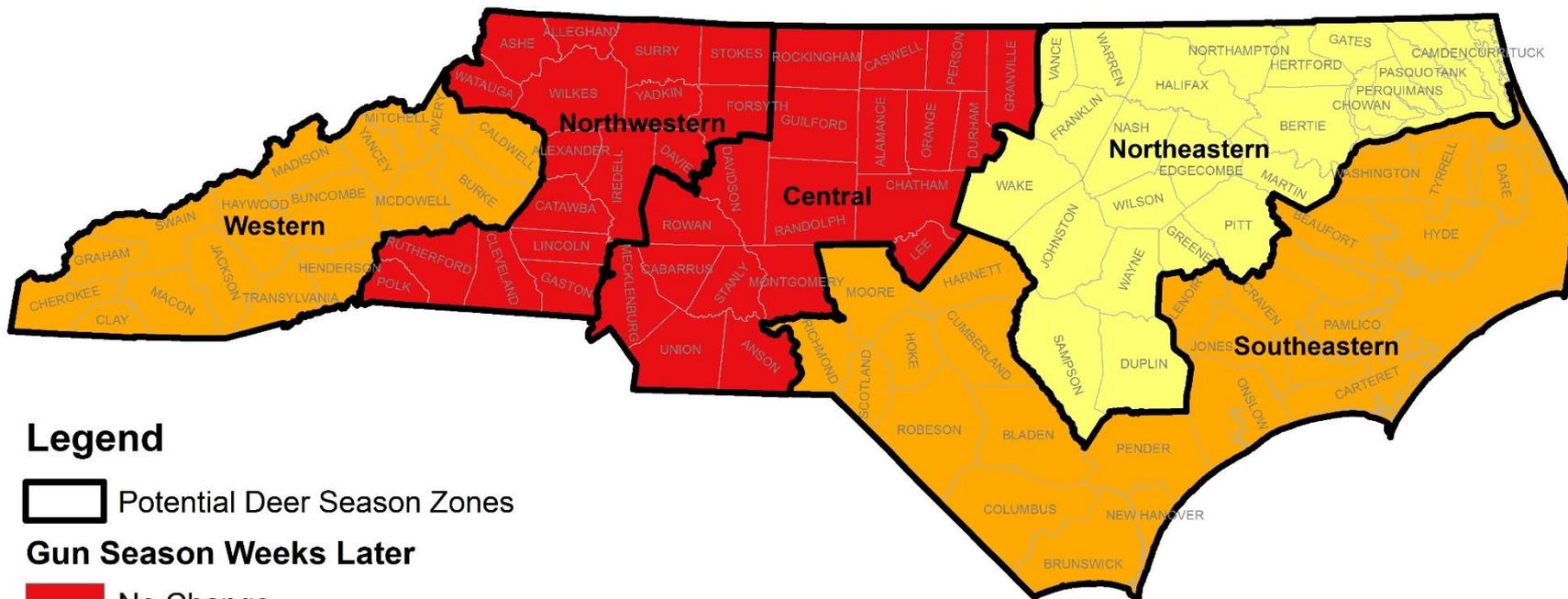
 Potential Deer Season Zones

## Gun Season Weeks Later

-  1 week
-  2 weeks
-  3 weeks
-  4 weeks



# Gun Season Weeks Later - Balanced Option



## Legend

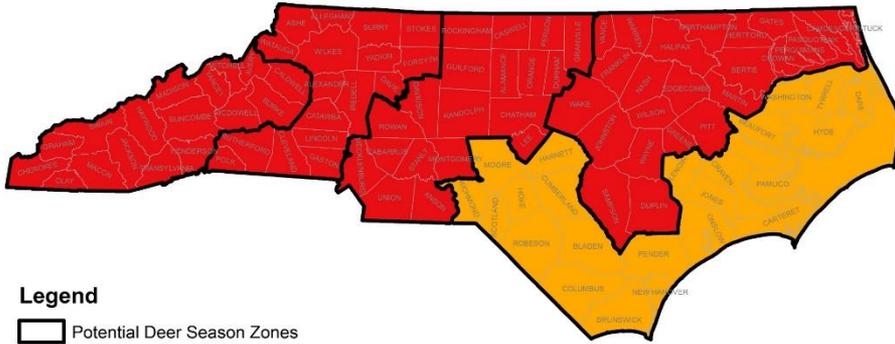
 Potential Deer Season Zones

## Gun Season Weeks Later

-  No Change
-  1 week
-  2 weeks

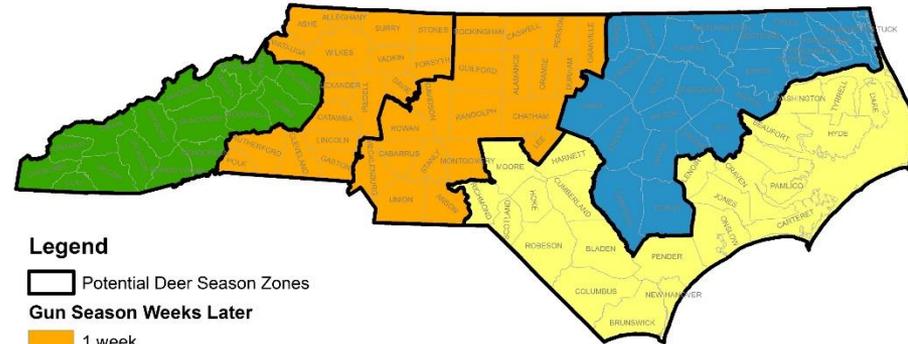


Gun Season Weeks Later - Hunter Preference



