

CWD COLLABORATIVE PROCESS

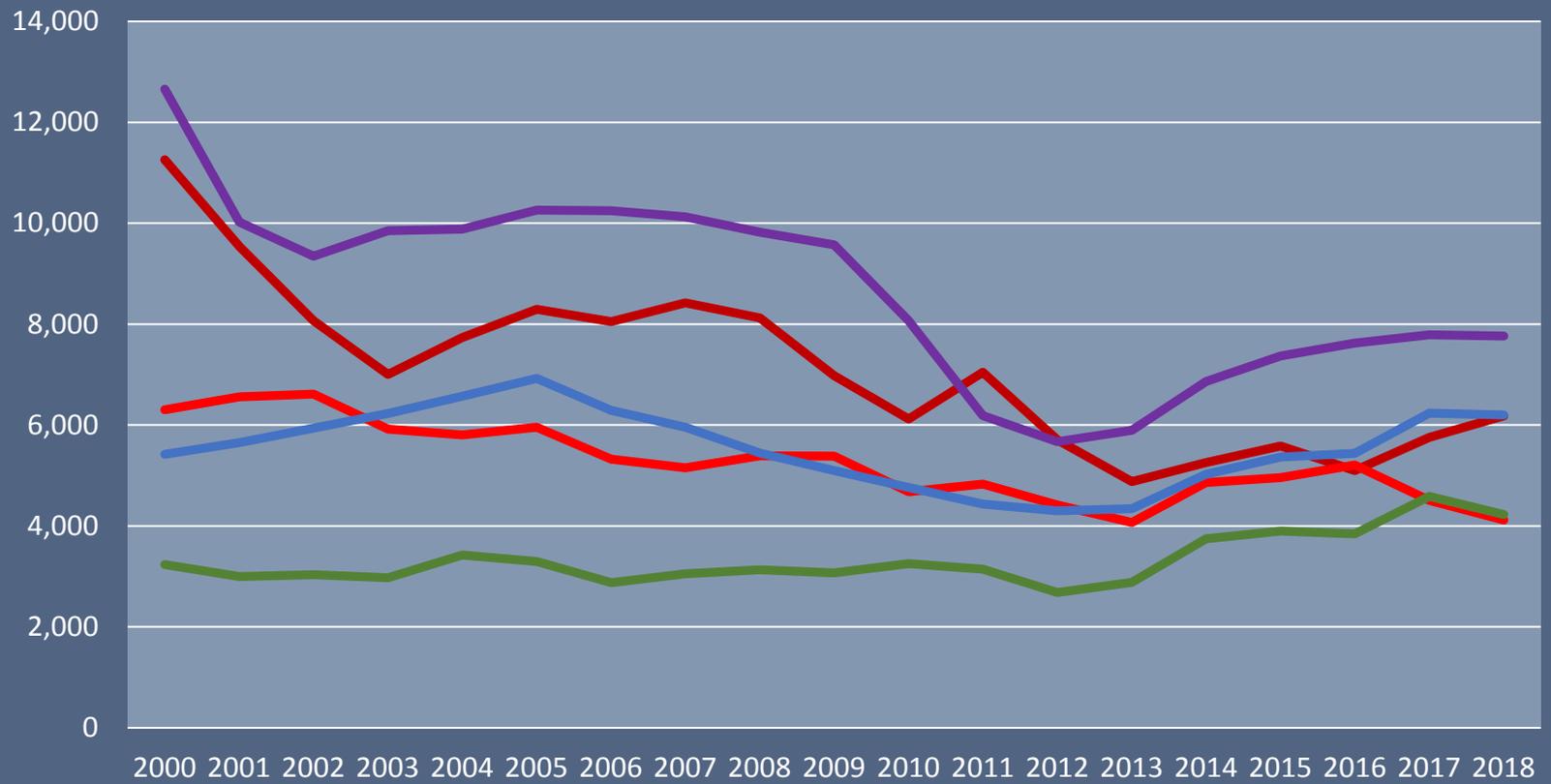
# TOWARD A SUSTAINED FUTURE



## Chronic