1/31/2022

TO: Scott Thompson-R6 Wildlife Manager

CC: R6 Wildlife

FROM: Ryan Williamson-Wildlife Biologist

SUBJECT: **2022 Region 6 Mule Deer Trend Area Results**

This is a summary of 2022 Post Season mule deer aerial surveys in Region 6. There are eleven Deer Trend Areas (DTA) that are surveyed twice each year (Figure 1), post season and spring green-up, which are all referred to as the 2022 survey year. An additional DTA is completed in HD 652, which is a limited permit-mule deer buck only season type and the survey data is not included in this report.

The 2021-2022 winter weather throughout Region 6 have been overall favorable to deer. Good snow cover conditions and few prolonged cold conditions resulted in fair to good surveying for the trend areas.

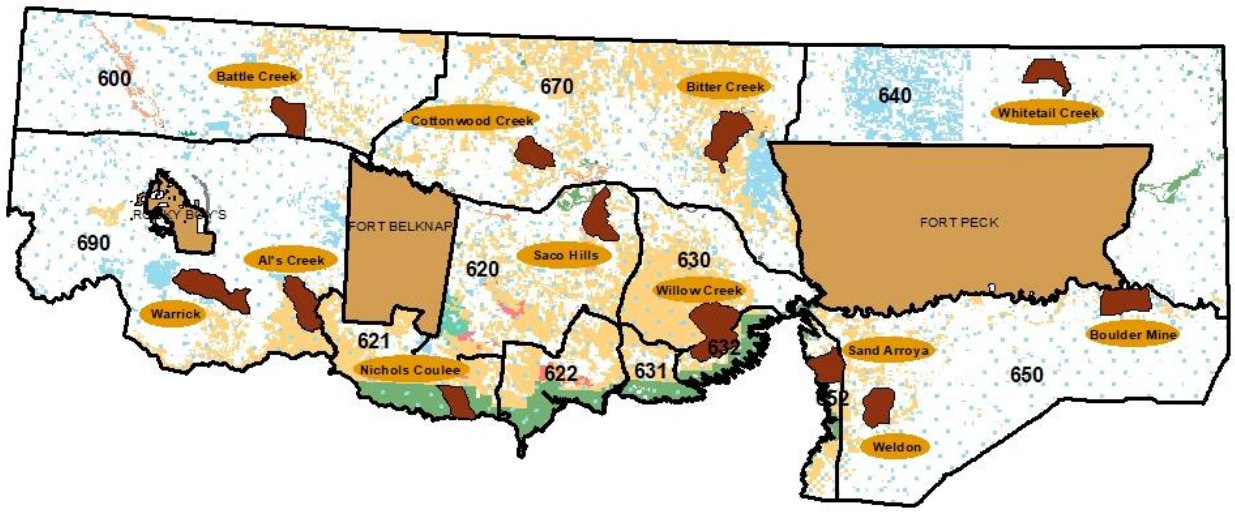

Figure 1. Region 6 deer Hunting Districts and mule deer DTAs. Note: Sand Arroyo DTA is a HD 652 Special mule deer buck Permit-only survey.

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Mule Deer- 2022 Post-season surveys

Mule deer post-season surveys were flown in December 2021 through January 2022 on 11 DTA's. Region-wide, 41% less mule deer were observed in 2022 than 2021. In 2022, 4,469 mule deer were observed on the eleven trend areas as compared to 7,553 in 2021 (Table 1). The above average numbers that occurred on many of the trend areas is mainly due to good winter survival, high recruitment into the population over the last few years and good habitat conditions in recent years. As compared to the long-term average (LTA) during years all HDs were surveyed (n = 20 years), 28% more deer were observed on the eleven trend areas combined in 2021.

Table 1. Ten-year average of observed mule deer in Region 6 during Post-season survey; LTA represents surveys from years 1998-present.