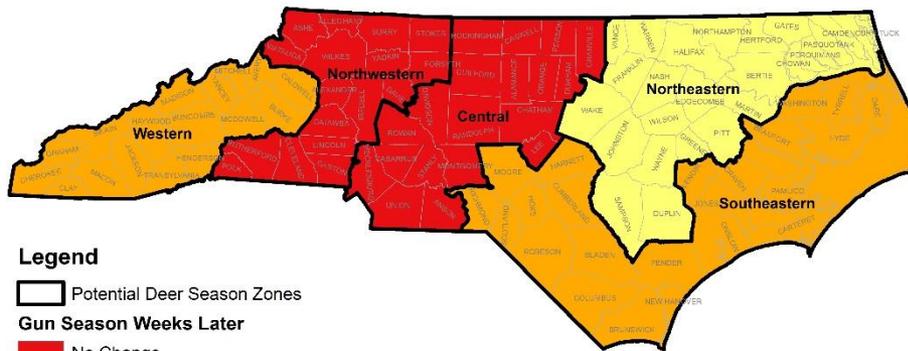
- Legend**
- Potential Deer Season Zones
  - Gun Season Weeks Later**
  - No Change
  - 1 week

Gun Season Weeks Later - Biological Optimum



- Legend**
- Potential Deer Season Zones
  - Gun Season Weeks Later**
  - 1 week
  - 2 weeks
  - 3 weeks
  - 4 weeks

Gun Season Weeks Later - Balanced Option



- Legend**
- Potential Deer Season Zones
  - Gun Season Weeks Later**
  - No Change
  - 1 week
  - 2 weeks

