The East-West Yana Project

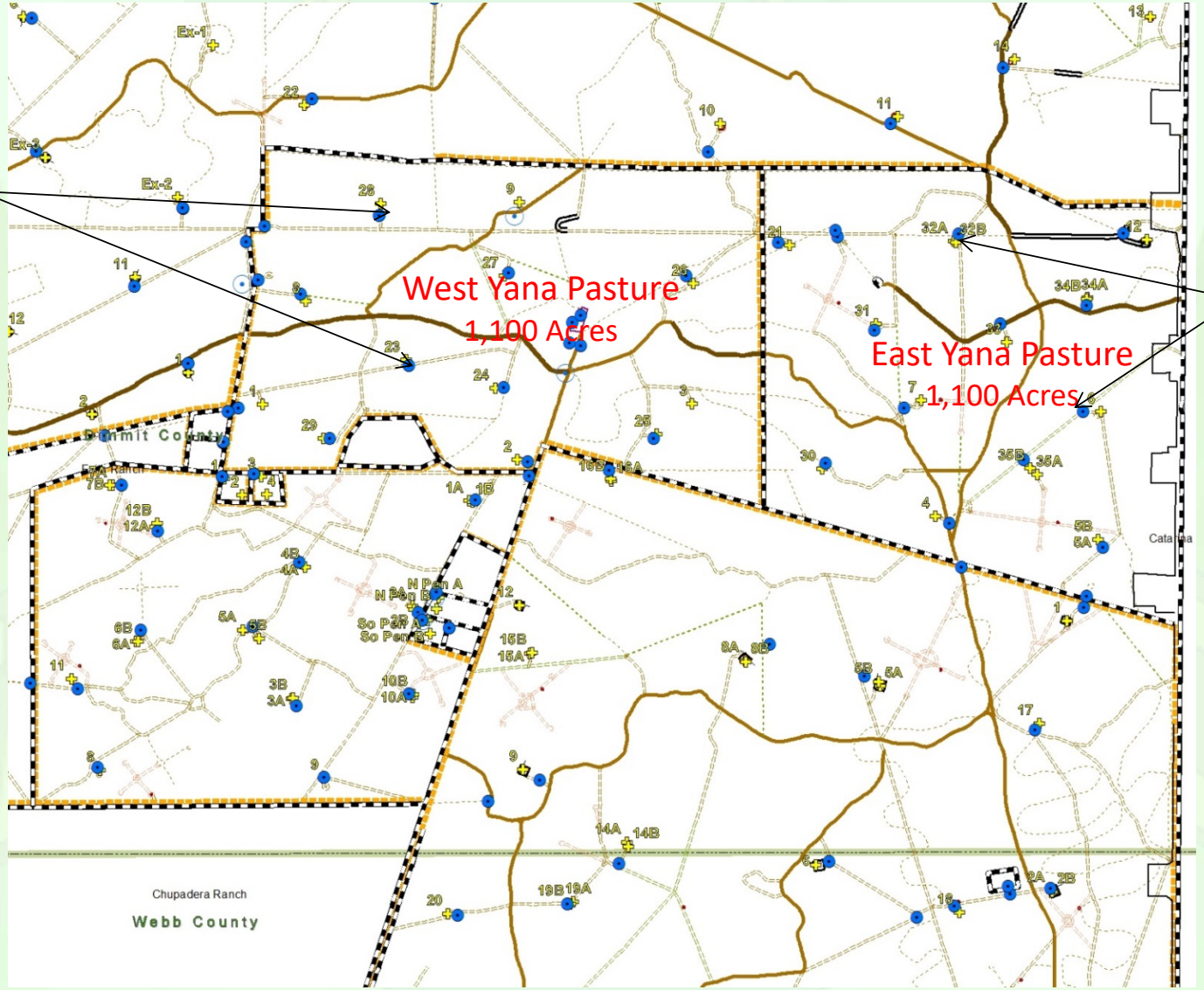
A Deer Data Gold Mine

The East-West Project Overview

- Two 1,100 acre pastures on the Faith Ranch.
- Nutrition held constant across both pastures:
  - 100 acres per feeder
  - Water at every feeder
- East Yana (the Control Pasture):
  - Fed but no culling or other manipulation
- West Yana (the Treatment Pasture):
  - TOTAL cleanout of ALL deer
  - Repopulated with Faith does and bucks in DMP pens

The East-West Yana Project

Protein Feeders



Water Troughs

Nutrition held constant across both pastures.

