

Chronic Wasting Disease Management Options in Endemic Populations



Recommendations for Adaptive Management of Chronic Wasting Disease in the West



Basic Design

Before-After-Control-
Impact (BACI)
Design

Identify matching pairs
of herds or units for
comparison

Measure prevalence
before and after
manipulation



Minimum Criteria

Manipulation commitment: 5 years sustained treatment application
(10 years preferred)

Size of manipulation area: Discrete unit that can sustain proposed manipulation and provide samples sufficient to measure effects

Frequency of monitoring: Prevalence before and after application.

Management tracking: Ability to annually track efficacy of prescribed management.

Population monitoring: Population or unit monitoring to include:
annual host population estimates, post-harvest buck:doe:fawn,
harvest, estimated age, sex.

Harvest Management

Hypothesis: Increasing harvest on the segment of the population that is most likely to be CWD positive should result in reduced disease prevalence

Hypothesis: Because male deer harvested later in the season appear more likely to be CWD positive, harvesting males later in the season will reduce prevalence.

Hypothesis: If significant transmission occurs from animal-animal contact during breeding behavior, then focusing harvest after the rut should remove animals sooner after infection and reduce transmission

Goal: Increase male harvest, bias harvest toward infected males, and/or shift or maintain timing of harvest to post rut. (may consider concurrent or independent assessment of female harvest as well – particularly as doe prevalence increases)



Harvest Management – Options

Increase buck harvest	<p>Increase proportion of bucks harvested</p> <ul style="list-style-type: none">• 30%, 40%, 50% of pre-season buck population• Manage to low end of objectives
Increase doe harvest	<p>Increase proportion of does harvested</p> <ul style="list-style-type: none">• Harvest objectives based on population performance
Increase overall harvest	<p>Increase overall harvest to achieve targeted population reduction</p> <ul style="list-style-type: none">• Manage to low end of objective
Change season dates	<p>Change season dates or add late season</p> <ul style="list-style-type: none">• Shift season dates• Add limited quota November season

Harvest Targeting Disease Foci

Hypothesis: Selectively removing animals in concentrated areas where CWD is known to occur may reduce prevalence and transmission

Goal: Develop a harvest strategy that builds on ongoing harvest or other monitoring programs to maximize removal of infected individuals and reduce rate of new infections.



Harvest Targeting Disease Foci

Use fall CWD
monitoring data to
identify hot spots

- Follow up with a winter hunting season in hot spots

OR

- Follow up with a fall season in hot spots in following year

Reduce Artificial Points of Host Concentration

Hypothesis: Reducing artificial concentration will reduce environmental contamination and transmission.

Goal: Identify consistently available artificial sources of food, minerals or water causing cervids to aggregate. Work with producers, landowners, land managers, and Dept of Ag to mitigate point-sources and reduce density of cervids at point sources within study area.

Artificial Points of Concentration

Fence or
Exclude

Fence areas with artificial feed
or mineral

Manage

Manage cervids congregating
around feed/mineral (hazing,
harvest, culling)

Clean or
Remove

Clean/remove salt/mineral,
feed from ground

- Remove salt/mineral, feed
altogether
- Add substrate to limit access
- Alternate feeders

