

2017 Deer Report
Land Between the Lakes National Recreation Area
USDA Forest Service

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Acknowledgements

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Summary

Land Between the Lakes mission is to protect and manage the resources of the Recreation Area for optimum yield of outdoor recreation and environmental education. A healthy deer herd in balance with the habitat will provide recreational opportunities including wildlife viewing, photography and hunting.

Land Between the Lakes deer harvest was showing declining trends from 2001-2015. To address the decline, in 2016 regulations were changed so that deer were no longer bonus deer in Kentucky or Tennessee portions of Land Between the Lakes, and the archery/crossbow limit was reduced from two deer to one in Kentucky. To better assess herd status, in 2016/17 we conducted hunter surveys, herd health checks, road-based and aerial infrared surveys.

Based on aerial infrared surveys, deer densities in both state portions are relatively low. Estimates are 10 deer per square mile in Kentucky and 19 deer per square mile in Tennessee. These estimates are comparable to other heavily forested areas. Herd health checks showed deer were in fair nutritional condition, and potentially near or in excess of the carrying capacity of the habitat.

Data indicates the deer population decline is primarily due to habitat conditions. The Land Between the Lakes forest continues to mature into older-aged closed canopy forest, and open lands have decreased to 5 percent of LBL. Unless habitat management increases, deer numbers will likely continue to decline long term, along with associated recreation, education, and economic benefits.

Mission and Goals

White-tailed deer are an important resource at Land Between the Lakes National Recreation Area. They are popular for wildlife viewing, the number one demand game species for hunting, and a management indicator species for implementation of the Land Between the Lakes Land and Resource Management Plan (USDA Forest Service 2004).

Land Between the Lakes mission is to protect and manage the resources for optimum yield of outdoor recreation and environmental education, to help stimulate the economy of the surrounding region; and to extend the beneficial results as widely as possible. A healthy deer herd in balance with the habitat will provide many opportunities for wildlife viewing, photography, hunting and scouting. White-tailed deer enhance other recreation and education opportunities at Land Between the Lakes, and help to support tourism and the regional economy.

The goal of LBL's deer program is to maintain a healthy and sustainable deer herd, to provide opportunities for wildlife viewing and hunting, the chance to harvest quality deer, and to help support the regional economy. Along with this goal, LBL promotes ethical viewing and hunting, environmental education messages, and visitor safety.

Habitat Requirements

White-tailed deer use a variety of habitats ranging from forest to croplands. They are primarily browsers and eat a tremendous variety of plants throughout their range. Forage consumed is regionally specific and usually consists of leaves, twigs, and stems of woody plants, acorn mast, fruits, cultivated crops, grasses and forbs. Browse consumption is highest when acorn mast is scarce and lowest when acorn mast is abundant. When white-tails can afford to be selective they tend to choose the most nutritious plants (USDA Forest Service 2004b).

2001-2016 Harvest Data

Deer hunting seasons at Land Between the Lakes currently include approximately 100 days of archery and crossbow hunting from late September through early January, and up to three two-day firearm/muzzleloader quota deer hunts in each state portion. To hunt during the archery season hunters must purchase state licenses and tags and an over-the-counter Land Between the Lakes Hunter Use Permit. Currently there are no procedures in place to monitor the number of archery hunters or archery hunting effort. Firearm/muzzleloader hunters must apply online or by phone during the month of July, and be drawn for a quota deer hunt permit. Hunters are not required to check in or check out for their quota hunt, but all harvested deer are required to be checked out at on-site hunter check stations or on state telephone/online game checking systems.

We monitor trends in white-tailed deer populations through harvest data. Harvest data collected at check stations can include date, hunt area, age, sex, weight, and antler measurements. When Land Between the Lakes hunter check stations are closed, deer can be checked through state telephone/online game checking systems. Data collected through state checking systems includes date; county; public or private land; and sex of harvest.

A number of factors affect deer harvest trends including the number of archers who hunt each year, number of quota hunters who hunt each year, hours hunted, weather, food availability (especially acorn mast), fluctuations in deer populations, individual hunter preferences, and harvest reporting compliance.

Approximately 2/3 of Land Between the Lakes is in Kentucky and 1/3 in Tennessee, with no reciprocal agreement between the two states regarding hunting. Therefore, the deer on Land Between the Lakes are managed as the Kentucky herd and the Tennessee herd, and each is subject to different regulations, pressures, and trends. Trends for deer in Kentucky and Tennessee are discussed separately below.

Trends in White-tailed Deer Population on the Kentucky Portion of Land Between the Lakes

From 2001 to 2015, deer harvested on the Kentucky portion of Land Between the Lakes were bonus deer, which meant they did not count against statewide bag limits. This was important because Kentucky has a statewide one buck limit, and the only way to legally harvest a second buck in the state is to harvest a bonus buck on designated areas. The archery bag limit for the Kentucky portion of LBL during that time was two deer, only one of which could be an antlered buck. In 2016, deer on the Kentucky portion were no longer bonus except for youth hunts, and the archery bag limit was reduced from two deer to one deer. Figure 1 shows reported archery harvest data for the Kentucky portion of Land Between the Lakes from 2001 – 2016. (Harvest data are available in tabular format in the Appendix at the end of this report).