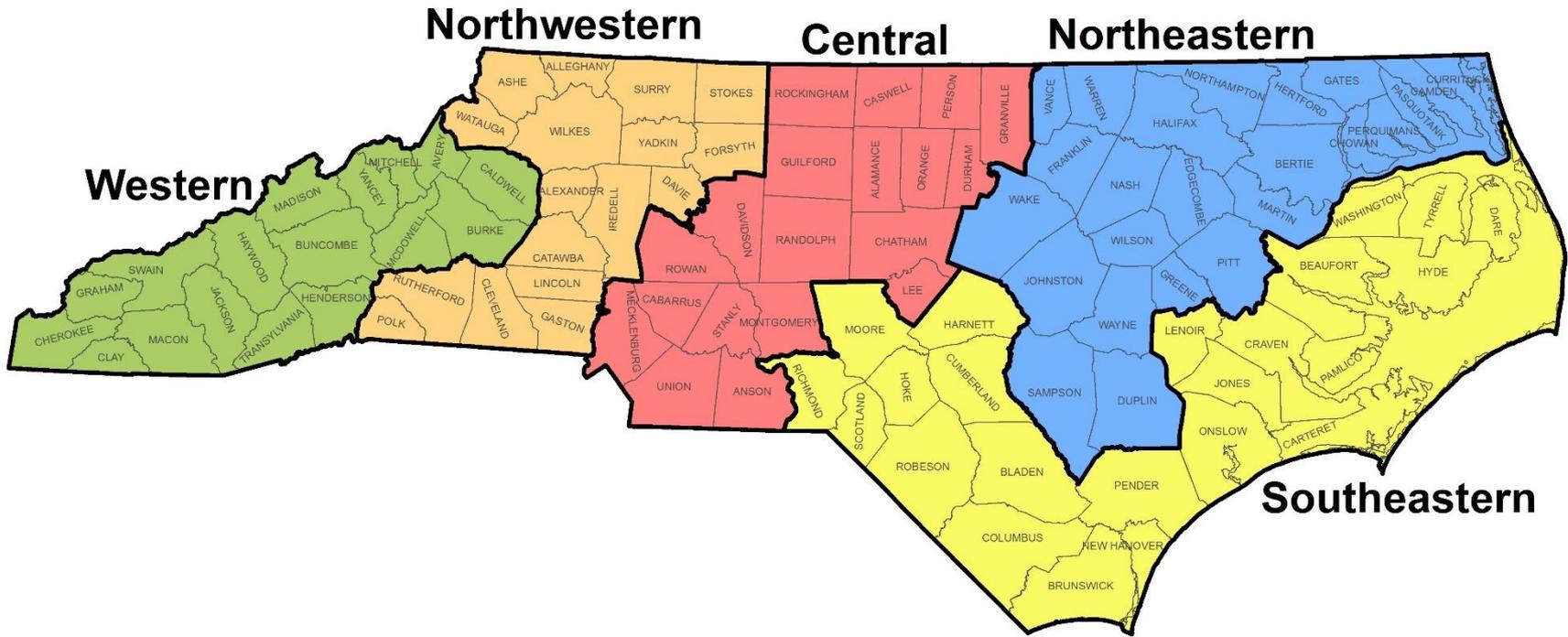


# Preference and Potential Trade-offs for Opening of Gun Season

- Least important attribute statewide
- Highest preference for no change for most of the state
- Biological optimum requires shifting 1-4 weeks later
- Small shifts may be viable trade-offs to improve timing of harvest with timing of peak breeding



# What Would the 2018/19 Deer Season Look Like Under the Balanced Option?



# Potential Season Zone: Western

## Peak Breeding: December 2



| 2018/2019 Season      | Status Quo                         | Potential Change                 | Balanced Option                      |
|-----------------------|------------------------------------|----------------------------------|--------------------------------------|
| <b>Blackpowder</b>    | Oct. 1-13<br>Monday opening        | 7 weeks later;<br>1 week shorter | Nov. 17 – 23<br>Saturday opening     |
| <b>Gun</b>            | Nov. 19 - Dec. 8<br>Monday opening | 5 days later;<br>3 weeks longer  | Nov. 24 - Jan. 6<br>Saturday opening |
| <b>Antlered bag</b>   | 2                                  | No change                        | 2                                    |
| <b>Antlerless bag</b> | 6                                  | Reduced                          | 4                                    |



# Biological Evaluation Tool for Proposed Deer Regulations

| Biological Evaluation of Proposed Deer Regulation Change   |  |  |          |                         |
|--|--|--|----------|-------------------------|
| Proposal Number: <i>116280</i>   |  |  |          |                         |
| Area and regulation(s): <i>1)doe spelter 7 weeks later and 1 week shorter gun 1 week later and 2 weeks longer bag limits entered 2 antlers 4 and 4 other sex days to first days of gun and 1/2 buck/ doe season</i>  |  |  |          |                         |
| In regard to achieving, moving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If harvest is below 1.0 antlered buck/mtl any year within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                         |
| Biological Objective   | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                         |
|  |  | Improved                               | Worsened | Not Affected or No Data |
| 1. Sustained harvest of 1.0 to 3.6 antlered buck/mtl, or if less than 1.0 buck/mtl the area has a stable or increasing trend.  | 1.36 (Avg) 0.94 (2013) 0.91 (2014) 1.33 (2015)                 | 20                                     | -20      | 0                       |
| 2. Total doe harvest (i.e. including fawns) is comprised of 25-35% yearling does (1.5 years old).  | 28.3% (Avg) 22.6% (2013) 33.2% (2014) 32.3% (2015)             | 10                                     | -10      | 0                       |
| 3. Total antlered buck harvest (i.e. excluding button bucks) is comprised of no more than 30% yearling bucks (1.5 years old).  | 41.1% (Avg) 53.6% (2013) 33.2% (2014) 34.4% (2015)             | 10                                     | -10      | 0                       |
| 4. Total harvest is comprised of at least 43% does.  | 26.7% (Avg) 28.0% (2013) 33.4% (2014) 28.7% (2015)             | 10                                     | -10      | 0                       |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.  | 27.9% (Avg) 30.6% (2013) 34.4% (2014) 28.4% (2015)             | 10                                     | -10      | 0                       |
| 6. No more than 20% of total antlered buck harvest (i.e. excluding button bucks) occur before the time of peak breeding.   | 60.9% (Avg) 57.9% (2013) 63.4% (2014) 61.4% (2015)             | 10                                     | -10      | 0                       |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.   |  | 15                                     | -15      | 0                       |
| 8. The risk of disease transmission is reduced.  |  | 15                                     | -15      | 0                       |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting biological objectives. The highest possible score is +100% and the lowest possible score is -100%.   |  | Biological Score <b>20</b>             |          |                         |
| If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area if they exist.  |  |  |          |                         |
| Additional comments: Average median conception date: December 2  |  |  |          |                         |

