

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 14
San Juan
September 2020

BOUNDARY DESCRIPTIONS

Grand and San Juan Counties - Boundary begins at the confluence of the San Juan and Colorado rivers; north along the Colorado river to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to US-191; south on this road to the Big Indian road; east on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Colorado state line; south on this line to the Navajo Indian Reservation boundary; southwest along this boundary to the San Juan River; west on this river to the Colorado River.

This boundary includes two subunits including:

Unit 14A - San Juan, Abajo Mountains - Grand and San Juan Counties - Boundary begins at the junction of Highway US-163 and South Cottonwood Creek (near Bluff); then north along this creek to Allen Canyon; north along this canyon to Chippean Canyon; north along this canyon to Deep Canyon; north along this canyon to Mule Canyon; north along this canyon to the Causeway; north from the Causeway to Trough Canyon; north along this canyon to North Cottonwood Creek; north along this creek to Indian Creek; north along this creek to the Colorado River; north along this river to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to Highway US-191; south on this road to the Big Indian road; east on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Colorado state line; south on this line to the Navajo Indian Reservation boundary; west and south along this boundary to the San Juan River; west on this river to Highway US-163; then east on this highway to South Cottonwood Creek.

Unit 14B - San Juan, Elk Ridge - San Juan County - Boundary begins at the junction of highway US-163 and South Cottonwood Creek (near Bluff); north along this creek to Allen Canyon; north along this canyon to Chippean Canyon; north along this canyon to Deep Canyon; north along this canyon to Mule Canyon; north along this canyon to the Causeway; north from the Causeway to Trough Canyon; north along this canyon to North Cottonwood Creek; north along this creek to Indian Creek; north along this creek to the Colorado River; south on this river to the San Juan River; east on this river to highway US-163; east on this highway to South Cottonwood Creek.

LAND OWNERSHIP

Subunit 14A - San Juan, Abajo Mountains

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service			130454	38%	1670	<1%
Bureau of Land Management			75780	22%	420722	61%
Utah State Institutional Trust Lands			9219	3%	59981	9%
Native American Trust Lands			0	0%	12	<1%
Private			125767	37%	210695	30%
National Parks			0	0%	390	<1%
Utah State Parks			0	0%	0	0%
Division of Wildlife Resources			0	0%	0	0%
TOTAL			341220	100%	693470	100%

Subunit 14B - San Juan, Elk Ridge

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	225	<1%	168372	65%	19210	3%
Bureau of Land Management	64649	94%	50048	19%	505156	76%
Utah State Institutional Trust Lands	4055	6%	4688	2%	50213	8%
Native American Trust Lands	0	0%	0	0%	7	<1%
Private	0	0%	3076	1%	6042	<1%
National Parks	15	<1%	69	<1%	54196	8%
National Recreation Area	0	0	0	0	10983	2%
USFS & BLM Wilderness Area	106	<1%	32973	13%	12679	2%

Utah Division of Wildlife Resources	0	0%	0	0%	0	0%
TOTAL	69050	100%	259226	100%	658486	100%

UNIT MANAGEMENT GOALS

Manage for realistic and attainable population management objectives that are below biological carrying capacity to maintain healthy and productive deer populations.

Manage the deer population at a level capable of providing a broad range of recreational opportunities, including hunting and viewing.

Balance deer herd goals and objectives with impacts on human needs, such as private property rights, agricultural crops and local economies.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size - Achieve a target population of 15,500 wintering deer (modeled number) during the five-year planning period.

Subunit	2015-2019 Objective	2020-2024 Objective
Abajo Mountains	13,500	13,500
Elk Ridge	5,600	2,000
UNIT TOTAL	20,500	15,500

The 2020-2024 population objectives are not necessarily the carrying capacity nor the long-term objectives. Deer populations will be assessed annually using the monitoring strategies outlined below to determine the current population status and their relationship to carrying capacity. Deer populations can be very dynamic depending on a number of factors that can change carrying capacity. Deer objectives can be adjusted based on range condition and trend assessments, as well as deer body condition, productivity and survival trends. Improvements in computer population modeling has provided better estimates of current deer numbers which will aid in setting population objectives that are more realistic and attainable.