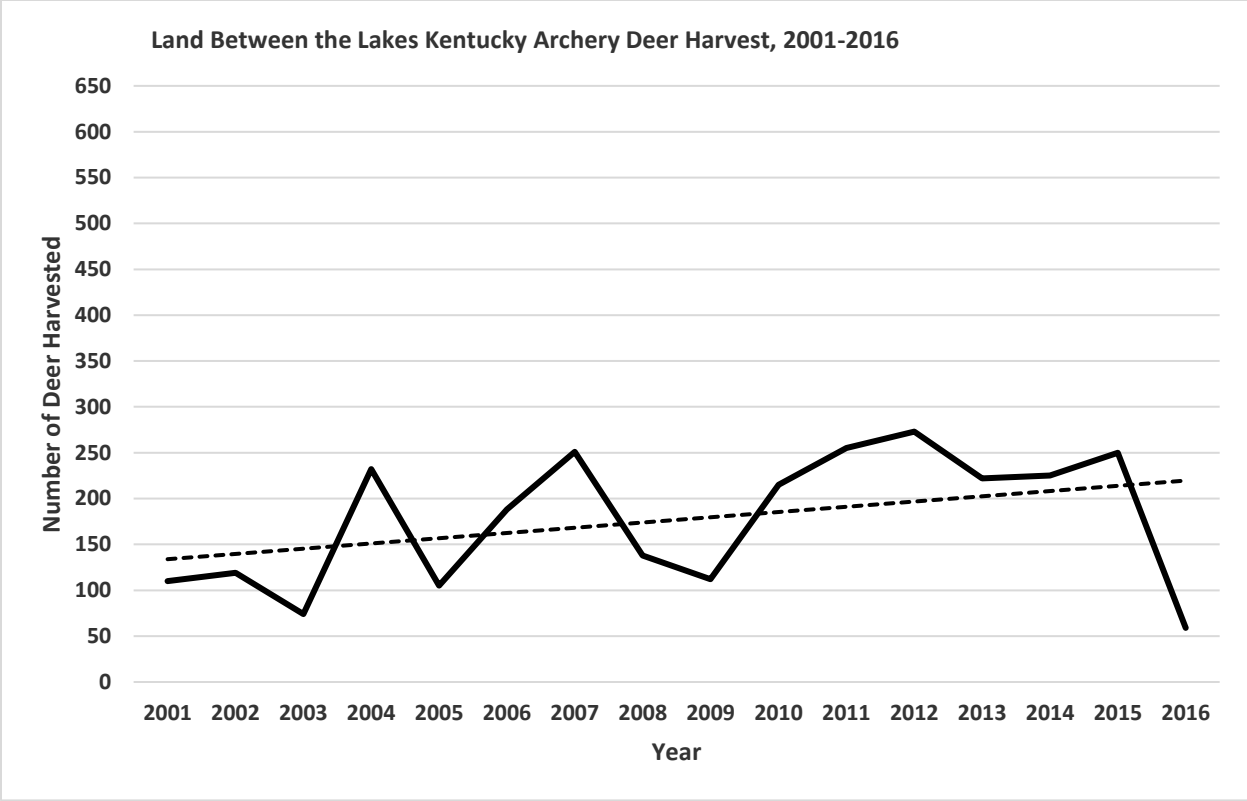


Figure 1. Land Between the Lakes Kentucky Archery Deer Harvest 2001-2016

Deer harvests can vary substantially from year to year for many reasons. The reported archery harvest on the Kentucky portion of Land Between the Lakes increased overall from 2001-2015. Part of the increase that we became aware of in recent years was due to deer harvested outside Land Between the Lakes being checked as Land Between the Lakes bonus deer. When the bonus deer was removed in 2016 and the bag limit reduced, the reported harvest dropped substantially.

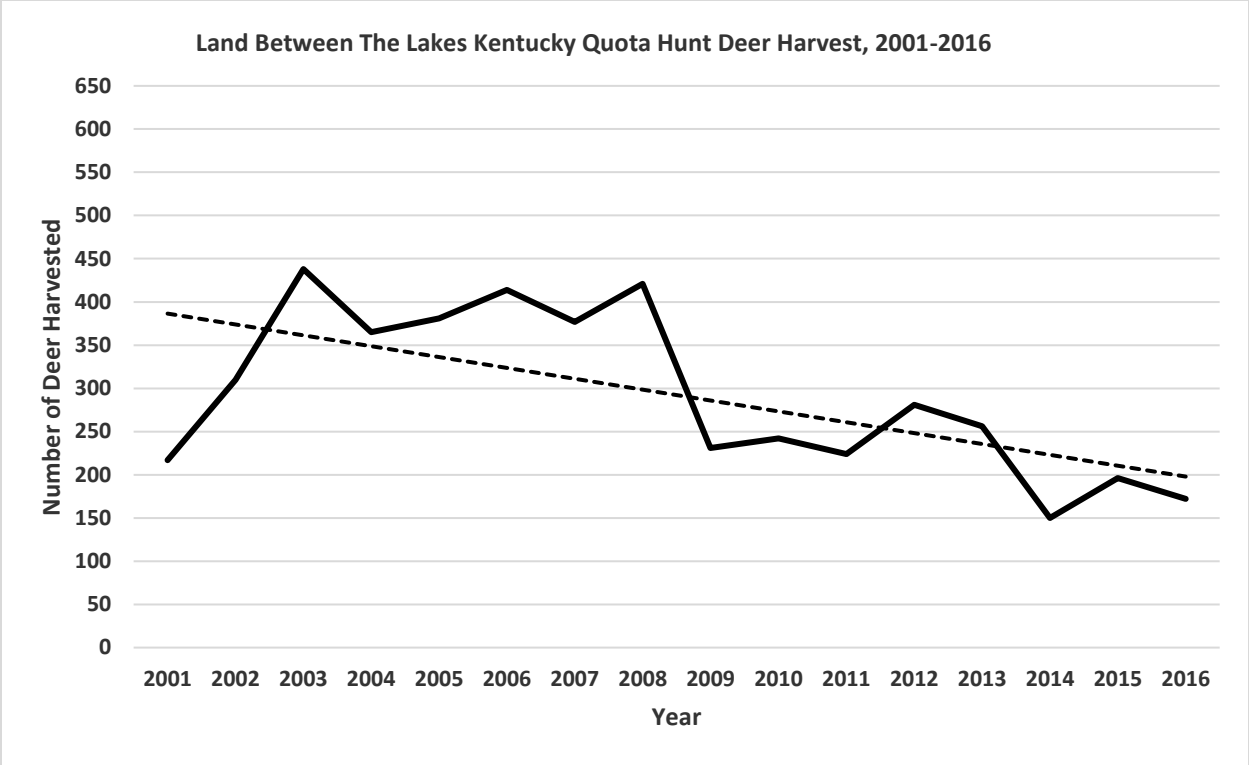


Figure 2. Land Between the Lakes Kentucky Quota Hunt Deer Harvest 2001-2016

While archery deer harvests increased, the quota hunt deer harvest decreased (Figure 2). The number of quota deer hunt permits on the Kentucky portion of Land Between the Lakes was reduced beginning in fall of 2009 as will be explained below. Also, there was a gradual but steady decrease in the number of youth quota deer hunt applicants, youth permits issued, and deer harvested by youth.

