MONTANA FISH, WILDLIFE & PARKS
HUNTING SEASON / QUOTA CHANGE SUPPORTING INFORMATION

Species: Mule Deer/White-tailed Deer
Region: 4
Hunting District: 400, 401, 403, 406
Year: 2021

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

In Hunting Districts (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, 2001) with either-sex mule deer regulations. Various numbers of mule deer B Licenses have been offered to address populations objectives.

White-tailed deer hunting regulations for these HDs have been either-sex white-tailed deer from 1980 to the present. Various numbers of antlerless white-tailed deer B Licenses have been available in various hunting districts to provide opportunity and address game damage. Regional Over-the Counter (OTC) white-tailed deer B Licenses have been available when populations could support additional harvest and are currently available.

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 Chronic Wasting Disease (CWD) management. After extensive public comment and landowner input, the proposal was changed to add 2 weeks of white-tailed and mule deer buck only permits for each of these 4 hunting districts following the existing 3-week general season. No other deer licenses would be valid during this 2 week period.

In addition for HD 406, it was proposed to maintain the level of general season deer access permits (30) for the Marias River WMA evenly distributed in 3 time periods and add 5 Antlered Buck Permits per week for the additional two weeks to accommodate a portion of the HD 406 antlered buck permit holders.

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.

This proposal is to continue the existing 2020 season structure. The only alternative is to discontinue the current season structure reverting to the 3-week general season. By Fish and Wildlife Commission direction, no other options will be considered at this time.

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 these 4 HDs and to gather sufficient 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 CWD Response Plan (2018) 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. The Plan also allows MFWP to preemptively manage for CWD in hunting districts adjacent to CWD positive areas. In HD 401, a mule deer buck tested positive for CWD in 2017 and a white-tailed buck tested positive for CWD in 2020. In HD 400 a white-tailed buck and a mule deer buck tested positive for CWD in 2018 and 2019 respectively. Additionally, a mule deer buck tested positive in 2020 in that HD. As of the writing of this proposal, there are no known CWD positive samples from HDs 403 or 406, yet these HDs are included in this proposal to reduce the potential transmission and spread of the disease. Adjacent to HD 401, WMU 102 in Alberta where CWD prevalence in mule deer averages 17.5% for the 2019/2020 season (increasing from 12% in 2018). No data is available for the current season. The nearest known positive is approximately 12 miles north of the border. In HD 600, the nearest known positive is approximately 15 miles east of HD 401.

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 to utilize 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.

WAFWA recommends an increase of 10 - 20 percentage points over the current buck harvest level to address CWD management. The allocation of antlered buck permits to achieve a 10% increase in buck harvest was determined by using harvest estimates and average success rates for similar permits (Table 1.).

Table 1. Number of antlered buck by species and Hunting District estimated to increase average buck harvest by approximately 10 percent.

Hunting District	**400**	**401**	**403**	**406**
Mule Deer	100	90	30	40
White-tailed Deer	40	70	10	40

Given the uncertainty of management success, and to allow management flexibility in the near term, a +/- quota range of 50% of permits listed in Table 2.

Table 2. Quota ranges is for antlered buck permits listed in Table 1.

Hunting District	**400**	**401**	**403**	**406**
Mule Deer	50 - 150	45 - 135	15 - 45	20 - 60
White-tailed Deer	20 - 60	35 – 105	5 - 15	20-60

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 Response Plan (MFWP, 2018) to implement CWD management by increasing harvest, especially antlered deer to maintain or reduce the prevalence of CWD and to limit the potential for spread of the disease. CWD prevalence in HD 401 was determined be 0.003 (0-0.015) for mule deer with 1 known positive and 0.006 (0.001 – 0.032) in white-tailed deer with 1 known positive. Prevalence in HD 400 in white-tailed deer during the same period with 1 known positive is estimated at 0.02 (0.003 – 0.10), and

0.003 (0.001-0.016) in mule deer (Emily Almberg, pers. comm.). Note this estimate does not take into account recent CWD suspect samples. Surveillance in these districts and elsewhere in north-central Montana is scheduled to occur within the next two years. 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 maintaining or reducing prevalence below 5 percent in HDs 400 and 401 and reducing the potential spread of CWD to adjacent HDs 403 and 406.

A complete and accurate understanding of CWD prevalence in HDs 403 and 406 is not known at this time given the small sample sizes. We cannot say with confidence, CWD is not present in these two HDs.

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 these HDs 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 if adopted, this proposal would be successful.

Permit holders will be surveyed to determine effectiveness of the 2020 season and again for the 2021 season. At the time of this writing, no data is available as the initial season is currently ongoing.

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).

Hunting District 400, 401, 403 and 406 are in the Prairie/Breaks population management unit (PMU) as defined in MFWP's (2001) 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.

