

Deer, Elk and Moose Management in Wyoming

Objectives, Data Collection,
Season Setting, and Cervid Management



OUTLINE

- **Big Game Management Synopsis**

- Management by objective
- Herd units/hunt areas
- Types of cervid objectives
- Herd unit management strategies
- Data collection/information used for season setting
- General vs. Limited Quota licensing
- Season setting process and timeline
- Mule deer management



- **Will Not Cover....**

- All big game season structures (i.e. all license types, season scenarios)
- Other facets of licensing including preference points, landowner licenses, etc.
- In-depth elk, WTD and moose management
- Non-cervid big game management



Management by Objective

- All big game herds have a management objective
- Planned instead of reactionary management
- Accountability
- Everyone knows where we're going
 - Department personnel
 - Landowners
 - Land management agencies
 - Sportspersons
 - Others



Planned Management System - 4 Stages

1. Inventory
(Where are we?)

2. Objectives
(Where do we want to be?)

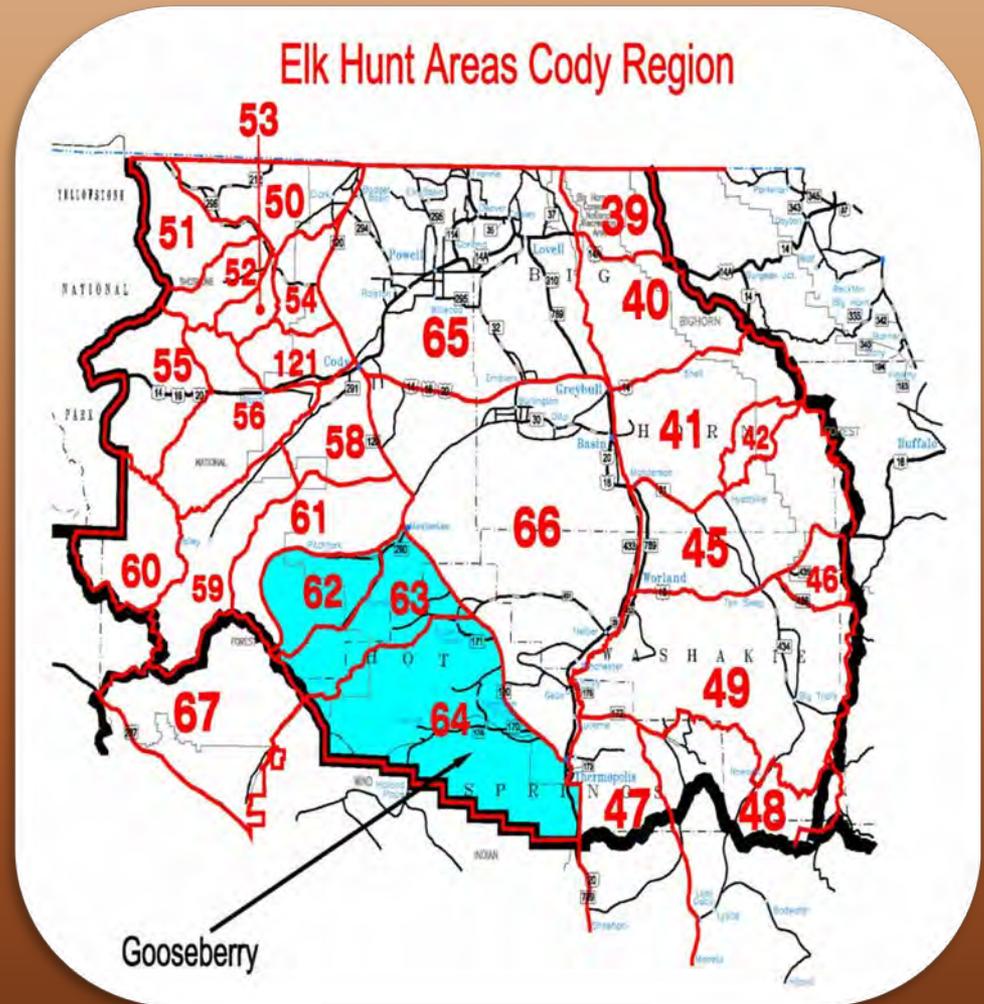
3. Actions
(How do we get there?)
-Season Setting Process

4. Evaluation
(Did we make it?)



Big Game Herd Units

- Geographical area with a discrete (closed) animal population
- Based on movement data, topography, habitats, barriers, etc.
- Population spends entire annual cycle within herd unit (all seasonal ranges present)



