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2020 BIG GAME BULLETIN



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TABLE OF CONTENTS

Black Bear	2
Season Results and Highlights	2
Non-hunting Mortalities	2
Damage Payments and Nuisance Complaints	2
Black Bear Research.....	3
Tooth Collections.....	3
Reproductive Tract Collections	3
Wild Turkey	10
Spring Harvest.....	10
Fall Harvest.....	10
Surveys.....	10
Spring Gobbler Survey	10
Brood Survey	11
Mast Survey.....	11
Wild Boar.....	16
White-tailed Deer	17
Deer Season.....	17
Special Deer Management Harvest.....	19
Nonseasonal Mortalities.....	20
Deer Hunting Outlook.....	20
Elk Restoration Project	29

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Season Results and Highlights

West Virginia hunters harvested 3,541 black bears during the combined 2020 archery and firearms seasons (Tables 1,2 and 3). The 2020 harvest was 14% above the 3,099 bears killed in 2019. The 2020 black bear harvest is the highest kill ever recorded and bruins were harvested in 52 of West Virginia's 55 counties, the highest also on record (Figure 1, Table 4). In addition, the 3,938 hunting and non-hunting mortalities recorded in 2020 is the highest total ever recorded (Table 4).

When looking at all mast species combined, mast production in 2020 was 39% below mast production in 2019 and 35% below the long – term average. Beech (-51%), hickory (-54%), white oak (-12%) and chestnut oak (-17%) production declined significantly over 2019 levels. In addition, soft mast production in 2020 decreased across all species when compared to 2019. However, the bright spot in 2020's mast crop was provided by red oak/black oak (+27%), and scarlet oak (+56%) which produced significantly more mast than the long – term average. Unfortunately, mast production by red/black oak and scarlet oak could not offset the declines in the other species surveyed.

The 2020 Mast Survey and Hunting Outlook predicted a similar bow/crossbow harvest compared to 2019 and an increased firearms harvest over the levels observed in 2019. However, the bow/crossbow, firearms and the overall harvest were much higher than 2019. Overall, the 2020 harvest increased during the September/October and bow/crossbow seasons and decreased slightly during the buck – gun and December seasons.

Hunters killed 1,095 bears during the first segment of the 2020 bow/crossbow season (September 26 – November 22). Five hundred sixty-nine were taken with vertical bows, 526 with crossbows. The top five counties were Fayette (76), Nicholas (59), Raleigh and Preston (55) and Boone (53) (Tables 1 and 2).

Firearms hunters harvested 2,442 bears during 2020 (Table 2). This is a 14% increase over the 2,133 bruins killed in 2019 (Table 4). Hunters took 1,225 bears in September and October (38 bears during the concurrent antlerless deer/bear season, 19 during the youth, class Q/QQ, XS season), 470 during the concurrent buck-gun bear season, and 747 during the traditional December season. Four bears were harvested during the third Mountaineer Heritage Season (2 bow, 2 muzzleloader). The top five counties were Nicholas (190), Randolph (185), Webster (168), Pocahontas (152) and Greenbrier (148).

Non-hunting Mortalities

Three hundred ninety-seven bears were killed on highways, were killed illegally, were destroyed, or succumbed from other non-hunting causes (electrocution, mange, etc.) (Tables 4 and 5). This is up 50% from the 265 non-hunting mortalities recorded in 2019 (Table 4). There were 125 deaths from vehicles in 2020 compared to 100 in 2019. The number of illegal deaths recorded in 2020 was the same as 2019 (7), respectively. Miscellaneous deaths decreased from 30 in 2019 to 11 in 2020. However, the decrease can be attributed to counting mange related bear deaths in the “destroyed” total instead of the miscellaneous total. Thirty bears were dispatched in 2020 due to severe mange infestation. Bears killed for nuisance or damage activity, increased to 254 in 2020 from the 128 reported in 2019.

Damage Payments and Nuisance Complaints

All hunters who pursue bears are required to buy bear damage stamps (Class DS). Funds derived from stamp sales are deposited in a special bear damage account to reimburse property owners for real and personal property damage caused by bears.

The number of bear damage claims was up 32% from 129 in 2019 to 170 in 2020 (Table 6). Total payments of \$264,802 were 41% higher than the \$187,346 paid out in 2019. Claims were reported in 31 counties in 2020 and 26 counties in 2019. There were 39 claims for bees (compared to 15 in 2019) totaling \$25,223, 17 for livestock at \$6,734 (22 in 2019), 71 for corn at \$213,260 (62 in 2019), and 44 (30 in 2019) miscellaneous claims at \$19,583.

Greenbrier County had the greatest dollar amount in compensations at \$105,142 followed by Pocahontas (\$34,913), Preston (\$33,350), Monroe (\$31,785) and Pendleton (\$7,291). Greenbrier County had the highest number of claims (32) followed by Monroe (15), then Pendleton, Pocahontas and Preston (12 each).

West Virginia Division of Natural Resources (DNR) employees received 2,122 nuisance bear calls in 2020 compared to 1,187 in 2019. The 5 counties with the most complaints were Raleigh (339), Fayette (325), Kanawha (240), Greenbrier (223) and Nicholas (109). The large increase in nuisance bear complaints in 2020 can be attributed to a summer soft mast failure.

Black Bear Research

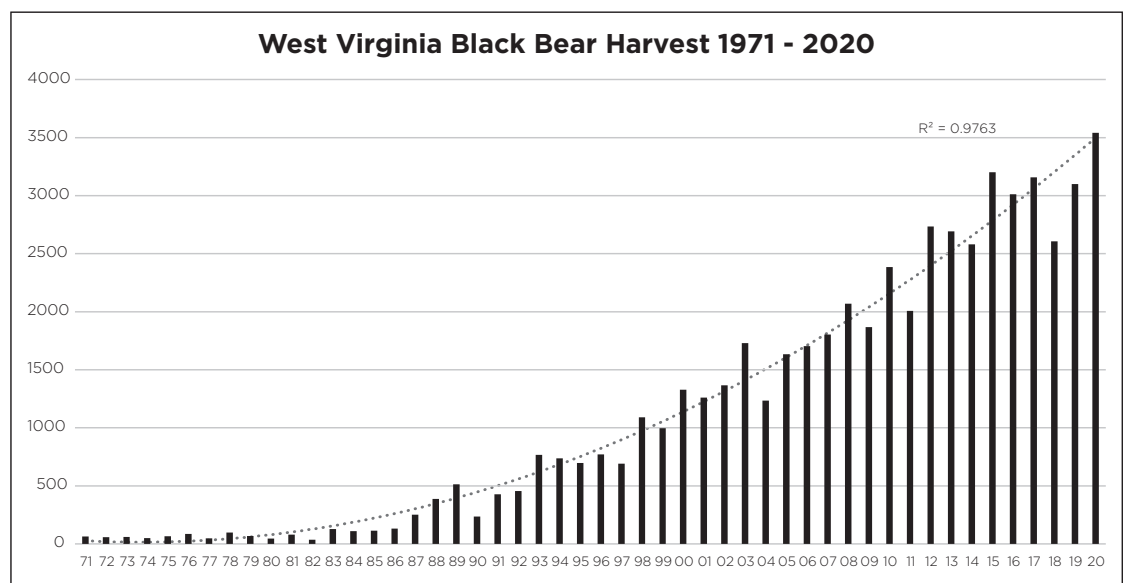
Reproductive tracts and tooth collections from harvested bears provide the most cost-effective way to monitor the black bear population and are being used to help make decisions about changes in hunting regulations. Radio collars have only been left on a small number of females in the northern and southern part of the state (6 in 2020). These sows are used as surrogates for orphaned cubs whenever possible. In 2020, managers visited 3 sows with neonate cubs and fostered 2 orphaned cubs. One sow did not have cubs or yearlings (due to advanced age). Two sows had yearlings in 2020. One was in an inaccessible rock cavity and one continued to move periodically throughout the winter.

Monitoring the status of West Virginia's black bear population has always been a top priority for the West Virginia Division of Natural Resources. Trends in bear population size are more realistic to obtain than absolute population numbers. In recent years, managers have shifted gears from growing the bear population to stabilizing population growth or reducing bear numbers in some management units. Accurate trend data is essential to making sound decisions on bear hunting seasons and bag limits.

TOOTH COLLECTIONS

Age data from the 2019 tooth samples have been received and hunters have been notified of their bear's age. Hunters submitted 2,097 useable teeth (correct tooth, tooth not broken, etc.) for age consideration. There were 18 cubs (1%), 29% (602) were yearlings, 27% (574) were 2-year olds, 11% (231) were 3-year olds, and the remaining 32% (672) were 4-years old or older. Biologists use age data from hunter-harvested bear teeth to calculate population estimates and mortality rates for black bears in West Virginia. The 2,097 useable teeth submitted in 2019 represent 68% of the total black bear harvest. This rate has gradually improved each year since 2016 (the first year tooth submission was mandatory). Hunters submitted 49% of the harvest in 2016, 53% of the harvest in 2017 and 63% in 2018. This rate should improve in the years to come, which will allow for more precise estimates of population size.

Figure 1. West Virginia black bear harvest, 1971-2020.



REPRODUCTIVE TRACT COLLECTIONS

Wildlife managers and biologists have been collecting female reproductive tracts to estimate litter size around the state for nearly 40 years. The data gathered from reproductive tracts (cubs/female) mirrors data collected from visiting the dens of radio-tagged females. The information collected from examining female reproductive tracts can be obtained at far less cost than maintaining a large sample of radio-tagged females.

Managers collected 55 reproductive tracts in 2019. Fifty of the tracts supplied useful information. Reproductive tract data lags one year behind because researchers are waiting on age data. Information from reproductive tracts obtained in 2019 cannot be fully analyzed until ages are determined. Seven yearling tracts were examined in 2019. One tract had 2 corpora lutea present, indicating it had bred in 2019. Six 2-year-olds were examined in 2019 with 2 tracts containing 6 corpora lutea. These bears would have given birth at age 3 to their first litters. Four 2-year olds had 9 placental scars. This indicates these bears were bred as yearlings and gave birth at age 2! Eighteen sows over the age of 3 showed evidence of breeding and averaged 3.11 corpora lutea. Seventeen females over the age of 3 showed evidence of giving birth in 2019 and averaged 2.65 placental scars. One 5-year-old and one 12-year-old sow had no evidence of corpora lutea or placental scars.

The West Virginia Division of Natural Resources offered hunters who turned in complete reproductive tracts a \$20.00 gift card for their cooperation for the fifth time in 2020. The goal each year is to buy up to 100 reproductive tracts.

Table 1. 2020 West Virginia Black Bear Harvest

COUNTY	BOW/ CROSSBOW	SEPT./OCT. GUN	BUCK GUN	DECEMBER FIREARMS	MOUNTAINEER HERITAGE	TOTAL
Barbour	45	13	8	3	0	69
Brooke	0	0	2	0	0	2
Hancock	0	0	0	0	0	0
Harrison	21	0	1	0	0	22
Marion	3	0	0	0	0	3
Marshall	1	0	0	0	0	1
Monongalia	6	0	0	0	0	6
Ohio	0	0	0	0	0	0
Preston	55	70	7	12	0	144
Taylor	16	0	2	0	0	18
Tucker	30	45	2	21	0	98
Wetzel	10	0	4	0	0	14
District 1 Subtotal	187	128	26	36	0	377
Berkeley	2	0	0	0	0	2
Grant	27	36	9	37	0	109
Hampshire	23	6	11	0	0	40
Hardy	21	27	14	20	0	82
Jefferson	5	0	0	0	0	5
Mineral	6	11	3	5	0	25
Morgan	4	0	5	0	0	9
Pendleton	38	72	12	44	0	166
District 2 Subtotal	126	152	54	106	0	438
Braxton	22	14	36	17	0	89
Clay	10	17	15	27	0	69
Lewis	7	2	16	1	0	26
Nicholas	59	73	39	78	0	249
Pocahontas	25	72	14	66	0	177
Randolph	46	131	7	47	0	231
Upshur	16	13	5	8	0	42
Webster	36	74	24	70	0	204
District 3 Subtotal	221	396	156	314	0	1087
Fayette	76	34	42	20	0	172
Greenbrier	51	63	26	59	0	199
McDowell	44	83	5	34	2	166
Mercer	25	3	7	2	0	37
Monroe	17	31	15	10	0	73
Raleigh	55	21	23	12	1	111
Summers	29	5	12	0	0	46
Wyoming	52	60	2	28	0	142
District 4 Subtotal	349	300	132	165	3	946
Boone	53	61	33	45	0	192
Cabell	0	0	0	0	0	0
Kanawha	48	45	31	42	1	166
Lincoln	7	0	4	0	0	11
Logan	53	86	2	28	0	169
Mason	2	0	0	0	0	2
Mingo	24	53	1	6	0	84
Putnam	1	0	1	0	0	2
Wayne	4	0	2	0	0	6
District 5 Subtotal	192	245	74	121	1	632
Calhoun	1	1	6	2	0	10
Doddridge	2	0	1	0	0	3
Gilmer	5	1	9	1	0	16
Jackson	1	0	1	0	0	2
Pleasants	0	0	1	0	0	1
Ritchie	2	1	5	1	0	9
Roane	0	0	2	0	0	2
Tyler	1	0	0	0	0	1
Wirt	8	1	3	1	0	13
Wood	0	0	0	0	0	0
District 6 Subtotal	20	4	28	5	0	57
STATE TOTAL	1,095	1,225	470	747	4	3,541

Bears listed for Logan, McDowell, Mingo and Wyoming counties as "Buck Gun" are bow or crossbow kills from 11/23 - 12/6.

