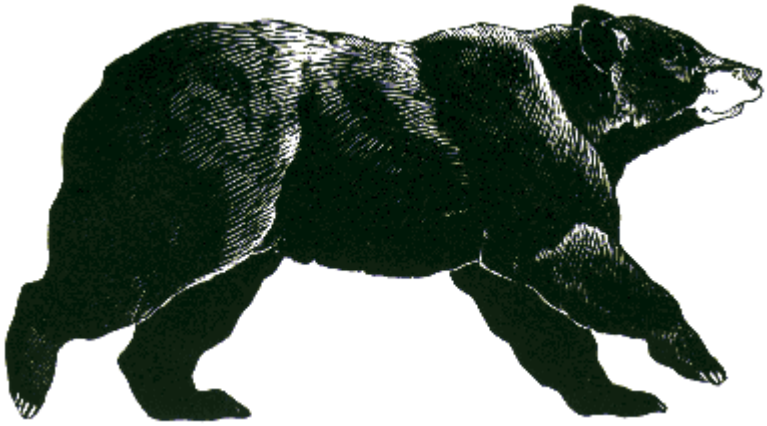
North Carolina Black Bear Annual Report

Updated with 2015 Data



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Funding for the Black Bear Program was partially provided through a Pittman-Robertson Wildlife Restoration Grant. The Federal Aid in Wildlife Restoration Act, popularly known as the Pittman-Robertson Act, was approved by Congress on September 2, 1937, and began functioning July 1, 1938. The purpose of this Act was to provide funding for the selection, restoration, rehabilitation and improvement of wildlife habitat, wildlife management research, and the distribution of information produced by the projects. The Act was amended October 23, 1970, to include funding for hunter training programs and the development, operation and maintenance of public target ranges.

Funds are derived from an 11 percent Federal excise tax on sporting arms, ammunition, and archery equipment, and a 10 percent tax on handguns. These funds are collected from the manufacturers by the Department of the Treasury and are apportioned each year to the States and Territorial areas (except Puerto Rico) by the Department of the Interior on the basis of formulas set forth in the Act. Funds for hunter education and target ranges are derived from one-half of the tax on handguns and archery equipment.

Each state's apportionment is determined by a formula which considers the total area of the state and the number of licensed hunters in the state. The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source.

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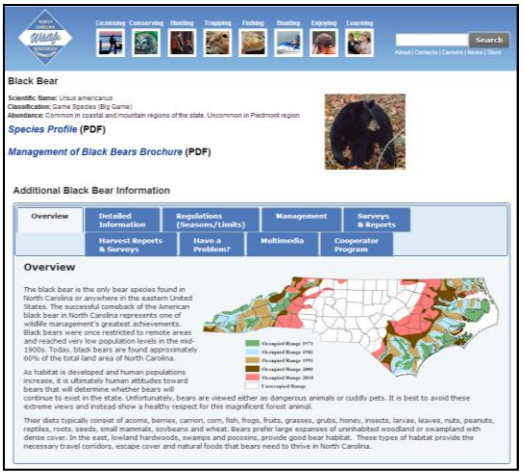
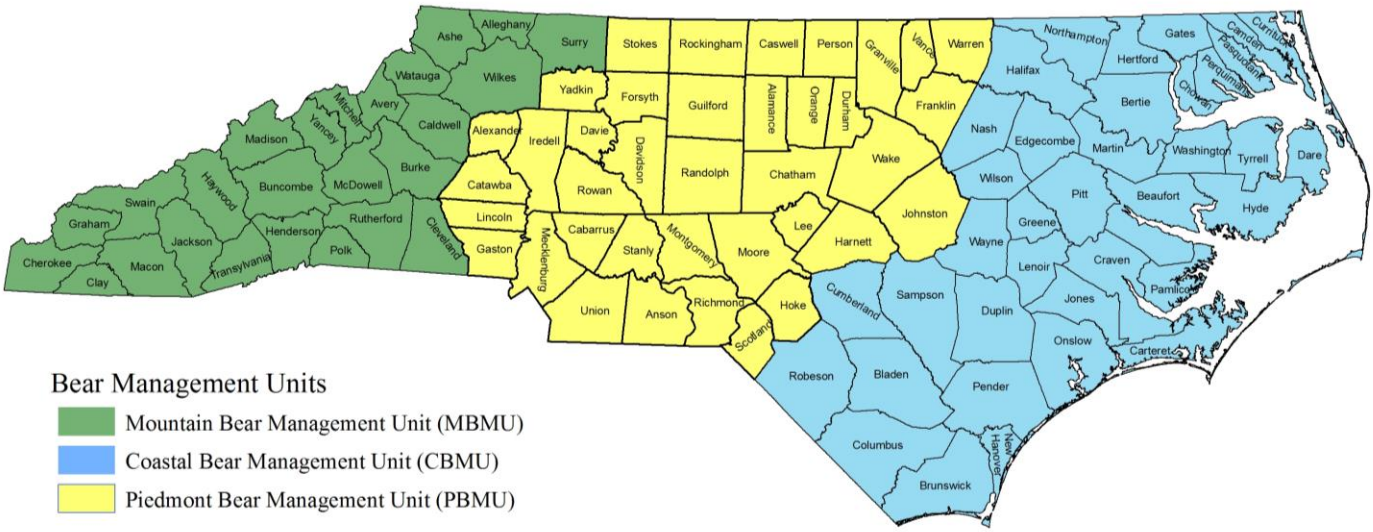
For more information on black bears in North Carolina, please visit our website at:
www.ncwildlife.org/bear

There you will find information on:

- NCWRC's 2012-2022 Black Bear Management Plan
- How to prevent and resolve conflicts with bears.
- How to participate in the Black Bear Cooperator Program.
- History of black bears and the black bear program in North Carolina.
- Harvest Reports and Summaries
- And much more!



Black Bear Management Units/Regions



Statewide Harvest

The statewide reported harvest for 2015 was a record harvest of 3,118 bears (Figure 1), a 24% increase from 2014 (N=2,521; Table 1). The statewide bear harvest has increased for eight of the ten past consecutive years from 2006 through 2015; the largest increase in harvest in those 10 years occurred in 2015. During the 2015 season, 60% of the harvest occurred in the Coastal Plain Bear Management Unit (CBMU; Table 2); since 1993, a majority of the harvest has occurred in the Coastal Plain region (Table 2; Figure 2). The composition of the statewide harvest that occurs in the mountains fluctuates annually, largely due to mast abundance and weather (Table 2).

