

Saratoga CWD Meeting Agenda



- *Chronic Wasting Disease 101 & Statewide Surveillance*

Hank Edwards- WGFD Wildlife Health Laboratory Supervisor

- *WGFD Chronic Wasting Disease Management Plan*

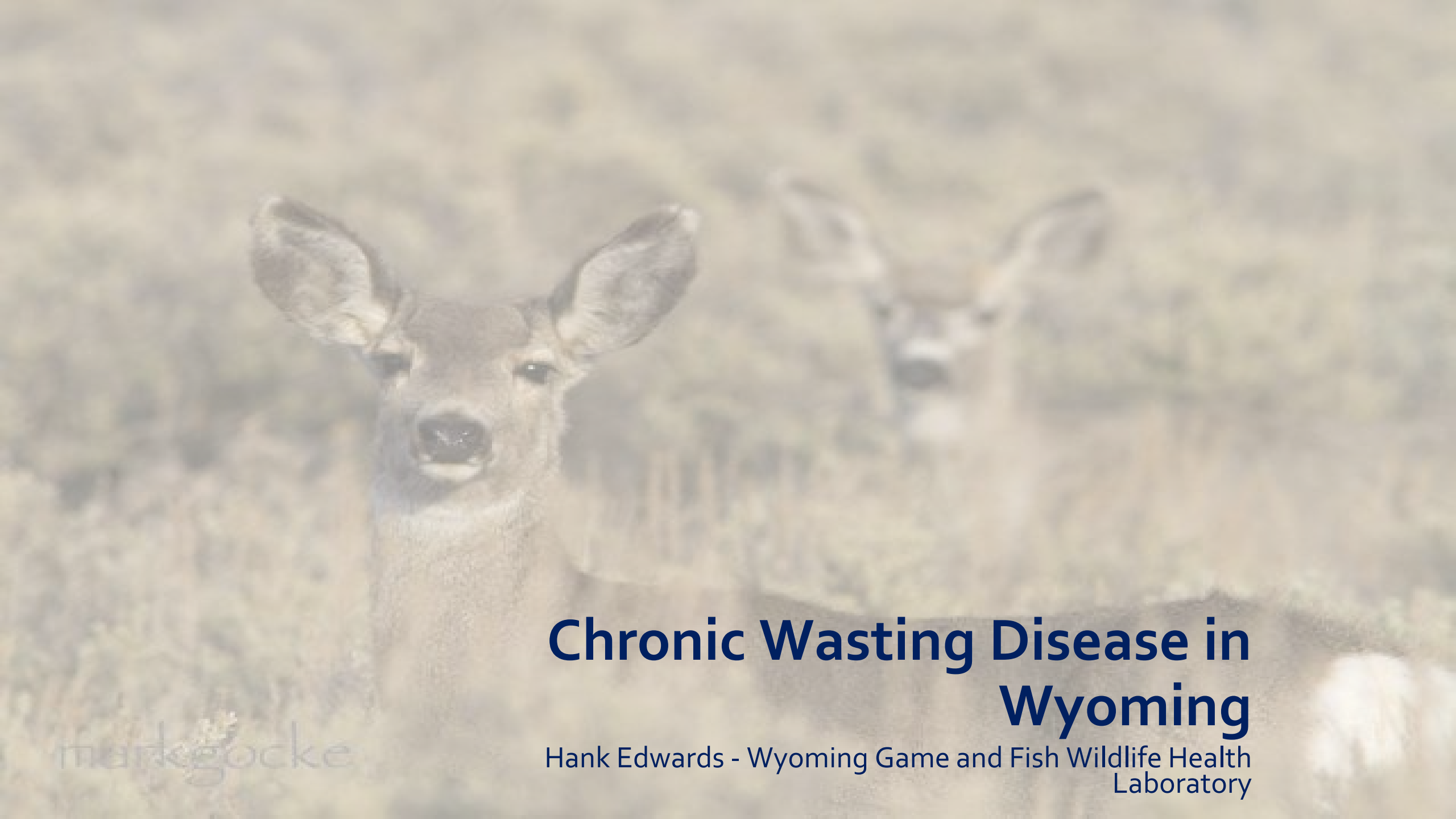
Martin Hicks- WGFD Laramie Region Wildlife Coordinator

- *Chronic Wasting Disease Status in Saratoga Herds*

Teal Cufaude-WGFD Saratoga Wildlife Biologist

- *Future Chronic Wasting Disease Management Planning & Engagement*

Teal Cufaude & Meeting Attendees



Chronic Wasting Disease in Wyoming

Hank Edwards - Wyoming Game and Fish Wildlife Health Laboratory

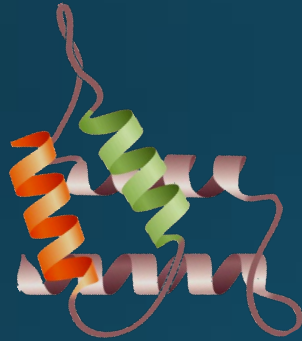
markgocke

What is Chronic Wasting Disease?

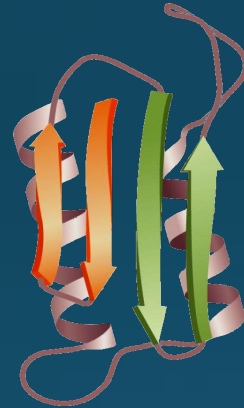
- Chronic wasting disease is a fatal nervous system disease of mule deer, white-tailed deer, elk, moose, and reindeer/caribou
- Pathogen: Prion (Infectious protein)
- Similar diseases: BSE (mad cow), scrapie in sheep, Creutzfeldt-Jakob disease & Kuru in humans



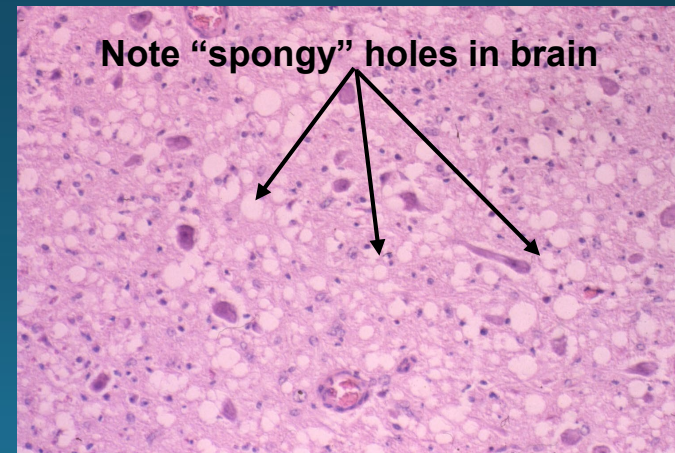
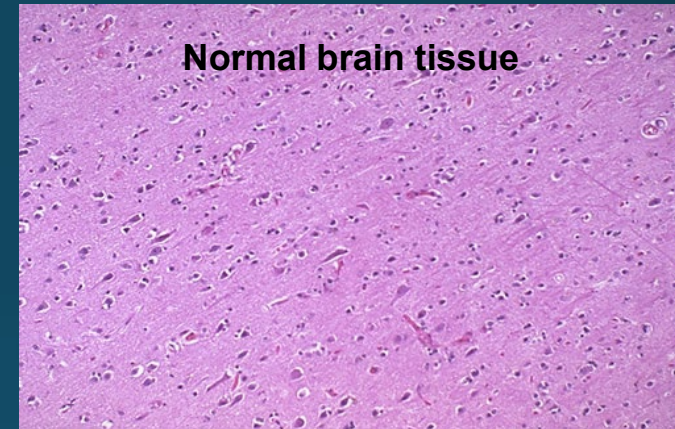
Prion Simplified



Normal Protein
(predominant in nervous
system cells)



**Abnormal Prion
Protein**



Clinical Signs of CWD



- Incubation period: ~1.5 – 2+ years (varies)
- No clinical signs during incubation period
 - Vast majority of all harvested CWD positive animals appear normal
- Clinical signs during last 4-8 weeks of the disease:
 - Weight loss
 - Drooling
 - Behavioral changes
 - Hair/coat changes
 - Droopy ears
 - Lack of general awareness

CWD Transmission

- Animal to animal
- Environment to animal
 - Ingestion of soil, plants, or hay contaminated with saliva, urine, feces
 - Contact with contaminated surfaces
 - Mineral licks etc...
 - Carcasses
- Environmental persistence of prions: **16+ years** (scrapie)



CWD & Sex/Age



- Mule and white-tailed deer
 - CWD more common in bucks (~2x)
 - More common in prime age animals
- Elk
 - CWD equally distributed in bulls and cows
 - More common in prime age animals

CWD & Genetics

- Influence the length of time animals survive once infected with CWD
 - Most deer die within 2 years
 - Most elk die within 4 years
- No true resistance identified
- No documented immunity or recovery
- All cervids susceptible regardless of nutrition or health status



CWD & Predators



- Mountain lions selectively prey on CWD infected animals
 - Most, but not all prions deactivated during digestion



- Modeling suggests selective wolf predation may decrease CWD prevalence

CWD & Human Health



- Laboratory Studies
 - Substantial species barrier – not absolute
 - Ongoing study reported transmission to macaques via ingestion of game meat
- Public Health Studies
 - No demonstrated link between human prion disease and ingestion of game meat

CWD & Human Health



- CDC and the World Health Organization recommend CWD positive animals not be consumed
- Prion not inactivated by cooking
 - Minimize human exposure to prions

*Disinfection of hunting knives/butchering equipment: 40% bleach (2 parts bleach/3 parts water) for 5+ minutes

CWD in Wyoming's Deer



markgocke

CWD in Wyoming

- Unknown origin or date of establishment
- Modeling suggests disease presence since 1950s
- Documented in free-ranging mule deer (1985), elk (1986), white-tailed deer (1990), and moose (2008)



WGFD CWD Surveillance

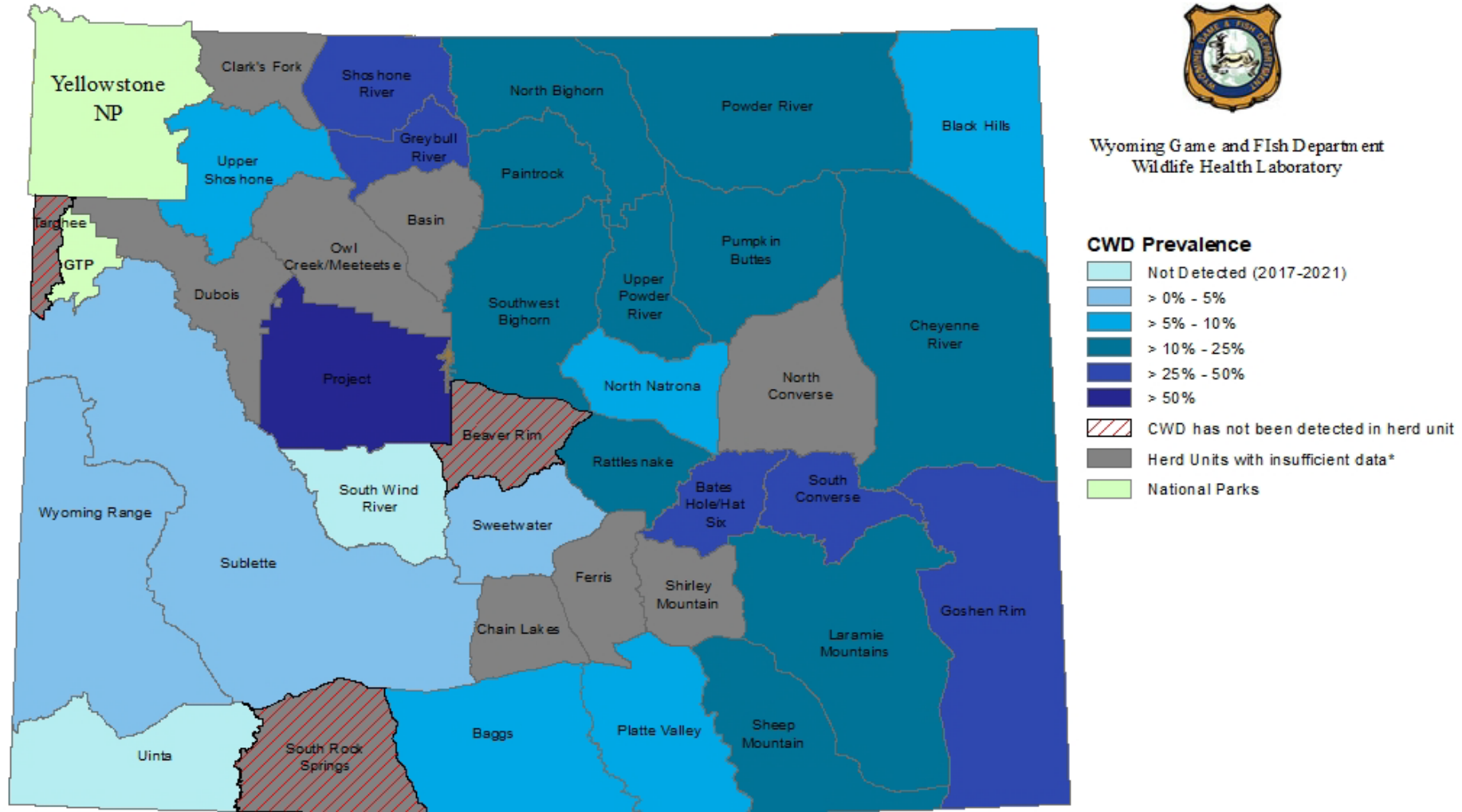
- 25+ years of surveillance
- 5 year rotation for most deer and elk herd units
- Free testing statewide
 - Regional offices, check stations
- Laboratory turn-around in < 3 weeks
 - Results available online



