MISSISSIPPI DEPARTMENT OF WILDLIFE, FISHERIES, AND PARKS

Paul T. Brown

2016–2017 DEER PROGRAM REPORT

Prepared by MDWFP Wildlife Bureau

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Leaf River Refuge Manager Quinton Breland, Upper Sardis Refuge Manager Garald Mize and other dedicated Commission employees protected, trapped, and relocated hundreds of deer throughout the state during the days of Mississippi's deer restoration. In addition, game wardens of the deer restoration era protected a growing deer population through the early period of wildlife conservation. During this time in the history of Mississippi's Wildlife Management Agency, game wardens provided their own gun and vehicle. Mobile communication with other officers was little more than a futuristic dream. Wildlife enforcement, or the game warden that interfered with the "jacklighting" of deer and illegal harvest of game, was not a welcome sight to some hunters at that time. Refuge managers and game wardens of the restoration era are pioneers of the deer population restoration success of today.

Today the conservation officer is considered differently. Most men and women who enjoy the bountiful wildlife that exist today regard the conservation officer as a partner in wildlife conservation. As those who are responsible for the deer populations we treasure are remembered, the conservation officers of today should not be forgotten.

The Mississippi Legislature is also to be thanked for their historic and sustained funding of this agency. Since the establishment of the Game and Fish Commission in the days of the Great Depression, the Mississippi Legislature has funded efforts necessary for the wildlife conservation success story of the white-tailed deer.

The Commission on Wildlife, Fisheries, and Parks and the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) Executive Committee is to be commended for the foresight and vision to allow the Wildlife Bureau the ability to assemble a team of dedicated biologists.

Mississippi landowners have made deer in the Magnolia State a reality. Without landowner desire to have deer, most agency efforts would have proved ineffective. Those of us who hunt, study, or admire the white-tailed deer truly thank you.

This report would not have been possible without the efforts and cooperation of the MDWFP Wildlife Bureau technical staff and field personnel. An extra-special appreciation is extended to Linda Taylor for assistance with many aspects of producing and mailing this report and to Brian Byrd who was responsible for the report layout and design. A special thanks to Rick Dillard who coordinates the Magnolia Records Program on his own time. Also, a special thanks to all the other biologists who had a part in developing this report. Finally, a very special thank you to Jason Price for assistance with generating reports and the development of the XNet analysis program.

Additionally, Mississippi's deer hunters deserve special recognition. Your data collection efforts, concern, and support for white-tailed deer are vital to the success of the White-tailed Deer Program.

Look for this information on www.mdwfp.com/deer. If you have any questions, feel free to contact us.

FEDERAL AID IN WILDLIFE RESTORATION

A PITTMAN-ROBERTSON FUNDED PROJECT

This report is produced by the Technical Guidance Project, Statewide Wildlife Development Project and Statewide Wildlife Investigations Project and is primarily funded by Federal Aid in Wildlife Restoration.

The first Deer Management Assistance Program (DMAP) report was completed in 1982. The DMAP report evolved into the Mississippi Deer Program Report in 1992. Since its inception, the purpose of this report was to consolidate all deer-related information obtained by the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) personnel. Compilation of these data provides managers the opportunity to analyze trends in deer harvest and physiological condition. In the future, managers will have a chronicled reference to more effectively critique effects of changes in season framework, hunter success, and climatic conditions on the deer population.

Decision makers such as the Mississippi Legislature and the Mississippi Commission on Wildlife, Fisheries, and Parks have served the sportsmen of the state well. Deer harvest and management opportunities exist today that were considered far-fetched thirty years ago.

Deer hunting regulations are subject to change each year, and often do. However, this year regulations did not change significantly from 2015–2016.

Annual surveys are used to monitor trends in hunter harvest and effort in Mississippi. This year the survey format remained unchanged from the 2015–2016 hunting season. The current harvest survey was conducted by Responsive Management in a phone survey format. This method provided harvest estimates much earlier than the previous surveys. Hopefully, the MDWFP can continue to use more progressive survey methods to acquire harvest estimates much sooner.

The MDWFP began using a computer summary program (XtraNet) to enter and analyze all DMAP and WMA data in 2004–2005. Data from 2001–2016 was analyzed using XtraNet, while data prior to 2001 was analyzed using DeerTrax. This may be the cause for differences in some numbers between 2000 and 2001. Statewide Compiled DMAP summary tables and graphs include harvest reports from WMAs that collect deer harvest data. Soil region summary tables only include data from private lands on DMAP to give managers a better representation of expectations for their property.

Sample methods were unchanged for the following data sets:

- Hunter effort and harvest information collected on state-operated WMAs
- Employee observations of deer mortality due to motor vehicle collisions
- Enforcement Bureau monitoring of deer hunting-related citations
- CWD monitoring and data collection
- Deer research projects conducted in cooperation with Mississippi State University Forest and Wildlife Research Center

Department wildlife biologists continued to inform and educate sportsmen relative to deer management needs and issues. Our goals are to provide insight into current deer management needs while providing the leadership to identify and guide future issues. All known media sources were utilized in this process. In addition, public presentations were made to hunting, civic, and conservation groups throughout the state. This report captures a portion of the informational and educational efforts.


Paul T. Brown

The summer and fall of 2016 will be remembered as one of the driest in the history of Mississippi. A record setting drought began in July and lasted into November. Natural vegetation was withered and food plots could not germinate until late November. Similar to the fall drought of 2015, the deer herd was impacted on several fronts. The natural vegetation was unable to keep up with deer browse pressure and even declined in quality as the nutrient rich new growth dried up in the summer sun. Plants were also no longer able to provide the high moisture content needed during doe gestational periods.

September is the most popular, but not always the best, time to plant fall food plots. Several hunters who planted in September 2016 had to replant due to the dry conditions throughout most of the state. Many food plots that were planted in September or early October laid dormant for months, with the seed losing germination due to the heat.

Stress tends to increase production in plants, and the oaks followed suit. The acorn crop was exceptionally heavy across most of the state. Food plot use was minimal due to late establishment and the abundant acorn crop. Additionally, hunters were met by one of the warmest winters on record for most of Mississippi.

Herd health was able to rebound during the deer season. Deer body weights statewide experienced a 2-5% increase in all age classes of bucks and does. Many DMAP clubs saw lactation rates remain about the same, while some reported a small decrease from the 2015-2016 season. Deer harvest objectives and recommendations proved to be difficult for some clubs to meet.

In summary, the 2016-2017 season was impacted by drought conditions, warm temperatures, and abundant acorns early in the season. For the second consecutive year, deer observations decreased and lower hunter success was reported across the state.

CENTRAL REGION

By Pierce Young

The 2016–2017 deer season was difficult for many hunters, not only in harvesting a deer, but also even seeing a deer. A rough fall drought, one of the warmest winters on record, and an overabundant winter acorn crop created a scenario in which deer movement during most of the hunting season was extremely low and scattered. Food plots for much of Central Mississippi were mostly non-existent. The few landowners who tried to plant food plots did not benefit from their efforts until after December rains. Total deer harvest in this region dropped by 10% from the previous season. Deer population numbers are very property specific throughout Central Mississippi, but overall deer harvests seem to have remained at a level to keep the deer herd stable after years of needed herd reduction. Deer harvest has been relatively high in the region since 2012 in order to reduce overabundant herd numbers on many properties. Several properties are no longer needing to harvest higher numbers of does to reduce the population, and are now only harvesting enough to maintain the population and to keep it stable. Although the warm winter weather and overabundant acorn crop made it difficult to see deer last season, it helped deer recover from two years of rough summer and fall droughts. Food was abundant at the end of last season and the conditions of deer going into the spring were good. Compared to the 2015–2016 season, body weights increased on bucks and does in all age classes. Lactation rates also increased. Antlers remained stable on bucks among all age classes.

Hunter selection in this region continued to favor older age bucks, with 34% of the buck harvest being 4.5+ years old. This is similar to the last few years. More hunters are passing younger bucks with the goal of growing bucks to maturity. However, only about 20% of the top quality bucks in the region are being allowed to reach their full potential with most of them being harvested at about 3.5 years old.

After one of the more difficult hunting seasons in recent years, hunters have a lot to look forward to in Central Mississippi for the 2017–2018 season. Due to the lower buck harvest, there will be many older bucks in the herd. In addition, spring herd health evaluations revealed that deer herds were in excellent condition. Spring and summer rains this year have produced abundant and nutritious natural vegetation to help with antler growth and fawn production. Bucks born in the wet 2012–2014 summers will be reaching ages of 3.5 to 5.5 years old, which means larger antlers in the woods than the last couple of seasons. If moist weather conditions continue into the fall for food plots, hunters in this part of the state can expect a very good upcoming hunting season.

DELTA REGION

By Alec Conrad

Deer season opened in the midst of a severe drought. Natural browse was in very poor condition and for the most part, the only sources of water available to deer were deeper brakes, rivers, and creek channels. Where oaks were available, acorns were abundant. Bow hunters who were able to capitalize on deer concentrated around water sources and oaks dropping acorns early were successful during October and early November.

By the opening of the early primitive weapons season, food plots were poorly developed and for all practical purposes, were failing to supplement deer nutrition or to facilitate harvest opportunities. Hunters perched in stands overlooking food plots during November were undoubtedly disappointed. Food plots responded favorably as the season progressed, but in many areas, acorns were plentiful enough to minimize deer use of food plots throughout the season.

Overall, many hunters reported low deer observations for the second consecutive season. Reported harvest was 14% lower than reported during the 2015-2016 season in the Delta, breaking a five year streak of elevated harvest in the region. Doe harvest suffered slightly more than buck harvest. However, considering the long term trend, 2016-2017 would be regarded as an average season. Deer harvest in the Batture exhibited a slight increase in harvest compared to the 2015-2016 season, probably because much of January was closed to hunting due to high water levels. Delta DMAP club participants attributed the decline in harvest to drought causing poor food establishment, abundant acorns, and warm temperatures. For perspective, the average temperature throughout the deer season (October through the end of January) was the highest recorded since 1950. Conditions were not favorable to encourage deer movement or for hunters to pursue them.

It's reasonable to believe that the herd has declined in some areas, particularly those impacted by recent floods. Recent Mississippi River flooding combined with late summer droughts have taken a toll on deer. This has been evident in average body weights and reported lactation during the past seasons, particularly in the Batture. Flooding during the summer of 2015 was devastating to the fawn crop and while lactation from the 2016 season seems to indicate improvement, reports from 2016 were still below average. Similar patterns are observable in data from the south Delta in flood prone areas. Fortunately, these effects are the result of extremely stressful environmental events and hopefully not indicative of a new normal.

On the bright side, there were record proportions of older aged bucks in the harvest reports, where 86% of bucks harvested were at least 3.5 years old and 65% at least 4.5 years old in the

Delta. Buck age structure was skewed slightly more towards older aged bucks in the Batture. Mature buck antler indices exhibited little difference from recent averages in either region. The 2016-2017 season seemed to be distinguished from others with respect to trophy buck harvest, primarily due to excellent fawn crops in 2011 and 2012 and recent increased efforts to protect young and middle-aged bucks.

EAST CENTRAL REGION

By Conner Herrington

Deer harvest in the East Central region along with reports of deer sightings decreased once again during the 2016-2017 hunting season. Many hunters experienced food plot failures or delayed production due to the drought leading into the fall. Those who timed planting with the late rains had better success. Deer movements were further suppressed by the abundant acorn crop throughout the region this year. Considering these factors along with an above average temperature over the winter, it is no surprise that harvest numbers were down. The majority of hunters reported nocturnal deer movement to be the main factor reducing harvest numbers this season.

Doe harvest varied by property, but was overwhelmingly down this season throughout the region. Much of the harvest reduction can be attributed to poor deer movement. However, many clubs and landowners stated that reduced harvest was in part intentional due to a fear that too many have been harvested over the years. Herd health parameters indicate that the deer herd is stable across much of the region, if not increasing in localized areas. This seems to be very property specific and habitat dependent, thus increasing the importance of data collection. Doe body weights remained stable from last year, and lactation rates were stable while increasing in areas.

Buck harvest decreased in terms of bucks per acre, but the quality of bucks remained the same. Hunters are still targeting more mature deer when compared to previous years. Throughout the region, the percentage of 3.5+ year old bucks either increased or remained the same as in the 2015-2016 season. Antlers remained stable throughout the region. The trend of targeting more mature bucks seems to be growing in popularity across much of the East Central region.

Hunters should be optimistic going into the 2017-18 deer season. An increase in mature bucks on the landscape should be expected due to reduced buck harvest the previous two seasons. Two seasons of reduced doe harvest combined with stable lactation rates should provide hunters with more harvest opportunities in the coming seasons. Additionally, the abundant rainfall over the spring and summer should have deer herds in good health heading into the 2017-2018 deer season.

NORTH EAST REGION

By John Gruchy

Deer harvest in North East Mississippi continued a downward trend during the 2016–2017 season. During the 2015-2016 season, the North East region saw a decline in antlerless harvest, while buck harvest was fairly consistent with previous seasons. The 2016-2017 season saw a continuation of the decreased doe harvest, but buck harvest declined as well. Overall, deer harvest on DMAP clubs was lower than it has been in more than a decade. The ratio of older bucks in the harvest also declined, giving way to more two year-olds. In all likelihood several factors, including unseasonably warm winter weather, a large hard-mast crop, and crippling fall drought, contributed to the decreased harvest. However, it is important to note that since the tremendous fawn crops of 2011 and 2012, reproduction appears to have been low to moderate over the past several seasons.

Despite an overall lack of fall food plots, a result of severe drought and widespread fall army worm issues, doe and buck weights appeared to be at or above soil region averages. The bumper mast crop surely contributed to herd health this season. While buck age structure appeared to be shifted towards slightly younger animals, antler characteristics were fairly consistent among age classes compared to previous seasons.

Based on harvest data and landowner and biologist observations, Hemorrhagic Disease was documented more often than normal. This is not surprising in a drought year, although the onset of clinical symptoms appeared to be later than usual during the fall of 2015.

While hunter observations and overall harvest were down, the large fawn crops of 2011 and especially 2012 continue to show up readily in the harvest data. The bucks in this cohort will be fully mature during the 2017-2018 season. Given the poor buck harvest during 2016–2017 season, it is highly likely a good proportion of these animals are still on the hoof. Hopefully the 2017–2018 deer season will be much improved.

SOUTH EAST REGION

By Kamen Campbell

The 2016-2017 season was below average for the South East region. Not only were total numbers down, but so was quality. Part of the reduction in quality was the fact that more 2-year-old bucks were harvested than usual. In fact, 35% of bucks harvested were 2 years old, higher than any other age category. Only 26% were 4 or older, the lowest in the state. Doe harvest was also down. The South East region is the only region in the state where buck harvest exceeded doe harvest. I believe this reduction is not purely a function of a decreasing deer herd, but also, the hunter's decisions to personally reduce doe harvest due to perceived population changes at the property level.

Along with most of the state, the South East region experienced a drought from late summer through the fall. Unlike some of the state, there were a few scattered showers along the coast in early fall. However, there were places that received enough rain to get food plots planted and germinated in September. Mast crops were great in the South East region. This obviously only impacted areas with hardwood components. Many clubs in the South East region consist primarily of industrial timberland.

I expect the 2017-2018 season to be better than the 2016-2017 season for several reasons. From hunter reports, fawn production seems to be high this year. More hunters are reporting does with twins than in previous years. This may be due to increases in habitat quality from the above average summer rainfall. Also, when only 26% of bucks harvested are 4 or older, that leaves mature bucks on the hoof for the following year. Conditions are ripe for buck harvest and quality to improve for the 2017-2018 season in the South East region.

SOUTH WEST REGION

By Kamen Campbell

Buck and doe harvest declined in the South West region for the 2016-2017 season. This followed the same trend as the statewide harvest estimates. While fewer bucks were harvested, several DMAP clubs in the South West region harvested their largest buck on record during the 2016-2017 season. Doe harvest also declined. That said, less does were recommended for harvest that year.

Data from the South West region shows that 83% of the bucks harvested were 3 or older. Additionally, 62% were 4 years or older! The doe age structures shows that 18% of the does were 1.5 years old. This is average for the state. Also, 66% of the does were 3 years or older and the average weight of mature does was 113 lbs. This average weight is second only to the Delta region.

Several factors were at play that potentially influenced the total harvest. First, was the late summer drought. Very little rain fell from late July up through the end of October. Many hunters watched food plots fail and had to replant. Some plots had only the rye grass germinate and produce. In short, 2016-2017 was a bad year for food plots. Second, 2016-2017 was another great year for mast production. Red and white oaks produced well. Soft mass was spotty in the South West region.

The outlook for the 2017-2018 season is promising. Above average rainfall characterized the spring and summer months up through mid-August. This kept preferred browse plants producing longer into the growing season than usual. As a result, I expect yearling body weights to increase, as well as fawn production. In addition, the reduced buck harvest over the last few years has left more mature bucks on the landscape. These bucks should be at their prime following the great growing season this summer. I expect to see club records, if not state records, set during the 2017-2018 season in the South West region.

Also, looking forward, the state passed regulations reducing doe harvest in the newly designated South West region. The bag limit for doe was dropped from 5 to 3 on private land, and no does are to be harvested on open public land outside of youth gun season and archery season. The impact from these regulations may not be visible immediately but will hopefully increase deer numbers around the Homochitto National Forest region where low deer numbers have long been a concern among the hunting public.

Deer Management Assistant Program (DMAP)

Through a cooperative research program with Mississippi State University initiated in 1976, the Mississippi Department of Wildlife, Fisheries, and Parks gained information which provided biologists with the ability to evaluate population density relative to carrying capacity, using body condition indicators and harvest age structure parameters rather than less reliable population estimates or browse surveys. This Cooperative Deer Management Assistance Program (DMAP) directly involved hunters in management through the collection of biological data. The interpretation of these data, through a partnership between DMAP cooperators and biologists, is the guiding principle of DMAP. From a two-county pilot project in its first year, DMAP grew steadily until participation peaked in 1994 at almost 1,200 cooperators with over 3.25 million acres under management.

SPECIAL NOTE: The statewide summary table and all graphs include harvest data from all DMAP Cooperators including private lands, Wildlife Management Areas (WMAs), and National Wildlife Refuges (NWRs) that participate in DMAP. WMA and NWR data is not included in the soil region summary tables and is used for comparison in Tables 4-6 and Figures 7-10.

As a result of the diligence of hundreds of DMAP cooperators, representing thousands of sportsmen, the DMAP has successfully provided biologists and managers with data to aid in recommendations and decision making. In excess of 10,000 deer have annually been available for comparative purposes since 1983. (Figure 2). Analysis of these data over time captured the obvious trends and subtle changes in deer herd condition and structure. These trends and changes would have gone undocumented and possibly undetected without DMAP. Clubs and landowners participating in DMAP may or may not be representative of hunter goals and objectives on a statewide basis. Therefore, deer condition and herd structure on DMAP lands may not reflect herds on un-managed lands. However, a data source representing more than 1.5 million acres is credible and can be used to examine trend data. The statewide coverage of private lands enrolled in DMAP at the county level can be seen in Figure 1.

Liberalized season structure and antlerless bag limits during the mid-1990s allowed land managers the flexibility to meet harvest objectives without the need for additional antlerless tags, which resulted in a decline in DMAP participation in the mid-2000s (Figure 3). Furthermore, it is likely that the peak in DMAP participation in the mid-2000s represents the peak in MDWFPs resources that could effectively be applied to DMAP cooperators. This "saturation point" was predicted in the original DMAP position statement drafted in 1980. Furthermore, the original intent of DMAP was to teach private landowners and hunting clubs to manage their own deer herds. It stands to reason that some clubs might cease to participate in the program once they have gleaned a sufficient amount of deer management knowledge. Current enrollment (public and private lands) includes 513 cooperators on 1,836,388 acres. Total DMAP cooperators have remained on a slightly declining trend since 2002. Total DMAP harvest has mirrored the changes in cooperators and acreage in DMAP over the past few years.

Based on the statewide DMAP data, a few trends are apparent. The addition of statewide antler criteria, first "the 4-point rule" in 1995 followed by statewide spread and main-beam regulations in 2009, have successfully protected yearling bucks and increased the average age of all harvested bucks (Figure 5). Indeed, it is quite impressive to consider that 44% of the buck harvest from 1991-1994 was made up of yearlings, while only 9% of bucks harvested today are yearlings, many of those are taken as management bucks or by youth hunters. Subsequently, three-quarters of the buck harvest on DMAP properties during the 2016-2017 season were mature (>3.5-year-old). Furthermore, acreage per mature buck harvested is half of what it was during the early 1990s. This means that mature bucks are likely more common over the past 5 hunting seasons than they have been since such data has been recorded.

Statewide condition data for harvested deer on WMAs, NWRs, and DMAP properties are summarized in Table 2. This table shows trend data on various antler parameters such as spread, length, circumference, and points. Other information, such as weight and lactation data are also provided in this table.

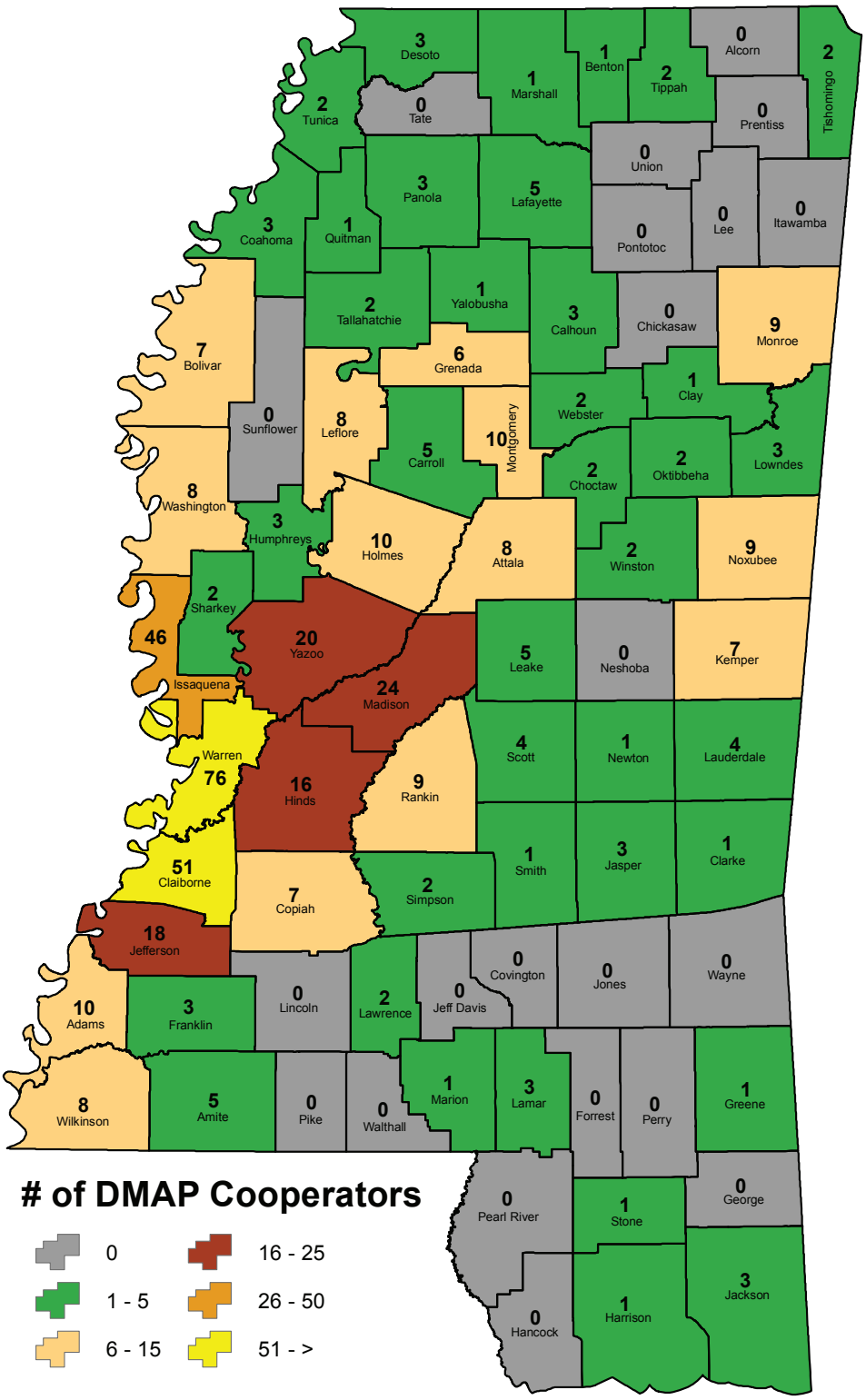
Perhaps the greatest utility of the DMAP dataset is the ability to evaluate specific deer herd metrics based on soil region. Categorizing harvest data based on soil region, or major physiographic region (Figure A6), is believed to be appropriate based on peer-reviewed research which has shown morphological and antler characteristic differences between these regions. These data are presented in Tables A2–A12 in the appendix. Soil region summaries allow individual DMAP cooperators and landowners not enrolled in DMAP to compare their harvest data to soil region averages. These tables also present trend data on various antler characteristics such as spread, length, circumference, and points. Other information, such as weight and lactation data are provided in these tables as well. WMA and NWR harvested deer are not included in the soil region tables to give a better representation of the deer herd on private lands on DMAP.

A comparison of WMAs/NWRs to DMAP properties reveals some interesting trends. During the 2016 season, private DMAP cooperators harvest nearly two does for every buck, while buck and doe harvest was nearly even on public lands. Acres per deer harvested showed a declining trend through the mid-2000s on both DMAP and WMAs/NWRs, indicating increased hunter success. During the 2015 and 2016 season,

however, acres per deer harvested showed a relatively large increase, indicating decreased hunter success. Although, average temperature during December 2015 and 2016 was warmer than the average temperature during the previous several Decembers, raising the traditional concerns of decreased deer movement related to temperatures, no peer-reviewed study has shown that such effects on deer movement exist. Furthermore, prolonged late-summer drought throughout much of the Central Region likely impacted cool-season food plot production, and very likely hunter success.

The early-2010s saw similar trends across private DMAP cooperators and WMAs/NWRs of increasing hunter success in harvesting mature bucks (e.g., decreasing acres per 3.5+ year old buck harvested; Figure 9. Notice the dramatic increase in harvest efficiency of mature bucks from 2009 to 2010. This is surely due to the implementation of minimum spread/main beam criteria on these WMAs/NWRs during the 2008 season. The average age of bucks harvested on WMAs/NWRs was once again above 3 years old. This is very likely a perfect reflection of the reduction in antler criteria on many WMAs during the previous 3-year cycle of WMA regulations. Increased antler criteria on many WMAs were reinstated for the 2015 season. As expected, more young bucks were protected. It is important to consider harvest data from WMAs/NWRs as minimum harvest numbers. Compliance with WMA regulations for submitting harvest data is known to be poor on some WMAs and NWRs.

Figure 1 **2016 DMAP Cooperators by County**



MANAGEMENT BUCK TAGS

During the 2003–2004 hunting season, sub – 4 point bucks were legal to harvest for the first time since 1995. Sub – 4 point tags were issued by biologists to DMAP properties on a limited basis for management purposes. During the 2005–2006 season, tags were expanded to include management bucks. Management buck tags were issued to DMAP properties to allow additional harvest of sub-optimal bucks. Tagged bucks did not count against the annual bag limit. During the 2006–2007 season, tagged bucks did not count towards the annual and daily bag limit. The management buck harvest criteria were for an individual property and determined by the DMAP biologist. A written management justification issued by the MDWFP must accompany any request for such a permit. Management bucks harvested under this permit must be identified with a tag immediately upon possession and noted in the harvest records.

A total of 2,554 tags were issued to these DMAP properties, and 446 of these tags were used. The number of DMAP clubs receiving buck tags, the number of tags issued, and the number of tags used all increased for the first time in several seasons. (Figure 13). More properties are increasing the intensity of their management strategies resulting in more management tags being issued. These tags allow the harvest of sub-optimal bucks that would otherwise be passed up by hunters being that the deer would count against the daily and annual bag limit. Removal of these deer aids many clubs in maintaining deer herds at or under habitat carrying capacity.

ANTLERLESS TAGS

MDWFP issues antlerless tags to DMAP properties to allow the harvest of antlerless deer in excess of the annual and daily bag limits. These tags have been issued since the implementation of DMAP. When antlerless seasons were liberalized statewide, the need for antlerless tags was reduced. However, some landowners and managers still have the need for more antlerless harvest than the state bag limit allows. With the changes in bag limits for the upcoming season, antlerless tags will be more important for properties with the need to harvest surplus does.

Antlerless tags are issued by DMAP biologists based on an individual landowner's or manager's need. The tags can only be used on antlerless deer on the property to which they were issued.

DMAP biologists issued 6,510 antlerless tags to 185 DMAP clubs during the 2016–2017 season. Antlerless tags issued and the number of clubs issued tags have decreased since the 2012–2013. However, the increased interest in deer management throughout Mississippi correlates with significantly more tags being issued on an average annual basis since the 2003-–2004 and previous seasons.