Wasting Disease

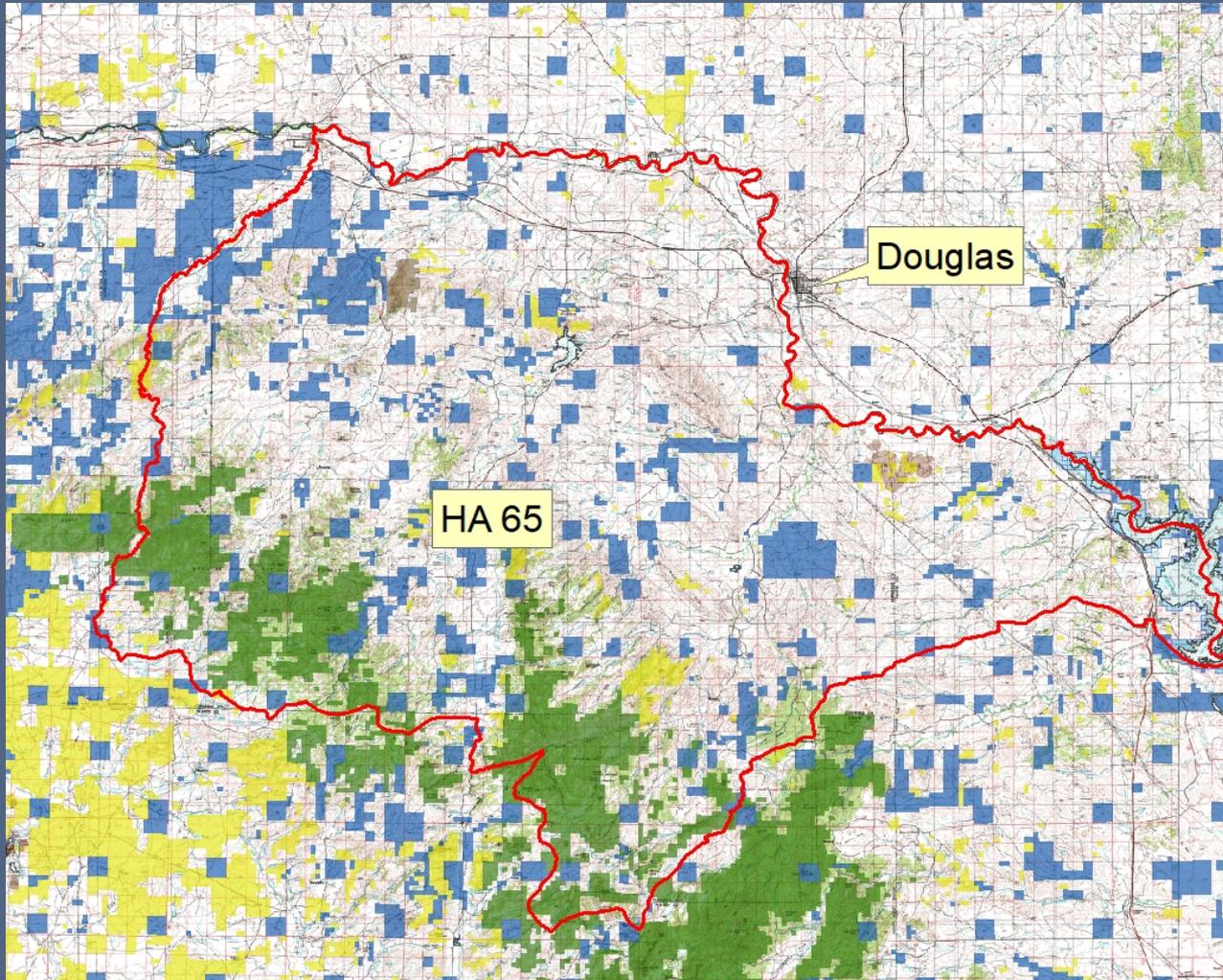
# Casper Region Mule Deer Population Trends – 2000 – 2018