Bow/Crossbow refers to bears killed with a bow or crossbow from September 26, 2020 - November 22, 2020. All other bow and crossbow kills have been separated based on the seasons in which they were killed.

Sept/Oct gun includes bears killed during the youth, Class Q/QQ and class XS season

10/17 - 10/18 (19 bears) and bears killed during concurrent deer/bear season

(10/22 - 10/25 (38 bears).

Table 2. Sex ratios of West Virginia black bears for September or November gun season, bow season, December and Mountaineer Heritage season, 1964-2020.

YEAR	BOW OR GUN SEASON SEPT./OCT.		BOW SEASON AND/OR EARLY NOV. GUN SEASON		LATE NOV. OR DEC. OR JAN. GUN SEASON		ANNUAL KILL		TOTAL*
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
1964-1983	0	0							
20-Year Total	0	0	345	360	415	152	760	512	1,272
Sex Ratios	0	0	49%	51%	73%	27%	60%	40%	
1984	0	0	8	8	51	43	59	51	110
1985	0	0	14	7	68	24	82	31	113
1986	0	0	31	14	61	26	92	40	132
1987	0	0	40	14	146	51	186	65	251
1988	0	0	21	16	198	165	219	181	400
1989	0	0	81	96	198	135	279	231	510
1990	0	0	41	20	114	60	155	80	235
1991	0	0	72	57	186	111	258	168	426
1992	0	0	112	89	169	85	281	174	455
1993	0	0	141	96	340	190	481	286	767
1994	0	0	111	73	290	258	401	331	732
1995	0	0	152	75	310	153	462	228	690
1996	0	0	114	101	355	198	469	299	768
1997	0	0	225	198	178	85	403	283	686
1998	0	0	167	97	481	337	648	434	1,082
1999	0	0	256	168	369	201	625	369	994
2000	0	0	196	102	655	364	851	466	1,317
2001	0	0	302	165	482	301	784	466	1,250
2002	0	0	540	321	327	169	867	490	1,357
2003	0	0	605	422	450	222	1,055	644	1,699
2004	0	0	319	219	479	218	798	437	1,235
2005	0	0	432	285	616	301	1,048	586	1,634
2006	0	0	399	266	727	312	1,126	578	1,704
2007	0	0	521	328	637	318	1,158	646	1,804
2008	348	322	283	177	597	343	1,228	842	2,070
2009	118	79	575	417	464	215	1,157	711	1,868
2010	215	248	314	146	932	530	1,461	924	2,385
2011	332	306	356	254	483	276	1,171	836	2,007
2012	380	310	462	261	844	478	1,686	1,049	2,735
2013	375	309	523	330	743	412	1,641	1,051	2,692
2014	265	240	402	165	1,008	501	1,675	906	2,581
2015	423	303	685	406	843	541	1,951	1,250	3,201
2016	457	426	600	419	741	369	1,798	1,214	3,012
2017	349	274	399	212	1,220	704	1,968	1,190	3,158
2018	319	246	421	216	965	439	1,705	901	2,606
2019	507	374	636	330	779	473	1,922	1,177	3,099
2020	652	573	641	454	796	425	2,089	1,452	3,541
37-YEAR TOTAL	4,740	4,010	11,197	7,024	18,302	10,033	34,239	21,067	55,306
Average Sex Ratios	54%	46%	61%	39%	65%	35%	62%	38%	
2020 Sex Ratios	53%	47%	59%	41%	65%	35%	59%	41%	

*Represents bears of known sex and not the total harvest in each year.

Table 3. West Virginia total black bear harvest by county, 2016-2020.

COUNTY	2016	2017	2018	2019	2020
Barbour	66	56	39	67	69
Brooke	0	0	0	0	2
Hancock	0	0	1	0	0
Harrison	18	3	7	4	22
Marion	3	1	1	6	3
Marshall	2	2	0	1	1
Monongalia	9	4	8	5	6
Ohio	0	0	0	0	0
Preston	137	131	89	106	144
Taylor	18	8	11	12	18
Tucker	128	138	99	108	98
Wetzel	2	2	7	9	14
District 1 Subtotal	383	345	262	318	377
Berkeley	6	3	3	8	2
Grant	101	127	85	84	109
Hampshire	50	59	44	48	40
Hardy	159	130	113	108	82
Jefferson	5	5	7	10	5
Mineral	20	26	35	23	25
Morgan	19	6	6	9	9
Pendleton	214	206	139	182	166
District 2 Subtotal	574	562	432	472	438
Braxton	62	76	57	78	89
Clay	45	55	64	57	69
Lewis	18	14	19	25	26
Nicholas	213	240	175	214	249
Pocahontas	184	218	175	135	177
Randolph	249	269	169	242	231
Upshur	32	47	29	42	42
Webster	149	238	156	193	204
District 3 Subtotal	952	1157	844	986	1087
Fayette	147	109	106	181	172
Greenbrier	185	192	139	153	199
McDowell	108	98	105	156	168
Mercer	39	54	32	39	37
Monroe	97	73	75	89	73
Raleigh	77	85	75	97	112
Summers	34	35	33	35	46
Wyoming	57	72	98	101	142
District 4 Subtotal	744	718	663	851	949
Boone	113	155	122	170	192
Cabell	0	0	0	1	0
Kanawha	125	108	119	120	167
Lincoln	1	3	5	3	11
Logan	51	56	87	98	169
Mason	0	0	1	0	2
Mingo	34	28	38	38	84
Putnam	0	0	0	0	2
Wayne	1	4	1	4	6
District 5 Subtotal	325	354	373	434	633
Calhoun	4	5	3	12	10
Doddridge	3	3	0	0	3
Gilmer	14	7	13	7	16
Jackson	0	0	0	2	2
Pleasants	0	0	0	0	1
Ritchie	4	3	4	7	9
Roane	1	0	5	4	2
Tyler	2	0	2	0	1
Wirt	6	5	4	5	13
Wood	0	1	1	1	0
District 6 Subtotal	34	24	32	38	57
STATE TOTAL	3,012	3,160	2,606	3,099	3,541

Table 4. Number of black bears killed each year in West Virginia and cause of death.

YEAR	HUNTING SEASON		ILLEGAL KILL	ROAD KILL	DESTROYED	OTHERS	TOTAL
	BOW	GUN					
70'S SUBTOTAL	14	523	70'S AVERAGE ANNUAL BAG: BOW 2; GUN 65				
80'S SUBTOTAL	261	1,542	80'S AVERAGE ANNUAL BAG: BOW 26; GUN 154				
90'S SUBTOTAL	2,363	4,506	90'S AVERAGE ANNUAL BAG: BOW 236; GUN 450				
2000	305	1,023	6	16	8	4	1,362
2001	475	785	18	43	22	1	1,344
2002	726	670	14	82	28	10	1,530
2003	774	958	17	87	61	7	1,904
2004	374	861	7	55	22	11	1,330
2005	585	1,076	15	62	18	10	1,766
2006	516	1,188	8	61	36	10	1,819
2007	728	1,076	4	62	155	7	2,032
2008	460	1,610	3	38	34	6	2,151
2009	992	876	11	70	184	9	2,142
00'S SUBTOTAL	5,935	10,123	00'S AVERAGE ANNUAL BAG: BOW 600; GUN 1,002				
2010	460	1,925	6	66	35	5	2,497
2011	610	1,397	8	107	85	6	2,213
2012	723	2,012	5	72	104	2	2,918
2013	853	1,839	4	65	94	12	2,867
2014	593	1,988	2	81	86	7	2,757
2015	1,091	2,110	3	60	83	8	3,355
2016	1,019	1,993	1	108	127	8	3,256
2017	611	2,547	1	63	73	3	3,298
2018	637	1,969	0	119	72	6	2,803
2019	966	2,133	7	100	128	30	3,364
10'S SUBTOTAL	7,563	19,913	10'S AVERAGE ANNUAL BAG: BOW 756; GUN 1,991				
2020	1,095	2,446	7	125	254	11	3,938

*November Gun Seasons held in 1989, and 2002 - 2020 in certain counties.

**September Season held in 2008-2020 in certain counties.

***Check tags without season (<0.05%) marked were assumed gun kills for this table.

****Bow kill for 2015 - 2020 indicates bears killed between the first day of archery season and the first day of buck firearms season, not all bears killed with a bow or crossbow.



Table 5. West Virginia 2020 non-hunting black bear mortalities by county and type.

COUNTY	ROADKILLS	ILLEGAL	DESTROYED	MISC.	TOTAL
Barbour	0	0	1	0	1
Brooke	0	0	0	0	0
Hancock	0	0	0	0	0
Harrison	0	0	0	0	0
Marion	0	0	0	0	0
Marshall	0	0	0	0	0
Monongalia	2	0	0	0	2
Ohio	0	0	0	0	0
Preston	1	0	7	0	8
Taylor	0	0	2	0	2
Tucker	1	0	3	0	4
Wetzel	0	0	0	0	0
District 1 Subtotal	4	0	13	0	17
Berkeley	0	0	0	0	0
Grant	1	0	0	0	1
Hampshire	1	0	13	1	15
Hardy	1	0	17	2	20
Jefferson	0	0	0	0	0
Mineral	0	0	7	0	7
Morgan	0	0	2	0	2
Pendleton	2	0	12	1	15
District 2 Subtotal	5	0	51	4	60
Braxton	8	0	6	1	15
Clay	2	0	4	0	6
Lewis	14	3	2	0	19
Nicholas	11	0	10	1	22
Pocahontas	0	0	25	0	25
Randolph	1	0	2	0	3
Upshur	3	1	0	1	5
Webster	2	0	3	0	5
District 3 Subtotal	41	4	52	3	100
Fayette	13	0	11	2	26
Greenbrier	11	0	68	0	79
McDowell	0	0	3	0	3
Mercer	5	0	1	0	6
Monroe	0	0	5	0	5
Raleigh	15	2	15	0	32
Summers	0	0	0	0	0
Wyoming	2	0	1	0	3
District 4 Subtotal	46	2	104	2	154
Boone	9	1	11	0	21
Cabell	0	0	0	0	0
Kanawha	13	0	10	0	23
Lincoln	0	0	1	0	1
Logan	4	0	4	1	9
Mason	0	0	0	0	0
Mingo	0	0	7	1	8
Putnam	1	0	0	0	1
Wayne	2	0	0	0	2
District 5 Subtotal	29	1	33	2	65
Calhoun	0	0	0	0	0
Doddridge	0	0	0	0	0
Gilmer	0	0	1	0	1
Jackson	0	0	0	0	0
Pleasants	0	0	0	0	0
Ritchie	0	0	0	0	0
Roane	0	0	0	0	0
Tyler	0	0	0	0	0
Wirt	0	0	0	0	0
Wood	0	0	0	0	0
District 6 Subtotal	0	0	1	0	1
Unknow	0	0	0	0	0
STATE TOTAL	125	7	254	11	397

Table 6. Black bear damage claims paid and payments by county 2016-2020.

