

How Do You Age Bucks on the Hoof?

(Or how on earth do you age bucks at all?)

Aging Techniques

1. Tooth Wear Aging:

- Embraced by “trained” biologists.
- Neither precise nor accurate.
- Two demonstrated biases:
 - Tooth wear over-ages 2 ½ and 3 ½ year old deer.
 - Tooth wear under-ages mature deer.
- So: “Darn, he’s 4 ½ years old.” It just makes hunters feel bad.
- Disclaimer: we do use it on harvested deer because it’s the only thing we’ve got.
 - But we recognize its inaccuracy.

2. Cementum aging:

- No better than tooth wear.
- Especially in South Texas.

Aging Techniques

3. Aging bucks on the hoof:

- A favorite of people who spend a lot of time hunting deer.
 - The Roman Nose.
 - The huge neck.
- I'm a natural skeptic:
 - I don't register details well and I have a poor visual memory.
 - Besides, physical deer traits should vary like people do.
- But is there a set of physical traits that indicate age on the hoof?
 - We collected data to answer that question (on known age bucks) in the East-West Yana project.

Physical Traits Collected in the East-West Yana Project

1. Live body weight.
2. Gray Face
3. Roman Nose: none, slight bump, or pronounced.
4. Wrinkles or loose skin around ears: none, slight, or pronounced.
5. Loose skin around face: yes or no.
6. Loose skin around neck: yes or no.
7. Loose skin around chest: yes or no.
8. Circumference around the face at the eyes.
9. Circumference around the midpoint between eyes and nose.
10. Distance between middle of eyes and nose tip.
11. Ear tip to ear tip.
12. Stomach girth.
13. Neck circumference.
14. Vertical height of tarsal glands.
15. Horizontal width of tarsal glands.
16. Staining on tarsal glands: none, slight, or heavy: “a breeder buck”
17. Ratio of the circumference at the eyes to the distance between eyes and nose tip: “the short face”
18. Ratio of the circumference at the eyes to the circumference at the midpoint: “the blocky face”
19. Whew!!!

Physical Traits Collected in the East-West Yana Project

5.5+ Years Old and Excluding Yearlings

| Primary Variable | Secondary Variable | r ² |
|------------------|---|----------------|
| Age | Neck Circumference | 0.6471 |
| Age | Total Mass | 0.5657 |
| Age | B&C Score | 0.5451 |
| Age | Weight | 0.5143 |
| Age | Wrinkled Around Ears to Numerical Data | 0.4073 |
| Age | Circumference around the Face at the Eyes | 0.3282 |
| Age | Loose Skin Around Neck to Numerical Data | 0.2449 |
| Age | Loose Skin Around Chest to Numerical Data | 0.1969 |
| Age | Staining on Tarsal Glands to Numerical Data | 0.1723 |
| Age | # Total Points | 0.1689 |
| Age | Horizontal Width of Tarsal Glands | 0.1416 |
| Age | Roman Nose to Numerical Data | 0.1368 |
| Age | # Typical Points | 0.1253 |
| Age | Ear tip to Ear tip | 0.1213 |
| Age | Circumference at midpoint between tip of Nose and Eyes | 0.1158 |
| Age | Gray Face to Numerical Data | 0.1062 |
| Age | Loose Skin Around Face to Numerical Data | 0.0875 |
| Age | Distance between a line running between the eyes and the Nose Tip | 0.0676 |
| Age | Vertical Height of Tarsal Glands: | 0.0642 |
| Age | Stomach Girth: | 0.0597 |
| Age | Ratio Circum at Eyes to Circum Mid Point | 0.0026 |
| Age | Ratio of Circum at Eyes to Dist Eyes-Nose Tip | 0.0001 |