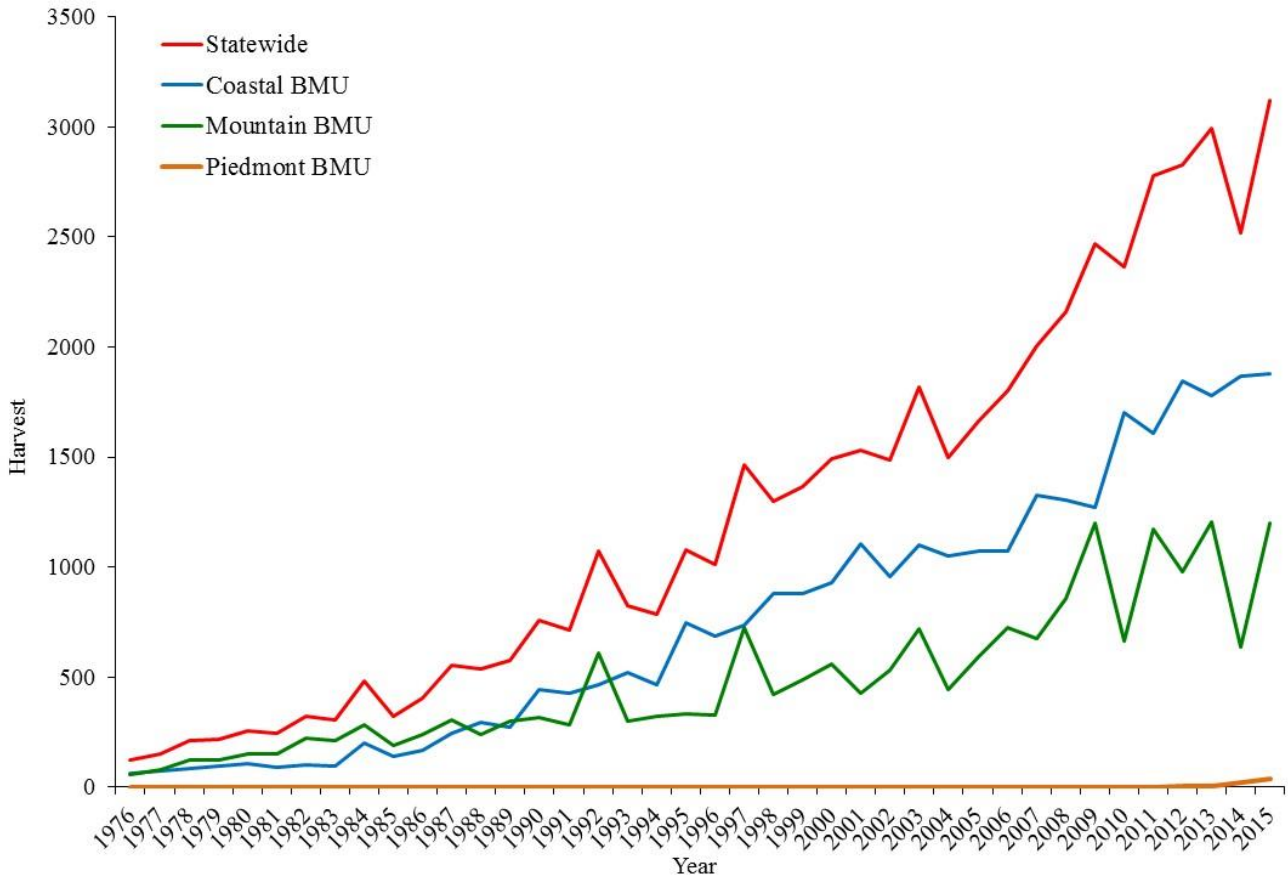


Figure 1. Statewide and regional harvest from 1976 through 2015.

Table 1. Statewide reported harvest of male and female bears from 1976 through 2015.

	Male		Female		All Bears	
Year	Harvest	Percent Change	Harvest	Percent Change	Total Harvest	Percent Change
1976	71	--	48	--	**121**	--
1977	84	18%	68	42%	**154**	**27%**
1978	144	71%	68	0.0%	**214**	**39%**
1979	124	-14%	93	37%	**219**	**3%**
1980	24	-81%	27	-71%	**254**	**16%**
1981	127	429%	79	193%	**250**	**-2%**
1982	178	40%	118	49%	**319**	**27%**
1983	189	6%	96	-19%	**305**	**-4%**
1984	323	71%	157	64%	**481**	**58%**
1985	198	-39%	124	-21%	**322**	**-33%**
1986	263	33%	144	16%	**409**	**27%**
1987	386	47%	167	16%	**554**	**35%**
1988	334	-14%	233	40%	**567**	**3%**
1989	310	-7%	237	2%	**547**	**-4%**
1990	455	47%	304	28%	**760**	**39%**
1991	416	-9%	294	-3%	**716**	**-6%**
1992	639	54%	420	43%	**1060**	**48%**
1993	505	-21%	316	-25%	**821**	**-23%**
1994	470	-7%	315	-0.3%	**785**	**-4%**
1995	657	40%	427	36%	**1,084**	**38%**
1996	593	-10%	417	-2%	**1,010**	**-7%**
1997	825	39%	638	53%	**1,464**	**45%**
1998	723	-12%	577	-10%	**1,300**	**-11%**
1999	820	13%	546	-5%	**1,366**	**5%**
2000	891	9%	599	10%	**1,490**	**9%**
2001	937	5%	596	-0.5%	**1,533**	**3%**
2002	939	0.2%	546	-8%	**1,485**	**-3%**
2003	1080	15%	732	34%	**1,812**	**22%**
2004	947	-12%	550	-25%	**1,497**	**-17%**
2005	1,024	8%	637	16%	**1,661**	**11%**
2006	1,142	12%	658	3%	**1,800**	**8%**
2007	1,198	5%	807	23%	**2,005**	**11%**
2008	1,323	10%	839	4%	**2,162**	**8%**
2009	1,537	16%	931	11%	**2,468**	**14%**
2010	1,481	-4%	882	-5%	**2,363**	**-4%**
2011	1,742	18%	1,033	17%	**2,779**	**18%**
2012	1,670	-4%	1,157	12%	**2,827**	**2%**
2013	1,788	7%	1,203	4%	**2,991**	**6%**
2014	1,474	-18%	1,026	-15%	**2,501**	**-16%**
2015	1,930	31%	1,185	15%	**3,118**	**25%**

Regional Harvest

Up until the late 1980's, the majority of bears harvested in North Carolina were in the Mountain Bear Management Unit (MBMU) versus the Coastal Bear Management Unit (CBMU), partly due to the closure of several coastal counties to bear hunting (Figure 2). As coastal bear populations increased and bear hunting seasons expanded in the coastal counties, bear harvest levels increased and started to exceed bear harvest levels in the MBMU. Since 1993, the majority of bears harvested in North Carolina are from the CBMU (Table 2; Figure 2). During the 2015 season, 60% of bears harvested in North Carolina were from the CBMU. Until 2005, there were no counties in the Piedmont Bear Management Unit (PBMU) with a bear hunting season. Starting in 2014, all 100 counties in North Carolina have a regulated bear hunting season.

Table 2. Percent (%) of total reported bear harvest that occurs in the CBMU, MBMU, and PBMU of North Carolina from 1987 through 2015.