Figure 13 **Buck Tags Issued and Used on DMAP Properties**

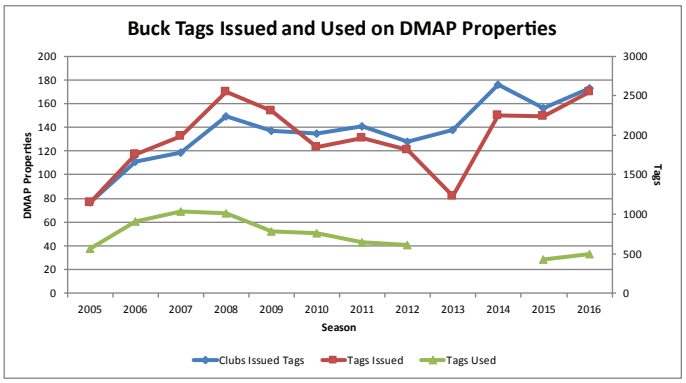


Figure 14 **Buck Tags Issued and Used on WMAs**

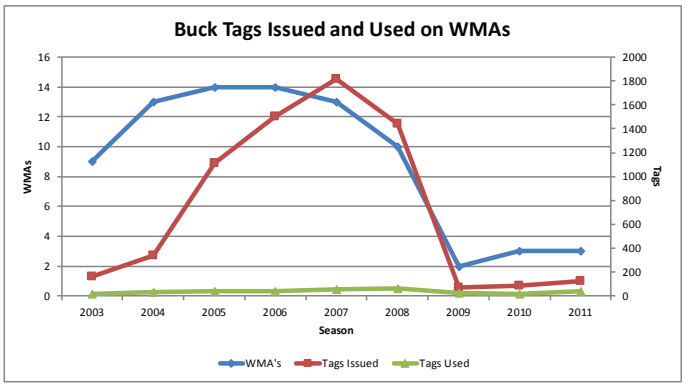


Table 1: DMAP Participation and Harvest by County					
County	Cooperators	Acres	Bucks	Does	Total
ADAMS	10	32,279	107	142	249
ALCORN	0	0	0	0	0
AMITE	5	12,914	68	92	160
ATTALA	8	20,545	131	178	309
BENTON	1	1,200	5	10	15
BOLIVAR	7	43,475	180	348	529
CALHOUN	3	6,401	9	38	47
CARROLL	5	6,414	27	54	81
CHICKASAW	0	0	0	0	0
CHOCTAW	2	4,277	26	38	64
CLAIBORNE	51	84,283	615	1,131	1,746
CLARKE	1	4,200	19	32	51
CLAY	1	5,085	6	59	65
COAHOMA	3	14,274	82	117	199
COPIAH	7	19,552	92	178	270
COVINGTON	0	0	0	0	0
DESOTO	3	11,037	55	83	138
FORREST	0	0	0	0	0
FRANKLIN	3	7,841	44	58	102
GEORGE	0	0	0	0	0
GREENE	1	2,138	2	5	7
GRENADA	6	25,464	55	121	176
HANCOCK	0	0	0	0	0
HARRISON	1	3,500	10	6	16
HINDS	16	31,708	115	324	439
HOLMES	10	19,594	87	128	215
HUMPHREYS	3	5,538	27	46	73
ISSAQUENA	46	101,433	769	1,050	1,819
ITAWAMBA	0	0	0	0	0
JACKSON	3	10,100	38	45	83
JASPER	3	4,219	12	28	40
JEFF DAVIS	0	0	0	0	0
JEFFERSON	18	38,959	168	309	477
JONES	0	0	0	0	0
KEMPER	7	18,012	53	102	155
LAFAYETTE	5	15,218	37	96	133
LAMAR	3	5,008	8	14	22
LAUDERDALE	4	17,901	31	90	121
LAWRENCE	2	2,990	24	28	52
LEAKE	5	11,310	37	63	100
LEE	0	0	0	0	0

Table 1: DMAP Participation and Harvest by County					
County	Cooperators	Acres	Bucks	Does	Total
LEFLORE	8	17,542	37	100	137
LINCOLN	0	0	0	0	0
LOWNDES	3	5,948	26	49	75
MADISON	24	46,587	247	638	885
MARION	1	7,329	66	42	108
MARSHALL	1	2,300	2	2	4
MONROE	9	27,577	79	204	283
MONTGOMERY	10	24,316	102	138	240
NESHOBA	0	0	0	0	0
NEWTON	1	3,495	17	21	38
NOXUBEE	9	31,025	91	167	258
OKTIBBEHA	2	2,427	12	13	25
PANOLA	3	5,889	29	112	141
PEARL RIVER	0	0	0	0	0
PERRY	0	0	0	0	0
PIKE	0	0	0	0	0
PONTOTOC	0	0	0	0	0
PRENTISS	0	0	0	0	0
QUITMAN	1	7,295	11	81	92
RANKIN	9	21,853	61	135	196
SCOTT	4	9,600	28	66	94
SHARKEY	2	2,564	4	21	25
SIMPSON	2	8,014	35	30	65
SMITH	1	7,400	29	30	59
STONE	1	600	10	4	14
SUNFLOWER	0	0	0	0	0
TALLAHATCHIE	2	5,150	24	38	62
TATE	0	0	0	0	0
TIPPAH	2	5,900	25	41	66
TISHOMINGO	2	4,816	15	30	45
TUNICA	2	6,300	18	15	33
UNION	0	0	0	0	0
WALTHALL	0	0	0	0	0
WARREN	76	120,566	994	1,247	2,241
WASHINGTON	8	41,453	277	323	600
WAYNE	0	0	0	0	0
WEBSTER	2	8,172	24	66	90
WILKINSON	8	25,070	123	177	300
WINSTON	2	6,543	14	49	63
YALOBUSHA	1	1,376	5	10	15
YAZOO	20	43,881	244	524	768
TOTALS	459	1,087,857	5,588	9,386	14,975

Statewide DMAP Data

Table 2: Statewide Compiled Data (DMAP, NWR, WMA)					
Season	**2016**	**2015**	**2014**	**2013**	**2012**
Acres	1,836,388	1,988,597	2,175,845	2,219,276	2,275,923
Total Deer	17,841	19,381	25,860	25,646	27,054
Bucks	6,980	7,237	9,341	9,379	10,107
Does	10,829	12,075	16,458	16,214	16,881
Acres/Deer	102.9	102.6	84.1	86.5	84.1
Bucks	263.1	274.8	232.9	236.6	225.2
Does	169.6	164.7	132.2	136.9	134.8
Avg. Age ALL Bucks	3.5	3.2	3.3	3.3	3.4
Avg. Points ALL Bucks	7.2	7.2	7.2	7.1	7.3
Avg. Length ALL Bucks	16.9	17.0	17.1	16.9	17.2
Avg. Spread ALL Bucks	13.9	14.0	14.2	14.0	14.3
Acres/3.5+ Bucks	369.7	396	361	365	355
% 0.5 Yr. Bucks	1.7	3.9	4.9	4.8	5.6
Weight	64.0	61	63	61	62
% 1.5 Yr.	9.3	12.0	11.1	13.3	12.0
Weight	107.0	103	106	106	110
Points	2.5	2.5	2.4	2.4	2.6
Circumf.	1.8	1.9	1.8	1.9	2
Length	4.9	5	4.9	5	5.7
Spread	5.5	5.4	5.4	5.5	5.8
% 2.5 Yr.	12.1	10.8	14.2	11.9	13.2
Weight	142.0	138	143	143	146
Points	6.7	6.6	6.6	6.7	7.0
Circumf.	3.4	3.3	3.4	3.4	3.5
Length	14.6	14.7	14.9	14.8	15.4
Spread	12.0	12.1	12.3	12.1	12.6
% 3.5 Yr.	22.3	23.6	21.9	21.8	25.1
Weight	164.1	159	166	162	167
Points	7.7	7.6	7.7	7.6	7.9
Circumf.	4.0	3.8	4.0	3.9	4.0
Length	17.3	17.1	17.6	17.3	17.8
Spread	14.1	13.9	14.3	14.1	14.6
% 4.5+ Yr.	52.2	45.7	42.6	43.1	38.4
Weight	184.7	176.0	181.3	177.6	180.9
Points	8.3	8.1	8.1	8.1	8.3
Circumf.	4.5	4.4	4.4	4.4	4.5
Length	19.9	19.3	19.6	19.6	19.9
Spread	16.0	15.5	15.8	15.7	16.1

Table 2 Continued: Statewide Compiled Data (DMAP, NWR, WMA)					
Season	**2016**	**2015**	**2014**	**2013**	**2012**
% 5.5 Yr.	17.0	14.0	12.0	12.4	11.1
Weight	187.0	179	185	178	183
Points	8.5	8.3	8.2	8.2	8.4
Circumf.	4.5	4.5	4.5	4.5	4.6
Length	20.2	19.8	20.0	19.9	20.4
Spread	16.3	15.8	16.1	15.9	16.4
% 6.5 Yr.	7.2	6.3	6.3	6.6	5.2
Weight	190.0	182	184	180	184
Points	8.3	8.1	8.1	8.2	8.5
Circumf.	4.7	4.5	4.6	4.6	4.7
Length	20.4	19.8	20.3	20.2	20.8
Spread	16.5	15.8	16.2	16.1	16.7
% 7.5 Yr.	2.1	1.9	1.9	1.5	1.6
Weight	189.0	182	187	186	181
Points	8.2	8.0	8.2	8.2	8.3
Circumf.	4.6	4.6	4.6	4.6	4.7
Length	20.2	20.2	20.6	20.5	21.1
Spread	16.1	16.3	16.6	16.8	16.7
% 8.5 Yr.	1.7	1.4	1.3	1.0	1.2
Weight	191.0	175	179	180	178
Points	8.7	7.7	7.5	8.0	8.3
Circumf.	4.8	4.6	4.5	4.6	4.7
Length	20.7	19.8	20.0	20.7	20.9
Spread	16.7	15.8	15.9	16.8	16.4
Doe Age Classes					
% 0.5 Yr.	7.8	6.7	7.5	7.1	8.5
% 1.5 Yr.	16.1	19.6	17.7	22.2	19.4
% 2.5 Yr.	19.2	17.9	23.4	17.9	18.5
% 3.5+ Yr.	56.9	55.8	51.3	52.8	53.6
Doe Weights					
0.5 Yr.	64	61	63	61	63
1.5 Yr.	95	91	94	94	98
2.5 Yr.	107	105	108	108	108
3.5+ Yr.	114	112	115	113	115
% Doe Lactation					
1.5 Yr.	11	8	11	10	13
2.5 Yr.	51	43	51	48	60
2.5+ Yr.	54	52	60	57	65
3.5+ Yr.	56	55	64	60	67
All Antlerless Harvest					
% 0.5 Yr. Buck Fawns	2.5	2.4	2.8	2.7	3.4
% 0.5 Yr. Doe Fawns	7.6	6.8	7.5	7.1	8.6
% 1.5 Yr. Does	15.7	19.7	17.7	22.1	19.4
% 2.5 Yr. Does	18.8	17.9	23.4	17.8	18.5
% 3.5+ Yr. Does	55.5	53.2	48.7	50.2	50.2

Statewide DMAP Data

Table 3: Harvest Summary of Bucks by Age Class: WMAs, NWR, and DMAP														
Season	Sample	0.5 Bucks		1.5 Bucks		2.5 Bucks		3.5 Bucks		4.5+ Bucks		Avg. Age All Bucks	Total 3.5+ Bucks	Acres/ 3.5+ Bucks
		#	%	#	%	#	%	#	%	#	%			
1991	17,850	1,250	7.0	8,392	47.0	5,280	29.6	2,200	12.3	677	3.8	2.1	2,877	960
1992	17,631	1,410	8.0	8,025	45.5	5,154	29.2	2,255	12.8	831	4.7	2.1	3,086	847
1993	18,585	1,301	7.0	8,527	45.9	5,488	29.5	2,489	13.4	852	4.6	2.1	3,341	740
1994	19,128	1,530	8.0	7,063	36.9	6,529	34.1	3,020	15.8	1,045	5.5	2.2	4,065	685
1995	14,650	1,172	8.0	3,391	23.1	5,503	37.6	3,367	23.0	1,187	8.1	2.5	4,554	560
1996	16,350	1,308	8.0	3,246	19.9	6,489	39.7	3,601	22.0	1,697	10.4	2.3	5,298	500
1997	14,405	1,296	9.0	2,737	19.0	5,474	38.0	3,601	25.0	1,585	11.0	2.4	5,186	456
1998	13,278	1,062	8.0	2,257	17.0	4,913	37.0	3,452	26.0	1,859	14.0	2.5	5,311	410
1999	12,336	740	6.0	1,974	16.0	4,441	36.0	3,454	28.0	1,727	14.0	2.9	5,181	393
2000	11,329	566	5.0	1,586	14.0	3,965	35.0	3,399	30.0	1,813	16.0	3.0	5,211	379
2001	10,639	404	3.8	1,319	12.4	3,660	34.4	3,192	30.0	2,064	19.4	2.7	5,256	468
2002	11,258	394	3.5	1,396	12.4	3,411	30.3	3,580	31.8	2,466	21.9	2.8	6,046	438
2003	10,737	374	3.5	1,546	14.4	2,974	27.7	3,328	31.0	2,512	23.4	2.8	5,841	456
2004	10,100	362	3.6	1,121	11.1	2,818	27.9	3,373	33.4	2,424	24.0	2.9	5,797	463
2005	9,719	452	4.7	1,205	12.4	2,196	22.6	3,285	33.8	2,576	26.5	2.9	5,861	408
2006	10,246	460	4.5	1,506	14.7	2,070	20.2	3,125	30.5	3,074	30.0	3.0	6,199	387
2007	10,026	426	4.3	1,564	15.6	2,115	21.1	2,938	29.3	2,978	29.7	3.0	5,915	401
2008	10,234	438	4.3	1,750	17.1	2,129	20.8	3,142	30.7	2,763	27.0	2.9	5,905	346
2009	10,033	472	4.7	1,354	13.5	2,027	20.2	3,120	31.1	3,060	30.5	3.0	6,180	401
2010	10,341	496	4.8	1,293	12.5	1,706	16.5	3,630	35.1	3,630	35.1	3.2	7,259	347
2011	9,468	528	5.6	1,146	12.1	1,553	16.4	2,642	27.9	3,598	38.0	3.2	6,240	358
2012	9,525	571	6.2	1,211	12.5	1,330	12.2	2,535	25.7	3,878	43.4	3.2	6,413	355
2013	8,896	446	5.0	1,244	14.0	1,118	12.6	2,041	22.9	4,047	45.5	3.3	6,088	365
2014	8,847	461	5.2	1,039	11.7	1,322	14.9	2,050	23.2	3,975	45.0	3.3	6,025	361
2015	6,949	284	4.1	866	12.5	780	11.2	1,710	24.6	3,309	47.6	3.4	5,019	396
2016	6,661	271	4.1	620	9.3	803	12.1	1488	24.3	3479	52.3	3.5	4,967	370

Table 4: Comparison of Bucks Harvested on WMAs and NWR vs. Private Lands DMAP

Season	Average Age		Average Points		Average Length		Average Spread		Acres/3.5+	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
2001	2.7	2.4	7.2	6.8	15.9	14.1	13.0	11.3	359	1,582
2002	2.8	2.5	7.3	6.8	16.3	14.2	13.2	11.4	346	1,359
2003	2.9	2.1	7.2	5.7	16.5	12.1	13.3	10.1	346	2,429
2004	2.9	2.6	7.2	7.1	16.4	15.1	13.4	12.6	361	2,299
2005	3.0	2.4	7.2	6.2	16.6	13.6	13.6	11.3	300	2,249
2006	3.1	2.4	7.1	6.3	16.5	14.1	13.5	11.6	293	1,666
2007	3.0	2.7	7.1	6.6	16.5	14.3	13.6	11.6	311	1,024
2008	2.9	2.6	7.0	6.5	16.2	14.1	13.5	11.7	310	1,055
2009	3.1	2.7	7.3	7.0	16.8	15.0	13.8	12.4	312	1,048
2010	3.2	3.0	7.3	7.2	17.3	15.9	14.0	13.0	270	915
2011	3.3	2.8	7.4	6.9	17.1	15.0	14.1	12.4	266	915
2012	3.5	2.8	7.4	7.1	17.5	15.7	14.5	13.0	269	962
2013	3.5	3.0	7.1	7.0	17.1	15.7	14.2	13.0	266	960
2014	3.5	2.9	7.2	7.1	17.4	15.9	14.4	13.2	263	1,130
2015	3.6	3.1	7.2	7.1	17.2	15.9	14.1	13.2	290	1,053
2016	3.8	3.1	7.5	7.2	17.9	16.4	14.7	13.6	261	949

Table 5: Comparison of WMAs and NWR vs. Private Lands DMAP

Season	Acres		Total Deer		Bucks		Does		Acres/Deer		Acres/Buck		Acres/Does	
	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public
2001	1,651,465	672,467	21,362	2,934	9,162	1,571	12,200	1,363	77	229	180	428	135	493
2002	1,784,033	664,467	22,878	2,740	9,779	1,488	13,099	1,252	78	243	182	447	136	531
2003	1,819,587	684,967	23,401	2,431	9,442	1,278	13,959	1,153	78	282	193	536	130	594
2004	1,858,150	627,746	23,042	1,844	9,152	903	13,890	941	81	340	203	695	134	667
2005	1,701,621	726,346	21,585	2,310	8,912	1,148	12,673	1,162	79	314	191	633	134	625
2006	1,644,169	694,682	23,678	2,455	9,304	1,178	14,374	1,277	69	283	177	590	114	544
2007	1,671,498	756,762	23,054	3,007	9,177	1,672	13,877	1,335	73	252	182	453	120	567
2008	1,645,261	765,780	23,086	3,691	9,223	1,807	13,863	1,884	71	207	178	424	119	406
2009	1,629,220	767,216	21,853	3,461	8,450	1,658	13,403	1,803	75	222	193	463	122	426
2010	1,543,744	726,671	23,993	3,545	8,782	1,559	15,211	1,986	64	205	176	466	101	366
2011	1,336,729	803,417	19,563	4,203	7,449	2,066	12,114	2,137	68	191	179	389	110	376
2012	1,511,078	761,895	23,616	3,649	8,436	1,734	15,180	1915	64	209	179	439	100	398
2013	1,407,704	762,132	21,000	3,291	7,394	1,646	13,606	1645	67	232	190	463	103	463
2014	1,406,799	765,872	21,884	3,241	7,551	1,571	14,333	1670	64	236	186	488	98	459
2015	1,255,453	718,213	16,268	2,730	5,873	1,275	10,395	1455	77	263	214	563	121	494
2016	1,086,657	749,731	14,944	2,897	5,586	1,417	9,386	1,472	73	259	195	529	116	509