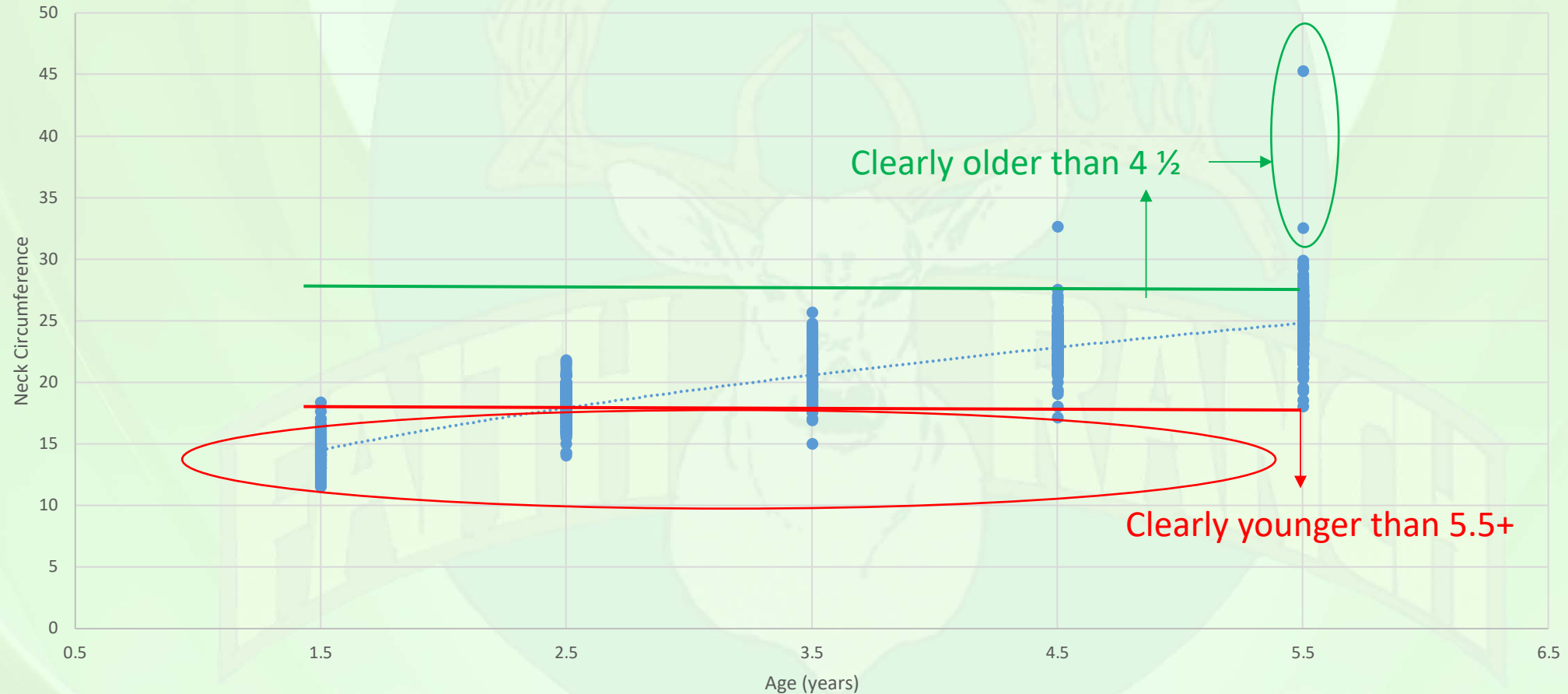
Results of Age v. Physical Characteristics

A couple tantalizing statistical correlations:

1. Neck Size and Age (2.5 years to 5.5+ years): 0.65 r-squared value.
2. Weight and Age (2.5 years to 5.5+ years): 0.51 r-squared value.
3. B&C Score and Age (1.5 years to 5.5+ years): 0.54 r-squared value.
 - Wait a minute! How can you be sure you're not harvesting a huge 4 ½? Using antlers—one of the best correlations—is a circular exercise.