Season	% of Total Harvest in CBMU Region	% of Total Harvest in MBMU Region	% of Total Harvest in PBMU Region
1987	44%	56%	NS
1988	53%	47%	NS
1989	50%	50%	NS
1990	58%	42%	NS
1991	60%	40%	NS
1992	44%	56%	NS
1993	64%	36%	NS
1994	59%	41%	NS
1995	69%	31%	NS
1996	68%	32%	NS
1997	50%	50%	NS
1998	68%	32%	NS
1999	64%	36%	NS
2000	62%	38%	NS
2001	72%	28%	NS
2002	64%	36%	NS
2003	60%	40%	NS
2004	70%	30%	NS
2005	65%	35%	0%
2006	60%	40%	0%
2007	66%	34%	0%
2008	60%	40%	0%
2009	51%	49%	0%
2010	72%	28%	0%
2011	58%	42%	0%
2012	65%	35%	0%
2013	60%	40%	0%
2014	74%	25%	1%
2015	60%	39%	1%

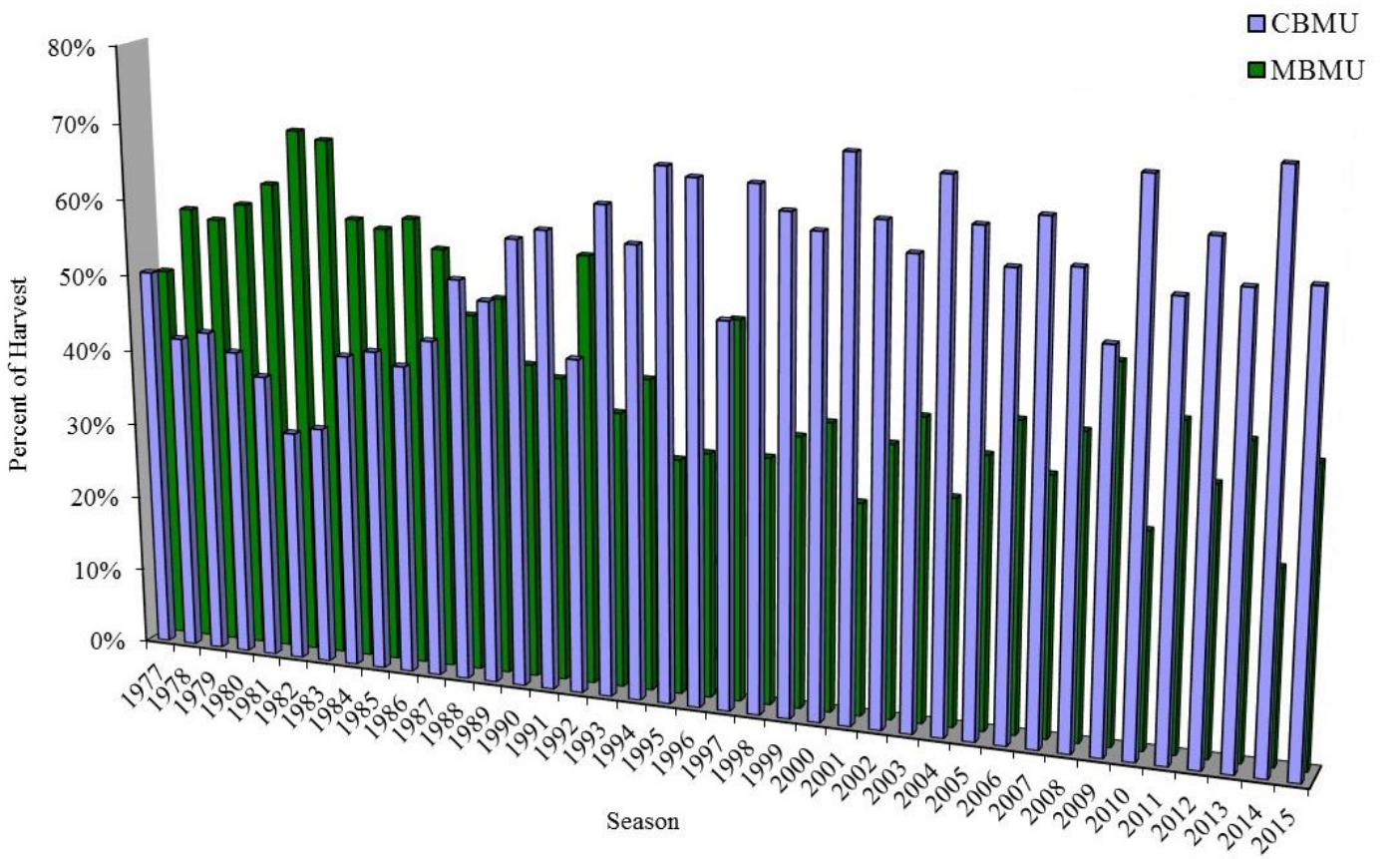


Figure 2. Percent of total reported bear harvest that occurs in the MBMU and CBMU of North Carolina from 1977 through 2015.

Piedmont Bear Management Unit (PBMU): In 2005, four counties in the PBMU were opened to bear hunting. In 2014, all counties were opened for bear hunting opportunities in the PBMU in order to meet the 2012-2022 Black Bear Management Plan objective for this region, which is to limit the establishment of the bear population. While there are established bear populations in at least 9 counties of the PBMU that have a bear hunting season, harvest levels are low in comparisons to the CBMU and the MBMU, reflecting the lower number of bears, as well as limited hunting access. In 2015, 39 bears (31 males;8 female) were harvested from the PBMU; this was a 94% increase from 2014 (n=20 bears). Males comprised 79% of the harvest (Table 4).

Coastal Bear Management Unit (CBMU): In 2015, the reported harvest increased 1% (n=1,880 bears; Table 3) from what occurred during the 2014 harvest (n=1,867 bears). The first Monday through Wednesday of opening week was marked by heavy precipitation and high water, making it difficult for bear hunters to track bears. This likely impacted the harvest during the November season opening week. However, the CBMU reported harvest was the highest on record since 1976.

The percentage of female black bears that comprise the reported harvest has remained fairly level (38% - 42%) over the past 10 years (Table 4). In 2015, females comprised 41% of the black bears harvested in the CBMU, the same level as 2014. While the sex ratio of the reported harvest has remained fairly stable in the CBMU, the number of females reportedly harvested on an annual basis has fluctuated, with peaks

in 2007, 2012 (23% increase; Table 4) and 2010 (34% increase). In 2015, there was a 0% change in the number of females harvested compared to the 2014 season. There was a 1% increase in the number of males harvested compared to the 2014 season.

Mountain Bear Management Unit (MBMU): The 2015 reported harvest (n=1,199 bears) in the MBMU increased by 89% compared to the 2014 season (n=634 bears; Table 3). The MBMU reported harvest was the second highest on record. During the 2009 season, the reported bear harvest exceeded 1,000 bears for the first time since records were kept; the record reported harvest was 1,207 bears in the 2013 season (Table 3). As with the CBMU, the MBMU bear harvest is also tied to bear population size, number of hunters, weather, and changes in bear hunting season structure and hunting methods. However, mountain bear harvest is also closely tied to the availability of hard and soft mast; harvest levels rise in years of poor natural food availability. When there is a lack of hard mast, bears are more attracted to unnatural food sources, such as bait piles, and look for food over larger unfamiliar areas, making them more accessible to hunters. During falls 2009, 2011 and 2013, the hard mast abundance was poor, which contributed to the record bear harvests that occurred in the MBMU in those years (Figure 3). The 89% increase in the harvest that occurred during the 2015 season corresponded with a fair hard mast crop and was the third largest increase in harvest levels (Figure 3).