Year	DTA	Immature Bucks	Adult Bucks	Does	Fawns	Unclass	Total Mule Deer	Bucks/ 100 Does	Fawns/ 100 Does	Fawns/ 100 Adults	Area (Sq. Mi.)	Deer/ Sq. Mi.
2013	11	140	148	1082	757	0	2127	27	70	55	699	3
2014	11	159	166	1167	950	5	2447	28	81	64	699	3.5
2015	11	237	287	1701	1189	258	3672	31	70	53	708	5.2
2016	11	274	252	1642	1311	870	4349	32	80	60	708	6.1
2017	11	346	296	2173	1610	1843	6268	30	74	57	708	8.9
2018	11	315	370	1965	1523	1143	5316	36	78	57	708	7.5
2019	11	310	566	2234	1587	407	5104	39	71	51	708	7.2
2020	11	313	369	2311	1817	1048	5858	30	79	61	708	8.3
2021	11	434	448	2490	1851	2330	7553	36	74	55	708	10.7
2022	11	272	340	2050	1016	791	4469	30	50	38	708	6.3
LTA		**205**	**243**	**1564**	**1092**	**387**	**3492**	**27**	**69**	**54**		**5.1**

Deer density (deer/sq. mile) comparisons can be made across all years regardless of number of DTAs surveyed (Figure 2). The general mule deer trend on post-season surveys has been increasing during the last 20 years. Over the last 7 years, a strong recovery across the region is evident. Densities of deer observed in 2022 (6.3 deer/sq. mile) was lower than 2021 (-41%, 10.7 deer/sq. mile) and is still above the LTA (24%) of 5.1 deer/sq. mile.

A region-wide drought in 2021 likely had an impact on the region's fawn numbers, which is more evident in the western half of the region compared to the eastern half. Post-season fawn:doe ratios for the region dropped in 2022, averaging 50 fawns:100 does as compared to 74 fawns/100 does in 2021 and an LTA of 69 (Figure 2). In 2022, fawn ratios ranged from a low of 30 fawns:100 does on the Battle Creek DTA (HD 600) to a high of 80 on the Whitetail Creek DTA (HD 640). Fawn ratios on DTAs from Glasgow to Plentywood (R6-East) ranged from 40 to 80 fawns:100 does. Fawn ratios in the Malta to Havre areas (R6-West) ranged from 30 to 47 fawns:100 does. Overall, these fawn ratios are fair to good and will indicate stable to increasing populations in most areas.

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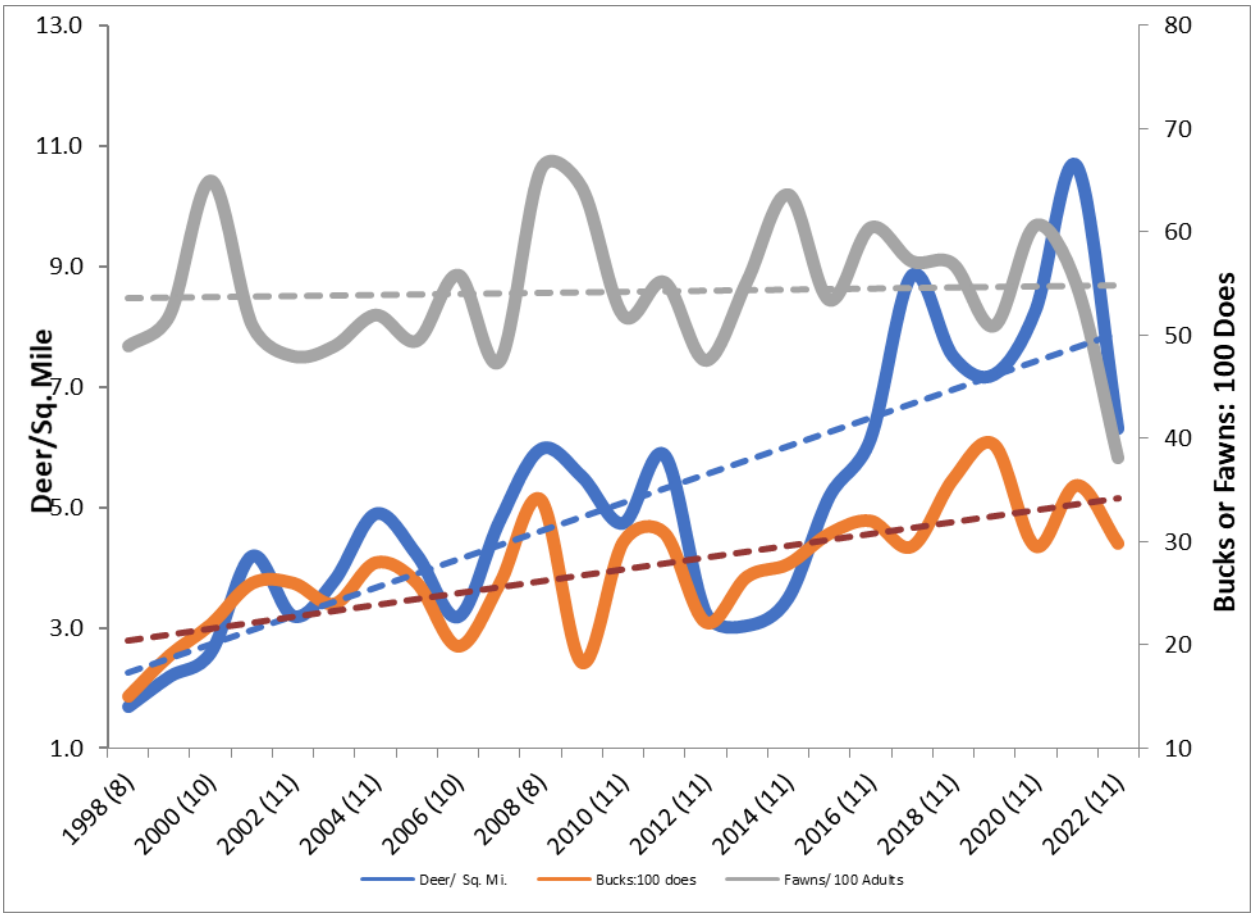