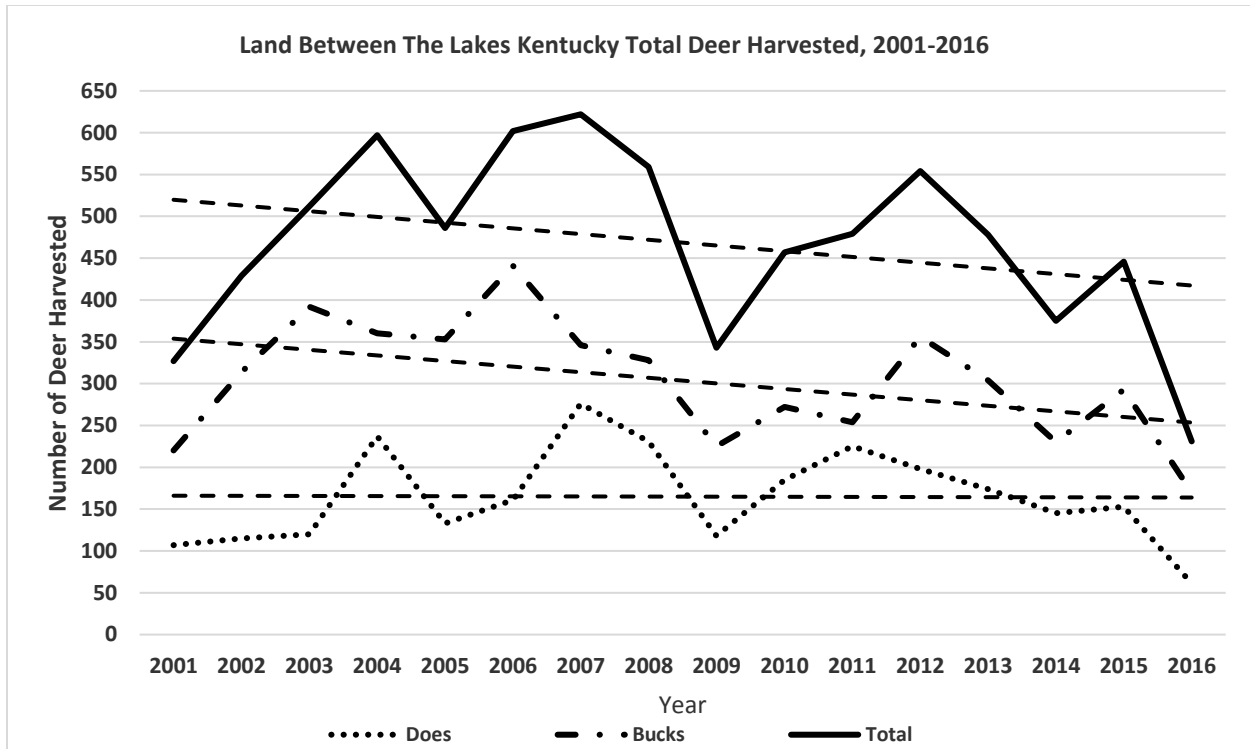


Figure 3. Land Between the Lakes Kentucky Total Deer Harvest 2001-2016

The total reported harvest for the Kentucky portion of Land Between the Lakes in Figure 3 shows a decreasing trend in the number of deer harvested from 2001 to 2016. A number of factors likely contributed. In 2007 there was a large-scale outbreak of Epizootic Hemorrhagic Disease (EHD) in North America including Land Between the Lakes, and numerous dead deer were reported. There was also a severe ice storm in January of 2009. As a result of a downward trend in deer harvest numbers following those events, one of three Kentucky quota hunts was dropped beginning in 2009. There was another EHD outbreak in the midwest in 2012 and a few suspected cases of dead deer were reported on Land Between the Lakes that year, but not the large numbers as were found in 2007.

Even after eliminating one quota hunt, incidental reports from hunters in the field and at check stations indicated growing hunter dissatisfaction with the number of deer observed and lack of deer sign on the Kentucky portion of Land Between the Lakes. LBL staff were seeing fewer deer than in the past, and deer/auto collisions decreased also.

Trends in White-tailed deer population on the Tennessee Portion of Land Between the Lakes

The following graphs show reported archery, quota hunt, and total harvest data for the Tennessee portion of Land Between the Lakes from 2001 – 2016.

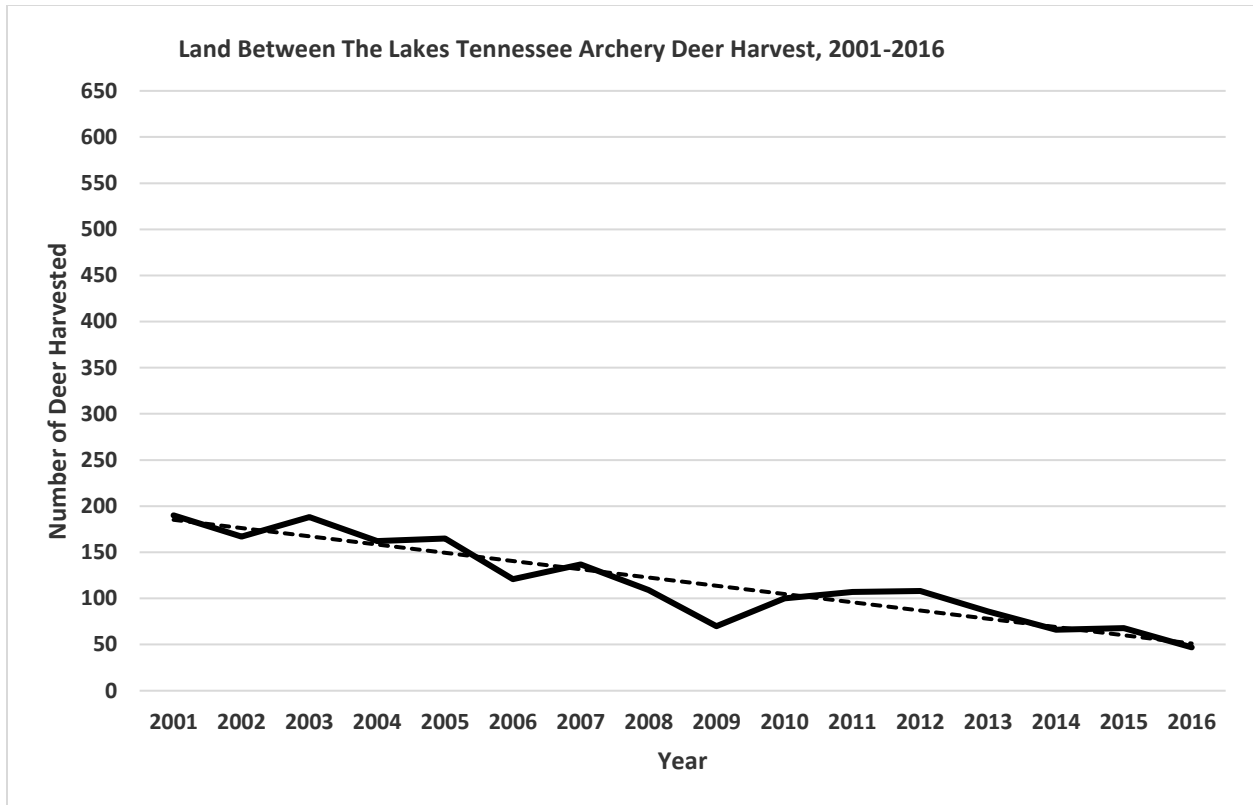


Figure 4. Land Between the Lakes Tennessee Archery Deer Harvest 2001-2016

While deer harvests can vary substantially from year to year, the archery harvest on the Tennessee portion of Land Between the Lakes in Figure 4 decreased during the past 16 years. LBL law enforcement officers reported that the amount of archery hunting pressure on the Tennessee portion of Land Between the Lakes appeared to be relatively consistent over the past several years.