Chronic Wasting Disease (CWD) Prevalence in Hunter Harvested Adult Male Mule Deer by Herd Unit 2017 - 2021



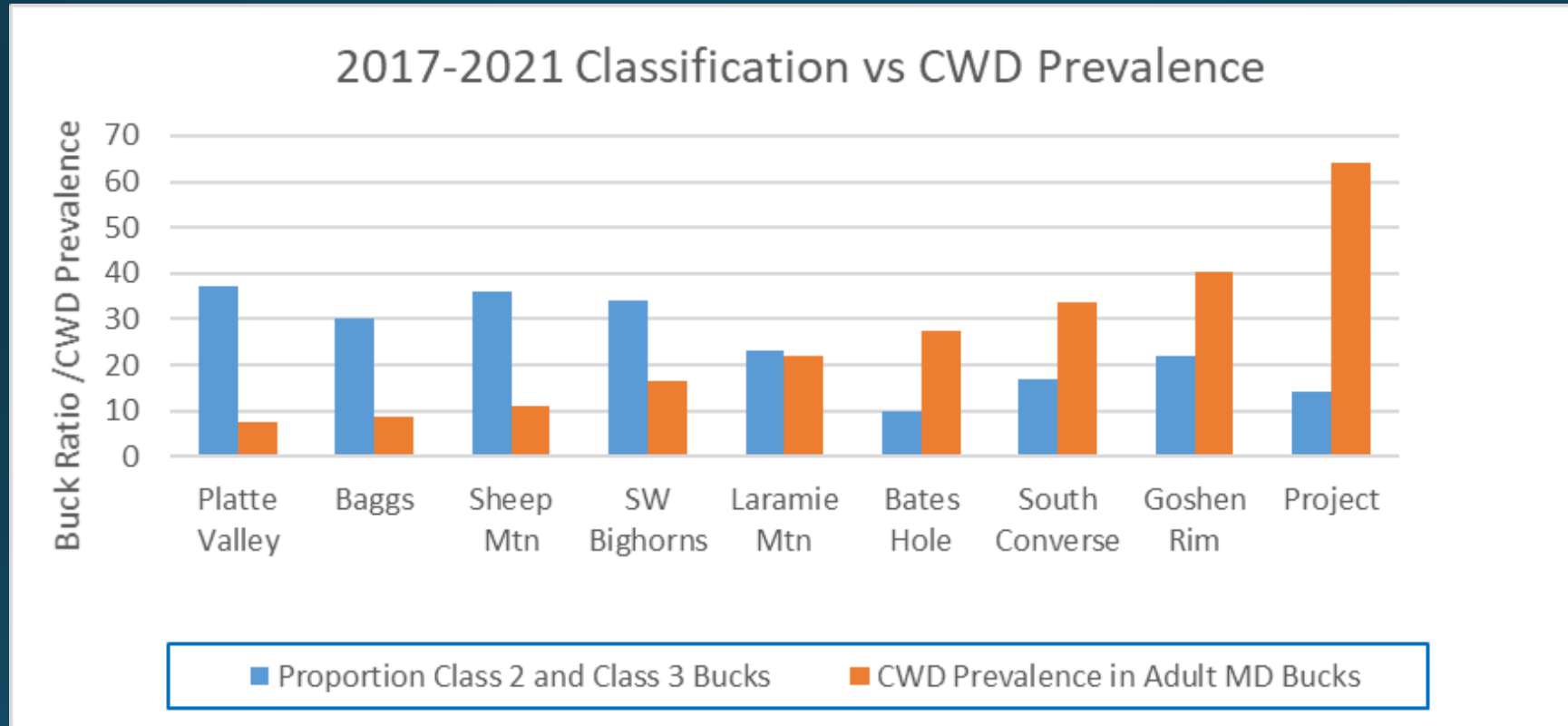
Wyoming Game and Fish Department
Wildlife Health Laboratory



* Data insufficient if less than 100 samples in a three year period

CWD occurs in 34 out of 37 mule deer herd units

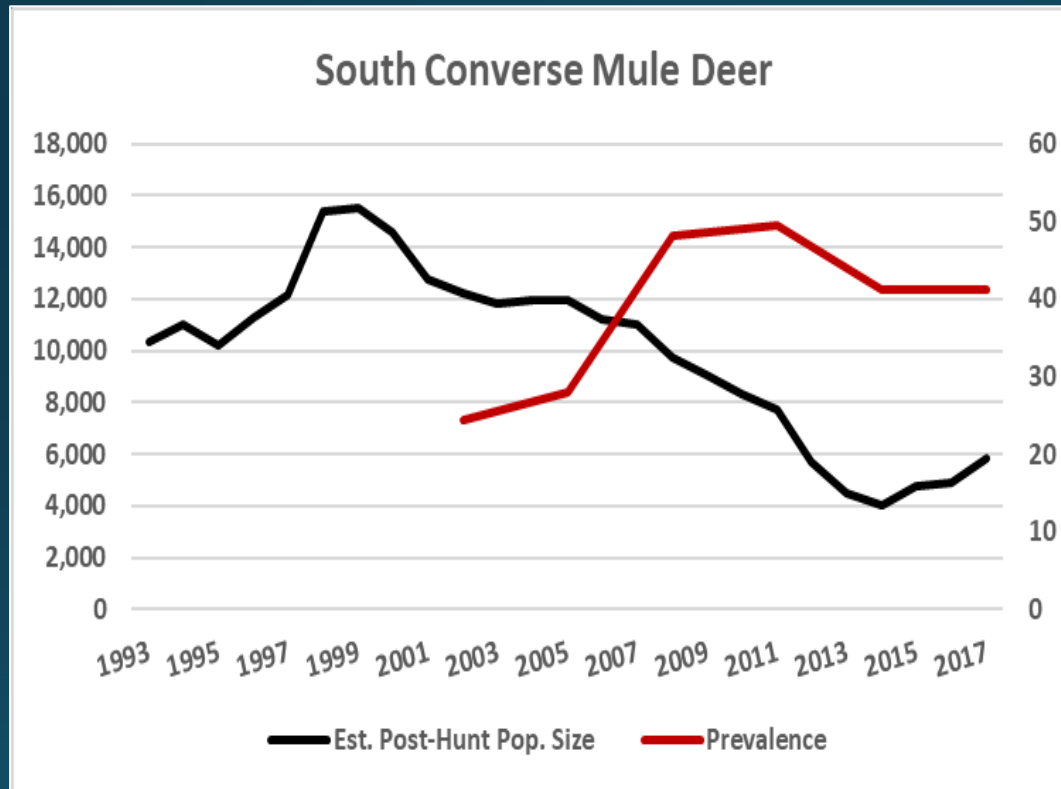
CWD and Class II & III Mule Deer Bucks



Buck class is determined by antler spread: Class II bucks = 20-25" Class III bucks = >25"

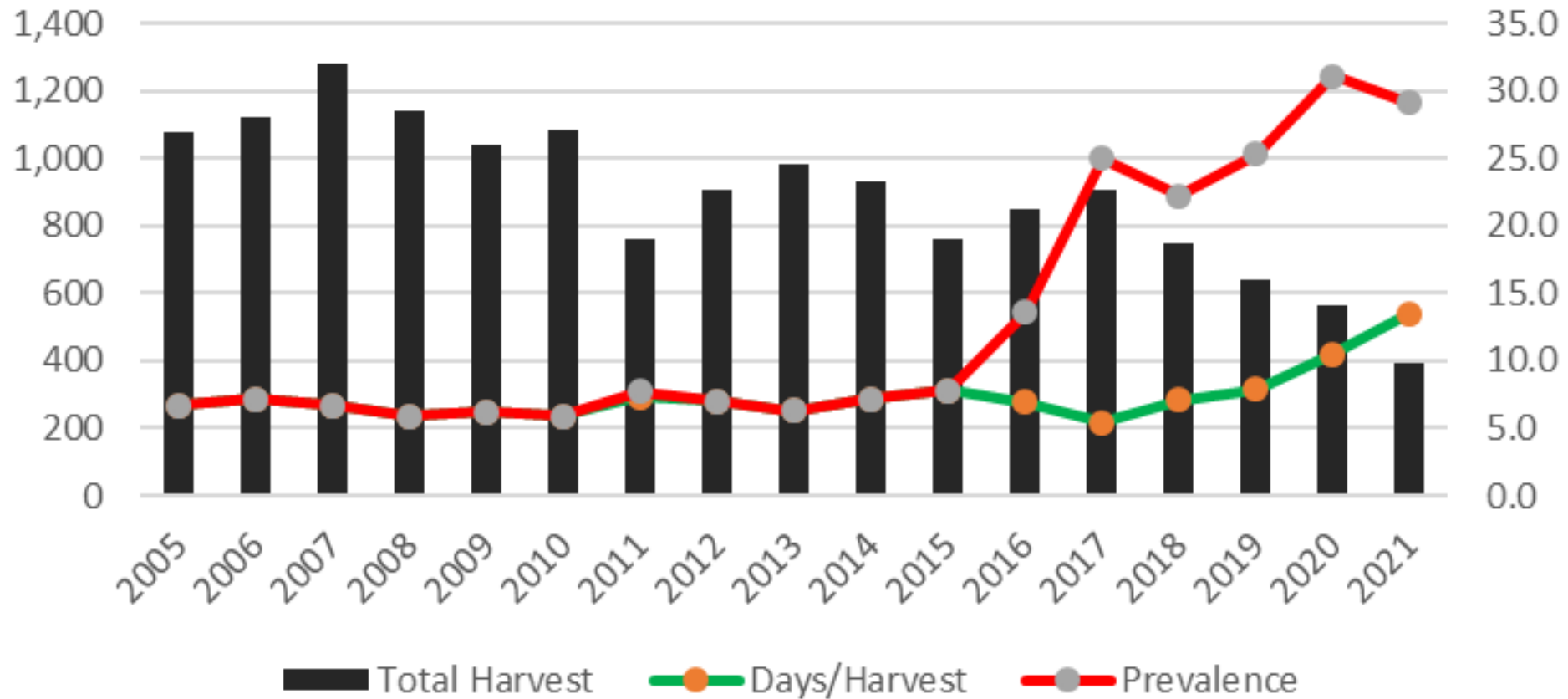
Raw management data must be interpreted with caution

South Converse Mule Deer Study 2010-2014

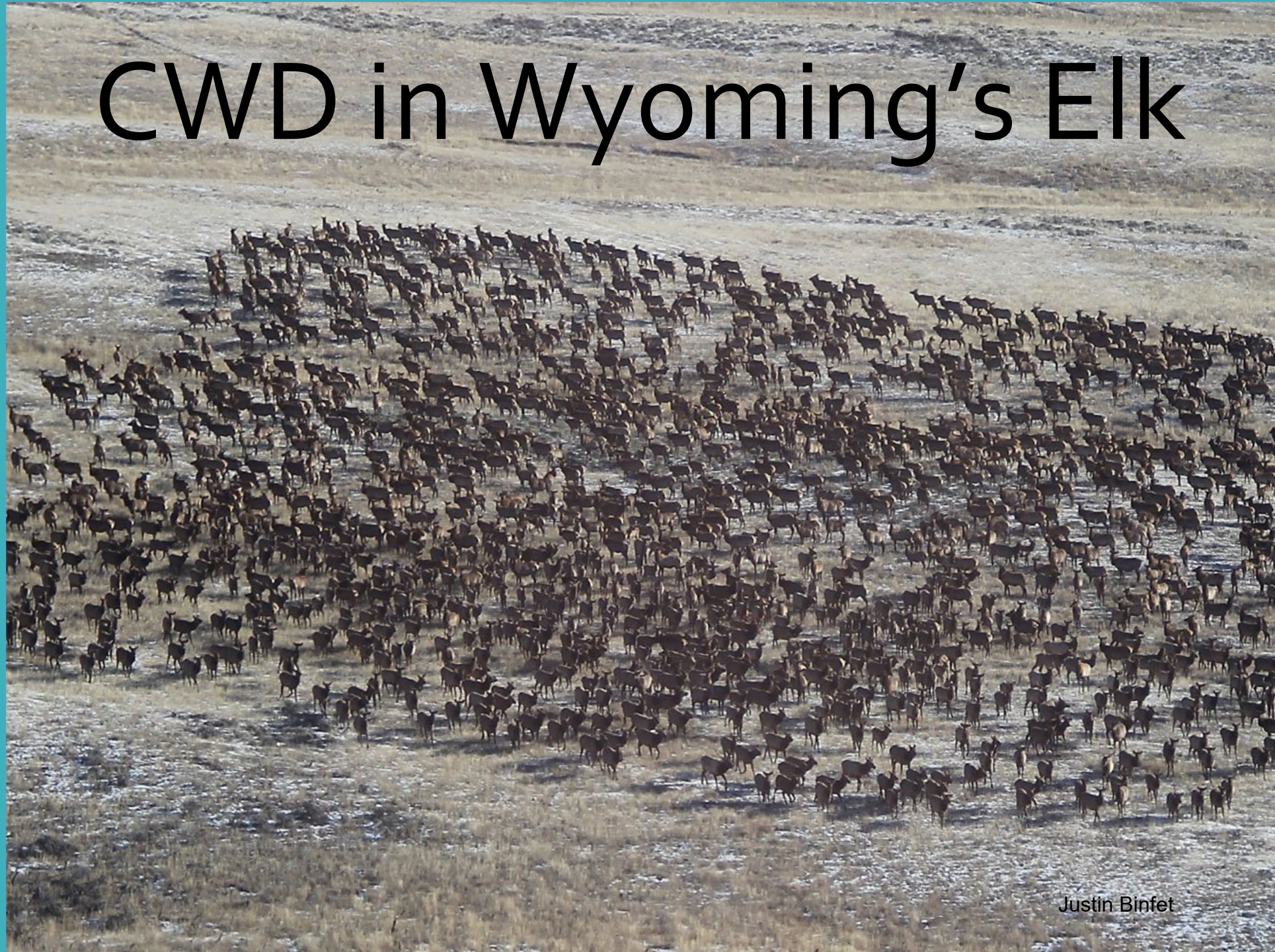


- South of Douglas WY
- Chronically infected herd, 44% prevalence (2010-14)
- Leading causes of mortality:
 - Mountain lion predation
 - CWD
- Annual female survival:
 - CWD Negative -76%
 - CWD Positive – 32%

UPR Harvest vs CWD Prevalence and Days/Harvest 2005-2021.