A tool was developed in 2010 by NCWRC biologists to objectively evaluate the biological impacts of proposed deer regulations ([www.ncwildlife.org/deerstudy](http://www.ncwildlife.org/deerstudy)).

This tool contains 6 measurable biological objectives that address deer numbers, sex-ratios, buck and doe age-structures, and timing of harvest relative to peak breeding.

Although not a formally proposed regulation, the balanced options were evaluated with this tool. The score calculated from this tool is an indicator that the proposed regulation is:

- moving toward achieving objectives (+),
- hindering meeting objectives (-)
- biologically neutral (0)



# Potential Season Zone: Western Biological Evaluation



|                      | Status Quo | Balanced Option |
|----------------------|------------|-----------------|
| <b>Bio. Obj. Met</b> | 2 of 6     | 3-4 of 6        |
| <b>Bio. Score</b>    | 0          | +20             |

| Biological Evaluation of Proposed Deer Regulation Change   |  |  |          |                                  |        |
|--|--|--|----------|----------------------------------|--------|
| Proposal Number: <i>Western</i>  |  |  |          |                                  |        |
| Area and regulation[s]: <i>backpounder: 7 weeks later and 1 week shorter; gun: 1 week later and 2 weeks longer; bag limits: antlered 2, antlerless 4, split either sex days to first days of gun and backpounder seasons</i>   |  |  |          |                                  |        |
| In regard to achieving, moving, improving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If harvest is below 1.0 antlered buck/m <sup>2</sup> any year within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                                  |        |
| Biological Objective   | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                                  |        |
|  |  | Improved                               | Worsened | Not Affected or No Data          | Points |
| 1. Sustained harvest of 1.0 to 3.6 antlered buck/m <sup>2</sup> or less than 1.0 buck/m <sup>2</sup> ; the area has a stable or increasing trend.  | 1.06 (Avg), 0.94 (2013), 0.91 (2014), 1.33 (2015)              | 20                                     | -20      | 0                                | 0      |
| 2. Total adult doe harvest (i.e., excluding fawns) is comprised of 25-35% yearling does (1.5 years old).   | 28.5% (Avg), 22.8% (2013), 38.2% (2014), 33.3% (2015)          | 10                                     | -10      | 0                                | 0      |
| 3. Total antlered buck harvest (i.e., excluding button bucks) is comprised of no more than 35% yearling bucks (1.5 years old).   | 41.1% (Avg), 53.8% (2013), 38.2% (2014), 34.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 4. Total harvest is comprised of at least 45% does.  | 28.7% (Avg), 28.0% (2013), 25.6% (2014), 26.7% (2015)          | 10                                     | -10      | 0                                | 0      |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.  | 27.9% (Avg), 30.8% (2013), 24.5% (2014), 28.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 6. No more than 20% of total antlered buck harvest (i.e., excluding button bucks) occurs before the time of peak breeding.   | 60.9% (Avg), 57.9% (2013), 63.4% (2014), 61.4% (2015)          | 10                                     | -10      | 0                                | 10     |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.   |  | 15                                     | -15      | 0                                | 0      |
| 8. The risk of disease transmission is reduced.  |  | 15                                     | -15      | 0                                | 0      |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting (or) a biological objective. The highest possible score is +100% and the lowest possible score is -100%.<br>If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area, if they exist.   |  |  |          |                                  |        |
|  |  |  |          | Biological Score (Sum of points) | 20     |
| Additional comments: <i>Average red deer conception date: December 1</i>   |  |  |          |                                  |        |