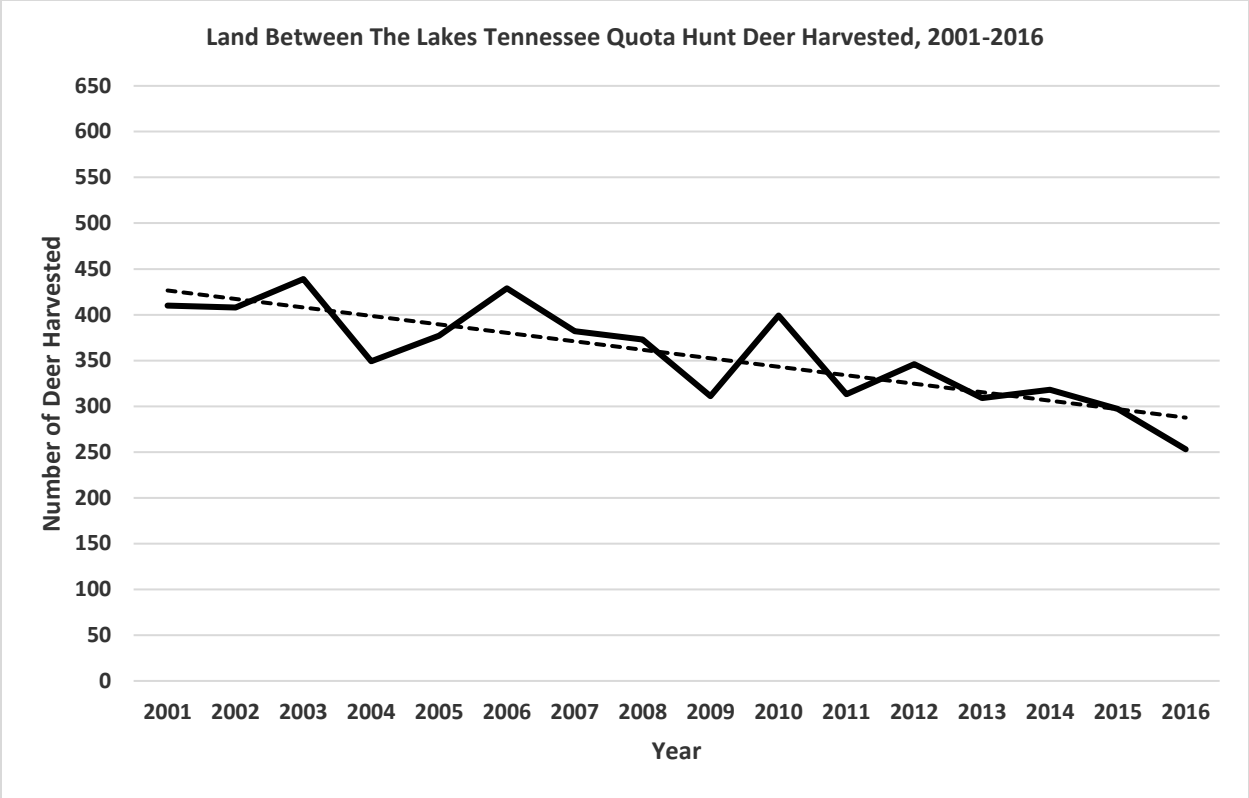


Figure 5. Land Between the Lakes Tennessee Quota Hunt Deer Harvest 2001-2016

The number of deer harvested on Tennessee quota hunts in Figure 5 also decreased since 2001. The number of quota permits issued has remained relatively consistent during the 16 year period except for a gradually decreasing number of youth hunt applicants, fewer youth permits issued, and fewer deer harvested by youth.