Predator Management

Reduce predator
harvest

Increase education
around predator
management, living
with large
carnivores



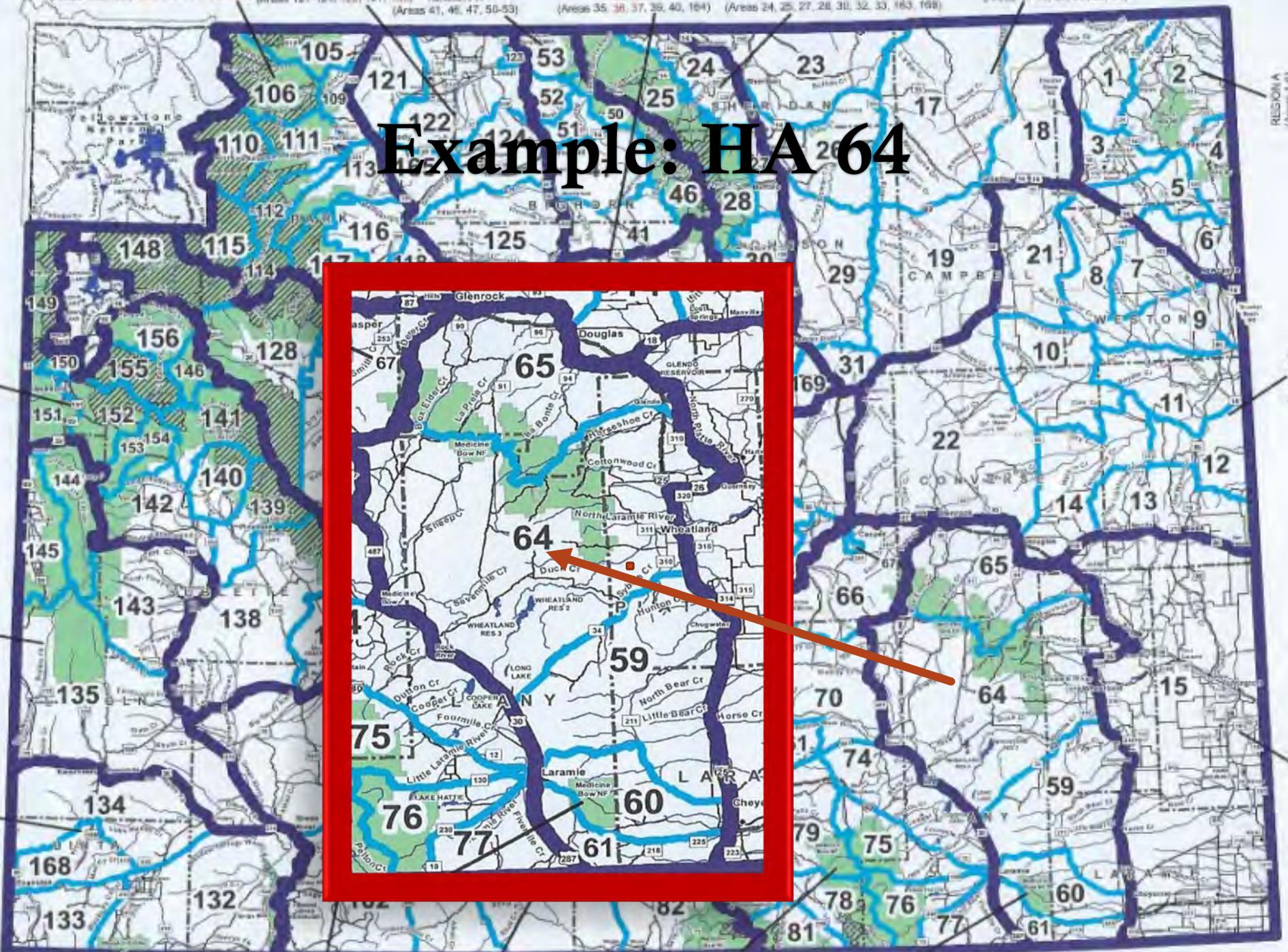
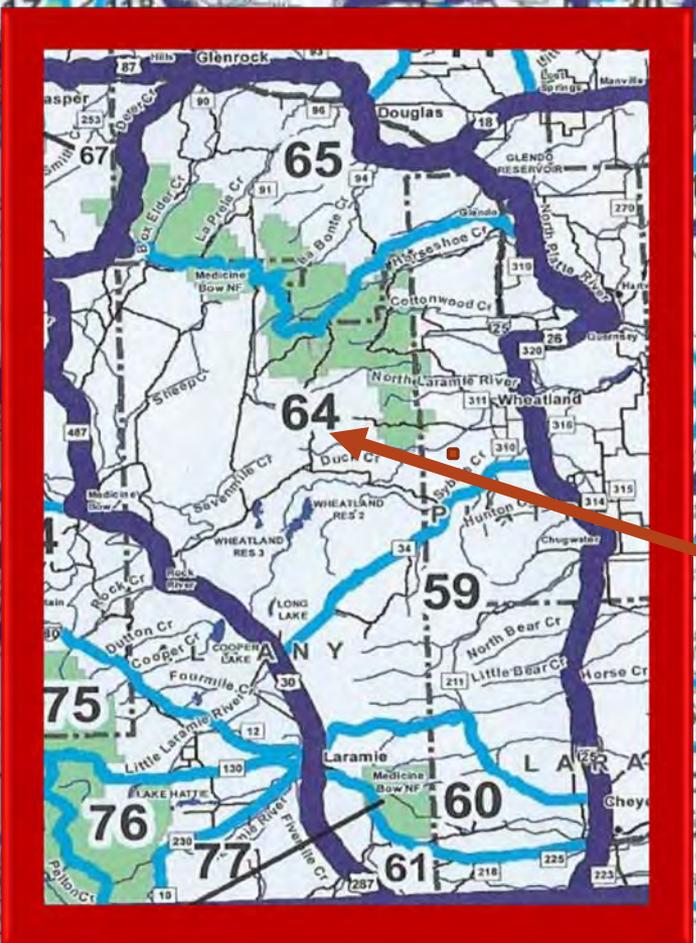
Evaluation and Assessment