COUNTY	2016		2017		2018		2019		2020	
	CLAIMS	PAYMENTS	CLAIMS	PAYMENTS	CLAIMS	PAYMENTS	CLAIMS	PAYMENTS	CLAIMS	PAYMENTS
Barbour	1	\$673	0	\$0	0	\$0	0	\$0	1	\$331
Berkeley	0	\$0	1	\$4,629	1	\$1,583	0	\$0	0	\$0
Boone	2	\$777	0	\$0	0	\$0	2	\$866	3	\$1,635
Braxton	2	\$486	6	\$2,144	7	\$3,719	3	\$1,720	5	\$2,004
Brooke	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Cabell	0	\$0	0	\$0	0	\$0	0	\$0	1	\$1,079
Calhoun	1	\$52	0	\$0	1	\$587	0	\$0	1	\$184
Clay	1	\$205	0	\$0	0	\$0	0	\$0	1	\$115
Doddridge	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Fayette	3	\$1,891	3	\$1,353	1	\$40	5	\$3,413	11	\$7,531
Gilmer	1	\$349	1	\$105	0	\$0	2	\$599	2	\$1,307
Grant	2	\$1,086	2	\$713	0	\$0	0	\$0	1	\$170
Greenbrier	32	\$41,981	30	\$29,013	13	\$17,677	26	\$88,333	32	\$105,142
Hampshire	5	\$8,980	5	\$1,606	0	\$0	4	\$4,698	2	\$1,351
Hancock	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Hardy	8	\$10,128	2	\$527	5	\$4,952	3	\$4,700	7	\$6,397
Harrison	0	\$0	1	\$170	0	\$0	0	\$0	1	\$225
Jackson	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Jefferson	0	\$0	0	\$0	2	\$5,430	0	\$0	0	\$0
Kanawha	3	\$591	1	\$180	1	\$2,020	2	\$1,640	3	\$873
Lewis	1	\$293	1	\$268	2	\$940	1	\$250	0	\$0
Lincoln	0	\$0	0	\$0	0	\$0	0	\$0	4	\$2,498
Logan	0	\$0	1	\$352	3	\$1,335	0	\$0	6	\$4,251
Marion	0	\$0	4	\$469	0	\$0	0	\$0	0	\$0
Marshall	1	\$951	0	\$0	0	\$0	0	\$0	0	\$0
Mason	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
McDowell	1	\$125	0	\$0	0	\$0	0	\$0	4	\$1,530
Mercer	10	\$6,089	4	\$1,019	5	\$797	4	\$2,279	9	\$4,568
Mineral	7	\$6,294	6	\$5,657	5	\$2,885	3	\$3,291	0	\$0
Mingo	0	\$0	1	\$490	0	\$0	0	\$0	3	\$1,970
Monongalia	0	\$0	0	\$0	1	\$546	0	\$0	0	\$0
Monroe	5	\$13,366	4	\$3,786	6	\$15,786	8	\$19,011	15	\$31,785
Morgan	1	\$623	0	\$0	3	\$908	3	\$1,019	0	\$0
Nicholas	10	\$3,519	5	\$1,366	2	\$984	6	\$10,940	3	\$1,097
Ohio	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Pendleton	9	\$26,748	2	\$901	7	\$9,938	17	\$13,197	12	\$7,291
Pleasants	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Pocahontas	17	\$19,425	9	\$4,505	4	\$3,747	7	\$7,343	12	\$34,913
Preston	15	\$42,877	15	\$19,766	18	\$19,222	13	\$14,220	12	\$33,350
Putnam	0	\$0	0	\$0	0	\$0	1	\$150	1	\$500
Raleigh	10	\$8,004	1	\$359	1	\$261	4	\$4,349	5	\$2,911
Randolph	5	\$1,004	9	\$2,550	7	\$1,971	2	\$287	7	\$6,205
Ritchie	0	\$0	0	\$0	0	\$0	0	\$0	1	\$537
Roane	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Summers	3	\$4,512	2	\$1,942	6	\$4,352	2	\$223	1	\$96
Taylor	0	\$0	0	\$0	1	\$500	0	\$0	0	\$0
Tucker	2	\$1,552	1	\$4,766	1	\$153	3	\$2,660	3	\$2,524
Tyler	0	\$0	1	\$1,371	0	\$0	0	\$0	0	\$0
Upshur	1	\$45	2	\$825	0	\$0	2	\$100	1	\$432
Wayne	2	\$696	0	\$0	0	\$0	0	\$0	0	\$0
Webster	1	\$600	1	\$85	3	\$1,344	4	\$1,228	0	\$0
Wetzel	0	\$0	3	\$2,617	1	\$286	1	\$630	0	\$0
Wirt	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Wood	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Wyoming	0	\$0	0	\$0	2	\$381	1	\$200	0	\$0
TOTAL	162	\$203,922	124	\$93,534	109	\$102,344	129	\$187,346	170	\$264,802

Harvest

SPRING HARVEST

The Spring gobbler season began in 1966 on our wildlife management areas and went statewide in 1968. Hunters harvested 11,320 bearded turkeys during the 2020 spring gobbler season (Table 7), a modest 0.94% increase above 2019. This year's harvest was 0.23% below the five-year average and 9.5% above the 10-year average. This was the fifth year of West Virginia's spring gobbler season coming in a week earlier (i.e. the third Monday in April) than historically and the second year the entire state was open to Sunday hunting on private and public land.

The first week's harvest, 5,855 birds, accounted for 51.7% of the total four-week spring gobbler harvest (Table 8). The second week, which was traditionally the first week up to 2015, accounted for 20.5% of the season harvest. Weeks 3 and 4 combined made up 22.1% of the total harvest. During the past five years no apparent shift in harvest distribution occurred due to the earlier opening season start date with most turkeys still being harvested the first week.

This was the first year youth season included two days (i.e. the Saturday and Sunday prior to the opening day). Youth hunters harvested 643 birds, 368 and 275 on Saturday and Sunday, respectively. The youth season harvest made up 5.7% of the entire spring turkey harvest and 80.1% above last year's youth harvest of 357 birds.

Districts 4 and 5 reported slight increases over last year's harvests with the remaining districts harvesting fewer birds than last year. District 1 harvested the most birds (2,749) followed by District 6 (2,286), District 5 (2,132), District 4 (1,619) District 3 (1,522) and District 2 (1,012). The top five counties with the highest harvest were Mason (457), Preston (434), Jackson (404), Wood (344), and Harrison (339).

FALL HARVEST

This marked the fourth year Sunday hunting was permitted on private land in all 55 counties and the third year on public lands. For the fifth consecutive year, due to regulatory changes, all West Virginia's 55 counties had at least a one week fall turkey season, which had a one bird either sex bag limit. Twenty-four counties had a one-week season, 17 counties, which had a spring harvest of at least 0.75 birds per square mile, were open to a split two-week season, and 14 "traditional" counties had a four-week split season. Hunters harvested 1,038 turkeys (Table 9), down 6.7% from 2019 and 18.7% below the five-year average and 13.4% below the 10-year average.

Although the past two years have shown slight declines in harvest, the 2020 fall season was still on par with a typical season. The 2020 brood production was similar to last years, which is a good indication this year's fall harvest would be similar as well.

District 1 and 2 harvests were slightly above 2019 with the remaining Districts below. District 3 harvested 231 birds, followed by District 4 (224), District 1 (199), District 2 (150), District 5 (130), and District 6 (104).

Leading the state was Randolph County, with hunters harvesting 64 birds, followed by Greenbrier (53), Monroe (46), Nicholas (45) and Preston (42) counties. All of these counties had a four-week season, except for Preston County which had a two-week season.

Overall, the combined 2020 spring and fall turkey harvest was 12,358 birds (Table 10). This is up 0.24% from 2019's total harvest (12,328), but since 1966, 2020 is 19th in the highest total harvest.

Surveys

SPRING GOBBLER SURVEY

The Wildlife Resources Section and the West Virginia Chapter of the National Wild Turkey Federation (NWTf) conduct an annual survey of spring gobbler hunters. The survey is done entirely by volunteer sportsmen who donate their time and effort to gather information to help the DNR manage wild turkeys. Typically, the West Virginian Chapter of NWTf sends survey forms to its members and the Wildlife Resources Section compiles the data from these and other participants. A survey report is written and provided free to cooperators. The results from this survey were not available at the time of this printing.

Hunters desiring a copy of the annual survey report need to participate in the survey. Spring gobbler hunters wanting to help are encouraged to contact Spring Gobbler Survey, West Virginia Division of Natural Resources, P.O. Box 67, Elkins, WV 26241, phone (304) 637-0245. Those wishing to participate will be sent the necessary forms and a questionnaire prior to the spring hunting season. The survey is simple to conduct and a hunter does not have to harvest a gobbler to provide useful data. Most of the information collected deals with what hunters hear, see, or have an opinion on related to turkeys.

Surveys continued ...

BROOD SURVEY

Past studies have shown that the quantity of broods observed two years prior to a spring turkey season is a good indicator of the spring's gobbler harvest. The number of turkey broods observed in the spring is a good indicator of that year's fall harvest. Statewide, 32 observers noted 479 encounters with turkeys in 2020, which included 698 hens, 1,088 poults, 425 gobblers, 313 unknown birds, and 51 repeated observations (i.e. "seen before"). This was 37.6% increase over 2019 (348 observations). Removing the repeated observations yielded 613 hens, 887 poults, 337 gobblers, 312 unknowns, and a 1.45 poult-to-hen ratio for the entire observation period, from June 1 through August 31. The 2020 poult-to-hen ratio was 18.0% below 2019 observations (1.77 poults/hen). This is the second year of decreasing poult-to-hen ratio.

Several years ago, slight modifications were made to West Virginia's brood observation procedures to standardize them with the Northeast and Southeast Association of Fish and Wildlife Agencies for regional indices. Currently both associations and the NWTTF Technical Committee have adopted the SEAFWA methodology for a standardized national survey. This index uses the averages of poults to hen observed compared to all hens observed (i.e., with

and without poults) during July and August. This index takes into consideration those hens that either lost their nests or broods, which more accurately reflects the status of recruitment. There were 178 observations statewide of hens or hens with broods in July and August. This included 356 hens and 676 poults. The statewide poult-to-hen ratio in 2020 was 2.01, up 25.6% from 2019 (i.e., 1.6 poults/hen). The Mountain Region had the highest poults-per-hen ratio (4.24 poults/hen) followed by the Southern Region (2.19 poults/hen) and the Eastern Region (1.88 poults/hen), with the Western Region observing the lowest ration (1.39 poults/hen).

A total of 18,627.75 hours were worked between July 1 and August 31 out of 58 potential observers. Using the national standardized method above resulted in a statewide 0.11 poults/hen/1,000 hours.

A total of 132 turkey broods were observed between June 1 and August 31 in 2020, just 7 more than last year. This is 5.6% above last year's observations and 22.8% below the 5-year average. The biggest change occurred in the Western Region, a 39.4% increase from last year, which coincidentally had the lowest poult per hen ratio.

MAST SURVEY

The Wildlife and Law Enforcement sections of the Division of Natural Resources and the Division of Forestry have conducted surveys for abundance of wild foods since 1970 (i.e., Mast Surveys). Foods of 18 tree and shrub species that are important to wildlife were monitored at 249 locations, covering all regions of West Virginia in 2020.

Compared to the 2019 survey year the statewide combined index for all monitored species was down approximately 37% for survey year 2020. While the crop of Scarlet Oak acorns increased substantially over 2019 levels (+33%) and the Red Oak/Black Oak crop was roughly comparable (-4%) between years, abundance of mast produced by all other species declined by a considerable margin. Among hard mast producing species, Beech (-50%), Walnut (-51%), and Hickory (-54%) performed most poorly, while White Oak (-12%), Chestnut Oak (-17%) and Scrub Oak (-18%) abundance also declined statewide relative to last year's crop. Relative to the 49-year, long-term survey average, only Red Oak/Black Oak (+27%) and Scarlet Oak (+56%) exceeded mean production levels. All other hard mast producers performed between 15% (Scrub Oak) and a remarkable 57% (Chestnut Oak) below average. Production among all oak species in 2020 was within 1% of 2019 levels but was nearly 9% below the long-term average; large gains in Red Oak/Black Oak and Scarlet Oak production were not entirely sufficient to offset noteworthy decreases in relative production by White Oaks (-54%) and Chestnut Oaks (-57%). Scrub Oaks, a usually consistent and reliable acorn producer as compared to the remainder of genus *Quercus*, produced at levels 18% less than those of 2019 and 15% below the 49-year survey average.

All soft mast producers underperformed -- in some cases considerably—the levels seen in survey year 2019. Apple (-83%), Crabapple (-65%), and Hawthorn (-57%) fruit production declined dramatically as blossoms fell victim to late frost and cold mid-May weather in many parts of West Virginia. Comparison to the long-term soft mast average paints a similarly bleak picture with Crabapple (-57%) and Hawthorn (-49%) fruit much scarcer than in a typical year, and Apples (-80%) a precious commodity across much of the state. Grape (-48%) and Black Cherry (-42%) crops were well below production levels seen in 2019 and well below the long-term average at -45% and -33%, respectively. Indeed, relative to the long-term average, all surveyed soft mast producing species were off from 15% (Blackberry) to an astounding 80% (Apple). Even Yellow Poplar, a reasonably reliable crop sometimes utilized by squirrels when other foods are scarce, produced at levels more than 40% below average. Soft mast provides significant and calorie-rich food resources for wild turkeys, ruffed grouse, black bears, and raccoons, all of which use soft mast extensively when and where it is available. Unlike last year, soft mast production did not differ significantly between high and low elevations and decreases were near uniform.