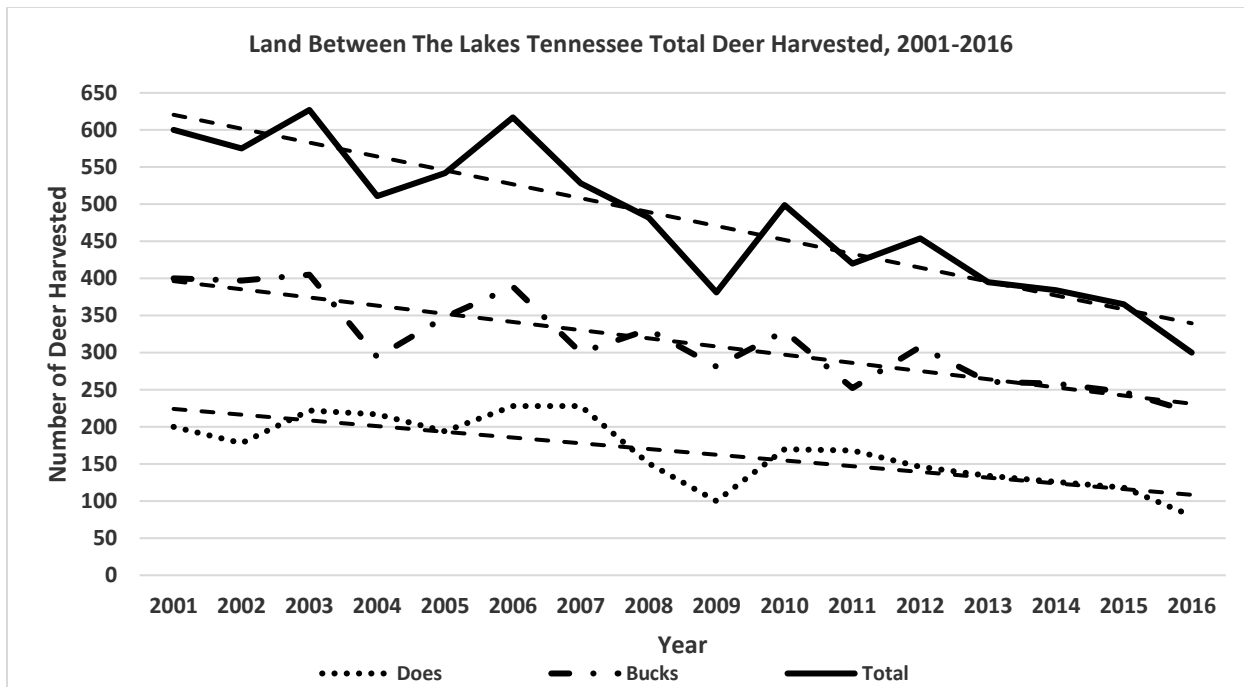


Figure 6. Land Between the Lakes Tennessee Total Deer Harvest 2001-2016

The total harvest for the Tennessee portion of Land Between the Lakes in Figure 6 shows a declining trend from 2001 to 2016. From 2001 to 2015, deer harvested on the Tennessee portion of Land Between the Lakes were bonus deer, and did not count against statewide bag limits. Also in 2015 the statewide limit for bucks in Tennessee went from three to two. In 2016, bonus deer were removed for the Tennessee portion of LBL except for youth hunts, but the archery bag limit remained 2 deer, only one of which could be an antlered buck.

Incidental reports from hunters in the field and at check stations indicated gradually growing hunter dissatisfaction with the number of deer observed, and fewer mature bucks being harvested on the Tennessee portion of Land Between the Lakes. More deer were being seen on the Tennessee portion than on the Kentucky portion, but not the number of deer as in the past, and reported deer/auto collisions were fewer on the Tennessee portion as well.

Harvest and Reporting Issues

LBL extends over 270 square miles in two states, has 465 miles of forest system roads and 300 miles of hiking, biking, horse, and off-highway-vehicle trails. In addition to protecting the health and safety of more than 1.5 million visitors annually, Forest Service law enforcement officers and Kentucky and Tennessee Fish and Wildlife officers are tasked with enforcing hunting and fishing regulations on Land Between the Lakes. These officers do an outstanding job with the resources they have available.

Even though the majority of hunters hunt legally and ethically, there are potential problems with harvest data, which can include:

- Unreported harvest from illegal poaching (these are poachers not hunters);
- persons harvesting deer during legal seasons and not checking them out;
- persons harvesting deer during legal seasons but incorrectly checking them on state automated systems so the deer doesn't get reported as harvested on Land Between the Lakes;
- prior to 2016, persons harvesting deer outside of Land Between the Lakes and checking them on state automated checking systems as Land Between the Lakes bonus deer, artificially inflating the harvest.

2016 Hunter Survey Data

Hunters are not required to check-in before hunting, or check-out after hunting unless they harvest a deer. In order to get additional data, all hunters who were issued quota hunt permits in 2016 were emailed a link to complete survey information following their hunt.

Hunters responded as follows:

- Hunters from 41 states are in our quota hunt application database. Hunters from 16 states responded to the 2016 quota deer hunt survey;
- 964 hunters completed the survey with a 95% confidence level of +/- 3.75%;
- Average distance driven by hunters was 170 miles, with hunters driving as far as 1200 miles to hunt the 2016 quota deer hunt;
- They hunted an average of 13 hours during their 2-day quota hunt in 2016;
- Bucks seen per hour averaged 0.08, does per hour 0.23, unclassifiable deer per hour 0.08, for total deer seen per hour 0.38. The rates for number of deer seen per hour were slightly higher in the Tennessee portion than in Kentucky. These rates are relatively low for western Kentucky and Tennessee, but are comparable to other heavily forested areas such as Pennyroyal Forest in western Kentucky (Kentucky Department of Fish and Wildlife Resources 2016 survey data).

Coyote Predation

Coyotes came into Land Between the Lakes around the late 1970s or early 1980s and have become well-established on the peninsula. They are predators of white-tailed deer, especially fawns, and many studies have looked at their potential impacts on deer herds.

Estimates of fawn survival vary widely across the white-tailed deer's range, and are affected by habitat, deer density, predator density, and other factors. Some studies have shown fawn survival rates below 50% in forested landscapes (Vreeland et. al. 2004, McDermott 2017), with coyotes taking a significant portion of those fawns. Coyotes may also reduce deer recruitment independent of direct predation (Cherry et al 2016).

A fawn survival study was recently completed in eastern Kentucky (McDermott 2017) in a heavily forested landscape with relatively low deer densities (<10 deer per square mile). Fawn survival to 4 months of age was estimated at 43%, which is consistent with other areas in the Midwest and Southeast. Predation, including suspected predation events, accounted for 80% of all fawn mortalities in their study area. Coyotes were responsible for up to 61.5% of predation deaths, and bobcats 38.5%. Other sources of fawn mortality for the remaining 20% included abandonment, hay cutters, and vehicle collisions. Recruitment into the huntable population was estimated at 0.58 fawns/doe.

We do not have estimates of coyote abundance or fawn survival on Land Between the Lakes. Hunters can harvest coyotes during any hunting season but are not required to report their harvest. Trappers have a very limited season on Land Between the Lakes and the trapper harvest of coyotes has been low, especially in recent years with low fur prices.

Road-Based and Aerial Infrared Surveys

Infrared thermal imaging equipment is able to record images of deer at night without the use of supplemental light. The Forest Service in 2010 began conducting road-based Infrared surveys on the Tennessee portion of Land Between the Lakes in cooperation with the Tennessee Wildlife Resources Agency. In 2011 these surveys were added in the Kentucky portion as well.

The surveys are conducted along most accessible roads in Land Between the Lakes. Surveyors drive the sample routes after dark with an Infrared thermal imager to locate, classify, and count deer. A spotlight and laser rangefinder are then used to measure the distance to the deer.

Road-based infrared surveys are subject to several biases, and variability of data is fairly high. In February 2017, an aerial infrared survey was conducted to validate road-based survey results and provide more accurate and precise population estimates.

The following summary contains analysis of both road-based and aerial infrared surveys (Kissell 2017):

Summary

Land Between the Lakes National Recreation Area (LBL) required an independent population estimate of white-tailed deer (*Odocoileus virginianus*) to assess the road-based distance sampling method used for the previous 7 years. Twenty transect lines were surveyed using a fixed-wing aircraft to collect thermal infrared imagery. Those data were provided by Davis Aviation as a count. The imagery provided was used to estimate a population density and a detection rate for each state using distance sampling. The population densities estimated were 0.016 deer per acre (10.2 deer/square mile) for Kentucky and 0.030 deer/acre (19.2 deer/square mile) for Tennessee. The average detection rate was 85.3% and 89.4% for Kentucky and Tennessee, respectively. Observations from a qualitative examination of the vegetation in late March supported the low estimated densities. Continuation of road-based population estimation concurrent with aerial-based population estimation would provide a measure of bias, should there be any, with which to correct road-based population estimates across time, both recent and future.

