MONTANA FISH, WILDLIFE & PARKS
HUNTING SEASON / QUOTA CHANGE SUPPORTING INFORMATION
Mule Deer 2025
Ryan Rauscher

Hunting Districts: 401

1. Describe the proposed season / quotas changes and provide a summary of prior history (i.e., prior history of permits, season types, etc.).

Increase the number of 401-50 mule deer permits from 90 to 135 for the 2025 season.

Deer season recommendations to manage Chronic Wasting Disease (CWD) in Hunting District (HD) 401 were developed in concert with HDs 400, 403 and 406. Therefore, this season justification, albeit specific to mule deer bucks in HD 401 for the 2025 season, initially describes the season history and season rational all four HDs. Rationale for specific proposed changes for HD 401 are explained.
In HDs 400, 401, 403 and 406, the general deer hunting season was 2 weeks in length from 1980-82 and 3 weeks from 1983-present.
Mule deer hunting regulations for these HDs have been buck only mule deer from 1980-83, in 1986-87 and again from 2013-2015. Either-sex mule deer hunting has been allowed from 1984-85 and from 1988-2012. Beginning in 2016 to the present, the season structure has been the standard package (Montana Fish, Wildlife & Parks, 2021) with either-sex mule deer regulations. Various numbers of mule deer B Licenses have been offered to address populations objectives.
For the 2020-21 seasons, FWP proposed to increase the general deer season length for a general deer license, antlerless mule deer B licenses and Region 4 OTC antlerless white-tailed deer license (LPT 004-00) in HDs 400, 401, 404, and 406 from 3 weeks to 5 weeks while maintaining the standard either-sex/either-species regulation package to address CWD management. After extensive public comment and landowner input, the proposal was changed to add 2 weeks of white-tailed and mule deer buck limited permits for each of these 4 hunting districts following the existing 3-week general season. No other deer licenses are valid during this 2-week period.
The revised proposal was adopted at the February 13, 2020 Commission Meeting. However, the Fish and Wildlife Commission adopted a 1-year sunset on the revised proposal. FWP proposed to continue the existing season structure for the 2021 season, with adjustment to the permit quotas reflecting harvest success of the 2020 season. This proposal was adopted at the February 4, 2021 Commission Meeting. Permit levels are adjusted to achieve a management goal of 10% of buck harvest occurring during the permit period. Given annual variation in permit success, annual permit success is averaged to avoid potential under or over harvest of bucks. Average success for the 2020 -2023 seasons for mule deer permits is 45.1%.
This proposal provides justification for LPTs 401-50 to increase from 10% of the buck harvest occurring during the permit period to 15% in response to CWD prevalence increasing to 6%. This would increase the number of permits from 90 to 135 for the 2025 season.

2. What is the objective of this proposed change? This could be a specific harvest amount or resulting population level or number of game damage complaints, etc.

The objective of this proposal is to continue CWD management in HD 401 and to continue to gather data to evaluate the effectiveness of meeting objectives of maintain low CWD prevalence and reducing the potential for spreading the disease.
The 2020 season proposal was developed to use the best available science to comply with management recommendations for CWD in the long term as identified by Association of Fish and Wildlife Agencies (AFWA, 2018) and the Montana Chronic Wasting Disease Management Plan (2020) henceforth, The Plan. The Plan directs Montana Fish, Wildlife & Parks (MFWP) to initiate CWD management to keep prevalence low and help prevent spread of the disease following detection.
Note: Some of the rationale and recommendations in this section were excerpted from the Association of Fish and Wildlife Agencies' "AFWA Technical Report on Best Management Practices for Prevention,

Surveillance, and Management of Chronic Wasting Disease, (2018) https://www.fishwildlife.org/application/files/9615/3729/1513/AFWA_Technical_Report_on_CWD_BMPs_FINAL.pdf