Figure 2 **DMAP Deer Harvest**

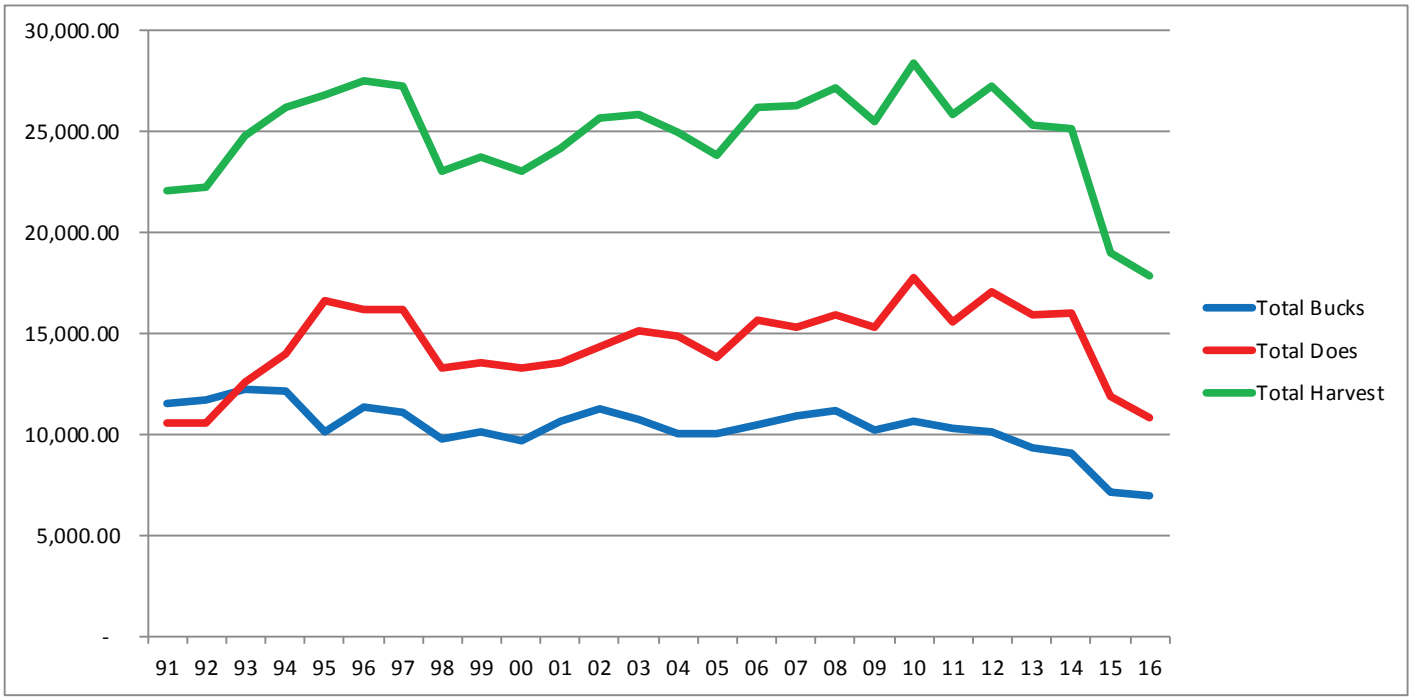


Figure 3 **DMAP Acreage and Cooperators**

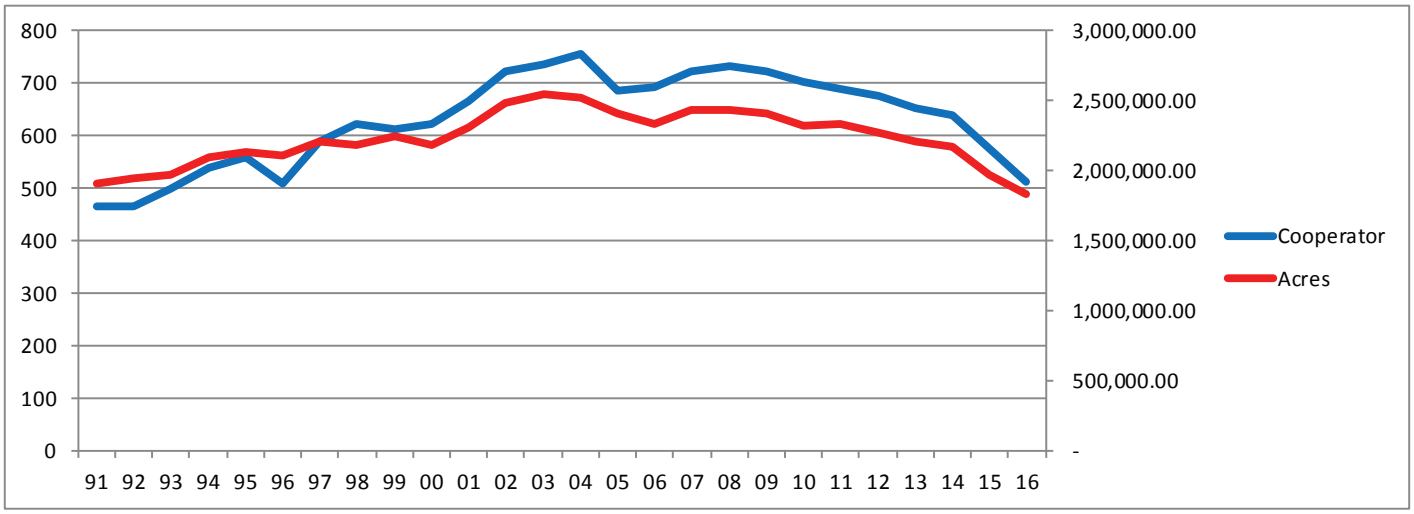


Figure 4 **Acres/Deer Harvest**

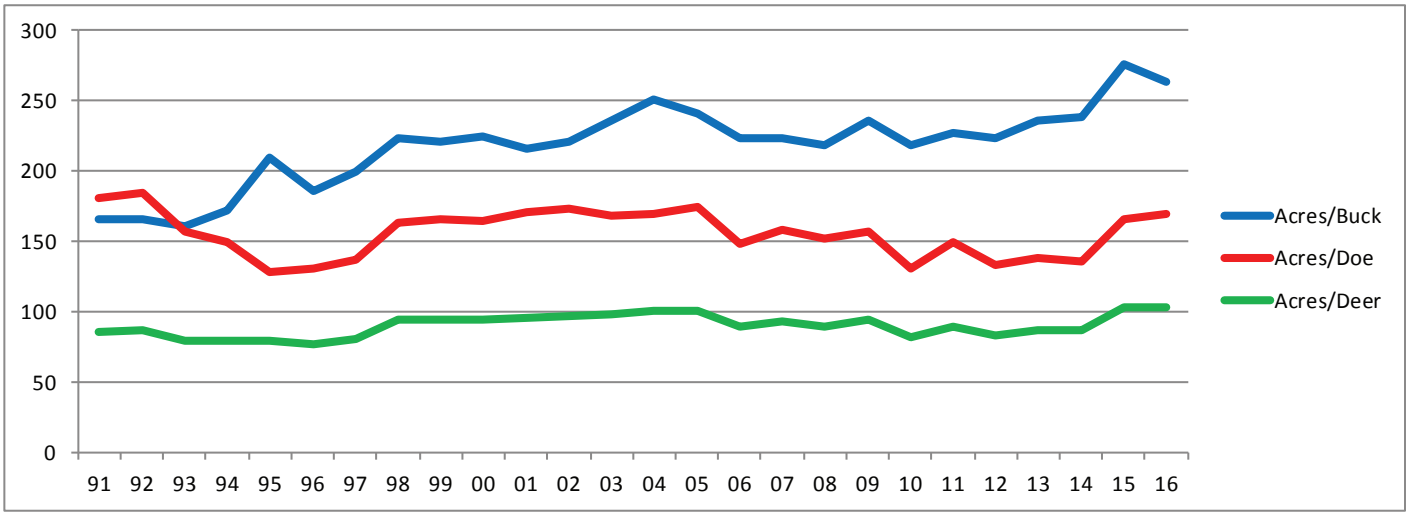


Figure 5 **Average Age All Bucks**

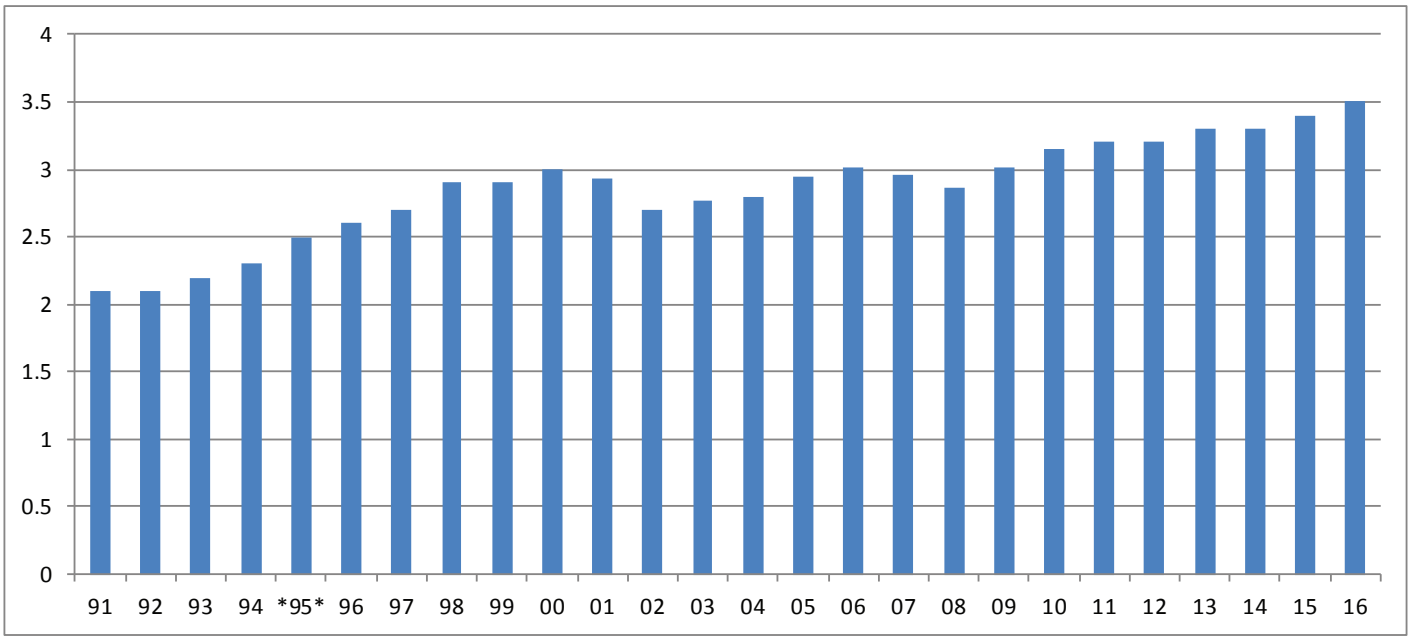


Figure 6 **Acres per 3.5+ Year Old Buck**

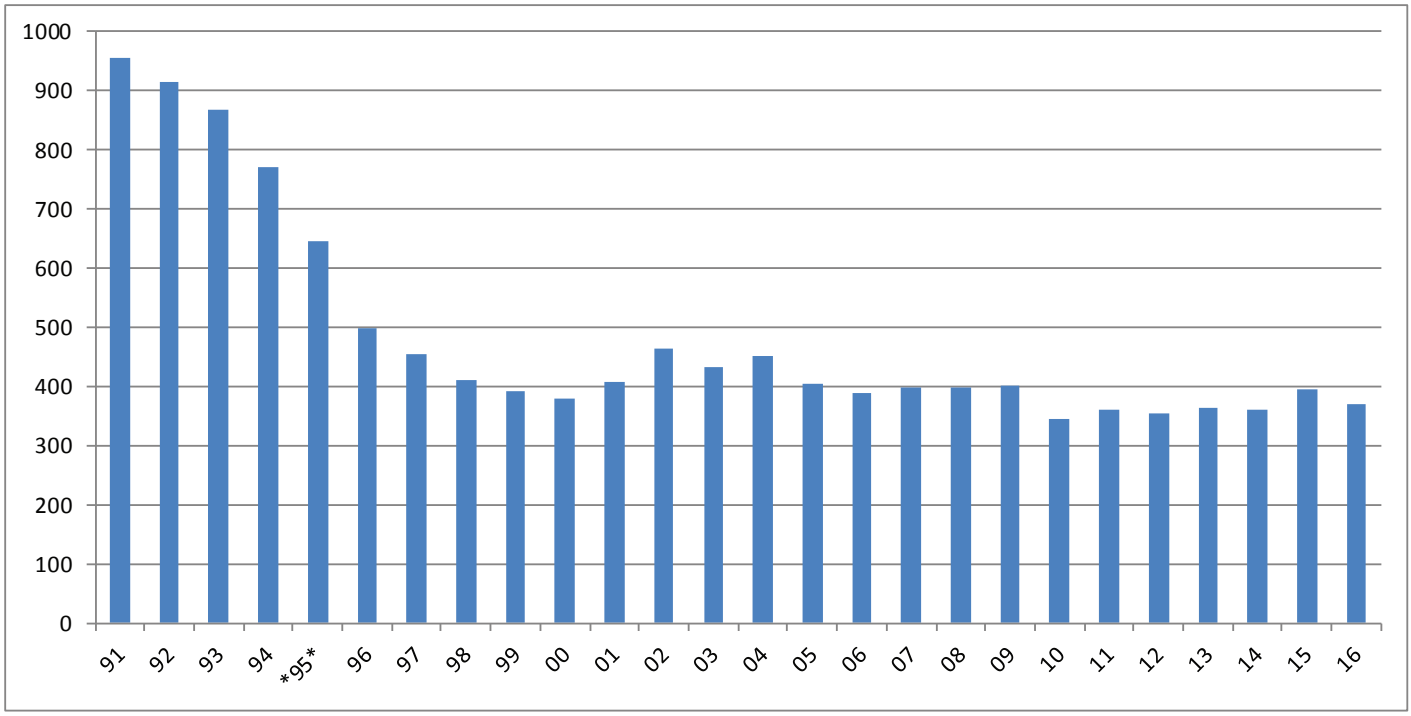


Figure 7 **Total Deer Harvest - Private vs. Public**

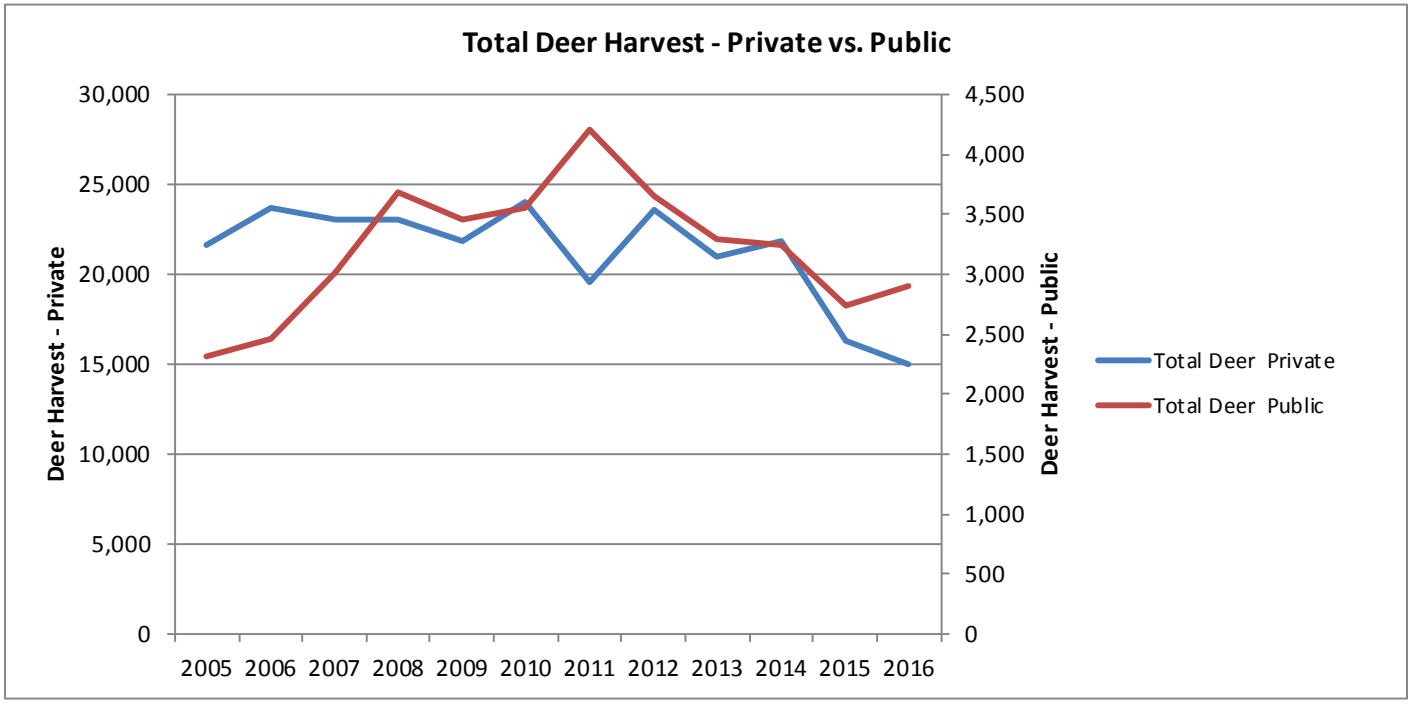


Figure 8 **Acres / Deer Harvested - Private vs. Public**

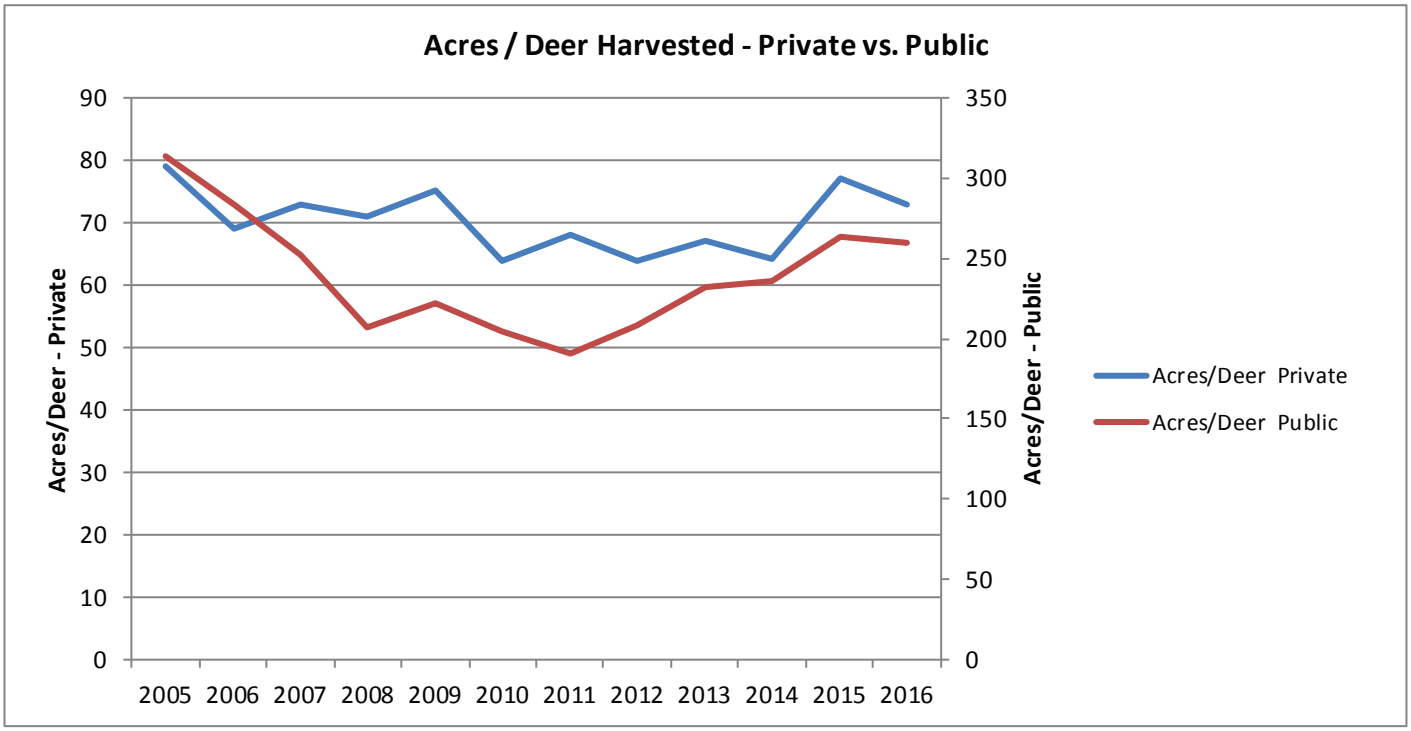


Figure 9 **Acres / 3.5 Year Old Buck Harvested - Private vs. Public**

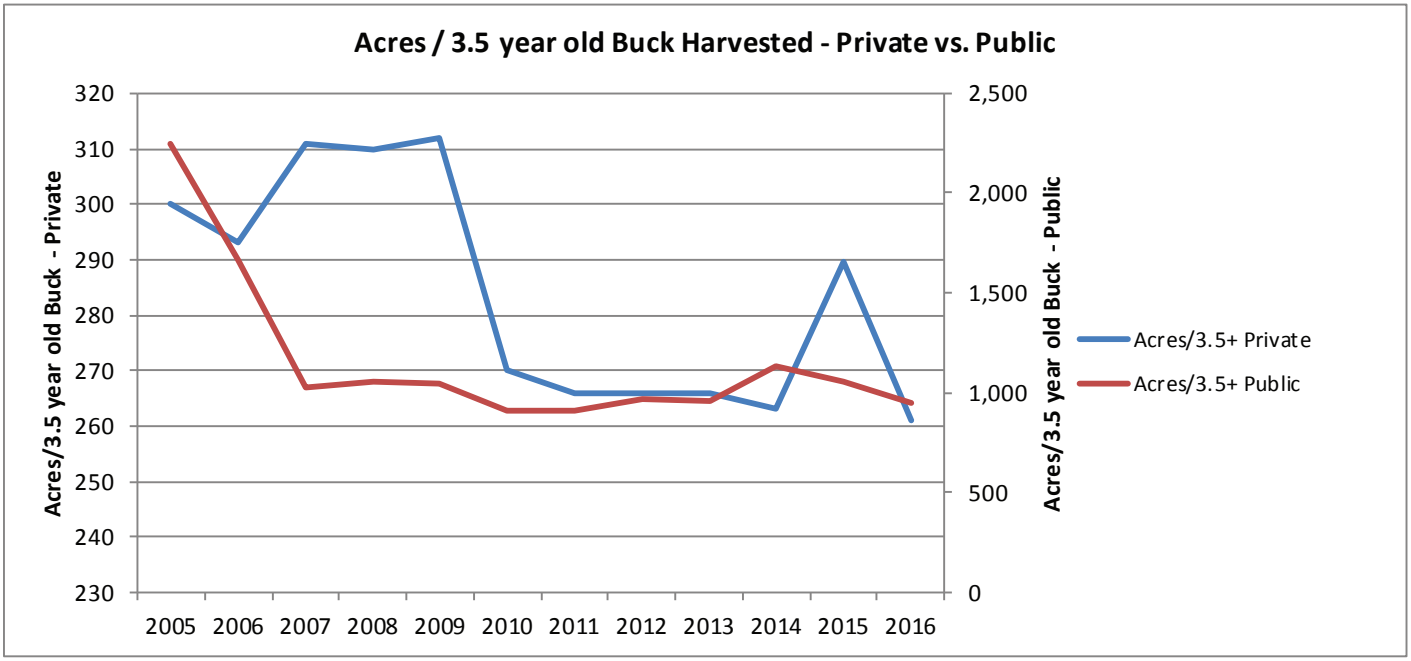
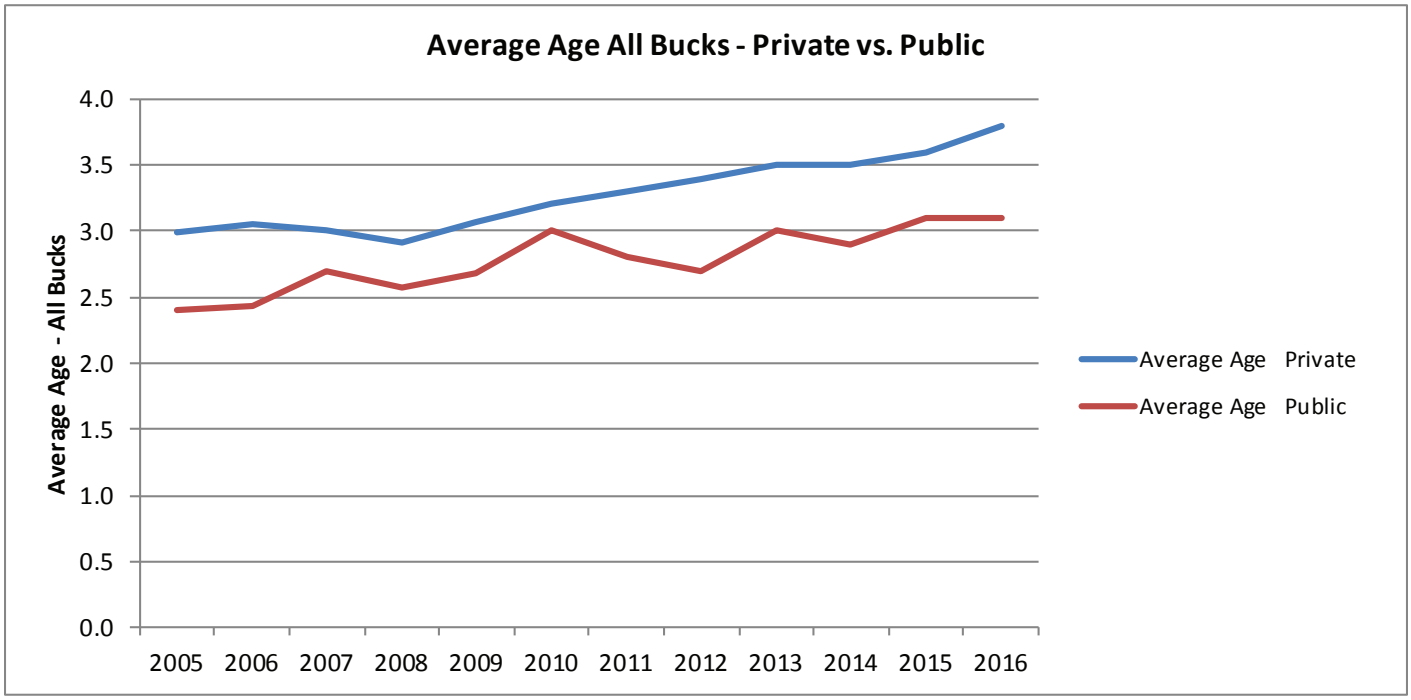


Figure 10 **Average Age All Bucks - Private vs. Public**




Paul T. Brown

WILDLIFE MANAGEMENT AREAS

One does not have to own land or even have access to private land for outdoor recreation. The Mississippi Wildlife Management Area (WMA) system is expansive and diverse. It includes 54 areas encompassing over 665,000 acres. Mississippi WMAs offer great opportunities for family and friends to enjoy outdoor activities such as hunting, fishing, trapping, bird watching, hiking, and wildlife viewing.

WHAT DO YOU NEED?

All persons using a WMA, except those exempt from purchasing an annual hunting or fishing license, must carry on their person an annual statewide Wildlife Management Area User Permit. This permit is required in addition to the daily visitor use permit and any required license and may be purchased wherever licenses are sold. Users are also exempt on lands owned by the U.S. Forest Service unless they are hunting, fishing, or trapping. If you are not sure who owns the land, you can visit our website at www.mdwfp.com or give us a call at 601-432-2199.

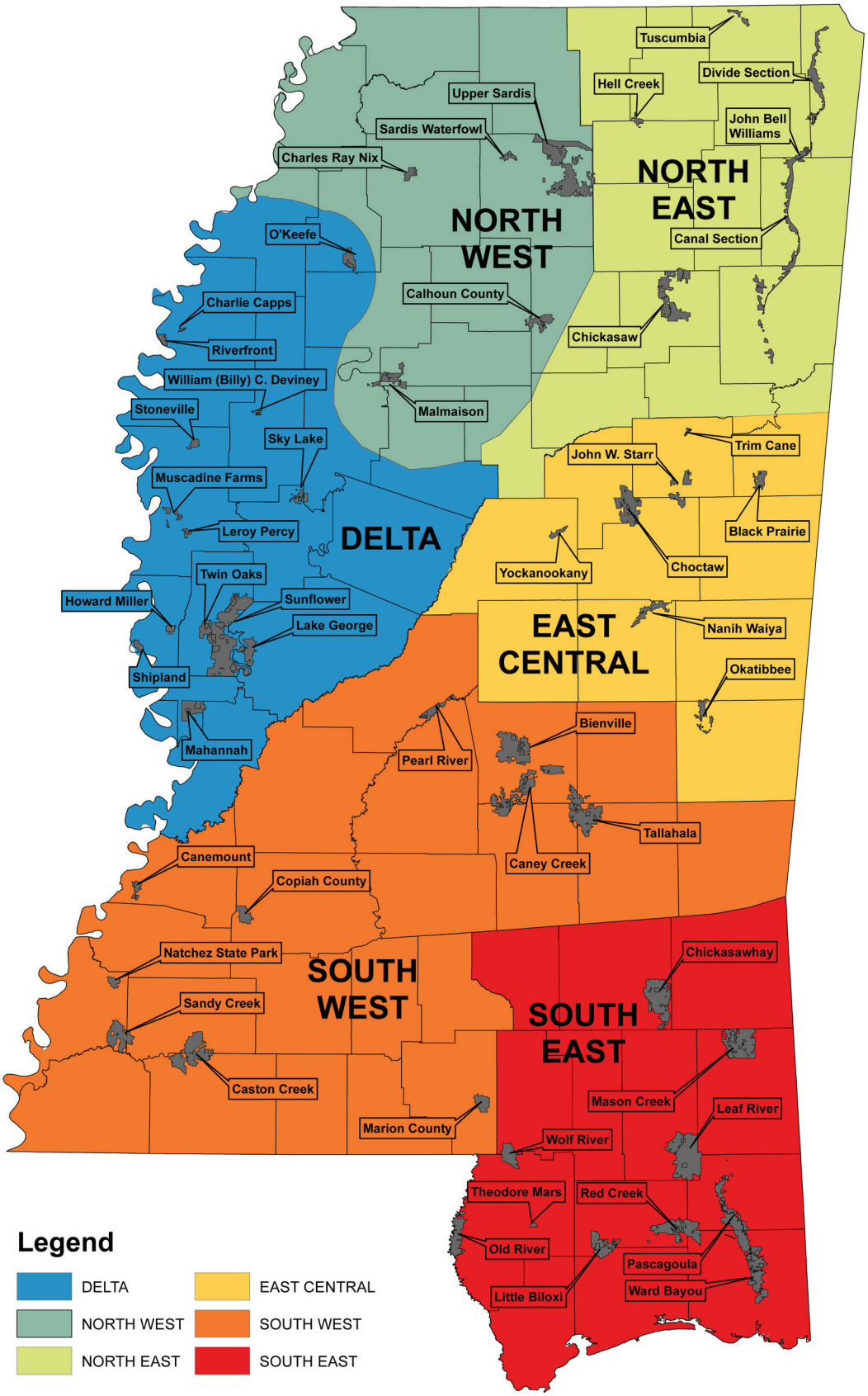
HUNTING OPPORTUNITIES

WMAs offer opportunities to hunt a variety of wildlife species. While deer hunting is the leading use, there are many other resident and migratory game species available to pursue. Wild turkey, squirrel, rabbit, quail, raccoon, opossum, fox, and bobcat are among the resident species traditionally hunted on WMAs. Ducks, geese, and doves are the most commonly hunted migratory species, but several other migratory game birds may be taken too.

YOUTH HUNTING OPPORTUNITIES

Youth are the key to continuing our hunting heritage as well as promoting wildlife conservation in years to come. It is important to provide youth the opportunity to be outdoors and have positive hunting experiences. Many WMAs offer special youth hunting opportunities. Most WMAs provide special or additional hunts for youth to pursue wild turkey, white-tailed deer, squirrels, dove, and waterfowl.

Figure 11 **WMA Region Map**



WMA REGIONS

DELTA REGION

By Roger Tankesly and Caleb Hinton

Lake George WMA
- Location: Near Holly Bluff in Yazoo County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area consists primarily of 20-year-old replanted bottomland hardwood timber. This hardwood regeneration has created an early successional habitat that has allowed the growth of massive amounts of browse.
- Doe harvest more than doubled from the previous season while hunter effort and buck harvest remained the same.

Leroy Percy WMA
- Location: Near Hollandale in Washington County
- Ownership: State Park, MDWFP owned
- This area is dominated by bottomland hardwood stands currently consisting of even-age timber classes that have shaded out herbaceous plants. Future timber thinning will open the forest once again to promote vegetation growth.
- Total harvest increased in the 2016-2017 season by 46% while hunter effort decreased by 13%.

Mahannah WMA
- Location: Near Vicksburg in Issaquena and Warren counties
- Ownership: U.S. Corps of Engineers, managed by MDWFP
- This area is comprised of a unique blend of flooding timber, cypress swamps, and controlled flooded agricultural lands. During the late summer and fall of 2016, Mahannah WMA was subjected to an extended period of drought. This dry period greatly impacted the germination of winter food plots.
- Total harvest increased significantly from the previous season and resulted in a lightly above average harvest relative to the past six seasons. Hunter effort increased by only 45 man-days.

Malmaison WMA
- Location: Near Greenwood in Carroll, Leflore, and Grenada counties
- Ownership: MDWFP
- Mature hardwoods dominate both the hills and delta sections of this area.
- Total harvest decreased by 13% in the 2016-2017 season while hunter effort increased by 8%.

O'Keefe WMA
- Location: Near Lambert in Quitman County
- Ownership: MDWFP
- This area contains one of the few remaining contiguous tracts of bottomland hardwood forest in the Mississippi delta.
- Total harvest decreased by 43% in the 2016-2017 season and hunter effort decreased by 16%.

Shipland WMA
- Location: Near Mayersville in Issaquena County, within the batture land of MS River
- Ownership: MDWFP
- This area consists of bottomland hardwood and an approximately 100-acre sand field. Timber thinning in the past has greatly increased the browse and escape cover on the WMA.
- Hunter effort decreased 25% but total harvest increased from the previous season and is now comparable to the past 6 years.

Sky Lake
- Location: Near Belzoni in Humphreys and Leflore counties
- Ownership: MDWFP/U.S. Army Corps of Engineers, managed by MDWFP
- This area is dominated by regenerated bottomland hardwood forest with abundant browse and escape cover.
- Total harvest decreased by 28% and hunter effort decreased by 26% in the 2016-2017 season.

Stoneville WMA
- Location: Near Leland in Washington County, within the MSU Delta Branch Experiment Station
- Ownership: Mississippi State University
- This area is dominated by bottomland hardwood stands of varying age classes with some mature tim-

ber stands scattered throughout the area.
- Total harvest increased by 143% and hunter effort increased by 14% in the 2016-2017 season.

Sunflower WMA
- Location: Near Rolling Fork in Sharkey County, Delta National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- This area consists entirely of bottomland hardwood forest, with stands varying in age from regeneration areas to mature forests.
- Doe harvest decreased by 33% and buck harvest was slightly above average. Hunter effort increased by 32% in the 2016-2017 season.

Twin Oaks WMA
- Location: Near Rolling Fork in Sharkey County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area consists of primarily bottomland hardwood in varying quantities and stages of maturity.
- Total harvest increased by 4% and hunter effort remained the same in the 2016-2017 season.
- This area is comprised primarily of pine, hardwood, and mixed forests. Habitat quality is marginal. Acorns are the main winter food source for deer on the area and acorn production has a significant impact on annual herd condition. Patches of thinned timber and areas damaged by tornadoes in 2008 and 2012 provide cover and browse.
- Total harvest decreased 25% and hunter effort increased 29% from the previous season. Seventy-six percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

EAST CENTRAL REGION

By Amy C. Blaylock

Black Prairie WMA
- Location: Near Brooksville in Lowndes County
- Ownership: MDWFP
- There has been an increase in habitat improvements on the area over the last several years. Greater acreage is being treated with prescribed fire and work is also being done to remove invasive fescue and Johnson grass to promote more desirable species.
- Harvest of mature does increased slightly from the previous season.

Choctaw WMA
- Location: Near Ackerman in Choctaw and Winston counties, within the Tombigbee National Forest
- Ownership: U.S. Forest Service, managed by the MDWFP
- Prescribed burning is conducted annually by the U.S. Forest Service, which helps improve wildlife habitat, however there is a significant amount of canopy closure which prohibits sunlight from reaching the forest floor resulting in poor browse conditions.
- Harvest of mature does slightly decreased from the previous season.

John W. Starr Forest WMA
- Location: Near Starkville in Oktibbeha and Winston counties
- Ownership: Mississippi State University, managed by MDWFP
- This area is a self-sustaining pine forest planted and managed by Mississippi State University.
- Total harvest decreased slightly in the 2016-2017 season.

Nanih Waiya WMA
- Location: Near Philadelphia in Neshoba County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area runs along the Pearl River and is mostly bottomland hardwood. Deer hunting pressure and success on the WMA is highly dependent upon the water level of the river.
- Mature doe harvest was average, but slightly higher than the two previous years.

Okatibbee WMA
- Location: Near Collinsville in Lauderdale County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area is mostly comprised of mixed hardwood and pine forest.

- Due to the low harvest last season, no conclusions can be made to determine population growth from the percentage of mature does harvested.

Trim Cane WMA

- Location: Near Starkville in Oktibbeha County
- Ownership: MDWFP
- Due to the small size of this area, hunting is limited to wheelchair bound and youth hunters. It is primarily a waterfowl hunting, but deer habitat should be enhanced over next few years. Approximately 200 acres are being burned annually and work has also begun to provide additional early successional habitat.
- Because of low harvest, sample size was too small to make determinations regarding population trends.

Yockanookany WMA

- Location: Near Kosciusko in Attala County
- Ownership: MDWFP
- This area is predominantly forested with stands of bottomland hardwoods. There are future plans to enhance habitat by creating more openings, improving accessibility, and conducting timber harvests to allow more sunlight to reach the floor. The Yockanookany River system is prone to frequent flooding and limits hunter access.
- The percentage of 3.5+ year old does was 29%.

NORTH EAST REGION

By Brad Holder

Calhoun County WMA

- Location: Near Calhoun City in Calhoun County
- Ownership: Quitman Timber, LLC, managed by MDWFP
- This area is composed primarily of pine plantations with some hardwood drains. Habitat conditions on Calhoun County WMA are fair to good. Annual timber harvest on the WMA provide patches of browse and cover. Crops and natural vegetation produced in adjacent fertile river valleys provide additional forage for the local herd.
- Total harvest decreased 80% from the previous season and hunter effort decreased 60%. Thirty-three percent of the does harvested were 3.5+ years old. New WMA regulations prohibiting ATV use and the closure of highly-traveled timber company roads made methods used to hunt with dogs and deer retrieval more difficult. These factors were likely the primary cause of precipitous declines in harvest and hunter effort. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

Canal Section WMA

- Location: Near Fulton in Itawamba, Monroe, Prentiss, and Tishomingo counties
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area is comprised primarily of bottomland hardwood forest. Habitat quality ranges from poor to fair, but continues to improve with increased prescribed burning, timber management, hydrology improvements, and trapping of feral swine and beaver.
- Total harvest decreased 28% and hunter effort decreased 9% from the previous season. Fifty percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

Charles Ray Nix WMA

- Location: Near Sardis in Panola County
- Ownership: MDWFP
- This area is comprised primarily of hardwood and pine forest and old fields. Habitat quality is general good. Prescribed fire, fall disking, invasive vegetation control, and timber management techniques produce browse and cover for deer in forests and old fields found throughout the WMA.
- Total harvest increased 8% and hunter effort increased 19% from the previous season. Forty-one percent of the does harvested were 3.5+ years old.

Chickasaw WMA

- Location: Near Houston in Chickasaw County, Tombigbee National Forest – Trace Unit

- Ownership: U.S. Forest Service, managed by MDWFP
- This area is primarily composed of pine hardwood, and mixed forests. Habitat quality is marginal. Acorns are the main winter food source for deer on the area and acorn production has a significant impact on annual herd condition. Scattered patches of thinned or damaged timber provide cover and browse.
- Total harvest increased 28% and hunter effort decreased 6% from the previous season. Thirty-seven percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

Divide Section WMA

- Location: Near Iuka in Tishomingo and Prentiss counties
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area is comprised primarily of old fields and hardwood, pine, and mixed forests. Habitat quality is fair in terms of cover but marginal to poor in terms of browse quality. Annual prescribed burning and invasive plant and animal control (i.e. feral swine) help to improve browse and cover quality in old fields and forests.
- Total harvest increased 8% and hunter effort increased by 4% from the previous season. Seventy-one percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

Hell Creek WMA

- Location: Near New Albany in Union County
- Ownership: MDWFP
- This area is comprised of pine and hardwood forest blocks scattered around agricultural fields. Habitat quality is fair to good. Prescribed burns, timber stand improvements, and fall disking are improving cover within small woodlots, old fields, and natural vegetation buffers around agricultural fields found on the WMA. Soybeans are farmed within many of the large fields on the area and provide ample summer forage.
- Total harvest decreased 38% and hunter effort increased by 29% from the previous season. Only one 3.5+ year old doe was reported to be harvested. Particularly low harvest numbers on Hell Creek WMA during the last two seasons could be attributed to lower deer density within the surrounding counties, extremely mild weather, and dip in hunter participation during the October permit-only gun hunts.

John Bell Williams WMA

- Location: Near Booneville in Prentiss County
- Ownership: Tennessee Tombigbee Water Management District, managed by MDWFP
- This area is comprised of hardwood and pine forests and old field habitat. Habitat quality is fair to good. Timber thins and wind damage (2014 tornado) have improved quantity and quality of browse and cover for deer on the WMA.
- Total harvest increased 43% and hunter effort decreased 20% from the previous season. All does harvested were older than 3.5 years old.

Sardis Waterfowl WMA

- Location: Near Oxford in Lafayette County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This area is comprised of hardwood, pine, and mixed forests with occasional old fields. Habitat quality is fair. Old fields and portions of forest are burned periodically which helps maintain browse and cover.
- Total harvest increased 33% and hunter effort decreased 15% from the previous season. Seventy percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

Tuscumbia WMA

- Location: Near Corinth in Alcorn County
- Ownership: MDWFP
- This area is dominated by wetland habitat and floods frequently during the winter months. Area management focuses on providing habitat for wintering waterfowl and waterfowl hunting. Deer hunting opportunity exists, but availability of quality deer habitat and access restrictions make hunting deer on the area a little challenging.
- Total harvest decreased 56% and hunter effort decreased 52% from the previous season. Harvest totals differ from age distribution because all biological data was not properly submitted for all deer harvested.

Upper Sardis WMA

- Location: Near Oxford in Lafayette County
- Ownership: The northern portion of the area along the Tallahatchie River Canal is owned by the U.S. Army Corps of Engineers. The rest of the area is owned by the U.S. Forest Service and is within the Holly Springs National Forest.
- This area is comprised primarily of pine, hardwood, and mixed forests. Habitat quality is marginal. Acorns are the main winter food source for deer on the area and acorn production has a significant impact on annual herd condition. Patches of thinned timber and areas damaged by tornadoes in 2008 and 2012 provide cover and browse.
- Total harvest decreased 25% and hunter effort increased 29% from the previous season. Seventy-six percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals because all biological data was not properly submitted for all deer harvested.

SOUTH EAST REGION

By Nathan Blount

Chickasawhay WMA

- Near Laurel in Jones County, within the Chickasawhay Ranger District of the Desoto National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- Habitat conditions on this area have improved in recent years due to management of two non-game species, the endangered red-cockaded woodpecker and the threatened gopher tortoise. Management practices include prescribed fire, timber harvest, mid-story removal, and eradication of invasive plant species.
- Total harvest decreased 35% and hunter effort increased 2% from the previous season. Fifty-seven percent of the does harvested were 3.5+ years old, which is below average compared to recent seasons.

Leaf River WMA

- Near Wiggins in Perry County, within the Desoto National Forest
- Habitat conditions on this area have improved in recent years due to management of both timber and the endangered red-cockaded woodpecker. Management practices include prescribed fire, mid-story removal, timber thinning, and eradication of invasive plant species.
- Total harvest increased 7% and hunter effort decreased 8% from the previous season. Fifty-two percent of the does harvested were 3.5+ years old, which is down from last season but in line with the long term average. Harvest totals differ from age distribution totals due to lack of properly submitted biological data.

Little Biloxi WMA

- Near Wiggins in Stone and Harrison counties, within the Desoto National Forest and on lands owned by Weyerhaeuser Company
- Ownership: U.S. Forest Service and Weyerhaeuser Company, managed by MDWFP
- Habitat conditions on Little Biloxi have improved in recent years due to timber harvests on the Weyerhaeuser portion of the WMA. Harvest operations result in more browse and forage for wildlife. A prescribed burning regimen on the National Forest portion has also helped to improve habitat on the WMA.
- Total harvest increased 42% from previous seasons and is at an all time high, while hunter effort decreased by 10%. Thirty-five percent of the does harvested were 3.5+ years old, a similar percentage to the previous five seasons. This suggests that the deer herd is stable.

Mason Creek WMA

- Location: Near Richton in Greene County, within the Chickasawhay Ranger District of Desoto National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- Habitat conditions on this area have improved in recent years due to timber thinning, prescribed fire, and the maintenance of wildlife openings.
- Total harvest decreased 70% and hunter effort decreased 12% from the previous season. Man-days on this area were at a five-year low.

Old River WMA

- Location: Near Poplarville in Pearl River County
- Ownership: MDWFP
- This WMA is primarily bottomland hardwoods and is closed to deer hunting when the Pearl River gauge at Bogalusa, LA reads 18 feet or higher.

- Total harvest increased 42% and hunter effort increased 46% from the previous season. The 2015-2016 season had multiple closures due to high water levels. This explains the large increase in hunter effort for the 2016-2017 season. Fifty-seven percent of the does harvested were 3.5+ years old. This is slightly lower than recent seasons but on par with the long-term average of sixty percent. Harvest totals differ from age distribution totals due to lack of properly submitted biological data.

Pascagoula WMA

- Location: Near Lucedale and Hurley in George and Jackson counties
- Ownership: MDWFP
- Habitat conditions on Pascagoula River WMA are improving due to aggressive control of invasive plant species, reclamation of wildlife openings, and the use of prescribed fire where applicable.
- Total harvest increased 31% and hunter effort increased 35% from the previous season. The 2015-2016 season had multiple closures due to high water levels. This explains the large increase in hunter effort for the 2016-2017 season. Thirty-nine percent of the does harvested were 3.5+ years old. This suggests that the deer herd is stable.

Red Creek WMA

- Location: Near Wiggins in Stone, George, and Jackson counties, within the Desoto National Forest
- Ownership: U.S. Forest Service
- Habitat conditions on this area are improved with a prescribed fire regimen. Future timber harvests are planned which will further enhance habitat.
- Total harvest increased 271% and hunter effort increased 2% from the previous season. Twenty-five percent of the does harvested were 3.5+ years old. Harvest totals differ from age distribution totals due to lack of properly submitted biological data.

Theodore A. Mars Jr. WMA

- Location: Near Poplarville in Pearl River County
- Ownership: MDWFP
- This WMA consists of upland pine stands with scattered hardwood bottoms.
- Deer hunting on this area is limited to youth hunters and no deer were reported harvested for this season. Hunter effort decreased by 34 man-days.

Ward Bayou WMA

- Location: Near Vancleave in Jackson County
- Ownership: U.S. Army Corps of Engineers, managed by MDWFP
- This majority of this area is comprised of bottomland hardwood and wetland habitat. Habitat conditions on this area have been significantly improved in recent years. Management practices include pre-commercial thinning of longleaf pines, prescribed fire, and control of invasive and non-desirable plant species.
- Total harvest increased 10% and hunter effort increased 23% from the previous year. The 2015-2016 season had multiple closures due to high water levels. This explains the increase in hunter effort for the 2016-2017 season. Seventy-one percent of the does harvested were 3.5+ years old.

Wolf River WMA

- Location: Near Poplarville in Lamar and Pearl River counties
- Owner: Weyerhaeuser Company, managed by MDWFP
- This area consists of various aged pine plantations interspersed with minor stream bottoms.
- Total harvest decreased 4% and hunter effort decreased 22% from the previous season. Hunter effort was at a 5-year low. Sixty-nine percent of the does harvested were 3.5+ years old.

SOUTH WEST REGION

By Josh Moree

Bienville WMA

- Location: Near Morton in Scott County, within the Bienville National Forest
- Owner: U.S. Forest Service, managed by MDWFP
- Habitat conditions on this area have improved over the years due to management for the red-cockaded woodpecker.
- Forty-eight percent of the does harvested on the area were 3.5+ years old.

Canemount WMA
- Location: Near Port Gibson in Claiborne County
- Owner: MDWFP
- This area is comprised of mixed hardwood timber stands with a very high component of cherrybark oak.
- Total harvest decreased 34% and hunter effort decreased 13% from the previous season. Fifty-seven percent of the does with harvest data were 3.5+ years old. This could suggest that the deer herd is increasing. The harvest numbers differ from the age distribution totals because all deer reported harvested did not have biological data submitted.

Caney Creek WMA
- Location: Near Forest in Smith and Scott counties, within the Bienville National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- The U.S. Forest Service conducts timber harvest operations and spring prescribed burns on Caney Creek WMA, which should increase available browse for deer and other wildlife.
- Totals harvest increased 13% and hunter effort decreased by 12% from the previous season. Forty-one percent of the does harvested were 3.5+ years old.

Caston Creek WMA
- Location: Near Meadville in Franklin and Amite counties within the Homochitto National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- Total harvest decreased 40% and hunter effort slightly decreased by 1% from the previous season. Sixty-seven percent of the does with harvest data were 3.5+ years old. The harvest numbers differ from the age distribution totals because all deer reported harvested did not have biological data submitted.

Copiah County WMA
- Location: Near Hazlehurst in Copiah County
- Ownership: MDWFP
- This area consists primarily of pine and mixed pine/hardwood stands. Various timber stands on the WMA were thinned over the last few years. Periodic prescribed fire is used to promote desirable herbaceous vegetation on the WMA. Numerous permanent openings throughout the WMA are maintained with native vegetation and supplemental plantings.
- Total harvest increased 29% and hunter effort decreased 9% from the previous season. Fifty-six percent of the does with harvest data were 3.5+ years old. The harvest numbers differ from the age distribution totals because all deer reported harvested did not have biological data submitted.

Marion County WMA
- Location: Near Columbia in Marion County
- Ownership: MDWFP
- This area consists primarily of longleaf pine stands and mixed pine/hardwood stands along the creeks and drains. Periodic prescribed fire is used to promote desirable herbaceous vegetation on the WMA. Numerous permanent openings throughout the WMA are maintained with native vegetation and supplemental plantings.
- Total harvest equaled that of the previous season, but hunter effort decreased by 26%. Fifty-eight percent of the does with harvest data were 3.5+ years old.

Natchez State Park WMA
- Location: near Natchez in Adams County
- Ownership: MDWFP
- Total harvest increased 50% and hunter effort increased 79% from the previous season. Seventy-five percent of the does with harvest data were 3.5+ years old. The harvest numbers differ from the age distribution totals because all deer reported harvested did not have biological data submitted.

Pearl River WMA
- Location: Near Canton in Madison County
- Ownership: Pearl River Valley Water Supply District, managed by MDWFP
- Total harvest increased 17% and hunter effort decreased 2% from the previous season. Seventeen percent of the does harvested were 3.5+ years old.

Sandy Creek WMA
- Location: Near Natchez in Adams and Franklin counties, within the Homochitto National Forest

- Ownership: U.S. Forest Service, managed by MDWFP
- Total harvest equaled that of the previous season while hunter effort decreased by 26%. Eighty-two percent of the does with harvest data were 3.5+ years old. The harvest numbers differ from the age distribution totals because all deer reported harvested did not have biological data submitted.