When considering all mast-producing species, the 2020 mast index was nearly 39% below last year and slightly more than 35% below the long-term average. The overall hard mast crop -- which includes production of beechnuts, hickory nuts, walnuts, and acorns -- was down over 25% relative to survey year 2019 and nearly 22% below the long-term average. The Black Oak group (excepting Scrub Oak) acorn production, while well above average, was not enough to counterbalance strong declines in abundance of other hard mast. The hickory - cherry - oak association produced at levels nearly 20% less than in survey year 2019 and just over 19% below the long-term average; this is an unsurprising result as all of these species underperformed strongly.

Table 7. Spring harvest of wild turkeys in West Virginia, 2016-2020.

COUNTY	2016	2017	2018	2019	2020
Barbour	165	204	250	202	234
Brooke	78	100	174	118	131
Hancock	98	106	87	109	146
Harrison	286	328	440	347	339
Marion	192	257	330	298	289
Marshall	207	256	417	311	296
Monongalia	197	267	346	263	270
Ohio	111	113	145	145	130
Preston	371	475	555	455	434
Taylor	101	135	189	142	146
Tucker	90	97	89	102	86
Wetzel	196	244	396	270	248
District 1 Subtotal	2,092	2,582	3,418	2,762	2,749
Berkeley	115	147	162	141	151
Grant	161	145	160	140	124
Hampshire	170	184	166	203	176
Hardy	132	132	151	142	123
Jefferson	79	115	115	125	121
Mineral	134	133	148	121	113
Morgan	54	64	65	83	93
Pendleton	88	112	112	112	111
District 2 Subtotal	933	1,032	1,079	1,067	1,012
Braxton	197	209	307	257	234
Clay	101	120	142	102	102
Lewis	211	249	289	233	250
Nicholas	330	311	287	260	265
Pocahontas	144	142	113	155	109
Randolph	250	247	207	258	214
Upshur	228	302	335	297	255
Webster	156	151	129	100	93
District 3 Subtotal	1,617	1,731	1,809	1,662	1,522
Fayette	292	278	247	257	290
Greenbrier	308	269	225	254	248
McDowell	200	177	132	105	122
Mercer	176	192	150	129	174
Monroe	184	192	183	231	201
Raleigh	283	280	213	205	212
Summers	219	209	170	158	182
Wyoming	320	262	197	182	190
District 4 Subtotal	1,982	1,859	1,517	1,521	1,619
Boone	157	157	125	132	169
Cabell	114	176	125	147	182
Kanawha	285	320	308	296	310
Lincoln	215	229	158	173	218
Logan	181	165	157	141	172
Mason	378	448	469	465	457
Mingo	131	143	106	118	147
Putnam	210	268	235	236	287
Wayne	139	186	129	132	190
District 5 Subtotal	1,810	2,092	1,812	1,840	2,132
Calhoun	145	164	190	164	147
Doddridge	137	160	216	178	198
Gilmer	132	143	170	142	140
Jackson	302	408	460	447	404
Pleasants	80	88	122	124	109
Ritchie	216	264	327	285	283
Roane	231	256	280	258	252
Tyler	182	181	250	217	209
Wirt	174	205	230	186	200
Wood	328	380	407	362	344
District 6 Subtotal	1,927	2,249	2,652	2,363	2,286
STATE TOTAL	10,361	11,545	12,287	11,215	11,320

Table 8. Spring wild turkey harvest in West Virginia by week of season, 2019-2020.

WEEK OF SEASON	2019		2020	
	BIRDS HARVESTED	%	BIRDS HARVESTED	%
Youth	357	3.18	643	5.68
Week 1	6,068	54.11	5,855	51.72
Week 2	2,193	19.55	2,322	20.51
Week 3	1,378	12.29	1,286	11.36
Week 4	1,219	10.87	1,214	10.72
Unknown	0	0.00	0	0.00
STATE TOTAL	11,215	100	11,320	100



Table 9. Fall harvest of wild turkeys in West Virginia, 2016-2020.

COUNTY	2016	2017	2018	2019	2020
Barbour	29	21	22	18	14
Brooke	15	9	7	4	12
Hancock	6	2	6	15	11
Harrison	41	15	18	17	18
Marion	38	12	20	14	22
Marshall	50	17	24	14	14
Monongalia	30	20	23	16	21
Ohio	21	5	8	5	8
Preston	105	55	54	43	42
Taylor	23	21	10	15	13
Tucker	14	6	26	13	18
Wetzel	40	17	14	12	6
District 1 Subtotal	412	200	232	186	199
Berkeley	21	20	12	13	17
Grant	57	29	47	22	32
Hampshire	30	18	22	20	19
Hardy	27	19	21	21	12
Jefferson	8	4	4	2	4
Mineral	22	14	30	19	19
Morgan	9	6	13	10	13
Pendleton	35	24	19	23	34
District 2 Subtotal	209	134	168	130	150
Braxton	43	5	8	17	7
Clay	12	4	3	5	5
Lewis	21	10	14	20	16
Nicholas	140	36	68	51	45
Pocahontas	49	34	41	44	37
Randolph	116	38	76	61	64
Upshur	92	32	58	59	37
Webster	91	14	51	27	20
District 3 Subtotal	564	173	319	284	231
Fayette	38	14	18	36	35
Greenbrier	74	64	65	65	53
McDowell	30	14	16	9	6
Mercer	27	17	17	21	26
Monroe	61	51	53	56	46
Raleigh	47	18	24	25	23
Summers	29	22	10	17	16
Wyoming	62	12	27	19	19
District 4 Subtotal	368	212	230	248	224
Boone	21	5	9	8	17
Cabell	12	5	8	7	9
Kanawha	38	17	10	20	19
Lincoln	26	7	12	8	9
Logan	25	5	9	6	15
Mason	64	28	45	33	23
Mingo	8	1	8	8	10
Putnam	27	14	14	20	17
Wayne	17	0	2	4	11
District 5 Subtotal	238	82	117	114	130
Calhoun	19	7	12	10	5
Doddridge	12	5	7	6	8
Gilmer	10	9	1	9	3
Jackson	48	34	29	27	18
Pleasants	7	8	13	6	3
Ritchie	21	8	12	15	9
Roane	26	17	15	19	11
Tyler	18	2	6	15	9
Wirt	30	23	17	15	10
Wood	84	34	37	29	28
District 6 Subtotal	275	147	149	151	104
STATE TOTAL	2,066	948	1,215	1,113	1,038

Table 10. Total spring and fall turkey harvest West Virginia, 1966-2020.

YEAR	SPRING	FALL	TOTAL	RANK
1966	12	1,334	1,346	54
1967	42	989	1,031	55
1968	134	1,697	1,831	53
1969	243	3,430	3,673	43
1970	370	3,020	3,390	46
1971	421	2,374	2,795	50
1972	589	2,353	2,942	49
1973	554	3,038	3,592	44
1974	596	2,158	2,754	51
1975	585	2,827	3,412	45
1976	721	1,860	2,581	52
1977	719	2,998	3,717	42
1978	566	2,803	3,369	47
1979	873	2,421	3,294	48
1980	1,459	3,696	5,155	39
1981	1,970	3,135	5,105	40
1982	2,458	5,684	8,142	35
1983	2,627	2,224	4,851	41
1984	3,387	2,414	5,801	38
1985	4,215	2,343	6,558	37
1986	4,774	3,130	7,904	36
1987	5,665	4,114	9,779	31
1988	6,526	2,939	9,465	33
1989	7,245	2,204	9,449	34
1990	9,152	3,504	12,656	16
1991	10,097	3,690	13,787	13
1992	11,299	3,518	14,817	8
1993	13,428	3,536	16,964	6
1994	15,501	3,351	18,852	4
1995	16,770	3,211	19,981	2
1996	16,618	2,870	19,488	3
1997	14,021	3,385	17,406	5
1998	12,467	1,678	14,145	11
1999	11,241	2,901	14,142	12
2000	12,794	1,541	14,335	10
2001	17,875	3,505	21,380	1
2002	13,385	2,808	16,193	7
2003	12,535	1,841	14,376	9
2004	10,573	1,357	11,930	23
2005	10,957	1,130	12,087	22
2006	11,735	1,186	12,921	15
2007	9,965	1,511	11,476	24
2008	9,929	1,206	11,135	26
2009	9,787	1,208	10,995	27
2010	10,209	1,126	11,335	25
2011	9,190	1,186	10,376	28
2012	8,303	1,294	9,597	32
2013	11,162	1,019	12,181	21
2014	9,128	956	10,084	30
2015	9,037	1,140	10,177	29
2016	10,361	2,066	12,427	18
2017	11,545	948	12,493	17
2018	12,287	1,215	13,502	14
2019	11,215	1,113	12,328	20
2020	11,320	1,038	12,358	19
TOTAL	410,637	127,223	513,174	

WILD BOAR

BY NICHOLAS G. HUFFMAN

Hunters killed 145 boars during the 2020 season. This is the second highest harvest (158 in 1995) since implementation of a wild boar hunting season in 1979. Hunters once again had the opportunity to hunt in early February in addition to archery season and the October firearms season. The February season resulted in a harvest of 65 boars. This was up from the previous two years of February hunting, representing an increase of 33% from last year. Forty-eight boars were harvested in Logan County and seventeen in Boone County during the February season.

Firearms hunters harvested a total of 82 boars (58 in Logan County and 24 in Boone County) and archers harvested 63 (49 in Logan County and 14 in Boone County). Crossbow hunters accounted for 15 of the archery kills. No harvests were reported for Raleigh County or Wyoming County. Located within ecological region 3, the wild boar population experienced better productivity (i.e., increased births) during 2020 due to improved mast production, especially oaks, during 2019. The productivity of 2020 coupled with a lower archery and October firearms season harvest of 2019 contributed to the increased harvest during 2020. The 2020 archery harvest increased 91% from last year.

Wild Boar were introduced in 1971 to supplement big game populations and did well enough to accommodate a hunting season in 1979. Harvests have ranged from 3 that year to 158 in 1995. The decline in the population in the late 1990's led to the removal of the December season in 2003. The single October firearms season was designed to reduce the harvest thereby allowing population growth coupled with allowing boars to move into unoccupied habitats. Traditionally, hunters have been less successful during Octobers when weather conditions are warm and dry and leaf fall makes boar sign more difficult to find. Hunters had suggested bringing back a late season for several years. Biologists analyzed the data and proposed the stand-alone season in February to allow hunters a unique opportunity. The Natural Resources Commission approved the season and hunters have participated in this event for three consecutive years. Biologists will continue to track the impact of this February season and make proposals accordingly. The February season is proposed to continue for next year. Annual Big Game Seasons are set by the Natural Resources Commission at their spring meeting.

Table 11. Wild boar harvest by weapon, 2020

COUNTY	CROSSBOW	ARCHERY	FIREARM	TOTAL
Boone	6	8	24	38
Logan	9	40	58	107
TOTAL	15	48	82	145

Table 12. West Virginia wild boar harvest, 1979-2020

YEAR	TOTAL HARVEST
1979	3
1980	10
1981	33
1982	72
1983	54
1984	81
1985	58
1986	35
1987	74
1988	34
1989	116
1990	86
1991	59
1992	130
1993	82
1994	86
1995	158
1996	139
1997	141
1998	58
1999	96
2000	46
2001	43
2002	38
2003	5
2004	7
2005	12
2006	14
2007	22
2008	14
2009	35
2010	16
2011	37
2012	62
2013	49
2014	51
2015	99
2016	46
2017	91
2018	137
2019	88
2020	145
TOTAL	2,662

Deer Season 2020 and January 2021

The following Tables 13 through 19 contain the 2020 white-tailed deer hunter harvest information for each of West Virginia's 55 counties. In 2020 and January 2021, deer hunters harvested a total of 106,861 deer in the combined deer seasons. This was an increase of 7.5% from the 2019 and January 2020 harvest of 99,437 and 6% below the previous five-year harvest average of 113,444. The combined deer season harvest for fall 2020 and January 2021 is the 30th largest total deer harvest on record for West Virginia. The total deer harvest represents one deer killed for every 138 acres of deer habitat in the state (Table 18), and a 58% harvest decrease from the record harvest of 255,356 deer in 2002. From 1945 through January 2021, a total of 6,670,223 deer have been recorded as harvested in West Virginia (Fig.2). Forty-four percent (2,902,354) of the total recorded deer harvest of the past 75 years has occurred in the last 20 years.