CWD in Wyoming's Elk

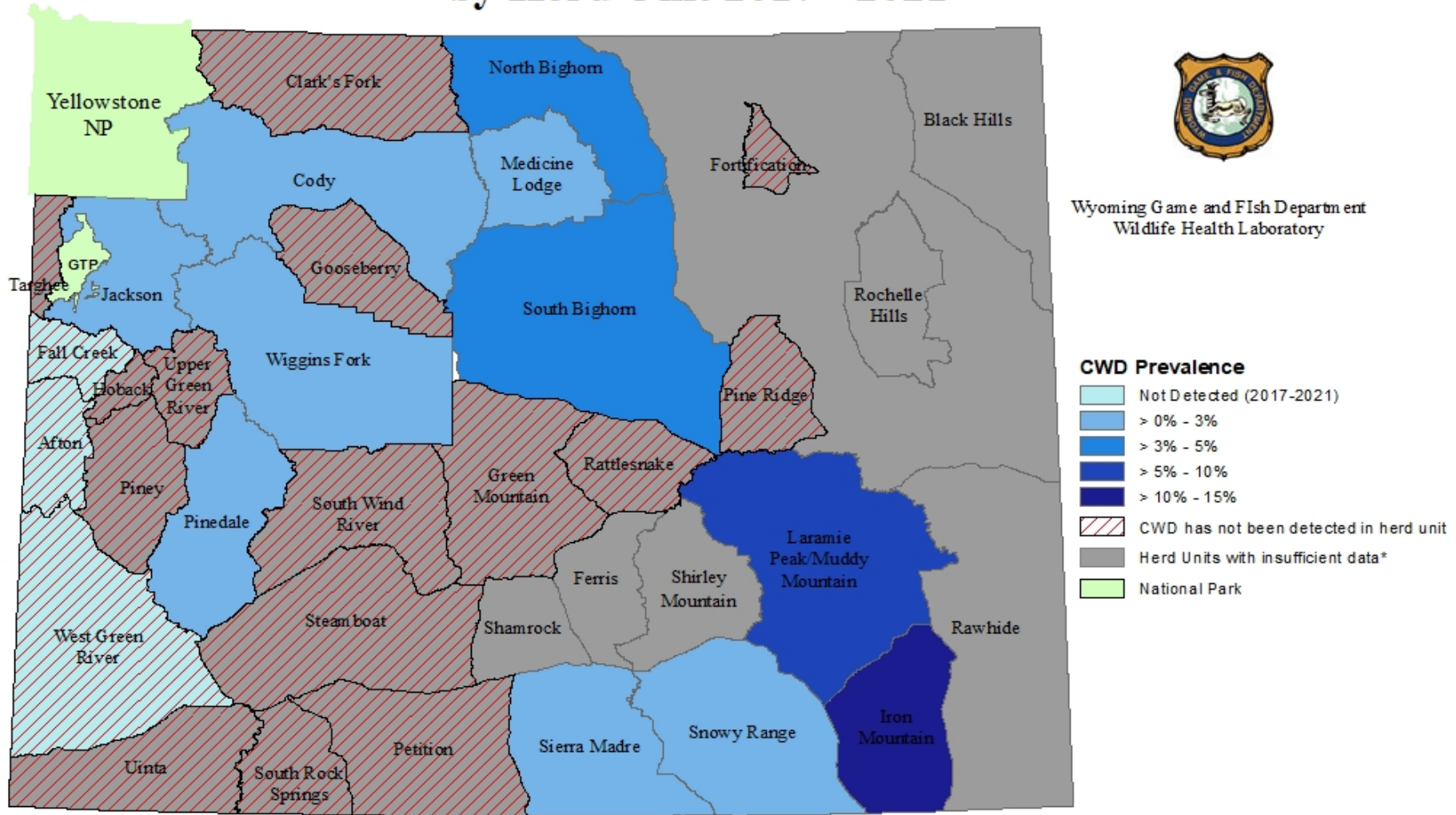


Justin Binfet

CWD and Wyoming's Elk

- Fewer infected elk herds in comparison to deer
 - 15 of 36 elk herds infected
 - 3-5 new herds identified with CWD each year
- Most herds currently below 6% prevalence
 - Iron mountain herd 13%
- Higher CWD prevalence in other states
 - Wind Cave NP 13.9%
 - Custer State Park 28%
- Very concerned with CWD on feedgrounds
 - High elk densities increase disease transmission
 - Currently drafting Feedground Management Plan

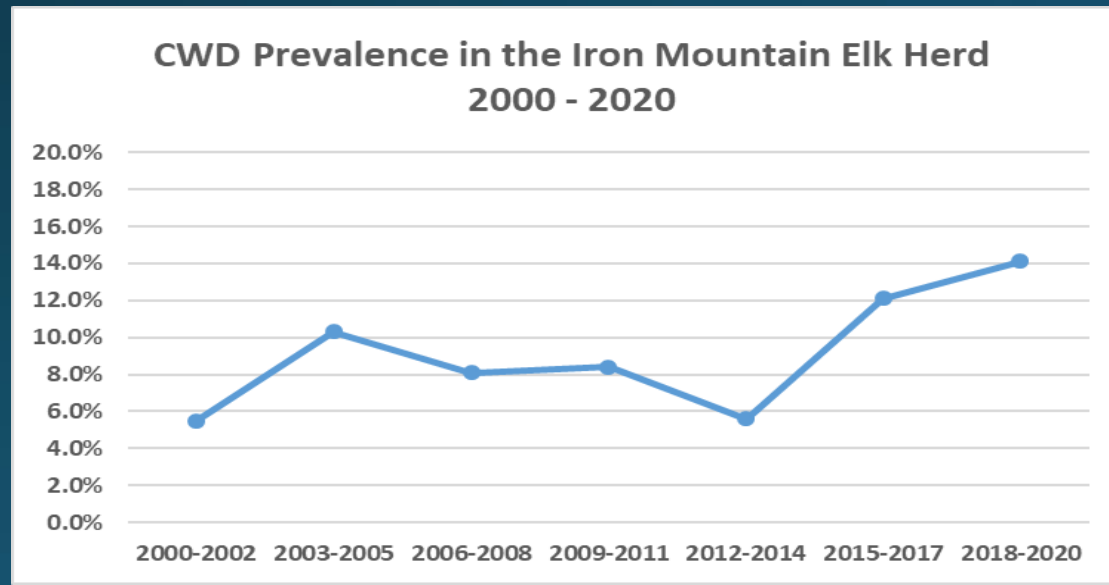
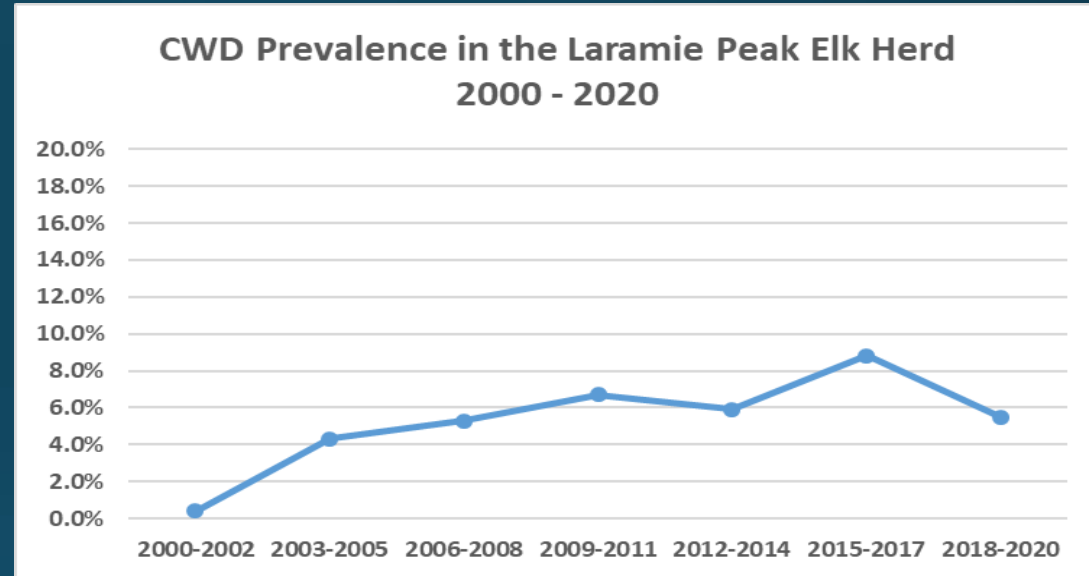
Chronic Wasting Disease (CWD) Prevalence in Hunter Harvested Adult Elk by Herd Unit 2017 - 2021



* Data insufficient if less than 100 samples in a three year period

CWD occurs in 15 out of 36 elk herd units

Trends in Southeastern WY Elk Herds



Why We Are Worried About CWD?



Why We Are Worried About CWD

- **Alarming statistics**

- 34 of Wyoming's 37 mule deer herds are infected with CWD
 - In 6 herds, prevalence exceeds 30% in males, average female prevalence: 14%+
- Over the past 10 years, statewide CWD prevalence in mule deer has increased 13 % each year, 22 % in white-tailed deer, and 11% in elk (Iron Mountain)
- CWD prevalence in male mule deer near Pavillion: 65%, females: 24%

Why We Are Worried About CWD

- Over time, CWD slowly changes deer herds
 - Generally CWD affects prime age animals, but as prevalence increases, animals become infected at younger ages. Because CWD positive animals only live ~2 years, the average age of the herd shifts to younger animals; older age animals become rare
 - Females are the foundation of the herd; as prevalence increases and more females become infected, the reproduction, growth, and resilience of the herd is constrained.
 - Population declines over time.
 - Prion deposition on the landscape increases with prevalence, increasing the likelihood of disease transmission from the environment

CWD – What WGFD is Doing

- Public education
 - WGFD website, social media, news releases, public meetings
- Increase CWD surveillance
 - 5-year rotation for most deer/elk herds across the state
- Carcass transport regulations
 - Prevent improper disposal and limit disease transmission
 - Working with municipal landfills for disposal options
- Updated CWD Management Plan
 - CWD management recommendations developed using scientific data, public and agency input
 - Herd specific management developed at the local level

How Everyone Can Help limit CWD

- Encourage hunting and testing of harvested deer, elk, and moose (prior to processing)
- Proper disposal of carcasses/parts after processing
 - Especially brain and spinal cord
- Get involved with WGFD on local deer/elk management
- Keep an open mind and patience for CWD management actions
 - Results may take 5+ years



Questions?



Mark Socke

Wyoming CWD Management Plan

Martin Hicks- Laramie Region Wildlife Coordinator

11/15/2022

Wyoming CWD Management Plan



The Plan contains the following:

- Guide to the Plan
- Goals and Purpose
- Introduction
- Surveillance and Monitoring
- **Disease Management Strategies**
- Elk Feedgrounds
- Research and Coordination
- Internal CWD Management Team
- Human Health
- Communication and Outreach

*Also contains:

- Executive Summary
- Appendix A – sample size calculations
- Appendix B – CWD working group final recommendations
- Appendix C – 2019 hunter perspective survey

Disease Management Strategies

- Understanding of CWD has improved greatly over the years; we now know that.....
 - Populations are being impacted
 - The disease is expanding in both distribution and prevalence
 - In most cases, bucks have higher (2x) prevalence than does
 - Prevalence is highest in mature bucks
 - Prevalence in WTD can meet/exceed that of mule deer
 - Environmental transmission may be significant at higher prevalences
 - Prevalence in elk does not vary by sex
 - Sympatric elk do not exhibit prevalences as high as deer
- Although there is little published information on effective management, enough is known about this disease to warrant some level of action



Wyoming CWD Management Plan

Disease Management Strategies



- Artificial Sources of Concentration
- Hunter Harvest Management
- Additional Regulatory & Agency Actions

Disease Management Strategies

- Management actions will be based on best available data, science, and accepted wildlife management practices
- Some management actions will be experimental in nature
- Need for public input and support
- Experimental management actions must be implemented and evaluated over long-term (e.g., 10 years or more)

Artificial Sources of Concentration

High concentrations of cervids can facilitate disease transmission

- Via animal-to-animal contact
- In case of CWD, increased environmental contamination



Artificial Sources of Concentration



- Unnatural cervid concentrations occur from human-caused attractants
 - Urban greenspaces (parks, golf courses, etc.)
 - Intentional feeding by private citizens
 - Agricultural operations

Artificial Sources of Concentration



- Agricultural operations are the most common form of artificial cervid concentration
- Many of these ag practices are undoubtedly beneficial to wildlife in the absence of disease
- Provide food, water, cover, etc.



