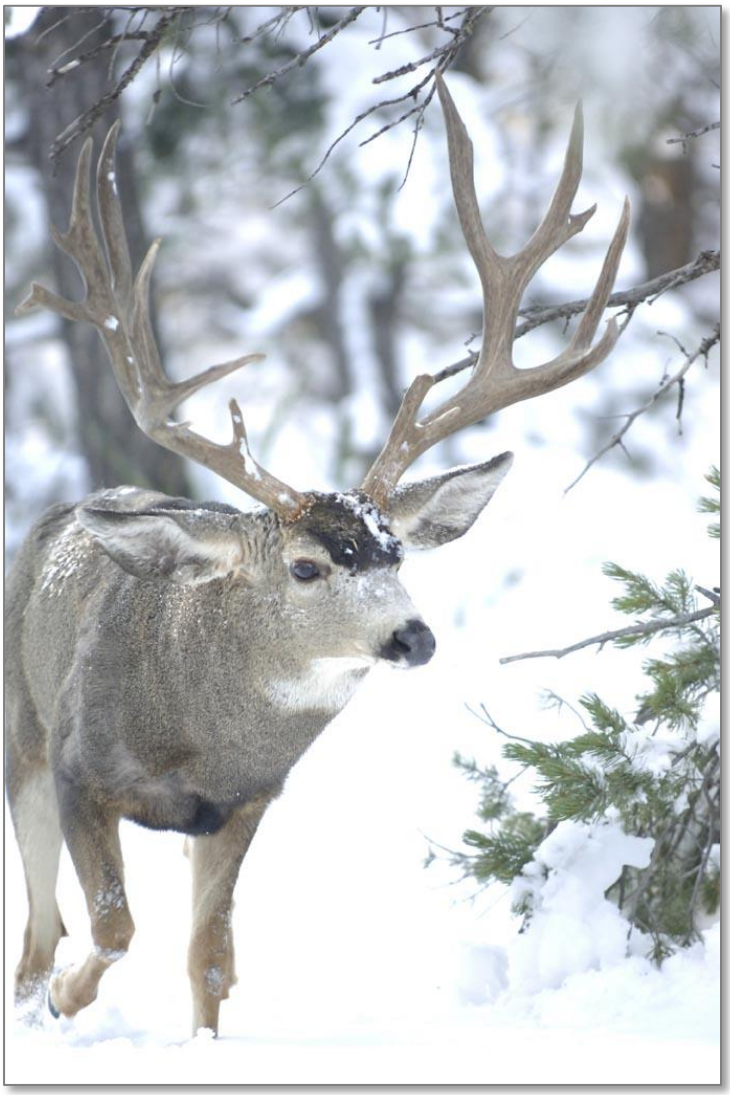
Rangewide Status of Black-tailed and Mule Deer



July 2012

Mule Deer Working Group

Alaska (2012)

Sitka Black-tailed Deer are native to the wet coastal rainforests of Southeast Alaska (ADFG's Region 1) and due to historic translocation efforts, now have established populations in parts of South Central Alaska (ADFG's Region 2), including Prince William Sound and on Kodiak and Afognak islands. Populations fluctuate predominately with the severity of winters - increasing during a series of mild winters and sometimes declining drastically after one or more severe winters. Predation can slow recovery of deer after these events. Deer hunter harvest is believed to be compensatory in Southeast Alaska due to the remoteness of most areas. However, early and heavy snowfall can occasionally concentrate deer on beaches in areas relatively close to population centers, leading to substantially higher harvests in these areas.

In Southeast Alaska, deer are fairly ubiquitous and the most frequently pursued big game species. Deer density on the mainland has historically appeared to be much lower than on the islands, presumably due to lower habitat quality. Because of the island geography, varying weather patterns, different predator guilds, and differences in the extent and pattern of forest logging, deer densities can vary greatly from one game management unit (gmu) to another and even within gmu's. Population size or density has never been formally calculated in Southeast Alaska due to the associated difficulties with various techniques in remote and densely forested areas. Historically we have attempted to index changes in deer abundance using deer pellet count surveys and hunter surveys. Currently we are conducting research to evaluate the implementation of a regional monitoring protocol using deer fecal DNA.

Southeast Alaska experienced two severe and one above average winter between Fall 2006 and Spring 2009, which led to heavy declines in the deer population and management actions such as doe closures were taken in parts of the region. In response to these reduced deer numbers, we documented a strong decline in deer harvest, deer hunters, and hunter effort. Since then we have experienced three below average winters across most of the region, and believe our deer populations are recovering in most areas, and hunter harvest and effort appear to be on the rebound as well. However, deer densities are of particular concern in two GMU's; 1A and 3Z. The reduced number of deer in these areas from historic highs is thought to involve the effects of periodic severe winters, reduced habitat quality, and predation slowing deer population recovery.

In Region II, the weather patterns can differ substantially from what is occurring in Region 1. GMU 6 the winter of 2011-12 was the worst in probably 30 years. Winter mortality is estimated at >50% overall, and was probably 70% in western Prince William Sound. In GMU 8, the Kodiak archipelago deer population decreased due to a severe winter with near record snowfall in 2011-12. Deer mortality was most severe on the northern portion of Kodiak and the western side of Afognak Island.