In the MBMU, the percentage of females that have comprised the total harvest has varied over the last 10 years (31% - 42%; Table 4). While the 10-year average has been 37%, during the 2015 season, females comprised 35% of the reported harvest. During the 2015 harvest season, the number of females and males harvested in the MBMU increased by 111% and 58%, respectively (Table 3).

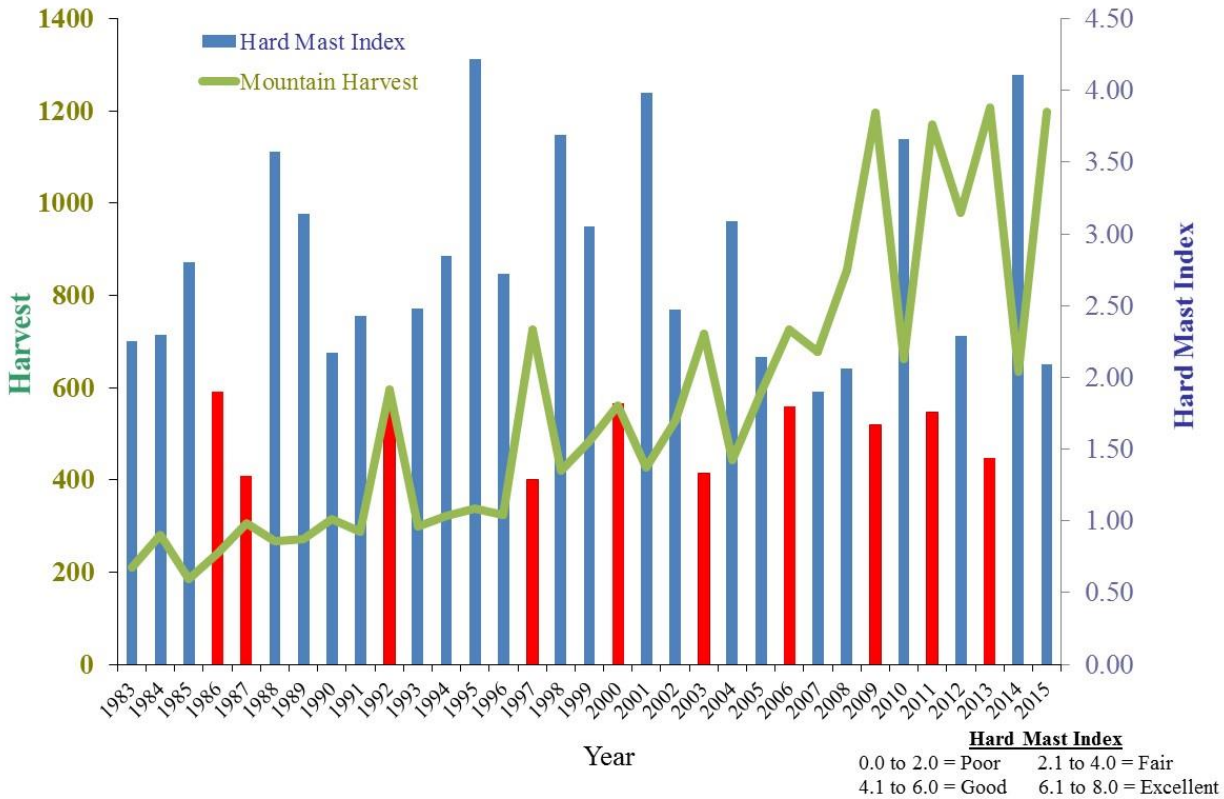


Figure 3. Registered bear harvest and hard mast index in the MBMU of North Carolina, 1983 through 2015, with increases in harvest corresponding with a poor hard mast index (indicated by the red bars).

Table 3. Harvest of registered black bears in the CBMU and MBMU and percent change in registered harvest from 1980-2015.

	CBMU						MBMU					
	Male		Female		Total[1]		Male		Female		Total[1]	
Year	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change
1980	3	-94%	5	-88%	**104**	**11%**	21	-70%	22	-58%	**152**	**22%**
1981	42	1300%	26	420%	**92**	**-12%**	85	305%	53	141%	**152**	**0%**
1982	45	7%	46	77%	**97**	**5%**	133	56%	72	36%	**221**	**45%**
1983	55	22%	29	-37%	**96**	**-1%**	134	1%	67	-7%	**209**	**-5%**
1984	134	144%	65	124%	**199**	**107%**	189	41%	92	37%	**281**	**34%**
1985	80	-40%	57	-12%	**137**	**-31%**	118	-38%	67	-27%	**186**	**-34%**
1986	116	45%	51	-11%	**167**	**22%**	147	25%	93	39%	**242**	**30%**
1987	166	43%	80	57%	**246**	**47%**	220	50%	87	-6%	**307**	**27%**
1988	173	4%	126	58%	**299**	**22%**	161	-27%	107	23%	**268**	**-13%**
1989	147	-15%	128	2%	**275**	**-8%**	163	1%	109	2%	**272**	**1%**
1990	257	75%	187	46%	**444**	**61%**	198	21%	117	7%	**315**	**16%**
1991	242	-6%	187	0%	**429**	**-3%**	174	-12%	107	-9%	**287**	**-9%**
1992	281	16%	183	-2%	**464**	**8%**	358	106%	237	121%	**595**	**107%**
1993	304	8%	219	20%	**523**	**13%**	201	-44%	97	-59%	**298**	**-50%**
1994	286	-6%	177	-19%	**463**	**-11%**	184	-8%	138	42%	**322**	**8%**
1995	426	49%	319	80%	**745**	**61%**	231	26%	108	-22%	**339**	**5%**
1996	384	-10%	301	-6%	**685**	**-8%**	209	-10%	116	7%	**325**	**-4%**
1997	417	9%	320	6%	**737**	**8%**	408	95%	318	174%	**726**	**123%**
1998	457	10%	422	32%	**879**	**19%**	266	-35%	155	-51%	**421**	**-42%**