Tallahala WMA

- Location: Near Montrose in Scott, Newton, Smith, and Jasper counties, within the Bienville National Forest
- Ownership: U.S. Forest Service, managed by MDWFP
- The U.S. Forest Service continues to conduct spring prescribed burns and timber management on the WMA. This will enhance browse production.
- Total harvest increased 28% and hunter effort decreased by 6% from the previous season. Fifty-four percent of the does harvested were 3.5+ years old.

Figure 12 **WMA Manday Graph**

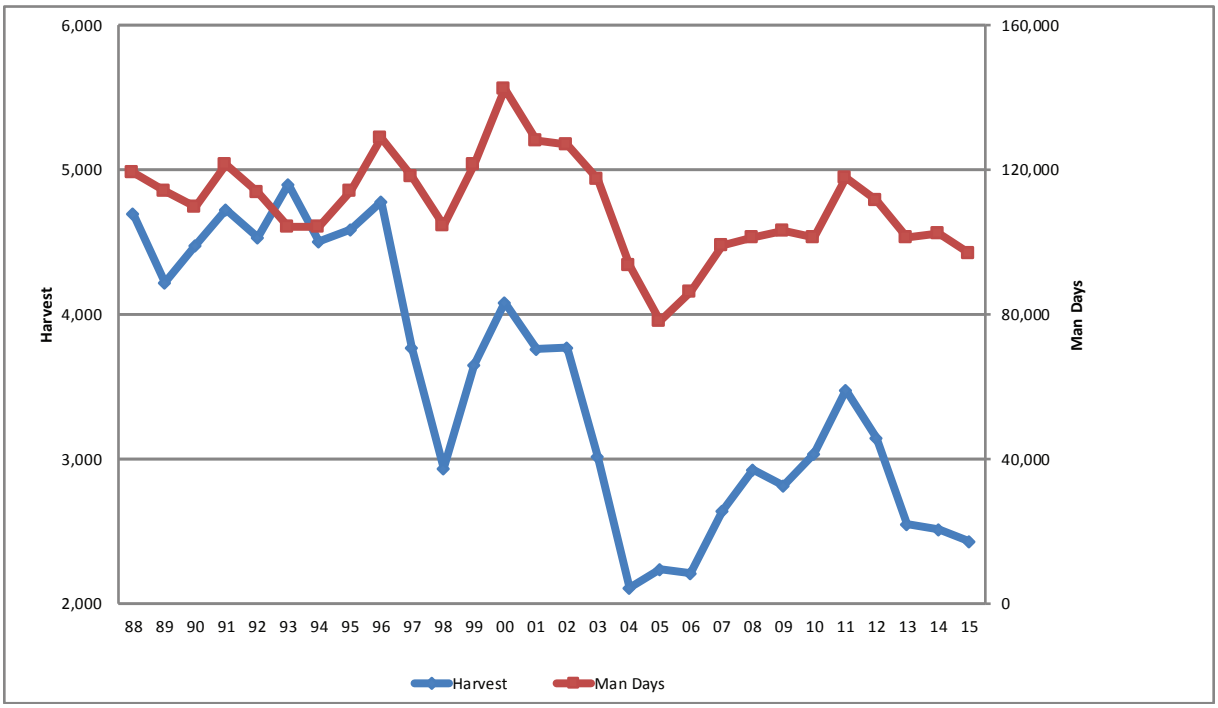


Table 6: Wildlife Management Area Harvest Information for the 2016–2017 Season									
Region	**Wildlife Management Area**	**Acreage**	**Total Harvest**	**Acres/ Deer**	**Buck Harvest**	**Acres/ Buck**	**Doe Harvest**	**Acres/Doe**	**Total Mandays**
Delta	Lake George	8,383	113	74	48	175	65	129	117
	Leroy Percy	1,642	16	103	12	137	4	411	308
	Mahannah	12,675	247	51	93	136	154	82	1,614
	O'Keefe	5,648	26	217	17	332	9	628	1,288
	Riverfront	1,000	0	N/A	0	N/A	0	N/A	0
	Sky Lake	4,306	15	287	9	478	6	718	147
	Shipland	3,642	19	192	12	304	7	520	574
	Stoneville	2,500	17	147	8	313	9	278	800
	Sunflower	58,480	177	330	127	460	50	1,170	9,979
	Twin Oaks	5,675	52	109	10	568	42	135	588
	Detla Total	**103,951**	**682**		**336**		**346**		**15,415**
	Delta Average	**10,395**	**68**	**168**	**34**	**323**	**35**	**452**	**1,542**
East Central	Black Prairie	6,001	55	109	15	400	40	150	446
	Choctaw	24,314	61	399	29	838	32	760	2,415
	John Starr	8,244	36	229	17	485	19	434	1,080
	Nanih Waiya	8,040	56	144	21	383	35	230	1,201
	Okatibbee	6,883	9	765	5	1377	4	1721	459
	Trim Cane	891	3	297	2	446	1	297	13
	Yockanookany	2,379	10	238	3	793	7	340	415
	East Central Total	**26,437**	**114**		**48**		**66**		**3,168**
	East Central Average	**8,107**	**33**	**311**	**13**	**675**	**20**	**562**	**861**
North East	Canal Section	27,500	31	887	17	1618	14	1964	4,476
	Chickasaw	27,259	114	239	62	440	52	524	4,496
	Divide Section	15,337	22	697	12	1278	10	1534	2,305
	Hell Creek	2,284	5	457	0	N/A	5	457	131
	John Bell Williams	2,930	4	733	1	2930	3	977	328
	Tuscumbia	2,436	4	609	1	2,436	3	812	188
	North East Total	**77,746**	**180**		**93**		**87**		**11,924**
	North East Average	**12,958**	**30**	**604**	**16**	**1,740**	**15**	**1,045**	**1,987**
North West	Calhoun County	9,130	13	702	7	1304	6	1522	653
	Charles Ray Nix	4,000	97	41	29	138	68	59	1,056
	Malmaison	9,696	48	202	25	388	23	422	1,678
	Sardis Waterfowl	2,480	30	83	19	131	11	225	69
	Upper Sardis	42,274	77	549	38	1,112	39	1,084	4,047
	North West Total	**67,580**	**265**		**118**		**147**		**7,503**
	North West Average	**13,516**	**53**	**315**	**24**	**615**	**29**	**662**	**1,501**

Table 6 Continued: Wildlife Management Area Harvest Information for the 2016–2017 Season									
Region	Wildlife Management Area	Acreage	Total Harvest	Acres/ Deer	Buck Harvest	Acres/ Buck	Doe Harvest	Acres/Doe	Total Mandays
South East	Chickasawhay	30,000	47	638	24	1250	23	1304	3,093
	Leaf River	41,411	220	188	108	383	112	370	7,520
	Little Biloxi	14,540	61	238	25	582	36	404	3,486
	Mason Creek	28,000	7	4,000	7	4000	0	N/A	1,623
	Old River	13,000	44	295	23	565	21	619	2,582
	Pascagoula River	37,415	94	398	62	603	32	1,169	6,261
	Red Creek	22,954	19	1,208	7	3,279	12	1,913	1,506
	Theodore A. Mars Jr.	900	1	N/A	0	N/A	1	900	22
	Ward Bayou	13,234	11	1,203	4	3,309	7	1,891	1,930
	Wolf River	10,881	47	232	34	320	13	837	1,720
	South East Total	**212,335**	**551**		**294**		**257**		**29,743**
	South East Average	**21,234**	**55**	**933**	**29**	**1,588**	**26**	**1,045**	**2,974**
South West	Bienville	26,136	104	251	44	594	60	436	2,306
	Canemount	3,500	61	57	22	159	39	90	592
	Caney Creek	28,000	69	406	30	933	39	718	2,882
	Caston Creek	27,785	35	794	30	926	5	5557	4,114
	Copiah County	6,583	94	70	50	132	44	150	2,304
	Marion County	7,125	50	143	22	324	28	254	1,555
	Natchez State Park	2,261	33	69	20	113	13	174	640
	Pearl River	6,925	28	247	16	433	12	577	972
	Sandy Creek	16,407	50	328	37	443	13	1,262	2,863
	Tallahala	28,120	60	469	31	907	29	970	2,752
	South West Total	**152,842**	**584**		**302**		**282**		**20,980**
	South West Average	**15,284**	**58**	**283**	**30**	**496**	**28**	**1,019**	**2,098**
TOTAL		**671,206**	**2,492**		**1,235**		**1,257**		**91,594**
AVERAGE		**13,983**	**52**	**437**	**26**	**859**	**26**	**808**	**1,908**

Table 7: Wildlife Management Area Harvest Information for 2012–2016 Hunting Seasons.											
Region	Wildlife Management Area	Buck Harvest					Doe Harvest				
		2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Delta	Lake George	30	38	42	49	48	46	30	46	31	65
	Leroy Percy	3	3	9	2	11	5	3	4	6	4
	Mahannah	107	43	90	61	93	166	106	131	85	154
	O'Keefe	37	24	35	30	17	35	18	22	17	9
	Riverfront										
	Shipland	12	13	14	6	12	13	11	11	7	7
	Sky Lake	11	12	1	8	9	0	10	3	13	6
	Stoneville	11	9	6	4	8	17	16	10	3	9
	Sunflower	106	130	100	82	130	136	103	113	88	51
	Twin Oaks	20	5	7	10	10	65	35	36	35	42
	Delta Total	**337**	**277**	**304**	**252**	**338**	**483**	**332**	**376**	**285**	**347**
	Delta Average	**37**	**31**	**34**	**28**	**38**	**54**	**37**	**42**	**32**	**39**
East Central	Black Prairie	30	28	19	18	15	37	49	36	54	42
	Choctaw	40	43	37	30	29	70	49	40	59	32
	John Starr	27	23	16	27	17	24	24	10	22	22
	Nanih Waiya	17	15	10	18	21	33	21	33	23	35
	Okatibbee	10	2	3	5	7	13	4	5	4	9
	Trim Cane	3	1	2	3	2	3	0	1	1	1
	Yockanookany	3	9	1	2	4	8	5	2	5	7
	East Central Total	**130**	**121**	**88**	**103**	**95**	**188**	**152**	**127**	**168**	**148**
	East Central Average	**19**	**17**	**13**	**15**	**14**	**27**	**22**	**18**	**24**	**21**
North East	Canal Section	31	30	21	24	17	33	17	12	21	16
	Chickasaw	33	45	41	41	62	55	50	39	42	52
	Divide Section	17	8	7	11	12	25	15	9	13	10
	Hell Creek	8	2	3	1	0	19	9	16	7	5
	John Bell Williams	1	3		4	1	1	3	2	3	3
	Tuscumbia	4	4	4	4	1	8	5	7	5	3
	North East Total	**94**	**92**	**76**	**85**	**93**	**141**	**99**	**85**	**91**	**89**
	North East Average	**16**	**15**	**15**	**14**	**16**	**24**	**17**	**14**	**15**	**15**
North West	Calhoun County	31	36	12	36	7	50	27	16	30	6
	Charles Ray Nix	42	30	22	36	29	47	37	40	54	68
	Malmaison	34	17	22	12	25	53	47	70	42	23
	Sardis Waterfowl	12	15	10	12	19	13	23	10	8	11
	Upper Sardis	59	53	47	39	38	48	60	55	63	39
	North West Total	**178**	**151**	**113**	**135**	**118**	**211**	**194**	**191**	**197**	**147**
	North West Average	**36**	**30**	**23**	**27**	**24**	**42**	**39**	**38**	**39**	**29**

Table 7 Continuted: Wildlife Management Area Harvest Information for 2012–2016 Hunting Seasons.											
Region	Wildlife Management Area	Buck Harvest					Doe Harvest				
		2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
South East	Chickasawhay	23	29	31	30	17	12	18	15	30	22
	Leaf River	98	111	139	126	108	70	66	76	80	112
	Little Biloxi	13	12	22	23	25	10	22	32	20	36
	Mason Creek	17	20	18	18	7	6	1	7	5	0
	Old River	19	17	14	19	23	18	19	19	12	21
	Pascagoula River	17	41	24	41	62	10	34	26	31	32
	Red Creek	2	3	1	1	7	3	2	3	6	12
	Theodore A. Mars Jr.	0	0	0	0	0	0	1	0	0	0
	Ward Bayou	9	7	11	1	4	5	8	12	9	7
	Wolf River	35	31	27	25	34	23	21	17	24	13
	South East Total	**233**	**271**	**287**	**284**	**287**	**157**	**192**	**207**	**217**	**255**
	South East Average	**23**	**27**	**29**	**28**	**29**	**16**	**19**	**21**	**22**	**26**
South West	Bienville	110	77	64	56	44	114	73	65	58	60
	Canemount	79	29	24	39	22	59	50	44	54	39
	Caney Creek	45	43	54	31	30	63	38	37	30	39
	Caston Creek	35	38	47	39	30	8	9	6	19	5
	Copiah County	56	55	54	35	50	48	62	53	38	44
	Marion County	43	42	44	17	22	37	44	41	33	28
	Natchez State Park	**30**	**22**	**16**	**12**	**20**	**30**	**19**	**15**	**10**	**13**
	Pearl River	**9**	**8**	**10**	**8**	**16**	**12**	**18**	**20**	**16**	**12**
	Sandy Creek	52	60	57	33	37	30	24	35	17	13
	Tallahala	57	37	29	26	31	75	36	34	21	29
	South West Total	**516**	**411**	**399**	**296**	**302**	**476**	**373**	**350**	**296**	**282**
	South West Average	**52**	**41**	**40**	**30**	**30**	**48**	**37**	**35**	**30**	**28**
Statewide WMA Total		**1488**	**1323**	**1267**	**1155**	**1233**	**1656**	**1342**	**1336**	**1254**	**1268**
Statewide WMA Average		**32**	**28**	**28**	**25**	**26**	**35**	**29**	**28**	**27**	**27**

Table 8: WMA Harvest Age Distribution and Antler Criteria for the 2016–2017 Season																
Region	Wildlife Management Area	*Antler Criteria	***Average Antler Measurements from Harvested Bucks	Buck Age Distribution						Doe Age Distribution					
				0.5	1.5	2.5	3.5	4.5+	Total	0.5	1.5	2.5	3.5	4.5+	Total
Delta	Lake George	15/18	14.3/18.1	8	8	5	11	15	47	20	8	8	5	27	65
	Leroy Percy	12/15	15.8/17.6	0	2	5	3	1	11	0	0	4	0	0	4
	Mahannah	16/20	14.1/16.5	4	16	12	19	42	93	14	23	28	32	57	154
	O'Keefe	16/20	16.4/19.5	0	3	5	7	2	17	0	3	3	0	3	9
	Riverfront	15/18	N/A												
	Shipland	15/18	16.8/14.5	1	2	0	5	4	12	1	1	1	0	4	7
	Sky Lake	12/15	13.8/17.8	0	0	5	3	1	9	0	2	4	0	0	6
	Stoneville	12/15	17/19	0	0	5	1	2	8	0	3	2	2	2	9
	Sunflower	15/18	14.2/17.1	0	10	20	30	61	121	6	8	12	6	18	50
	Twin Oaks	16/20	15.5/19.6	0	1	1	2	6	10	3	11	5	8	15	42
East Central	Black Prairie	15/18	15.6/19.4	1	4	6	2	1	14	3	8	10	8	10	39
	Choctaw	10/13	12.6/15.3	0	0	13	4	2	19	7	7	4	2	8	28
	John Starr	10/13	13.3/18.6	0	4	5	5	1	15	4	2	4	4	2	16
	Nanih Waiya	10/13	14.3/17.4	1	3	10	4	0	18	6	9	5	7	7	34
	Okatibbee	10/13	14/20.6	0	0	4	1	0	5	1	0	1	1	1	4
	Trim Cane	10/13	15/21.1	0	0	0	1	1	2		0	0	0	1	1
	Yockanookany	12/15	14.8/18.1	0	0	0	2	1	3	1	3	1	0	2	7
North East	Canal Section	12/15	11/14.9	0	3	2	2	5	12	0	2	1	0	9	11
	Chickasaw	10/13	11.7/15	1	8	11	10	11	41	4	14	11	4	13	46
	Divide Section	10/13	13.3/15.9	0	0	3	1	4	8	1	1	0	0	5	7
	Hell Creek	10/13	N/A	0	0	0	0	0	0	0	1	3	0	1	5
	John Bell Williams	12/15	N/A	0	0	0	0	1	1	0	0	0	0	3	3
	Tuscumbia	10/13	N/A	0	0	0	0	0	0	1	0	1	0	0	2
North West	Calhoun County	10/13	12/15	1	1	1	1	1	5	0	2	0	1	0	3
	Charles Ray Nix	15/18	14.2/17.5	1	3	1	10	13	28	14	19	7	6	22	68
	Malmaison	15/18	15/19.7	0	4	7	8	6	25	4	6	7	2	4	23
	Sardis Waterfowl	**None	9.7/12.7	2	4	2	5	5	18	3	0	0	0	7	10
	Upper Sardis	10/13	12.2/15.5	1	2	4	8	8	23	3	2	1	3	16	25
	North East Average	16	15	15	14	16	24	17	14	15	15				
North West	Calhoun County	31	36	12	36	7	50	27	16	30	6				
	Charles Ray Nix	42	30	22	36	29	47	37	40	54	68				
	Malmaison	34	17	22	12	25	53	47	70	42	23				
	Sardis Waterfowl	12	15	10	12	19	13	23	10	8	11				
	Upper Sardis	59	53	47	39	38	48	60	55	63	39				

Table 8 Continued: WMA Harvest Age Distribution and Antler Criteria for the 2016–2017 Season

Region	Wildlife Management Area	*Antler Criteria	***Average Antler Measurements from Harvested Bucks	Buck Age Distribution						Doe Age Distribution					
				0.5	1.5	2.5	3.5	4.5+	Total	0.5	1.5	2.5	3.5	4.5+	Total
South East	Chickasawhay	10/13	11.2/13	0	1	2	5	7	15	1	5	3	4	8	21
	Leaf River	10/13	11.9/15	3	7	46	26	13	95	5	21	25	22	33	106
	Little Biloxi	10/13	13.1/16.4	2	4	11	4	2	23	5	7	10	5	7	34
	Mason Creek	10/13	12/16.5	0	1	1	1	4	7	0	0	0	0	0	0
	Old River	10/13	12.2/14.9	0	4	5	4	6	19	0	5	4	3	9	21
	Pascagoula River	10/13	11.9/15.3	0	1	33	20	7	61	4	5	10	3	9	31
	Red Creek	10/13	12.9/18.2	0	0	3	2	0	5	0	0	3	0	1	4
	Theodore A. Mars Jr.	**None	N/A												
	Ward Bayou	10/13	N/A	0	1	2	0	1	4	0	0	2	1	4	7
	Wolf River	10/13	12/15.5	1	1	9	14	8	33	1	3	0	1	8	13
South West	Bienville	12/15	14.4/16.4	0	1	21	12	7	41	2	10	15	11	14	52
	Canemount	16/20	16.1/21.3	0	1	0	4	16	21	1	6	8	5	15	35
	Caney Creek	12/15	12.6/15.7	0	1	18	4	5	28	0	8	11	5	8	32
	Caston Creek	10/13	11/16.5	0	0	3	1	3	7	1	0	0	1	1	3
	Copiah County	12/15	13.8/17.6	3	4	8	14	8	37	5	4	6	10	9	34
	Marion County	12/15	12.3/16.2	2	4	3	4	8	21	4	4	3	5	10	26
	Natchez State Park	12/15	13.4/16	0	1	2	3	12	18	0	2	1	1	8	12
	Pearl River	10/13	12.8/16.6	0	4	8	4	0	16	2	4	4	1	1	12
	Sandy Creek	10/13	12.1/14.4	1	1	1	4	3	10	2	0	0	2	7	11
	Tallahala	12/15	13/17	1	3	10	10	4	28	2	5	6	6	9	28

**Antler Criteria:1st number indicates Inside Spread, 2nd number indicates Main Beam Length.*

***Youth hunting areas: Hardened antler above hairline*

**** Average inside spread and main beam lengths of 3.5 year old bucks harvested in the 2016–2017 season*

CHRONIC WASTING DISEASE

Pictured above: A deer from Wisconsin with CWD

Chronic Wasting Disease (CWD) is a contagious neurological disease affecting deer, elk, and moose. It causes a characteristic spongy degeneration of the brains of infected animals resulting in emaciation, abnormal behavior, loss of bodily functions, and death. CWD belongs to a group of diseases known as transmissible spongiform encephalopathies (TSEs), similar to "mad cow disease", but the diseases are distinctly different. Currently, there is no evidence that CWD poses a risk for humans; however, public health officials recommend that human exposure to the CWD infected animals be avoided as they continue to evaluate any potential health risk. A recent study has shown that macaques, a primate, can contract the disease from eating low doses of CWD infected venison over a long period.

Public health and wildlife officials advise hunters to take the following precautions when pursuing or handling deer and elk that may have been exposed to CWD:

- Do not shoot, handle, or consume any animal that is acting abnormally or appears sick.
- Wear latex or rubber gloves when field dressing your deer.
- Do not saw through bone, and avoid cutting through the brain or spinal cord (backbone).
- Wash hands and instruments thoroughly after field dressing is completed.
- Avoid consuming brain, spinal cord, eyes, spleen, tonsils, and lymph nodes.
- Avoid consuming the meat from any animal that tests positive for the disease.
- If you have your deer commercially processed, request that your animal is processed individually, without meat from other animals being added to meat from your animal.

The origin of CWD is unknown, and it may never be possible to definitively determine how or when CWD arose. It was first recognized as a syndrome in captive mule deer held in wildlife research facilities in Colorado in the late 1960s. It is possible that CWD was derived from scrapie, a TSE of domestic sheep. It is theorized that deer came into contact with scrapie-infected sheep either on shared pastures or in captivity somewhere along the range of the Rocky Mountains, where high levels of sheep grazing occurred in the early 1900s. Because CWD infectious agents are extremely resistant in the environment, transmission may be both direct and indirect. Concentrating deer and elk in captivity or by artificial feeding probably increases the likelihood of both direct and indirect transmission between individuals. The movement of live animals is one of the greatest risk factors in spreading the disease into new areas.

The most obvious and consistent clinical sign is weight loss over time. CWD affected animals continue to eat but amounts of feed consumed are reduced, leading to gradual loss of body condition. Excessive drinking and urination are common in the terminal stages. Behavioral changes include decreased interactions with other animals, listlessness, lowering of the head, blank facial expression, and repetitive walking in set patterns. Excessive salivation, drooling, and grinding of the teeth also are observed.

CWD poses serious problems for wildlife managers, and the implications for free-ranging deer are significant. Ongoing surveillance programs are expensive and draw resources from other wildlife management needs. Impacts of CWD on population dynamics of deer and elk are presently unknown, but the highest prevalence seems to be in adult males. Computer modeling suggests that CWD could substantially reduce infected deer populations by lowering adult survival rates and destabilizing long-term population dynamics.

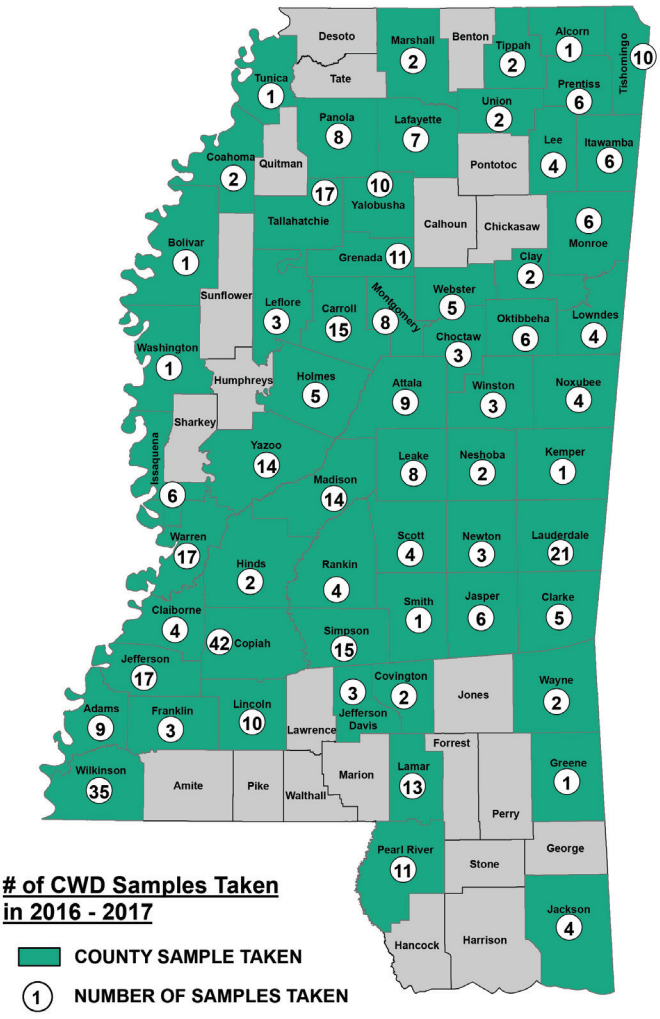
Currently, there is no evidence of deer with CWD in Mississippi. Due to the loss of federal funding for CWD testing, the MDWFP is only sampling target deer, road kills, and deer harvested during herd health evaluations (HHEs). A total of 307 samples were collected from free-ranging white-tailed deer in Mississippi during the 2016–2017 sampling period. All free range samples were submitted to the Colorado State University Veterinary Diagnostic Laboratory. Evidence of CWD was not detected in any of the tested samples. Additionally, 137 samples were taken from white-tailed deer within high-fenced enclosures and submitted to the National Veterinary Services Laboratories for testing. Evidence of CWD was not detected in any of the enclosure samples.

In 2016, Arkansas Game and Fish Commission confirmed CWD positive deer and elk for the first time in the state, moving the threat of CWD closer to Mississippi. Due to the concerns over the disease, Mississippi does not allow the importation of white-tailed deer from other states or the importation of deer carcasses from states or countries with chronic wasting disease.

Under Rule 2.7, which was passed in May 2016, "it is unlawful to import, transport, or possess any portion of a cervid carcass originating from any state, territory, or foreign country where the occurrence of CWD has been confirmed by either the state wildlife agency, state agriculture agency, state veterinarian, United States Department of Agriculture (USDA) Animal Plant Health Inspection Service (APHIS), or the Canadian Food Inspection Agency (CFIA)."

On January 21, 2017 a tornado took down thousands of feet of fence for a 420-acre illegal deer enclosure in Lamar County that had been subject to federal and state investigation for illegally importing white-tailed deer into Mississippi from Texas (a CWD positive state). Native deer were free to move on and off the property before all of the deer were able to be tested for CWD. Testing will be made available for a period of three years for CWD on the property and will be available for deer killed within a 5-mile radius of the property on a voluntary basis.

CWD Samples in 2016 -2017



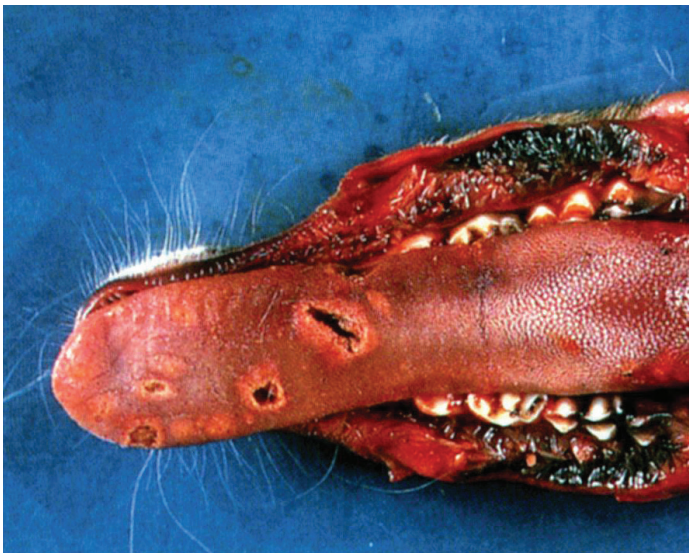
For more information visit:

MDWFP
www.mdwfp.com/cwd
Chronic Wasting Disease Alliance
www.cwd-info.org
USDA APHIS VS
www.aphis.usda.gov
USGS National Wildlife Health Center
www.nwhc.usgs.gov/disease_information/chronic_wasting_disease/index.jsp
Department of Health & Human Services Center for Disease Control
www.cdc.gov/prions/cwd/index.html

HEMORRHAGIC DISEASE

Biting Midge (Culicoides spp.) transmits EHD

Hoof Sloughing from EHD



Mouth Lesions from EHD

Hemorrhagic Disease (HD), sometimes referred to as Epizootic Hemorrhagic Disease (EHD) or Bluetongue (BT), is considered the most important viral disease of white-tailed deer in the United States. Different subtypes of two closely related viruses cause HD: EHD and BT. To make it more complex, there are technically six subtypes of BT virus and two subtypes of EHD virus. A distinguishable difference does not visually exist between these diseases, so wildlife managers normally group the symptoms into one category and refer to the condition as HD.

Biting midges of the genus Culicoides transmit HD; therefore the disease is seasonal, based on the abundance of midge vectors. Normal occurrence of HD is late summer through fall (approximately late July – November). Deer that become infected with the HD virus may exhibit a variety of outward symptoms. Some mildly infected deer will exhibit few symptoms. Others which contract a more potent form of the virus will appear depressed, become feverish, have swollen areas around the head or neck, and may have trouble breathing. Those contracting the potent form of the virus can die within 1 to 3 days. Normal population mortality rates from HD are usually less than 25 percent. However, mortality rates greater than 50 percent of the population have been documented. On a brighter note, HD has destroyed no free-ranging deer population.

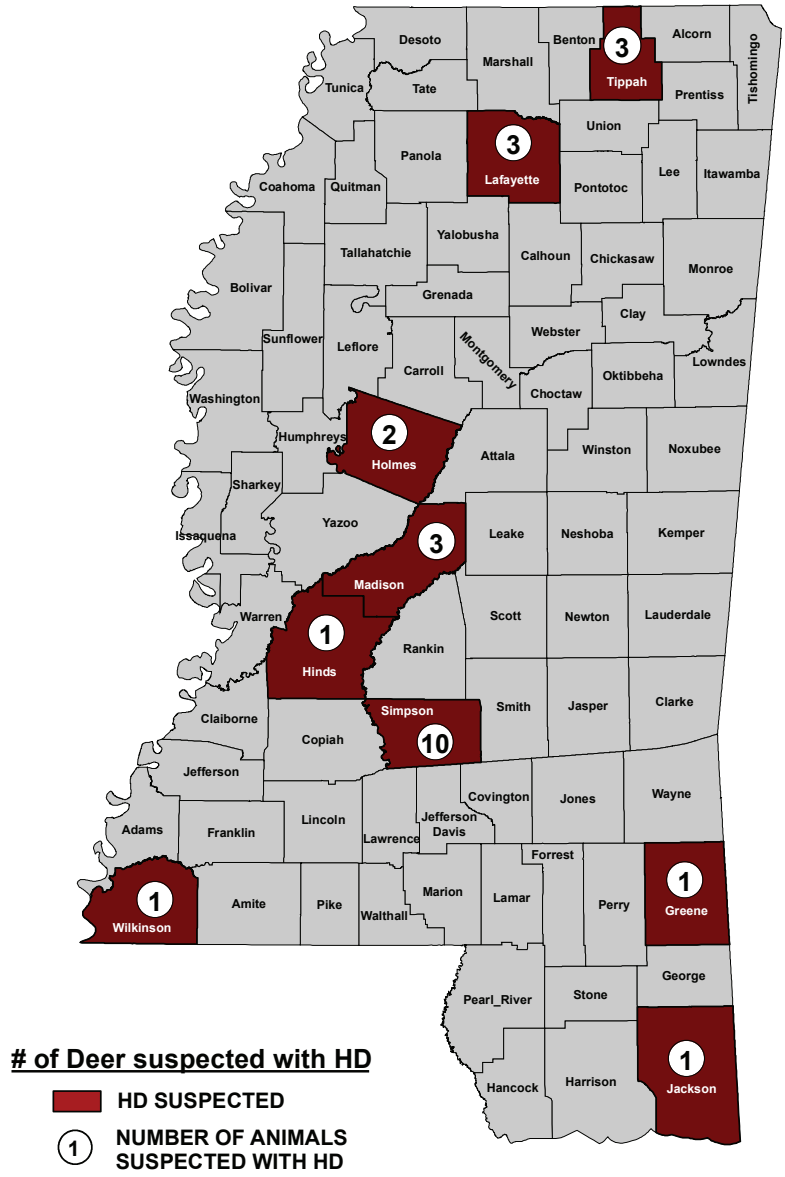
HD is first suspected when unexplained deer mortality is observed in late summer or early fall. Typically, archers who are scouting during late September are the first to observe suspect carcasses in the woods. On some occasions, HD deer are found dead during the late summer in or adjacent to water. The fever produced by the disease causes the infected deer to seek water. These deer may subsequently succumb to the disease in or near creeks and ponds.

Hunters will most frequently encounter the evidence of HD while observing harvested deer during the winter months. During the high fever produced by HD, an interruption in hoof growth occurs. This growth interruption causes a distinctive ring around the hoof, which is readily identifiable upon close examination. Hoof injury, as well as bacterial or fungal infection can cause a “damaged” appearance on a single hoof. HD is not considered unless involvement is noticed on two or more hooves.