Once CWD has become established in a population, its eradication is not currently considered feasible. However, opportunities remain to stabilize or suppress CWD prevalence and thereby minimize impacts and potentially irreparable harm. Typical disease control tools such as vaccines, safe and practical agents to eliminate prions from the environment, and effective curative therapies do not exist for CWD. Consequently, to date, most of the attempts to manage CWD have focused on reducing population densities and eliminating areas of CWD foci through a combination of hunter harvest and agency culling (Blanchong et al. 2006, Conner et al. 2007, Pybus 2012, Mateus-Pinilla et al. 2013, Manjerovac et al. 2014). Current modeling, limited research (Miller et. al. 2020) and some field observations indicate that harvest can be used to control CWD. Therefore, AFWA (2018) recommends utilizing harvest and/or other removal mechanisms to manage CWD prevalence by: 1) targeting the portion of the population most likely to have CWD, 2) targeting animals in known CWD hotspots, 3) targeting timing of removal to most effectively remove infected animals, and 4) reduce cervid density in CWD positive areas with high density populations.

Management efforts toward CWD suppression should focus on strategies that exploit or complement current management activities. As mentioned earlier, modeling, limited research, and some field observations indicate that harvest could be used to control CWD (Wild et al. 2011, Jennelle et al. 2014, Geremia et al. 2015, Potapov et al. 2016, Al-Arydah et al. 2016, Miller et al. 2020). Previous research has shown that male deer have a higher likelihood of CWD infection than females (Miller et al. 2000, Grear et al. 2006, DeVivo et al. 2017) and mule deer have a higher prevalence that white-tailed deer. However, Montana Fish, Wildlife and Parks (2019) found little difference in prevalence rates between mule deer and white-tailed deer where the species overlap, hence the need to address both species in developing CWD management actions. Focusing harvest of sufficient intensity on the segment of the population most likely to be infected should help reduce disease prevalence and subsequent transmission (e.g., Potapov et al. 2016). Exploiting potential biases in removal of infected animals via harvest (e.g., Conner et al. 2000) also could be used to enhance the efficacy of harvest as a CWD control strategy (Wild et al. 2011). For example, targeting mature bucks via increased harvest pressure during or after the breeding season may selectively remove a higher proportion of infected individuals than harvest in early autumn (Conner et al. 2000). Such strategies would allow agencies to modify existing harvest management approaches to emphasize CWD suppression and thus should be relatively sustainable in the long-term with minimal additional personnel time or cost. Miller et. al. (2020) found suggested that harvesting mule deer with sufficient hunting pressure might control chronic wasting disease when prevalence is low.

Therefore, an increase in harvest intensity on male deer and maintaining or reducing buck:doe ratios, targeting mature male deer during the rut, and maintaining or reducing deer density should maintain the prevalence at a low level and reduce the potential for spreading the disease.

CWD prevalence rates vary by species and HDs. However, low sample sizes have resulted in wider than desired confidence intervals. Combining the past three years provides a better estimate of prevalence with narrower confidence intervals. Hunting district 401 shows an increasing trend for CWD prevalence in mule deer. Looking at the 3-year combined data, the 0.05 CWD management prevalence threshold is exceeded in HD 401 for mule deer (0.06, CI 0.03-0.10, Figure 1.).

WAFWA recommends an increase of 10 - 20 percentage points over the current buck harvest level to address CWD management. Initial permit levels were estimated to have 10% of the average buck harvest occur during the permit period. The 3-year average CWD prevalence has increased to 6%. Therefore, an increase in the permits is warranted. Increasing the permits to 15% should slow the spread of CWD and reduce the potential for spreading the disease.

To reduce the potential for further increase in CWD prevalence, it is proposed to increase the 10% increase/shift of buck harvest to the last 2 weeks of the season to 15%. Using the harvest information and average permit success rates allows calculation of recommend LPTs (rounded to the nearest 5 permits) for the 2025 season. This would result in a increase in LPT 401-51 from 90 to 135.