Artificial Sources of Concentration

WGFD will engage the agricultural community to explore ways to reduce unnaturally high cervid concentrations, and will work with willing landowners to:

- Decrease cervid concentrations through hunting seasons or culling to minimize CWD prevalence
- Eliminate or make the source unavailable to cervids (e.g., fencing/stackyards, silage, salt/mineral feeders that exclude wildlife) without impacting normal agricultural operations
- Develop informational material to reduce cervid concentrations around agricultural operations

Artificial Sources of Concentration

- WGFD will partner with other agencies to assess cervid use around livestock salt/mineral supplement sites



- WGFD will assess the value of water developments for wildlife (e.g., guzzlers) where CWD is a concern

Artificial Sources of Concentration

- WGFD will work with the legislature and local governments to the extent possible to regulate the intentional private feeding of cervids



- Excluding traditional agricultural practices
- Elk feedgrounds will be addressed later

Artificial Sources of Concentration

- WGFD will continue to implement habitat treatment projects across the state to benefit wildlife populations, which may help buffer the impacts of disease and other factors affecting them



Hunter Harvest Management

WGFD will identify herd units, hunt areas, or subpopulations to develop hunting season strategies to reduce or limit CWD prevalence- WAFWA- “Recommendations for Adaptive Management of CWD in the West”

- Increase mature male harvest
- Reduce populations / densities within areas of concern
- Lethal removal strategies to reduce cervid densities around disease “hot spots”

- maintain for a sufficient time (i.e., 10 years or more) to adequately evaluate effects on CWD prevalence
BACI



Hunter Harvest Management

Increase mature male harvest in select herds or areas –

- Bucks exhibit higher CWD prevalence than females
- Prime-age bucks have higher prevalence than young bucks
- Increasing license issuance
- Extending season length



Hunter Harvest Management

Reduce populations / densities within areas of concern

- Could be at the herd unit level – most likely within a segment of a population
- Many factors to consider here relative to carrying capacity, population estimate relative to objective, etc.
- Will require sustained female harvest

Hunter Harvest Management

Lethal removal strategies to reduce cervid densities around disease “hot spots” (i.e., hayfields, urban areas, select portions of a hunt area)

- Hunter harvest is preferred method
- “Sharp-shooters” could be used in specific areas
 - Within city limits
 - Areas without safe shooting lanes



Hunter Harvest Management

Intensive public outreach efforts will occur as needed to garner and maintain public support for the duration of the proposed action



- Harvest goals and resulting deer/elk densities will be clearly articulated and developed with public input
- Harvest strategies will be implemented over a sufficient amount of time (i.e., 5 – 10+ years) to allow for rigorous evaluation

Hunter Harvest Management

Harvest management strategies will be determined locally and tailored to each herd unit or localized sub-population

- Migratory vs. non-migratory
- Herd productivity
- Population objective and hunting season structure
- Landownership
- Other factors (predation, other diseases, winter severity, etc.)



Hunter Harvest Management

CWD management will be considered when formulating annual & long-term herd management decisions, and will be incorporated into annual herd unit completion reports

- Hunt season strategies
- Population size / management objectives
- Male:female ratio management strategy / goal
- Prevalence estimates and sample size / distribution
- Potential CWD management strategies that may be implemented



Hunter Harvest Management

WGFD will continue to engage landowners to maintain or increase hunter access on both private and landlocked public/state lands



WGFD will disseminate formal assessments of experimental hunter harvest management actions to bolster the broader understanding of CWD management

Hunter Harvest Management

Sample submission for CWD management actions

- Imperative to understand efficacy of CWD management strategies
 - To detect changes in prevalence
- WGFD will utilize voluntary and/or mandatory CWD sample submission of hunter-harvested deer/elk
- Voluntary sample submission is preferred but will require mandatory if necessary



How Will This Plan Be Applied?

- This Plan is meant to serve as an umbrella document to provide local managers with a suite of potential management options to attempt to reduce or manage CWD



- The application of CWD management strategies will be determined at a local level
 - Will require local public input and support
 - Management actions will vary in significance and scale

Questions?





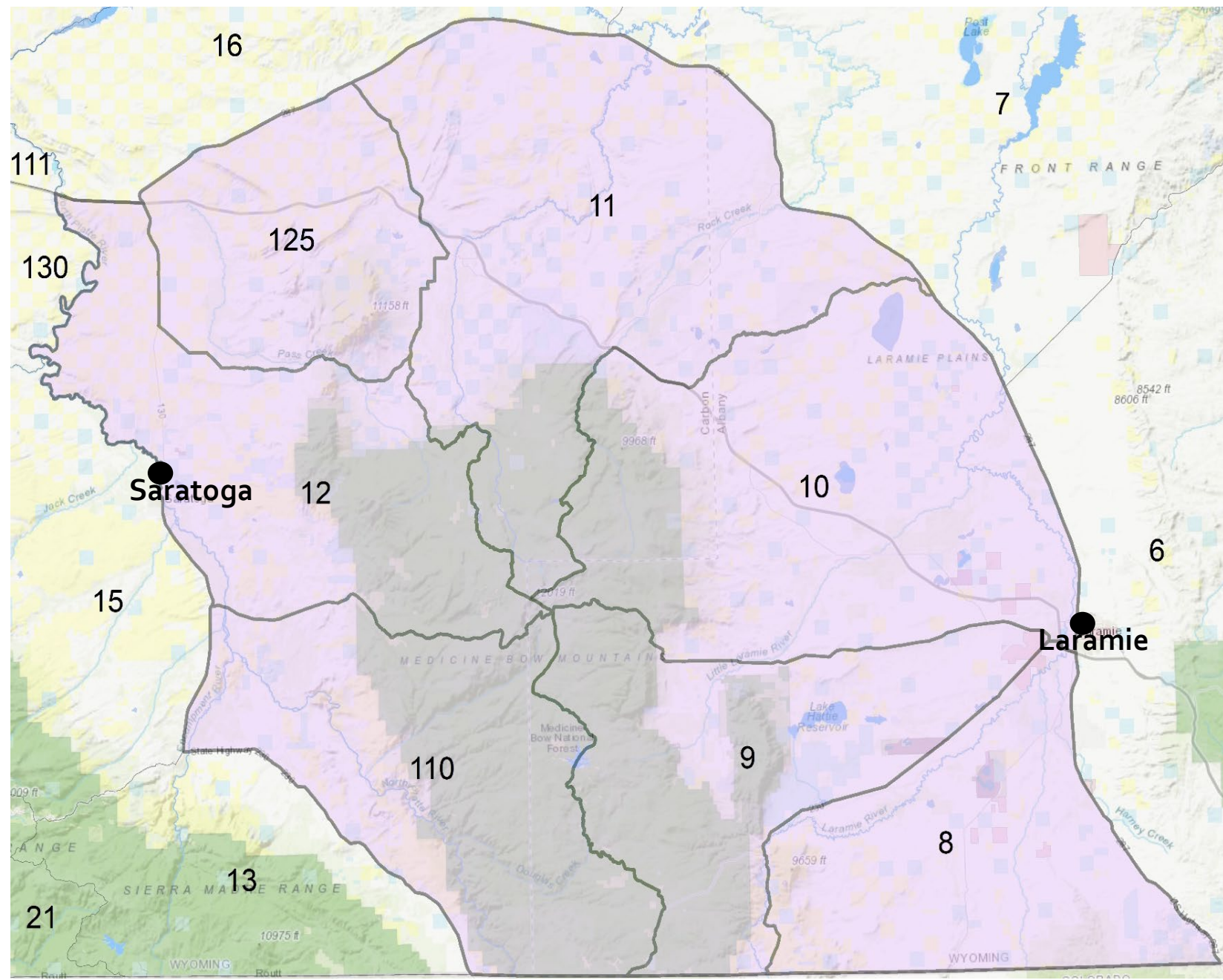
CHRONIC WASTING DISEASE

Current CWD status, monitoring, and management

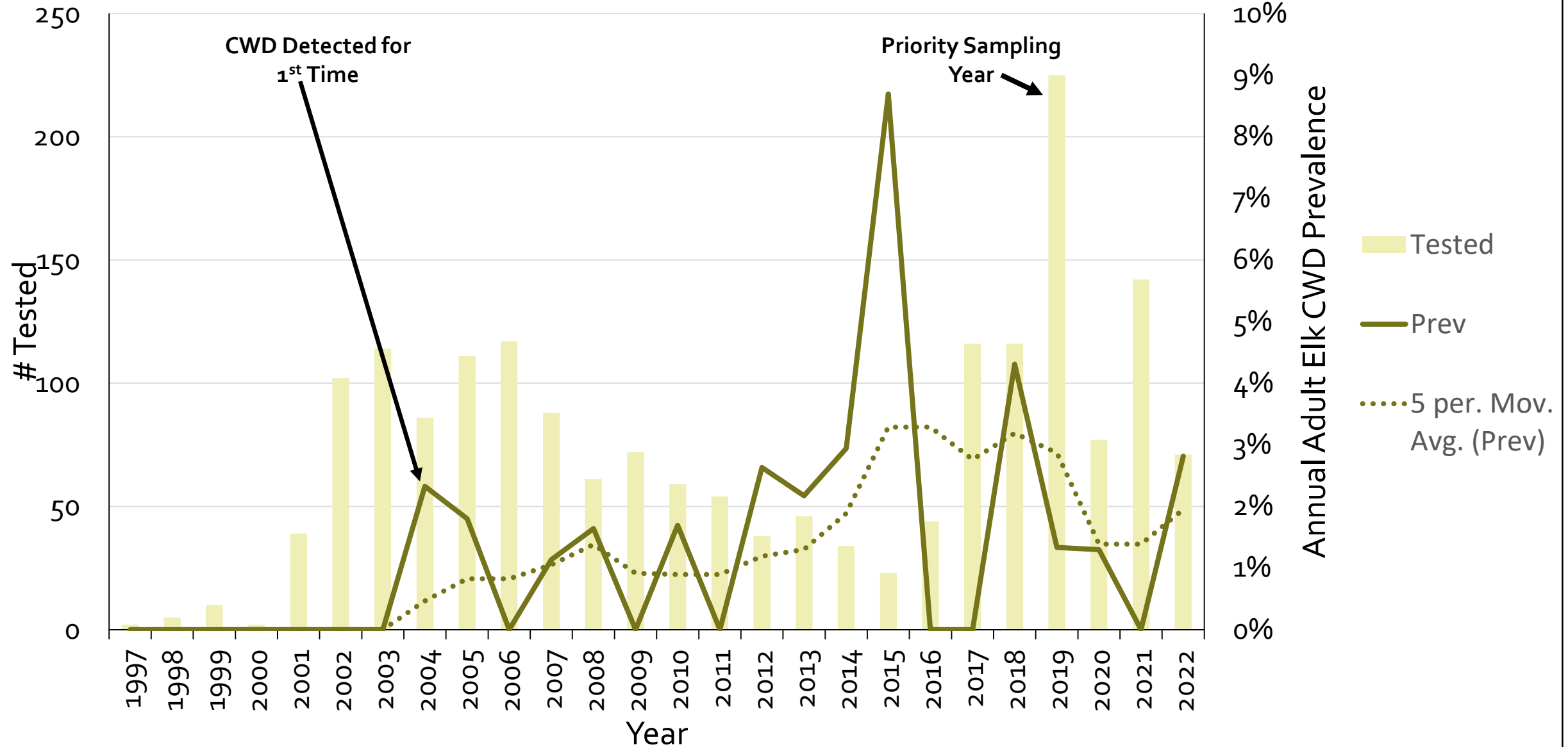
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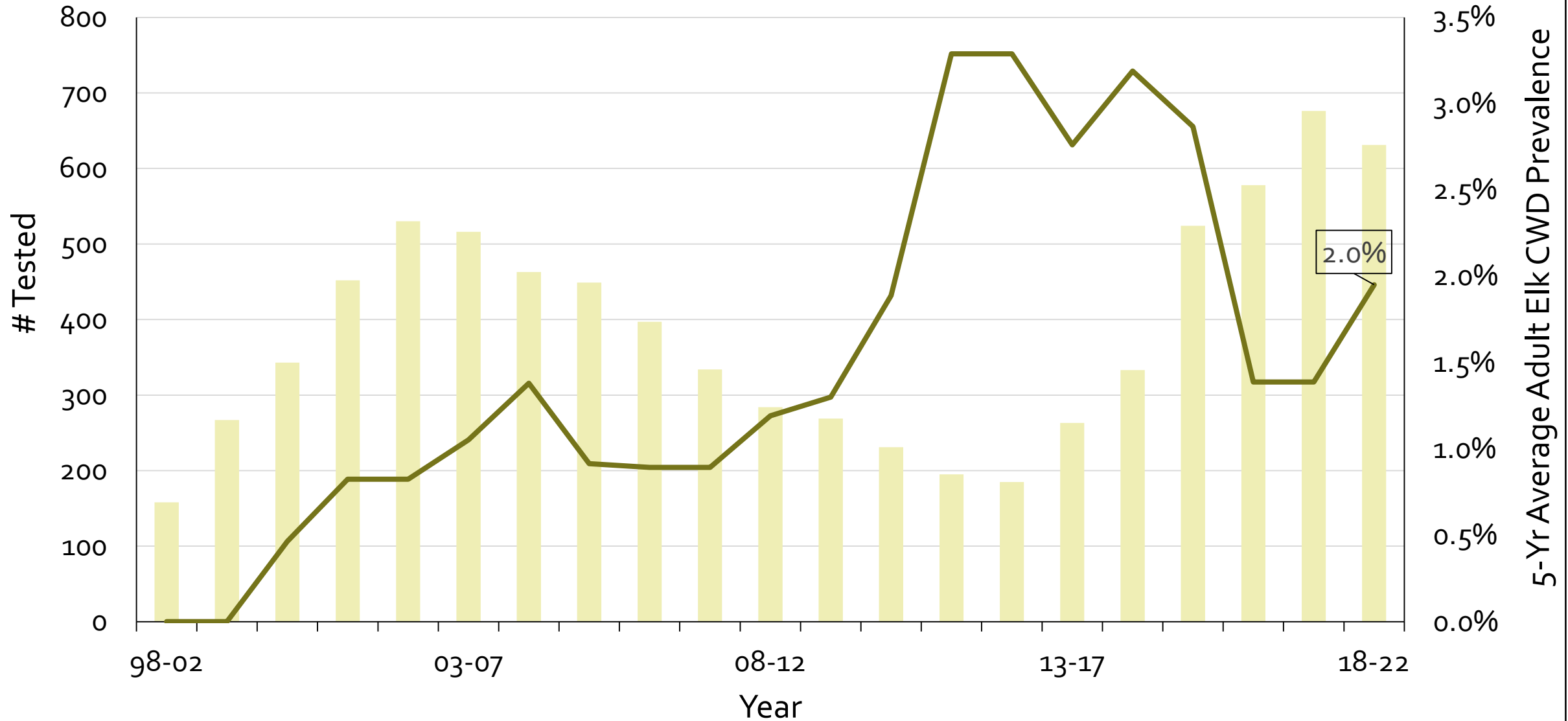
Snowy Range Elk