Fortunately, people are not at risk of contracting HD. Handling infected deer or eating the venison from infected deer is not a public health risk. Even being bitten by the midge carrying the virus is not a cause of concern for humans. Deer which develop bacterial infections or abscesses secondary to HD may not be suitable for consumption.

The case is not as clear regarding domestic livestock. A small percentage of BT infected cattle can become lame, have reproductive problems, or develop sore mouths. Variations exist between BT and EHD virus infection in cattle and domestic sheep. Sheep are usually unaffected by EHD but can develop serious disease symptoms with the BT virus.

Occasionally over-population of a deer herd has been blamed for outbreaks of HD. Abnormally high deer populations are



expected to have greater mortality rates because the deer are in sub-optimal condition. Furthermore, the spread of the virus would be expected to be greater in dense deer herds. However, an outbreak of HD cannot be directly attributed to an overpopulated deer herd.

HD can be diagnosed several ways. A reliable tentative diagnosis can be made after necropsy by a trained biologist or veterinarian. A confirmed diagnosis can only be made by isolating one of the viruses from refrigerated whole blood, spleen, lymph node, or lung from a fresh carcass.

MDWFP biologists have been monitoring the presence of HD in Mississippi by several methods: through investigation of sudden, unexplained high deer mortality during late summer and early fall, necropsy diagnosis, isolation of EHD or BT virus, and observation of hoof lesions on hunter-harvested deer. HD or previous HD exposure is always present in Mississippi deer herds. Similar to disease resistance in humans, previous exposure without mortality yields the development of antibodies that afford the animal protection against future exposure to a disease. Without the antibody presence, significant mortality would occur.

The occurrence of HD was 5x higher during the 2016–2017 hunting season than the previous year, with evidence of HD reported in 158 deer across 30 counties compared to 25 deer across 9 counties reported in 2015–2016. The highest areas of HD reports were from counties in Central Mississippi, especially along the Big Black River corridor, Southwest Mississippi, and the Delta counties bordering the Mississippi River. Researchers have documented a distinctive 2–3 year cycle in HD outbreaks. Assuming that these cyclic outbreaks occur, we can expect a lower occurrence of HD during the 2017–2018 hunting season in these areas

FEE MANAGEMENT ASSISTANCE PROGRAM

The Fee Management Assistance Program (FMAP) was implemented during the 1989–1990 season. It began as a pilot program in two north-central counties at the request of local conservation officers to control expanding deer populations. Under this program, does tags were purchased for $10 each, at a rate of one per 50 acres. The landowner or club was required to show proof of ownership or hunting control. FMAP allowed the permittee to harvest antlerless deer in addition to the state bag limit. This program was accepted and quickly spread statewide. Sportsmen realized they could properly harvest does and still maintain a healthy population. Initially, a large number of permits were sold. However, liberalization of antlerless opportunity has occurred throughout the state, and no FMAP permits have been sold since 2013. Continuation of the program is recommended because it provides an opportunity to harvest antlerless deer in excess of the season bag limit on specific areas that exceed the environmental carrying capacity.

Conclusion


Paul T. Brown

Warm weather and low deer observations marked the 2016-2017 deer season. The statewide harvest survey of licensed hunters revealed it to be the lowest deer harvest in Mississippi since 1985 and the lowest buck harvest since the mid-70s. Statewide Deer Management Assistance Program (DMAP) harvest data (total deer harvest per acre) indicate overall hunter success was lower than previous seasons.

The fall of 2016 saw one of the most severe droughts in a decade according to the U.S. Drought Monitor. This caused significant stress on the deer herd. However, this stress on the herd was minimized once fall arrived due to an abundant acorn crop. The heat and lack of rain persisted into late November, and many food plots never germinated. The abundant acorns coupled with the hot weather appeared to minimize daytime deer movement, resulting in a large decrease in deer observations.

In some areas of Northeast and Southwest Mississippi, the herd appears to be declining. Many theories exist as to the cause, including disease and predation. Research is needed to discover the cause(s) that are negatively impacting our deer herd. MDWFP emphasizes the need for a mandatory reporting system. Having county-level harvest data would allow MDWFP to recognize regional decreases in harvest and be able to take action earlier.

The good news is Mississippi still ranks number 1 in the percentage of older age-class bucks harvested, with 78% of bucks harvested being 3.5+ year olds. Mississippi hunters are choosing to allow bucks to reach older age classes and harvesting more does than bucks for the past several years. Additionally, Mississippi still boasts one of the densest deer herds in the country. With over 1 million acres of public land and the average age of a harvested public land buck being 3 years old, opportunity abounds for deer hunters in the Magnolia state.

MDWFP is proud to serve the hunters of the state of Mississippi. The DMAP harvest data and Wildlife Management Area harvest reporting, while not perfect, are a critical dataset to help biologists inform the public and decision makers about the health and status of our deer herd. We owe the hunters and cooperators a great deal of gratitude for collecting this data.

Since 1997, MDWFP personnel have monitored statewide deer road kill in an effort to gain trend information about population levels and to compare rates over time. All MDWFP personnel record the county and deer sex (where possible) for all deer carcasses observed on or adjacent to roads during regular travel from October 1–January 31. The cause of death of these animals is assumed to be a vehicle collision. Personnel also report mileage driven each month. Data are reported as numbers of carcasses observed per 10,000 miles driven.

Figure A1 shows the number of carcasses observed per 10,000 miles driven by month as well as by season average from the 2008–2009 season through the 2016–2017 season. The precision and accuracy of this method of data collection has not been critically evaluated. Furthermore, we acknowledge some critical assumptions, such as the number of vehicles traveling state highways and MDWFP observers or the rate of carcass collection by MDOT road crews remain similar across regions and years, are not easily verified. Therefore, any inferences or interpretation of these data should be approached cautiously. However, every effort has been made to standardize sampling protocol.

Although road kill observation data has limitations, these data may be useful as an index of fluctuations or trends over time. Based on data in figure A1, observations of road kill carcasses showed a slightly decreasing trend during the 2015–2016 deer season when compared to the 2015–2016 season, although observations were similar to data from 2012–2015. Decreased road kill observations for the 2016–2017 season are consistent with below average hunter observations and harvest during the same time frame. Additionally, as may be expected deer-vehicle collisions were higher in December, during peak breeding season for much of the state.

MDWFP also collects road-kill data from State Farm Insurance Company. According to State Farm's estimates there were 22,733 projected deer-vehicle collisions in Mississippi during 2015–2016, which is a 1% increase from 22,373 projected in 2014–2015. The 2015–2016 deer-vehicle collision numbers represent a 9% increase from the 20,156 collisions estimated in 2010–2011. This estimate supports the increasing trend from MDWFP personnel's road-kill observations. Analysis of road kill and deer-vehicle collision data suggests the statewide deer density in Mississippi is stable or slowly expanding.

Observed road kill has fluctuated greatly since MDWFP began collecting data in 1997. We observed a steady increase in carcasses observed per 10,000 miles driven from 1997 until observations peaked during the 2010–2011 season. Since that time, road kill observations have decreased until this season when observations appeared to increase again. The MDWFP is working with DMAP cooperators and other partners to assess and manage the statewide deer herd. Hopefully new technologies can help us refine these methods and continue our mission to conserve and enhance Mississippi's wildlife resources.

Figure A1 **Statewide Averages (Deer/10,000 Miles Driven)**

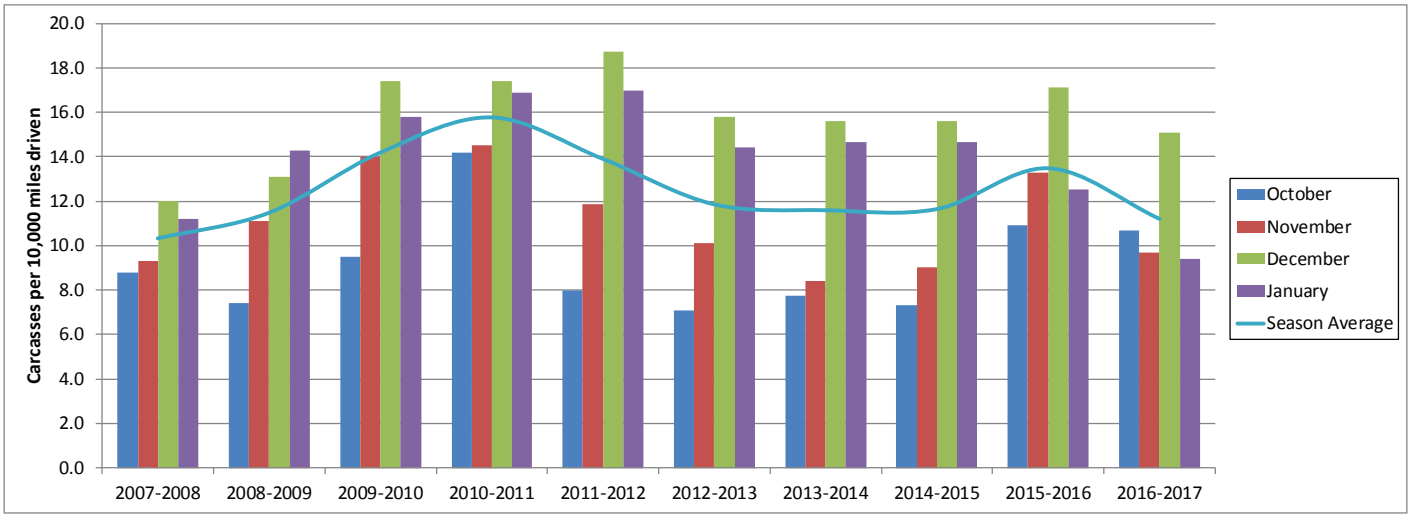
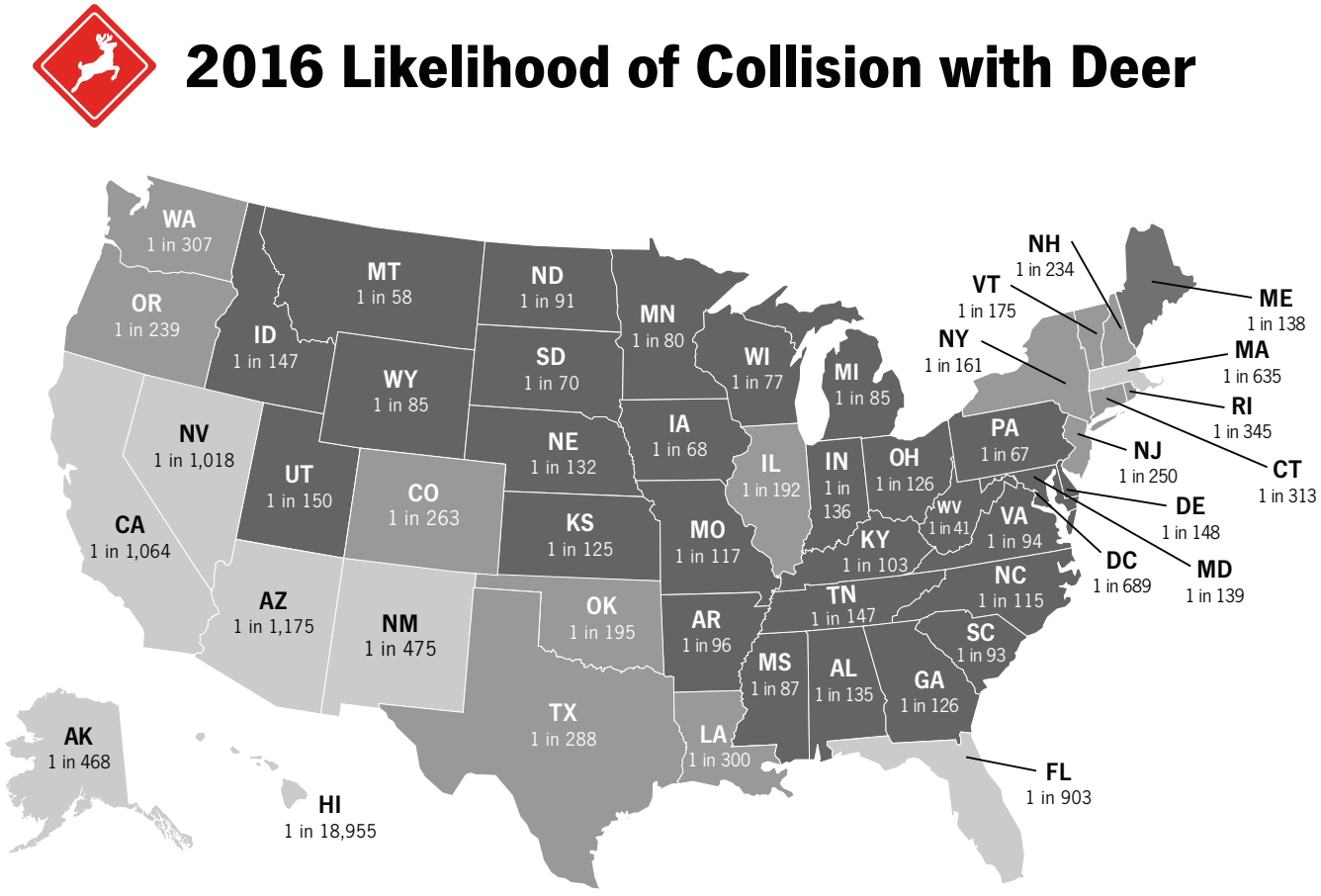


Figure A2 **2016 Likelihood of Collision with Deer**



*July 1, 2015 — June 30, 2016

High Risk States | Medium Risk States | Low Risk States

Mississippi's current white-tailed deer population may seem as a blessing to hunters but high deer numbers can negatively affect other segments of the population. Each year, white-tailed deer cause damage to agricultural crops and smaller areas such as gardens in residential settings. The preferred method of controlling deer depredation problems is adequate hunter harvest during deer season. This lowers the deer population to levels that are in balance with the environmental carrying capacity of the habitat. Normally this involves cooperation with adjoining landowners and hunting clubs. Landowners can also employ other forms of direct methods to alleviate depredation issues, with lethal removal being a last resort.

Alternative direct methods used to solve depredation problems include scare or harassment tactics, assorted chemical applications, electric fencing, and traditional fencing at a height that eliminates deer access. These tactics have both benefits and limitations. White-tailed deer typically become habituated to harassment tactics, rendering them ineffective after a short period of time. However, since most crops are extremely susceptible to depredation during the first few weeks of growth, harassment tactics may be a viable option to mitigate the damage. Chemical applications and fencing can become quite costly to landowners with large amounts of property. High fencing around gardens and small problem areas is costly as well but provides assured control on a long-term basis with little or no maintenance.

In some instances, after other control measures have been exhausted, deer will be lethally removed. This process seldom provides a long-term solution but is used in some problem situations. Conservation officers often assist farmers and landowners in mitigating agricultural depredation by deer through the use of Animal Control Permits (ACPs).

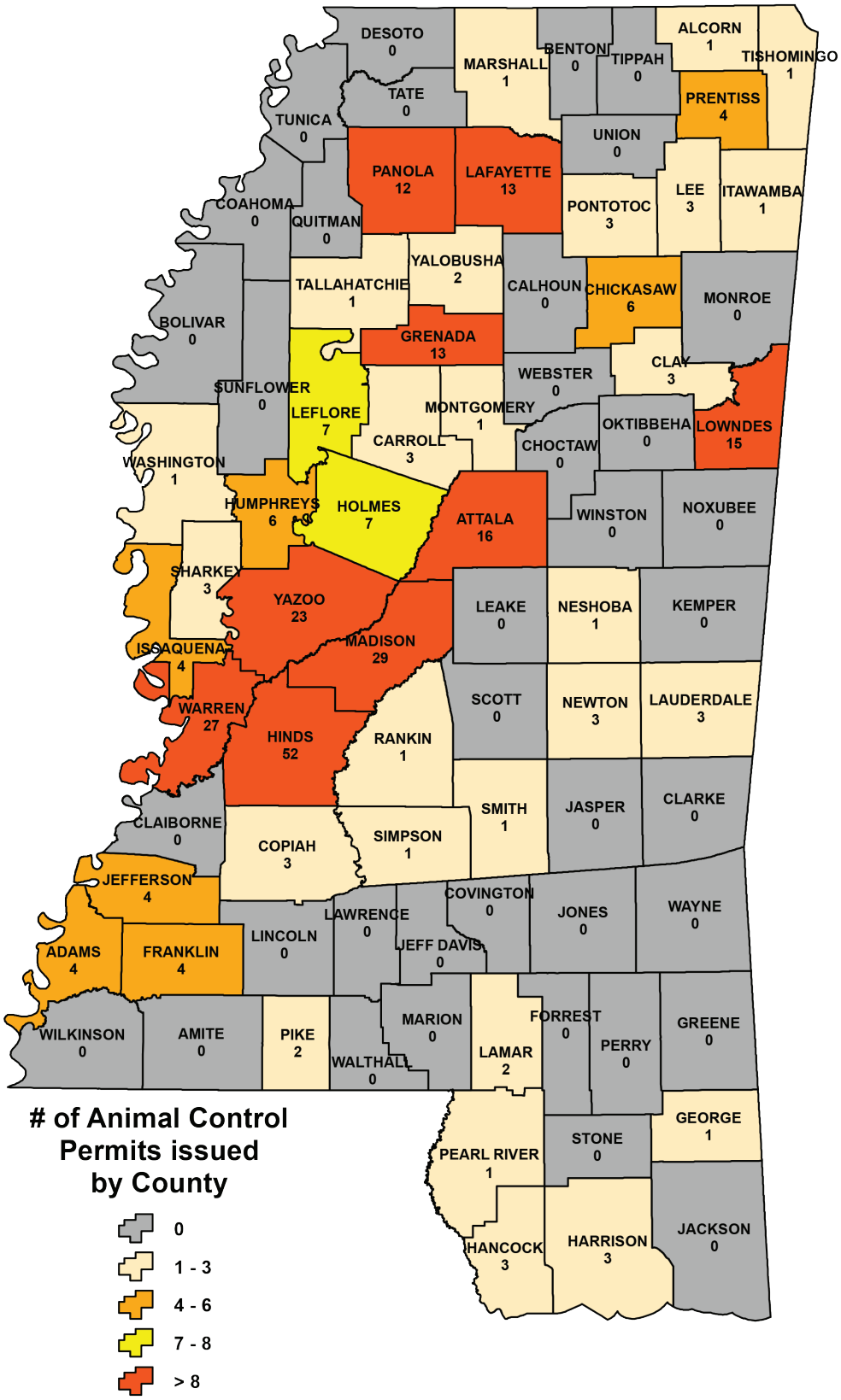
The method for application of ACPs changed significantly in the fall of 2009. Landowners who experience deer depredation problems on agricultural plants, gardens, and ornamental landscaping are required to apply for a permit before any action is taken to harass or remove problem animals. The process for permit issuance includes an on-site evaluation by an MDWFP officer to verify the occurrence of depredation, documentation of damage or safety concerns with photographic evidence, followed by submission of the ACP application to supervisors and administrative personnel for final approval. Permits are issued primarily for agricultural damage, but ornamental vegetation is included. Agricultural ACPs must include a notarized letter from all adjoining landowners within ½ mile of fields to be covered under the ACP and in the case of leasing the land, a notarized letter from the landowner must be attached as well. These letters must state that they are aware of the ACP. Miscellaneous problems such as deer on airport runways and in suburban areas also occur and are handled by the U.S. Department of Agriculture/Wildlife Services (USDA/WS), who are issued permits to conduct removals. MDWFP personnel are not permitted to conduct lethal removals under an ACP within an urban/suburban area due to safety and liability concerns. Additionally, property owners should know that permits are not issued in every situation.

A total of 299 ACPs were issued in 45 counties during 2016. This was an increase over the 239 permits issued in 43 counties during 2015. This increase in 2016 may be associated with an increase in the number of deer within the state's deer herd, especially in agricultural areas, along with a reduction of their habitat and natural food sources. Natural flooding can also congregate deer causing an increase of damage and the need for ACPS.

The ability to associate trends in deer abundance with the number of ACPs issued may have been lost until people adjusted to the new application process. Counties where ACPs were issued and the number of permits issued by county are shown in Figure A3. Counties with the most depredation problems are generally counties with the most rapidly expanding deer populations. Also, these counties often possess an abundance of forested acres. Producers in certain areas of the delta can mitigate damage by simply planting less palatable crops in fields that have multiple forested borders since these borders are often excellent white-tailed deer habitat. Producers in more forested areas do not have that luxury. Cases of deer depredation included damage to soybeans, corn, cotton, peas, sweet potatoes, watermelons, gourds, numerous garden and truck crops, flowers, ornamental trees, shrubs, landscaping, and interference on airports.

Due to most agricultural plant's high palatability and nutritional value, depredation problems will continue to occur in Mississippi as long as abundant deer populations exist. Extensive problems with agricultural depredation can be controlled with adequate antlerless harvest. Instances of urban conflicts with deer are increasing due to escalating deer numbers and urban sprawl. Urban deer problems are magnified in cities where bowhunting has been banned.

Figure A3 **2016 Animal Control Permits**



DEER HERD HEALTH EVALUATIONS

Deer herd health evaluations (HHE's) are conducted by MDWFP biologists annually. Evaluation sites are selected each year based on a specific need for additional information which cannot be obtained from hunter-harvested deer. These sites may be DMAP cooperator lands, WMAs, open public lands, or areas with a specific deer management concern. Some sites are sampled annually, others on a rotational schedule of 2 – 3 years, and some locations on an as-needed basis.

Time and personnel constraints normally limit the number of locations biologists sample each year. Deer collections are conducted during the months of February, March, and April. Collection timing must be late enough to insure that all does have been bred, but early enough to precede spring green-up when foliage density reduces the ability to readily observe and identify deer. The sampling window is most critical in the southern portion of the state where late breeding is a chronic problem and early green-up of native vegetation occurs.

The 2017 Health check season came during a period when the agency was experiencing multiple vacancies in personnel. The reduced manpower led to fewer HHE's being conducted. Only 4 HHE's were conducted during the spring of 2017.

Biologists complete an application for approval to conduct each HHE during a specific time period. The MDWFP Deer Committee reviews these applications and denies or grants approval. Other agency personnel assist the biologist in charge of the deer collection. When non-agency personnel are participating in the process, specific prior approval is obtained on the application.

During a typical HHE, biological data regarding reproduction, body condition, and disease are collected from mature females. A minimum of 10 mature females are desired to obtain an adequate sample size to assess herd parameters. Mature does are collected during the late afternoon on existing food plots or at night with the aid of a light and truck platform, which has been designed specifically for this purpose. Non-target deer are occasionally taken by mistake during the collection process. Data are obtained from all deer but the purpose of the evaluation is to obtain reproductive, physical condition, and disease data from mature females. All measurements and data are obtained from the deer on site or at a convenient nearby location. All deer are donated to a charitable institution or to an individual determined needy by agency personnel. Neither deer nor portions thereof are utilized by any MDWFP employees. Receipts are obtained from every deer donated. Rarely, instances have occurred where deer had to be disposed of in a manner where human utilization was not possible.

REPRODUCTION

Reproductive data collected during HHEs include conception dates, fawning dates, number of corpus lutea per doe, and number of fetuses per doe. Conception dates and fawning dates are determined using a fetal aging scale. Fetal length is measured on the fetal aging scale and the length is used to calculate conception date and fawning date. Breeding date ranges for Mississippi are presented in Figure A4. Data from the 2017 statewide deer HHEs are given in Table A1. Data were collected from 25 deer on 4 sites across the state.

In Table A1, conception date ranges, averages, and corresponding fawning dates are given for each collection site. The earliest conception date (4-December) was detected at Yazoo National Wildlife Refuge (NWR) in Yazoo County. The latest

conception date (16-January) was detected at Davis Island in Warren County. Mean fawning dates based on the conception dates ranged from (7-July) on Yazoo NWR to (17-July) George P. Cossar State Park. The narrow range in average conception dates can be partially attributed to the relatively close proximity of the 4 HHE locations. The 4 locations were all within a 75 mile radius. The statewide average conception date was (28-December) and the corresponding state average fawning date was (12-July).

Sample sizes for each collection site are given as N1 or N2. Different groupings by age and sex are mandatory to accurately interpret condition and reproductive data. Total 1½+ year old fecund (capable of breeding) does are represented as N1. Mature 2½+ year old does are represented as N2. Both N1 and N2 deer are utilized to calculate conception dates, but only N2 deer are considered in the sample when reproductive rates and condition data are compared.

Data comparing conception ranges and mean conception dates are self-explanatory. Average number of corpus lutea (CLs) is determined by examination of the ovaries of each N2 deer in the sample and counting the number of CLs present at the time of collection. A CL is a structure in the ovary which forms when an egg is released. The CL functions to maintain pregnancy by the release of hormones. As in domestic livestock, healthy deer on a high plane of nutrition will produce more eggs than deer in poor condition. Therefore, CL data provide a quantitative index to gauge not only reproductive performance at a specific site but also provide a general index to overall herd condition. CL data ranged from a low of (1.5 CLs) per doe at George P. Cossar State Park in Yalobusha County to a high of (2.4 CLs) per doe on Yazoo NWR in Yazoo County.

Average number of fetuses are also self-explanatory, but will, in most instances, be a lower number than the average number of CLs because all CLs do not represent a viable fetus. As the average number of CLs provides an index to reproductive

rates and herd condition, the average number of fetuses per doe provides an additional index to determine site-specific herd health. Average number of fetuses per doe ranged from a low of 1.5 at George P. Cossar State Park in Yalobusha County to a high of 2.2 on Yazoo NWR in Yazoo County.

BODY CONDITION

Body condition data collected during HHEs include dressed weight and kidney fat index (KFI). Average dressed weight only includes N2 deer. A wide range of weights are possible due to soil type, deer herd condition, and habitat type. In general, dressed weight is a reliable indicator to help gauge herd condition but should not be used to compare different sites unless all soil and habitat types are uniform.

KFI provides a quantitative index to energy levels within a deer herd. KFI is calculated by expressing the weight of the kidney fat as a percentage of the kidney weight. Generally, deer in good physical condition have a KFI of over 100%. However, high KFI indices can also be observed in areas with large mast crops. Substandard kidney fat levels were found at Mahannah WMA. The highest value during 2017 was (221%) on Yazoo NWR in Yazoo County.

DISEASE

Biological samples were taken during the HHEs for the purpose of Chronic Wasting Disease (CWD) monitoring. The presence of CWD was not detected in any samples taken during the 2017 herd health evaluations.

DISCUSSION

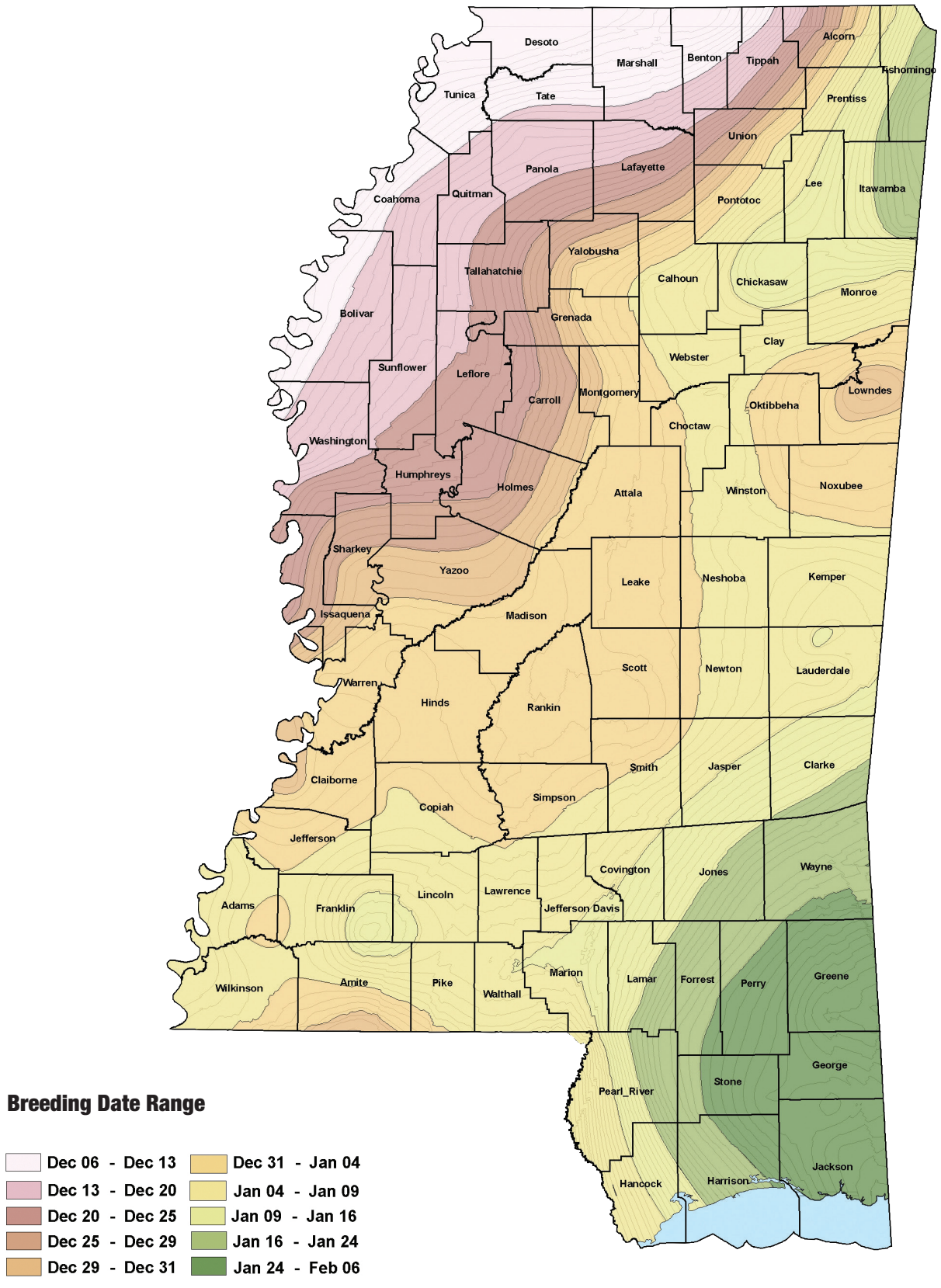
A wide range of reproductive and heard health levels were observed. Despite the relatively close proximity of the 4 locations and similar soil regions (Batture, Delta, and Upper Thin Loess), the deer harvest strategies and land use varied widely amongst properties. Ranging from trophy management on private land, to recreational harvest on public land, to an un-hunted state park. Deer density varied greatly because of these differences.

The 2017 HHE season produces few deer observations and therefor few sampling opportunities. The target sample size minimum desirable sample size (N2 ≥ 10) were met on any HHE. Deer behavior and movement can fluctuate greatly between seasons and from day to day. Each HHE was conducted over a 12 hour or less period. An average of six does 2 years or older were sampled per HHE in 2017.

Table A1: Heard Health Evaluations

Soil	SiteID	SITE	Date	N1	N2	Min Con Date	Max Con Date	Avg Con	Avg Fawn	Avg #CLs	Avg Fetus	Avg Wght	Avg KFI
B	56	Davis Island	20-Mar	11	8	18-Dec	16-Jan	1-Jan	16-Jul	2.1	1.9	89.5	184.3
D	115	Mahannah WMA	9-Mar	5	5	22-Dec	5-Jan	26-Dec	10-Jul	2.2	2	98.6	70.98
D	194	Yazoo NWR	8-Mar	5	5	4-Dec	13-Jan	23-Dec	7-Jul	2.4	2.2	114.8	221
Uthin	296	George P. Cossar State Park	21-Mar	4	4	22-Dec	15-Jan	2-Jan	17-Jul	1.5	1.5	68.8	197.5

Figure A4 **Breeding Date Range**



High Fenced Enclosures

PERMITS

40 Miss Admin. Code, Part 2, Rule 8.2 requires owners of enclosures containing white-tailed deer to obtain an annual Facility Permit from the MDWFP. The permit is valid from July 1 through June 30. For the 2016–2017 permit year, 115 facility permits applications were received totaling 85,894 acres. See Figure A5 for enclosure locations in Mississippi.

40 Miss Admin. Code, Part 2, Rule 8.2 allows white-tailed deer breeding pens within enclosures of at least 300 acres. For the 2016–2017 permit year, 6 white-tailed deer breeder permits were issued along with 387 metal ear tags which are to be inserted in all deer 1.5 years old and older being held in a breeding facility. A moratorium to stop live deer movement was issued in 2013 by the Commission on Wildlife, Fisheries, and Parks. This moratorium was removed by the Commission on Wildlife, Fisheries, and Parks in January 2017. As allowed by 40 Miss Admin. Code, Part 2, Rule 8.2, one intrastate white-tailed deer transport permit was issued, transporting 7 live white-tailed deer from Noxubee County to Hancock County.

As described in Section 49-11-3, Mississippi Code of 1972, the MDWFP may issue operating licenses to any person, partnership, association, or corporation for the operation of commercial wildlife enclosures. Each commercial wildlife enclosure shall contain a minimum of 300 acres in one tract of leased or owned land. During the 2016– 2017 permit years, 18 big game commercial wildlife enclosure licenses were issued.