Karin McCoy – July 6, 2012

Alberta (2012)

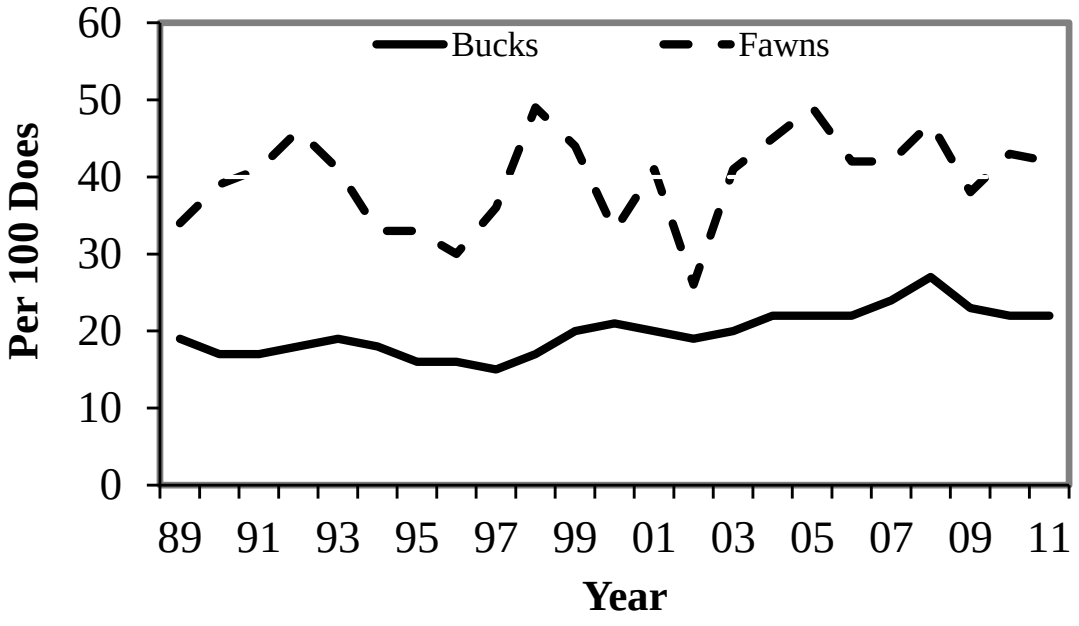
The 2010-11 winter kept most of the southern half of the province under continuous snow cover, unusual for the south. Estimates of loss were from 25-50% of southern mule deer populations. This past winter was much milder, with warmer temperatures and little snowfall. While this benefitted deer populations that were recovering from the previous two years, lack of snow cover throughout most of the province meant very few aerial surveys were conducted. This left wildlife managers applying conservative estimates for mule deer populations going into the 2012 hunting season. While populations are expected to have recovered to some degree, hunting permits will remain conservative in the south, to ensure continued recovery and to ensure quality hunting opportunities continue to be provided to residents. In the north, mule deer populations continue to fare well, with most areas at goal. Opportunity for residents to harvest a mule deer remain high. Along the foothills, populations continue to do well, creating some depredation problems for wildlife managers, but also providing many excellent hunting opportunities.

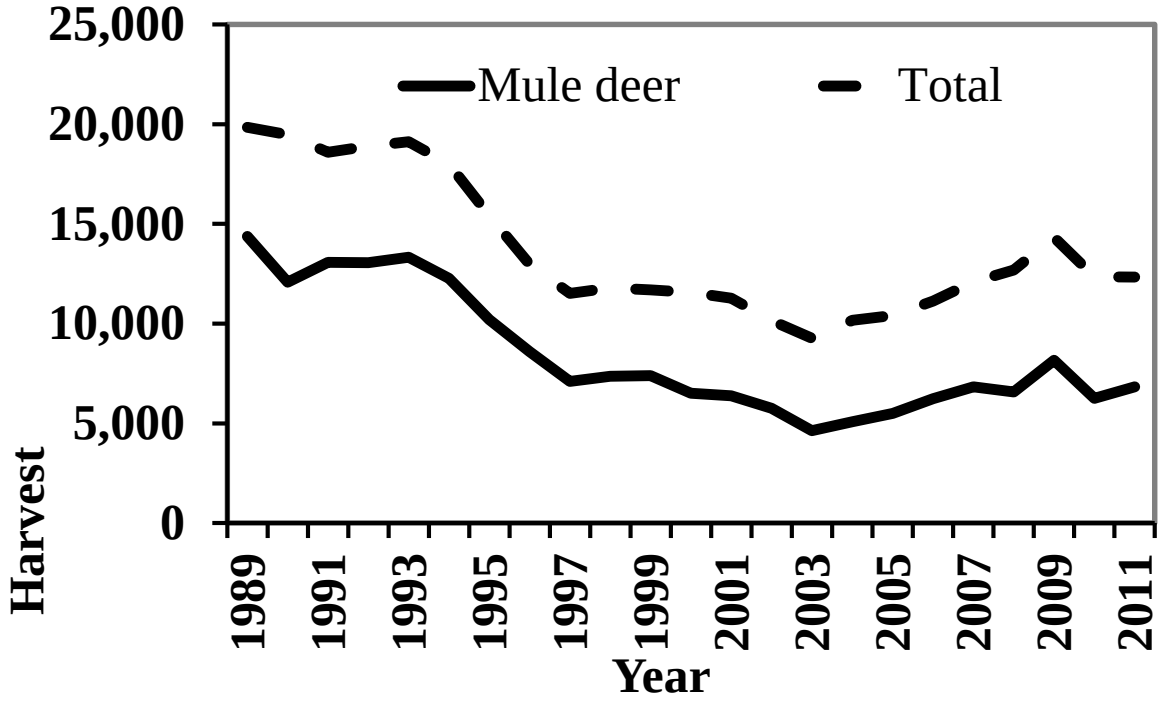
The provincial population was estimated last fall to be 142,000 pre-season. This provided approximately 10,500 hunting opportunities for residents for Antlered Mule Deer (64,500 hunters apply) and approximately 15,400 hunting opportunities for residents for antlerless Mule Deer (24,000 hunters apply). As well, approximately 1700 opportunities were available for non-residents through Outfitter-guide allocations.