# Potential Season Zone: Northwestern

## Peak Breeding: November 25



| 2018/2019 Season      | Status Quo        | Potential Change                | Balanced Option   |
|-----------------------|-------------------|---------------------------------|-------------------|
| <b>Blackpowder</b>    | *Nov. 3 - Nov. 16 | 1 week later;<br>1 week shorter | Nov. 10 - Nov. 16 |
| <b>Gun</b>            | *Nov. 17 - Jan. 1 | Same time;<br>5-7 days longer   | Nov. 17 - Jan. 6  |
| <b>Antlered bag</b>   | 2                 | No change                       | 2                 |
| <b>Antlerless bag</b> | **Unlimited       | Reduced                         | 4                 |

\*Cleveland, Rutherford, and Polk blackpowder currently opens Oct. 1 and gun Nov. 19

\*\*Unlimited with purchase of bonus antlerless report card in max. either-sex seasons



# Potential Season Zone: Northwestern Biological Evaluation



|                      | Status Quo | Balanced Option |
|----------------------|------------|-----------------|
| <b>Bio. Obj. Met</b> | 3 of 6     | 4-5 of 6        |
| <b>Bio. Score</b>    | 0          | +20             |

| Biological Evaluation of Proposed Deer Regulation Change   |  |  |          |                                  |        |
|--|--|--|----------|----------------------------------|--------|
| Proposal Number: <i>Western</i>  |  |  |          |                                  |        |
| Area and regulation[s]: <i>blackpounder 7 weeks later and 1 week shorter; gun 1 week later and 2 weeks longer; bag limits antlered 2, antlerless 4, split either sex days to first days of gun and blackpounder seasons</i>  |  |  |          |                                  |        |
| In regard to achieving, moving, improving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If harvest is below 1.0 antlered buck/m <sup>2</sup> any year within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                                  |        |
| Biological Objective   | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                                  |        |
|  |  | Improved                               | Worsened | Not Affected or No Data          | Points |
| 1. Sustained harvest of 1.0 or 3.0 antlered buck/m <sup>2</sup> or less than 1.0 buck/m <sup>2</sup> the area has a stable or increasing trend.  | 1.06 (Avg), 0.94 (2013), 0.91 (2014), 1.33 (2015)              | 20                                     | -20      | 0                                | 0      |
| 2. Total adult doe harvest (i.e., excluding fawns) is comprised of 25-35% yearling does (1.5 years old).   | 28.5% (Avg), 22.8% (2013), 30.2% (2014), 33.3% (2015)          | 10                                     | -10      | 0                                | 0      |
| 3. Total antlered buck harvest (i.e., excluding button bucks) is comprised of no more than 30% yearling bucks (1.5 years old).   | 41.1% (Avg), 53.8% (2013), 38.2% (2014), 34.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 4. Total harvest is comprised of at least 45% does.  | 28.7% (Avg), 28.0% (2013), 25.6% (2014), 26.7% (2015)          | 10                                     | -10      | 0                                | 0      |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.  | 27.9% (Avg), 30.8% (2013), 24.5% (2014), 28.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 6. No more than 20% of total antlered buck harvest (i.e., excluding button bucks) occurs before the time of peak breeding.   | 60.9% (Avg), 57.9% (2013), 63.4% (2014), 61.4% (2015)          | 10                                     | -10      | 0                                | 10     |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.   |  | 15                                     | -15      | 0                                | 0      |
| 8. The risk of disease transmission is reduced.  |  | 15                                     | -15      | 0                                | 0      |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting biological objectives. The highest possible score is +100% and the lowest possible score is -100%. If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area if they exist.   |  |  |          |                                  |        |
|  |  |  |          | Biological Score (Sum of points) | 20     |
| Additional comments: <i>Average red deer conception date: December 1</i>   |  |  |          |                                  |        |



# Potential Season Zone: Central

## Peak Breeding: November 15



| 2018/2019 Season      | Status Quo       | Potential Change                | Balanced Option  |
|-----------------------|------------------|---------------------------------|------------------|
| <b>Blackpowder</b>    | Oct. 27 - Nov. 9 | 1 week later;<br>1 week shorter | Nov. 3 - Nov. 9  |
| <b>Gun</b>            | Nov. 10 - Jan. 1 | Same time;<br>5 days longer     | Nov. 10 - Jan. 6 |
| <b>Antlered bag</b>   | 2                | No change                       | 2                |
| <b>Antlerless bag</b> | *Unlimited       | Reduced                         | 4                |