Abajo Mountains – No change needed in population objective. This population has been within 85% of the population objective 4 out of the past 5 years (Table 1). Desirable Components Index (DCI) scores from the 2019 range trend survey shows that the unit has generally remained the same over time (Figure 1). Body fat measurements from captured deer on the unit in 2019 were the highest recorded in the past 5 years and near statewide averages (Table 2). These data suggest that overall, this herd has not reached or exceeded carrying capacity on summer range and upper elevation winter ranges on years with favorable environmental conditions. Population trend, habitat and body condition data, combined with highway mortality data suggest that the current objective is realistic, attainable and allows for herd growth of 4,100 deer over the next 5 years.

Elk Ridge – A reduction in population objective to 2,000 deer will be implemented in 2020 due to poor conditions on critical winter ranges and an extremely low current deer population. This subunit has experienced a large population decline over the past 20-25 years and was estimated in 2019 at 600 deer (Table 1). Elk Ridge is a narrow plateau of summer range with limited perennial water sources. Fawn production has remained at low levels for an extended period of time primarily due to prolonged drought periods and poor summer range conditions (Table 1 and Figure 2). Beef Basin, which represents approximately 20% of crucial deer winter range on the subunit, has experienced severe reductions in sagebrush abundance since 1994, promoting an increase in annual grasses, mostly cheat grass. Recently, Black Mesa has experienced severe sagebrush foliage reduction due to the extreme drought in 2018 (Figure 3). The 2019 DCI overall rating for sites in this area are "poor". Projecting the population 5 years into the future using current computer modeling and averaging survival, harvest and classification data from the past 10 years yields a population estimate of 800 deer. Considering the high body condition score of deer this past winter and acknowledging that other biological measurements may vary, the deer population may increase above the average values used in the model.

Herd Composition

Abajo Mountains – Manage for a buck to doe ratio of 18-20 bucks per 100 does in accordance with the statewide plan. This is a change from the previous objective of 15-17 bucks per 100 does. This subunit consistently shows higher fawn production than surrounding units and has a history of maintaining a buck to doe ratio within the new objective. A public survey indicated strong support for maintaining a higher buck to doe ratio on this subunit. Biologists will take into account current year buck/doe ratio, 3 year average buck/doe ratio and trend as well as fawn and adult survival when making permit recommendations.

Elk Ridge – Manage for a buck to doe ratio of 25-35 bucks per 100 does, in accordance with the statewide plan. Biologists will take into account current year buck/doe ratio, 3 year average buck/doe ratio and trend as well as fawn and adult survival when making permit recommendations.

Harvest

Abajo Mountains - Continue General Season Unit by Unit buck deer hunt regulations, using archery, any weapon, and muzzleloader hunts. Antlerless removal may be implemented if needed to maintain the population below carrying capacity and to address specific localized crop depredation, range degradation or urban conflict concerns, using a variety of harvest methods and seasons.

Elk Ridge - Continue Limited Entry buck deer hunting strategy to maintain herd composition objectives and quality hunting opportunities. Antlerless removal may be implemented if needed to address specific localized range degradation issues. Antlerless removal will likely not occur for population management during the duration of this plan given that the population is considerably below carrying capacity.

POPULATION MANAGEMENT STRATEGIES

Monitoring

Population Size - The **Abajo Mountains** and **Elk Ridge** population estimates will be made based on fall and spring herd composition counts conducted by biologists, survival and body condition data from GPS collared deer, and hunter harvest data. These data will be used in computer models to determine a winter deer herd population size. The modeled population estimate for the winter of 2020 was 9,400 deer on the Abajo Mountains subunit and 600 deer on the Elk Ridge subunit.

Buck/doe ratios and Age Structure - Monitor age class structure of the buck population through the use of check stations, postseason classification, uniform harvest surveys and field bag checks.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of check stations.

Research - Continue to collect annual adult and fawn survival rates, body condition scores, and cause specific mortality on this unit from GPS collared deer. Continue research efforts to identify migration corridors and limiting factors for deer herd growth.

Table 1. Population and Harvest Trend data for the Abajos (top) and Elk Ridge (bottom).