Big Game Herd/Hunt Areas Units in Wyoming

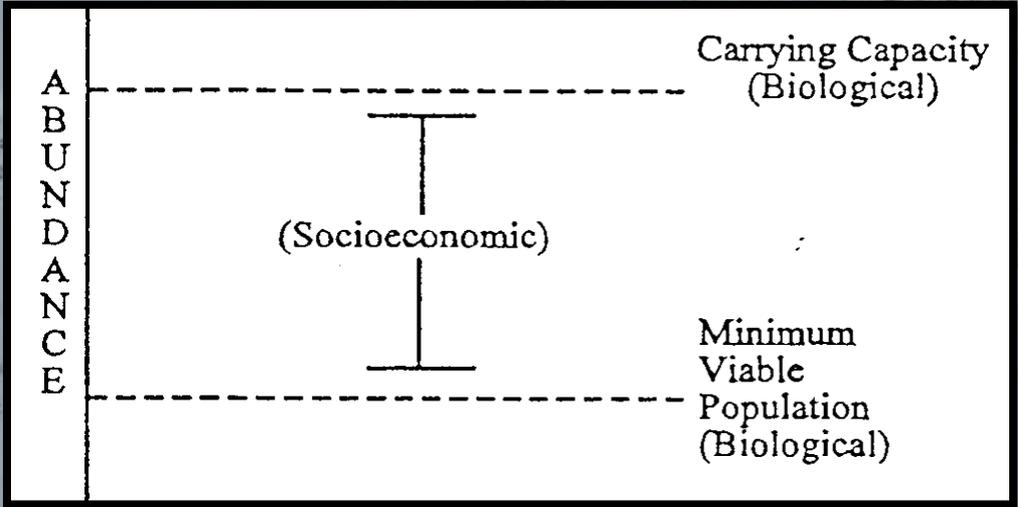
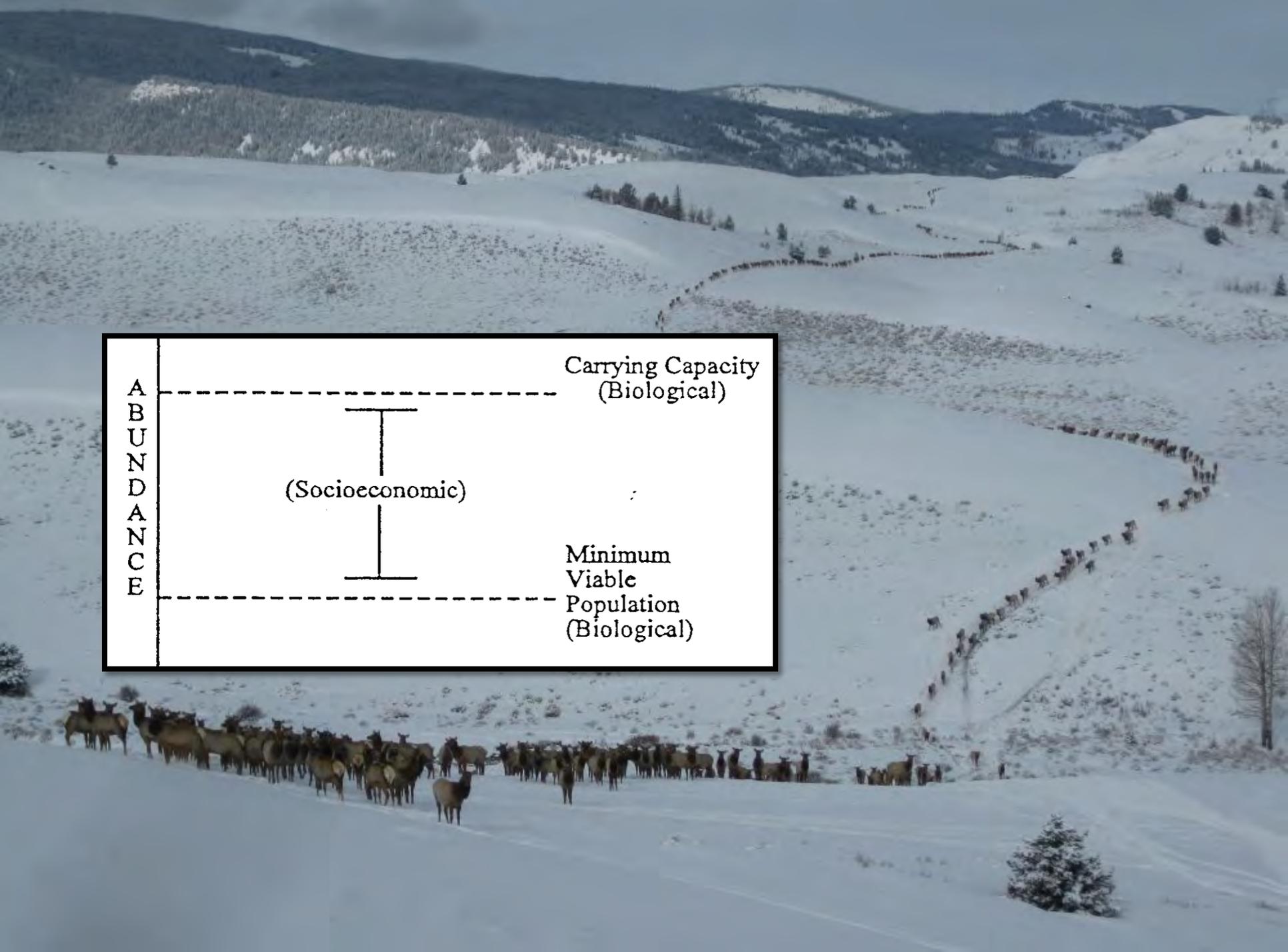
SPECIES	HERD UNITS	HUNT AREAS
Pronghorn	40	103
Mule Deer	37	132
White-tailed Deer	5	132
Elk	35	106
Moose	10	38
Bighorn Sheep	10	19
Mountain Goat	2	5
Bison	1	3



Establishing Herd Unit Objectives

- Public meetings, open houses, individual and group discussions
- Objectives are measurable, numeric, quantifiable
- Objectives typically determined by socioeconomics with limits defined by biology
- Reviewed on 5-year rotation
- Must be approved by WGF Commission





Big Game Objectives

(cervids only)

- **Postseason Population Size** – estimate produced from models
 - Most big game herds have this numeric objective, including 34 of 37 mule deer herds
- **Mid-winter Trend Counts** – based on aerial/ground surveys
 - Most elk herds have this numeric objective due to difficulty in modeling elk populations – based on 3-year averages
- **Satisfaction** – 60% satisfied landowners and hunters with secondary objective of male quality, harvest stats or habitat
 - Measured via landowner and hunter harvest surveys
- **Limited Opportunity** (some moose herds only)
 - Median age of male harvest is ≥ 4 yrs old over past 5 years
 - Average hunter days / bull harvest is ≤ 10
 - Documentation of at least 3x more adult bulls than # licenses issued

Big Game Management Strategies

- Commission approved management strategies accompany each objective
 - Special
 - Recreational
 - Private Land