There is a lack of understory vegetation, or even potential for understory vegetation in most areas, to meet the nutritional and cover needs of deer. Wildlife openings and areas

associated with agricultural fields are the only locations where the habitat for deer may be considered “good habitat.” The apparent main cause of low deer densities on LBL is habitat related. Proven habitat management practices will be required to maintain and increase the deer population size on LBL.

Table 2. Distance sampling results for white-tailed deer using road-based and aerial data collected during late winter, 2010-2016, for Land Between the Lakes National Recreation Area. Acronym definitions are given below the table.

State	Method	Year	N LCL	N	N UCL	D LCL	D	D UCL	%CV
KY	Road-based	2011	2741	3938	5658	16.6	23.8	34.2	18.0
	Road-based	2012	1714	2573	3863	10.4	15.5	23.3	20.5
	Road-based	2013	2915	4310	6370	17.6	26.0	38.5	19.2
	Road-based	2014	1116	1678	2523	6.7	10.1	15.2	20.4
	Road-based	2015	2126	3239	4935	12.8	19.6	29.8	21.1
	Road-based	2016	2174	3293	4990	13.1	19.9	30.1	21.0
	Road-based	2017	1528	2304	3472	9.2	13.9	21.0	20.5
	Aerial IR	2017	1485	1681	1902	9.0	10.2	11.5	6.1
TN	Road-based	2010	1267	2359	4392	12.4	23.1	43.0	29.9
	Road-based	2011	2812	4052	5839	27.5	39.7	57.2	17.8
	Road-based	2012	1918	2780	4029	18.8	27.2	39.5	18.2
	Road-based	2013	3398	4621	6286	33.3	45.3	61.6	15.1
	Road-based	2014	2586	3922	5949	25.3	38.4	58.3	20.4
	Road-based	2015	3056	4325	6121	29.9	42.4	60.0	16.9
	Road-based	2016	2237	3178	4515	21.9	31.1	44.2	17.5
	Road-based	2017	1576	2248	3208	15.4	22.0	31.4	17.6
	Aerial IR	2017	1620	1893	2212	16.6	19.2	22.4	7.6

N LCL - 95% lower confidence limit for the estimated number of deer.

N – Estimated number of deer.

N UCL – 95% upper confidence limit for the estimated number of deer.

D LCL – 95% lower confidence limit for density (number of deer per square mile).

D – Density of deer (number of deer per square mile)

D UCL – 95% upper confidence limit for density (number of deer per square mile).

D CV – Percent coefficient of variation of density. (Lower %CV indicates more precise estimate)

2016 Herd Health Checks

The Kentucky Department of Fish and Wildlife Resources, assisted by the Forest Service, collected 12 deer for herd health checks on August 15, 2016. Four deer were collected from each county, resulting in eight deer collected in Kentucky and four deer in Tennessee. Samples were submitted to the Southeastern Cooperative Wildlife Disease Study at the University of Georgia for examination and testing. The following results are from their report (Fenton 2017):

The deer are generally in fair nutritional condition. The average abomasal parasite count (APC) of the 12 deer was 1063. The average for 8 deer collected in KY was

780, the average for 4 deer collected in TN was 1630. The individual counts ranged from 60 to 3080. An average APC of 1000-2000 suggests a deer population that potentially is in excess of the carrying capacity of the habitat. Based on APC data and nutritional condition, the herd is possibly near or has exceeded nutritional carrying capacity.

Only 2 of 12 deer were positive for antibodies to epizootic hemorrhagic disease and bluetongue viruses, which suggests that this herd could be susceptible to an outbreak. Epizootics of hemorrhagic disease typically occur at long intervals, but cannot be reliably predicted. There are no management actions that are known to be helpful in regard to hemorrhagic disease.

Ticks were collected from all of the deer sampled. The majority of ticks were identified as lone star ticks, *Amblyomma americanum* (adults, nymphs, and larvae). Adult *Ixodes scapularis*, blacklegged ticks, were found on two deer in low numbers. A small number of adult *Amblyomma maculatum*, the gulf coast tick, were detected on one deer, which is an unusual finding in Kentucky.

In addition to the above herd health check, deer weights are collected at check stations during quota hunts. Average yearling buck weights can serve as an indicator of herd condition. From 2001-2016 there was a gradual decline in yearling buck weights (Appendix) that was consistent across Land Between the Lakes. During that period, average yearling buck field-dressed weights decreased approximately 10 pounds in the Kentucky portion, and 8 pounds in the Tennessee portion. Since this was consistent across Land Between the Lakes, it points to an area-wide issue of declining nutrition as a likely cause.

Habitat Management

White-tailed deer use a variety of habitats ranging from forest to grassland to croplands. They are primarily browsers and eat a variety of plants. Active forest and open lands management are critical for providing quality deer habitat.

At the time of LBL's inception in the early 1960's, LBL was approximately 18 percent open land, consisting mostly of farmland (cropland and pastures) and old home places. Virtually all of LBL forest had been previously cut, and fire was used by landowners to help keep their land open (Chester and Fralish 2002).

The Tennessee Valley Authority managed Land Between the Lakes from its establishment in 1964 until transfer to the Forest Service in 1999. While the Tennessee Valley Authority developed and implemented several resource management plans during its tenure, none of its plans kept up with annual growth of the forest (Chester and Fralish 2002). There were challenges to forest management which led to a shutdown of the logging program in 1992, until completion of a new Natural Resources Management Plan (Tennessee Valley Authority 1994). The plan included 25% of LBL (approximately 42,000 acres) set aside as Core Areas. Core Areas receive little to no management and serve as benchmarks or experimental controls for comparative studies with actively managed acres. During Tennessee Valley Authority management, foresters recognized that the forest was trending towards mature forest condition, that conversion to maple was occurring on sites that historically supported oak-hickory, and the challenge of bringing back the young-growth forest component (Chester and Fralish 2002).

Land Between the Lakes Forest Trends

Land Between the Lakes is more than 90 percent forested and forest conditions are trending toward middle to late successional forest (USDA Forest Service 2015). The mature closed canopy structure remains the dominant structure type. Over the last 10 years Land Between the Lakes has treated 3% of the forested landscape. Our current amount in early successional forest structure is less than the 2004 Area Plan desired condition. To date we have created only 237 acres of this habitat, and these acres will transition into young forest conditions in a few years.