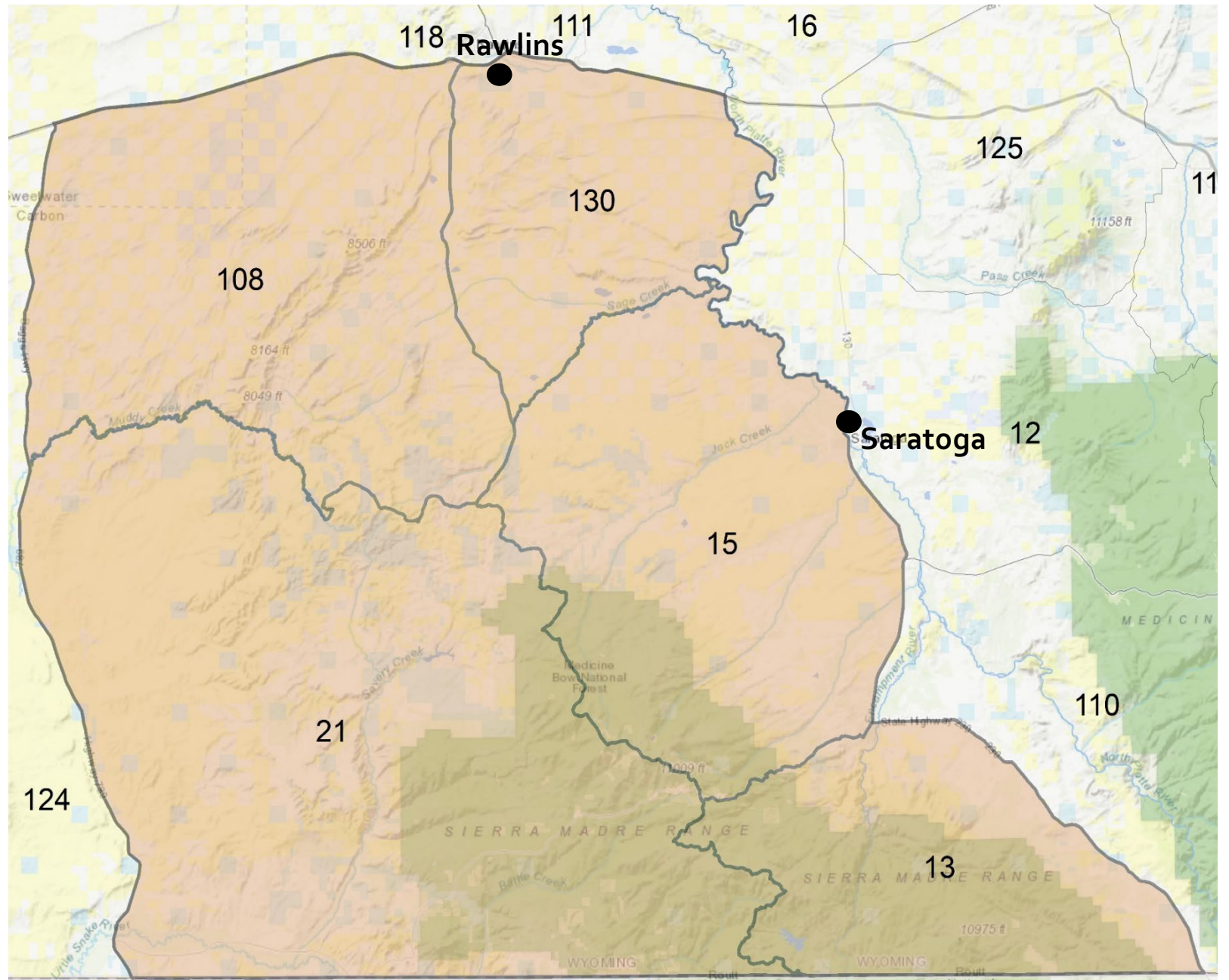
Snowy Range Elk CWD Prevalence (97-22)



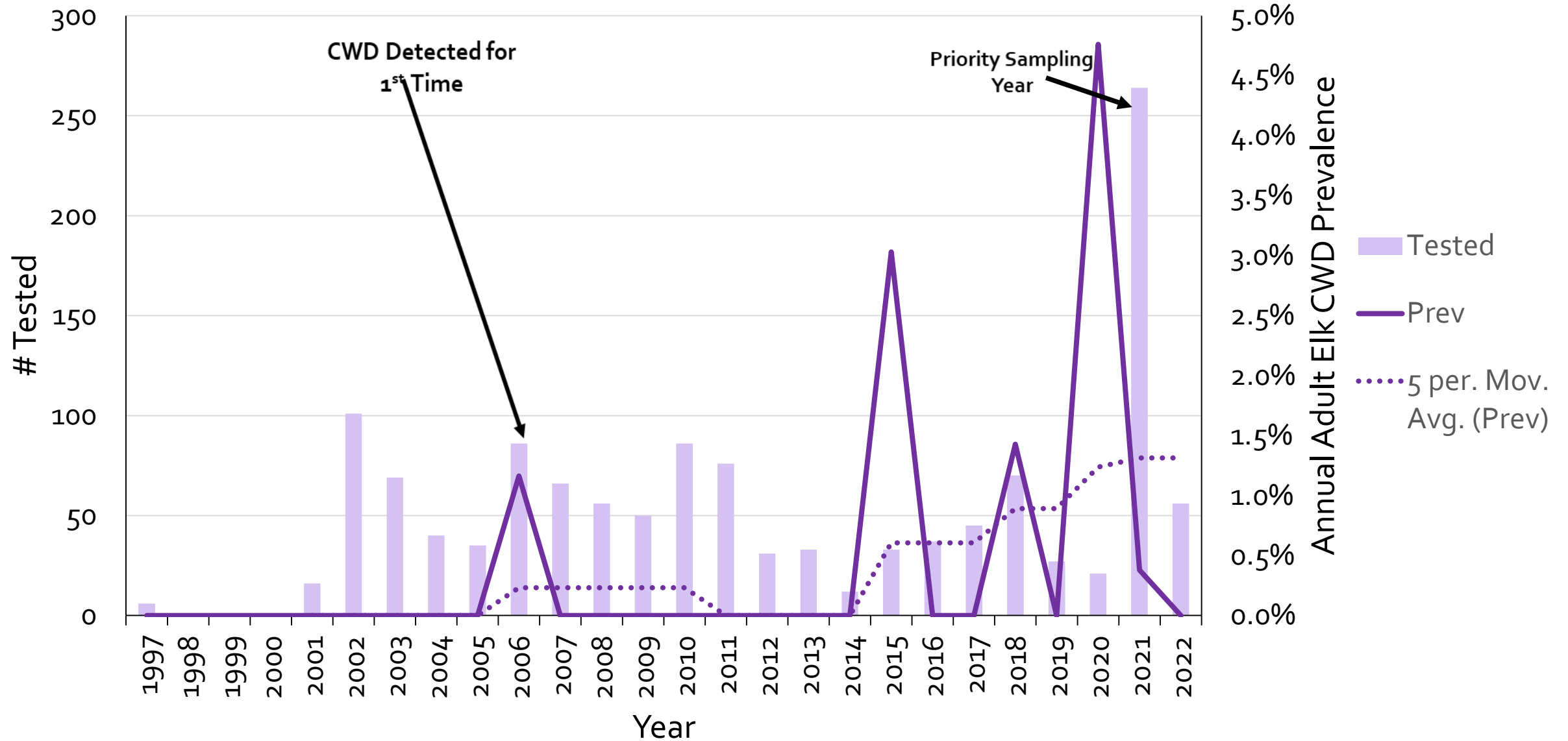
Snowy Range Elk CWD Prevalence (98-22)



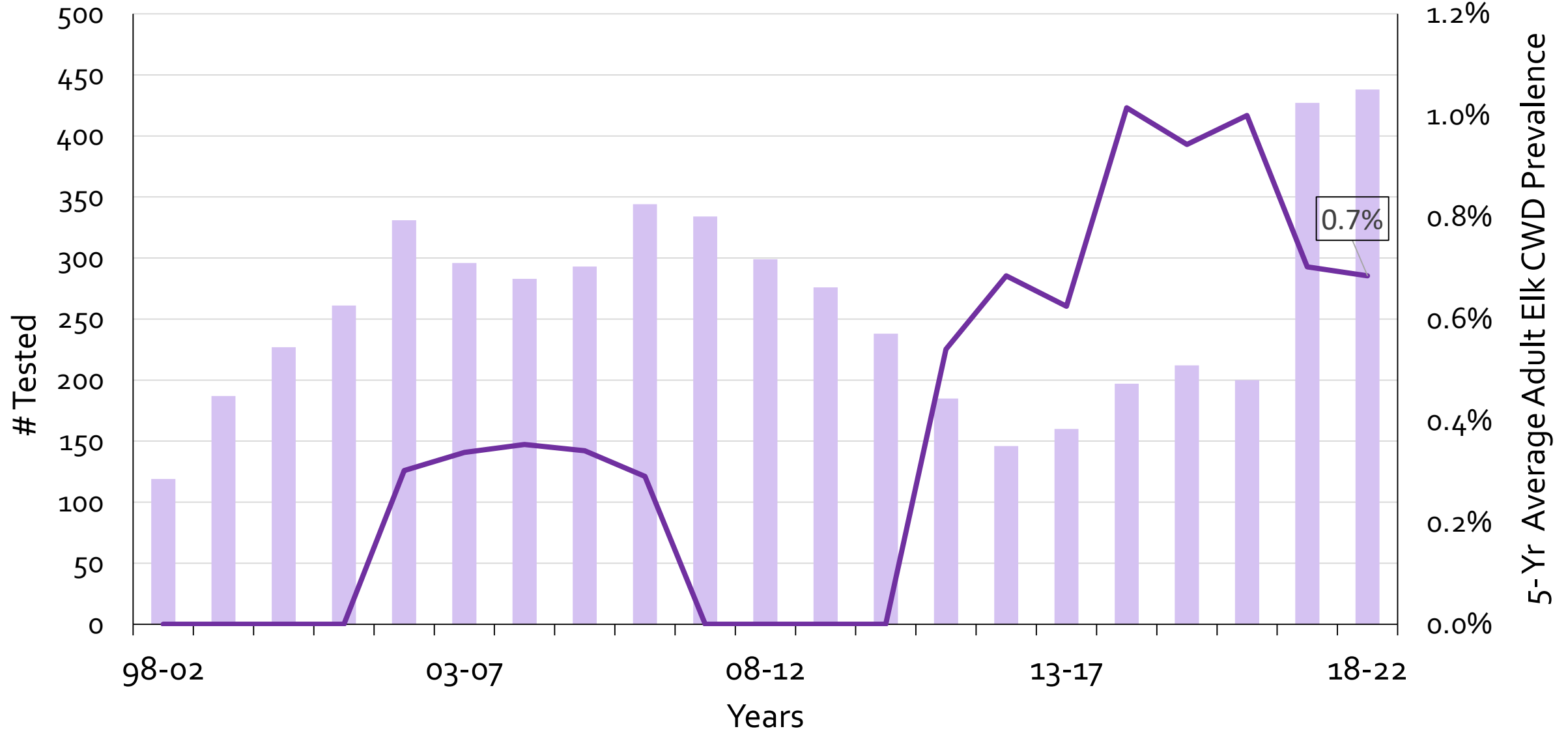
Sierra Madre Elk



Sierra Madre Elk CWD Prevalence (97-22)