\*Unlimited with purchase of bonus antlerless report cards



# Potential Season Zone: Central Biological Evaluation



|                      | Status Quo | Balanced Option |
|----------------------|------------|-----------------|
| <b>Bio. Obj. Met</b> | 3 of 6     | 4-5 of 6        |
| <b>Bio. Score</b>    | 0          | +20             |

| Biological Evaluation of Proposed Deer Regulation Change  |  |  |          |                                  |        |
|---|--|--|----------|----------------------------------|--------|
| Proposal Number: <i>Western</i>   |  |  |          |                                  |        |
| Area and regulation[s]: <i>backpacer: 7 weeks later and 1 week shorter; gun: 1 week later and 2 weeks longer; bag limits: antlered 2, antlerless 4, split either sex days to first days of gun and backpacer seasons</i>  |  |  |          |                                  |        |
| In regard to achieving, moving, improving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If harvest is below 1.0 antlered buck/ha2 any year within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                                  |        |
| Biological Objective  | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                                  |        |
|   |  | Improved                               | Worsened | Not Affected or No Data          | Points |
| 1. Sustained harvest of 1.0 to 3.6 antlered buck/ha <sup>2</sup> or less than 1.0 buck/ha <sup>2</sup> the area has a stable or increasing trend.   | 1.06 (Avg), 0.94 (2013), 0.91 (2014), 1.33 (2015)              | 20                                     | -20      | 0                                | 0      |
| 2. Total adult doe harvest (i.e., excluding fawns) is comprised of 25-35% yearling does (1.5 years old).  | 28.5% (Avg), 22.8% (2013), 38.2% (2014), 33.3% (2015)          | 10                                     | -10      | 0                                | 0      |
| 3. Total antlered buck harvest (i.e., excluding button bucks) is comprised of no more than 30% yearling bucks (1.5 years old).  | 41.1% (Avg), 53.8% (2013), 38.2% (2014), 34.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 4. Total harvest is comprised of at least 45% does.   | 28.7% (Avg), 28.0% (2013), 25.6% (2014), 26.7% (2015)          | 10                                     | -10      | 0                                | 0      |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.   | 27.9% (Avg), 30.8% (2013), 24.5% (2014), 28.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 6. No more than 20% of total antlered buck harvest (i.e., excluding button bucks) occurs before the time of peak breeding.  | 60.9% (Avg), 57.9% (2013), 63.4% (2014), 61.4% (2015)          | 10                                     | -10      | 0                                | 10     |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.  |  | 15                                     | -15      | 0                                | 0      |
| 8. The risk of disease transmission is reduced.   |  | 15                                     | -15      | 0                                | 0      |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting biological objectives. The highest possible score is +100% and the lowest possible score is -100%. If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area if they exist.  |  |  |          |                                  |        |
|   |  |  |          | Biological Score (Sum of points) | 20     |
| Additional comments: <i>Average red in conception date: December 1</i>  |  |  |          |                                  |        |



# Potential Season Zone: Northeastern

## Peak Breeding: November 7



| 2018/2019 Season      | Status Quo         | Potential Change                 | Balanced Option   |
|-----------------------|--------------------|----------------------------------|-------------------|
| <b>Blackpowder</b>    | Sept. 29 - Oct. 12 | 3 weeks later;<br>1 week shorter | Oct. 20 - Oct. 26 |
| <b>Gun</b>            | Oct. 13 - Jan. 1   | 2 weeks later;<br>9 days shorter | Oct. 27 - Jan. 6  |
| <b>Antlered bag</b>   | 4                  | Reduced                          | 2                 |
| <b>Antlerless bag</b> | *Unlimited         | Reduced                          | 4                 |

\*Unlimited with purchase of bonus antlerless report cards



# Potential Season Zone: Northeastern Biological Evaluation



|                      | Status Quo | Balanced Option |
|----------------------|------------|-----------------|
| <b>Bio. Obj. Met</b> | 2 of 6     | 4-6 of 6        |
| <b>Bio. Score</b>    | 0          | +40             |