Overall at Land Between the Lakes, mature closed oak forest still remains the dominant structure type. This mature forest is predisposed to stresses, such as insects and disease related to forest health issues. The absence of early successional stages affects resiliency in terms of forest health as a whole because early successional forests are better able to recover from catastrophic weather events such as tornados, ice storms, and other natural events.

There are fewer acres of young, regenerating forests across all forest communities, and more acres aging into middle age and mature structure types. Land Between the Lakes has not achieved the 10-year objectives for forest management in the 2004 Area Plan.

There are no new timber sale contracts or stand improvement contracts for 2015 - 2017 to date, as we focused on collaborative efforts with the public.

Land Between the Lakes Open Land Trends

As of 2017, open lands cover approximately 8,400 acres, which is about 5 percent of Land Between the Lakes (E. Raikes, pers comm.). Approximately 2900 acres (1.7 percent) are cultivated in row crops and wildlife plantings. The remaining 5500 acres (3.2 percent) are various grassland types including hayfields, road and utility right-of-ways, early successional wildlife openings, and native warm season grasses.

The 2004 Area Plan states that we had approximately 10,646 acres in open lands. When the acreage was assessed for the 2004 Area Plan, we counted all the acreage that could benefit wildlife. Per that assessment, we included open lands in the Core areas. Open lands are not managed in Core areas, and those acres have since reverted to forest and been taken out of open lands habitat acreage. The acreage of cultivated lands have decreased by about 30 percent from 2004. This is a result of land taken out of cultivation for increased protection of riparian corridors, establishment of field borders, and fields or portions of fields not being cost effective to manage. Additionally, some fields have grown up into forest because of small size, remote location, and poor access. Acres of open land have also decreased due to natural encroachment of surrounding forest into openings over time. Finally, current technology, including maps and satellite imagery, is able to more accurately assess open land acreage, which may also account for some of the loss.

Land Between the Lakes Prescribed Burning

Goal 5 of the Area Plan states, “Active management techniques will include the increased use of prescribed fire, which is documented to sustain native ecological communities and improve habitat for many wildlife species.”

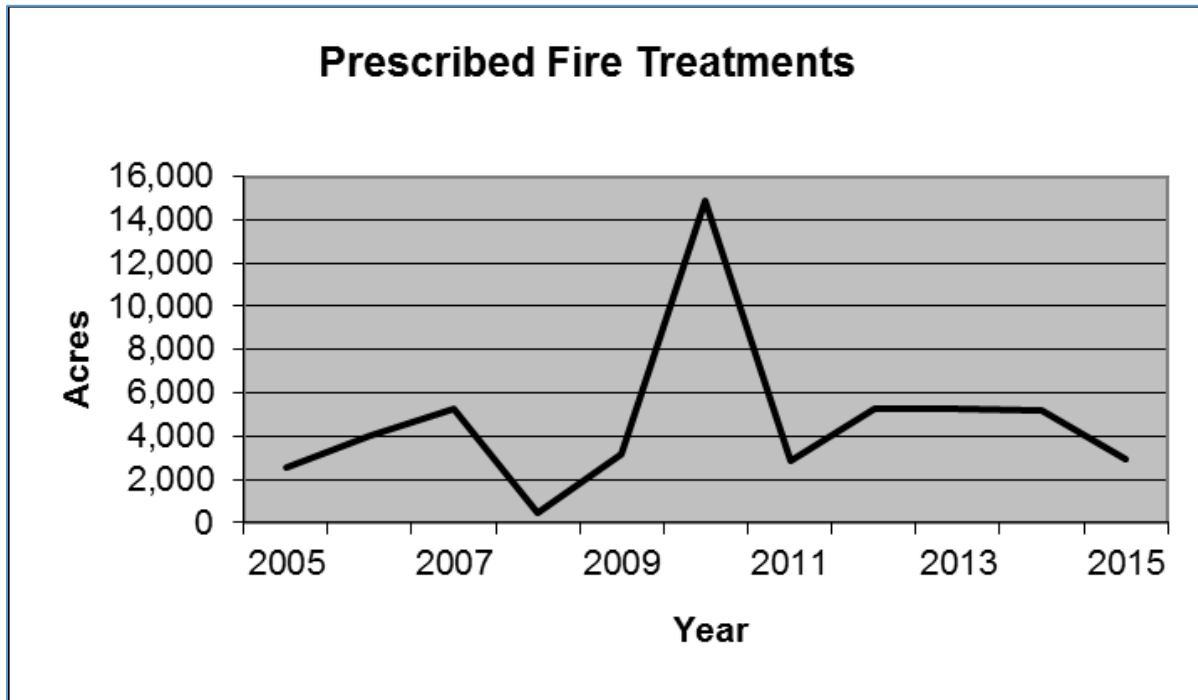


Figure 7. Prescribed Fire Treatments

In 2010 favorable conditions supported an increase in alignment with desired goals of the 2004 Area Plan resulting in 14,866 acres of prescribed fire treatment. From 2011 to 2014, acres treated were within a 5,000 acre annual average. This is below the Area Plan goal due primarily to unfavorable environmental conditions that were prohibitive in meeting desired objectives. These conditions included weather, moisture of the vegetation, and wind speed and direction for smoke dispersal (USDA Forest Service 2015).

In summary, as a result of Core Areas not being managed, and the inability to meet forest, open land, and prescribed fire goals, habitat for early successional species, including white-tailed deer, continues to decrease on Land Between the Lakes.

Recommendations

The following recommendations are based on the above information and input from federal, state, and university wildlife biologists and deer managers:

1. Ramp up forest management, open lands management, and prescribed fire to Area Plan levels as soon as possible. Habitat management is the key to a healthy and sustainable deer population and increased biological diversity.
2. Maintain the 2016 hunting regulations in both states for 2017. This will help to meet 2004 Area Plan mission and goals, and provide a second year of consistent regulations for data comparison.
3. Promote deer hunting on the Tennessee portion of Land Between the Lakes which has higher deer density, a two-deer archery/crossbow bag limit, and may be exceeding current carrying capacity.
4. Implement mandatory on-site check-out for all harvested deer, including both manned (during quota hunts) and unmanned (during archery season) check-out options. Check-out to include a physical tag to put on the deer and one with information to deposit in a secure lock box. Enforce completion of Kentucky hunter harvest log. State and Forest Service law enforcement officers set up random exit roadblocks to insure compliance. These measures will increase accuracy of harvest data.
5. Continue ground-based and aerial infrared surveys in 2018 to provide replication and verification of population estimates.
6. Promote hunter education, safe and ethical hunting, proper harvest reporting, getting youth out-of-doors, and appropriate environmental messages.
7. Use an adaptive management strategy to make adjustments as the need arises.