In 2020, the traditional bucks-only firearm season harvest of antlered bucks was 38,785, a 6% increase from the 2019 harvest (Table 13). This is 16% less than the five-year average bucks-only firearm season harvest of 46,417 and ranks 39th among all past years.

The 2020 antlerless deer harvest taken with a firearm increased by 10% from that of 2019 and was 73% less than the record harvest of 104,199 in 2002. A total of 31,255 antlerless deer (Table 15) were taken with a firearm during the antlerless deer season and the Youth, Class Q/QQ (physically challenged) and Senior Lifetime Class XS deer season. This year marked the ninth year for an October firearm antlerless deer season and was the third year for a four-day season rather than a three-day season (October 22- 25). For the third year, the traditional December antlerless season was increased from three to four days (December 10-13) and followed buck firearm season

rather than muzzleloader season. The antlerless deer maximum season bag limit was decreased from 4 to 3 in 2012 and continued to remain at 3 for 2020. In comparison to 2019, the antlerless bag limit in 2020 was decreased in 2 counties and a portion of one county from 3 antlerless deer to 1 antlerless deer. Portions of two counties that had limited permits in 2019 were opened to unlimited permits in 2020. The firearm antlerless deer season was open in 2020 for 26 days on private land in 51 counties or portions thereof. In 4 counties and portions of 5 more, the season was closed. Of the counties open for antlerless deer hunting to resident and nonresident hunters, 26 counties and portions of 2 counties had a bag limit of three antlerless deer, and 14 more counties and portions of 4 counties had a bag limit of one antlerless deer. Four counties and portions of 3 counties in 2020 were limited to resident and nonresident hunters who had to apply for limited permits. The antlerless Class N/NN season was closed on a large portion of National Forest land. Similar to 2019, all Monongahela National Forest land in Pocahontas and Randolph counties was closed to firearm antlerless Class N/NN hunting. For the second year qualifying youth, Class Q/QQ and Senior Lifetime Class XS license holders had an additional day in 2020, which totaled to a four-day antlerless-only season on private and public land in counties having a firearms deer hunting season. The 2020 special split deer season for youth, Class Q/QQ and Senior Lifetime Class XS hunters was the thirteenth year for the season to be open on private land in all 51 counties open to a deer firearms season, the ninth year that all public lands in the 51 counties were open and also the ninth year that Senior Lifetime Class XS license holders could participate. The 2020 antlerless season harvest was 34th highest on record and 8% less than the five-year average antlerless harvest of 33,863.

The 2020 deer statewide archery (bow/crossbow) season opened September 26, 2020, two days earlier than the 2019 season. In the 2020 archery season (including urban archery and 30 deer taken with long or recurve bows in the Mountaineer Heritage season in January 2021), a harvest of 31,594 was recorded, which includes 17,437 deer harvested during the archery season with a crossbow. Deer reported as harvested with a crossbow represented 55% of the total archery season harvest and ranged from 21% to 76% of the archery antlered deer harvest by county. This year's archery harvest was 7% more than the 2019 archery season, 6th highest on record and 12% above the five-year average of 28,278 (Table 14).

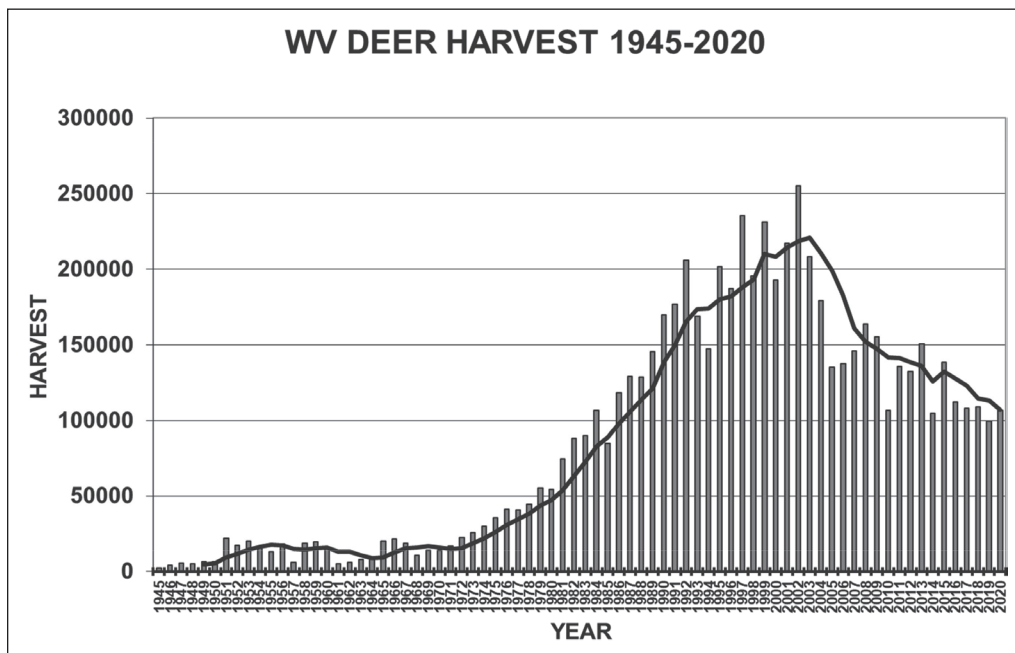


Figure 2. White-tailed deer harvest in West Virginia from 1945-2020.

Deer Season 2020 and January 2021 continued ...

The 2020 muzzleloader harvest was 5,227 a 3% increase from the 2019 harvest of 5,092 but includes 612 deer taken with side lock and flintlock muzzleloaders in the Mountaineer Heritage season. This is 7% above the five-year average harvest of 4,876 and ranks 29th out of 36 years the muzzleloader season has existed in West Virginia (Table 16). Some changes to the muzzleloader season that occurred in 2012 were reversed in 2018 and remained for the 2020 season. In 2012 the early 6-day special antlerless muzzleloader deer season in September was dropped and the traditional mid-December portion of the season was moved to early December opening the Monday following the close of buck firearm season. In 2018 through 2020 the September portion remained dropped but the December portion was moved to mid-December (December 14-20) after the antlerless Class N/NN deer season.

In 2020, hunting on Sunday was permissible in West Virginia for the 20th year since 1956. In 2001, all counties were open to hunting on Sunday. In 2002, a total of 20 counties were open to hunting on Sunday. From 2003 through 2013, there were 14 counties open to hunting on Sunday. In 2014 19 counties, in 2015 20 counties, in 2016 22 counties and in 2017 all counties were open to hunting on Sunday on private land with written permission. In 2018 through 2020 all counties were open to hunting on Sunday on both private and public land, making 14 additional days available for deer hunting in 2020 deer seasons. All 14 days were open for bow and crossbow hunters, who recorded taking 3,972 deer on Sundays, or 13% of the total 2020 archery (bow/crossbow) harvest. Six Sundays were open for antlerless firearms deer hunting and 3,214 deer were reported as harvested. Two Sundays were open for taking an antlered deer with a firearm, the Sunday after Thanksgiving and the first Sunday in December (i.e. November 29th and December 6th), and 1,900 antlered bucks were reported as harvested.

In the 2020 deer season, 51 counties were open to the two-week, bucks-only season. The desired buck harvest per square mile was not exceeded by more than one buck per square mile in any county open to firearms deer hunting. There were 19 counties with a buck harvest of one buck per square mile lower than the desired harvest. For the remaining 32 counties, the buck harvest was within one buck per square mile of the desired harvest for the county. This harvest represented no change from the desired buck harvest results in 2019. In contrast to 2018, no counties exceeded the desired buck harvest per square mile by at least one buck per square mile, and six counties were lower than the desired harvest while 45 counties were within one buck per square mile of the desired buck harvest.

The harvest of antlerless deer is the key to healthier, heavier, and more productive deer herds. This is because there are natural limits

to the number of deer the land can support. When these natural limits are exceeded, deer body weights, reproductive rates, antler development, and herd health declines, including an increased likelihood that deer will die over winter. If deer exceed natural limits long enough, habitat quality is reduced, which produces a long-term reduction in the natural limit of deer the land can support. To avoid these problems a minimum of 70 females for every 100 bucks is generally required just to stabilize a deer herd. If a decrease in the herd is warranted, the percentage of females needs to be above 40%. Figure 3 depicts the total deer harvest in West Virginia from 1993 through 2020 by the sex composition of the harvest for each year in relation to the percentage of female deer harvested. This figure appears to reflect the stabilizing effect the 40% female harvest has on the number of deer harvested. The 2020 deer harvest records indicate the percentage of female deer in the harvest was 39% within 1% of that recorded in 2019, which is expected to slightly increase the statewide deer herd. However, the percentage of female deer in the harvest of individual counties in 2020 varied from 20% to 49%, which reflects antlerless deer season frameworks design for individual counties to grow, reduce, or stabilize the deer population on a county basis.

Over the last 10 years the yearly average number of reported antlered bucks harvested during all deer seasons is 2.9 antlered bucks per square mile of deer habitat in West Virginia or one buck per 220 acres. Hunters and landowners must continually assess their expectations of the proper number of deer sightings versus the visible impacts deer have on vegetation and manage the state's deer herd by participating and encouraging antlerless deer harvest where needed. This benefits not only the deer herd, but all wildlife dependent on our state's woodland habitat.

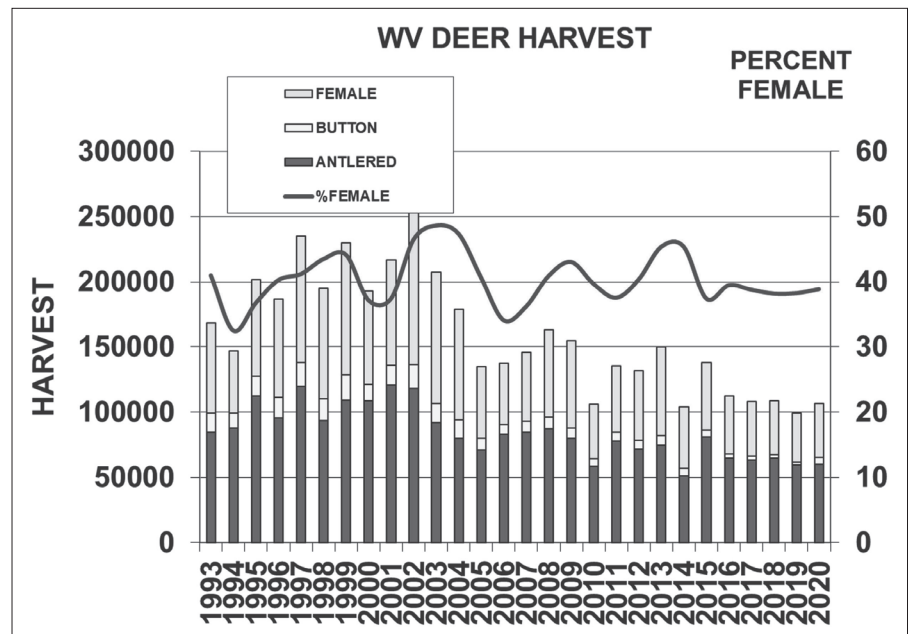


Figure 3. Deer harvested by sex in West Virginia from 1993-2020.



Special Deer Management Harvest

Deer taken by hunters in the Special Urban Deer Season and Special Split Youth, Class Q/QQ and Senior Lifetime Class XS deer season do not count toward the hunter's regular deer season bag limits nor require the hunter to purchase a Class N/NN or additional deer stamps. However, these deer are included in tables 13-19 as part of the 2020 deer season harvest.

The Special Urban Deer Season is available to incorporated cities and homeowner associations, which may open three weeks prior to the opening of statewide deer archery season and close January 31st. The extension through January 2021 was the third year for this expanded opportunity. During this special season, up to seven deer may be taken by each hunter. This is the 17th year that homeowner associations have taken advantage of the special urban archery deer season to address deer population management. For information regarding implementing a special season, contact your local city government or homeowner's association.

In the special split Youth, Class Q/QQ and Senior Lifetime Class XS deer season, a total of 2,318 antlerless deer were harvested. This season was open on private land and public land in any county open to a firearms deer season on October 17-18, 2020, and again December 26 and 27, 2020. This was the 23rd year a Youth special season was held. To participate, hunters had to hold a Class Q license, or be a youth at least eight and less than 18 years of age on the day of the season, or possess a Senior Lifetime Class XS license. Youth hunters, age 8-14, must be accompanied by a licensed adult at least 21 years of age and youths age 15-17 must comply with all regular season license requirements for junior sportsman hunting or hunt with resident landowner privileges. The 2020 season was the eleventh year for participation by the 15-17 age youths and the ninth year for participation by Class XS license holders. The daily bag limit was one

antlerless deer. Hunters harvested 1,181 deer on the first day, October 17th, 494 deer on October 18th and an additional 297 and 346 deer on December 26th and 27th, respectively. Overall the harvest for the 2020 special Youth, Class Q and Senior Lifetime Class XS deer season increased 18% from 2019. The harvest for the 2020 first day was up 11% from the first day of the 2019 season. The Sunday was up 30% from the 2019 recorded harvest, as 494 deer were harvested. The second and third days of the 2020 season were up 16% and 35%, respectively, from the reported harvest in 2019.