Big Game Management Strategies

SPECIES	METRIC	RECREATION MANAGEMENT		SPECIAL MANAGEMENT	
Mule Deer	Post-hunt bucks:100does	20	29	30	45
White-tailed Deer	Post-hunt bucks:100 does	20	29	na	na
Elk	Post-hunt bulls:100 does	15	29	30	40
	% Branch Antlered Bulls in the Harvest	45%	61%	62%	75%
Moose		n/a		Median age of harvested bulls >4 years old; 50-70 males/100 females post-hunt	

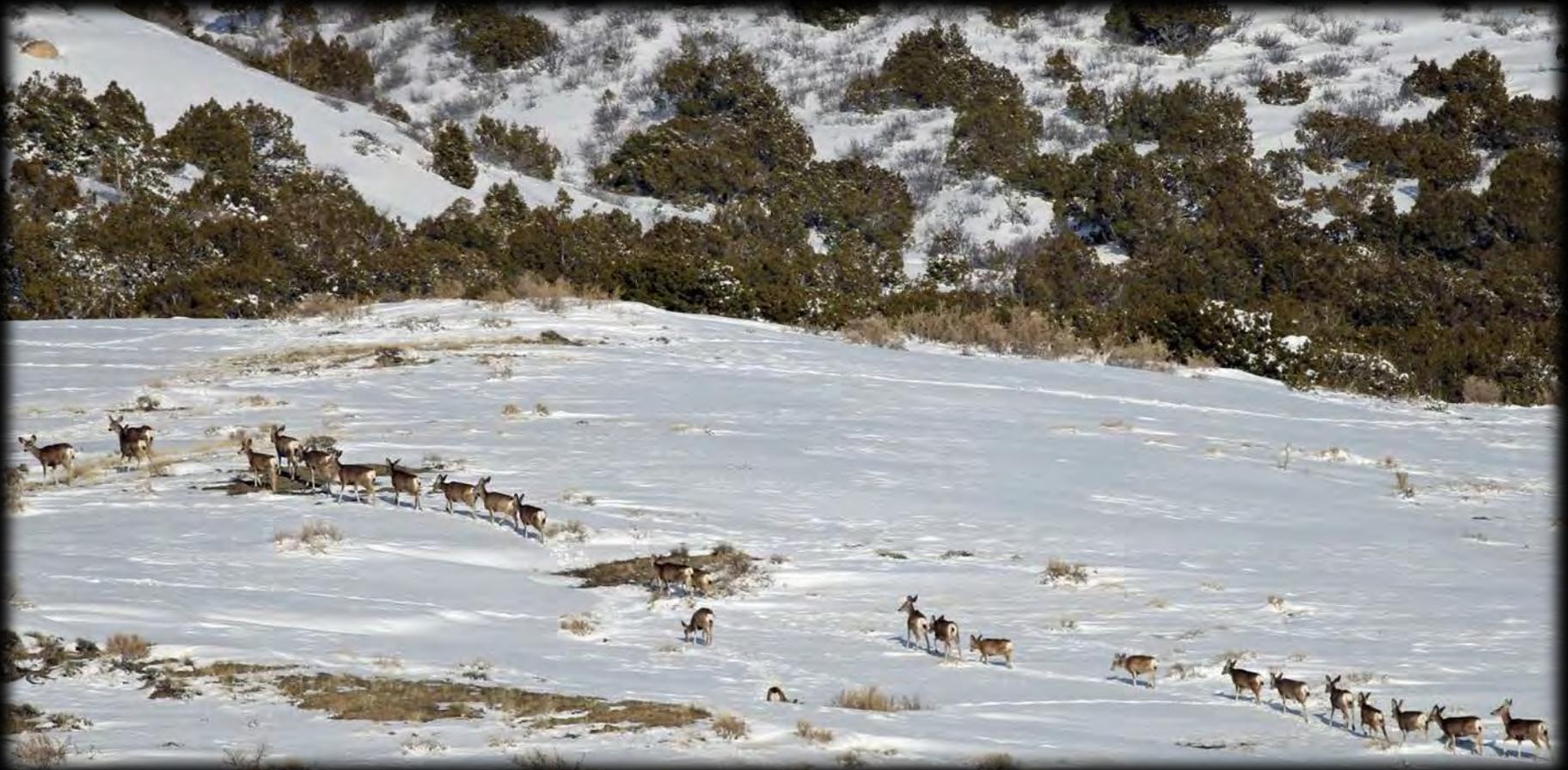
Private land strategy – no male ratio target range