Population Trends



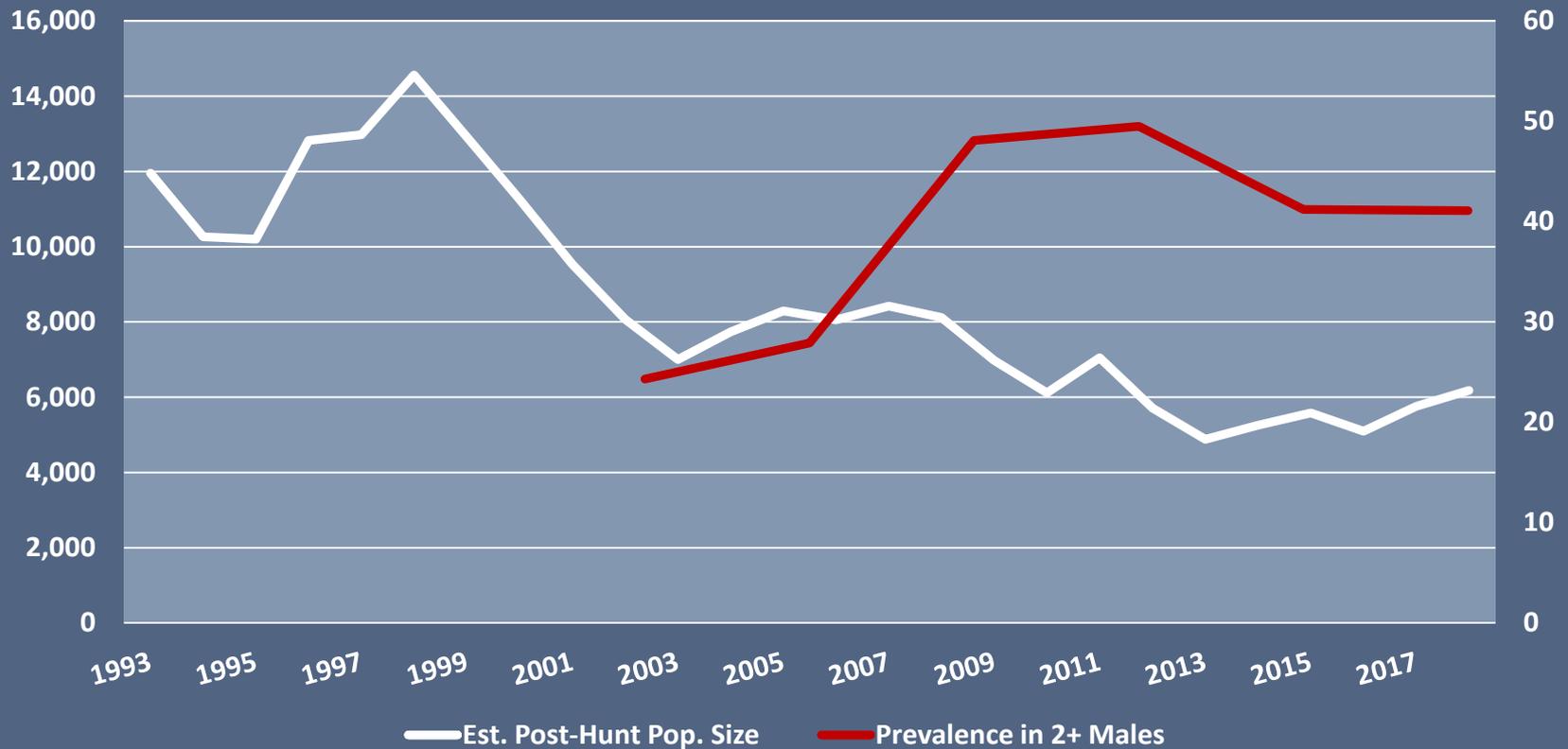
South Converse Bates Hole Rattlesnake North Natrona Cheyenne River