Special controlled deer hunts were held in 2020 on six West Virginia State Parks. A total of 94 deer (69 antlerless and 25 antlered deer) were harvested according to state park superintendents. These deer are not included in tables 13-19 as part of the 2020 deer harvest. Twenty-five deer were taken at Beech Fork State Park, 28 deer at Cacapon State Park, nine deer at Canaan Valley State Park, 15 deer at North Bend State Park, 17 deer at Pipestem State Park, and no deer were harvested during the 3-day archery deer hunt at Twin Falls State Park. This was the sixth year for such a hunt on Pipestem State Park, the fifth year for a hunt at Cacapon State Park, and the fourth year for a controlled deer hunt at North Bend State Park. All state park controlled deer hunts are by application only. Visit WVhunt.com to apply on-line.

The Green Bank Observatory controlled deer hunt was cancelled in 2020 because of SARS CoV2 pandemic concerns. The Observatory held its first controlled hunt in 1993, which paved the way for the controlled deer hunts conducted today on state parks. Look for an announcement in July 2021 on whether a hunt will occur in October 2021. Deer are a keystone species in West Virginia's natural world and proper stewardship of our State's flora and fauna require that deer management be addressed on all lands.

Nonseasonal Mortalities

Nonseasonal mortalities are those deer deaths that are not associated with the harvest of deer by hunters. Figure 4 depicts nonseasonal deer mortalities that are associated with human/deer conflicts. The public, DNR Natural Resource Police Officers, and DNR Wildlife Resources personnel routinely report nonseasonal mortalities. The WV Department of Transportation, Division of Highways (DOH) Traffic Engineering Division, provides monthly summaries of vehicle killed deer that are encountered by DOH personnel. DNR Natural Resource Police Officers provide wildlife damage investigation reports from which the number of deer killed for crop damage is obtained.

The reported nonseasonal mortalities from vehicle collisions in 2020 were not available at the time of preparation of this document, so therefore deer killed on crop damage permits are the only nonseasonal deer mortalities depicted in Figure 4. Deer killed on crop damage permits increased in DNR Districts 1, 3, 4, 5, and 6, and decreased slightly in District 2. Overall, deer killed through the crop damage permit system in 2020 increased by 14%, with 1,549 deer killed on crop damage permits in 2019 and 1,761 recorded in 2020.

The occurrence of deer reportedly killed by collisions with vehicles and deer reported as killed for crop damage follow similar trends. Although other factors such as deer food supply (such as acorns), number and average speed of vehicles, and crop growing conditions like drought influence these trends, a major factor is deer population (Fig. 4).

Deer Hunting Outlook

Overall deer hunting opportunities for hunters across the state in 2021 are proposed to be similar to those in 2020 with the exception of increased antlerless deer season hunting opportunities in counties where recorded deer harvest data and habitat impacts indicate female deer harvest should be increased to stabilize or decrease current deer populations. The 2020 deer seasons was the sixth year for the electronic game checking system. For 4 years prior to 2020, hunters were directed to take deer harvested on the first 2 days of the traditional buck firearm season to special designated locations where wildlife agency personnel could examine their deer. This required examination was for the collection of biological information such as age and antler development and to collect samples for CWD testing. A similar requirement may be asked of hunters in the 2021 deer seasons. Hunter cooperation in delivering their deer to the biological examination stations and recording their harvest throughout the deer season is an integral part to the DNR's ability to manage deer in West Virginia. Hunters have helped manage deer in the state since mandatory game checking began in 1929, and the information provided by hunters is the foundation for tracking deer herd trends and monitoring doe harvest impacts. To register your harvest visit WVhunt.com, call 1-844-982-4325 (1-844-WVCheck) or visit a license agent.

The 2021 deer archery (bow/crossbow) season opening date is proposed to open the last Saturday in September (September 25th), which is one day earlier than the September 26th opening in 2020. The expanded

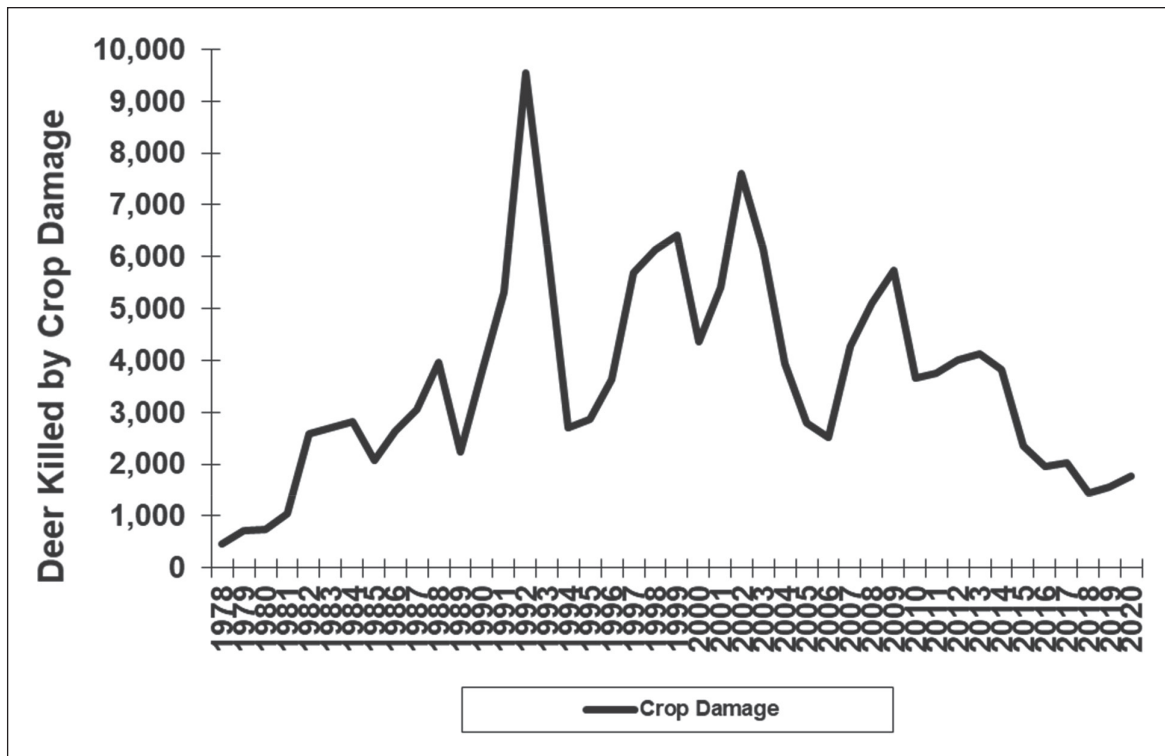


Figure 4. Crop damage kills in West Virginia from 1978-2020.

Deer Hunting Outlook continued ...

January portion of the urban archery deer seasons available to incorporated cities and homeowner associations put in place in 2018 is proposed to remain available in January 2022. The liberal bag limit and extended season length available for the season has provided incorporated cities and homeowner associations a reliable and efficient method to address locally over abundant deer populations.

Antlerless deer hunting opportunities for the 2021 muzzleloader season are proposed to follow guidelines adopted in 2012 muzzleloader deer season regulations. In counties with unlimited Class N/NN antlerless deer permits and an antlerless Class N/NN season bag limit of one or more, hunters would be able to take two deer of either sex during the muzzleloader season, provided the second muzzleloader deer is taken on an additional muzzleloader deer stamp (RM for residents and RMM for nonresident hunters). In counties with limited lottery Class N/NN antlerless season and a one antlerless deer Class N/NN season bag limit, hunters in the 2021 muzzleloader season can take one deer of either sex, but the second muzzleloader season deer taken on the RM or RMM additional muzzleloader deer stamp can only be an antlered deer, provided the hunter has not filled the maximum annual bag limit (excluding special urban archery hunts) of three antlered bucks.

Overall the Class N/NN antlerless deer season is proposed to remain the same in 2021 as it was in 2020 in many counties. An October Class N/NN antlerless deer season is again proposed for the fall of 2021 and is proposed to occur October 21st through 24th. The number of antlerless deer that can be taken with a firearm is proposed to remain one to a maximum of three deer, depending on the need to stabilize, increase or decrease the county deer population. Some counties with a one antlerless deer bag limit maybe restricted to resident and non-resident hunters chosen by lottery. In 2021 it is proposed to open United States Forest Service land in Pocahontas and Randolph counties to antlerless Class N/NN hunting for resident and non-resident hunters chosen by lottery. Again, as in the past four years, a split Special Youth, Class Q/QQ and Senior Lifetime Class XS deer season is proposed to be held on October 16th and 17th and open again on December 26th and 27th on private and public lands in the 51 counties open to firearms deer season. This season would be closed in Logan, Mingo, McDowell, or Wyoming counties.

Please refer to the 2021-2022 Hunting and Trapping Regulations Summary for further details on all deer hunting seasons because any proposed seasons and bag limits have not been approved by the Natural Resources Commission at this time. White-tailed deer hunting season regulations for 2021 will be published and available to hunters in July of 2021. This newsprint-like pamphlet contains complete information on gun, archery, muzzleloading, and antlerless deer hunting, plus other hunting regulations on turkey, bear, boar, and small game. Hunters will be able to obtain a copy from any DNR office or any business that sells West Virginia hunting licenses or visit the Wildlife Resources Section on the web at WVdnr.gov.

Efforts to control the spread and monitor chronic wasting disease (CWD) in free-ranging deer in West Virginia by DNR, landowners,

and hunters are ongoing. Sample collection planned for Hardy County and published in the 2020-2021 Hunting and Trapping Regulations was cancelled because of SARS CoV2 pandemic concerns. In the 2020 deer seasons hunters in the counties impacted by CWD could request to have their harvest tested and 52 hunters requested a test of their harvested deer. DNR staff submitted the samples for testing and twelve were found to have the abnormal protein associated with CWD. CWD has now been detected in a total of 398 deer in Hampshire County, eight deer in Hardy County, 23 deer in Berkeley County, nine deer from Mineral County and eight deer in Morgan County. Lowering encounter rates between infected and non-infected animals by prohibiting artificial supplemental feeding and baiting are generally accepted management practices for slowing the spread of an infectious disease among wildlife and initiating these prohibitions on a statewide or regional basis for deer is a major tool used by other states combating CWD. Currently (February 2021) in West Virginia in all of Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral and Morgan counties it is illegal to bait or feed deer any time. In addition, hunters are prohibited from transporting dead deer or their parts beyond the boundary of Berkeley, Hampshire, Hardy, Mineral and Morgan counties except for the following: meat that has been boned out, quarters or other portions of meat with no part of the spinal column or head attached, cleaned hide with no head attached, clean skull plate (no meat or tissue attached) with antlers attached, antlers with no meat or tissue attached, and finished taxidermy mounts. The Virginia Department of Wildlife Resources and the Maryland Department of Natural Resources have detected CWD positive deer adjacent to Berkeley, Jefferson, Hampshire, Morgan, and Mineral counties in Virginia and Allegany and Washington County in Maryland. In addition, Pennsylvania Game Commission has detected CWD positive deer in Bedford, Blair, Fulton and Franklin counties adjacent and north of Allegany and Washington County in Maryland. To reduce the risk of spreading CWD to new areas, other states have made it illegal to possess or use deer scents/lures that contain natural deer urine or other bodily fluids while taking, attempting to take, attracting, or scouting wildlife. All West Virginia deer hunters are urged to use caution in spreading natural deer urine based lures in the environment and ask not to place deer urine lures on the ground or on vegetation where deer can reach them. Additionally, a well-documented method of spreading CWD across long distances is the movement of live species of deer for commercial purposes. Many organizations such as the Rocky Mountain Elk Foundation, and The Wildlife Society have recognized the threat the pen propagation and translocation of deer species represent to the wild deer and elk resources that are enjoyed by all citizens. This threat is not only from CWD but also from the introduction of other pathogens and genetic consequences, which have the potential to devastate our revered deer resource. For more information on CWD and the current status of the disease in West Virginia, contact any DNR office or visit the Wildlife Resources Section on the web at WVdnr.gov.