Kim Morton – July 9, 2012

Arizona (2012)

Arizona has seen a few years with improved recruitment. Buck to doe ratios statewide were at 22:100, whereas fawn to doe ratios statewide were at 42:100. Harvest reached a recent peak in 2009, although harvest has been on an increasing general trend since 2003. The increasing trend in harvest is probably indicative of a mule deer population that continues to improve gradually.



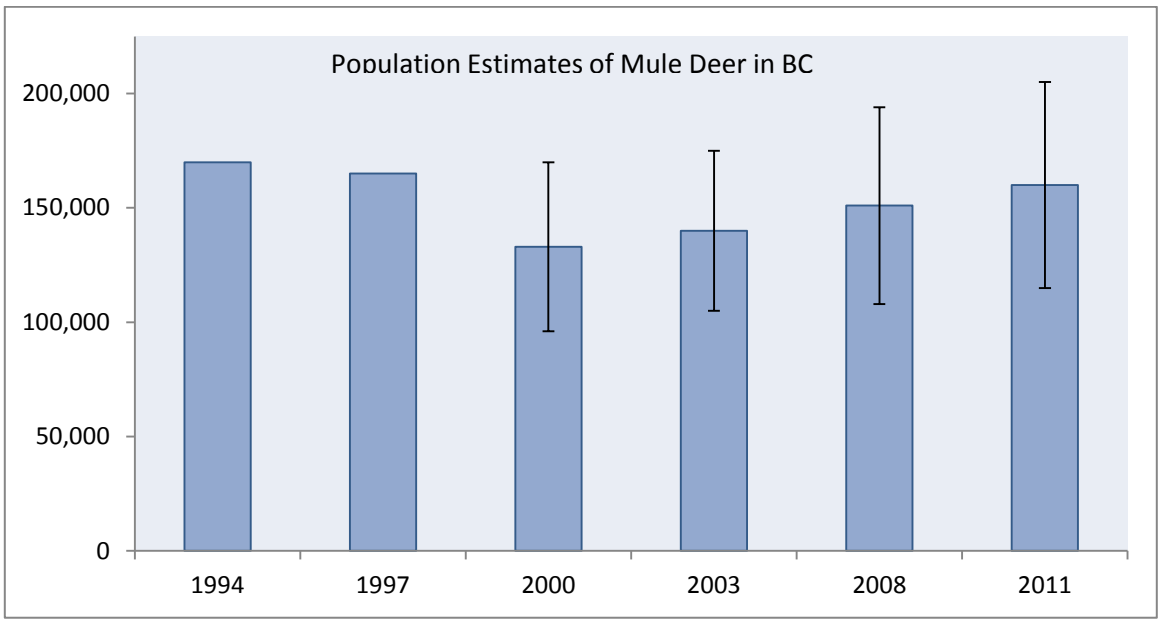


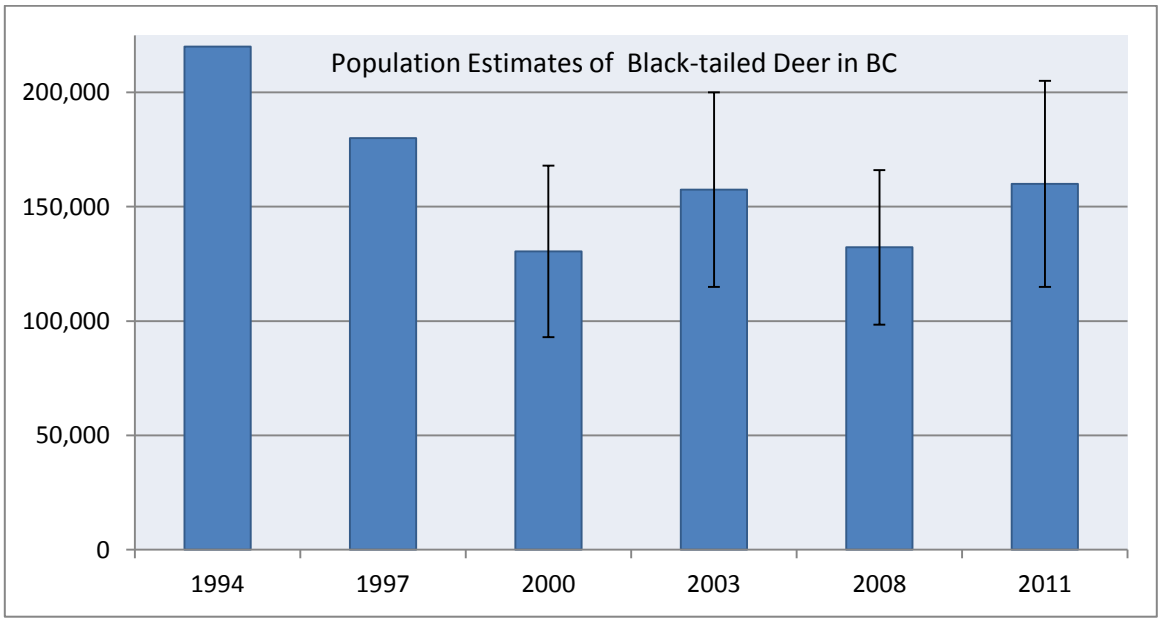
Brian Wakeling - July 3, 2012

British Columbia (2012)

Mule deer numbers declined in the late 1990's, largely due to winter conditions. Since then, they are considered to be generally stable with the 2011 provincial estimate of 115,000-205,000. Populations on the northern edge of the range vary with winter severity. Mule deer surveys are generally focused to obtain post-hunt buck:doe ratios and overwinter fawn survival.

Black-tailed deer numbers declined during the early to mid-2000's mainly due to increased predation from cougars. Both cougar and wolf population levels stabilized late in the decade resulting in a subsequent general increase in deer numbers in parts of the province. The 2011 provincial estimate for black-tailed deer is 99,000-155,000. Black-tailed deer surveys are conducted to obtain pre-hunt buck:doe ratios and overwinter fawn survival.





Gerry Kuzyk – June 4, 2012

California (2012)

Based on the following population estimates, the overall trend in California is a gradual decline in the deer population (blacktail and mule deer).

2011 – 455,810
2010 - 455,446
2009 - 484,400
2008 - 487,000
2007 - 440,000
2006 - 422,000
2005 - 635,000 *
2004 - 461,000
2003 - 540,000
2002 - 564,000
2001 - 602,000
2000 - 539,000
1999 - 541,000
1998 - 539,000

* Our model includes harvest, and in CA the weather can have a huge impact on harvest. In 2005 we had early storms that coincided with several opening weekends resulting in a higher than normal kill. We need to use these numbers with caution.

California is so diverse that there are very different issues impacting various parts of the state, but the overall trend is a slow decline in both population and harvest. The one thing California has more of than any other state is people. The human population increased about 11% from 2000 to 2011. Census data show 33,871,648 people in 2000 versus 37,692,912 in 2011. The result is a large number and variety of human related impacts.