Figure 2. Mule deer post season survey data for all areas combined 1998-Present, Region 6.

Although buck ratios across the region generally held steady over recent years, ratios did see a 20% decrease in 2022 with 30 bucks:100 does observed as compared to 36 bucks:100 does in 2021. This is still 11% above the LTA of 27 bucks:100 does Buck ratios ranged from 16 bucks:100 does in HD 621 to 50 bucks:100 does in HD 640.

Following the Mule Deer Adaptative Harvest Management Plan, the current Post-Season data for the hunting districts across the region indicate standard package for all hunting districts (Figure 3, Table 2). The standard hunting regulation is a 5-week either-sex general season with low to moderate numbers of antlerless B-licenses. While post-season survey data does go into the decision making for season quotas and types, it is used in conjunction with spring green-up trend data. The most recent spring green-up data (2021) is included below in this report.

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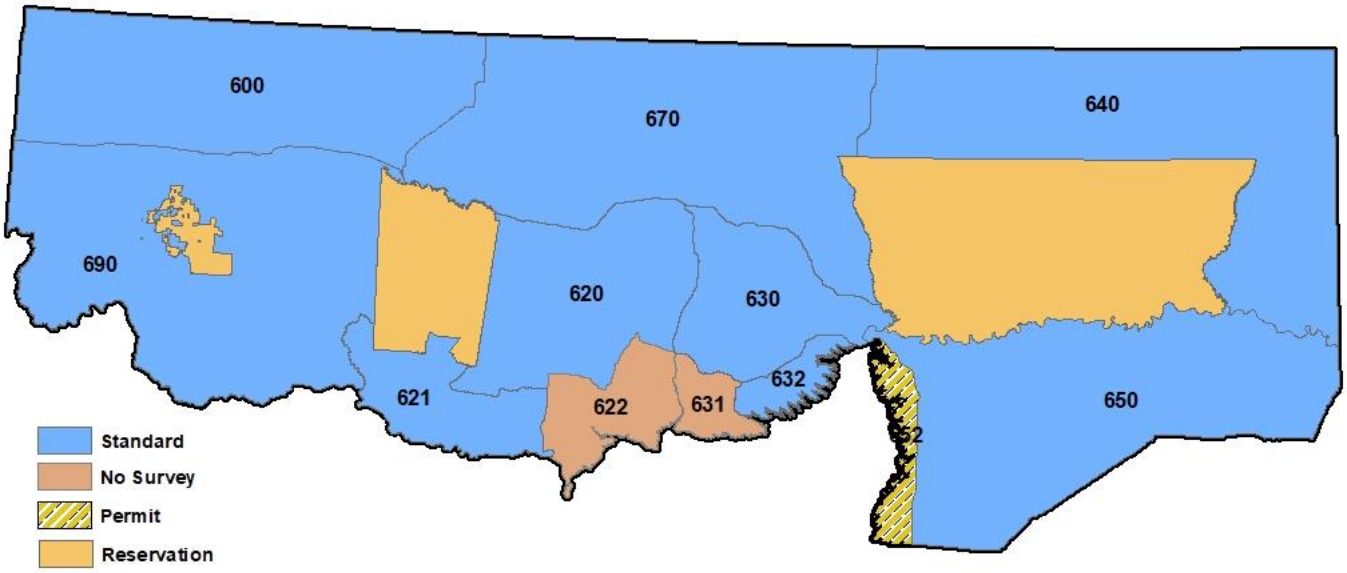