Frequency of Disease Monitoring: One post-treatment sampling effort with sample sizes sufficient to measure effect. Sampling efforts may span up to 3 years to achieve target sample sizes.

Management Tracking: The prescribed management strategy should be sufficiently measured to determine if the manipulation goal is being met.

These represent only very minimum criteria, evaluation of additional metrics may be desirable for more robust interpretation of outcomes.

Example: HA 64



HA 64 Background

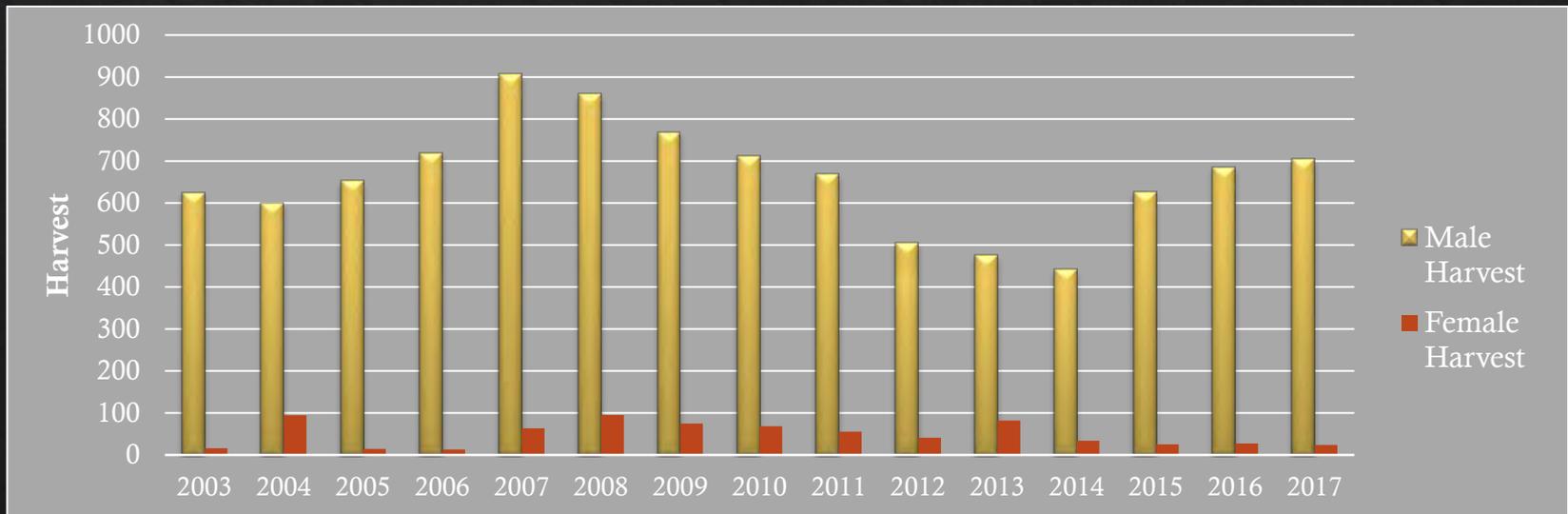
Hunt Area 64 is part of the Laramie Mountains Herd Unit (MD537) which is also comprised of Hunt Areas 59 and 60.