Mary Sommer June 19, 2012

Colorado (2012)

The statewide post-hunt 2011 deer population estimate is 418,000, compared to 526,000 in 1998. The current statewide population objective range is 528,000 - 578,000.

We have concern over declines in herds in the far western portions of the state. Multiple factors such as diminished habitat quality and quantity from development, drought, and invasive plants are leading to the declines. The severe winter of 2007-2008 also had significant impact on many of our largest western slope deer herds. Some deer herds in the central and northern mountains also are performing well, and population sizes are increasing. Most eastern plains deer populations remained relatively stable.

The current weighted average sex ratio objective for herds statewide is 30 bucks/100 does. During the post-hunt herd inventories in 2011, Colorado Parks and Wildlife employees classified 57,600 deer and observed an average sex ratio (weighted by population size) of 29 bucks/100 does. Sex ratios are considerably higher than in 1998 because in 1999 we went from primarily over-the-counter deer licenses to totally limited deer hunting statewide. During those helicopter surveys we observed an average age ratio (weighted by population size) of 56 fawns/100 does.

Based on observed post-hunt sex ratios and high hunter success, overall buck hunting quality continues to be good, even in some of the declining herds. In these herds, we have lowered license numbers to achieve the sex ratio objectives and maintain quality hunting.
Andy Holland – June 20, 2012

Hawaii

Idaho (2012)

Idaho's mule deer population appears to be relatively stable over the last decade. The state is in the process of converting population monitoring to allow total population estimates through a combination of sightability and modeling. Although not all areas have yet been assessed, recent winter population levels have likely been between 170,000 and 200,000. Short- and long-term objectives are to increase mule deer numbers. Post-season buck ratios have exceeded the statewide minimum of 15:100 does. However, December fawn:doe ratios are typically low (mid 50s to mid 60s), and fawn survival varies dramatically among years, from 30% to 76%.