Population Trends and Harvest for the San Juan, Abajo Mountains (14a) Deer Subunit

Year	Buck harvest	Permits	Post-Season F/ 100 doe	Post-Season B/ 100 doe	Post-Season Population	Objective	% of Objective
2015	905	2500	57	24	11,900	13,500	88%
2016	1048	2650	55	23	12,700	13,500	94%
2017	1018	2750	51	22	12,900	13,500	96%
2018	876	2750	32	18	11,700	13,500	87%
2019	713	2750	44	14	9,400	13,500	70%
5 Year Avg	912	2,680	48	20	11,720		

Population Trends and Harvest for the San Juan, Elk Ridge (14b) Deer Subunit

Year	Buck harvest	Permits	Post-Season F/ 100 doe	Post-Season B/ 100 doe	Post-Season Population	Objective	% of Objective
2015	47	57	43	43	800	5,600	14%
2016	43	56	48	43	900	5,600	16%
2017	49	56	28	30	800	5,600	14%
2018	42	52	27	44	750	5,600	13%
2019	48	59	35	24	600	5,600	11%
5 Year Avg	46	56	36	37	770		

Antlerless Harvest

Use antlerless harvest to locally reduce deer populations when range conditions, deer adult and fawn survival, fawn production, and deer body condition suggest it is necessary.

Use antlerless harvest in combination with the Urban Deer Rule to reduce nuisance and depredation by deer.

Predator Management

Manage predators according to the predator management policy (W1AG-04) where habitat is not limiting and predators are demonstrated to have negative impacts on the population. Indices such as doe and fawn survival, population growth rate, body condition scores, fawn production, and cause specific mortality will be used to determine if predator management is deemed necessary.

Private Lands Management

Support programs that increase tolerance for deer on private lands including CWMU, landowner permits, and Walk-In Access programs.

Address all depredation problems in a timely and efficient manner.

Disease Management

Investigate and manage diseases that threaten mule deer populations and continue monitoring for chronic wasting disease (CWD) as stated in the Statewide plan. This unit is a CWD positive unit (<0.05% prevalence).

CWD Strategies

- Utilize rotational hunter harvest surveillance, targeting this unit once every several years.
- Consider compulsory testing of hunter harvested deer to increase sample size.
- Consider managing the unit toward the lower end of the buck/doe objective to minimize increase of the disease.
- Consider late season buck hunts in focal hotspots on the unit to minimize disease transmission.
- Educate public and enforce rules regarding carcass importation and disposal from CWD positive areas.

Urban Deer Management

Continue working with municipalities on localized urban deer control management actions. Work cooperatively with municipalities in developing urban deer management plans, within the guidelines set by state law and agency policies.

HABITAT MANAGEMENT OBJECTIVES

Maintain or improve mule deer habitat on the unit by protecting, maintaining, and enhancing existing crucial habitats and mitigating losses due to natural and human impacts.

Minimize deer vehicle collisions along highways on the unit by continuing to cooperate with UDOT in construction and maintenance of highway fences, passage structures and warning signs, etc. Data from previous projects are in Figure 4.

HABITAT MANAGEMENT STRATEGIES

Continue to improve, protect, and restore summer and winter ranges critical to deer, such as aspen and sagebrush steppe communities. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as pinion-juniper removal, reseeding, controlled burns, mechanical treatments, grazing management, water developments etc. on public and private lands. Habitat improvement projects will occur through the WRI process. Projects completed to date are summarized in Table 3.

Continue to work with and support Universities and land management agencies on habitat research projects. Continue to stay apprised on Utah State University's current sagebrush restoration project and the USFS aspen regeneration project on Elk Ridge.

Continue to monitor permanent Range Trend studies located throughout the unit. Specific information about site locations and results can be found at: https://wildlife.utah.gov/pdf/range-trends/archive/2019_Southern_Region_Unit_Summary_Report.pdf

Conduct cooperative range assessments to evaluate forage condition and utilization of important deer ranges. Determining opportunities for habitat improvements will be an integral part of these surveys. This will also be pivotal in determining if antlerless harvest is necessary.

Work toward long term habitat protection and preservation through the use of agreements with federal agencies and local governments and the use of conservation easements on private lands.

Support, cooperate with, and provide input to land management planning efforts dealing with actions affecting habitat security, quality and quantity.

Work with land management agencies and energy companies to minimize and mitigate impacts of energy development activities.

Work with land management agencies in managing riparian areas in critical fawning habitat to furnish water, cover and succulent forage from mid- to late summer.

Protect deer winter ranges from wildfire by reseeding burned areas, creating fuel breaks and vegetated green strips and reseed areas dominated by annual grasses with desirable perennial vegetation. Seek opportunities to increase browse in burned areas of critical winter range.

Reduce expansion of pinion-juniper woodlands into sagebrush habitats and improve habitats dominated by pinion-juniper woodlands by completing habitat restoration projects like lop-and-scatter, bullhog and chaining.

Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.

Work with private landowners, federal, state, and local governments to maintain and protect critical ranges from future losses and degradation through grazing management and trail, OHV and Travel Plan modifications..

Highway mortality will continue to be monitored and the need for additional highway fences, passage structures, warning signs and other mitigation options will be evaluated.

RECREATION OBJECTIVES

Provide mule deer hunting that encourages a variety of hunting opportunities while maintaining population objectives.

RECREATION STRATEGIES

Consider early rifle hunt opportunities as hunter crowding and other concerns dictate.

Work with land managers to maintain access during hunting seasons where appropriate.

RANGE TREND SUMMARIES AND BODY CONDITION DATA

Figure 1. Deer winter range Desirable Components Index (DCI) summary by year of Range Trend sites for WMU 14, San Juan.

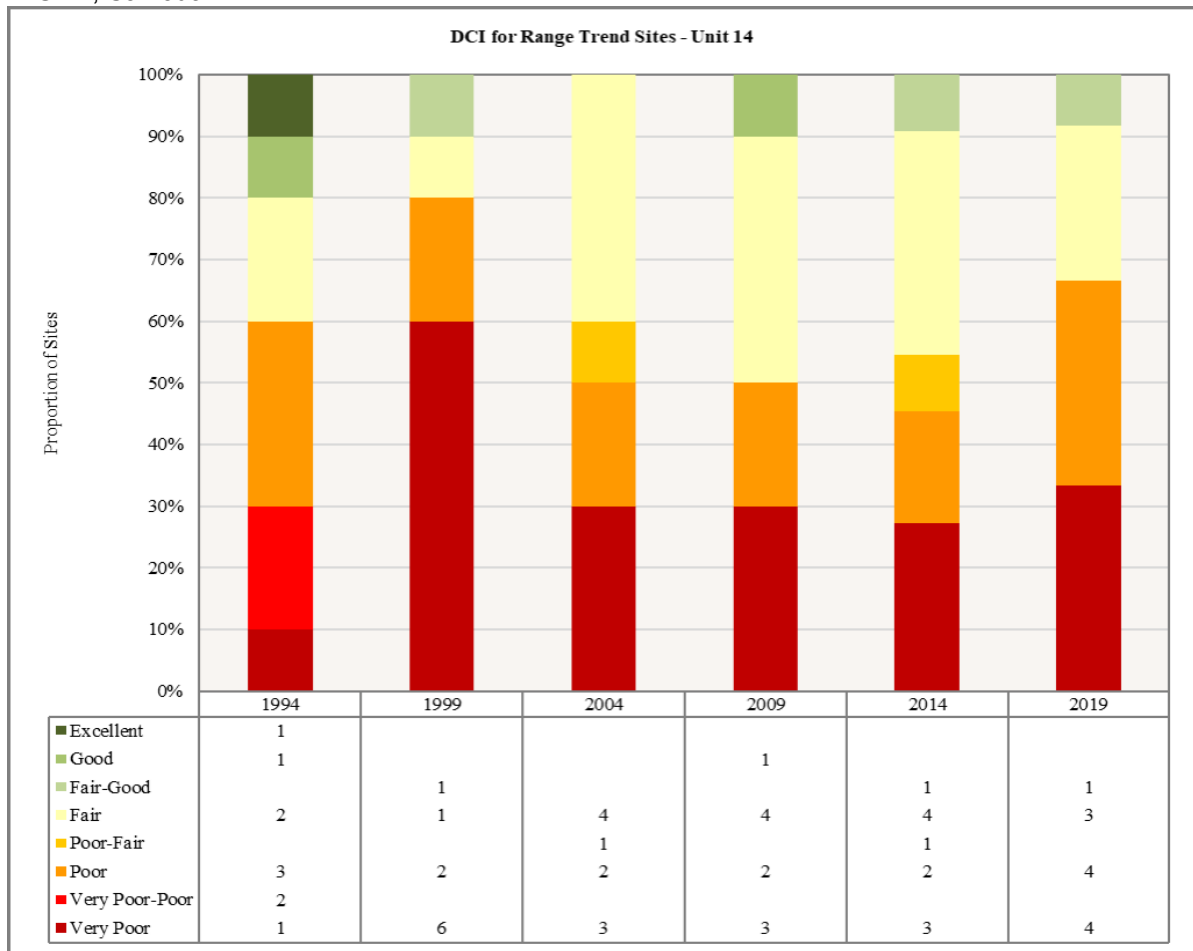


Table 2. Body Fat Comparisons of Captured Deer, 2014-2019.