| Biological Evaluation of Proposed Deer Regulation Change   |  |  |          |                         |        |
|--|--|--|----------|-------------------------|--------|
| Proposal Number: <i>Western</i>  |  |  |          |                         |        |
| Area and regulation[s]: <i>backpoder: 7 weeks later and 1 week shorter; gun: 1 week later and 2 weeks longer; bag limits: antlered 2, antlerless 4, split either sex days to first days of gun and backpoder seasons</i>   |  |  |          |                         |        |
| In regard to achieving, moving, improving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If antlered is below 1.0 antlered buck/ha2 any year within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                         |        |
| Biological Objective   | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                         |        |
|  |  | Improved                               | Worsened | Not Affected or No Data | Points |
| 1. Sustained harvest of 1.0 to 3.6 antlered buck/ha <sup>2</sup> or less than 1.0 buck/ha <sup>2</sup> the area has a stable or increasing trend.  | 1.06 (Avg), 0.94 (2013), 0.91 (2014), 1.33 (2015)              | 20                                     | -20      | 0                       | 0      |
| 2. Total adult doe harvest (i.e., excluding fawns) is comprised of 25-35% yearling does (1.5 years old).   | 28.5% (Avg), 22.8% (2013), 38.2% (2014), 33.3% (2015)          | 10                                     | -10      | 0                       | 0      |
| 3. Total antlered buck harvest (i.e., excluding button bucks) is comprised of no more than 30% yearling bucks (1.5 years old).   | 41.1% (Avg), 53.8% (2013), 38.2% (2014), 34.4% (2015)          | 10                                     | -10      | 0                       | 0      |
| 4. Total harvest is comprised of at least 45% does.  | 28.7% (Avg), 28.0% (2013), 25.6% (2014), 26.7% (2015)          | 10                                     | -10      | 0                       | 0      |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.  | 27.9% (Avg), 30.8% (2013), 24.5% (2014), 28.4% (2015)          | 10                                     | -10      | 0                       | 0      |
| 6. No more than 20% of total antlered buck harvest (i.e., excluding button bucks) occurs before the time of peak breeding.   | 60.9% (Avg), 57.9% (2013), 63.4% (2014), 61.4% (2015)          | 10                                     | -10      | 0                       | 10     |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.   |  | 15                                     | -15      | 0                       | 0      |
| 8. The risk of disease transmission is reduced.  |  | 15                                     | -15      | 0                       | 0      |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting (or) biological objectives. The highest possible score is +100% and the lowest possible score is -100%. If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area if they exist.  |  |  |          |                         |        |
| Biological Score (Sum of points) <b>20</b>   |  |  |          |                         |        |
| Additional comments: <i>Average red deer conception date: December 1</i>   |  |  |          |                         |        |



# Potential Season Zone: Southeastern

## Peak Breeding: Oct. 27



| 2018/2019 Season      | Status Quo         | Potential Change                 | Balanced Option   |
|-----------------------|--------------------|----------------------------------|-------------------|
| <b>Blackpowder</b>    | Sept. 29 - Oct. 12 | 2 weeks later;<br>1 week shorter | Oct. 13 - Oct. 19 |
| <b>Gun</b>            | Oct. 13 - Jan. 1   | 1 week later;<br>2 days shorter  | Oct. 20 - Jan. 6  |
| <b>Antlered bag</b>   | 4                  | Reduced                          | 2                 |
| <b>Antlerless bag</b> | *Unlimited         | Reduced                          | 4                 |

\*Unlimited with purchase of bonus antlerless report cards



# Potential Season Zone: Southeastern Biological Evaluation



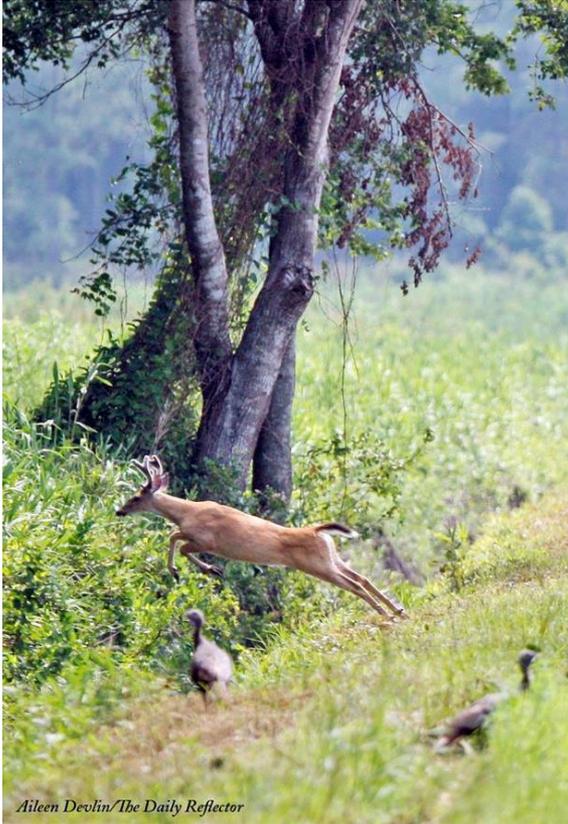
|                      | Status Quo | Balanced Option |
|----------------------|------------|-----------------|
| <b>Bio. Obj. Met</b> | 2 of 6     | 4-6 of 6        |
| <b>Bio. Score</b>    | 0          | +40             |