Data Collection/Information Used for Season Setting



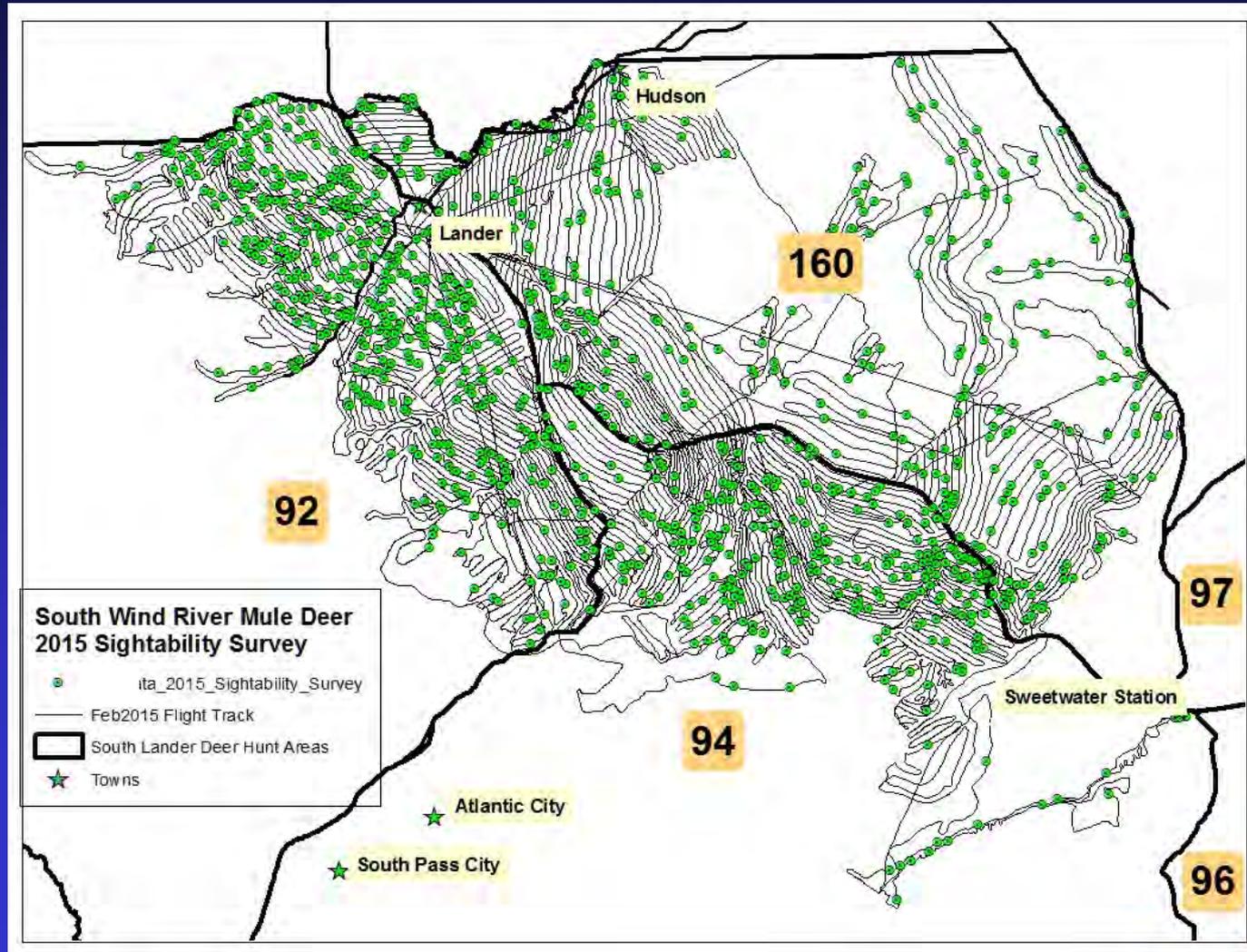
Data Collection/Information Used for Season Setting

- Post-Season classifications
 - Obtain sex/age ratios
 - Helicopter and ground



Data Collection/Information Used for Season Setting

- Sightability surveys (population census for mule deer, elk, moose)



Data Collection/Information Used for Season Setting

- Trail cameras, trend counts, late winter classifications (change in ratios), mortality transects, etc.

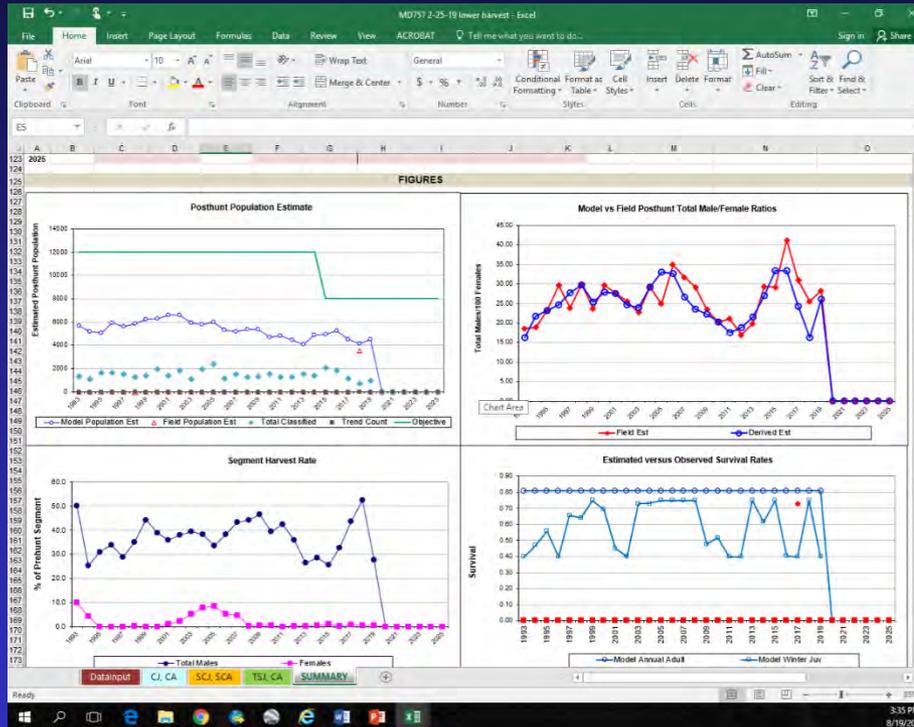


Data Collection/Information Used for Season Setting

- Antler measurements (mule deer statewide)
- Disease sampling
- Tooth age data
- Field harvest data collection (check stations, field checks)
- Hunter feedback during hunting seasons (field contacts)
- Statistically valid harvest survey data



Data Collection/Information Used for Season Setting



- Data goes into population models
 - Produces herd size estimates
 - Evaluate preseason harvest percentages
 - Predict affects of varying future harvest prescriptions and changes in survival (e.g. low survival due to severe winter, disease, etc.)