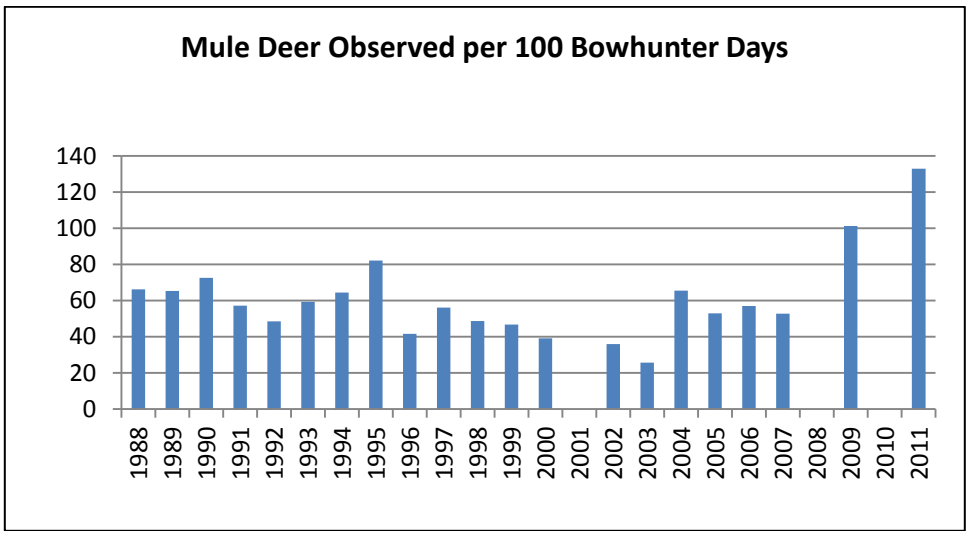
Population Parameters

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	58	64	61	60	56	63	61	56	60	
Buck:Doe	20	19	17	16	19	21	22	16	15	
Fawn Survival	0.57	0.71	0.40	0.69	0.54	0.76	0.31	0.69	0.30	0.52
Adult Doe Survival	ND	ND	ND	ND	ND	ND	0.87	0.89	0.90	0.90

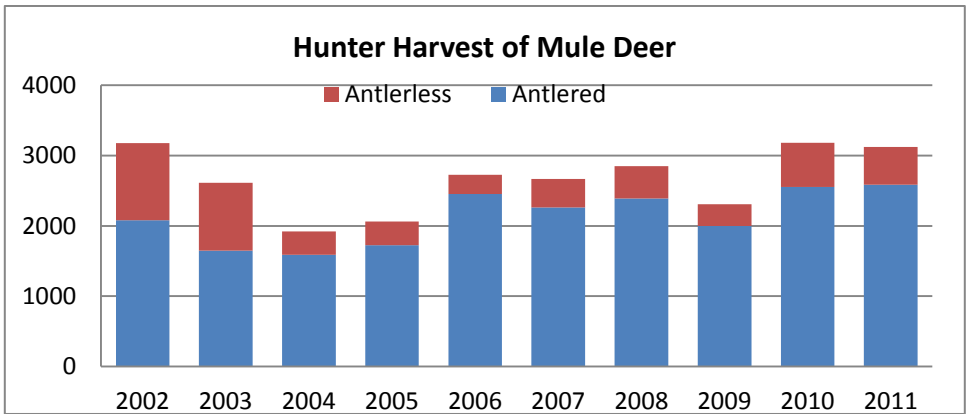
Mule deer harvest in Idaho has been approximately stable since the mid 1990s (ave. 19,370 bucks) following a steep decline in harvest in the early 1990s. From the hunting perspective, one the largest changes has been the decline in hunter numbers and hunter days since the early 2000s (but with little attendant change and actually an increase in buck harvest). Percent 4-point or larger bucks in the harvest has remained stable in the upper 30% range.
Tom Keegan, June 21, 2012

Kansas (2012)

Mule deer comprise a small portion of the deer population in Kansas; however, they receive enthusiastic support from deer hunters. Limited survey efforts are currently used to monitor mule deer populations. We do not have estimates of survival rates. Distance sample surveys estimated the density to be 1.8 mule deer per square mile with a 95% CI of 1.2 to 2.7 in the western portion of the range and approximately 0.2 deer per square mile in the eastern portion of their distribution. Estimates from spotlight surveys indicate a pre-firearm season population of approximately 35,000 animals. No discernible trends have been seen in the herd composition with a 6 year average of 42.5 bucks per 100 does and 76.5 fawns per 100 does. Field biologists indicate a declining population of mule deer, especially in the eastern part of their range; however, bowhunters report a stable to increasing trend in mule deer observations during their hunts.



Our regulations are liberal for white-tailed deer while being restrictive for mule deer. In recent years mule deer could be taken on about 10% of the deer permits issued in Kansas and more than half of those have been issued to landowners. Each permit allows only one deer to be taken and all permits that allow the hunter to take a mule deer are also valid for a white-tailed deer. This practice takes pressure off mule deer while allowing approximately 19,000 people to have the potential to pursue them. Hunters have taken an average of 2,664 mule deer per year during the last 10 years.



Lloyd Fox - June 29, 2012.

Montana (2012)

Population estimates continue to be problematic with staff exploring refinements. Current process is model with harvest and field observations of recruitment and bucks as inputs. Given this, recent estimates have been as much as 30% below long term average.