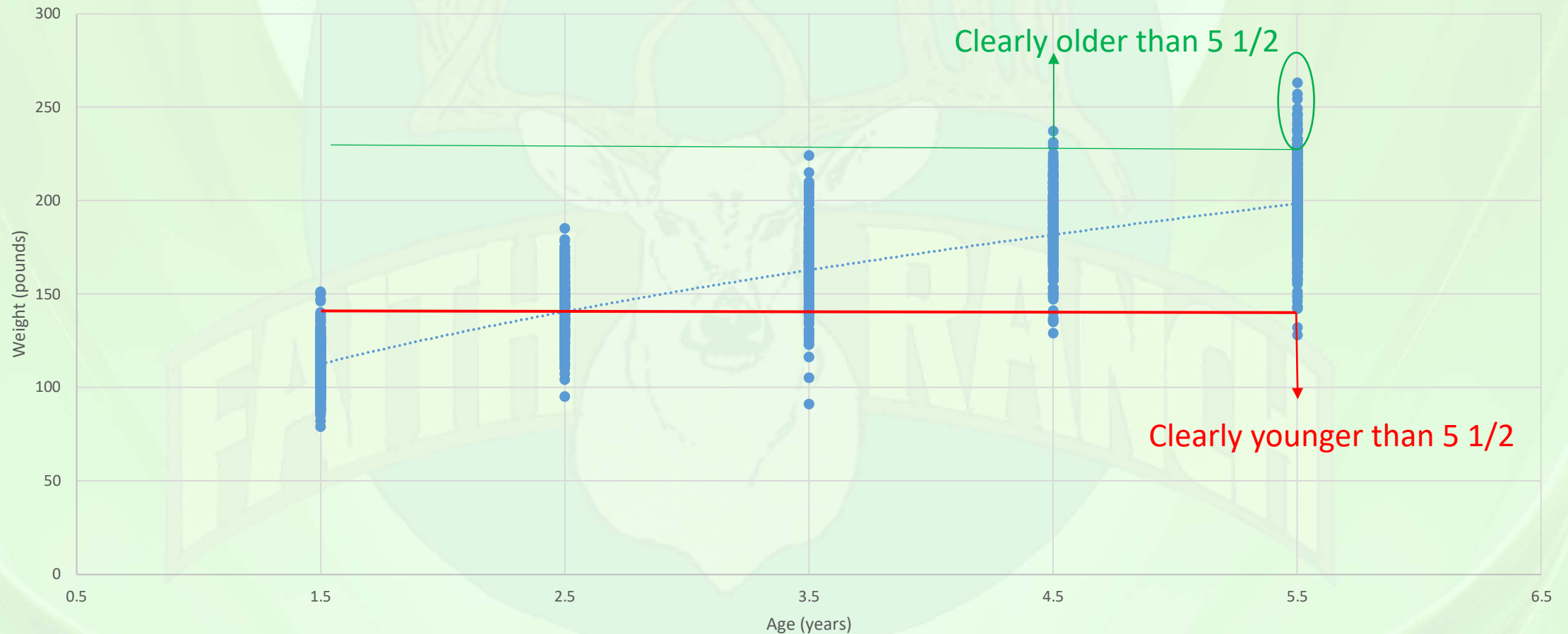
The Bottom Line: No Physical Characteristic is an Accurate Indicator of Age

Neck Circumference vs. Age (5.5+ - One Group)



The Bottom Line: No Physical Characteristic is an Accurate Indicator of Age

Weight vs. Age (5.5+ - One Group)



The Roman Nose

| Roman Nose Data: Types of Noses by Age | | | |
|--|----------|-------------|-----------------|
| Age | Straight | Slight Hump | Pronounced Hump |
| 1.5 | 95.71% | 4.29% | 0.00% |
| 2.5 | 90.71% | 8.20% | 1.09% |
| 3.5 | 75.61% | 23.17% | 1.22% |
| 4.5 | 63.57% | 36.43% | 0.00% |
| 5.5 | 47.97% | 47.97% | 4.07% |
| 6.5 | 43.27% | 48.08% | 8.65% |
| 7.5 | 47.89% | 43.66% | 8.45% |
| 8.5 | 46.34% | 34.15% | 19.51% |

Decreasing trend of straight noses with age. But 40%+ of mature bucks have straight noses

Almost all bucks with pronounced humps are mature. But a few young deer have pronounced humps.

The Bottom Line

1. NO single physical trait is a reliable indicator of age.
2. The best indicator is probably B&C score, but that's a circular exercise:
 - "Don't shoot a 4 ½ year old buck with great antlers because he will grow bigger next year. But the best way to tell age on a buck is looking at its antlers."
3. The most promising physical features are live weight and neck size.
4. Three statements are true:
 - If a buck has a PRONOUNCED Roman nose, then it's almost certainly mature (5.5+).
 - If a buck has a HUGE neck, it's almost certainly mature.
 - If a buck has a HUGE body, it's almost certainly mature.
5. The problem: MOST mature bucks do not have a Roman nose, a HUGE neck, or a HUGE body, so you will miss identifying bucks as mature if you rely on those 3 body features.