Table 13. West Virginia Antlered Buck Harvest, 2016-2020

COUNTY	2016	2017	2018	2019	2020
Barbour	1,098	984	958	855	846
Brooke	268	175	188	188	221
Hancock	209	157	139	153	135
Harrison	1,138	1,017	888	551	663
Marion	765	735	678	538	675
Marshall	727	624	637	600	680
Monongalia	827	825	750	550	731
Ohio	270	180	197	200	234
Preston	1,774	1,947	1,607	1,396	1,469
Taylor	581	485	491	347	384
Tucker	730	817	754	602	633
Wetzel	899	823	676	738	688
District 1 Subtotal	9,286	8,769	7,963	6,718	7,359
Berkeley	737	753	757	533	597
Grant	954	1,194	1,219	954	1,088
Hampshire	1,197	1,386	1,471	1,231	1,382
Hardy	1,076	1,198	1,212	1,010	1,171
Jefferson	422	419	463	346	381
Mineral	922	1,011	1,048	760	891
Morgan	437	503	622	437	500
Pendleton	1,088	1,018	1,275	985	1,296
District 2 Subtotal	6,833	7,482	8,067	6,256	7,306
Braxton	1,102	1,233	1,017	1,142	1,088
Clay	390	481	438	406	380
Lewis	1,246	1,216	1,001	973	952
Nicholas	1,044	987	1,060	924	806
Pocahontas	921	1,040	994	952	1,082
Randolph	1,617	1,633	1,685	1,368	1,429
Upshur	1,399	1,025	1,155	1,138	1,055
Webster	941	777	937	705	646
District 3 Subtotal	8,660	8,392	8,287	7,608	7,438
Fayette	889	927	998	874	828
Greenbrier	1,447	1,628	1,481	1,500	1,318
McDowell	0	0	0	0	0
Mercer	636	593	617	515	490
Monroe	1,099	1,295	1,193	993	887
Raleigh	648	592	624	598	617
Summers	657	809	701	500	500
Wyoming	0	0	0	0	0
District 4 Subtotal	5,376	5,844	5,614	4,980	4,640
Boone	573	658	672	433	599
Cabell	677	404	644	316	397
Kanawha	1,058	1,046	1,214	748	1,019
Lincoln	846	569	958	439	752
Logan	0	0	0	0	0
Mason	1,267	867	1,206	742	1,001
Mingo	0	0	0	0	0
Putnam	992	624	943	436	662
Wayne	815	448	737	428	650
District 5 Subtotal	6,228	4,616	6,374	3,542	5,080
Calhoun	705	740	698	644	504
Doddridge	946	947	659	762	705
Gilmer	791	875	800	768	611
Jackson	1,487	1,096	1,380	893	1,062
Pleasants	334	317	280	287	258
Ritchie	1,422	1,338	1,065	1,238	1,010
Roane	1,178	1,186	1,176	954	899
Tyler	855	817	566	659	548
Wirt	777	734	669	451	527
Wood	1,193	974	1,001	712	838
District 6 Subtotal	9,688	9,024	8,294	7,368	6,962
STATE TOTAL	46,071	44,127	44,599	36,472	38,785

Table 14. West Virginia Archery/Crossbow Harvest, 2016-2020

COUNTY	2016	2017	2018	2019	2020
Barbour	535	534	537	693	730
Brooke	262	155	171	193	227
Hancock	353	282	267	320	308
Harrison	559	634	528	404	539
Marion	482	509	433	470	548
Marshall	336	300	290	386	377
Monongalia	678	694	592	675	852
Ohio	286	202	217	288	308
Preston	1,265	1,469	1,333	1,682	1,745
Taylor	279	361	286	334	383
Tucker	400	482	465	515	515
Wetzel	288	311	251	413	358
District 1 Subtotal	5,723	5,933	5,370	6,373	6,890
Berkeley	534	559	645	649	858
Grant	323	363	366	432	493
Hampshire	349	381	355	506	562
Hardy	268	321	296	379	447
Jefferson	402	408	446	460	536
Mineral	327	381	353	392	481
Morgan	214	242	251	268	379
Pendleton	296	316	371	423	538
District 2 Subtotal	2,713	2,971	3,083	3,509	4,294
Braxton	516	539	452	659	629
Clay	223	243	250	289	271
Lewis	544	538	485	552	539
Nicholas	726	635	636	745	671
Pocahontas	264	324	244	313	384
Randolph	928	883	914	1,139	1,079
Upshur	747	694	683	947	893
Webster	537	511	540	467	410
District 3 Subtotal	4,485	4,367	4,204	5,111	4,876
Fayette	701	765	694	897	872
Greenbrier	525	722	615	704	727
McDowell	456	574	628	577	517
Mercer	653	625	567	763	716
Monroe	483	542	505	582	572
Raleigh	729	789	807	981	1,010
Summers	362	450	377	370	426
Wyoming	867	824	976	972	853
District 4 Subtotal	4,776	5,291	5,169	5,846	5,693
Boone	354	377	399	373	481
Cabell	416	208	376	277	382
Kanawha	894	894	1,045	998	1,178
Lincoln	421	258	415	325	456
Logan	574	507	772	545	642
Mason	690	535	610	579	730
Mingo	386	277	410	371	450
Putnam	579	397	551	393	553
Wayne	402	179	292	303	392
District 5 Subtotal	4,716	3,632	4,870	4,164	5,264
Calhoun	295	283	295	372	305
Doddridge	264	328	241	318	310
Gilmer	257	334	311	381	296
Jackson	692	515	676	642	747
Pleasants	137	162	117	171	163
Ritchie	536	501	514	679	625
Roane	455	489	478	538	508
Tyler	281	328	258	375	335
Wirt	341	334	341	343	352
Wood	853	738	709	715	936
District 6 Subtotal	4,111	4,012	3,940	4,534	4,577
STATE TOTAL	26,524	26,206	26,636	29,537	31,594

Table 15. West Virginia Antlerless Deer Harvest, 2016-2020

COUNTY	2016	2017	2018	2019	2020
Barbour	806	873	875	873	945
Brooke	392	236	159	149	227
Hancock	168	163	100	104	127
Harrison	1,045	1,014	842	517	653
Marion	826	809	543	554	661
Marshall	514	437	371	372	475
Monongalia	673	673	677	565	755
Ohio	230	152	141	151	183
Preston	1,635	1,703	1,799	1,663	2,041
Taylor	514	533	473	351	470
Tucker	200	332	413	346	418
Wetzel	866	723	516	461	504
District 1 Subtotal	7,869	7,648	6,909	6,106	7,459
Berkeley	675	730	706	543	711
Grant	467	599	647	528	655
Hampshire	908	959	1,068	966	1,132
Hardy	659	717	774	631	773
Jefferson	428	450	411	381	450
Mineral	761	706	729	547	733
Morgan	433	490	562	462	545
Pendleton	497	424	574	502	662
District 2 Subtotal	4,828	5,075	5,471	4,560	5,661
Braxton	909	1,083	848	816	748
Clay	182	109	305	166	167
Lewis	1,377	1,258	1,160	1,075	1,130
Nicholas	509	436	862	437	434
Pocahontas	216	249	213	233	260
Randolph	850	849	850	772	851
Upshur	1,605	1,300	1,289	1,196	1,282
Webster	314	562	331	284	238
District 3 Subtotal	5,962	5,846	5,858	4,979	5,110
Fayette	283	286	441	482	497
Greenbrier	739	773	801	724	741
McDowell	0	0	0	0	0
Mercer	414	547	423	412	419
Monroe	819	998	1,099	938	898
Raleigh	215	226	229	284	241
Summers	603	682	524	380	420
Wyoming	0	0	0	0	0
District 4 Subtotal	3,073	3,512	3,517	3,220	3,216
Boone	157	172	182	138	218
Cabell	422	290	380	256	312
Kanawha	412	478	525	401	417
Lincoln	567	338	290	252	387
Logan	0	0	0	0	0
Mason	1,370	1,052	922	858	875
Mingo	0	0	0	0	0
Putnam	885	612	807	521	606
Wayne	269	134	53	111	141
District 5 Subtotal	4,082	3,076	3,159	2,537	2,956
Calhoun	630	557	653	608	561
Doddridge	750	731	627	531	535
Gilmer	688	727	694	609	490
Jackson	1,317	1,122	1,183	907	1,065
Pleasants	268	298	164	182	197
Ritchie	1,309	1,290	1,123	1,108	1,079
Roane	1,123	1,101	1,073	940	771
Tyler	815	781	542	607	614
Wirt	860	733	721	576	497
Wood	1,218	1,087	1,057	866	1,044
District 6 Subtotal	8,978	8,427	7,837	6,934	6,853
STATE TOTAL	34,792	33,584	32,751	28,336	31,255

Table 16. West Virginia Muzzleloader Harvest , 2016-2020

COUNTY	2016	2017	2018	2019	2020
Barbour	133	119	108	122	182
Brooke	38	13	24	31	32
Hancock	34	18	19	30	38
Harrison	113	126	132	69	97
Marion	113	82	72	77	115
Marshall	73	64	66	71	98
Monongalia	91	82	87	109	121
Ohio	46	34	39	36	59
Preston	217	203	213	268	319
Taylor	70	59	77	64	66
Tucker	73	73	84	89	80
Wetzel	90	71	44	70	76
District 1 Subtotal	1,091	944	965	1,036	1,283
Berkeley	67	64	64	75	68
Grant	81	75	100	97	92
Hampshire	88	89	121	125	113
Hardy	63	74	87	85	71
Jefferson	54	46	65	45	52
Mineral	80	43	50	69	97
Morgan	44	38	48	50	76
Pendleton	70	48	62	70	70
District 2 Subtotal	547	477	597	616	639
Braxton	157	127	142	176	145
Clay	43	34	64	35	17
Lewis	168	146	125	140	154
Nicholas	232	162	198	203	241
Pocahontas	56	57	70	75	84
Randolph	243	194	205	253	241
Upshur	185	163	169	193	212
Webster	139	74	158	161	150
District 3 Subtotal	1,223	957	1,131	1,236	1,244
Fayette	124	124	165	165	133
Greenbrier	135	130	178	160	165
McDowell	0	0	0	0	0
Mercer	86	62	118	101	58
Monroe	70	107	93	96	87
Raleigh	70	70	114	92	105
Summers	62	78	83	78	63
Wyoming	0	0	0	0	0
District 4 Subtotal	547	571	751	692	611
Boone	72	74	127	88	87
Cabell	60	32	50	37	43
Kanawha	78	64	103	94	105
Lincoln	106	46	76	70	94
Logan	0	0	0	0	0
Mason	153	108	142	108	150
Mingo	0	0	0	0	0
Putnam	119	63	90	75	67
Wayne	62	30	29	55	44
District 5 Subtotal	650	417	617	527	590
Calhoun	69	66	70	70	59
Doddridge	70	95	41	90	74
Gilmer	93	87	83	96	62
Jackson	158	138	154	158	146
Pleasants	27	20	27	29	34
Ritchie	102	109	88	125	120
Roane	105	90	95	125	98
Tyler	82	63	43	84	83
Wirt	92	91	90	75	61
Wood	141	118	118	133	123
District 6 Subtotal	939	877	809	985	860
STATE TOTAL	4,997	4,243	4,870	5,092	5,227

WHITE-TAILED DEER

Table 17. Deer Mortality by Type of Season in West Virginia, 2020.