Unit	Percent (%) Ingesta Free Body Fat (IFBF)					
	Dec 2014	Dec 2015	Dec 2016	Dec 2017	Dec 2018	Dec 2019
Box Elder						8.79
Cache		11.02	9.59	13.65	10.32	13.71
North Slope					8.59	
South Slope	11.31	9.46	9.00	9.56	7.24	9.90
Oquirrh-Stansbury	10.52	8.43	9.56	8.79	7.39	8.46
Chalk Creek/Kamas					7.19	11.02
Wasatch-Manti		8.76	9.22	10.23	9.32	11.11
Wasatch East						11.51
South Manti			8.87			9.42
Book Cliffs				7.56	6.35	8.80
West Desert					6.33	8.04
Monroe	8.10	8.98	8.23	9.53	6.50	10.37
Beaver						7.75
Boulder						8.54
Panguitch					8.76	8.64
Pine Valley		7.42	6.68	6.54	6.91	6.86
Zion					8.48	9.04
La Sal						8.63
San Juan		9.35	9.25	7.60	7.77	9.50
Statewide	9.98	9.06	8.80	9.18	7.78	9.49



Unit High



Unit Low

Figure 2. Drought Index, San Juan Unit. Top Graph Depicts the Entire Year, Bottom Graph Depicts Spring and Fall.