The East-West Project Overview

1. Study began in 2007; oldest bucks are 10 ½ years old.
2. Methodology:
   - Annual fawn buck capture to determine age with certainty:
     - We tag all DMP bucks fawns in West Yana each year.
     - We capture and tag buck fawns in East Yana each year.
     - The result is a dataset of KNOWN AGE bucks.
   - Annual buck capture:
     - We capture ALL tagged bucks we can find with a helicopter in both pastures and record:
       - Antler measurements.
       - Weight.
       - Body characteristics
   - We shoot ALL untagged bucks.
   - But tagged bucks are data: they will never get shot.

Examples of Bucks with tags—i.e. data that never gets shot

Examples of Untagged Bucks that Escaped Early Harvest: These are not data and they will be shot!!!

The East-West Project Overview

Why is this growing dataset so special?

1. All of the bucks are known-age bucks captured (and therefore aged) as fawns.
2. We take full antler measurements on each buck.
3. We record and measure variety of physical traits.
4. Both East and West Yana are high fenced and supplementally fed--data that most deer managers find relevant.
5. The study will continue for a long time.
    1. How long?
    2. Perhaps until we start seeing most of the older bucks die.

The Topics today

1. Does total pasture cleanout and DMP pens work? Antler sizes in the Treatment (West Yana) v. Control (East Yana).
   - Averages and Bell Curves
   - Acres per 160+, 170+, and 180+
   - Numbers of 180+ bucks
2. The power of supplemental feed, a comparison between:
   - The fed, but unmanipulated East Yana antlers, and
   - The unfed, unhunted Faith Ranch of the 1980s.
3. Mortality (and its corollary, survival) of bucks on feed at various ages.
   - And at what age should you start shooting bucks.
4. Culling:
   - Spikes?
   - Identifying culls at 2 ½, 3 ½, and 4 ½ years of age.
5. Are there physical characteristics of bucks that indicate age on the hoof? Roman noses? Stomach girth? Neck size?
6. Tracking: a better way to determine age on the hoof.

A Mature (but continuing) Study

- So why am I talking about this again?
  - Sample sizes are large enough to give us some answers.
  - Thanks to RJ Hegedus, we have refined our methodology so the numbers are more accurate.
- Our findings are starting to become definitive and I think we have hard answers to some of the questions.
- Specifically, we know:
  - Whether total cleanout and DMP manipulation works and to what extent,
  - The culling criteria derived from the study is solid, and
  - We know what physical buck traits correlate with actual age.
- But I'll be back when we get better data on a few more issues.

The East-West Yana project: Acknowledgements

- Matt Moore, the Faith Ranch biologist, who does all of the work:
  - He organizes the captures.
  - He records and enters the data.
  - And he looks at thousands of photos to determine population and mortality.
  - He makes sure the feeders are filled.
- Wack Ezell, the Faith Ranch manager:
  - He keeps the ranch running while research is being conducted.
- Charlie DeYoung, Ph.D.:
  - His encouragement and support was critical in making the project a reality.
- R.J. Hegedus, Stedman West Interests, Inc. IT Manager:
  - R.J.'s analysis and sorting of the data in response to my questions made the dataset come alive with meaning.

A Rich Dataset of known age bucks:

Questions we will be able to answer

1. Does total cleanout and DMP manipulation produce bigger deer?
2. What is the bell curve of mature antler scores on fed pastures versus unfed pastures?
3. What percent of 170+ bucks (e.g.) should you expect in a fed deer herd?
4. Should you harvest spikes? Or 3-point yearlings?
5. Should you harvest 2 ½, 3 ½, and 4 ½ year old bucks? Which ones?
6. At what age do deer antlers peak? 5 ½, 6 ½, 7 ½, 8 ½…?
7. How does rainfall influence antler size in a fed environment?
8. Does antler size always jump from 4 ½ to 5 ½ and can you use this jump as precise determinant of age?
9. Do super old deer explode in antler size because they stop using energy for breeding?

A Rich Dataset of known age bucks:

Questions we will be able to answer

11. What is deer mortality with supplemental feed?
12. Are there physical features of a deer—a Roman nose or stomach girth, e.g.—that can be used to determine age on the hoof.
13. Can tracking deer from year to year help a manager determine age? With what precision?
14. Can feed consumption be used to determine deer numbers?
15. Paternity and which bucks breed.
16. Is there evidence of epigenetic change over time:
    - In antler sizes of the unmanipulated bucks (East Yana).
    - In the body weight of the West Yana bucks.
17. Does line breeding produce bigger bucks?
18. Heritability and breeding values.