Declines in recruitment and observed numbers observed for last 5-6 years in western and parts of central Montana. Recent significant declines in eastern Montana associated with inclement winter/spring weather and/or drought. Increased recruitment in some areas based upon spring 2012 surveys. Harvest management responses have included conservative adjustments to general license harvest opportunity and dramatic reductions in antlerless B licenses.

Quentin Kujala – July 9, 2012

Nebraska (2012)

Mule deer buck harvest was 7,585 in 2011, down 17% from the record high of 9,115 in 2008. Suspected causes are disease (meningeal worm and chronic wasting disease) and interspecific competition as whitetails expand into mule deer range. Mule deer populations in western management units appear to be doing fine but some eastern units have seen mule deer harvest declines of 50% or greater in the last three years. 83% of the mule deer bucks harvested were age two or older, the highest on record.

Mule deer doe harvest in 2011 was 2,115, the lowest in 25 years. It is hoped that this low antlerless harvest will allow for expansion of mule deer populations when conditions become favorable.
Bruce Trindle – May 24, 2012

Nevada (2012)

Mule deer population estimates in Nevada show a slight decline from 1998 to 2012. Estimates for 1998 – 2001 were relatively stable at approximately 130,000 deer statewide. After a one year decline of ~20,000 animals in 2002, estimates have remained relatively stable at 106,000 to 112,000 (112,000 in 2012). Hunter success is slightly down from long-term averages and, although by design through hunt structure, remains close to 40%. Percent 4 point or better in the harvest also remains stable and was 42% in 2011. Although production and recruitment were up in 2011, the outlook for 2012 is more cautious as climatic conditions less favorable to fawn production and recruitment have occurred around much of the Great Basin and fall surveys in 2012 could be telling of the looming drought conditions.

1998	132,000
1999	134,000
2000	133,000
2001	129,000
2002	108,000
2003	109,000
2004	105,000
2005	107,000
2006	110,000
2007	114,000
2008	108,000
2009	106,000
2010	107,000
2011	109,000
2012	112,000

Tony Wasley, May 23, 2012.

New Mexico (2012)

With the latest drought hitting New Mexico beginning in the winter of 2010-2011 mule deer populations suffered through a year with low fawn recruitment. Some decent moisture occurred statewide during the monsoon season followed by the 2011-2012 winter with more precipitation than in 2010-2011. In the southwestern portion of the state, fawn:doe ratios ranged from a low of 17:100 to a high of 36:100. While this year New Mexico experienced better precipitation during the

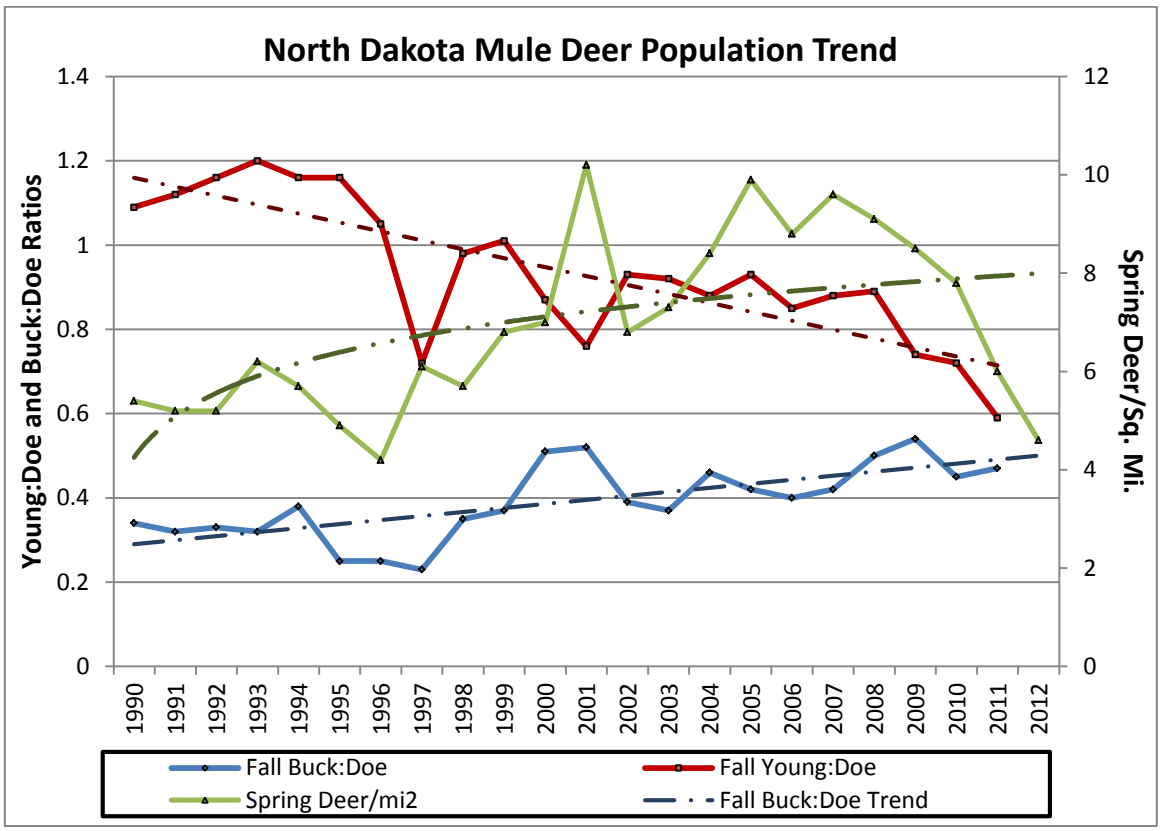
winter and spring, we are still below normal levels. Therefore, mule deer will continue to suffer from drought conditions.