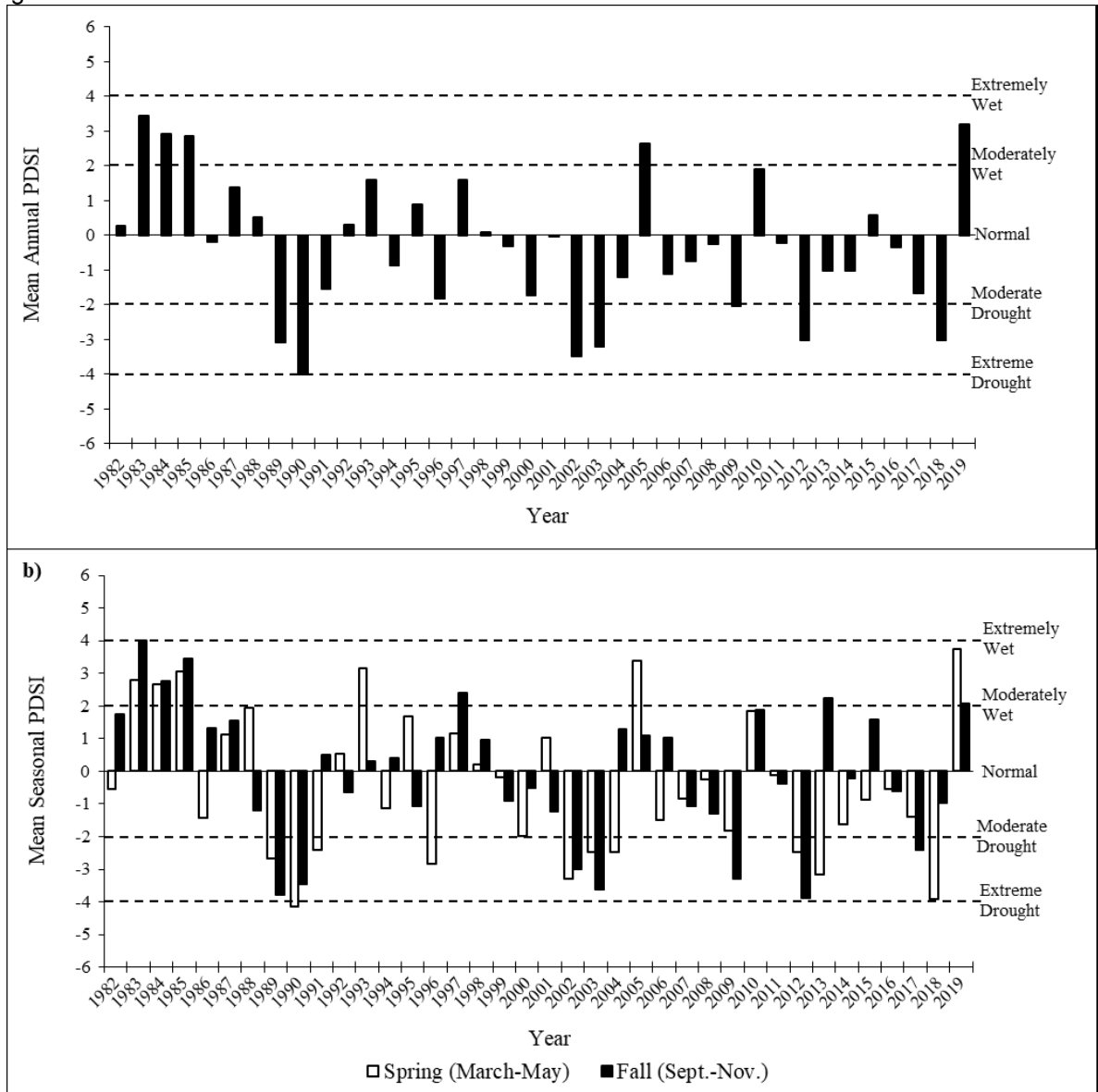


Figure 3a-b. Trends in Browse Cover (a) and Density (b), on Black Mesa Crucial Low Elevation Big Sagebrush Range Trend Site on the San Juan Unit, 1992-2019.