Sierra Madre Elk CWD Prevalence (98-22)

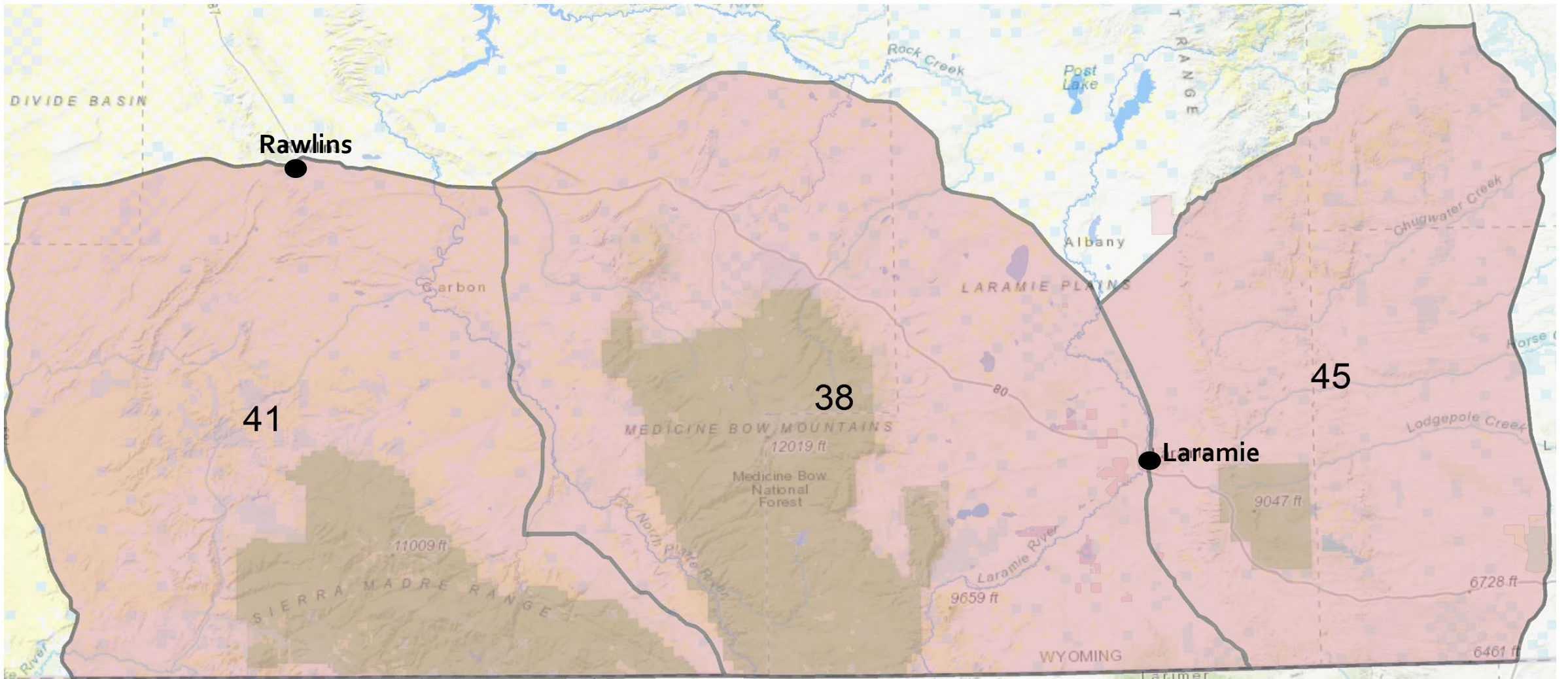


Monitoring CWD in Elk Herds

- CWD prevalence low (<5%) in Snowy Range and Sierra Madre elk
- “Priority” herds in 2019 & 2021
- “Priority” herds again in 2024 & 2026
- Liberal cow and bull harvest likely to continue
 - A lot of opportunity to assess CWD prevalence across ages/sexes



Snowy Range Moose



Monitoring CWD in Snowy Range Moose

- Collect CWD samples from hunter harvested moose
- Mandatory CWD testing on harvested moose???
- Opportunistically collect samples from other moose mortalities, e.g., roadkill
- No Snowy Range moose have tested positive for CWD

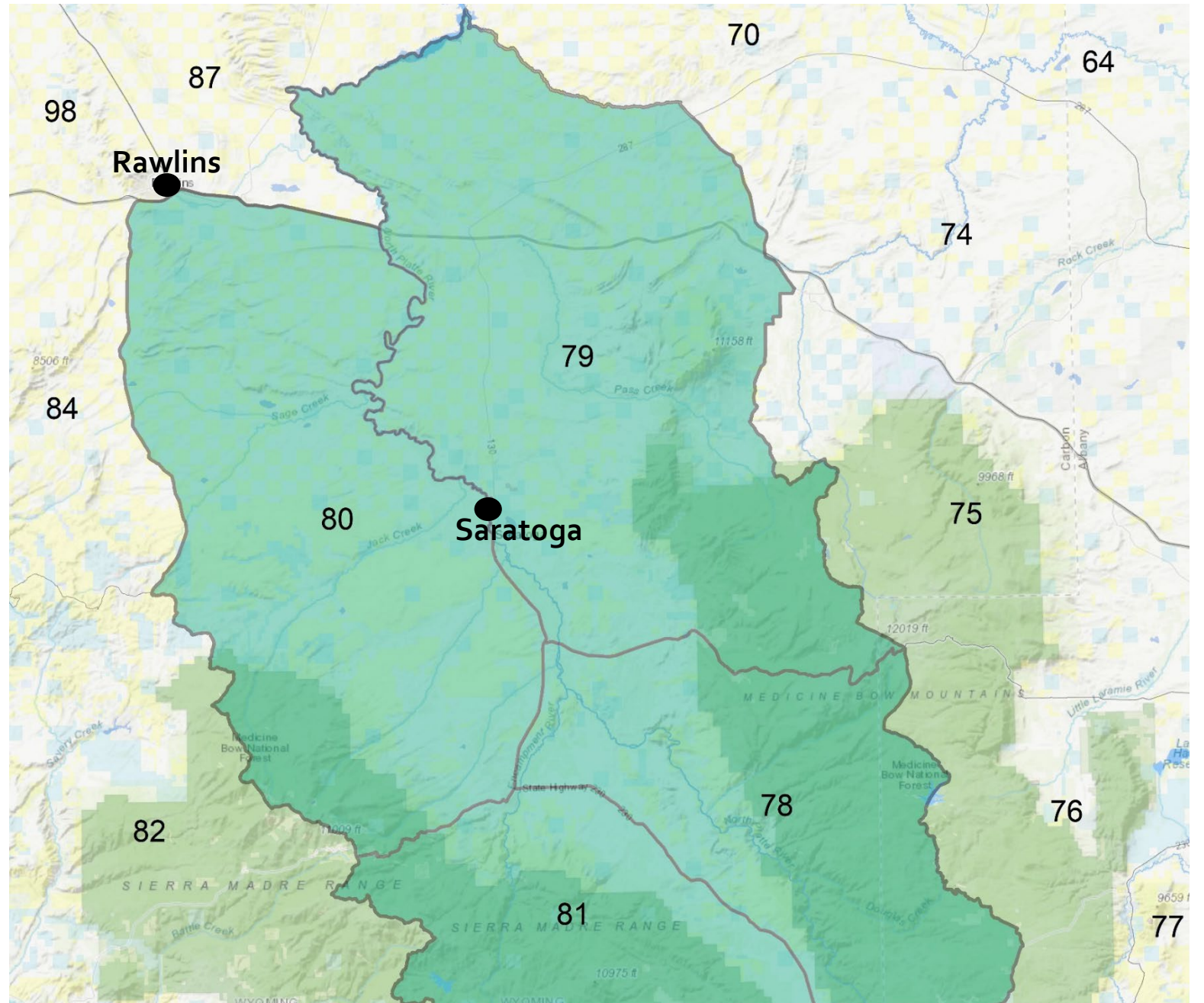


Monitoring CWD in Snowy Range Moose

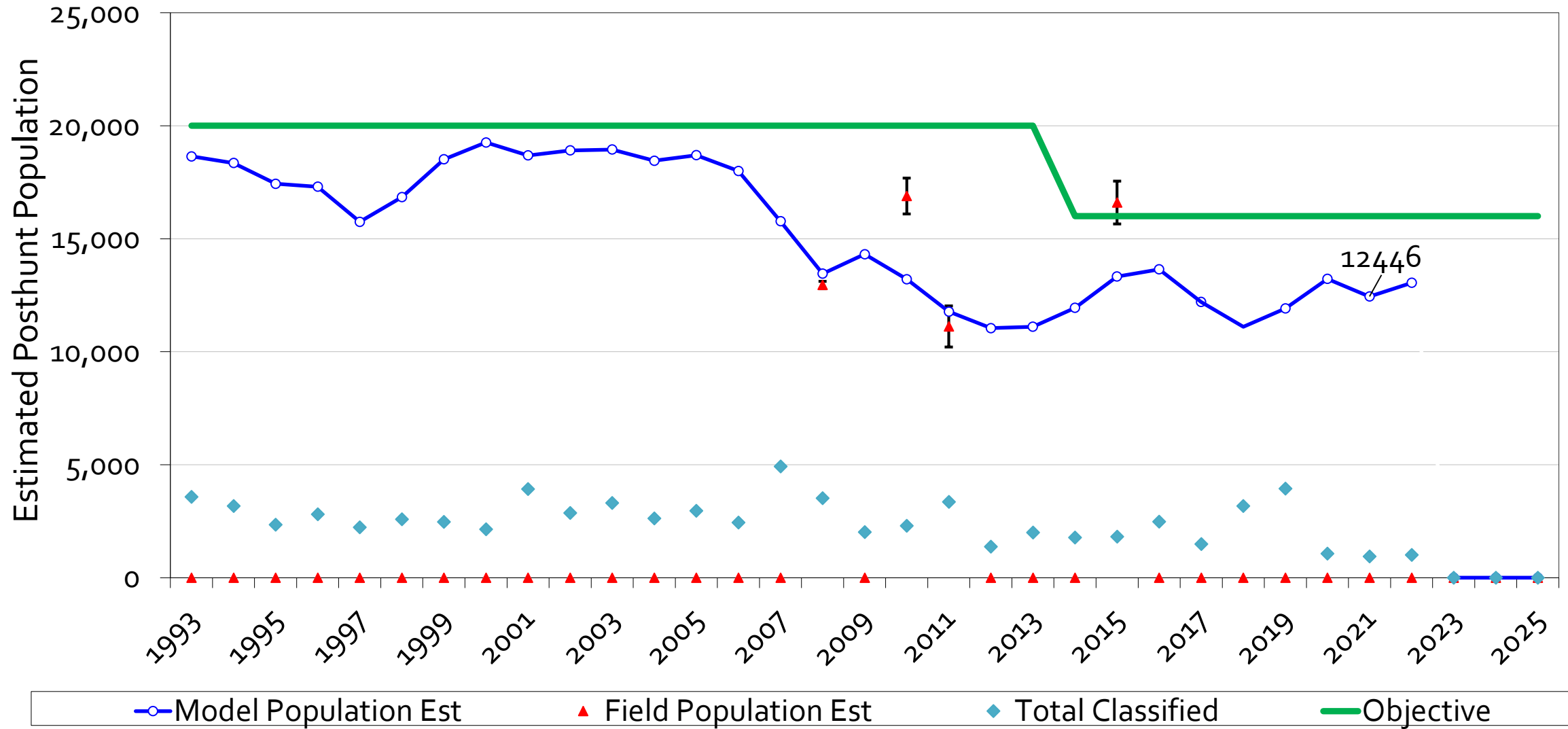


- Currently, 9 collared female Snowy Range moose
- 21 female moose will be collared this winter
- Plan to collect CWD samples from any collared moose mortalities