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Population data for HD 400 is shown in Table 3. Most recent data show the population more than 20 percent above the long-term average and recruitment between 30 and 60 fawns:100 adults. Therefore, data indicates that the standard hunting regulation should be applied. HD 400 currently has 200 antlerless mule deer B licenses available.

Population data for HD 401 is shown in Table 4. The 2019 survey was a partial survey due to weather conditions and is not indictive trend. Most recent data show the population shows the population is 15.5 % below long-term trend 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.

Population data for HD 403 is shown in Table 5. The population is significantly higher than 20 percent above the long-term average trigger, yet recruitment is slightly below 60 fawns:100 adults. Therefore, data indicates that the standard hunting regulation should be applied. HD 403 currently has 50 antlerless mule deer B licenses available.

Population data for HD 406 is shown in Table 6. The population is 12 percent below the long-term average and recruitment is less than 60 fawns:100 adults. Therefore, data indicates that the standard hunting regulation should be applied. HD 406 currently has 100 antlerless mule deer B licenses available.

All HDs within this proposal are within the criteria for the standard regulation package. All four HDs are above long-term buck:doe ratios. These data indicate the mule deer buck population in these HDs can sustain increase harvest pressure as a result of this proposal without adverse effects to the population.

Antlerless mule deer B licenses for all 4 HDs will be adjusted appropriately to maintain or reduce population density as recommended by AFWA (2018) and the Adaptive Harvest Document (MFWP 2001).

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 these 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, esp. peas, has provided some alternative winter forage.

The winter of 2017-18 was moderately severe yet appears there was good overwinter survival. The winter of 2018-19 was mild except for the months of February and early to mid-March. The 2019-20 winter was above average snowfall and below average temperatures with reports of climate related mortality. Yet winter survival of adults was not significantly affected. 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).**

The revised 2020 proposal was developed after extensive landowner and public comment as an alternative to the original 5-week season proposal. At the Feb 13, 2020 F & W Commission when this alternative season structure was proposed, some opposition to any season change remained. However, most commenters recognized a need for CWD management and recognized this as a reasonable alternative. This proposal is brought forth to gather additional comment.

Submitted by: Ryan Rauscher
Date: 11/20/2020

Approved: _____
Regional Supervisor / Date

Disapproved / Modified by: _____
Name / Date

Reason for Modification:

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Table 3. Mule Deer Numbers Recorded on the Pondera Creek Mule Deer Survey Route, H.D. 400.

Mule Deer Census Routes						
HD	YEAR	TOTAL	F/100 D	F/100 Ad	B/100 D	MD/sq. Mile
400	78	102	0	53	0	2.9
400	79	120	0	80	0	3.4
400	80	244	0	76	0	7.0
400	81	226	0	84	0	6.5
400	82	196	0	106	0	5.6
400	83	389	0	65	0	11.1
400	84	260	0	63	0	7.4
400	85	200	49	47	5	5.7
400	86	87	31	20	5	2.5
400	87	194	38	37	4	5.5
400	88	207	77	68	13	5.9
400	89	249	78	68	14	7.1
400	90	220	92	85	8	6.3
400	91	264	80	76	6	7.5
400	92	196	62	53	18	5.6
400	93	155	102	85	20	4.4
400	94	291	76	67	13	8.3
400	95	238	87	76	16	6.8
400	96	160	75	63	18	4.6
400	97	250	69	66	5	7.1
400	98	134	89	79	14	3.8
400	99	230	64	59	9	6.6
400	2000	210	84	71	19	6.0
400	2001	291	67	55	23	8.3
400	2002	240	60	50	20	6.9
400	2003	335	80	65	23	9.6
400	2004	189	54	42	29	5.4
400	2005	247	76	64	19	7.1
400	2006	184	83	60	39	5.3
400	2007	196	52	43	21	5.6
400	2008	279	70	58	22	8.0
400	2009	131	53	46	17	3.7
400	2010	155	67	55	22	4.4
400	2011	250	55	43	27	7.1
400	2012	89	52	40	31	2.5
400	2013	94	59	49	21	2.7
400	2014	74	53	28	30	2.1
400	2015	85	75	63	18	2.4
400	2016	222	89	71	25	6.3
400	2017	242	77	67	15	7.1
400	2018	-	-	-	-	-
400	2019	307	63	49	26	8.7
400	2020	305	65	51	28	
AVE.		208	57	61	15	5.8

Table 4. Mule Deer Numbers Recorded on the Sweet Grass Hill Mule Deer Survey Route, H.D. 401.