Data Collection/Information Used for Season Setting

- Landowner contacts
- Damage claims and complaints
- Hunter/landowner satisfaction surveys
- Year-round public input from constituents



Data Collection/Information Used for Season Setting



- This all leads to Department recommendations for next fall's hunting seasons

Season Setting Process Timeline

- Data collection – Year-round
 - **PUBLIC INPUT**
- Notify Governor & LSO – January
- Compile/analyze harvest data – Jan & Feb
- Regions develop draft proposals – Jan & Feb
- Wildlife Administration review – March
- Local public season meetings –mid/late March
 - ~700 public at meetings last year
 - **PUBLIC INPUT**
- Regions review public comment, edit seasons as appropriate –
Early April
- Wildlife Administration final review – Mid April
- Commission sets seasons – Late April
 - **PUBLIC INPUT**



Challenges

- Limited data, not an exact science
- Conflicting public attitudes, desires, and needs
- Changing demographics of user groups
- Resource limitations (funding & personnel)
- Attendance at meetings – outreach
- Timelines/constraints of regulation process
- Results of management actions are not always:
 - Immediate
 - Readily identifiable
 - Predictable

Hunting Season Structure



Hunting Season Structure

GENERAL LICENSE:

- No limit on number of hunters
- General seasons for mule deer, elk and WTD



Positives:

- Greatest hunter flexibility
- No limits on resident hunter participation each year

Negatives:

- Increased hunter #s, decreased hunter success, increased # of days to harvest an animal
- Decreased season length
- Lower hunter satisfaction

Hunting Season Structure

LIMITED QUOTA

- Hunter numbers determined by quota
- LQ seasons for mule deer, elk and WTD
- More general hunt areas than LQ hunt areas

Positives:

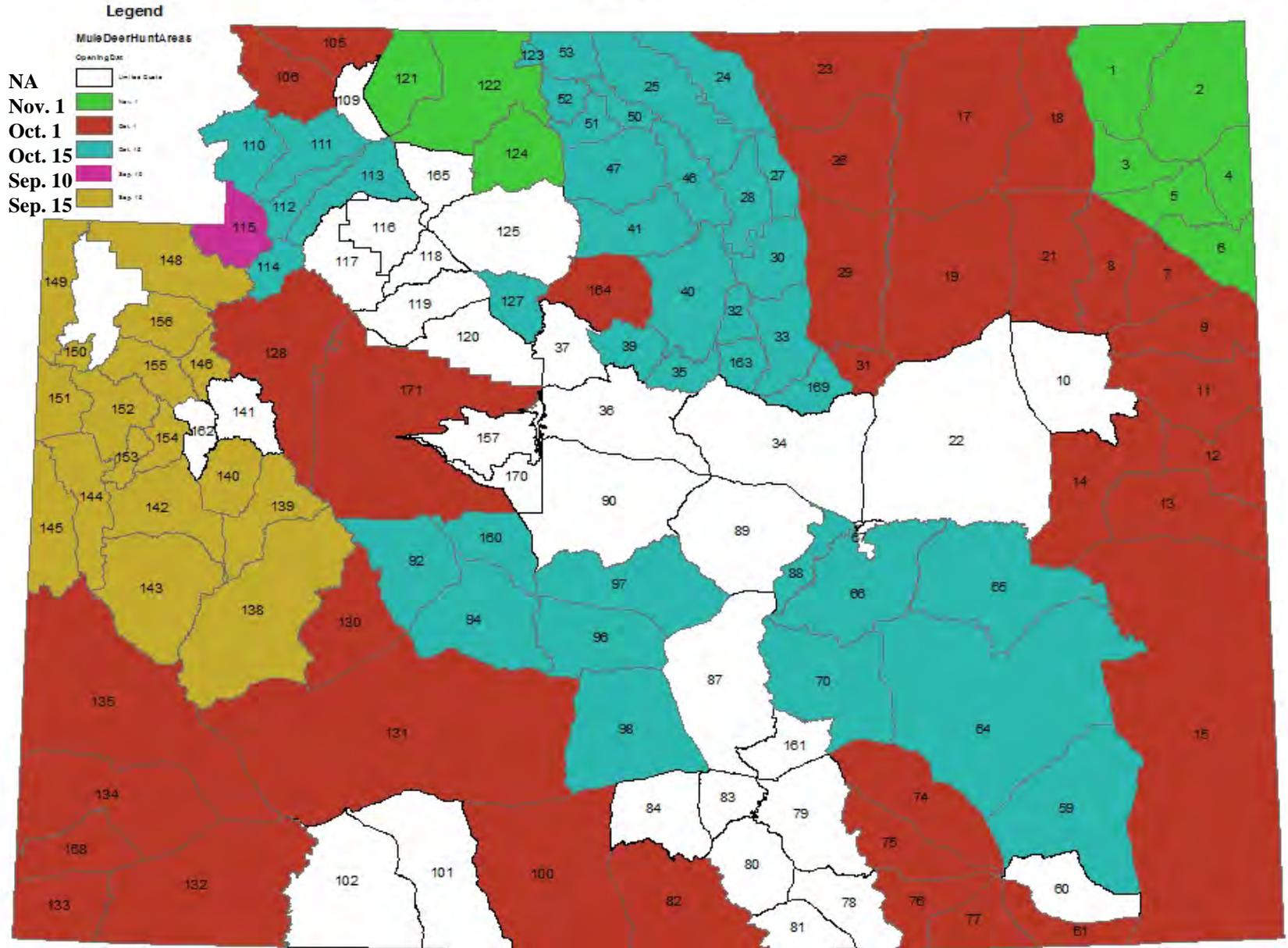
- Reduced hunter #s, greater hunter success, fewer days required to harvest an animal
- Increased season length
- Higher satisfaction rates due to better hunting quality

Negatives:

- Reduced chance to draw a license each year
- Restricted to one hunt area



Deer General Area Opening Dates - 2018



Hunting Season Structure

LIMITED QUOTA SEASONS WITHIN GENERAL AREAS

- Can provide for special opportunities within general areas (e.g. early or late season buck/bull licenses)