	CBMU						MBMU					
	Male		Female		Total[1]		Male		Female		Total[1]	
Year	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change	Harvest	% change
1999	509	11%	372	-12%	**881**	**0%**	311	17%	174	12%	**485**	**15%**
2000	532	5%	397	7%	**929**	**5%**	359	15%	202	16%	**561**	**16%**
2001	667	25%	440	11%	**1,107**	**19%**	270	-25%	156	-23%	**426**	**-24%**
2002	594	-11%	361	-18%	**955**	**-14%**	345	28%	185	19%	**530**	**24%**
2003	656	10%	442	22%	**1,098**	**15%**	425	23%	292	58%	**717**	**35%**
2004	643	-2%	410	-7%	**1,053**	**-4%**	304	-28%	140	-52%	**444**	**-38%**
2005	655	2%	418	2%	**1,073**	**2%**	371	22%	219	56%	**590**	**33%**
2006	639	-2%	436	4%	**1,075**	**0%**	503	36%	222	1%	**725**	**23%**
2007	789	23%	538	23%	**1,327**	**23%**	409	-19%	269	21%	**678**	**-6%**
2008	757	-4%	548	2%	**1,305**	**-2%**	566	38%	291	8%	**857**	**26%**
2009	792	5%	478	-13%	**1,270**	**-3%**	745	32%	452	55%	**1,197**	**40%**
2010	1,060	34%	641	34%	**1,701**	**34%**	421	-43%	241	-47%	**662**	**-45%**
2011	987	-7%	620	-3%	**1,608**	**-5%**	755	79%	415	72%	**1,170**	**77%**
2012	1,082	10%	762	23%	**1,844**	**15%**	585	-23%	395	-5%	**980**	**-16%**
2013	1,089	1%	692	-9%	**1,781**	**-3%**	696	19%	510	29%	**1,206**	**23%**
2014	1103	1%	764	10%	**1867**	**5%**	372	-47%	262	-49%	**634**	**-47%**
2015	1115	1%	762	0%	**1880**	**1%**	784	111%	415	58%	**1199**	**89%**

[1] Total includes harvest of bears in which sex is unknown.

Table 4. Percentage of males and females that comprised the reported harvest in the three bear management units of North Carolina from 1976 through 2015.

	CBMU		MBMU		PBMU	
Year	% Female	% Male	% Female	% Male	% Female	% Male
1976	43%	57%	38%	62%	n/s	n/s
1977	47%	53%	42%	58%	n/s	n/s
1978	27%	73%	36%	64%	n/s	n/s
1979	44%	56%	42%	58%	n/s	n/s
1980	63%	38%	51%	49%	n/s	n/s
1981	38%	62%	38%	62%	n/s	n/s
1982	51%	49%	35%	65%	n/s	n/s
1983	35%	65%	33%	67%	n/s	n/s
1984	33%	67%	33%	67%	n/s	n/s
1985	42%	58%	36%	64%	n/s	n/s
1986	31%	69%	39%	61%	n/s	n/s
1987	33%	67%	28%	72%	n/s	n/s
1988	42%	58%	40%	60%	n/s	n/s
1989	47%	53%	40%	60%	n/s	n/s
1990	42%	58%	37%	63%	n/s	n/s
1991	44%	56%	38%	62%	n/s	n/s
1992	39%	61%	40%	60%	n/s	n/s
1993	42%	58%	33%	67%	n/s	n/s
1994	38%	62%	43%	57%	n/s	n/s
1995	43%	57%	32%	68%	n/s	n/s
1996	44%	56%	36%	64%	n/s	n/s
1997	43%	57%	44%	56%	n/s	n/s
1998	48%	52%	37%	63%	n/s	n/s
1999	42%	58%	36%	64%	n/s	n/s
2000	43%	57%	36%	64%	n/s	n/s
2001	40%	60%	37%	63%	n/s	n/s
2002	38%	62%	35%	65%	n/s	n/s
2003	40%	60%	41%	59%	n/s	n/s
2004	39%	61%	32%	68%	n/s	n/s
2005	39%	61%	37%	63%	0%	0%
2006	41%	59%	31%	69%	0%	100%
2007	41%	59%	40%	60%	100%	0%
2008	42%	58%	34%	66%	0%	100%
2009	38%	62%	38%	62%	100%	0%
2010	38%	62%	36%	64%	0%	0%
2011	39%	61%	35%	65%	0%	100%
2012	41%	59%	40%	60%	0%	100%
2013	39%	61%	42%	58%	25%	75%
2014	41%	59%	41%	59%	20%	80%
2015	41%	59%	35%	65%	21%	79%

Number of bears harvested by date

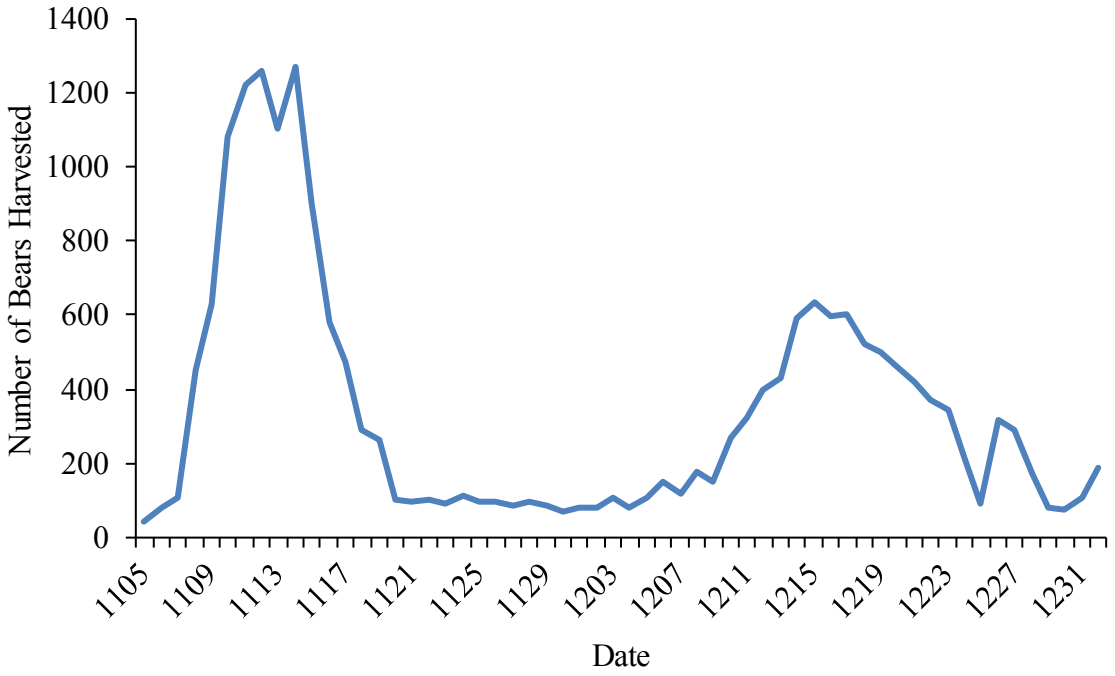


Figure 4. Number of reported bears harvested per date the season in the CBMU region, 2002-2015.

Figure 5. Number of reported bears harvested per date the season in the MBMU region, 2002-2015.