Figure 3. Region 6 Hunting District hunting regulation as indicated by 2022 post-season survey data and outlined in Mule Deer Adaptive Harvest Management plan.

Table 2. Mule Deer Adaptive Harvest Management Plan triggers and hunting season types.

Hunting Regulation

Regulation	*# Deer counted*	*Recruitment fawns:100 ad*	*Buck Harvest*
Standard	Between 20% above and 30% below LTA	Between 30 and 60	±25% of LTA
Restrictive	At least 30% below LTA	Less than 30	At least 25% below LTA
Liberal	More than 20% above LTA	Greater than 60	More than 25% above LTA

Hunting Season

	A-license archery	*A-License general season*	*B-License (antlerless)*
Standard	Six weeks Either-sex	Five weeks Either-sex	Low to moderate number
Restrictive	Six weeks Antlered Bucks	Five weeks Antlered Bucks	Only to address game damage on private lands in portions of HD
Liberal	Six weeks Either-sex	Five weeks Either-sex	Liberal numbers

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Mule Deer- Spring surveys

The following information are results from the 2021 Region 6 Spring Green-up Flights.

All eleven DTAs were flown in March and April of 2021 during both early and prime green-up conditions. Mild winter and dry conditions made for slower green-up across the region. During the 2021 surveys, 4,337 mule deer were observed as compared to 3,375 in 2019, a 28% increase. Compared to the LTA during years all HDs were surveyed (n = 16 years), 84% more deer were observed on the eleven trend areas combined in 2021 (Figure 4, Table 2).

Table 2. Observed 10-year average of mule deer in Region 6 during Spring survey; LTA represents surveys from years 1998-present.

Year	Number Survey Areas	Total Adults	Fawns	Unclassified	Total Mule Deer	Fawns/ 100 Adults	Area (Sq. Mi.)	Deer/ Sq. Mi.
2011	11	1646	819	0	2465	50	699	3.5
2012	11	1086	540	6	1632	50	699	2.3
2013	11	1400	888	180	2468	63	699	3.5
2014	11	1199	680	10	1889	57	699	2.7
2015	11	1559	851	11	2421	55	708	3.4
2016	9	1647	950	93	2690	58	609	4.4
2017	11	2001	1141	96	3238	57	708	4.6
2018	11	2024	1158	51	3233	57	708	4.6
2019	11	2162	1102	111	3375	51	708	4.8
2020	0	No Survey						
2021	11	2735	1460	142	4337	53	708	6.1
LTA		**1504**	**801**	**48**	**2353**	**53**		**3.6**

Across the 21 years of presented data, there is an increasing trend in mule deer densities. The last 6 years represent the highest densities since 2008 and saw a record high in 2021. Mule deer densities on all 11 DTAs combined were 6.1 deer/sq. mi. in 2021, 27% higher than 2019 and 69% higher than the LTA of 3.6 deer/sq. mile.