Hunt Area 64 is comprised of 30% public land, consisting of Medicine Bow National Forest, BLM, State Lands and the Laramie Peak and Thorne/Williams WHMAs. This area is dominated by the Laramie Mountain Range, consisting of pine trees and mixed mountain shrubs. Hunt Area 64 provides the most access for the Laramie Mountains Herd Unit. Mule deer can be found from low-elevation farmland up to the higher elevations in the Laramie Range. Total occupied habitat is 2,082 square miles.

Buck:doe ratios have typically been at or above the recreational management guidelines of 20-29 bucks:100 does. The population for the herd unit has been above the objective of 20,000 mule deer for the past 11 years.

HA 64 Harvest Management

- Population estimate ~ 10,000, Current objective: ~ 8,000-12,000
- Estimated CWD prevalence in adult bucks: ~23%
- Harvest in HA 64 has fluctuated over the years and has predominately been focused on the male segment of the population.
- The five-year average preseason buck harvest rate is 20%.
- Typically has a ten-day season starting on October 15. However, when buck ratios are well above the management level than the season has been extended by 6 days.



HA 64 Options for CWD Management through Harvest

Increase buck harvest/Late season harvest:

- Add a limited quota late season license to target bucks
- Move the General season to focus around the rut period (e.g. Oct 21-Nov 10)
- Move the general season and add a limited quota late season license

Increase doe harvest: Due to high prevalence of CWD in this population, does are likely a significant contributor to maintaining the disease.

- Increase Type 6 licenses, make them mule deer only, and extend season to end of December.
- Allow for any deer harvest during the first 3 days of general season
- Target increased doe licenses around damage areas and areas of concentration.

Drop population density:

- Manage to the low end of the population objective (8,000)

Harvest Management Example

To increase the harvest rate on males by 10% an additional 200 male mule deer need to be harvested.

- This harvest regime would be done for three years then backed off to maintain: 1) adequate buck ratios within recreational management levels and 2) the lower population objective level. In order to achieve the goal of 200 additional mule deer then 225 licenses will need to be issued.