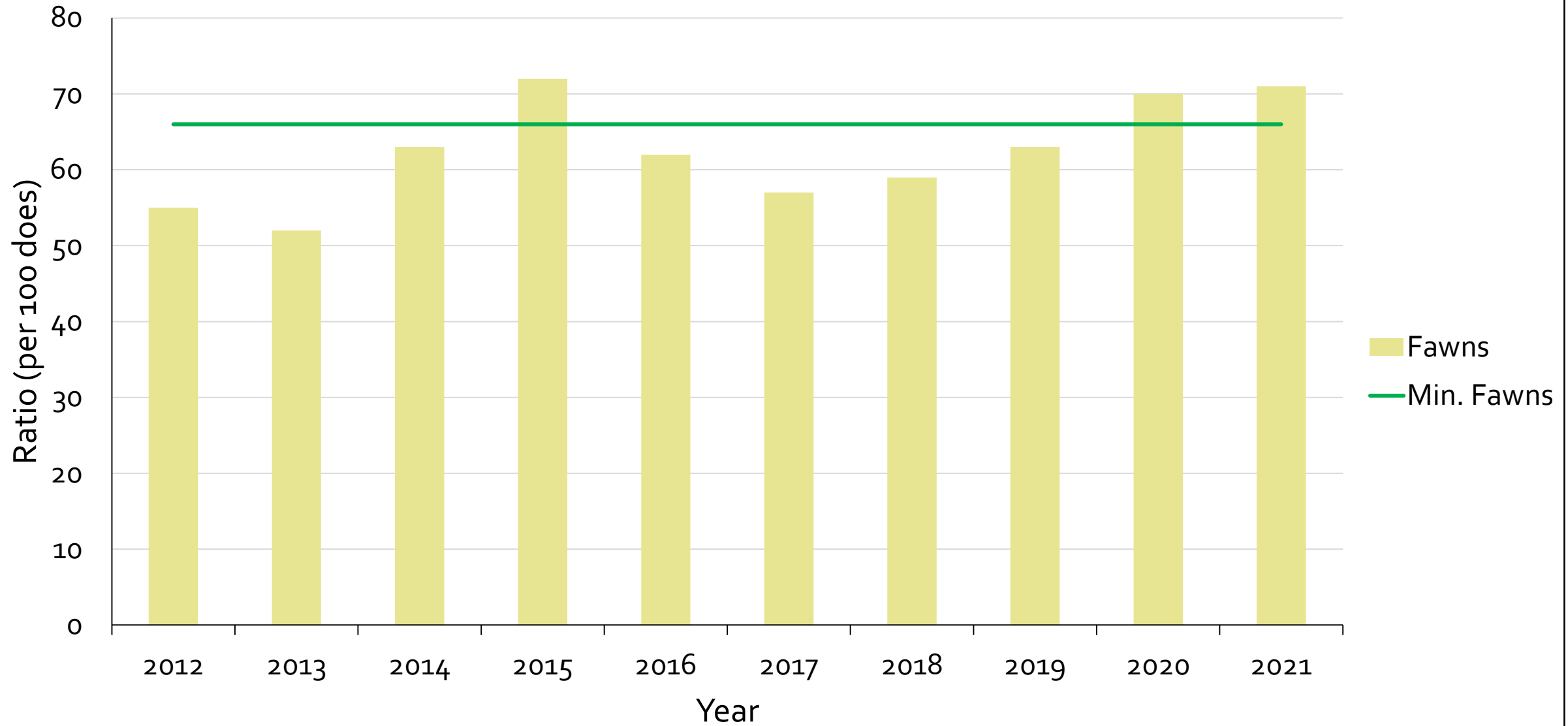
Platte Valley Mule Deer



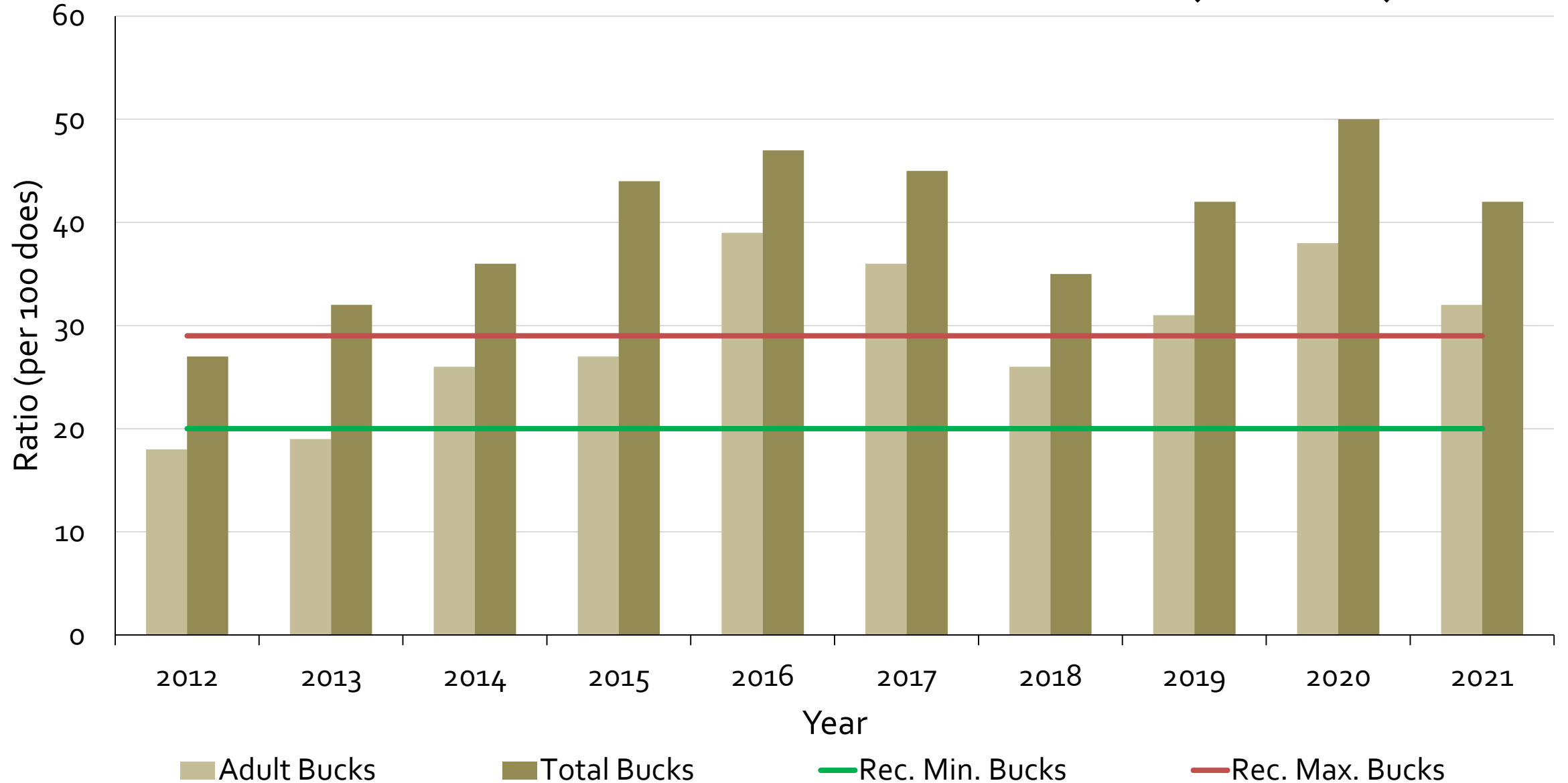
PVMD Population (93-21)



PVMD Post-Hunt Fawn Ratios (12-21)



PVMD Post-Hunt Buck Ratios (12-21)