ENCLOSURE MANAGEMENT ASSISTANT PROGRAM

As required 40 Miss Admin. Code, Part 2, Rule 8.2, all permitted high-fenced enclosures containing white-tailed deer must be enrolled in the Enclosure Management Assistance Program (EMAP). The owner of a permitted high-fenced enclosure must work with an MDWFP approved wildlife biologist to manage the white-tailed deer herd within the enclosure.

EMAP is a sub-level of DMAP (Deer Management Assistance Program). The starting point of EMAP is goal/objective setting by the enclosure owner to manage the white-tailed deer herd within their enclosure. Once goals and objectives are set, biological data are collected from harvested white-tailed deer, (i.e., weights, antler measurements, lactation data on does, and a jaw-bone pulled to determine the age of each deer harvested). The enclosure owner is responsible for the collection of biological data. The wildlife biologist is responsible for supplying the enclosure owner with harvest data sheets and jawbone tags.

EMAP cooperators receive a harvest summary report after each hunting season. This report contains a detailed analysis of current and historical harvest as well as graphs and charts that show trend directions while facilitating data interpretation.

For management of deer herds within high-fenced enclosures and upon the request of the wildlife biologist, the MDWFP may issue management buck and doe tags to EMAP properties to allow the harvest of does and management bucks in excess of the annual and daily bag limits.

For the 2016–2017 hunting season, harvest data were submitted for 66 enclosures, with 454 bucks and 721 does harvested. Using reported harvest data, deer harvested within enclosures do not differ from statewide free-range deer in antler size or body weights. For management purposes, 290 buck tags and 490 doe tags were issued to 21 enclosures.

Chronic Wasting Disease Surveillance

Regulations adopted by the Mississippi Commission on Wildlife, Fisheries, and Parks (40 Miss Admin. Code, Part 2, Rule 8.2) allow the movement of captive white-tailed deer from one permitted high-fenced enclosure to another permitted high-fenced enclosure within Mississippi only if the high-fence enclosure from which the deer originate is participating in the Mississippi White-tailed Deer Herd CWD Certification Program. No person may import a live white-tailed deer into Mississippi pursuant to Section §49-7-54, Mississippi Code of 1972.

It is the responsibility of the enclosure/breeding pen owner to obtain sampling supplies and collect samples. Retropharyngeal lymph nodes and obex tissue must be collected for testing.

The MDWFP supplies sampling data sheets to the enclosure/breeding pen owner. Once samples are collected, the MDWFP submits samples to the testing laboratory and supplies test results back to the enclosure/breeding pen owner. The contract laboratory for all captive CWD testing is the National Veterinary Services Laboratories. Visit www.mdwfp.com/deer for more information regarding the Mississippi White-tailed Deer Herd CWD Certification Program.

For the 2016 – 2017 permit year, 137 samples were taken from white-tailed deer within high-fenced enclosures and submitted to the National Veterinary Services Laboratories for CWD testing. All samples were tested and evidence of CWD was not detected in any of the samples.

Figure A5 **2016 Permitted Enclosures**

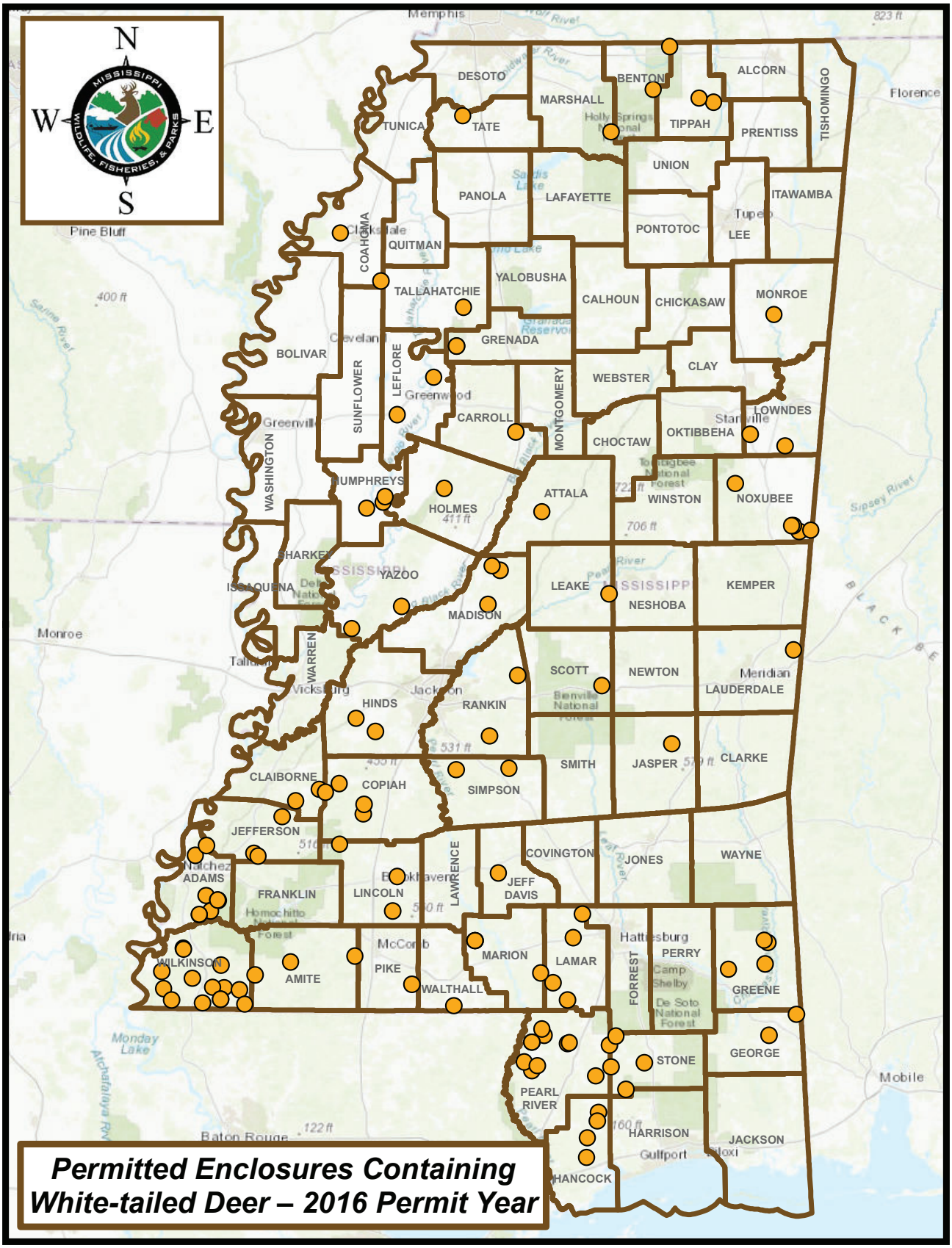


Figure A6 **Soil Resource Areas Map**

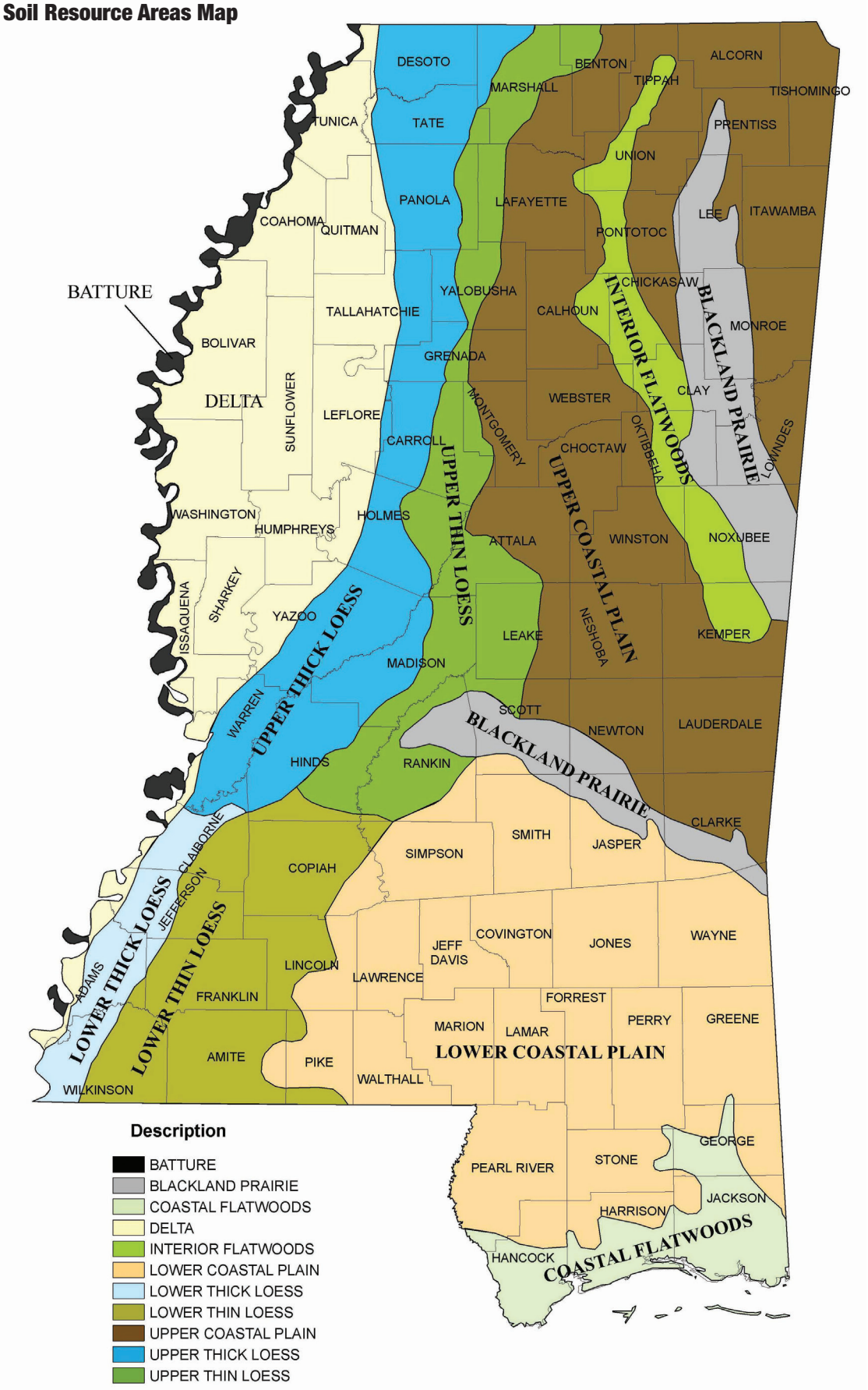


Table A2: Batture Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	215,113	235,150	249,319	254,044	263,522	243,430
Total Deer	3,622	3,575	5,852	4,902	4,659	4,522
Bucks	1,469	1,356	2,133	1,847	1,922	1,745
Does	2,070	2,199	3,703	3,045	2,731	2,750
Acres/Deer	59.4	65.8	42.6	51.8	56.6	55.2
Bucks	146.4	173.4	116.9	137.5	137.1	142.3
3.5+ Bucks	161.9	212.0	145.9	167.6	167.7	171.0
Does	103.9	106.9	67.3	83.4	96.5	91.6
Avg. Age ALL Bucks	4.3	4.0	4.0	4.0	3.9	4.0
% 0.5 Yr. Bucks	3.5	1.5	4.2	3.5	4.2	3.4
Weight	68.2	64.9	66.4	65.0	69.7	66.8
% 1.5 Yr.	1.9	7.8	4.1	5.4	3.6	4.6
Weight	108.6	102.3	109.7	115.5	120.6	111.3
Points	2.0	2.1	2.3	2.1	2.4	2.2
Circumf.	2.0	1.8	2.1	2.1	2.3	2.1
Length	3.3	4.3	5.3	6.1	7.4	5.3
Spread	4.3	4.7	5.7	6.1	7.2	5.6
% 2.5 Yr.	4.0	6.2	9.2	6.9	7.5	6.8
Weight	158.0	160.4	161.1	164.3	171.0	163.0
Points	7.0	6.7	6.7	7.0	7.6	7.0
Circumf.	3.6	3.5	3.6	3.6	3.7	3.6
Length	16.7	16.9	16.9	16.8	17.9	17.0
Spread	13.7	13.9	13.7	13.9	14.8	14.0
% 3.5 Yr.	16.7	23.9	22.6	22.9	26.6	22.5
Weight	174.9	181.8	184.3	184.7	185.5	182.2
Points	7.9	7.6	7.9	7.9	8.3	7.9
Circumf.	4.1	4.0	4.1	4.2	4.3	4.1
Length	18.7	18.5	19.0	19.4	19.8	19.1
Spread	15.2	15.2	15.4	15.8	16.2	15.6
% 4.5+ Yr.	73.9	60.5	59.8	61.2	58.1	62.7
Weight	190.8	196.7	196.4	197.1	197.2	195.6
Points	8.4	8.0	8.1	8.2	8.4	8.2
Circumf.	4.5	4.4	4.5	4.6	4.7	4.5
Length	20.7	20.2	20.7	20.9	21.5	20.8
Spread	16.6	16.1	16.8	16.9	17.4	16.8
Doe Age Classes						
% 0.5 Yr.	4.2	3.0	5.4	5.7	7.1	5.1
% 1.5 Yr.	6.2	23.0	17.6	26.1	20.3	18.6
% 2.5 Yr.	23.0	24.5	31.0	23.3	23.5	25.1
% 3.5+ Yr.	66.5	49.5	45.9	44.9	49.1	51.2
Doe Weights						
0.5 Yr.	66.1	64.1	65.5	64.0	66.6	65.3
1.5 Yr.	94.1	91.9	98.8	99.6	104.5	97.8
2.5 Yr.	108.0	109.5	112.3	113.1	114.3	111.4
3.5+ Yr.	116.8	117.3	120.0	119.3	121.2	118.9
% Doe Lactation						
1.5 Yr.	6.5	3.2	10.3	9.1	13.7	8.6
2.5 Yr.	43.4	34.9	55.6	53.2	71.4	51.7
2.5+ Yr.	59.1	39.0	64.3	61.1	75.3	59.8
3.5+ Yr.	64.5	41.1	70.1	65.2	77.2	63.6

Table A3: Delta Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	166,172	150,534	185,546	182,256	195,786	176,059
Total Deer	2,066	2,139	2,993	2,590	2,646	2,487
Bucks	713	701	908	689	850	772
Does	1,315	1,420	2,072	1,885	1,791	1,697
Acres/Deer	80.4	70.4	62.0	70.4	74.0	71.4
Bucks	233.1	214.7	204.3	264.5	230.3	229.4
3.5+ Bucks	271.1	273.7	280.7	403.2	318.9	309.5
Does	126.4	106.0	89.5	96.7	109.3	105.6
Avg. Age ALL Bucks	4.0	3.7	3.5	3.2	3.4	3.6
% 0.5 Yr. Bucks	4.2	4.7	5.0	5.2	5.1	4.8
Weight	72.9	71.2	68.8	72.2	69.5	70.9
% 1.5 Yr.	3.5	9.3	8.5	15.6	10.2	9.4
Weight	123.1	119.8	120.3	116.8	128.4	121.7
Points	2.3	2.2	2.2	2.2	2.4	2.3
Circumf.	1.6	1.9	1.5	1.6	1.5	1.6
Length	4.7	4.5	4.2	4.4	5.8	4.7
Spread	4.7	5.1	5.1	4.4	5.9	5.0
% 2.5 Yr.	5.4	5.3	12.0	10.8	9.8	8.6
Weight	159.7	161.5	163.1	163.3	170.1	163.5
Points	7.1	6.2	6.5	7.3	7.5	6.9
Circumf.	3.6	3.5	3.5	3.6	3.7	3.6
Length	15.7	16.9	16.0	15.8	16.9	16.3
Spread	13.1	14.2	13.3	13.0	14.5	13.6
% 3.5 Yr.	18.8	22.9	22.6	25.0	33.0	24.5
Weight	191.1	185.8	189.0	187.8	187.7	188.3
Points	8.2	8.0	7.9	8.1	8.3	8.1
Circumf.	4.5	4.1	4.2	4.2	4.3	4.3
Length	19.2	18.6	18.9	19.0	19.5	19.0
Spread	15.4	15.3	15.3	15.6	16.2	15.6
% 4.5+ Yr.	68.0	57.9	52.0	43.5	41.8	52.6
Weight	200.5	199.9	203.3	200.6	203.9	201.6
Points	8.4	8.4	8.3	8.3	8.6	8.4
Circumf.	4.7	4.6	4.6	4.5	4.8	4.6
Length	20.6	20.3	20.7	20.5	21.1	20.6
Spread	16.6	16.5	16.8	16.6	17.2	16.7
Doe Age Classes						
% 0.5 Yr.	8.3	7.3	6.7	6.7	8.3	7.5
% 1.5 Yr.	16.3	18.3	15.4	24.6	20.2	19.0
% 2.5 Yr.	19.6	20.2	28.2	21.8	20.9	22.1
% 3.5+ Yr.	55.7	54.2	49.7	46.9	50.6	51.4
Doe Weights						
0.5 Yr.	70.6	65.7	69.6	67.8	71.8	69.1
1.5 Yr.	107.0	103.5	105.9	102.3	107.7	105.3
2.5 Yr.	118.0	114.9	115.8	116.1	117.5	116.5
3.5+ Yr.	124.0	124.2	125.2	126.9	125.5	125.2
% Doe Lactation						
1.5 Yr.	17.8	11.3	18.1	10.2	12.4	14.0
2.5 Yr.	50.6	40.4	55.1	45.4	62.4	50.8
2.5+ Yr.	60.6	52.3	61.3	56.1	64.6	59.0
3.5+ Yr.	64.1	56.7	64.8	61.1	65.5	62.4

Table A4: Upper Thick Loess Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	190,903	209,744	224,243	231,857	232,766	217,903
Total Deer	3,322	3,661	4,522	4,734	5,450	4,338
Bucks	1,104	1,258	1,432	1,596	1,721	1,422
Does	2,209	2,399	3,086	3,131	3,712	2,907
Acres/Deer	57.5	57.3	49.6	49.0	42.7	51.2
Bucks	172.9	166.7	156.6	145.3	135.3	155.4
3.5+ Bucks	249.9	230.2	238.8	224.2	219.0	232.4
Does	86.4	87.4	72.7	74.1	62.7	76.7
Avg. Age ALL Bucks	3.5	3.4	3.2	3.2	3.0	3.3
% 0.5 Yr. Bucks	5.4	5.4	6.3	5.1	9.5	6.3
Weight	63.7	64.6	70.0	63.3	64.4	65.2
% 1.5 Yr.	16.3	1.5	18.2	20.2	19.3	15.1
Weight	110.2	109.3	112.2	110.2	117.2	111.8
Points	2.4	2.1	2.1	2.1	2.1	2.2
Circumf.	1.8	1.7	1.7	1.7	1.9	1.8
Length	4.3	3.5	4.0	3.7	4.3	4.0
Spread	5.1	4.6	4.5	4.6	4.6	4.7
% 2.5 Yr.	6.6	5.5	7.9	7.4	8.0	7.1
Weight	147.3	146.8	148.4	147.4	152.3	148.4
Points	6.8	6.5	6.2	6.4	6.8	6.5
Circumf.	3.3	3.4	3.2	3.4	3.4	3.3
Length	14.7	14.6	13.7	14.5	14.8	14.5
Spread	12.0	12.0	11.9	12.1	12.4	12.1
% 3.5 Yr.	18.1	21.2	21.3	20.3	21.8	20.5
Weight	167.4	163.1	171.1	169.8	173.8	169.0
Points	7.7	7.6	7.8	7.7	7.9	7.7
Circumf.	4.1	3.9	4.0	4.0	4.2	4.0
Length	17.6	17.3	17.5	17.5	17.9	17.6
Spread	14.4	14.3	14.5	14.2	14.8	14.4
% 4.5+ Yr.	53.6	52.5	46.4	46.4	41.5	48.1
Weight	183.0	181.6	184.4	185.3	189.3	184.7
Points	8.3	8.2	8.1	8.2	8.4	8.2
Circumf.	4.6	4.5	4.5	4.5	4.6	4.5
Length	19.9	19.8	19.4	19.8	20.1	19.8
Spread	16.2	15.9	15.7	15.9	16.3	16.0
Doe Age Classes						
% 0.5 Yr.	7.3	8.4	8.3	6.9	9.2	8.0
% 1.5 Yr.	18.8	18.2	17.3	20.5	19.9	18.9
% 2.5 Yr.	19.8	15.5	20.2	17.4	18.1	18.2
% 3.5+ Yr.	54.1	57.9	54.1	55.2	52.8	54.8
Doe Weights						
0.5 Yr.	64.0	65.7	66.6	64.8	64.6	65.1
1.5 Yr.	101.8	97.7	100.2	98.3	102.5	100.1
2.5 Yr.	110.7	111.1	110.9	112.3	112.9	111.6
3.5+ Yr.	116.1	116.4	119.3	118.0	118.9	117.7
% Doe Lactation						
1.5 Yr.	11.0	9.9	11.1	11.9	14.1	11.6
2.5 Yr.	61.5	56.1	49.1	48.3	62.3	55.5
2.5+ Yr.	67.2	63.2	61.8	58.6	68.0	63.8
3.5+ Yr.	69.3	65.1	66.6	61.9	70.0	66.6

Table A5: Lower Thick Loess Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	99,405	111,281	131,919	126,525	130,947	120,015
Total Deer	1,702	1,878	2,275	2,731	2,798	2,277
Bucks	698	755	880	948	1,114	879
Does	1,002	1,111	1,383	1,777	1,681	1,391
Acres/Deer	58.4	59.3	58.0	46.3	46.8	53.8
Bucks	142.4	147.4	149.9	133.5	117.5	138.1
3.5+ Bucks	174.1	175.0	192.0	177.5	164.1	176.5
Does	99.2	100.2	95.4	71.2	77.9	88.8
Avg. Age ALL Bucks	3.9	3.9	3.7	3.5	3.4	3.7
% 0.5 Yr. Bucks	1.8	1.9	3.3	4.4	4.0	3.1
Weight	61.7	61.8	59.4	58.6	61.9	60.7
% 1.5 Yr.	6.7	9.7	8.8	12.1	12.9	10.0
Weight	107.5	96.9	101.9	104.8	103.8	103.0
Points	2.7	2.1	2.3	2.2	2.3	2.3
Circumf.	2.2	1.8	1.4	1.9	1.8	1.8
Length	5.1	3.6	2.8	4.0	4.1	3.9
Spread	6.6	3.9	5.0	5.0	5.0	5.1
% 2.5 Yr.	6.7	4.8	7.5	6.8	8.2	6.8
Weight	151.9	143.3	138.2	141.8	150.6	145.2
Points	7.1	7.3	6.2	6.6	7.0	6.8
Circumf.	3.5	3.5	3.2	3.2	3.5	3.4
Length	14.6	14.8	14.1	14.3	14.7	14.5
Spread	12.0	12.5	11.7	11.4	12.2	12.0
% 3.5 Yr.	21.5	21.5	21.9	19.7	25.8	22.1
Weight	162.3	159.0	158.8	161.7	168.0	162.0
Points	7.9	7.7	7.6	7.9	7.8	7.8
Circumf.	4.0	3.9	3.9	4.0	4.0	4.0
Length	17.0	17.0	17.0	17.1	17.3	17.1
Spread	13.8	14.0	13.7	13.9	14.2	13.9
% 4.5+ Yr.	63.7	64.0	58.5	57.1	49.1	58.5
Weight	178.9	174.6	177.6	176.6	181.4	177.8
Points	8.2	8.2	8.1	8.3	8.4	8.2
Circumf.	4.6	4.4	4.4	4.5	4.5	4.5
Length	19.4	18.8	19.0	19.3	19.4	19.2
Spread	15.4	15.0	15.1	15.2	15.4	15.2
Doe Age Classes						
% 0.5 Yr.	5.9	4.2	5.4	5.1	6.2	5.3
% 1.5 Yr.	20.0	21.2	15.6	22.5	18.8	19.6
% 2.5 Yr.	13.5	15.6	19.4	12.3	13.7	14.9
% 3.5+ Yr.	60.5	59.0	59.6	60.1	61.3	60.1
Doe Weights						
0.5 Yr.	62.2	64.5	60.2	58.5	60.9	61.3
1.5 Yr.	92.5	93.5	89.3	91.0	93.8	92.0
2.5 Yr.	105.3	104.9	105.0	109.9	104.9	106.0
3.5+ Yr.	112.2	112.6	113.4	113.8	113.1	113.0
% Doe Lactation						
1.5 Yr.	5.7	8.7	7.1	7.6	10.0	7.8
2.5 Yr.	49.3	33.7	46.3	48.3	51.1	45.7
2.5+ Yr.	60.9	47.9	57.4	56.4	67.0	57.9
3.5+ Yr.	63.6	51.7	61.0	58.1	70.6	61.0

Table A6: Upper Thin Loess Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	67,911	73,486	91,546	93,474	101,290	85,541
Total Deer	793	982	1,392	1,366	1,426	1,192
Bucks	274	348	490	512	510	427
Does	519	626	899	854	916	763
Acres/Deer	85.6	74.8	65.8	68.4	71.0	73.1
Bucks	247.9	211.2	186.8	182.6	198.6	205.4
3.5+ Bucks	449.7	362.0	372.1	342.4	377.9	380.8
Does	130.8	117.4	101.8	109.5	110.6	114.0
Avg. Age ALL Bucks	2.7	2.8	2.7	2.8	2.8	2.8
% 0.5 Yr. Bucks	7.6	7.8	9.1	8.3	7.1	8.0
Weight	66.3	63.3	64.0	61.2	63.6	63.7
% 1.5 Yr.	16.8	20.4	17.8	20.3	18.9	18.8
Weight	104.1	101.7	111.6	110.4	110.4	107.6
Points	2.5	2.5	2.6	2.6	2.7	2.6
Circumf.	1.5	1.8	2.0	1.9	1.8	1.8
Length	4.2	4.3	5.0	4.8	5.4	4.7
Spread	4.9	4.7	5.2	5.1	5.6	5.1
% 2.5 Yr.	17.9	11.1	20.8	14.9	18.5	16.6
Weight	140.6	138.3	146.9	142.9	144.2	142.6
Points	6.7	6.5	6.8	6.7	7.0	6.7
Circumf.	3.4	3.1	3.5	3.5	3.4	3.4
Length	14.1	14.2	15.2	14.5	15.0	14.6
Spread	11.5	11.5	12.2	11.9	12.1	11.8
% 3.5 Yr.	29.0	29.3	22.9	19.5	23.9	24.9
Weight	156.7	153.1	162.8	157.6	163.3	158.7
Points	7.4	7.4	7.7	7.8	7.6	7.6
Circumf.	3.9	3.8	3.9	3.9	3.9	3.9
Length	17.0	16.7	16.7	16.4	17.0	16.8
Spread	13.9	13.5	13.8	13.5	13.6	13.7
% 4.5+ Yr.	28.6	31.4	29.3	37.1	31.7	31.6
Weight	168.6	165.9	173.2	174.0	170.9	170.5
Points	8.2	8.2	8.0	7.9	8.6	8.2
Circumf.	4.2	4.2	4.4	4.3	4.4	4.3
Length	18.5	18.7	18.8	18.4	18.7	18.6
Spread	14.9	14.9	15.1	14.8	15.3	15.0
Doe Age Classes						
% 0.5 Yr.	11.9	9.9	12.5	11.3	9.3	11.0
% 1.5 Yr.	19.3	19.9	24.1	20.4	20.4	20.8
% 2.5 Yr.	16.7	18.9	23.3	18.3	18.9	19.2
% 3.5+ Yr.	52.1	51.3	40.2	50.0	51.4	49.0
Doe Weights						
0.5 Yr.	65.2	59.6	60.5	59.3	65.9	62.1
1.5 Yr.	91.7	86.7	92.3	92.0	93.4	91.2
2.5 Yr.	99.9	100.8	102.5	105.6	103.7	102.5
3.5+ Yr.	108.1	106.8	110.0	110.0	110.5	109.1
% Doe Lactation						
1.5 Yr.	17.9	12.1	14.2	14.2	13.7	14.4
2.5 Yr.	61.7	55.4	58.3	55.7	60.7	58.4
2.5+ Yr.	62.6	60.7	60.7	61.6	69.8	63.1
3.5+ Yr.	62.9	62.7	62.1	63.7	73.1	64.9

Table A7: Lower Thin Loess Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	56,997	65,715	74,637	74,981	84,855	71,437
Total Deer	734	840	1,070	984	1,202	966
Bucks	262	296	370	354	404	337
Does	470	544	700	629	795	628
Acres/Deer	77.7	78.2	69.8	76.2	70.6	74.5
Bucks	217.5	222.0	201.7	211.8	210.0	212.6
3.5+ Bucks	339.3	338.7	369.5	340.8	334.1	344.5
Does	121.3	120.8	106.6	119.2	106.7	114.9
Avg. Age ALL Bucks	3.2	3.2	2.9	3.1	3.0	3.1
% 0.5 Yr. Bucks	5.2	4.7	5.9	5.9	6.3	5.6
Weight	68.2	56.3	69.2	59.1	66.3	63.8
% 1.5 Yr.	19.4	17.0	20.5	22.0	14.5	18.7
Weight	112.2	108.0	109.5	110.6	115.1	111.1
Points	2.5	2.2	2.3	2.4	2.5	2.4
Circumf.	2.1	2.5	2.1	2.2	2.2	2.2
Length	4.7	6.3	5.2	5.3	5.7	5.4
Spread	5.6	5.6	4.8	5.7	5.7	5.5
% 2.5 Yr.	7.7	8.0	13.6	7.9	9.6	9.4
Weight	145.9	139.6	142.2	149.9	152.3	146.0
Points	6.7	5.6	5.9	6.9	6.9	6.4
Circumf.	3.4	3.3	3.2	3.6	3.5	3.4
Length	14.3	13.8	14.1	15.2	15.6	14.6
Spread	11.9	11.2	10.8	11.8	12.7	11.7
% 3.5 Yr.	21.8	22.5	21.7	16.4	29.6	22.4
Weight	158.2	154.1	164.9	157.7	160.9	159.2
Points	7.2	7.3	7.8	7.6	7.8	7.5
Circumf.	3.6	3.7	4.0	3.9	3.8	3.8
Length	15.5	16.2	17.4	16.7	16.4	16.4
Spread	12.9	12.3	13.7	13.4	13.4	13.1
% 4.5+ Yr.	46.0	47.8	38.3	48.1	40.0	44.0
Weight	177.6	176.8	180.9	181.1	177.4	178.8
Points	8.4	8.1	8.2	8.1	8.0	8.2
Circumf.	4.3	4.4	4.5	4.4	4.3	4.4
Length	19.2	19.0	19.6	19.3	18.7	19.2
Spread	15.0	15.1	15.3	15.2	14.9	15.1
Doe Age Classes						
% 0.5 Yr.	8.6	6.2	6.3	7.1	9.3	7.5
% 1.5 Yr.	17.2	17.7	19.2	19.6	18.9	18.5
% 2.5 Yr.	13.7	14.5	15.1	14.3	17.5	15.0
% 3.5+ Yr.	60.6	61.5	59.5	59.0	54.3	59.0
Doe Weights						
0.5 Yr.	63.9	62.2	61.8	63.4	64.1	63.1
1.5 Yr.	95.9	94.2	94.3	94.3	98.6	95.5
2.5 Yr.	105.2	103.0	107.4	109.3	107.3	106.4
3.5+ Yr.	112.0	112.0	116.8	114.1	114.3	113.8
% Doe Lactation						
1.5 Yr.	16.7	11.8	8.5	9.3	13.5	12.0
2.5 Yr.	65.6	41.3	53.9	48.8	51.9	52.3
2.5+ Yr.	63.9	53.4	64.2	58.5	60.1	60.0
3.5+ Yr.	63.5	56.3	66.8	60.8	62.7	62.0