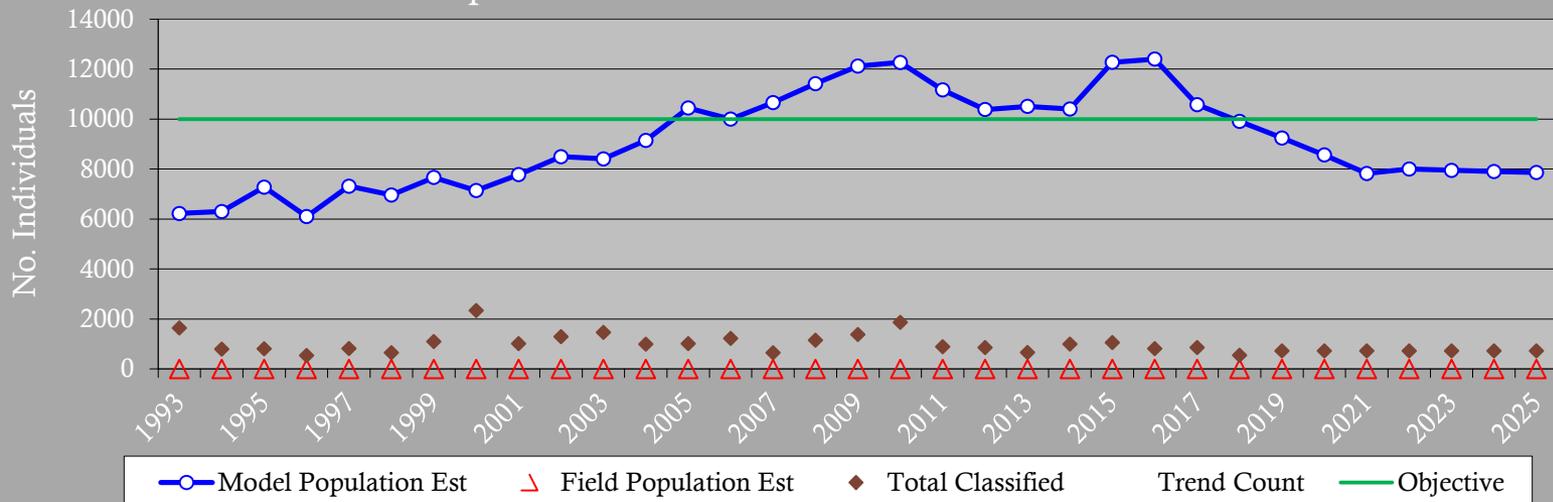
To decrease the population density to 8,000 mule deer then harvest approximately 500 does annually for three years.

- 625 licenses will need to be issued annually for three years then should be backed off for the next ten years .

HA 64 Season Structure

Hunt Area	Type	Season Dates		Quota	License	Limitations
		Opens	Closes			
64	Gen	Oct. 15	Oct. 31		General	Antlered mule deer or any white-tailed deer
64	1	Nov. 1	Nov. 20	225	Limited quota	Antlered mule deer
64	2	Oct. 15	Oct. 31	100	Limited quota	Antlered mule deer or any white-tailed deer
64	6	Oct. 15	Dec. 31	625	Limited quota	Doe or fawn mule deer
59,60,61,64,65	J			900		

Posthunt Population Estimate – HA 64



HA 64
Mitigation of
sources of
artificial
concentration:

There are artificial areas of concentration of deer in several feedlots within the Laramie Mountains Mule Deer Herd Unit.



At least five different feedlots are found within the WY Hwy 34 corridor adjacent to Sybille Creek. At any one time there are 10-20 deer hanging around these areas, which all fall on private land.



Could request landowner support to mitigate these feedlots (e.g. fencing) and/or support for targeted thinning of the deer around these areas. Managers could consider an annual late season hunt or depredation to address this issue.

Carcasses

WGFD Regulations

Head and spinal column of all cervids harvested from any hunt area must either remain at the kill site or be disposed of in an approved landfill or incinerated.

Whole cervid carcasses cannot be transported out of state

- Edible portions, cleaned hide and skull plate, teeth, finished taxidermy

Whole cervid carcasses harvested out of state in areas where CWD occur cannot be transported into WY unless head and spinal column are disposed in an approved landfill or incinerated.

- Edible portions, cleaned hide and skull plate, teeth, finished taxidermy



Carcass Disposal

Develop carcass composting program across state

- Need sufficient organic material and wind-blocks
- Budget for personnel costs

Purchase incinerators for construction/demolition landfills

- Must budget for ongoing fuel and labor costs
- Must obtain permits

Dumpster program

- Budget for transport/personnel costs

Questions?