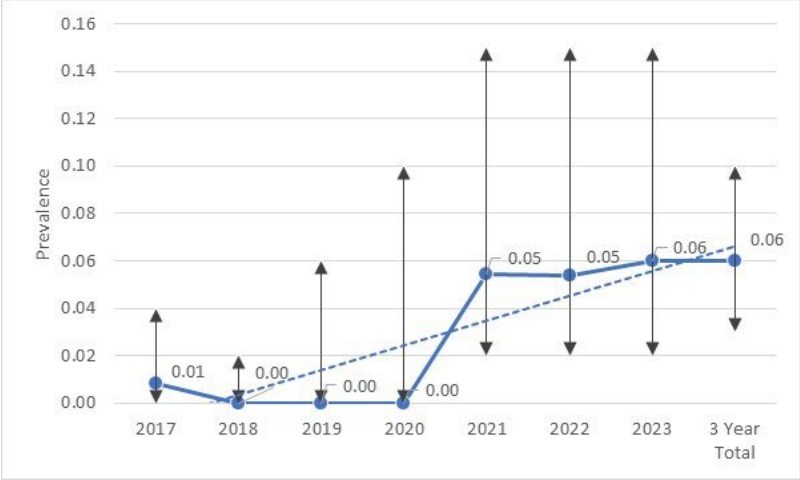

Figure 1: Figure 1. HD 401 Mule Deer CWD Prevalence 95% CI, 2017-2023, and 3-Year Total

3. How will the success of this proposal be measured? This could be annual game or harvest surveys, game damage complaints, etc.

The intent of this proposal is to in comply with AFWA (2018) and Montana's CWD Management Plan (MFWP, 2020) to implement CWD management by increasing harvest and/or shifting harvest, especially antlered deer to maintain or reduce the prevalence of CWD and to limit the potential for spread of the disease. CWD surveillance in these districts and elsewhere in north-central Montana occur on a rotating basis. In lieu of surveillance, monitoring of the effectiveness of this management strategy would occur in either 5 or 10 years. Success of this proposal would be reducing prevalence to below 5 percent in HD 401 for mule deer bucks.

Modelling has shown that it will take some time to determine the effects of this proposal on population metrics. In previous efforts, Newell and Lukacs (2018) noted that due the great amount of variability among HDs, it is often difficult to detect changes in population metrics among regulation types and that a high amount of variability sometimes masked meaningful results. Given the relatively small area of HD 401 and the relatively small harvest (compared to statewide in Newell and Meredith, 2008), rigorous statistics may not be achievable. Nonetheless, these population metrics will be monitored through normal means and evaluated annually.

AFWA (2018) recommended harvesting animals, especially bucks, during the rut would reduce the potential for transmission and spread of the disease. To that extent, this proposal would be successful.

Permit holders were surveyed to determine effectiveness of the 2020 - 2023 seasons and will be surveyed following future seasons to determine harvest rates.

4. What is the current population's status in relation to the management objectives? (i.e., state management objectives from management plan if applicable; provide current and prior years of population survey, harvest, or other pertinent information).

For mule deer HD 401is in the Prairie/Breaks population management unit (PMU) as defined in MFWP's (2021) Adaptive Harvest Management document. The objective for this PMU is to maintain the total number of mule deer observed during spring green-up surveys within the range of 20% above and 30% below the long-term average (at least 10 years). Historically, only post-season surveys are completed in these HDs and are used for compliance with AHM. The Standard Hunting Regulation is implemented during those years when the population size is near average, and recruitment is moderate.

The triggers for the Standard Hunting Regulation are:

1) The total number of deer counted on the survey area is within the range of 20% above and 30% below the long-term average; AND
2) Recruitment is between 30 and 60 fawns:100 adults.