COUNTY	BUCK GUN	ANTLERLESS	ARCHERY/ CROSSBOW	MUZZLELOADER	MOUNTAINEER HERITAGE	TOTAL
Barbour	846	945	730	161	21	2,703
Brooke	221	227	227	30	2	707
Hancock	135	127	308	33	5	608
Harrison	663	653	539	85	12	1,952
Marion	675	661	548	104	11	1,999
Marshall	680	475	377	89	9	1,630
Monongalia	731	755	852	104	17	2,459
Ohio	234	183	308	46	13	784
Preston	1,469	2,041	1,742	277	45	5,574
Taylor	384	470	383	60	6	1,303
Tucker	633	418	515	70	10	1,646
Wetzel	688	504	358	69	7	1,626
District 1 Subtotal	7,359	7,459	6,887	1,128	158	22,991
Berkeley	597	711	857	65	4	2,234
Grant	1,088	655	492	84	9	2,328
Hampshire	1,382	1,132	561	98	16	3,189
Hardy	1,171	773	447	64	7	2,462
Jefferson	381	450	535	49	4	1,419
Mineral	891	733	481	85	12	2,202
Morgan	500	545	378	68	9	1,500
Pendleton	1,296	662	537	62	9	2,566
District 2 Subtotal	7,306	5,661	4,288	575	70	17,900
Braxton	1,088	748	629	134	11	2,610
Clay	380	167	271	16	1	835
Lewis	952	1,130	539	139	15	2,775
Nicholas	806	434	670	209	33	2,152
Pocahontas	1,082	260	384	66	18	1,810
Randolph	1,429	851	1,079	218	23	3,600
Upshur	1,055	1,282	891	168	46	3,442
Webster	646	238	409	126	25	1,444
District 3 Subtotal	7,438	5,110	4,872	1,076	172	18,668
Fayette	828	497	869	119	17	2,330
Greenbrier	1,318	741	727	146	19	2,951
McDowell	0	0	515	0	2	517
Mercer	490	419	716	54	4	1,683
Monroe	887	898	571	77	11	2,444
Raleigh	617	241	1,007	87	21	1,973
Summers	500	420	426	59	4	1,409
Wyoming	0	0	851	0	2	853
District 4 Subtotal	4,640	3,216	5,682	542	80	14,160
Boone	599	218	480	77	11	1,385
Cabell	397	312	380	38	7	1,134
Kanawha	1,019	417	1,178	76	29	2,719
Lincoln	752	387	456	87	7	1,689
Logan	0	0	640	0	2	642
Mason	1,001	875	730	143	7	2,756
Mingo	0	0	450	0		450
Putnam	662	606	553	64	3	1,888
Wayne	650	141	392	39	5	1,227
District 5 Subtotal	5,080	2,956	5,259	524	71	13,890
Calhoun	504	561	305	56	3	1,429
Doddridge	705	535	310	66	8	1,624
Gilmer	611	490	296	56	6	1,459
Jackson	1,062	1,065	747	131	15	3,020
Pleasants	258	197	163	31	3	652
Ritchie	1,010	1,079	625	98	22	2,834
Roane	899	771	508	91	7	2,276
Tyler	548	614	335	76	7	1,580
Wirt	527	497	351	56	6	1,437
Wood	838	1,044	936	109	14	2,941
District 6 Subtotal	6,962	6,853	4,576	770	91	19,252
STATE TOTAL	38,785	31,255	31,564	4,615	642	106,861

Table 18. West Virginia 2020 deer kill per square mile of habitat by season (calculated using deer habitat open by county for season, all seasons combined kill based on total deer habitat for county).

COUNTY	AREA	BUCKS	ANTLERLESS	MUZZLELOADER	ARCHERY BOW/CROSSBOW	ALL SEASONS COMBINED
Barbour	328	2.58	2.88	0.55	2.22	8.24
Brooke	72	3.06	3.15	0.44	3.15	9.80
Hancock	64	2.12	2.00	0.60	4.85	9.57
Harrison	379	1.75	1.72	0.26	1.42	5.15
Marion	286	2.36	2.31	0.40	1.92	7.00
Marshall	294	2.32	1.62	0.33	1.28	5.55
Monongalia	310	2.36	2.44	0.39	2.75	7.93
Ohio	82	2.84	2.22	0.72	3.74	9.53
Preston	632	2.32	3.23	0.50	2.76	8.82
Taylor	160	2.40	2.94	0.41	2.40	8.15
Tucker	402	1.57	1.04	0.20	1.28	4.09
Wetzel	350	1.97	1.44	0.22	1.02	4.65
District 1 Subtotal	3,359	2.19	2.22	0.38	2.05	6.85
Berkeley	297	2.01	2.40	0.23	2.89	7.53
Grant	471	2.31	1.39	0.20	1.05	4.94
Hampshire	631	2.19	1.79	0.18	0.89	5.05
Hardy	569	2.06	1.36	0.12	0.79	4.33
Jefferson	198	1.92	2.27	0.26	2.70	7.16
Mineral	319	2.79	2.30	0.30	1.51	6.91
Morgan	213	2.35	2.56	0.36	1.78	7.05
Pendleton	690	1.88	0.96	0.10	0.78	3.72
District 2 Subtotal	3,388	2.16	1.67	0.19	1.27	5.28
Braxton	501	2.17	1.49	0.29	1.26	5.21
Clay	338	1.13	1.53	0.05	0.80	2.47
Lewis	373	2.55	3.03	0.41	1.44	7.43
Nicholas	632	1.27	0.69	0.38	1.06	3.40
Pocahontas	911	1.19	0.60	0.09	0.42	1.99
Randolph	1,019	1.40	1.20	0.24	1.06	3.53
Upshur	343	3.08	3.74	0.62	2.60	10.04
Webster	535	1.21	0.45	0.28	0.77	2.70
District 3 Subtotal	4,652	1.60	1.41	0.27	1.05	4.01
Fayette	629	1.32	1.25	0.21	1.39	3.71
Greenbrier	991	1.33	0.75	0.17	0.73	2.98
McDowell	515	0.00	0.00	0.00	1.00	1.00
Mercer	380	1.29	1.10	0.15	1.88	4.42
Monroe	463	1.92	1.94	0.19	1.24	5.28
Raleigh	562	1.10	0.68	0.19	1.80	3.51
Summers	341	1.47	1.23	0.18	1.25	4.13
Wyoming	481	0.00	0.00	0.00	1.77	1.77
District 4 Subtotal	4,361	1.38	1.10	0.18	1.31	3.25
Boone	485	1.24	0.45	0.18	0.99	2.86
Cabell	240	1.66	1.30	0.18	1.59	4.73
Kanawha	798	1.28	1.46	0.13	1.48	3.41
Lincoln	426	1.76	0.91	0.22	1.07	3.96
Logan	422	0.00	0.00	0.00	1.52	1.52
Mason	413	2.42	2.12	0.36	1.77	6.67
Mingo	404	0.00	0.00	0.00	1.11	1.11
Putnam	320	2.07	1.89	0.21	1.73	5.89
Wayne	485	1.34	0.54	0.09	0.81	2.53
District 5 Subtotal	3,993	1.60	1.21	0.19	1.32	3.48
Calhoun	276	1.83	2.03	0.21	1.11	5.18
Doddridge	316	2.23	1.70	0.23	0.98	5.15
Gilmer	330	1.85	1.48	0.19	0.90	4.42
Jackson	447	2.38	2.38	0.33	1.67	6.75
Pleasants	125	2.06	1.57	0.27	1.30	5.20
Ritchie	443	2.28	2.43	0.27	1.41	6.39
Roane	476	1.89	1.62	0.21	1.07	4.78
Tyler	252	2.18	2.44	0.33	1.33	6.27
Wirt	230	2.29	2.16	0.27	1.53	6.26
Wood	325	2.58	3.21	0.38	2.88	9.05
District 6 Subtotal	3,220	2.16	2.13	0.27	1.42	5.98
STATE TOTAL	22,972	1.83	1.65	0.25	1.38	4.65

*Note counties or portions thereof not open to Class N antlerless deer season include special youth, Class Q/QQ and Class XS season harvest however antlerless kill per square mile is calculated only on area open to Class N season if a portion of the county is closed to Class N season.

WHITE-TAILED DEER

Table 19. West Virginia 2020 Deer Harvest by Deer Type

COUNTY	ANTLERED	ANTLERS LESS THAN 3 INCHES	BUTTON BUCK	FEMALE	SHED ANTLERS	UNKNOWN	GRAND TOTAL
Barbour	1,349	70	68	1,205	9	2	2,703
Brooke	380	13	30	284	0	0	707
Hancock	325	14	17	252	0	0	608
Harrison	1,025	52	40	830	4	1	1,952
Marion	1,065	36	48	847	3	0	1,999
Marshall	971	27	32	596	4	0	1,630
Monongalia	1,261	66	68	1,054	10	0	2,459
Ohio	443	17	19	301	4	0	784
Preston	2,523	146	133	2,760	11	1	5,574
Taylor	658	40	43	557	4	1	1,303
Tucker	980	50	26	584	6	0	1,646
Wetzel	956	49	35	582	4	0	1,626
District 1 Subtotal	11,936	580	559	9,852	59	5	22,991
Berkeley	1,047	73	48	1,062	4	0	2,234
Grant	1,471	45	35	772	5	0	2,328
Hampshire	1,744	92	46	1,306	1	0	3,189
Hardy	1,490	78	33	856	5	0	2,462
Jefferson	686	44	35	649	4	1	1,419
Mineral	1,231	52	36	879	3	1	2,202
Morgan	744	51	45	659	1	0	1,500
Pendleton	1,685	59	56	760	5	1	2,566
District 2 Subtotal	10,098	494	334	6,943	28	3	17,900
Braxton	1,536	92	56	922	4	0	2,610
Clay	586	22	13	210	3	1	835
Lewis	1,312	92	88	1,281	2	0	2,775
Nicholas	1,212	39	52	846	3	0	2,152
Pocahontas	1,329	42	29	406	3	1	1,810
Randolph	2,208	81	66	1,235	9	1	3,600
Upshur	1,626	102	99	1,598	17	0	3,442
Webster	903	36	33	469	3	0	1,444
District 3 Subtotal	10,712	506	436	6,967	44	3	18,668
Fayette	1,343	83	57	844	3	0	2,330
Greenbrier	1,763	83	47	1,054	4	0	2,951
McDowell	362	11	12	131	1	0	517
Mercer	924	66	43	650	0	0	1,683
Monroe	1,262	110	49	1,023	0	0	2,444
Raleigh	1,192	73	41	662	5	0	1,973
Summers	771	58	39	538	3	0	1,409
Wyoming	508	20	20	304	1	0	853
District 4 Subtotal	8,125	504	308	5,206	17	0	14,160
Boone	933	35	34	382	1	0	1,385
Cabell	672	34	27	398	3	0	1,134
Kanawha	1,803	73	42	800	1	0	2,719
Lincoln	1,111	50	26	502	0	0	1,689
Logan	403	9	12	217	1	0	642
Mason	1,527	85	65	1,072	6	1	2,756
Mingo	297	7	8	137	1	0	450
Putnam	1,029	50	42	763	3	1	1,888
Wayne	943	20	15	245	4	0	1,227
District 5 Subtotal	8,718	363	271	4,516	20	2	13,890
Calhoun	710	61	36	621	1	0	1,429
Doddridge	930	52	30	609	3	0	1,624
Gilmer	826	71	31	527	3	1	1,459
Jackson	1,619	93	83	1,219	5	1	3,020
Pleasants	381	14	10	246	0	1	652
Ritchie	1,428	89	76	1,232	6	3	2,834
Roane	1,257	74	59	882	4	0	2,276
Tyler	778	62	47	686	6	1	1,580
Wirt	737	50	43	603	2	2	1,437
Wood	1,382	78	88	1,388	4	1	2,941
District 6 Subtotal	10,048	644	503	8,013	34	10	19,252
STATE TOTAL	59,637	3,091	2,411	41,497	202	23	106,861



Elk disappeared from the mountains and hills of West Virginia in the late 1800s because of subsistence hunting, timbering and market hunting. Although West Virginia Division of Natural Resources (DNR) and other eastern state agencies had often considered and studied reintroducing elk off and on for most of the late 1900s, serious efforts were never undertaken until Kentucky's reintroduction success in the late 1900s.

West Virginia's interest began with habitat and social acceptance feasibility studies in 2005. The DNR identified possible sites to sustain an elk population in various regions of the state, but the only area that was identified for social acceptance was the southwestern coalfield area where large scale mining activity had generated suitable elk habitat and little to no agriculture existed. This potential Elk Management Zone consisted of Logan, Mingo, McDowell, Wyoming, southern Lincoln, southern Wayne, and western Boone counties. A passive plan was put in place to protect any elk which may have wandered in from Kentucky.

Local support and interest from then Governor Earl Ray Tomblin's office led to legislation in 2015 by the West Virginia Legislature, which authorized the Division of Natural Resources to proceed with an active elk restoration plan. This legislation established the Elk Management Zone from the existing passive plan as the

West Virginia Elk Management Area to which elk management activities would be limited. To facilitate an elk release, efforts were also made to add more public land access in the region. This resulted in over 44,000 acres being permanently secured for public access and ultimately the creation of the 25,000-acre Tomblin Wildlife Management Area, which would serve as the first elk release site.

In late December 2016, with the release of 24 elk secured from the Land Between the Lakes Recreation Area (LBL) in western Kentucky, wild elk were roaming the mountains of West Virginia for the first time in over 140 years. Subsequent releases were made from LBL and Arizona in 2018. Although the effort suffered a set back in the summer of 2019 from an unexpectedly high mortality rate caused by a known parasite, calving over the past four summers has produced around 45 known calves. This has stabilized the population with approximately 75-80 currently roaming the area. All released individuals were marked and equipped with GPS telemetry collars so movements could be tracked. In addition to this, efforts continue each winter to capture, mark, and collar calves and other un-collared individuals so that data can be collected. Efforts also continue to identify a source herd from which additional elk can be transferred to West Virginia to supplement the herd, but no new relocations are set at this time.



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