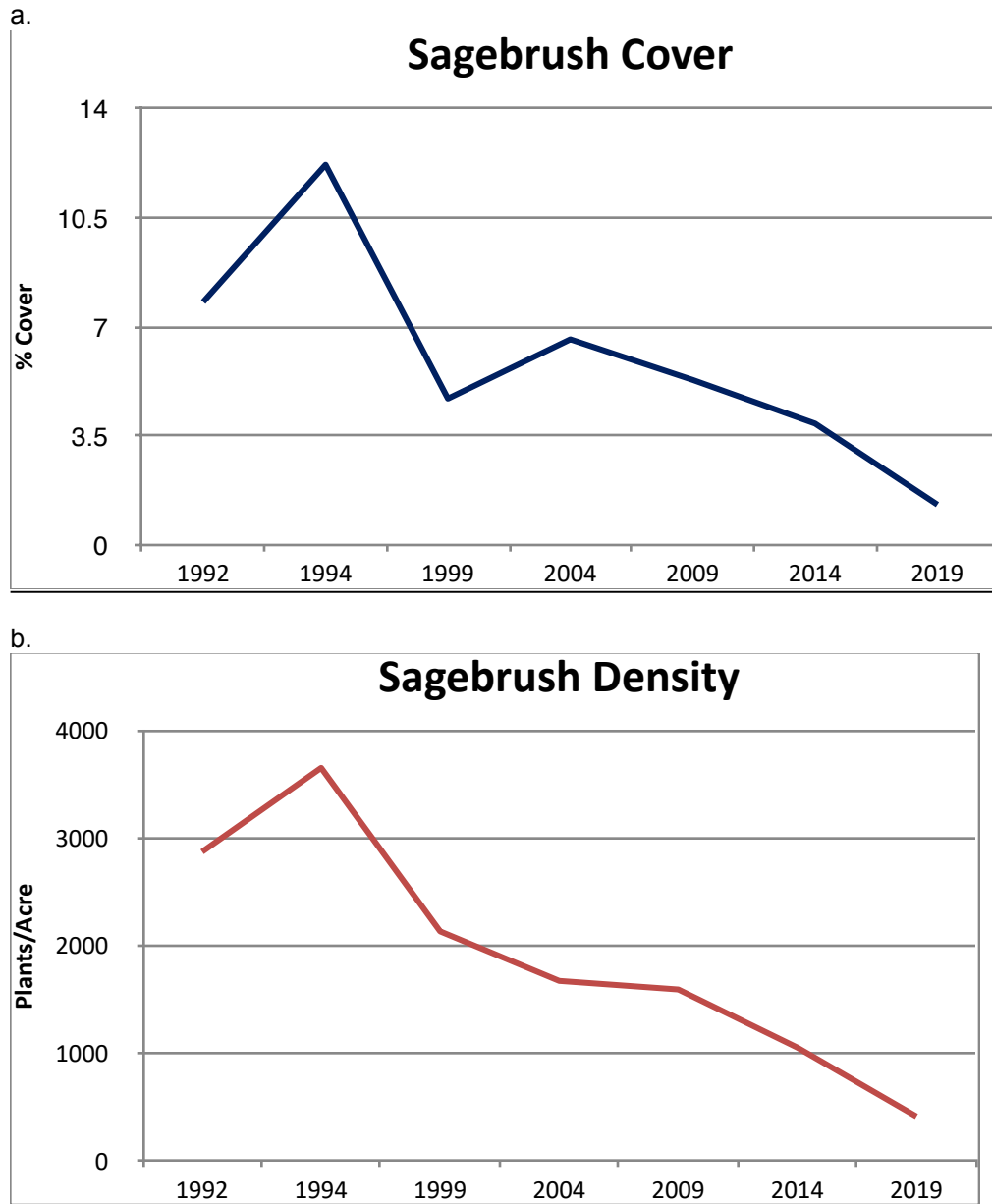
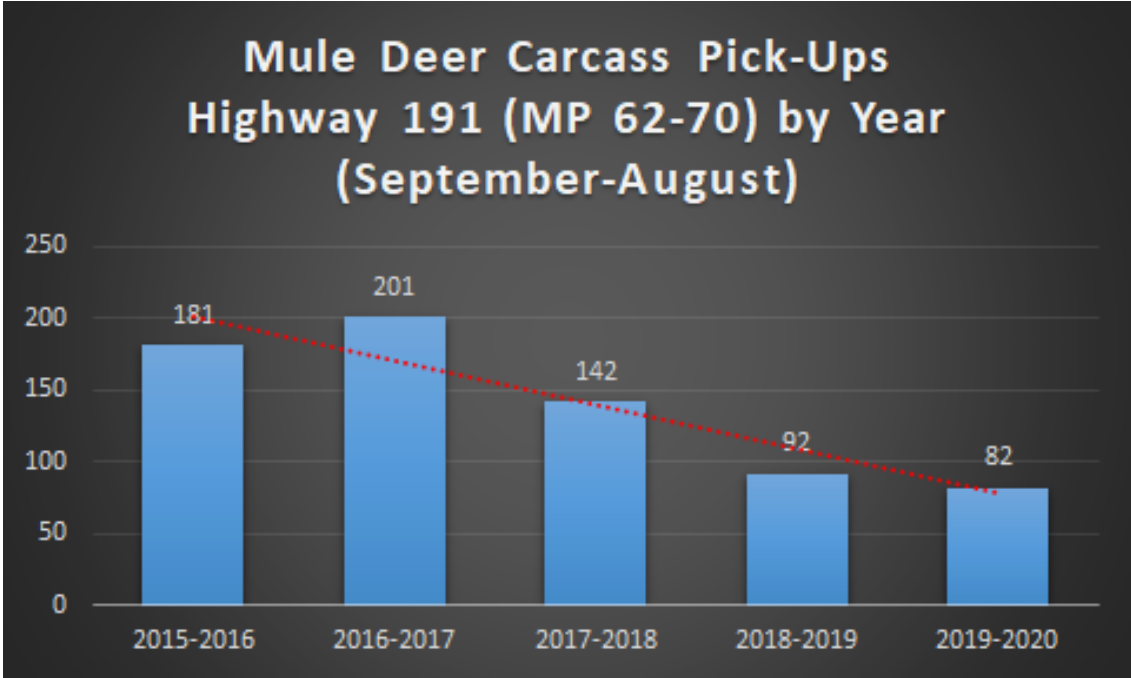


Figure 4. Carcass Pick-Up Data within Project Area of Highway 191, San Juan, Abajos Unit.



Highway mortality on this unit was historically very high, with approximately 400 deer a year being killed by vehicle collisions. There has been a considerable amount of effort put into fencing and crossing structures along Highway 191. To date, there has been a total of approximately 7 miles of highway fenced and 6 wildlife crossings installed. Carcass collection numbers have reduced 50% within the project area in the past two years.

Table 3. Watershed Restoration Initiative Project Acreage Completed 2004-2020.

Treatment Action	Acres
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Aerator	3,248
Bullhog	11,277
Disc	2,083
Easement	1,082
Forestry Practices (non-commercial thinning)	270
Harrow	2,205
Herbicide Application	962
Pond Dredging	6
Planting/Transplanting	76
Prescribed Fire	898
Research	25
Seeding	2,950
Stream Channel	50
Lop-and-Scatter/Burn	9,314
Other Veg. Improvements	365
Total Acres Treated (may overlap)	34,813