A Better Way: Tracking Bucks

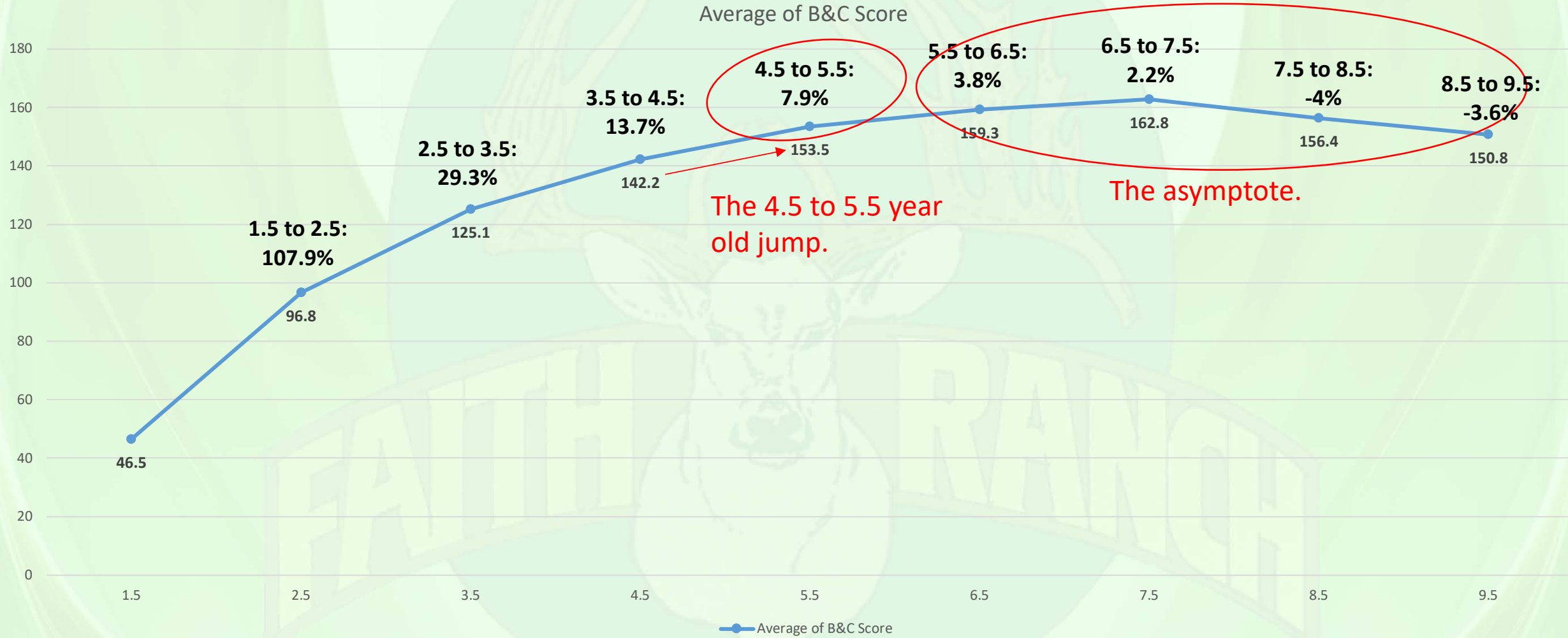
Looking for the 4 ½ to 5 ½ Year Old Jump in Antler Size

- At Faith Ranch, we scout heavily:
 - Motion cameras at protein feeders.
 - 10 days of video scouting in each pasture.
- Our rule:
 - If a buck pops up on the radar screen (he's big enough to register), we assume he's 5 ½ years old.
 - And we track that buck from one year to the next.
 - But if a buck's antlers take a jump in size the next year, we assume he was 4 ½ years old the first year we saw him (and 5 ½ that next year).
- But that assumes deer antler size increases from 4 ½ to 5 ½.
 - Is that true?
 - The East-West Yana dataset can answer that question.

The Basis for the 4 ½ to 5 ½ Antler Jump

- Body growth takes precedence over antler growth.
- That's why antlers continue to grow larger until maturity.
- Body growth rate is most rapid in young bucks but the growth rate slows down with age.
- During the 3 ½ year old antler development season, body growth takes a fair amount of nutrition from antler growth.
- During the 4 ½ year old antler development season, body growth happens but it has slowed down.
- By the 5 ½ year old antler season, body growth has completely stopped.
- That's why we call a 5 ½ year olds and older "mature bucks."
- The 4 ½ to 5 ½ year old jump makes sense since beyond maintenance needs, all nutrition can go to antlers.
- But does the data show the 4 ½ to 5 ½ year old jump?

Average Antler Growth at Various Ages



The AVERAGE B&C scores of bucks from the East-West Yana dataset confirms the 4 ½ to 5 ½ jump.

But What About Individual Bucks?

- The answer:
 - Too much variation exists to use the 4 ½ to 5 ½ year old jump as a precise indicator of age.
 - BUT: I think the asymptote has promise when used with buck tracking.



Conclusions

- Precise age is almost impossible to determine because of the variations in individual bucks.
 - Variations in physical characteristics.
 - Variations in tooth wear.
 - Variations in antler growth from year to year.
- But tracking and the 4 ½ to 5 ½ antler jump is useful—on average—in identifying when a buck is 5 ½ years old.

End of Aging Bucks on the Hoof



Me: Do a scatterplot of individual buck scores at 4 and 5 and 6 to see the jump. And analyze individual deer.