Percentage of Females in the Harvest throughout the Season

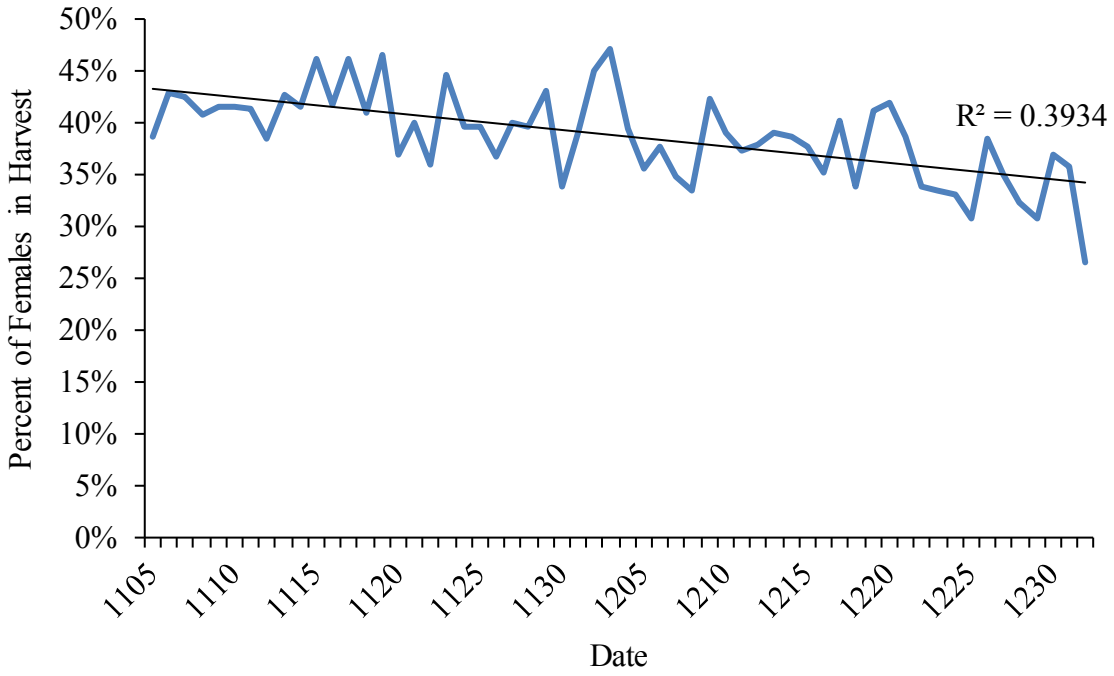


Figure 6. Percent of female bears that comprise the registered harvest during the seasons in the CBMU region, 2002-2015 (trend indicated by black line).

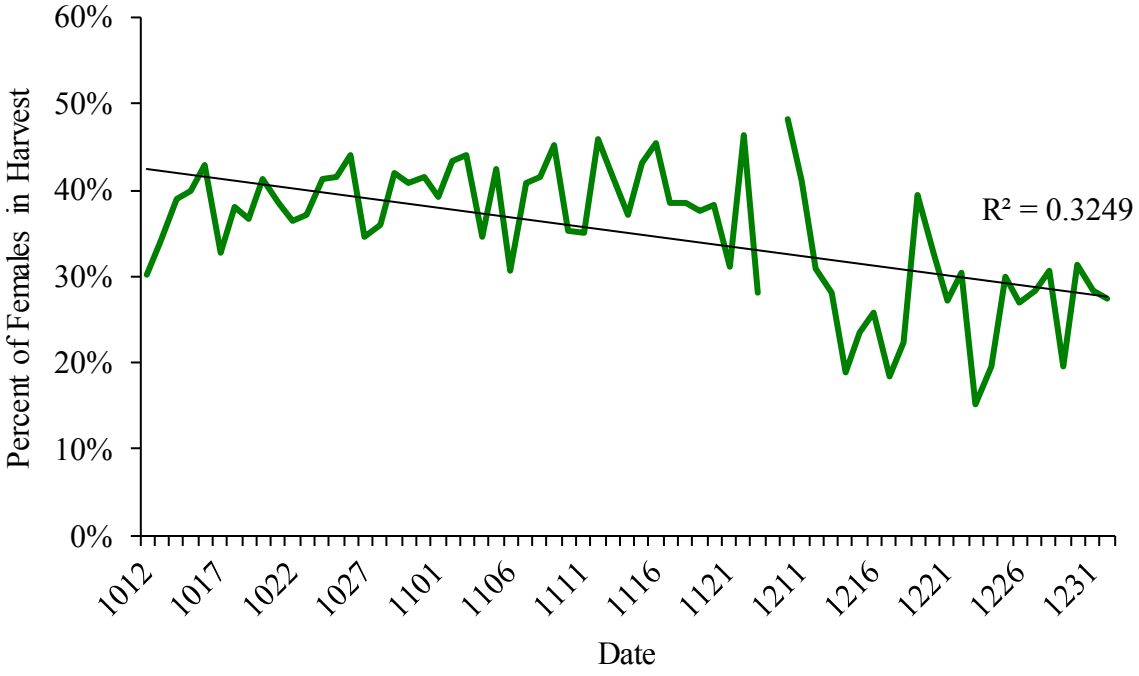


Figure 7. Percent of female bears that comprise the registered harvest during the season in the MBMU, 2002-2015 (trend indicated by black line).