Table A8: Black Prairie Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	45,097	58,886	60,734	70,937	79,982	63,127
Total Deer	379	814	881	977	1,198	850
Bucks	98	236	295	318	389	267
Does	278	578	584	657	808	581
Acres/Deer	119.0	72.3	68.9	72.6	66.8	79.9
Bucks	460.2	249.5	205.9	223.1	205.6	268.8
3.5+ Bucks	777.5	436.2	365.9	427.3	368.6	475.1
Does	162.2	101.9	104.0	108.0	99.0	115.0
Avg. Age ALL Bucks	2.8	2.9	2.8	2.7	2.8	2.8
% 0.5 Yr. Bucks	10.5	7.6	7.4	10.2	5.2	8.2
Weight	56.2	58.7	64.9	63.2	62.3	61.1
% 1.5 Yr.	12.6	6.7	9.3	12.2	9.6	10.1
Weight	97.3	107.7	112.5	104.2	114.3	107.2
Points	2.1	2.6	2.5	2.3	3.8	2.7
Circumf.	1.4	2.0	1.9	1.8	2.3	1.9
Length	3.4	5.2	5.5	5.0	7.5	5.3
Spread	5.0	6.0	6.2	6.4	6.7	6.1
% 2.5 Yr.	15.8	25.1	21.6	22.8	25.3	22.1
Weight	134.0	136.8	149.2	143.0	150.5	142.7
Points	5.7	7.1	7.3	6.9	7.3	6.9
Circumf.	3.4	3.5	3.6	3.3	3.4	3.4
Length	13.4	15.4	15.5	14.5	15.2	14.8
Spread	12.0	12.6	12.6	11.9	12.6	12.3
% 3.5 Yr.	29.5	27.8	33.5	24.1	30.6	29.1
Weight	156.3	156.6	168.1	163.2	166.7	162.2
Points	8.1	7.9	7.9	7.4	8.0	7.9
Circumf.	3.9	4.0	4.1	3.9	4.0	4.0
Length	17.4	17.4	17.8	17.0	17.6	17.4
Spread	14.0	14.1	14.4	13.6	14.3	14.1
% 4.5+ Yr.	31.6	32.7	28.3	30.7	29.2	30.5
Weight	174.8	167.7	176.4	176.4	178.5	174.8
Points	8.2	8.4	8.6	8.1	8.4	8.3
Circumf.	4.5	4.4	4.4	4.4	4.4	4.4
Length	20.3	18.7	18.9	19.0	19.5	19.3
Spread	16.1	14.9	15.4	15.2	15.2	15.4
Doe Age Classes						
% 0.5 Yr.	6.9	8.1	7.4	8.6	8.7	8.0
% 1.5 Yr.	18.4	19.5	9.3	19.6	23.1	18.0
% 2.5 Yr.	26.0	22.1	21.6	20.1	19.2	21.8
% 3.5+ Yr.	48.7	50.3	61.7	51.7	49.0	52.3
Doe Weights						
0.5 Yr.	56.9	60.8	59.7	59.9	59.9	59.4
1.5 Yr.	90.3	88.3	96.6	91.9	97.0	92.8
2.5 Yr.	101.8	101.1	106.9	104.7	108.2	104.5
3.5+ Yr.	109.7	110.6	114.7	112.1	115.5	112.5
% Doe Lactation						
1.5 Yr.	15.7	6.3	13.9	12.8	13.3	12.4
2.5 Yr.	54.2	58.6	54.5	50.8	55.6	54.7
2.5+ Yr.	58.5	59.1	58.9	59.7	59.3	59.1
3.5+ Yr.	60.7	59.3	60.5	63.2	60.7	60.9

Table A9: Upper Coastal Plain Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	158,859	301,107	323,725	335,433	372,530	298,331
Total Deer	1,554	2,507	2,883	3,313	3,504	2,752
Bucks	516	934	1,047	1,206	1,304	1,001
Does	1,028	1,572	1,835	2,104	2,180	1,744
Acres/Deer	102.2	120.1	112.3	101.2	106.3	108.4
Bucks	307.9	322.4	309.2	278.1	285.7	300.7
3.5+ Bucks	522.6	574.6	619.0	482.6	566.2	553.0
Does	154.5	191.5	176.4	159.4	170.9	170.6
Avg. Age ALL Bucks	2.8	2.8	2.8	3.0	2.8	2.8
% 0.5 Yr. Bucks	5.6	5.4	5.7	5.7	7.6	6.0
Weight	56.6	57.6	57.7	59.8	59.6	58.3
% 1.5 Yr.	15.1	16.7	15.7	15.9	15.7	15.8
Weight	95.6	94.2	96.5	96.8	106.4	97.9
Points	2.4	2.6	2.5	2.5	3.2	2.6
Circumf.	1.6	1.9	1.8	1.9	2.1	1.9
Length	4.8	5.3	4.9	5.3	7.1	5.5
Spread	5.3	5.7	5.7	5.6	6.6	5.8
% 2.5 Yr.	17.9	19.0	26.5	17.9	23.7	21.0
Weight	135.5	133.7	136.7	135.4	139.8	136.2
Points	6.3	6.5	6.7	6.6	6.9	6.6
Circumf.	3.2	3.3	3.3	3.4	3.5	3.3
Length	13.6	14.1	14.1	14.2	14.9	14.2
Spread	11.0	11.6	11.7	11.6	12.0	11.6
% 3.5 Yr.	30.6	28.3	20.7	22.6	20.6	24.6
Weight	146.3	145.1	149.2	144.7	150.7	147.2
Points	7.2	7.4	7.4	7.2	7.4	7.3
Circumf.	3.8	3.7	3.9	3.7	3.8	3.8
Length	16.0	16.1	16.5	15.8	16.5	16.2
Spread	13.1	13.0	13.5	12.6	13.2	13.1
% 4.5+ Yr.	30.6	30.6	31.4	37.9	32.8	32.7
Weight	161.2	156.7	161.6	158.4	163.9	160.4
Points	8.2	7.8	8.0	7.8	8.0	8.0
Circumf.	4.2	4.1	4.2	4.1	4.2	4.2
Length	18.1	17.9	18.1	17.9	18.3	18.1
Spread	14.8	14.4	14.4	14.3	14.5	14.5
Doe Age Classes						
% 0.5 Yr.	9.7	9.6	5.7	9.5	10.5	9.0
% 1.5 Yr.	18.1	20.6	15.7	22.3	19.6	19.3
% 2.5 Yr.	17.8	17.1	26.5	15.9	19.6	19.4
% 3.5+ Yr.	54.3	52.7	52.1	52.3	50.3	52.3
Doe Weights						
0.5 Yr.	57.7	57.6	58.4	56.5	58.9	57.8
1.5 Yr.	85.6	83.9	85.2	85.6	89.6	86.0
2.5 Yr.	94.8	94.7	96.7	98.2	99.6	96.8
3.5+ Yr.	102.0	101.5	104.0	104.3	105.7	103.5
% Doe Lactation						
1.5 Yr.	11.9	8.7	9.3	9.2	12.2	10.3
2.5 Yr.	56.0	48.5	48.2	45.8	54.7	50.6
2.5+ Yr.	60.8	56.3	59.6	58.2	63.4	59.7
3.5+ Yr.	62.3	58.8	65.4	62.0	66.8	63.1

Table A10: Lower Coastal Plain Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	41,898	84,002	84,961	97,826	59,360	73,609
Total Deer	415	596	656	751	476	579
Bucks	203	266	233	307	204	243
Does	212	330	422	441	272	335
Acres/Deer	101.0	140.9	129.5	130.3	124.7	125.3
Bucks	206.4	315.8	364.6	318.7	291.0	299.3
3.5+ Bucks	590.1	449.2	562.7	531.7	498.8	526.5
Does	197.6	254.6	201.3	221.8	218.2	218.7
Avg. Age ALL Bucks	3.1	3.3	3.0	2.9	2.8	3.0
% 0.5 Yr. Bucks	1.0	3.1	2.6	3.7	2.7	2.6
Weight	75.0	58.4	57.5	59.5	54.2	60.9
% 1.5 Yr.	10.4	10.4	13.7	15.1	15.4	13.0
Weight	98.3	108.0	104.5	105.4	108.2	104.9
Points	2.8	3.1	2.6	2.6	3.0	2.8
Circumf.	2.0	2.2	1.6	1.9	1.9	1.9
Length	5.1	7.2	5.6	5.5	6.9	6.1
Spread	6.2	7.5	6.7	5.4	7.0	6.6
% 2.5 Yr.	26.5	14.3	17.2	19.5	18.6	19.2
Weight	133.1	132.2	140.4	142.4	140.1	137.6
Points	6.5	6.5	6.6	6.2	6.9	6.5
Circumf.	3.3	3.2	3.3	3.2	3.2	3.2
Length	13.7	14.1	14.1	13.3	14.3	13.9
Spread	10.8	11.2	11.4	10.9	12.2	11.3
% 3.5 Yr.	26.9	29.0	30.8	29.2	36.7	30.5
Weight	143.4	143.0	149.2	149.9	147.5	146.6
Points	7.4	7.1	7.4	7.4	7.2	7.3
Circumf.	3.7	3.5	3.7	3.6	3.5	3.6
Length	15.6	15.2	15.7	15.4	14.8	15.3
Spread	12.4	12.2	12.6	12.5	12.1	12.4
% 4.5+ Yr.	35.3	43.2	35.7	32.6	26.6	34.7
Weight	152.3	151.1	153.8	156.5	159.1	154.6
Points	8.4	7.8	7.5	7.8	7.9	7.9
Circumf.	4.0	3.9	4.0	4.0	4.2	4.0
Length	17.4	17.0	17.0	17.5	17.8	17.3
Spread	13.9	13.3	13.7	14.0	14.0	13.8
Doe Age Classes						
% 0.5 Yr.	3.8	3.8	3.9	3.3	3.5	3.6
% 1.5 Yr.	13.3	21.3	21.9	18.2	19.3	18.8
% 2.5 Yr.	19.9	16.3	20.2	18.0	23.6	19.6
% 3.5+ Yr.	63.0	58.8	54.0	60.5	53.6	58.0
Doe Weights						
0.5 Yr.	71.6	62.9	63.9	63.4	59.0	64.2
1.5 Yr.	87.3	87.9	88.1	86.5	90.1	88.0
2.5 Yr.	99.4	99.9	99.9	102.3	100.5	100.4
3.5+ Yr.	105.4	102.1	105.8	104.1	109.9	105.5
% Doe Lactation						
1.5 Yr.	0.0	10.6	9.0	13.5	10.0	8.6
2.5 Yr.	47.6	40.4	53.7	51.4	53.3	49.3
2.5+ Yr.	55.2	56.9	57.9	58.1	58.9	57.4
3.5+ Yr.	63.8	61.5	59.5	60.1	61.3	61.2

Table A11: Coastal Flatwoods Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	9,600	21,946	22,870	28,070	19,669	20,431
Total Deer	49	43	108	102	74	75
Bucks	27	24	52	51	42	39
Does	22	19	56	51	32	36
Acres/Deer	195.9	510.4	211.8	275.2	265.8	291.8
Bucks	355.6	914.4	439.8	550.4	468.3	545.7
3.5+ Bucks	685.7	4389.2	714.7	967.9	728.5	1497.2
Does	436.4	1155.1	408.4	550.4	614.7	633.0
Avg. Age ALL Bucks	2.6	2.6	2.9	2.8	2.9	2.8
% 0.5 Yr. Bucks	11.1	4.2	3.8	2.0	2.5	4.7
Weight	50.3	52.0	54.0	50.0	50.0	51.3
% 1.5 Yr.	14.8	25.0	23.1	20.0	15.0	19.6
Weight	85.3	95.5	99.9	94.7	111.8	97.4
Points	3.0	2.5	2.1	2.3	27.0	7.4
Circumf.	1.6	3.1	1.9	1.6	1.3	1.9
Length	5.6	7.0	3.1	4.1	4.2	4.8
Spread	4.7	6.0	7.2	5.8	5.5	5.8
% 2.5 Yr.	22.2	12.5	11.5	20.0	15.0	16.2
Weight	126.5	130.7	126.3	147.6	144.0	135.0
Points	6.3	6.3	4.8	6.6	5.0	5.8
Circumf.	3.1	3.1	2.7	3.1	3.0	3.0
Length	12.8	13.6	12.8	14.3	12.4	13.2
Spread	10.0	12.8	10.4	11.2	11.0	11.1
% 3.5 Yr.	29.6	33.3	30.8	30.0	35.0	31.7
Weight	137.9	145.9	147.1	158.9	142.6	146.5
Points	6.9	7.4	7.9	7.8	7.5	7.5
Circumf.	3.4	3.4	3.8	3.5	3.2	3.5
Length	14.4	15.1	15.8	15.6	15.6	15.3
Spread	11.0	11.9	13.1	12.6	13.7	12.5
% 4.5+ Yr.	22.2	25.0	30.8	28.0	32.5	27.7
Weight	150.8	151.0	157.1	156.4	155.3	154.1
Points	7.8	7.2	7.9	7.4	7.7	7.6
Circumf.	3.8	4.0	4.2	3.9	3.7	3.9
Length	17.3	16.4	17.7	18.8	17.5	17.5
Spread	13.8	12.7	13.8	13.9	14.6	13.8
Doe Age Classes						
% 0.5 Yr.	9.5	12.5	7.1	5.7	9.6	8.9
% 1.5 Yr.	23.8	6.3	16.1	28.3	19.4	18.8
% 2.5 Yr.	4.8	50.0	23.2	22.6	25.8	25.3
% 3.5+ Yr.	61.9	31.3	53.6	43.4	45.2	47.1
Doe Weights						
0.5 Yr.	53.0	53.0	56.5	42.7	59.3	52.9
1.5 Yr.	82.2	75.0	87.9	90.3	84.6	84.0
2.5 Yr.	109.0	99.5	93.6	101.8	102.9	101.4
3.5+ Yr.	97.5	102.2	102.5	111.3	95.9	101.9
% Doe Lactation						
1.5 Yr.	0.0	0.0	44.4	33.3	0.0	15.5
2.5 Yr.	100.0	37.5	46.2	33.3	12.5	45.9
2.5+ Yr.	78.6	23.1	44.2	46.0	36.4	45.6
3.5+ Yr.	76.9	0.0	43.3	52.6	50.0	44.6

Table A12: Interior Flatwoods Soil Resource Area (Summary of DMAP Data)						
	2016 Season	2015 Season	2014 Season	2013 Season	2012 Season	'12–16 Season
Acres	33,252	35,824	37,064	34,832	48,375	37,869
Total Deer	297	378	672	386	615	470
Bucks	112	126	282	142	226	178
Does	185	252	389	244	389	292
Acres/Deer	112.0	94.8	55.2	90.2	78.7	86.2
Bucks	296.9	284.3	131.4	245.3	214.0	234.4
3.5+ Bucks	536.3	465.2	311.5	440.9	343.1	419.4
Does	179.7	142.2	95.3	142.8	124.4	136.9
Avg. Age ALL Bucks	2.6	2.8	2.7	2.9	2.9	2.8
% 0.5 Yr. Bucks	5.6	5.9	12.4	8.3	9.0	8.2
Weight	52.0	59.7	57.3	59.5	60.9	57.9
% 1.5 Yr.	16.8	12.6	13.3	18.8	12.3	14.8
Weight	93.7	91.9	100.2	96.3	109.0	98.2
Points	2.4	2.0	2.1	2.2	3.0	2.3
Circumf.	1.5	1.6	1.2	1.3	1.7	1.5
Length	3.5	2.9	4.0	4.0	5.6	4.0
Spread	4.6	3.9	4.6	5.2	5.2	4.7
% 2.5 Yr.	19.6	16.8	17.6	13.5	11.8	15.9
Weight	131.4	133.0	139.0	133.8	139.0	135.2
Points	6.3	5.6	6.4	5.5	6.4	6.0
Circumf.	3.1	3.1	3.3	3.1	3.4	3.2
Length	14.0	14.0	14.7	14.1	14.7	14.3
Spread	11.6	11.2	11.3	10.9	11.2	11.2
% 3.5 Yr.	33.6	37.0	26.7	18.0	30.3	29.1
Weight	150.5	148.5	146.9	135.0	155.1	147.2
Points	7.1	7.4	7.4	6.3	7.5	7.1
Circumf.	3.7	3.6	3.7	3.4	3.7	3.6
Length	15.3	16.7	16.5	13.4	16.7	15.7
Spread	12.2	13.2	13.0	11.0	13.2	12.5
% 4.5+ Yr.	24.3	27.7	30.0	41.4	36.5	32.0
Weight	159.0	159.0	165.1	170.7	165.5	163.9
Points	7.5	7.6	7.8	8.3	8.0	7.8
Circumf.	4.0	4.0	4.1	4.2	4.1	4.1
Length	17.7	17.6	18.0	18.6	18.0	18.0
Spread	14.3	13.8	14.4	14.9	13.7	14.2
Doe Age Classes						
% 0.5 Yr.	6.3	8.2	5.9	7.6	9.1	7.4
% 1.5 Yr.	20.7	23.8	18.9	16.0	18.9	19.7
% 2.5 Yr.	16.7	9.8	17.6	13.0	18.4	15.1
% 3.5+ Yr.	56.3	58.2	57.6	63.4	53.6	57.8
Doe Weights						
0.5 Yr.	53.0	53.7	58.4	58.2	60.2	56.7
1.5 Yr.	89.3	85.5	89.4	87.5	97.7	89.9
2.5 Yr.	100.5	100.9	101.5	102.9	101.0	101.4
3.5+ Yr.	108.1	107.1	108.8	111.0	110.6	109.1
% Doe Lactation						
1.5 Yr.	8.8	22.4	10.5	21.6	28.6	18.4
2.5 Yr.	37.9	47.8	41.1	67.7	69.1	52.7
2.5+ Yr.	57.7	58.7	57.7	70.0	69.0	62.6
3.5+ Yr.	63.8	60.6	62.8	70.5	68.9	65.3

The Law Enforcement Bureau began monitoring all statewide citations at the district and county levels during the 1996–1997 deer season. Twenty cited deer hunting violations were extracted from the database and summarized from 2008 to 2017 in Table 13. These violations were chosen because they are commonly cited, or because they represent changes in Administrative Rules or policy. Some citations were combined into one category because they represent similar violations (i.e., Unlawful shot/weapon includes hunting with restricted calibers and inappropriate weapons for the season). Citations for eight of the most common violations are summarized by county in Table A14 on page 66. The total citations in Table A14 represent the totals for all deer-related citations.

A total of 1,559 citations were written during the 2016–2017 deer hunting season (Table A15 and Figure A7). This represents a decrease in deer-related citations from the previous season, potentially in some part due to reduced deer sightings and subsequently less hunters in the woods during the 2016–2017 season. This logic may explain decreases in citations for residents and non-residents hunting without licenses and harvesting of bucks with undersized antlers.

A new rule, 40 Miss. Admin Code, Part 2, Rule 2.7 Prohibition on Cervid Carcass Importation, to Protect Mississippi from Chronic Wasting Disease, was enacted for the 2016–2017 hunting season. This rule only allows the following to be imported from a Chronic Wasting Disease positive state:

- Meat from cervids that has been completely deboned.
- Antlers, antlers attached to cleaned skull plates or cleaned skulls where no tissue is attached to the skull.
- Cleaned teeth.
- Finished taxidermy and antler products.
- Hides and tanned products.
- Any portions of white-tailed deer originating from the land between the Mississippi River levees in Arkansas.

Parts of fourteen different cervids were confiscated due to violations of this rule. All confiscated parts of the cervids were destroyed either via a landfill or via incineration.

Our officers are doing a great job across the state, but they need the help of sportsmen. Hunters can assist our officers by reporting wildlife violations by calling 1-800-BE-SMART. Most counties have only one or two officers, but with concerned sportsmen, they have eyes and ears all over the county.

Figure A7 **Statewide Averages (Deer/10,000 Miles Driven)**

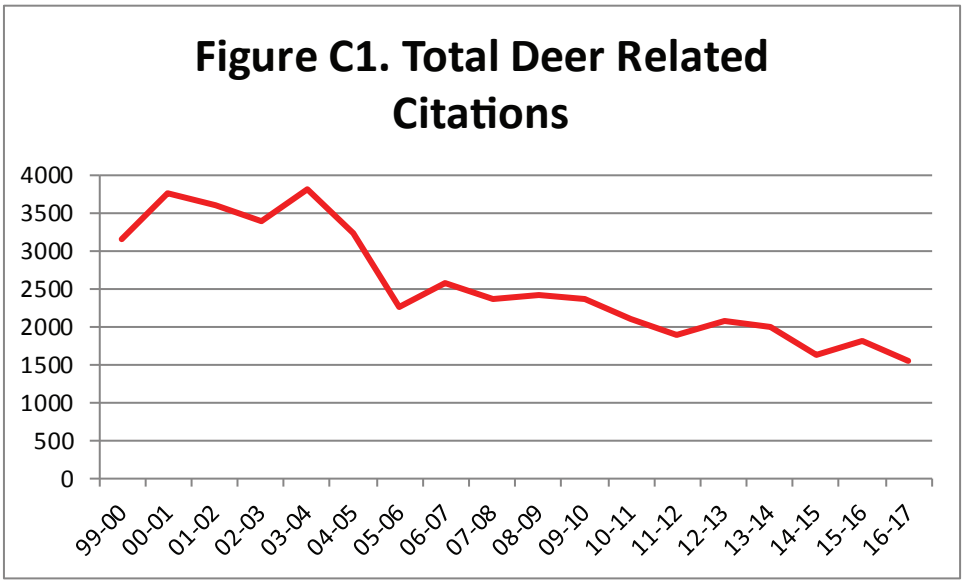


Table A13: Statewide Citations Summary for Most Frequent Deer-Related Violations By Season									
Violation	**'08–'09**	**'09–'10**	**'10–'11**	**'11–'12**	**'12–'13**	**'13–'14**	**'14–'15**	**'15–'16**	**'16–'17**
NO LICENSE - NON-RES	108	78	96	116	83	102	91	80	68
NO LICENSE - RESIDENT	337	354	346	275	308	272	266	289	258
BAITING	214	235	205	188	154	131	86	14	26
SUPPLEMENTAL FEED	NA	44	54	124	170	224	174	188	185
DUMPING WILDLIFE PARTS	6	5	7	4	8	12	3	16	13
EXCEEDING BAG LIMIT	12	10	11	6	14	11	11	8	6
HEADLIGHTING DEER	175	178	128	105	168	171	105	130	95
WILDLIFE HARRASSMENT (ILLEGAL SHINING)	36	37	26	23	29	17	18	68	19
HUNTING AFTER HOURS	49	53	37	33	37	26	25	35	13
HUNTING CLOSED SEASON	56	84	63	43	76	78	32	44	18
HUNTING FROM PUBLIC ROAD/ MOTORIZED VEHICHLE	47	31	18	34	34	35	17	25	186
HOMOCHITTO DOG LAW	NA	NA	1	8	4	8	11	2	5
UNLAWFUL ACT DUE TO HIGH WATER CLOSURES	NA	NA	NA	NA	NA	NA	NA	18	NA
HUNTING/SHOOTING FROM MAIN LEVEE	3	8	3	2	0	2	5	2	1
KILLING DOE OUT OF SEASON	7	10	9	10	3	7	4	2	4
NO ARCHERY/ PRIMATIVE WEAPON	24	23	9	15	10	6	15	24	20
NO HUNTER ORANGE	266	231	225	204	242	217	190	160	162
WMA REGS	167	134	130	112	110	108	125	146	32
No WMA Permit	34	29	44	44	26	39	32	49	132
TRESPASSING	176	180	149	100	119	119	104	120	80
UNDERSIZED ANTLERS	41	30	28	29	34	26	47	57	21
UNLAWFUL WEAPON/SHOT SIZE	143	140	100	94	129	81	42	58	33
PROHIBITION OF IMPORTATION OF CERVID CARCASS	NA	NA	NA	NA	NA	NA	NA	NA	2
Totals	**1865**	**1857**	**1663**	**1546**	**1729**	**1675**	**1385**	**1467**	**1379**

Paul T. Brown

Table A14: Citations Summary for Most Frequent and Total Deer-Related Violations By County During the 2016–2017								
County	Supplemental Feed	Headlighting Deer	No License - Non-Resident	No License - Resident	No Hunter Orange	Trespassing	Undersized Antlers	Total
ADAMS	0	0	0	0	1	0	0	1
ALCORN	0	2	0	3	4	1	0	11
AMITE	3	7	2	1	2	2	0	29
ATTALA	10	0	3	6	5	0	0	34
BENTON	0	0	0	3	3	0	0	13
BOLIVAR	0	0	0	2	1	0	0	5
CALHOUN	9	2	1	5	2	4	2	34
CARROLL	1	1	0	1	0	2	0	17
CHICKASAW	3	4	2	5	1	1	1	35
CHOCTAW	5	0	0	2	3	3	1	21
CLAIBORNE	8	2	7	5	4	3	0	42
CLARKE	9	1	1	5	1	2	0	27
CLAY	1	0	2	1	2	0	0	9
COAHOMA	2	1	0	2	1	1	0	12
COPIAH	8	4	5	3	8	0	0	44
COVINGTON	0	0	0	0	1	0	0	2
DESOTO	3	1	0	2	1	0	1	10
FORREST	0	0	0	2	1	0	0	4
FRANKLIN	1	0	1	1	0	0	0	9
GEORGE	0	0	1	4	1	0	0	17
GREENE	0	2	1	3	0	1	0	14
GRENADA	3	0	0	6	4	2	1	25
HANCOCK	2	1	1	2	0	0	0	8
HARRISON	2	2	1	6	4	0	0	30
HINDS	5	2	0	4	4	2	0	26
HOLMES	3	0	3	9	2	0	0	26
HUMPHREYS	0	1	1	1	0	3	0	10
ISSAQUENA	2	0	0	2	0	0	2	15
ITAWAMBA	1	6	2	6	6	4	0	47
JACKSON	1	2	1	5	2	1	1	53
JASPER	3	0	0	1	2	0	0	16
JEFFERSON	3	0	6	3	2	0	0	16
JEFFERSON DAVIS	1	1	1	1	1	1	0	12
JONES	1	4	0	1	0	1	0	15
KEMPER	13	1	2	11	5	2	0	39
LAFAYETTE	0	0	1	1	2	0	0	9
LAMAR	0	0	0	1	1	0	0	5
LAUDERDALE	10	0	2	4	2	3	1	29
LAWRENCE	1	2	1	1	0	1	0	11
LEAKE	1	1	0	2	0	1	1	7
LEE	0	1	0	3	4	1	0	18
LEFLORE	1	1	0	3	4	1	1	21
LINCOLN	2	0	1	5	3	0	0	11
LOWNDES	1	1	1	2	3	1	0	11
MADISON	3	1	0	5	1	1	2	28
MARION	2	1	0	7	2	1	1	23
MARSHALL	1	0	1	1	1	1	1	7
MONROE	5	2	0	6	5	5	3	40
MONTGOMERY	1	0	0	1	1	0	0	3
NESHOBA	8	2	0	5	3	1	0	30

Table A14 Contiinued: Citations Summary for Most Frequent and Total Deer-Related Violations By County During the 2016–2017								
County	Supplemental Feed	Headlighting Deer	No License - Non-Resident	No License - Resident	No Hunter Orange	Trespassing	Undersized Antlers	Total
NOXUBEE	0	2	0	2	2	2	0	12
OKTIBBEHA	1	2	1	6	2	0	0	18
PANOLA	1	1	3	5	2	2	0	21
PEARL RIVER	1	2	2	5	1	1	0	19
PERRY	2	0	1	2	1	0	0	19
PIKE	2	2	2	3	0	0	0	15
PONTOTOC	7	2	0	10	8	0	0	48
PRENTISS	5	4	0	2	4	1	0	36
QUITMAN	2	0	0	1	1	3	0	14
RANKIN	0	0	0	5	3	0	1	17
SCOTT	2	3	0	5	2	1	0	38
SHARKEY	1	0	0	7	1	1	0	48
SIMPSON	1	0	0	2	0	0	0	7
SMITH	1	1	0	4	1	0	0	12
STONE	2	0	1	3	2	0	0	27
SUNFLOWER	0	0	0	1	1	0	0	5
TALLAHATCHIE	0	1	1	3	2	0	0	10
TATE	1	2	0	2	2	1	1	20
TIPPAH	0	2	0	3	0	1	0	11
TISHOMINGO	0	1	0	3	3	3	0	16
TUNICA	1	0	0	0	2	0	0	8
UNION	0	3	0	2	1	0	0	12
WALTHALL	4	1	2	1	5	0	0	21
WARREN	0	0	1	1	0	1	0	9
WASHINGTON	0	0	0	0	0	0	0	4
WAYNE	1	1	0	1	0	1	0	12
WEBSTER	1	1	0	4	1	1	0	12
WILKINSON	0	1	2	0	1	1	0	5
WINSTON	3	0	0	3	1	0	0	9
YALOBUSHA	1	1	0	2	1	0	0	16
YAZOO	0	1	0	4	2	1	0	23
Total	**185**	**95**	**68**	**258**	**162**	**80**	**21**	**1559**

2016-2017 Hunting Accident Summary

For the purposes of this report, a hunting accident includes an injury to a person(s) by the discharge of a hunting weapon or during the maneuvering of a treestand while engaged in the activity of hunting. There were 24 total hunting related accidents investigated in Mississippi during the 2016 – 2017 hunting season. While this represents a slight increase from last season, total hunting related accidents remain much lower than the 10-year average. Of the accidents occurring during the 2016-2017 season, 8 were firearm related, and 13 were treestand related (Figure A10). A majority of hunting accidents occurred while deer hunting (FigureA8).

From 2006 to 2013 the proportion of firearm and treestand-related accidents were fairly constant at approximately half and half. In contrast, the 2014-2015 season saw the proportion of treestand-related accidents rise to nearly two-thirds, while the proportion fell to less that 30% for the 2015-2016 season. Unfortunately, the 2016-2017 season ended with an increase in the total number and proportion of treestand-related accidents including two fatalities resulting from treestand falls. One fatality occurred following a ten foot fall from a homemade shooting house.

Unlike treestand accidents, firearm accidents require mandatory reporting, allowing MDWFP to monitor trends in firearm accidents and measure successes of the Hunter Education Program. Due to the lack of mandatory reporting for treestand accidents, the MDWFP Deer Program warns that the numbers reported here for treestand accidents are likely and unfortunately, underestimated. The MDWFP began requiring the use of industry standard, full-body, fall arrest systems on Wildlife Management Areas in 2009, per Administrative Rule (MS Admin Code 40 Part 2 Rule 1.1 – Basic Regulations for All Wildlife Management Areas). It is important to note that of the 13 treestand-related accidents during the 2016-2017 season, only one victim was wearing a safety harness.

Hunting accidents in Mississippi average about one injury for every 9,666 licensed hunters, or about 10 injuries per 100,000 participants. For comparison, football, averages around 3,500 injuries per 100,000 participants. Based on relative rates of injury, hunting may be considered a very safe sport. While treestand-related injuries appear to be on a declining trend, the MDWFP urges caution when utilizing above ground treestands. Know how to properly use and wear a full-body harness – then use it every time you hunt from a treestand. Take time before hunting season to read the safety information and instructions on all of your safety equipment, including instructions for treestands. Knowing how it feels to suspend in the event of a fall, and knowing how to use the supplied suspension relief device can and will give you the confidence to survive in the event of a fall. Remember the most important part of your hunt is making it home. Share this message with the ones you care for and help MDWFP spread the word about treestand safety.

Related to Treestand Safety, MDWFP urges anyone hunting from an elevated stand to:

- Learn and use proper treestand safety.
- Always use a full-body harness.
- Maintain connection to the tree from the time you leave the ground until you return (life-lines are a great option for fixed-position stands).
- Read all instructions that come with any treestand or treestand related product.
- Watch the treestand safety video that comes with all Treestand Manufacturers Association (TMA) certified treestands/harnesses.
- Learn what the TMA does and how products are tested/certified.
- Remove all stands from the woods each year and store stands out of the weather.
- Inspect treestands and safety equipment each time they are used.
- Store harnesses indoors and out of the weather.
- Carry and know how to use the suspension relief device (SRD) supplied with every TMA certified harness.
- Practice suspending from a TMA certified harness at ground level (with another responsible adult supervising) and deploy the SRD to understand how it feels to be suspended and use the SRD.
- Make a plan before each hunt that includes letting someone know where you will be hunting.
- Be sure to carry an emergency signal device (cell phone or whistle attached to harness).
- Never use tree limbs to climb.
- Use a lineman's belt and the supplied tree strap while hanging a fixed-position stands.
- Always connect the bottom and top sections of a climbing stand and practice retrieving a lost bottom section (at ground level, with supervision, while wearing a harness).
- Be a good example for other hunters by always wearing a harness while hunting in an elevated position.

Without question, the most important component of accident prevention is education. Volunteer instructors and Conservation Officers certified 10,954 sportsmen in Hunter Education during the 2015 – 2016 season (Figure A9). For more information about hunter safety and Hunter Education, including dates for classes in your area, visit www.mdwfp.com.