White-tailed Deer Management

- WTD managed with a combination of general and LQ licenses
 - Type 3 & 8 licenses
 - Up to 2 licenses for buck deer, but one or both must be Type 3
- Very liberal WTD management statewide – maximize opportunity
 - Most WTD seasons go through end of Nov (some until mid-Dec)
- Most WTD occupy private lands (irrigated fields / river bottoms)



Late Season Mule Deer Hunting

- Very few areas in the state offer November mule deer buck hunting opportunities
 - The Black Hills (HAs 1 – 6), HA128 (by Dubois), some areas in the Bighorn Basin

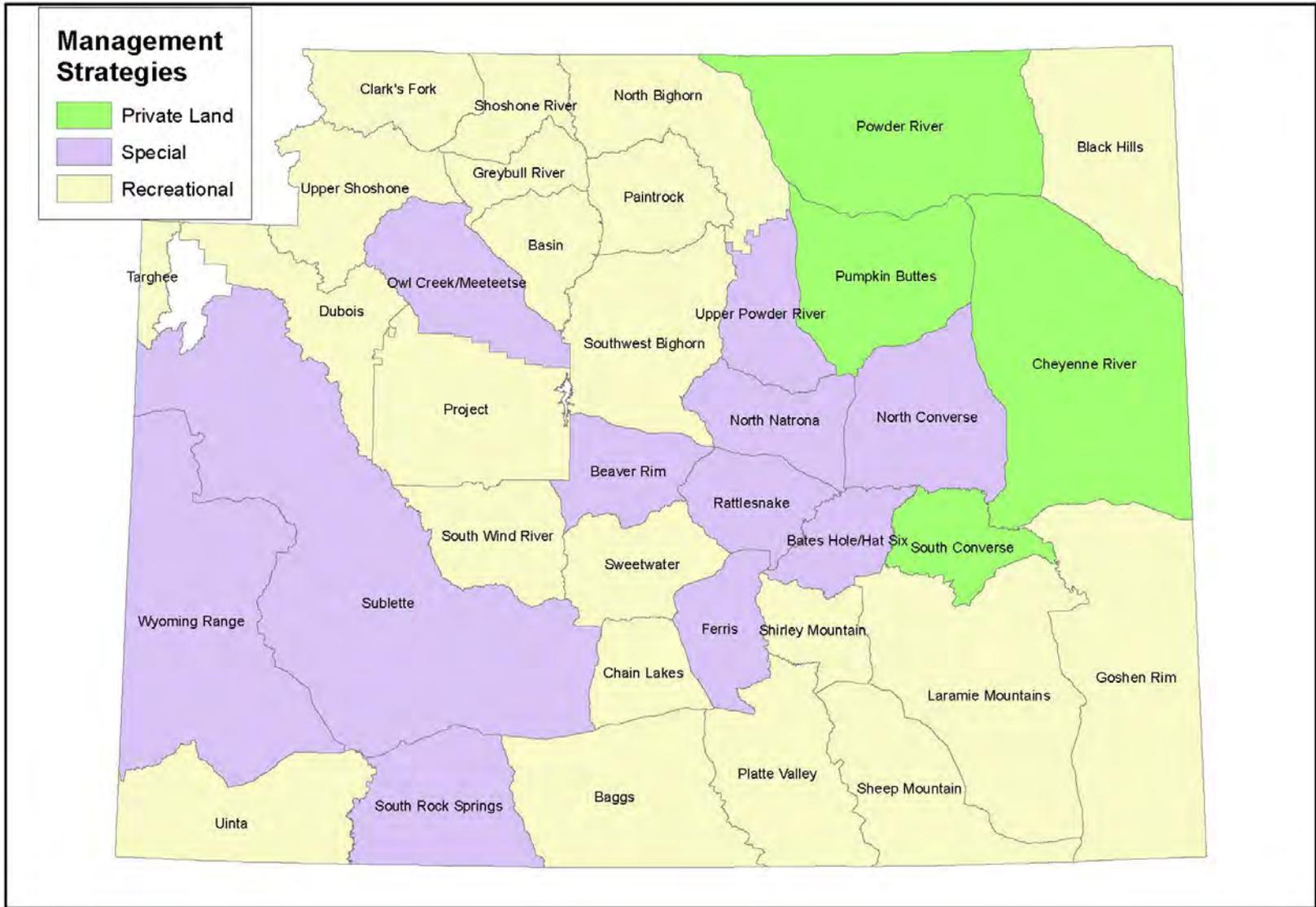


Current Mule Deer Management

37 Herd Units Statewide

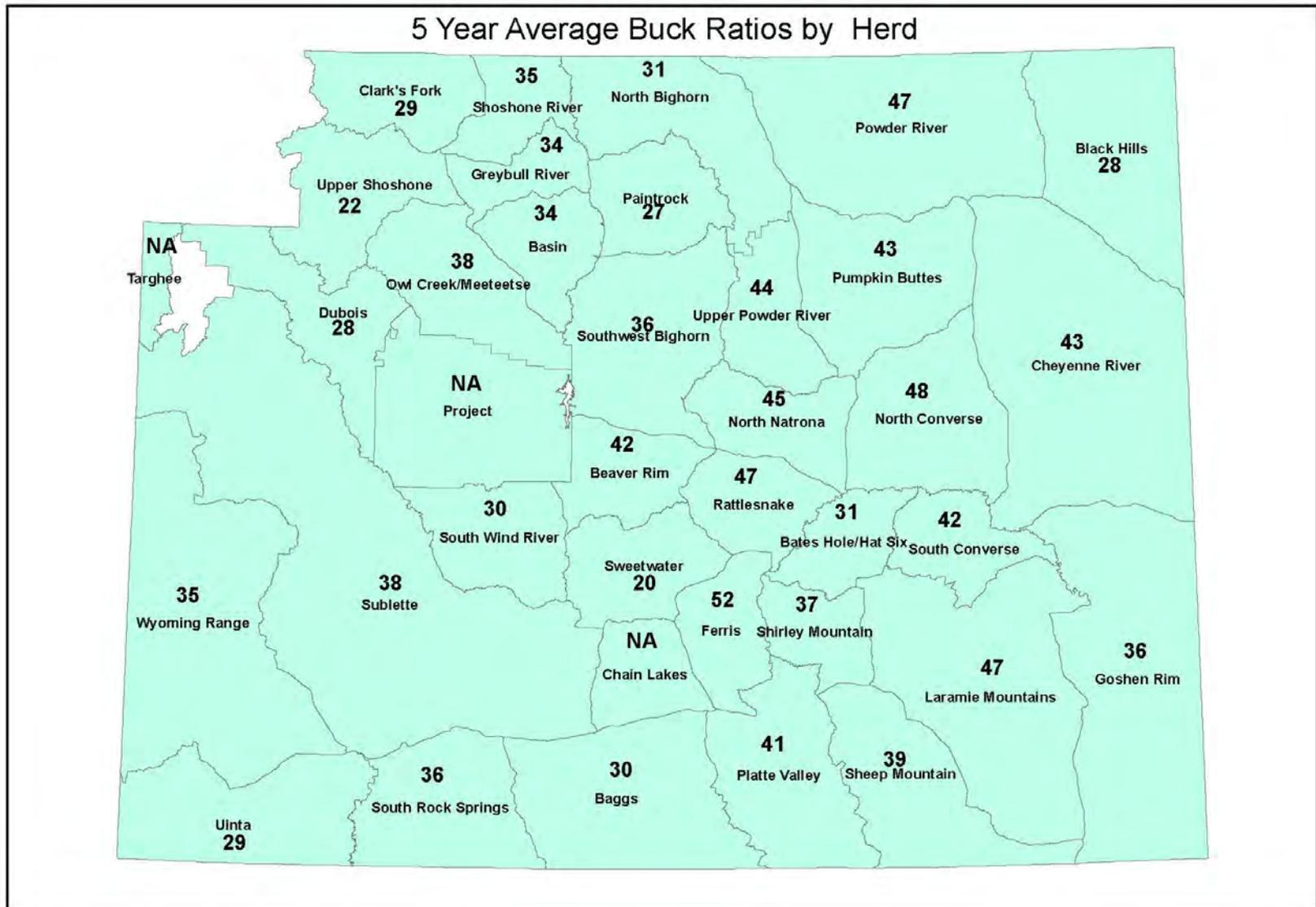
- 34 have postseason population objective
 - 21 below objective
 - 13 at objective (+/- 20%)
- 3 have satisfaction objective
 - All meeting objective





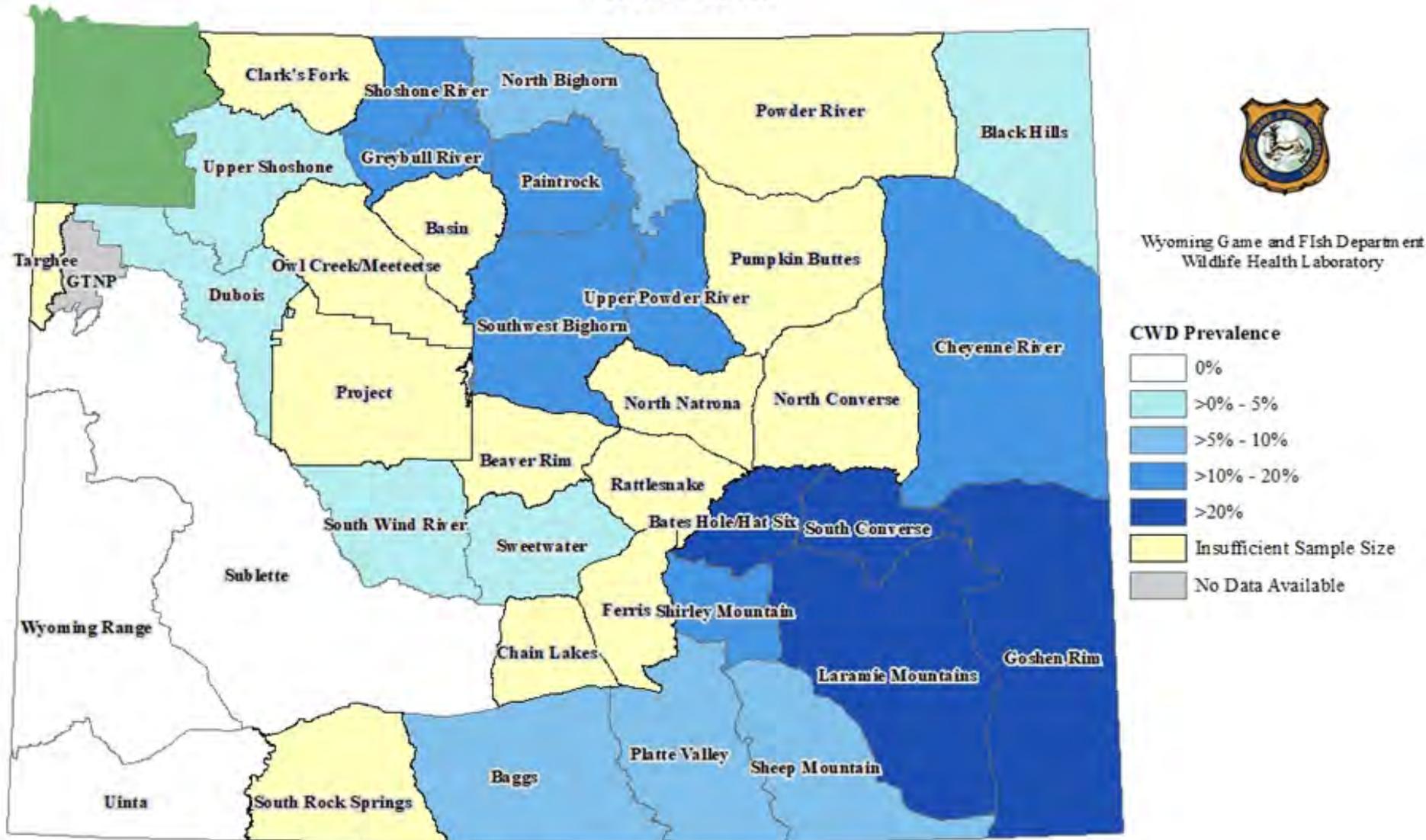
22 Recreational, 11 Special, 4 Private Land