On a positive note, during the past two years, wildfires in New Mexico have burned several hundred thousand acres. Specifically in the Gila National Forest, two fires have burned close to 400,000 acres. This will translate into better habitat conditions for mule deer in those areas.

Habitat work is continuing; funded both through our Habitat Stamp Program that funds improvements on BLM and USFS property as well as funds originating from our Enhancement Tags (statewide licenses). These monies are used in selected priority areas. We have identified three focus areas for this work; GMU 2C in NW New Mexico, GMU 18 in central NM and GMU 16 in west-central NM. Other areas are also being considered. Prescriptions include thinning and burning as well as planting and seeding with native browse. Our MD Habitat Guidelines are used as a reference in implementing these prescriptions.

Our Private Land Deer Conservation Incentive Program has expanded over the past 5-6 years to include 35+ ranches. This program will be revitalized because the Department is going to focus more time and effort with landowners. Approximately 40% of New Mexico is private land, therefore it is critical to work with landowners on the landscape to improve conditions for mule deer. This program works with private landowners to improve the habitat on their property for deer. Again, we try to use the Guidelines as the guiding documents in consulting with the landowners. In return for their work, participating landowners are issued specific sport hunting incentives which they can market with the goal of using generated funds to further pay for their habitat work. Additional funds are sought through Federal Farm Bill Programs. Consultation among agency staff, landowners, NRCS, etc. has resulted in an expansion of the acreage in the program as well as increased variety of prescriptions employed.
Kevin Rodden and Barry Hale - July 9, 2012

North Dakota (2012)
The badlands mule deer population index increased from 1998 – 2007 due to a decade of very mild winters and a conservative harvest strategy. Since 2008, mule deer numbers have declined due to three consecutive severe winters (2008-2010). Fawn production following the winters of 2008-2010 resulted in the three lowest fawn:doe ratios since the late 1950s. The 2012 spring index was 23% lower than 2011and 33% lower than the long-term average.



Bruce Stillings June 1, 2012

Oregon (2012)

Deer populations continue to be a major Hot Topic in Oregon. Oregon's estimated Mule deer population declined from 260,000 (1998) to 216,000 in 2009. Deer numbers jumped up to 222,000 for 2010 but dropped back to 215,000 in 2011.

Because of the difficulties with surveying black-tailed deer (BTD) we do not develop population estimates each year. However, in 1998 the BTD population was estimated at 387,000, declining to 320,000 in 2004, the population seems to have been relatively stable since that time. Deer hair loss syndrome was first found in Oregon in the late 1990's and is suspected of being a principal factor in subsequent declines (along with changes to forest management and maturing forest habitats, particularly on federal lands). Oregon is currently evaluating methods developed by Brinkman et al. 2010 to estimate black-tailed deer populations using fecal DNA and a mark-resight estimator.

Both mule deer and BTD are substantially below the long term statewide management objectives/benchmarks.

Don Whittaker June 22, 2012

Saskatchewan (2012)

Overall, Mule deer populations are below long term averages in several core areas resulting from poor winter conditions in 2010-2011. This decline has led to the decrease in licences available for both antlerless and either-sex licence types across the province. A mild winter in 2012 coupled with the low number of available licences should prove favorable for our population as a whole.

Travis Williams June 28, 2012

South Dakota (2012)

Mule deer populations on the prairie in South Dakota have decreased in recent years, presumably as a result of severe winters and increased harvest rates. Severe winter weather the past 3 years has caused direct mortality of mule deer supported by laboratory diagnostics and increased staff observations/public reports of dead deer. Winter extremes also likely had a negative effect on the overall herd health, supported by decreased fawn:doe counts documented in recent fall recruitment surveys. High hunter harvest rates, however, are believed to be primarily responsible for the statewide trend on the prairie as SDGFP has liberalized regulations in attempt to bring deer herds in most management units down to socially acceptable levels (whitetails and mule deer). Mule deer in the Black Hills region are stable but remain at low densities despite restricted harvest regulations promulgated several years ago.

Andy Lindbloom June 28, 2012

Texas (2012)

Last year's extreme drought had a significant impact on Texas' mule deer population. Our 2012 surveys indicated a decrease of 44% in the Trans-Pecos population. In addition, the average fawn crop was well below our average at 13%. In the Panhandle, the mule deer population also decreased (47%). The fawn crop was also very poor (6%) and below the region's average. The lack of fawns did impact our population estimates; however, adult mortality appears to have occurred based upon survey data and field reports.