Fawn/adult ratios on all DTAs combined were above average with 53 fawns:100 adults observed in 2021, which represents a 4% increase from 51 fawns:100 adults in 2019 and the same as the LTA of 53 fawns:100 adults. Regional fawn ratios peaked in 2008 with 79 fawns:100 adults observed and have remained fairly stable since. A trend similar to the post-season surveys is evident with higher fawn ratios in R6-East (57 fawns:100 adults), with lower fawn ratios in R6-West (49 fawns:100 adults).

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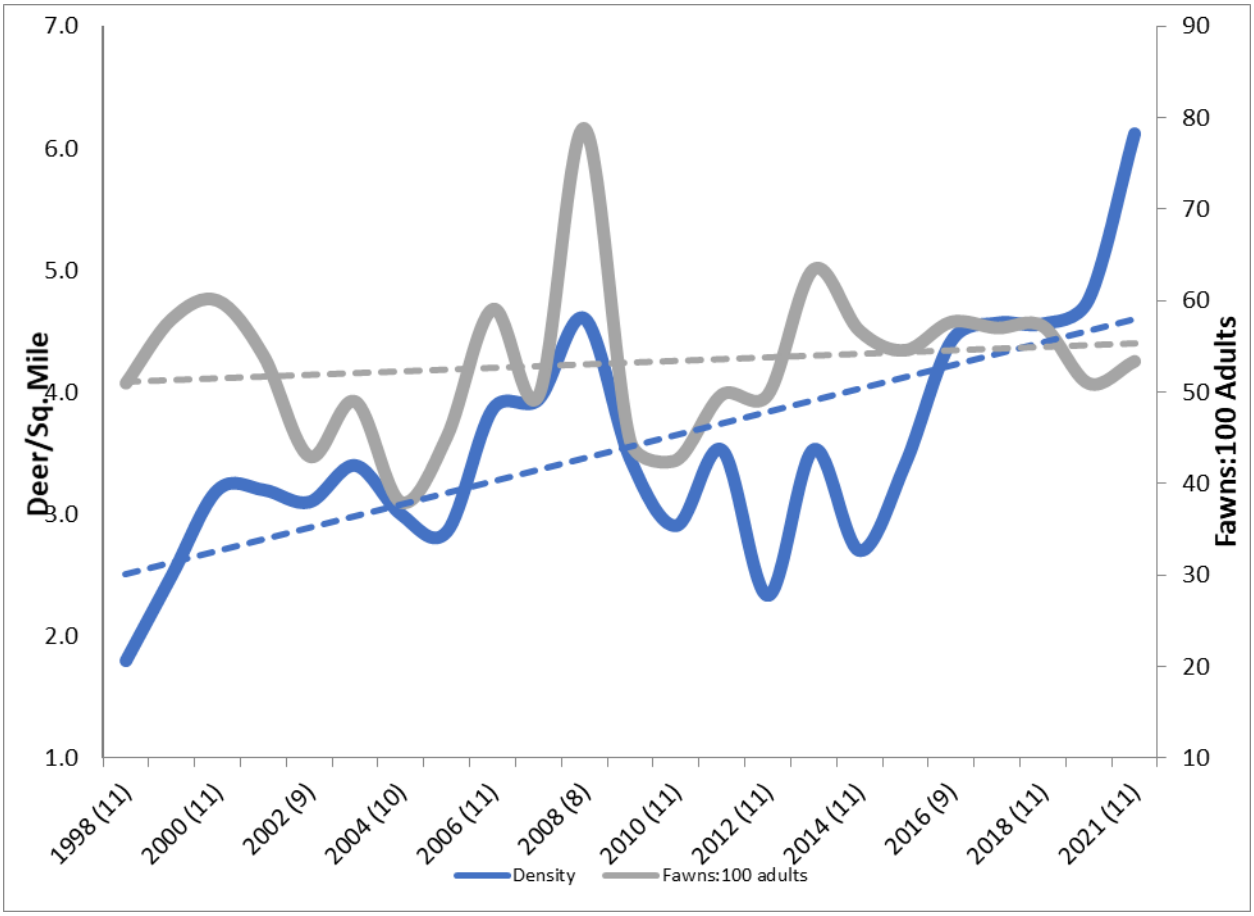

Figure 4. Mule deer spring survey data for all areas combined in Region 6; 1998-2021.

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