The season structure for the Standard Hunting Regulation for these HDs is either-sex mule deer for 3 weeks with none to moderate number of antlerless B licenses followed by 2 weeks of limited antlered buck permits for mule deer and white-tailed deer.
Population data for HD 401 is shown in Figure 2. A survey was not completed in 2024 due to(Figure 1) weather and aircraft availability. The 2023 survey data show the population shows the population is below long-term trend (2023 survey was not complete) and recruitment is between 30 and 60 fawns per 100 adults. Therefore HD 401 is within standard season package. HD 401 currently has 200 antlerless mule deer B licenses available.

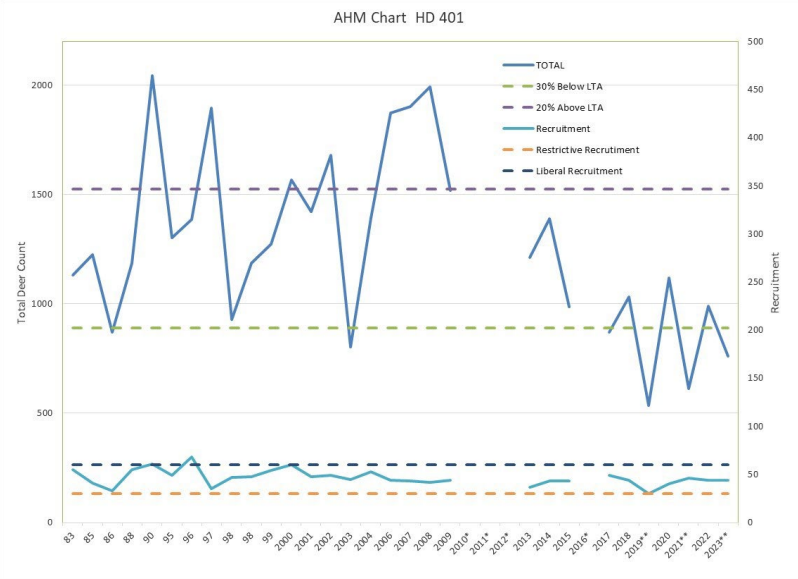

Figure 1: Figure 2. Hunting District 401 Adaptive Harvest Management Plan population and recruitment trends

5. Provide information related to any weather/habitat factors, public or private land use or resident and nonresident hunting opportunity that have relevance to this change (i.e., habitat security, hunter access, vegetation surveys, weather index, snow conditions, and temperature / precipitation information).

In general, mule deer numbers in the Prairie-Breaks Districts fluctuate more widely than Mountain/foothill or other mule deer populations across Montana, with “higher” highs and “lower” lows. These fluctuations are due primarily to weather conditions and changes in land use.
The northwest HDs in the Prairie-Breaks unit include a portion of the Golden Triangle where much of the land use is production agriculture. Recent conversion of CRP to crop production has resulted in a reduced carrying capacity for mule deer. Much of the CRP loss is adjacent to mule deer and white-tailed deer habitat. Mule deer populations have been less influenced in areas of more traditional mule deer habitat. However, recent production of pulse crops has provided some alternative winter forage.
The winter of 2022-2023 had various levels of snow cover beginning in November and continuing through March. Temperatures, while occasionally significantly below average, has been relatively mild. The winter of 2023-2924 was mild with little snow cover and mild temperatures for most of the winter. Thus, winter survival and good summer climates has led to stable or increasing mule deer production and recruitment in most HDs.

6. Briefly describe the contacts you have made with individual sportsmen or landowners, public groups or organizations regarding this proposal and indicate their comments (both pro and con).

Permit holders were surveyed following the 2022 season. Of the 2022 permit holders that had an opinion, 82% either support or strongly support the current season structure. Of the 2023 permit holders, of those permit holders that had an opinion, 77 either support or strong support the current season structure. Local wardens are in favor of managing to maintain or reduce CWD prevalence.

Submitted by: Ryan Rauscher
Date: 09/27/2024

Game – BFW October 23, 2024