If implemented, this strategy will increase habitat for early successional species, increase deer numbers and herd health, increase wildlife viewing, hunting, tourism, and related economic benefits in the region.

Risks

1. Current low density deer populations are unstable, and natural factors such as disease can have a large effect. Also it can be difficult to maintain hunter interest if population densities remain low.
2. Deer populations that are above the habitat's carrying capacity can result in negative effects on habitat and loss of biological diversity.

Communications:

1. Identify objectives, target audiences, and key messages.
2. Deer hunting will continue at the same level and regulations as in 2016.
3. Increase habitat management to approved Area Plan levels as soon as possible.
4. Continue to monitor deer population and harvest.
5. Our desire is to meet our congressionally mandated mission to provide outdoor recreation and environmental education; increase biological diversity; increase the quality of wildlife viewing and deer hunting; achieve Area Plan goals; and support the regional economy.

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Appendix

LBL Kentucky White-tailed Deer Harvest Statistics

Non-quota bow hunts						Quota Gun Hunts										Yearling Bucks							
Year	B	D	T	% Does	%Tot harv	Permits				% Show	% Suc	B	D	T	% Does	B	D	T	% Does	%	Wt (lbs)	Diam (mm)	Mast (lbs)
						BO*	ES*	Total	%ES														
2001	49	61	110	56%	34%	1301	655	1956	33%	73%	15%	171	46	217	21%	220	107	327	33%	45%	95	17.3	107
2002	46	73	119	61%	28%	1500	508	2008	25%	73%	21%	268	42	310	14%	314	115	429	27%	36%	93	19.1	108
2003	40	34	74	46%	14%	2320	924	3244	28%	73%	18%	352	86	438	20%	392	120	512	23%	42%	94	18.1	73
2004	68	164	232	71%	39%	2200	1090	3290	33%	73%	15%	292	73	365	20%	360	237	597	40%	42%	96	18.6	34
2005	51	54	105	51%	22%	2102	1234	3336	37%	73%	16%	302	79	381	21%	353	133	486	27%	41%	87	16.1	147
2006 ^{9,11}	92	96	188	51%	31%	1904	1119	3023	37%	73%	19%	349	65	414	16%	441	161	602	27%	38%	99	19.9	154
2007 ⁷	89	162	251	65%	40%	1900	1104	3004	37%	73%	17%	257	114	377	30%	346	276	622	44%	37%	86	17.8	61
2008 ⁸	57	81	138	59%	25%	0	2973	2973	100%	73%	19%	271	150	421	36%	328	231	559	41%	48%			29
2009	55	57	112	51%	33%	0	1543	1543	100%	73%	20%	170	61	231	26%	225	118	343	34%	31%**			81
2010	99	116	215	54%	47%	0	1529	1529	100%	73%	22%	173	69	242	29%	272	185	457	41%	39%	86	17.5	540
2011	114	141	255	55%	53%	0	1541	1541	100%	73%	20%	140	84	224	38%	254	225	479	47%	32%	93	17.3	130
2012	146	127	273	47%	49%	0	1528	1528	100%	73%	25%	210	71	281	25%	356	198	554	36%	26%	86	16.5	208
2013	120	102	222	46%	46%	0	1466	1466	100%	73%	24%	184	72	256	28%	304	174	478	36%	37%	86	16.3	34
2014	130	95	225	42%	60%	0	1447	1447	100%	73%	14%	100	50	150	33%	230	145	375	39%	29%	81	17.0	147
2015	147	103	250	41%	56%	0	1453	1453	100%	73%	18%	146	50	196	26%	293	153	446	34%	23%	88	17.3	Poor ¹¹
2016	47	12	59	20%	26%	0	1402	1402	100%	73%	17%	123	49	172	28%	170	61	231	26%	28%	85	16.5	Exc.

LBL Tennessee White-tailed Deer Harvest Statistics

Non-quota bow hunts						Quota Gun Hunts										Yearling Bucks							
Year	B	D	T	% Does	%Tot harv	Permits				% Show	% Suc	B	D	T	% Does	B	D	T	% Does	%	Wt (lbs)	Diam (mm)	Mast (lbs)
						BO*	ES*	Total	%ES														
2001	92	98	190	52%	32%	1402	1286	2688	48%	75%	20%	308	102	410	25%	400	200	600	33%	52%	91	19.0	107
2002	86	81	167	49%	29%	1401	1410	2811	50%	75%	19%	311	97	408	24%	397	178	575	31%	56%	91	17.7	108
2003	81	107	188	57%	30%	1303	1494	2797	53%	75%	21%	324	115	439	26%	405	222	627	35%	55%	94	18.7	73
2004	57	105	162	65%	32%	1301	1473	2774	53%	75%	17%	237	112	349	32%	294	217	511	42%	40%	88	16.4	34
2005	70	95	165	58%	30%	1203	1604	2807	57%	75%	18%	278	99	377	26%	348	194	542	36%	37%	86	15.9	147
2006 ^{9,11}	38	83	121	69%	20%	1204	1564	2768	57%	75%	21%	316	113	429	26%	389	228	617	37%	35%	96	19.6	154
2007 ⁷	48	89	137	65%	26%	1205	1607	2812	57%	75%	18%	252	130	382	34%	300	228	528	43%	40%	92	19.1	61
2008 ⁸	57	52	109	48%	23%	0	2718	2718	100%	75%	18%	274	99	373	27%	331	151	482	31%	36%			29
2009	39	31	70	44%	18%	0	2590	2590	100%	75%	16%	242	69	311	22%	281	100	381	26%	17%			81
2010	48	52	100	52%	20%	0	2658	2658	100%	75%	20%	281	118	399	30%	329	170	499	34%	33%	89	17.8	540
2011	39	68	107	64%	25%	0	2603	2603	100%	75%	16%	213	100	313	32%	252	168	420	39%	47%	87	18.0	130
2012	52	56	108	52%	24%	0	2577	2577	100%	75%	18%	256	90	346	26%	308	146	454	32%	31%	88	16.5	208
2013	35	51	86	59%	22%	0	2511	2511	100%	75%	16%	226	83	309	27%	261	134	395	34%	30%	81	15.2	34
2014	35	31	66	47%	17%	0	2438	2438	100%	75%	17%	223	95	318	30%	258	126	384	33%	26%	86	16.0	147
2015	31	37	68	54%	23%	0	2383	2383	100%	75%	17%	216	81	297	27%	247	118	365	32%	28%	85	15.7	Poor ¹¹
2016	29	18	47	38%	16%	0	2345	2345	100%	80%	13%	191	62	253	25%	220	80	300	27%	27%	83	15.5	Exc.