# CWD Prevalence in 2+ Bucks – South Converse Mule Deer (HA65)

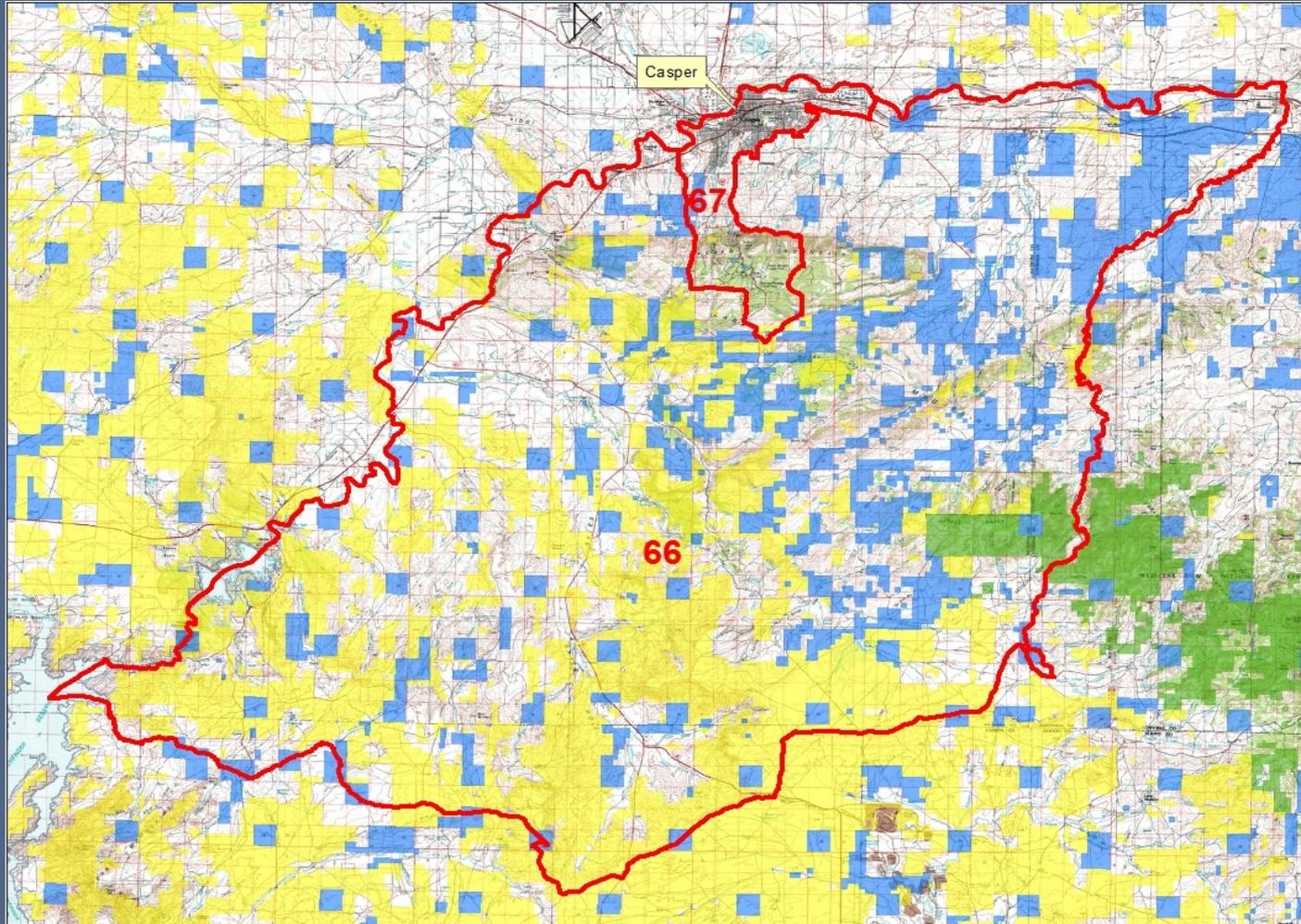


# CWD Prevalence in 2+ Bucks – South Converse Mule Deer (HA65)

South Converse Mule Deer

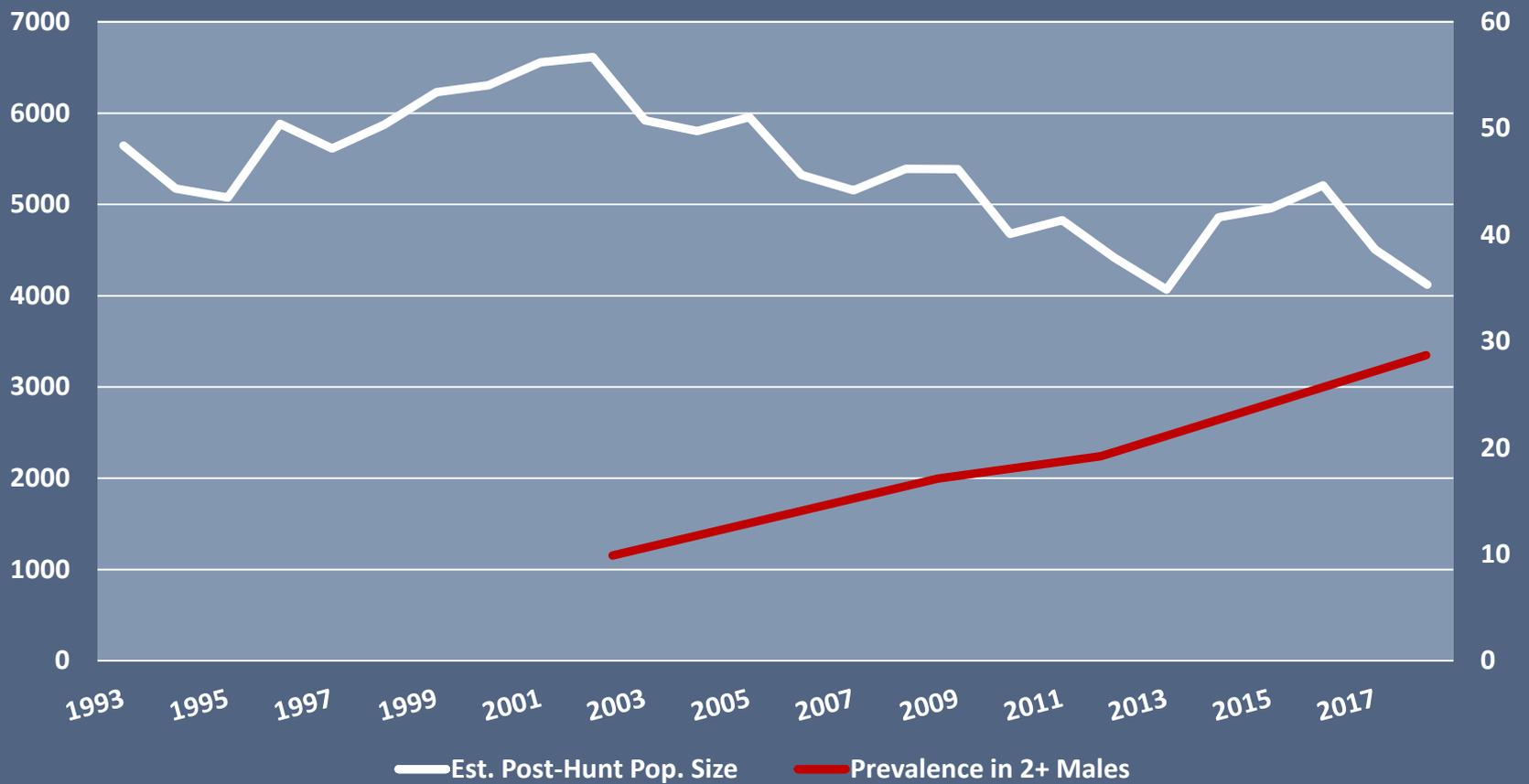


# CWD Prevalence in 2+ Bucks - Bates Hole / Hat Six Mule Deer (HA66)



# CWD Prevalence in 2+ Bucks - Bates Hole / Hat Six Mule Deer (HA66)

Bates Hole Mule Deer



# Annual Survival

Bates Hole / Hat Six Mule Deer (HA66) – Annual adult female survival from collared deer was 0.73 in 2017

South Converse Mule Deer (HA65) – Annual adult survival ranged from 0.65 – 0.73 during a 4-year CWD study

- Statewide long-term mean annual survival in Colorado is 0.82
- Survival dropped below 0.70 in only one year in one herd in Colorado since intensive monitoring began



# Bates Hole / Hat Six Mule Deer Study – 2017 Data

Of the 34 collared deer in which CWD status was determined, prevalence was 29% in adult females

55 collared deer – 20 mortalities over 1.5 years

- 8 were CWD-negative at time of mortality, 11 CWD-positive, 1 unk
- 9 mountain lion kills
  - 3 CWD+, 6 CWD-
- 5 deaths from clinical CWD
- 2 highway vehicle collisions
- 2 unknown predation
- 1 capture myopathy
- 1 unknown



# Additive or Compensatory Mortality?

Some level of mortality will always occur in a wildlife population

**Compensatory Mortality** – mortality (weather, hunting, predation, disease, highway collisions, etc.) is spread out across the segment of a population that would have died regardless