Shawn Gray June 15, 2012

Utah (2012)

Mule deer populations estimates in Utah have been fairly stable with some weather related declines and rebounds since 1998. Our population estimates are as follows:

1998 307,500
1999 316,530
2000 322,320
2001 309,070
2002 281,350
2003 268,180
2004 289,400
2005 296,050
2006 318,450
2007 302,430
2008 273,100
2009 301,700
2010 293,700
2011 286,100

We have a 2013 objective of 350,000 and a long term objective of 423,000.

Anis Aoude, May 29, 2012

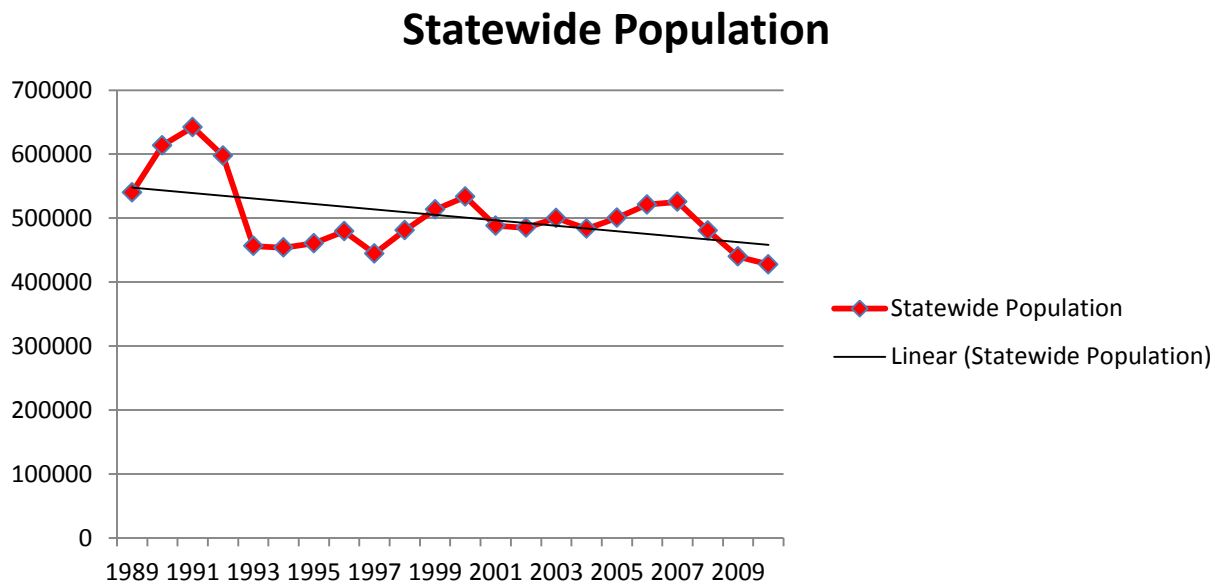
Washington (2012)

Washington state mule deer and black-tailed deer populations have rebounded and are doing well with a couple of exceptions. In North-Central (Okanogan, Chelan, Douglas counties) mule deer

seem to be at the capacity that the habitat will support and continue to respond positively to habitat improvements when they occur. Mild to average winters the last two years allowed for better over-winter survival and strong young of the year recruitment. In the Northeast, mule deer numbers have climbed slightly. More habitat enhancement (prescribed burns, thinning) could be accomplished on public lands that would benefit mule deer in the Northeast. The Palouse, Southeast-Blue Mountains, and the Columbia Basin mule deer populations are all stable and doing well. Summers are a critical time of year for deer in these portions of the state. The last two summers in these three areas have been near normal to slightly cooler and wetter than normal, so the ill effects of summer drought have not been a problem for mule deer. South-central mule deer populations (Yakima and Kittitas counties) are experiencing a slight resurgence after recent losses attributed to hair loss caused by exotic lice. Deer numbers are still well below what they were prior to the occurrence of hair loss. The mule deer/black-tailed deer transitional populations along the Columbia River gorge on the state's southern border are doing well, with harvest and post-hunt buck numbers responding to more restrictive hunting season structures that were implemented recently. Black-tailed deer in western Washington are mostly stable and healthy. Some site specific sub-populations still struggle with hair loss as well less than ideal habitat conditions. There is still potential to improve black-tailed deer numbers if private and public forests were managed for an increase in early successional habitat.
Jerry Nelson – June 29, 2012

Wyoming (2012)

Mule deer populations throughout Wyoming have generally declined since the early 1990s. It was apparent, given declining mule deer fawn production starting in the late 1980s, some populations were responding in a density-dependent fashion to decreasing habitat availability and/or quality. In addition, fawn productivity, on average, has decreased in many herd units by ~25/100. Throughout Wyoming, mule deer populations have declined by an estimated 106,000 deer since 2000. After the 2010 hunting seasons, it was estimated there were 427,000 mule deer in the state. This is 24% below the statewide objective of 564,650 mule deer.



Daryl Lutz, May 23, 2012

Yukon (2012)

There has been no more formal inventory work on mule deer in Yukon. Trends in abundance and distribution are monitored primarily through sighting and motor vehicle collision reports. Numbers and distribution have generally been on the upswing since first reports in the early 1900 but there are still likely fewer than 1000 territory-wide. More recently, numbers have been rebounding after a decline in 2008/09, believed to be the result of harsh winter conditions.

Rick Ward – May 24, 2012