| Biological Evaluation of Proposed Deer Regulation Change   |  |  |          |                                  |        |
|--|--|--|----------|----------------------------------|--------|
| Proposal Number: <i>Western</i>  |  |  |          |                                  |        |
| Area and regulation[s]: <i>blackpounder 7 weeks later and 1 week shorter; gun 1 week later and 2 weeks longer; bag limits antlered 2, antlerless 4, split either sex days to first days of gun and blackpounder seasons</i>  |  |  |          |                                  |        |
| In regard to achieving, moving, improving, or maintaining biological objectives, is the direction of current trends expected to be improved, worsened, or not affected by this proposed rule change? Points should be awarded based on the average effect over the entire proposed change area. Objectives 1-6 receive no points if the effect is not expected to be quantifiable through reported harvest or biological data collected within a 5-year period following the change. No partial score is given for any objective. *If harvest is below 1.0 antlered buck/ha/yr within the last 3 years, then Objectives 2 and 4 automatically receive no points. |  |  |          |                                  |        |
| Biological Objective   | For the area considered, what is the 3-year average and trend? | Points awarded based on above criteria |          |                                  |        |
|  |  | Improved                               | Worsened | Not Affected or No Data          | Points |
| 1. Sustained harvest of 1.0 to 3.6 antlered buck/ha/yr or less than 1.0 buck/ha/yr. The area has a stable or increasing trend.   | 1.06 (Avg), 0.94 (2013), 0.91 (2014), 1.33 (2015)              | 20                                     | -20      | 0                                | 0      |
| 2. Total adult doe harvest (i.e., excluding fawns) is comprised of 25-35% yearling does (1.5 years old).   | 28.5% (Avg), 22.8% (2013), 38.2% (2014), 33.3% (2015)          | 10                                     | -10      | 0                                | 0      |
| 3. Total antlered buck harvest (i.e., excluding button bucks) is comprised of no more than 30% yearling bucks (1.5 years old).   | 41.1% (Avg), 53.8% (2013), 38.2% (2014), 34.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 4. Total harvest is comprised of at least 45% does.  | 28.7% (Avg), 28.0% (2013), 25.6% (2014), 26.7% (2015)          | 10                                     | -10      | 0                                | 0      |
| 5. Sex composition of harvest that occurs prior to peak breeding is comprised of at least 50% does.  | 27.9% (Avg), 30.8% (2013), 24.5% (2014), 28.4% (2015)          | 10                                     | -10      | 0                                | 0      |
| 6. No more than 20% of total antlered buck harvest (i.e., excluding button bucks) occurs before the time of peak breeding.   | 60.9% (Avg), 57.9% (2013), 63.4% (2014), 61.4% (2015)          | 10                                     | -10      | 0                                | 10     |
| 7. Deer are a naturally occurring product of the landscape. There is no genetic manipulation and movements are not restricted.   |  | 15                                     | -15      | 0                                | 0      |
| 8. The risk of disease transmission is reduced.  |  | 15                                     | -15      | 0                                | 0      |
| Explanation of Score: A positive (+) score indicates an overall expected improvement over current regulations. A negative score (-) indicates an expectation that the proposed change will hinder meeting biological objectives. The highest possible score is +100% and the lowest possible score is -100%.<br>If the biological score is neutral or positive, please note areas of biological concern within the larger proposed change area, if they exist.   |  |  |          |                                  |        |
|  |  |  |          | Biological Score (sum of points) | 20     |
| Additional comments: <i>Average red deer conception date: December 1</i>   |  |  |          |                                  |        |



# Balanced Options

## Impacts to Deer Herd



- Increased biological objectives met
  - Improved buck age structure
  - Improved timing of harvest
  - Sustainable doe harvest
    - Antlerless bag reduction statewide
    - Continue to monitor trends in deer numbers and manipulate either-sex days at county level in the future if reduced bag limits do not meet biological and sociological objectives



# Balanced Options

## Impacts to Deer Hunters

- 81% support the idea of change
- Little agreement on type of change; some hunters will not be satisfied with change or lack of change
- Increased rut activity and chance to see/harvest mature bucks
- Increased numbers of deer
- Improved long-term satisfaction
- Increased regulatory consistency



# Balanced Options Impacts to Others

- Small game hunting and trapping
- Nonhunting activities
- Western black bear hunting
- Depredation issues



# *Discussion*