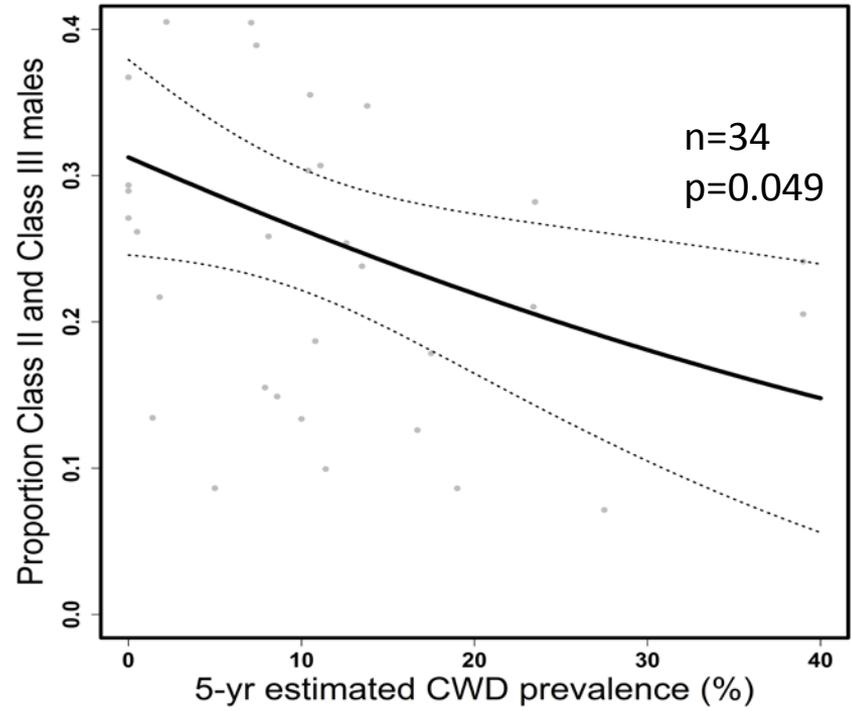
- Does not affect overall population performance

**Additive Mortality** – decreases survival in a wildlife population

- Additive sources of mortality cause deaths above what would be expected from normal environmental processes
- Disease occurs throughout most wildlife populations with varying levels of severity/impact
  - Deaths from CWD are likely compensatory at low CWD prevalence, but become increasingly additive at higher prevalence

9% of all collared deer in 2017





In 2018, CWD prevalence was 26% (N=19) in yearling bucks in Bates Hole / Hat Six Mule Deer

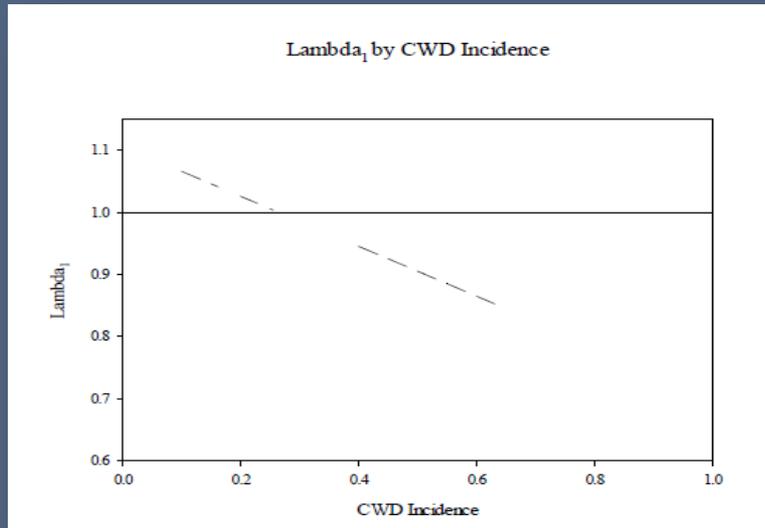


- Likely a sign of high CWD prevalence in adult females
- May be additive source of male mortality
- Hunting season structure implications

# Mule Deer Population Effects of CWD Wyoming

White-tailed deer study:  
10% annual pop decline at  
~30% CWD prevalence

Recent mule deer study: 19%  
annual decline at ~40%  
prevalence and genetic shift



Edmunds, David R. *Chronic wasting disease ecology and epidemiology of white-tailed deer in Wyoming.* University of Wyoming, 2013.



DeVivo, Melia T. *Chronic Wasting Disease Ecology and Epidemiology of Mule Deer in Wyoming.* University of Wyoming, 2015.

# CWD Over the Long Term