Figure A8 Hunting Accidents by Species Hunted

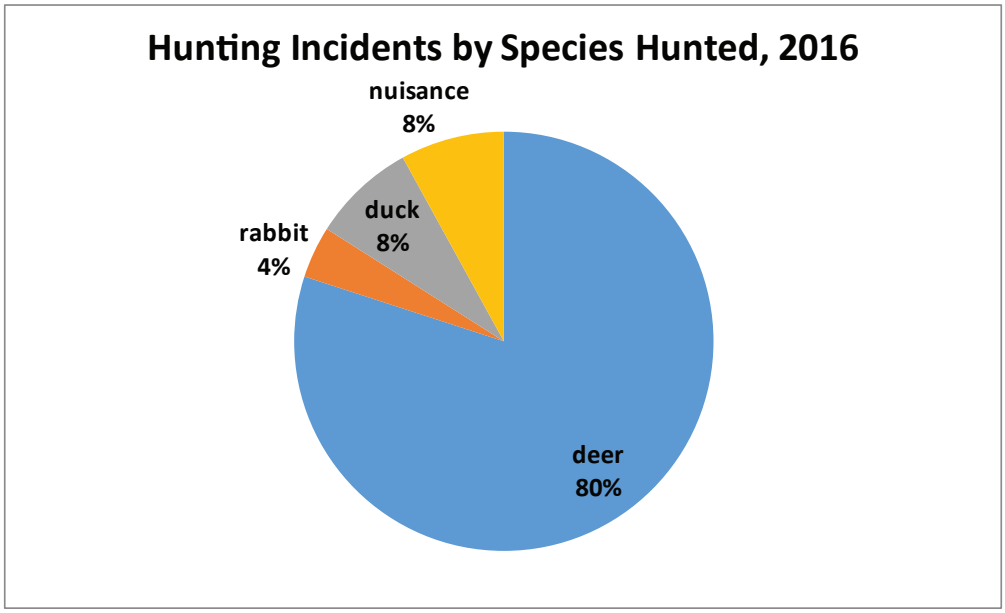
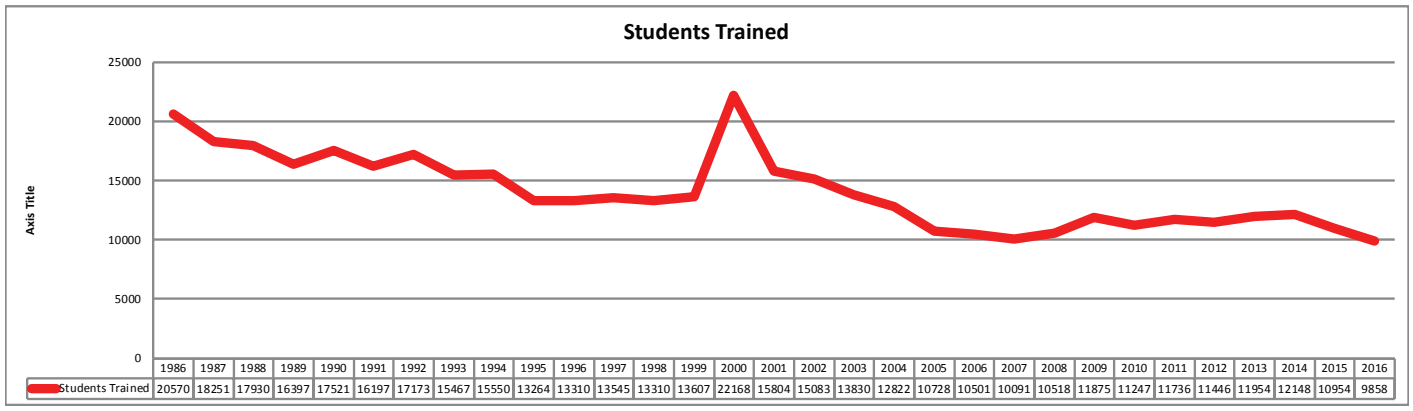
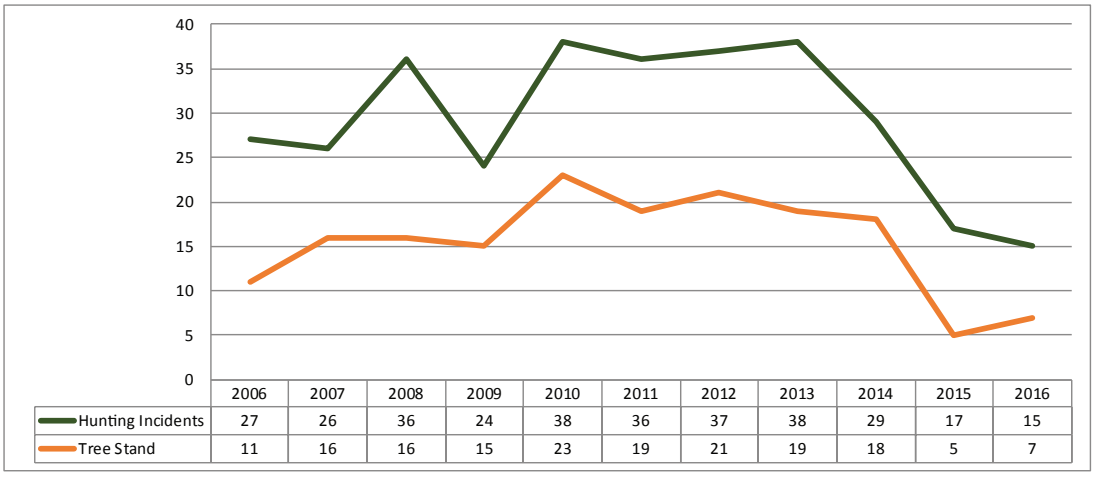


Figure A9 Students Trained



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Students Trained	20570	18251	17930	16397	17521	16197	17173	15467	15550	13264	13310	13545	13310	13607	22168	15804	15083	13830	12822	10728	10501	10091	10518	11875	11247	11736	11446	11954	12148	10954	9858

Figure A10 Total Hunting Related Accidents-10 Year Trend



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hunting Incidents	27	26	36	24	38	36	37	38	29	17	15
Tree Stand	11	16	16	15	23	19	21	19	18	5	7

Effects of hunting activity on movement ecology of white-tailed deer using GPS collars

Ashley Jones, Steve Demarais, Bronson Strickland, and Garrett Street

Where do bucks go during the hunting season? Do they perceive hunters on the landscape and change their behavior to avoid predation? To answer these and other questions, we placed telemetry collars on 55 bucks aged 2.5 years or older in Madison and Yazoo Counties along the Big Black River beginning in October, 2016. Each buck received a bright orange GPS collar to track their locations through February, 2019. The collars record locations of the bucks every 15 minutes during the hunting seasons and every 4 hours the rest of each year. Using these locations combined with where hunters are on the landscape, we will understand how adult bucks alter their movements and habitat selection to avoid harvest. Specifically, we want to know how the proportion of time spent in certain areas changes in response to hunting pressure. We also want to know how the way they move through these areas changes during the hunting season.

Although the complete results of how bucks avoid hunters will not be available until 2019, some new and interesting information has been gained by placing telemetry collars on deer. We have already lost 7 deer: 4 died from rut-related injuries, 2 were hit by cars, and 1 was accidentally harvested by a hunter. We have also documented three separate bucks making 5-mile relocation movements over short time periods. Large movements like these may occur more often at different times of year, and our research will reveal such patterns. Support for this project is from Mississippi Department of Wildlife, Fisheries, and Parks using Federal Aid to Wildlife Restoration funds.

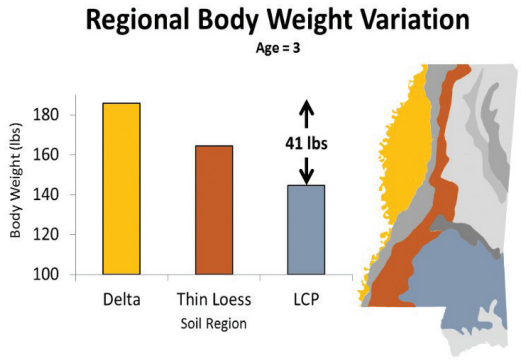
Nutrition: The Proven Cause of Regional Body and Antler Size Differences

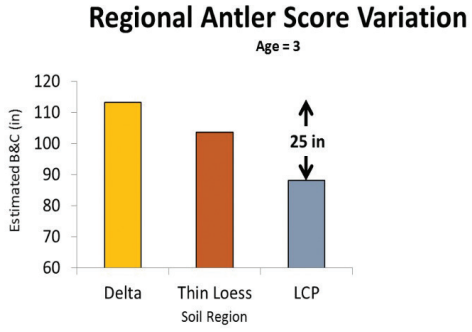
Eric Michel, Steve Demarais, Bronson Strickland, and Larry Castle

Are deer in the Delta bigger than deer in southeast Mississippi because of differences in the nutritional quality of the habitat or is it because of their genetic makeup? To address this question, the MDWFP captured pregnant does from the regions with the biggest deer (Delta), average deer (Thin Loess), and smaller deer (Lower Coastal Plain; LCP). Their offspring were raised on optimum nutrition to eliminate nutritional differences related with their source habitats; these are called first generation deer. We allowed first generation deer from each region to breed, and we raised their second generation fawns on optimum nutrition to further eliminate the effects of forage quality.

First Generation Results

Being raised on optimum nutrition caused a moderate increase in growth of first-generation bucks compared to their wild predecessors. Over all three regions, body and antler size increased about 6%, but the pattern was not consistent among regions. Body weight for 3-year-old bucks from the Delta and Thin Loess increased by 9 pounds but LCP bucks remained essentially unchanged compared to their wild counterparts roaming the nutritionally deprived region of South Mississippi. Antler score was a different story. Bucks from the Delta remained essentially unchanged, whereas Thin Loess bucks and LCP bucks increased 7 inches more than their wild predecessors.





Second Generation Results

We saw astounding improvements in the second generation. As you can see in the next figure, bucks from the Delta, Thin Loess, and LCP regions increased 32, 21 and 36 pounds, respectively, compared to the wild bucks–that's a whopping 18% improvement! The second generation LCP bucks grew body weights equivalent to wild bucks from the Delta region. Antler size displayed the same trend. Bucks from the Delta, Thin Loess, and LCP regions increased 5, 11 and 28 inches, respectively, compared to the wild bucks. The 28 inches for LCP bucks was an amazing 32% improvement compared to their wild predecessors!

What Does it Mean?

First and foremost, you are what you eat–but you're also what your mother and her mother ate! Our results clearly show that deer in the LCP region of Mississippi are not genetically doomed to have smaller bodies and antlers, they are simply a product of their environment. Once nutrition was improved, LCP bucks started to display their genetic potential–but it took time. We feel confident that what we found was an epigenetic effect.

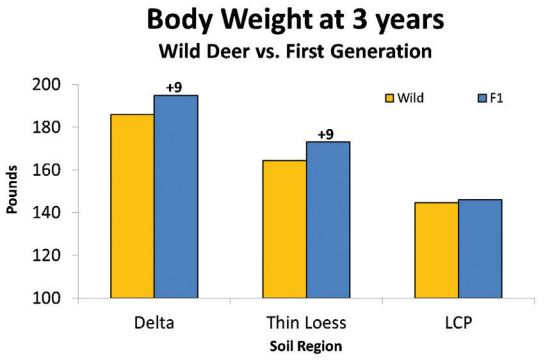
This new Epigenetic phenomenon explains how one's DNA can remain the same while its expression is altered by environmental conditions. One way to think about it is a series of switches within an animal's genes. If generations of a family have lived in a low-quality habitat, then it is advantageous to "turn off the switch" for the genes that promote a large body and antlers–the advantage is that smaller animals are better suited to the quality of forage in their environment. This "off switch" keeps animals from growing larger in a particularly good year, only to be hurt when forage quality returns to "normal." Therefore, this new epigenetics model shows that in addition to the environment a buck experiences during his lifetime, the habitat quality experienced by his parents and grandparents also is critically important!

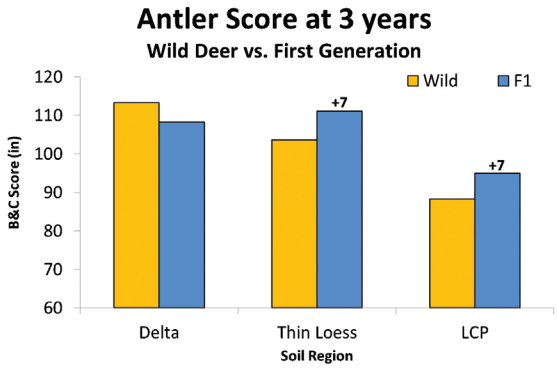
This is a remarkable discovery and explains the variation we see in body and antler size far better than the basic genetic model. It is also one trick that Mother Nature has that allows deer (and other animals) to adapt to their environment.

Although the first generation of bucks were raised on the same optimal diet, certain genes that code for growth were not "switched on." Their mothers had passed along a signal to their genes, which essentially said not to grow as big as you can because the environment simply will not support it (there is a disadvantage to being too big when food is limited).

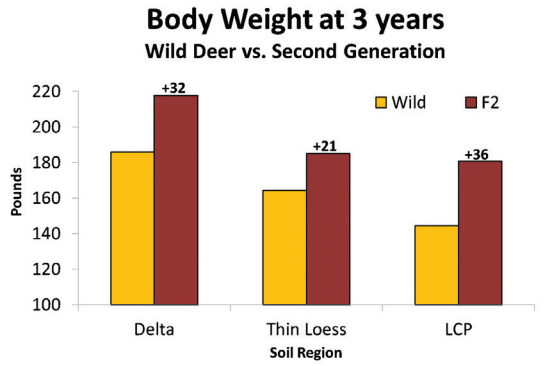
However, by the second generation, these genetic switches were turning on and signaling to the genes that it is now safe to grow larger because my mother had good nutrition. This can be thought of as the mother "inheriting" her environment. If a

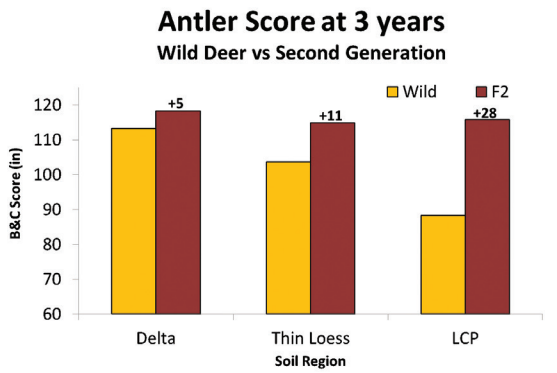
First Generation Results





Second Generation Results





mother inherits a high-quality environment, then she will pass that along to her fawns, and the same will occur if she inherits a low-quality environment.

The second important result was exhibited by deer with genetics represented by the Delta region. Some of our study animals came from the region that we considered to be the "Gold Standard" for body and antler growth by white-tailed deer in Mississippi. Yet, we observed a 32-pound increase in body weight and a 5-inch increase in antler score. These results prove that even deer in the Delta are not attaining their full potential in the wild.

Application to Management

There are three take-home messages from this research:

1) Focus on nutrition. These results are empowering because they show a clear link between body and antler quality and nutrition, which is something you can improve on your property. Habitat management and supplemental food plots will yield results.

2) We need to be realistic about our expectations as big changes take time. We live in a society where everything is at our finger tips. If we want it now, we can have it now. This mindset should not be carried over into deer management. Although individual deer will respond to increased nutrition in the short-term, it will take 5 to 10 years of consistently improved nutrition for the "genetic switches" to be turned on and stimulate greater expression of their genetic potential. Once turned on, you will see far greater improvements at the population level.

3) Stop worrying about genetics! Although genetics do control body and antler growth of individuals, previous work by the MSU Deer Lab has proven that genetics cannot be managed in free-ranging populations.

Support for this project is from the MDWFP using Federal Aid in Wildlife Restoration funds, MSU Deer Lab, Purina Mills, and private individuals.

While Males Fight, Females Choose

Daniel L. Morina, Steve Demarais, Bronson K. Strickland and Jamie E. Larson

Secondary sexual characteristics are physical aspects that develop at sexual maturity that are not used directly in the sexual act. Many female birds select their mate based on secondary sexual traits that signal their genetic quality, which is one reason male birds are more brightly colored. In mammals, however, it can be difficult to determine what signals quality to the female. Secondary sexual traits in deer, such as body mass and size of antlers, may provide an advantage in male-male competition for access to mates while simultaneously functioning as indicators of genetic quality or status.

The ability to isolate individual male traits is challenging and limits detection of the influential trait females are selecting, so we manipulated antler size while controlling for age and body size. We evaluated female choice by placing an estrus female into a choice trial pen with the manipulated males in adjacent, separate pens and recorded her choice-related behavior.

We based each female's choice on three behavioral criteria that took place within 10 feet of each male's fence line. For a choice to be determined for each criterion, she had to spend at least 60% of her time on one side or the other. Combining results of the three timed movement criteria, females preferred males with larger antlers in 13 of 15 trials.

In the first demonstration of female choice for antler size in deer, we showed that females prefer larger-antlered males to smaller-antlered males when male-male competition is controlled. This mate choice for larger antlers may be adaptive for females because this moderately to highly heritable trait increases reproductive success in males. It may be advantageous for females to choose mates with larger antlers if they produce male offspring with larger antlers, who in turn also have greater reproductive success.

Support for this project was provided by the Mississippi Department of Wildlife, Fisheries, and Parks through the Federal Aid in Wildlife Restoration Project.

Determining Age of Fetal White-Tailed Deer: Are All Southeast Deer The Same?

Daniel L. Morina, Steve Demarais, Bronson K. Strickland, Jamie E. Larson, and John Gruchy

Knowledge of the breeding seasons of white-tailed deer is essential for management and of great interest to hunters. It provides hunters and managers information about when rutting activity occurs and certain measures of herd health. Breeding dates are estimated by collecting fetuses from does and aging them using a growth curve developed in South Carolina. Once fetus age is determined, managers back date to the date of conception to estimate breeding date. The South Carolina fetal growth curve has never been evaluated in any other state. Fawning dates of does relocated from the Delta, Thin Loess, and Lower Coastal Plain soil regions of Mississippi to the MSU Deer Research Unit differed from fawning dates estimated using the South Carolina fetal growth curve. The objective of this project is to develop a more accurate fetal growth curve.

Known conception dates are required to develop a fetal growth curve. Therefore, we synchronize estrus using a controlled internal drug release dispenser containing progesterone. After synchronizing their breeding date, females are placed in a breeding pen with one or more males of the same region for natural mating. We remove fetuses by cesarean section surgery at predetermined intervals ranging from 35 to 189+ days post-conception. This coincides with typical timing of the data collection methods used by deer managers.

Preliminary analyses suggest fetal size may be a function of the doe's body mass. Since, the average doe mass is different among the three regions sampled, the accuracy of the South Carolina fetal growth curve differs for each region. If the variation in fetal size can be explained by the mass of the doe, we believe a universal scale can be developed for use throughout the range of white-tailed deer to refine estimates of regional breeding dates.

Support was provided by the Mississippi Department of Wildlife, Fisheries, and Parks through the Federal Aid in Wildlife Restoration Project.

The Wisconsin Blue Buck: Fact versus Fiction

Jordan L. Youngmann, Steve Demarais, Randy W. DeYoung, Bronson Strickland, William McKinley, Johnathan Bordelon, and Chris Cook

Current populations of white-tailed deer in the southeastern United States are genetically mixed as a result of restocking during the mid-1900s. Although most restocked deer came from native sources or nearby states, some deer were shipped from up north, including areas like Michigan and Wisconsin. The legend goes that these northern deer have resulted in the "Wisconsin Blue Buck" or big-bodied descendants in certain places across the South. However, this story has never been proven through the use of DNA analysis.

To test the Blue Buck theory, we sampled free-range deer across Louisiana, Mississippi, and Alabama at sites with known historic stocking of a significant number of northern deer. We also sampled deer DNA from the stocking source populations in Michigan and Wisconsin. Genetic relationships were tested through the use of 14 microsatellite DNA markers.
Preliminary analysis found southeastern populations to be loosely divided east to west along the Mississippi River with further relationships apparent in populations that received deer from North Carolina. Additionally, genetic grouping was found between native Alabama deer that received no stocking and nearby Mississippi deer, suggesting natural recolonization of pre-restoration populations in some areas.

Only one analysis showed evidence of a northern genetic contribution still present in southeastern populations: between Black Warrior WMA in Alabama, and Michigan, which provided 105 (74%) translocated deer to that area. Why so little evidence of northern deer across the South? When one considers the long trip those deer faced from Michigan and Wisconsin, the warmer climate upon arrival, and exposure to different strains of diseases such as epizootic hemorrhagic disease, it is most likely that few of them survived long enough to make a genetic impact.

Support for this project is provided by the Mississippi Department of Wildlife, Fisheries, and Parks, the Louisiana Department of Wildlife and Fisheries, and the Alabama Department of Conservation and Natural Resources using Federal Aid in Wildlife Restoration funds.

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2016–2017 Phone Survey Data

Each year the MDWFP conducts a phone survey through Responsive Management. The survey provides the agency with metrics hunter participation and success. Information from the survey allows the agency to gauge trends in hunting pressure as well as hunter success within each season. Results of the survey can be separated by resident or non-resident, weapon category, county, and species hunted.

Resident Hunter Survey Results

Tables A15 & A16 display the deer harvest results from the 2016 and 2017 Survey of Mississippi Resident and Non-resident Hunters.

Total resident deer hunters by user group (gun, archery, and primitive weapons) are shown in Figure A11. Archery, primitive weapons, and gun hunter numbers increased. The overall number of hunters increased for the second straight year.

Deer hunting man-days by user group are shown in Figure A12. A long-term evaluation of hunter man-days reveals a declining trend from the mid-1980s till around 2009. The 2016–2017, demonstrated a slight decline in hunter participation. The trend in participation since 2009 is relatively stable. Hunter man-days increased substantially for gun and archery hunters. Primitive weapons hunter participation showed a slight decrease.

Total resident deer harvest for the 2016–2017 season is depicted in Figure A13. This graph includes the combined harvest of bucks and does from archery, primitive weapon, and gun deer seasons. Total resident deer harvest in the 2016–2017 season decreased by 3,784 (i.e., 1.7%) compared to the 2015–2016 season (Table A17). The percentage of successful hunters declined from 66% to 65%. The average seasonal harvest dropped slightly from 1.86 to 1.79 deer per hunter.

Archery and primitive weapon hunters harvested 33% of total harvest and 38% of total doe harvest. These numbers increased from 32% and 37%, respectively, in 2015-2016 season (Table A16). Archery and primitive weapon hunters, on average, harvested greater than two does per bucks. On average it took archery hunters 18.7 days, primitive weapons hunters 15.7 days, and gun hunters 13.6 days to harvest a deer. These averages changed from 19.4, 18.4, and 13.1 days, respectively, for the 2015-2016 season.

Non-Resident Hunter Survey Results

Total non-resident hunter numbers decreased by 32% from the 2015–2016 to the 2016–2017 season (Table A17, Figure A14). Buck harvest decreased by 22% and doe harvest decreased by 23% (Figure A15). Man-days decreased for all three seasons (Figure A16). Non-resident success rates increased as a whole from the 2015-2016 season. Success rate increased during gun season and for bucks during archery season.

2015-2016 Summary (Resident and Non-Resident Combined)

The total number of deer harvested decreased by about 9,500 deer from the 2015–2016 season. With the exception of 2006, it was the lowest deer harvest since 1984. A total of 142,330 deer hunters spent 3,700,293 man-days deer hunting and harvested 100,158 bucks and 144,622 does, for a total of 244,795 deer. It took an average of 15.1 man-days per deer harvested. Hunters spent an average of 26.0 man-days hunting during the season.

Table A15: 2016–2017

	Total Harvest			Total Hunters			Average Seasonal Harvest		Total Mandays			Percent Successful Hunters		DPH
	R	NR	Total	R	NR	Total	R	NR	R	NR	Total	R	NR	
Total Deer	225,284	19,511	244,795	125,591	16,739	142,330	1.79	1.16	3,360,357	339,936	3,700,293	65.0	56.6	1.72
Buck	91,321	8,837	100,158				0.73	0.50				42.1	35.4	
Doe	133,498	11,124	144,622				1.06	0.66				50.0	37.7	
Archery Total	41,825	3,228	45,053	50,305	6,352	56,657	0.82	0.50	781,849	75,237	857,086	39.2	26.0	0.78
Buck	11,574	1,193	12,767				0.23	0.19				15.2	13.9	
Doe	29,679	1,965	31,644				0.59	0.31				32.8	16.6	
Primitive Total	31,856	2,176	34,032	49,961	5,685	55,646	0.63	0.40	500,759	46,778	547,537	36.2	24.7	0.61
Buck	10,772	632	11,404				0.22	0.10				13.7	9.9	
Doe	20,626	1,544	22,170				0.41	0.30				26.6	19.1	
Gun Total	153,322	14,318	167,640	109,548	14,353	123,901	1.39	0.98	2,077,749	217,921	2,295,670	58.7	51.6	1.34
Buck	68,983	6,562	75,545				0.63	0.45				42.1	31.3	
Doe	83,192	7,615	90,807				0.76	0.53				40.0	31.5	

R: Resident *NR: Non-Resident* *DPH: Deer Per Hunter*

Table A16: 2015–2016

	Total Harvest			Total Hunters			Average Seasonal Harvest		Total Mandays			Percent Successful Hunters		DPH
	R	NR	Total	R	NR	Total	R	NR	R	NR	Total	R	NR	
Total Deer	229068	25,178	254,246	122,978	24,592	147,570	1.86	1.02	3,423,900	439,651	3,863,551	66.0	52.0	1.72
Buck	98947	10,791	109,738									44.0	32.0	
Doe	130,121	14,387	144,508									52.0	37.0	
Archery Total	39,369	3,890	43,259	48,383	7,483	55,866	0.81	0.47	762,628	88,959	851,587	41.0	30.0	0.76
Buck	12,743	1,046	13,789									16.0	9.0	
Doe	26,626	2,844	29,470									36.0	24.0	
Primitive Total	32,324	3,839	36,163	48,901	8,050	56,951	0.66	0.41	593,961	74,990	668,951	43.0	31.0	0.62
Buck	11,085	1,413	12,498									17.0	12.0	
Doe	21,239	2,426	23,665									31.0	23.0	
Gun Total	157,374	17,650	175,024	107,437	21,127	128,564	1.46	0.83	2,067,311	275,702	2,343,013	63.0	47.0	1.36
Buck	75,113	8,532	83,645									41.0	29.0	
Doe	82,261	9,118	91,379									41.0	30.0	

R: Resident *NR: Non-Resident* *DPH: Deer Per Hunter*

Table A17: Change from 2015-2016 season to 2016–2017 season														
	Total Harvest			Total Hunters			Average Seasonal Harvest		Total Mandays			Percent Successful Hunters		DPH
	R	NR	Total	R	NR	Total	R	NR	R	NR	Total	R	NR	
Total Deer	-3,784	-5,667	-9,451	2,613	-7,853	-5,240	-0.07	0.14	-63,543	-99,715	-163,258	-1.0	4.6	0.00
Buck	-7,626	-1,954	-9,580				0.73	0.50				-1.9	3.4	
Doe	3,377	-3,263	114				1.06	0.66				-2.0	0.7	
Archery Total	2,456	-662	1,794	1,922	-1,131	791	0.01	0.03	19,221	-13,722	5,499	-1.8	-4.0	0.02
Buck	-1,169	147	-1,022				0.23	0.19				-0.8	4.9	
Doe	3,053	-879	2,174				0.59	0.31				-3.2	-7.4	
Primitive Total	-468	-1,663	-2,131	1,060	-2,365	-1,305	-0.03	-0.01	-93,202	-28,212	-121,414	-6.8	-6.3	-0.01
Buck	-313	-781	-1,094				0.22	0.10				-3.3	-2.1	
Doe	-613	-882	-1,495				0.41	0.30				-4.4	-3.9	
Gun Total	-4,052	-3,332	-7,384	2,111	-6,774	-4,663	-0.07	0.15	10,438	-57,781	-47,343	-4.3	4.6	-0.02
Buck	-6,130	-1,970	-8,100				0.63	0.45				1.1	2.3	
Doe	931	-1,503	-572				0.76	0.53				-1.0	1.5	

R: Resident *NR: Non-Resident* *DPH: Deer Per Hunter*

Figure A11: Total Deer Hunters - Resident

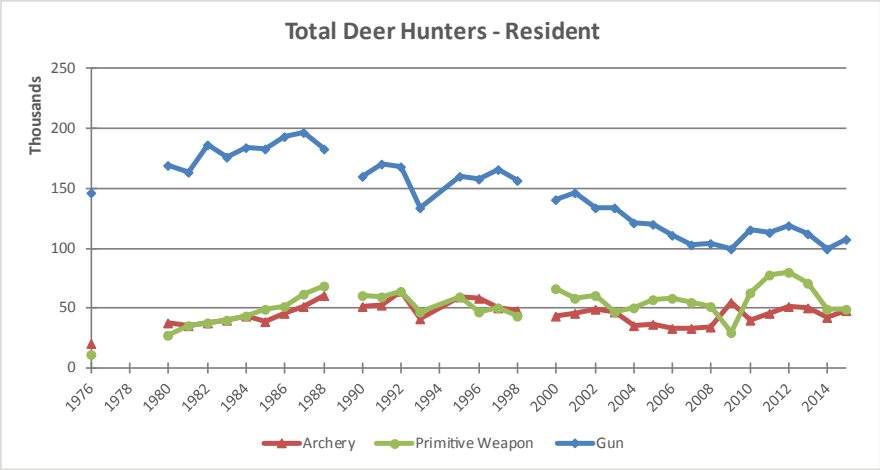

Figure A12: Total Man-Days - Resident

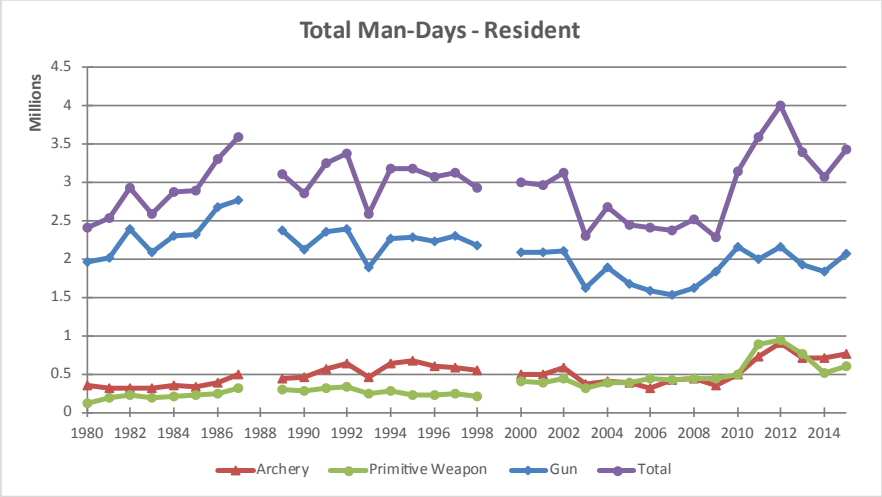

Figure A13: Total Deer Harvest - Resident

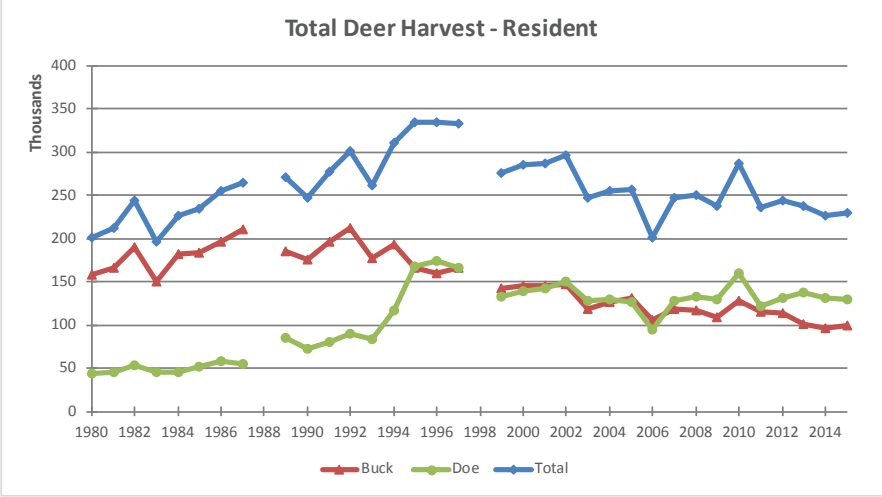

Figure A14: Total Deer Hunters - Non-Resident

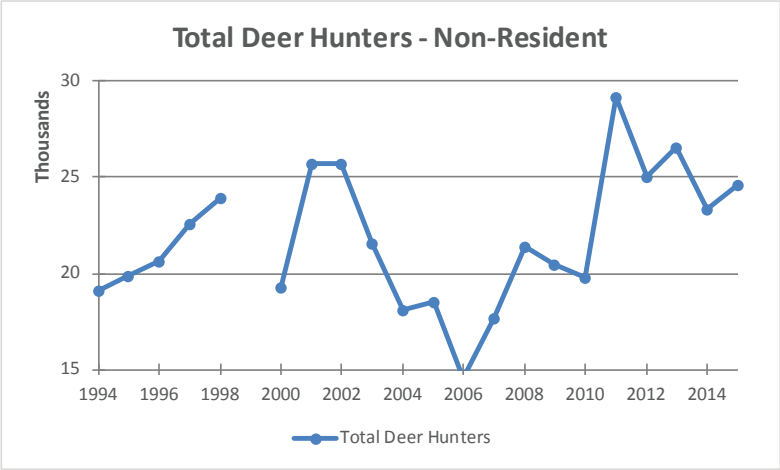

Figure A15 Total Deer Harvest - Non-Resident

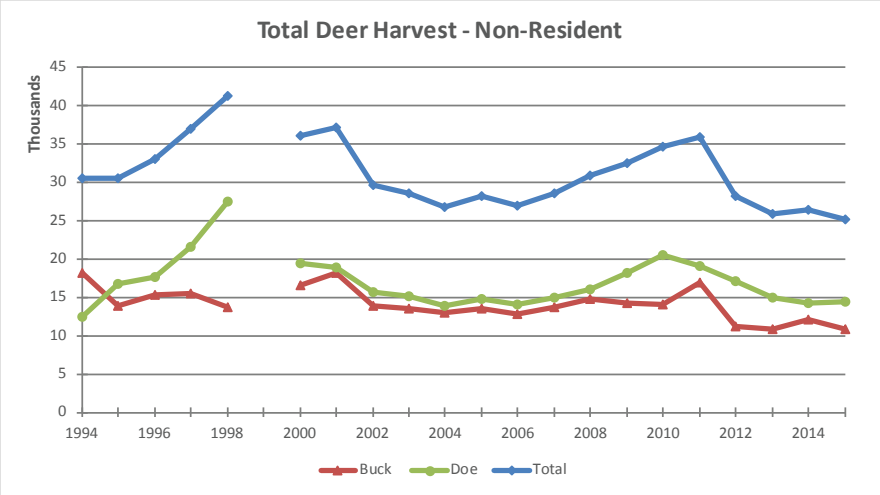

Figure A16: Total Man Days - Non-Resident