2014 – 2018 Average Postseason Buck Ratios



3 herds with no ratios (satisfaction), 7 herds from 20 – 29, 15 herds from 30 – 39, 11 herds from 40 – 49, 1 herd with 50+

Chronic Wasting Disease (CWD) Prevalence in Hunter Harvested Adult Buck Mule Deer by Herd Unit 2014-2018



* Sample size is too low for estimation of prevalence

This map depicts prevalences calculated from 2014-2018 data only, see distribution map for statewide distribution of CWD

Buck Ratios and Minimum Viability

- Low buck ratios still adequate to breed all available does
 - Alberta found that pregnancy rates and fawn production were not affected until buck ratios ~5 (*pers. communication*)



Current Mule Deer Management

Doe/fawn harvest is very conservative in most herd units (based on 2017 harvest data)

- $\leq 5\%$ of overall harvest in 17 herds
- 6 – 10% of harvest in 7 herds
- 10 – 20% in 7 herds
- 21 – 30% in 3 herds
- $> 30\%$ in 3 herds

Important Management Metrics

- Male ratios – for change in ratio modeling
- Herd productivity (fawn/calf ratios and recruitment)
 - ~66 fawns per 100 does (postseason) needed to sustain average mule deer population – not a universal rule
- Survival rates
- Sex/age harvest percentages
 - % of males, females, young and overall based on preseason availability



Important Management Metrics

Harvest Percentages (2014 – 2018)

- South Converse Mule Deer (>40 % CWD prevalence)
 - Harvest 22% of bucks, <1% of females
- Bates Hole / Hat Six Mule Deer (29% CWD prevalence)
 - Harvest 37% of bucks, <1% of females
- Black Hills Mule Deer (<5% CWD prevalence)
 - Harvest 37% of bucks, 2% of females
- Laramie Peak / Muddy Mountain Elk (6% CWD prevalence)
 - Harvest ~23% - 27% of bulls, ~16% - 19% of females
- **CWD prevalence data on this slide are not necessarily correlated with harvest percentages! Also depends on epidemiological timeline**

REMINDER!

- Any local initiatives to alter management (i.e. hunting seasons) in an attempt to reduce CWD prevalence must still go through the Department's traditional public input process.
- Depending upon the scale of the proposed management action, this may even require a localized collaborative process with affected stakeholders

Mule Deer Initiatives

- Regional Mule Deer Initiatives
 - Wyoming Range
 - Sublette
 - Owl Creek / Meeteetse
 - Upper Powder River
 - Baggs
 - Sheep Mountain
 - Platte Valley
 - Green Mountain
 - South Wind River
 - Bates Hole / Hat Six



Management decisions must also consider public input and management direction borne from MDIs

Questions?



Hunting Season Structure

“ANY”:

- Allows for harvest of any sex or age
- Can be used in both limited quota & general license seasons



Positives:

- Maximum hunter flexibility
- Increased male:female ratios
- Greatest hunter success of general license scenario

Negatives:

- Limited control of harvest

Hunting Season Structure

“ANTLERED”:

- Harvest of antlered animals only
- Can be used in both limited quota & general license seasons

Positives:

- Reduces hunter density than “any” seasons
- Used to increase populations

Negatives:

- Decreased male:female ratios
- Reduced hunter flexibility
- Lower hunter success than “any” season structure



Hunting Season Structure

“ANTLERLESS”:

- Harvest of antlerless animals only
- Used in both limited quota and general license seasons

Similar to “COW OR CALF, DOE OR FAWN” – limited quota seasons



Positives:

- No male harvest
- Increased male:female ratios
- Used to decrease populations

Negatives:

- Not applicable when populations are below objective
- Reduced hunter flexibility

Timing of Seasons

- Used to increase/decrease vulnerability to harvest

Early Seasons:

- Increased opportunity to harvest male animals during rut (i.e., elk)
- Increased opportunity to harvest resident herd segments

Late Seasons:

- Increased opportunity to harvest male animals during rut (i.e., mule deer)
- Increased opportunity to harvest migratory herd segments

Antler Restrictions

ANTLER POINT RESTRICTIONS (APR):

- Used to control harvest on males

Positives:

- Reduces hunter participation
- Reduces total male harvest
- Can result in greater male:female ratios in short-term (<3 yrs)



Negatives:

- Increases harvest pressure on select age classes of males, and reduces their number if used long-term
- Reduces number of older-aged males if used long-term
- Results in increased illegal/accidental harvest

Antler Restrictions



SPIKES-EXCLUDED SEASONS:

- Used to limit harvest on younger males

Positives:

- Reduces hunter participation
- Reduces total male harvest
- Reduces harvest of yearling males
- Can result in greater adult male:female ratios in short-term

Negatives:

- Reduces number of older-aged males if used long-term
- Results in increased illegal/accidental harvest



Antler Restrictions

SPIKES-ONLY SEASONS:

- Used to focus harvest on younger males

Positives:

- Flexible harvest opportunity during late antlerless seasons within large cow/calf groups
- Can reduce bull ratios where needed while preserving mature bull quality
- May enable more bull harvest on private lands where needed without requiring trespass fees

Negatives:

- Increases harvest pressure on select age classes of males, and reduces their number if used long-term