Class 1= <19" antler spread



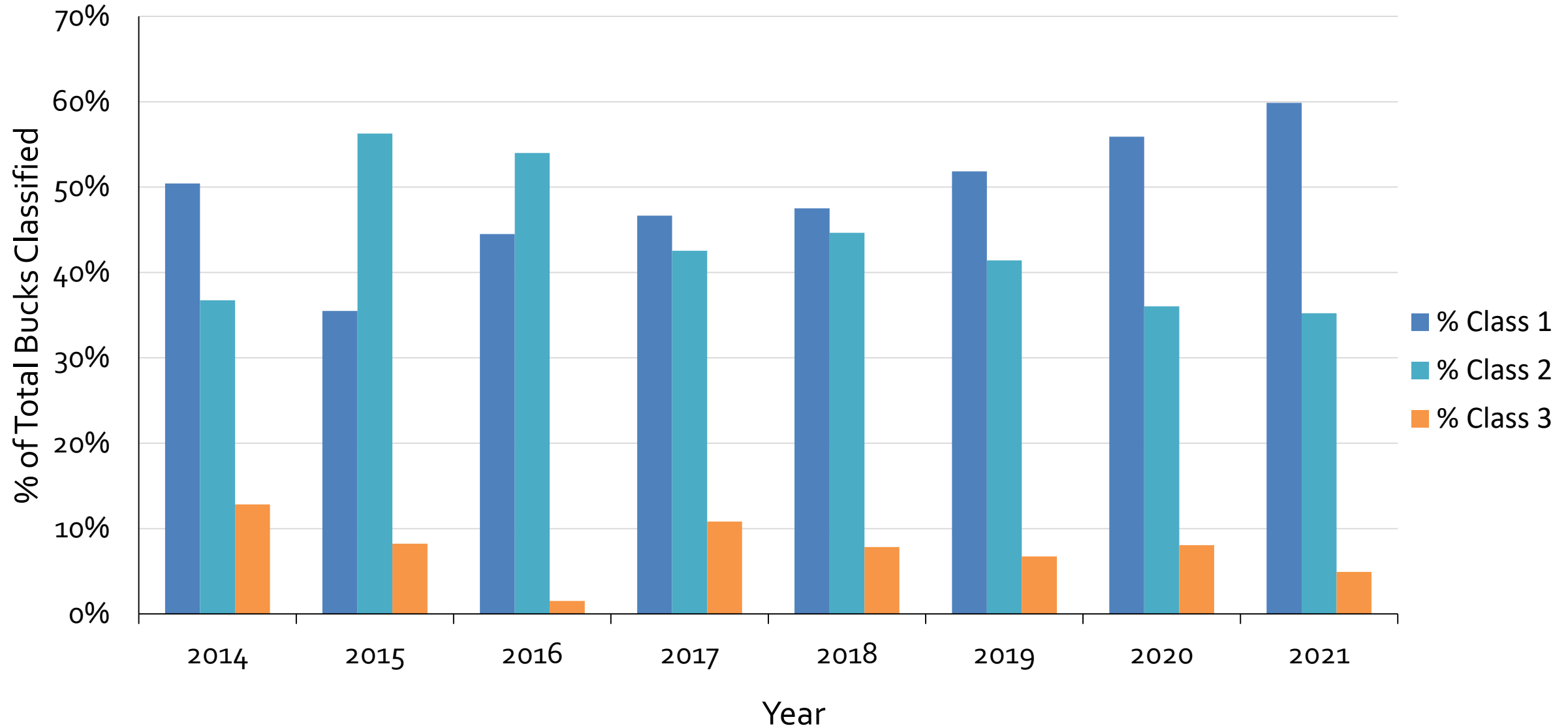
Class 2= 20"-25" antler spread



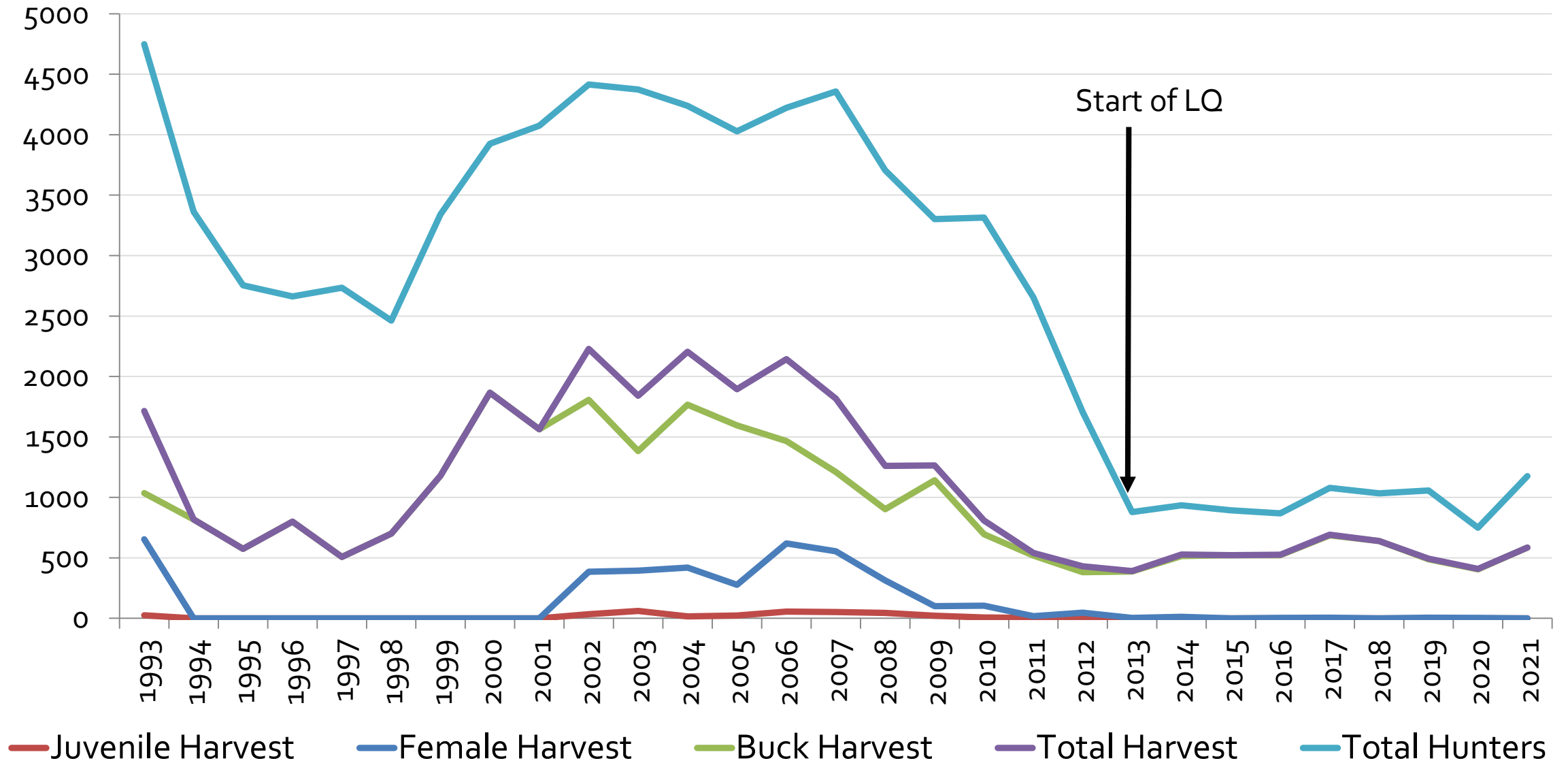
Class 3= >26" antler spread

Adult Buck Antler Classes

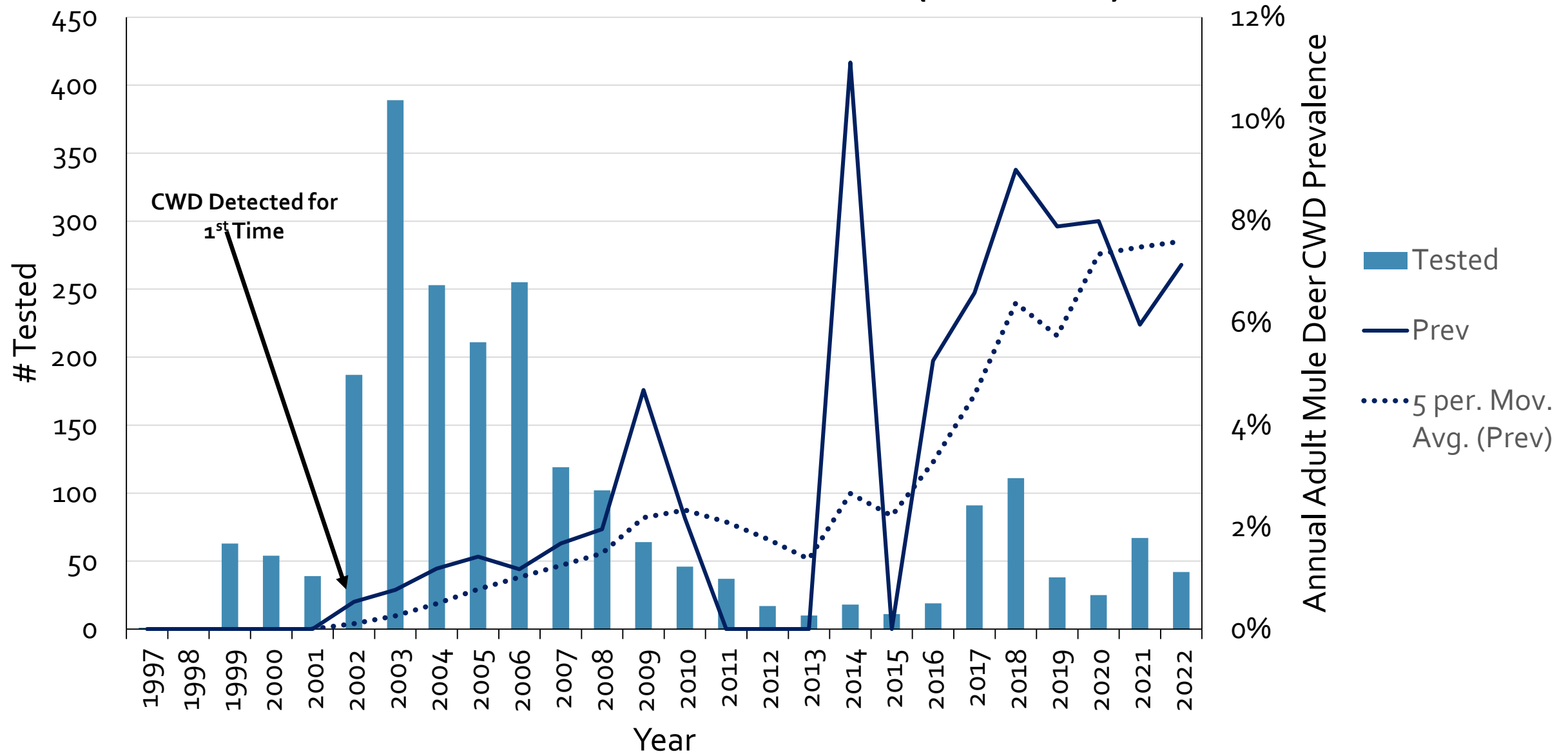
PVMD Post-Hunt Buck Classes (14-21)



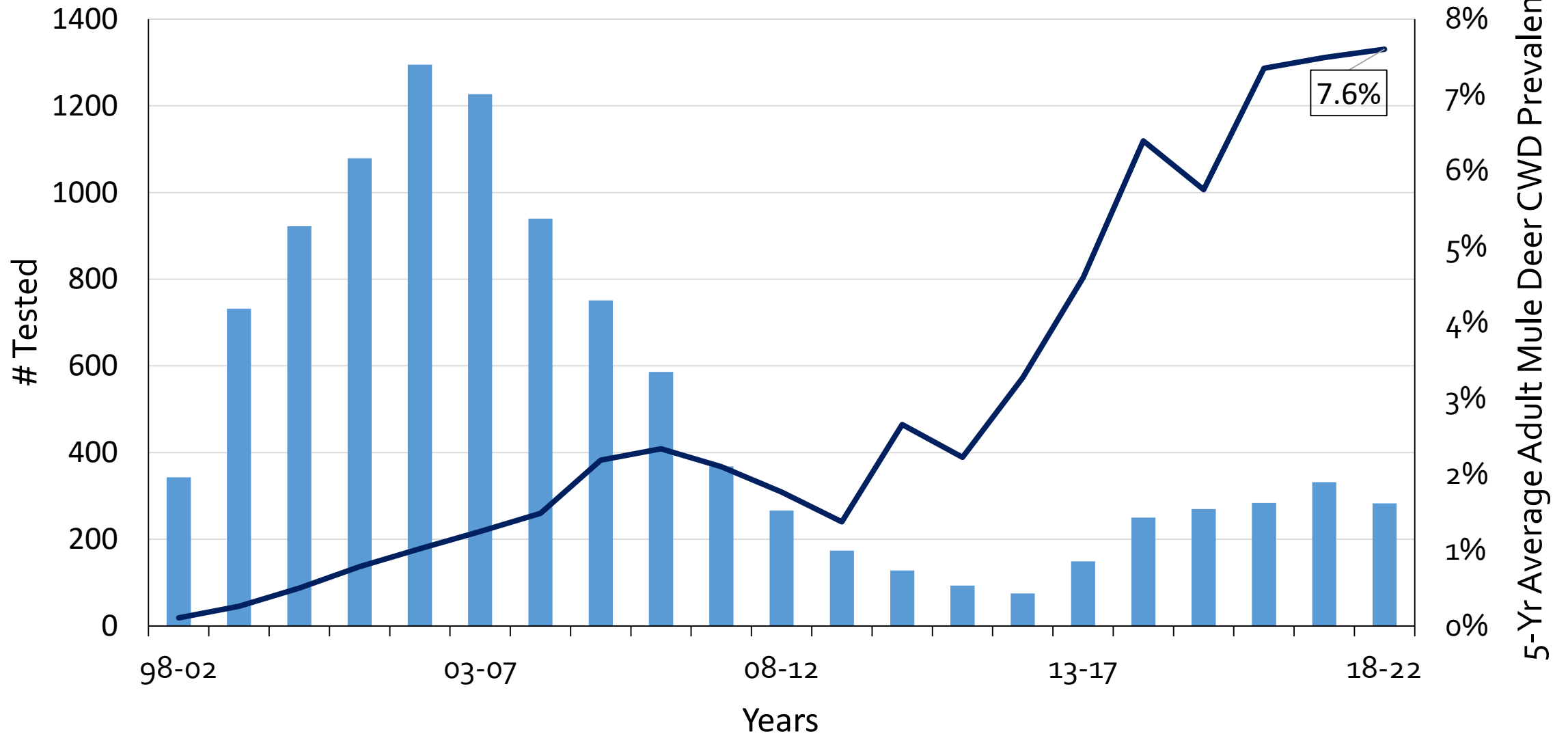
PVMD Harvest Trends (93-21)



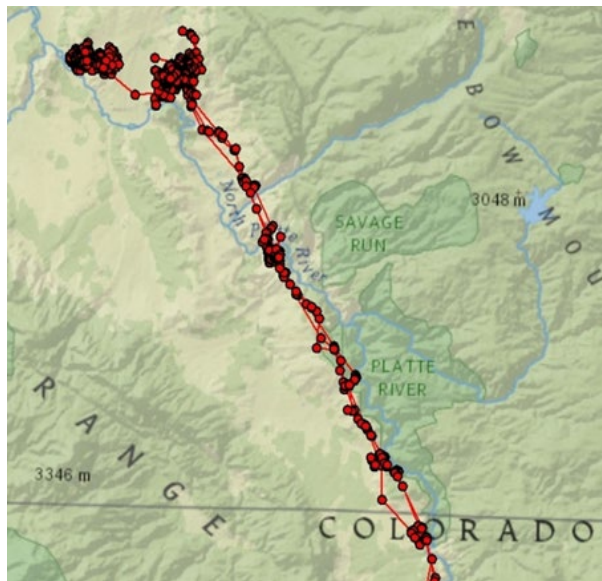
PVMD CWD Prevalence (97-22)



PVMD CWD Prevalence (98-22)



Complexities of PVMD Management



Monitoring CWD in PVMD

Mortality investigations

2020-6 mortalities

1 predation

1 legal hunter harvest

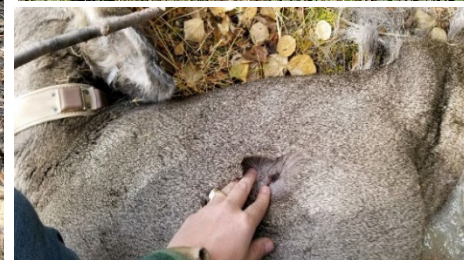
1 poached

3 unknown

2021-11 mortalities

All unknown

8 tested for CWD; 1 positive



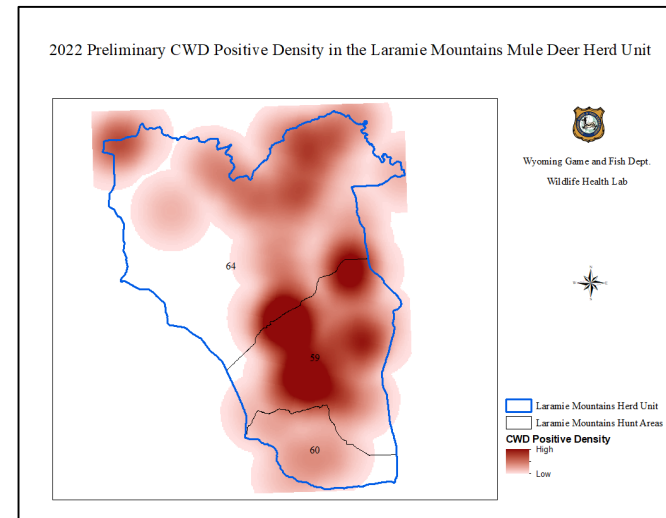
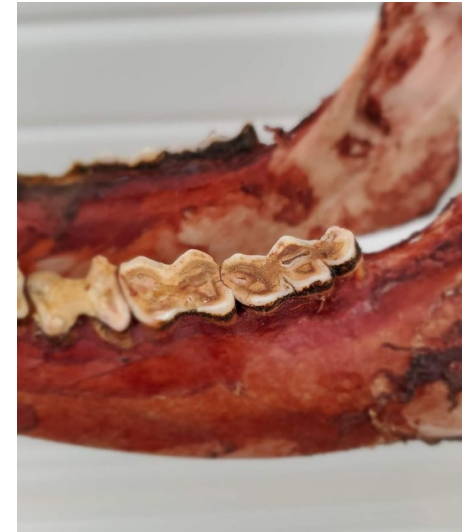
Why Should We Consider CWD Management?

- Risk of CWD prevalence increasing exponentially once threshold or inflection point is hit
- High CWD prevalence herds perform poorly compared to herds with low CWD prevalence
- High CWD prevalence mule deer herds have fewer older aged bucks/larger antler class bucks
- Reduced hunt quality and decline in hunter interest



What's Next?

- Work to better understand how disease affects wildlife & our local herds
- Collect more data in our local herds to understand geographic distribution of CWD
- **Priority CWD Sampling-
Platte Valley Mule Deer 2023**



What's Next?



- Series of public meetings in 2023/2024
- Consider adaptive management options
- Implement locally supported suite of strategies to reduce CWD prevalence

What's Next?

- Get your harvested animals tested for CWD
- Limit environmental contamination
- Stay informed and engaged
- Be open-minded and patient
- Let us know what information you still need to be an active participant in CWD management (Fill out survey)