Mule Deer Census Routes						
HD	YEAR	TOTAL	F/100 D	F/100 Ad	B/100 D	MD/sq. Mile
401	83	1133	69	55	26	18.9
401	85	1226	54	41	30	20.4
401	86	871		33		14.5
401	88	1187	68	55	23	19.8
401	90	2044	78	61	29	34.1
401	95	1302	65	49	33	21.7
401	96	1387	86	68	27	23.1
401	97	1897	44	35	26	31.6
401	98	928	59	47	25	15.5
401	98	1187		48		19.8
401	99	1274	65	54	20	21.2
401	2000	1567	80	60	32	26.1
401	2001	1421	60	48	27	23.7
401	2002	1679	65	49	33	28.0
401	2003	804	57	45	27	13.4
401	2004	1394	72	53	35	23.2
401	2006	1873	57	44	29	31.2
401	2007	1904	58	43	35	31.7
401	2008	1994		42		33.2
401	2009	1519		44		25.3
401	2010*					
401	2011*					
401	2012*					
401	2013	1212	50	37	35	20.2
401	2014	1389	51	43	18	23.2
401	2015	988	50	43	17	16.5
401	2016*					
401	2017	870	64	49	30	14.5
401	2018	1033	54	44	22	17.2
401	2019**	534	44	30	49	
401	2020	1120	55	41	36	18.6
AVE.		1324	61	47	29	23

* No survey completed
**Partial Survey

Table 5. Mule Deer Numbers Recorded on the Kevin Rim Mule Deer Survey Route, H.D. 403.

Mule Deer Census Routes						
HD	YEAR	TOTAL	F/100 D	F/100 Ad	B/100 D	MD/sq. Mile
403	79	78	88	71	24	2.6
403	80	84	0	89	0	3.4
403	81	74	97	90	8	3.0
403	82	214	87	81	7	8.6
403	83	120	71	67	6	4.8
403	84	167	0	63	0	6.7
403	85	128	75	71	6	5.1
403	86	200	44	43	3	8.0
403	87	139	72	71	1	5.6
403	88	93	89	80	11	3.7
403	89	201	102	97	5	8.0
403	90	124	62	55	13	4.9
403	91	239	87	77	13	9.5
403	92	169	68	63	7	6.8
403	93	145	71	67	6	5.8
403	94	245	65	60	8	9.8
403	95	204	98	81	21	8.2
403	96	241	94	84	12	9.6
403	97	64	80	71	12	2.6
403	98	105	76	71	7	4.2
403	99	110	65	59	10	4.4
403	2000	205	83	70	18	8.2
403	2001	233	72	63	14	9.3
403	2002	194	72	63	15	7.8
403	2003	239	87	75	15	9.6
403	2004	242	79	62	27	9.7
403	2005	179	66	55	21	7.2
403	2006	282	71	59	19	11.3
403	2007	234	57	50	13	9.4
403	2008	268	59	52	15	10.7
403	2009	247	62	55	13	9.9
403	2010	159	67	55		6.4
403	2011	324	72	65	9	13.0
403	2012	164	58	55	6	6.6
403	2013	287	54	48	13	11.5
403	2014	446	57	50	15	17.4
403	2015	263	69	62	12	10.5
403	2016	421	71	62	14	17.0
403	2017	436	67	60	12	17.6
403	2018	333	66	52	22	14.4
403	2019	276	61	47	32	11.0
403	2020	281	65	58	13	11.2
AVE.		211	70	66	11	8

Table 6. Mule Deer Numbers Recorded on the Marias River Mule Deer Survey Route, H.D. 406.

Mule Deer Census Routes						
		HD 406				
HD	YEAR	TOTAL	F/100 D	F/100 Ad	B/100 D	MD/sq. Mile
406	79	85	77	69	11	1.2
406	80	133		82		1.9
406	82	285		74		4.1
406	83	374	86	78	10	5.3
406	84	164		55		2.3
406	85	334	78	73	6	4.8
406	87	317	63	58	9	4.5
406	88	377	81	75	8	5.4
406	89	450	80	67	19	6.4
406	90	456	88	78	13	6.5
406	91	609	113	100	13	8.7
406	92	462	79	66	20	6.6
406	93	516	82	68	20	7.4
406	94	444	72	61	18	6.3
406	95	491	78	70	11	7.0
406	96	456		57		6.5
406	97	429	62	54	14	6.1
406	98	305	60	55	8	4.4
406	99	261	60	48	25	
406	2000	451	76	64	18	6.4
406	2001	611	83	61	36	8.7
406	2002	503	81	62	30	7.2
406	2003	434	74	59	25	6.2
406	2004	526	89	69	30	7.5
406	2005	448	82	60	36	6.4
406	2006	690	66	50	32	9.9
406	2007	479	61	44	38	6.8
406	2008	445	53	40	31	6.4
406	2009	480	61	46	33	6.9
406	2010	521	74	52	43	7.4
406	2011	582	58	43	36	8.3
406	2012		-	-	-	-
406	2013	480	50	41	11	6.9
406	2014	571	55	43	26	8.2
406	2015	560	55	43	29	8.0
406	2016	611	76	63	20	8.7
406	2017	605	67	51	38	8.5
406	2018	636	60	44	37	9.1
406	2019	606	61	46	33	8.7
406	2020	398	67	51	31	5.8
AVE.		451	72	59	23	7