Harvest by District

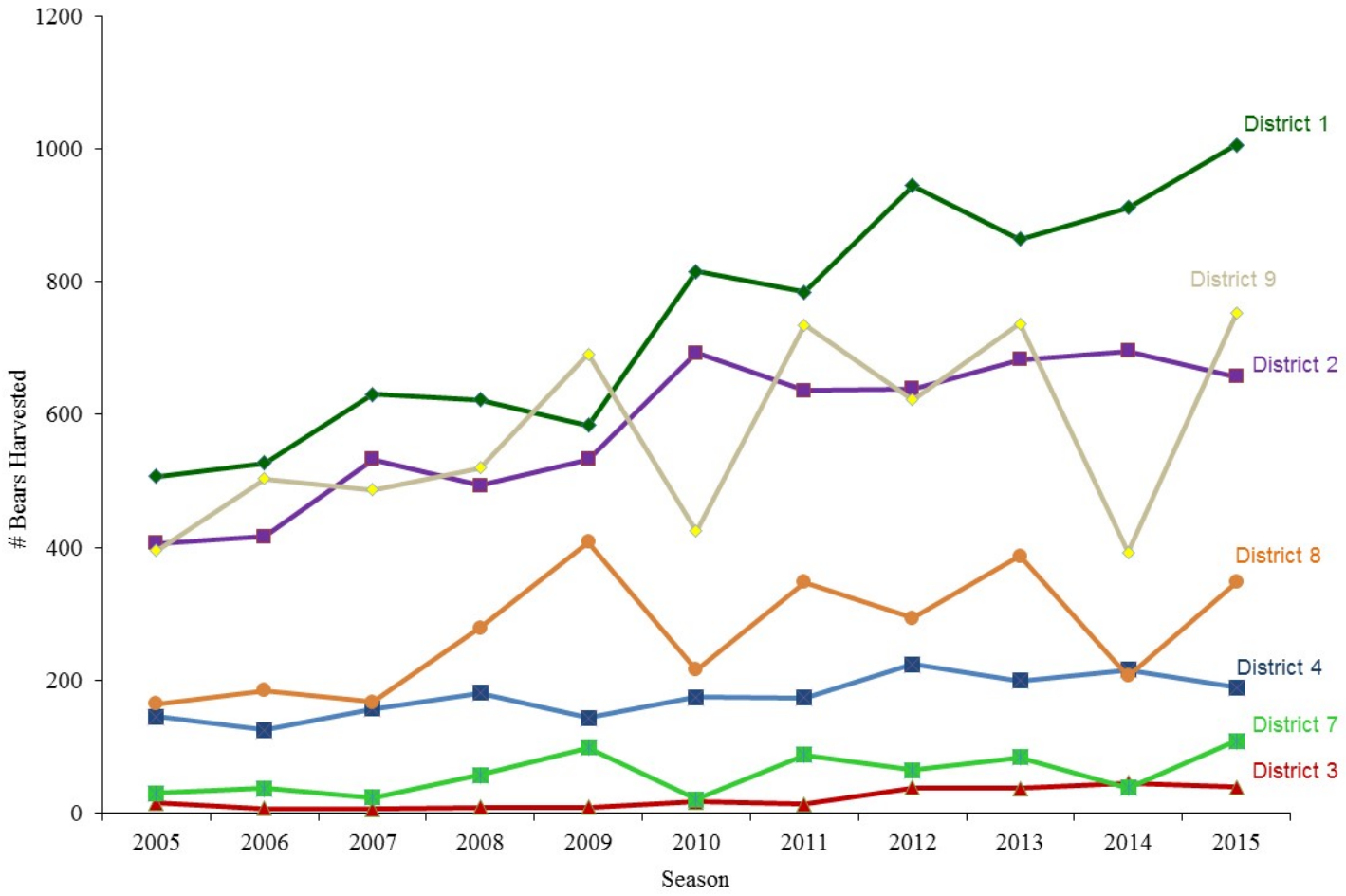


Figure 8. The reported harvest of black bears by district from 1995 through 2015.

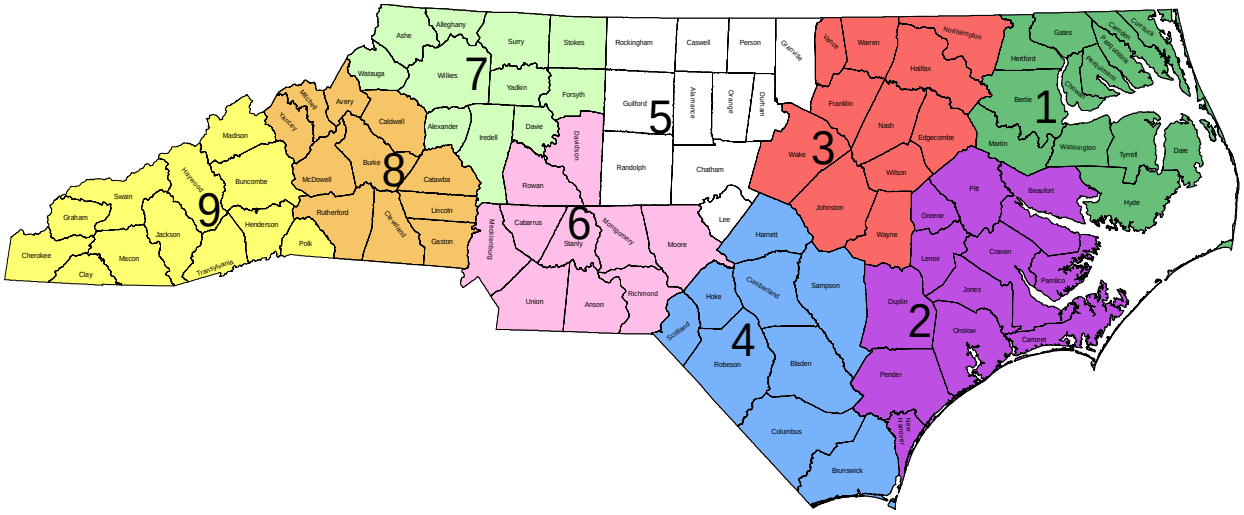


Figure 9. The nine wildlife districts of the North Carolina Wildlife Resources Commission.

Table 5. The reported harvest of black bears by district from 1976 through 2015.

	District								
Season	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1976	6	36	0	20	0	0	2	22	35
1977	0	58	0	16	0	0	0	23	56
1978	0	57	0	28	0	0	1	45	78
1979	0	57	0	36	0	0	2	29	93
1980	0	74	0	30	0	0	2	49	101
1981	0	62	0	30	0	0	1	32	118
1982	0	73	0	26	0	0	0	56	168
1983	0	71	0	26	0	0	0	54	157
1984	0	120	0	81	0	0	2	45	234
1985	0	103	0	35	0	0	0	34	153
1986	48	86	0	33	0	0	1	76	163
1987	94	93	0	58	0	0	1	68	238
1988	98	136	0	62	0	0	0	53	187
1989	83	146	0	46	0	0	2	59	239
1990	194	192	0	58	0	0	4	81	231
1991	187	185	0	57	0	0	1	75	210
1992	222	186	0	56	0	0	2	130	478
1993	239	206	0	78	0	0	4	65	232
1994	194	192	0	77	0	0	5	102	215
1995	389	281	0	75	0	0	6	74	254
1996	392	204	0	89	0	0	3	91	231
1997	359	296	0	82	0	0	12	197	517
1998	467	336	15	61	0	0	9	119	293
1999	447	312	16	106	0	0	10	107	368
2000	461	355	9	104	0	0	20	139	402
2001	469	520	15	103	0	0	14	110	302
2002	429	410	16	100	0	0	30	170	330
2003	557	423	1	117	0	0	22	227	468
2004	480	401	13	159	0	0	15	99	330
2005	507	406	15	145	0	0	30	165	395
2006	527	416	7	125	0	0	37	185	503
2007	631	533	6	157	0	0	24	167	487
2008	622	493	9	181	0	0	58	279	520
2009	584	533	9	144	0	0	99	408	691
2010	816	693	17	175	0	0	21	216	425
2011	784	636	14	174	0	0	88	348	735
2012	945	639	38	224	0	0	65	294	622
2013	864	683	37	199	0	0	84	387	737
2014	912	696	46	216	12	1	38	207	393
2015	1,006	657	39	189	18	0	109	348	752
Percent of 2015 Harvest by District	32%	21%	1%	6%	1%	0%	3%	11%	24%

Harvest by County

Table 6. Reported harvest results of black bears by county in the Mountain Bear Management Unit (MBMU) of North Carolina from 2002 through 2015 (n/s=no season).

County	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% change from 2014 to 2015
Alleghany	0	0	0	0	1	3	9	15	2	8	6	6	2	8	300%
Ashe	14	11	6	12	12	10	17	36	5	31	24	25	8	29	263%
Avery	15	23	6	15	26	10	25	46	17	46	25	45	25	48	92%
Buncombe	24	31	13	18	19	17	39	47	18	49	47	74	30	61	103%
Burke	19	19	6	5	13	19	26	57	28	37	38	55	19	33	74%
Caldwell	15	26	9	12	20	16	25	39	15	36	23	31	15	51	240%
Cherokee	45	61	47	35	62	39	51	75	51	85	71	58	32	65	103%
Clay	18	32	30	24	43	48	53	27	49	25	40	37	25	29	16%
Cleveland	0	1	0	0	0	1	0	1	0	0	3	3	1	0	-100%
Graham	51	66	67	86	87	70	55	111	74	134	96	68	77	116	51%
Haywood	48	78	33	46	72	60	76	96	41	127	75	102	54	117	117%
Henderson	7	16	8	14	13	22	23	35	10	37	25	38	7	28	300%
Jackson	5	25	26	21	31	38	23	47	28	37	59	71	26	63	142%
Macon	51	65	53	44	89	80	81	95	65	77	67	110	50	87	74%
Madison	44	57	35	49	48	66	80	92	46	73	73	91	55	120	118%
McDowell	42	67	41	68	38	54	66	98	87	105	110	98	67	81	21%
Mitchell	32	24	13	14	24	16	47	64	19	40	29	42	22	37	68%
Polk	0	2	0	0	0	3	3	8	2	5	3	13	5	9	80%
Rutherford	6	16	7	8	15	5	15	29	8	6	10	25	7	14	100%
Surry	n/s	n/s	n/s	5	3	3	2	11	2	15	11	15	6	8	33%
Swain	15	18	7	24	27	14	16	22	15	43	24	23	14	24	71%
Transylvania	22	17	11	34	12	30	20	36	26	43	42	52	18	33	83%
Watauga	7	2	3	5	8	5	9	17	3	9	10	20	8	26	225%
Wilkes	9	9	6	8	13	3	21	20	9	24	13	16	10	29	190%
Yancey	41	51	17	43	48	45	74	73	42	78	56	89	51	83	63%
Totals	**530**	**717**	**444**	**590**	**724**	**677**	**856**	**1,197**	**662**	**1,170**	**980**	**1,207**	**634**	**1,199**	**89%**

Table 7. Reported harvest results of black bears by county in the Coastal Bear Management Unit (CBMU) of North Carolina from 2002 through 2015 (n/s=no season).

County	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% change from 2014 to 2015
Beaufort	130	154	118	143	112	164	124	151	184	183	169	181	200	201	1%
Bertie	29	38	40	38	53	73	44	50	61	90	112	99	68	81	19%
Bladen	39	56	74	64	53	74	87	66	101	88	91	98	103	90	-13%
Brunswick	22	27	38	34	28	42	36	34	26	32	43	37	46	31	-33%
Camden	26	66	50	49	49	45	59	62	71	64	78	63	43	63	47%
Carteret	21	25	24	31	32	40	23	23	25	31	32	15	28	36	29%
Chowan	11	10	5	8	9	12	16	8	9	7	17	15	16	13	-19%
Columbus	20	19	22	23	23	19	30	17	25	21	32	25	14	9	-36%
Craven	62	54	69	41	46	67	66	77	84	79	87	65	76	67	-12%
Cumberland	11	7	14	12	14	16	15	15	9	16	33	20	25	36	44%
Currituck	17	15	20	14	18	49	39	26	34	39	27	26	35	40	14%
Dare	2	19	3	1	3	10	3	7	4	5	3	3	10	2	-80%
Duplin	3	3	6	4	7	7	13	10	18	16	17	11	14	15	7%
Edgecombe	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	12	10	7	9	29%
Gates	24	26	51	47	53	52	53	55	75	52	75	70	82	77	-6%
Greene	n/s	n/s	n/s	n/s	n/s	n/s	2	1	0	1	4	5	4	2	-50%
Halifax	2	0	4	2	1	2	2	1	3	6	4	7	4	0	-100%
Hertford	8	8	12	16	18	24	32	35	53	71	48	59	50	48	-4%
Hyde	119	187	101	153	130	138	159	163	215	180	210	216	253	233	-8%
Jones	75	83	72	87	105	127	111	96	154	129	108	159	134	116	-13%
Lenoir	n/s	n/s	n/s	n/s	n/s	n/s	19	13	13	22	32	29	18	26	44%
Martin	22	16	21	22	34	40	33	28	53	48	50	64	61	56	-8%
Nash	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0	1	100%
New Hanover	0	1	3	1	1	5	1	4	3	3	3	5	5	1	-80%
Northampton	14	1	9	13	6	4	7	8	14	8	15	15	25	16	-36%
Onslow	47	34	34	41	36	46	46	47	61	44	54	47	55	49	-11%
Pamlico	25	26	21	15	36	39	27	45	42	22	37	41	45	53	18%
Pasquotank	12	12	8	8	14	10	6	7	10	8	11	8	25	14	-44%
Pender	47	43	54	43	41	38	49	46	73	66	45	48	56	53	-5%

County	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% change from 2014 to 2015
Perquimans	n/s	n/s	n/s	n/s	3	8	2	3	15	5	17	10	11	10	-9%
Pitt	n/s	n/s	n/s	12	20	36	40	51	77	n/s	51	77	61	38	-38%
Robeson	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	2	200%
Sampson	8	8	11	12	7	6	13	12	14	17	25	19	28	20	-29%
Tyrrell	97	97	84	85	72	102	113	90	150	137	216	151	156	264	69%
Washington	62	63	85	66	71	68	63	50	66	75	81	79	102	105	3%
Wayne	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	1	0	-100%
Wilson	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	5	3	6	3	-50%
Total	**955**	**1,098**	**1,053**	**1,073**	**1,075**	**1,327**	**1,305**	**1,270**	**1,701**	**1,605**	**1,844**	**1,780**	**1,867**	**1,880**	1%

Table 8. Reported harvest results of black bears by county in the Piedmont region of North Carolina from 2004 through 2015 (n/s=no season).

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% change from 2014 to 2015
Alamance	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Alexander	n/s	0	0	0	0	0	0	1	0	0	1	1	0%
Anson	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Cabarrus	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Caswell	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	3	300%
Catawba	n/s	0	1	1	1	1	0	0	0	0	1	1	0%
Chatham	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Davidson	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Davie	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Durham	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	1	100%
Forsyth	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Franklin	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	3	300%
Gaston	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Granville	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	1	4	300%
Guilford	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Harnett	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0	1	100%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	% change from 2014 to 2015
Hoke	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Iredell	n/s	0	0	0	0	0	0	0	0	0	1	0	-100%
Johnston	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	1	0	0	2	200%
Lee	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Lincoln	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Mecklenburg	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Montgomery	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	1	0	-100%
Moore	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Orange	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Person	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	8	7	-13%
Randolph	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Richmond	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Rockingham	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	2	3	50%
Rowan	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Scotland	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Stanly	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Stokes	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	1	2	2	8	300%
Union	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Vance	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	1	1	0%
Wake	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	0	0	0%
Warren	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	1	2	2	4	100%
Yadkin	n/s	0	0	0	0	0	0	0	0	0	0	0	0%
Total	**n/s**	**0**	**1**	**1**	**1**	**1**	**0**	**1**	**3**	**4**	**20**	**39**	95%

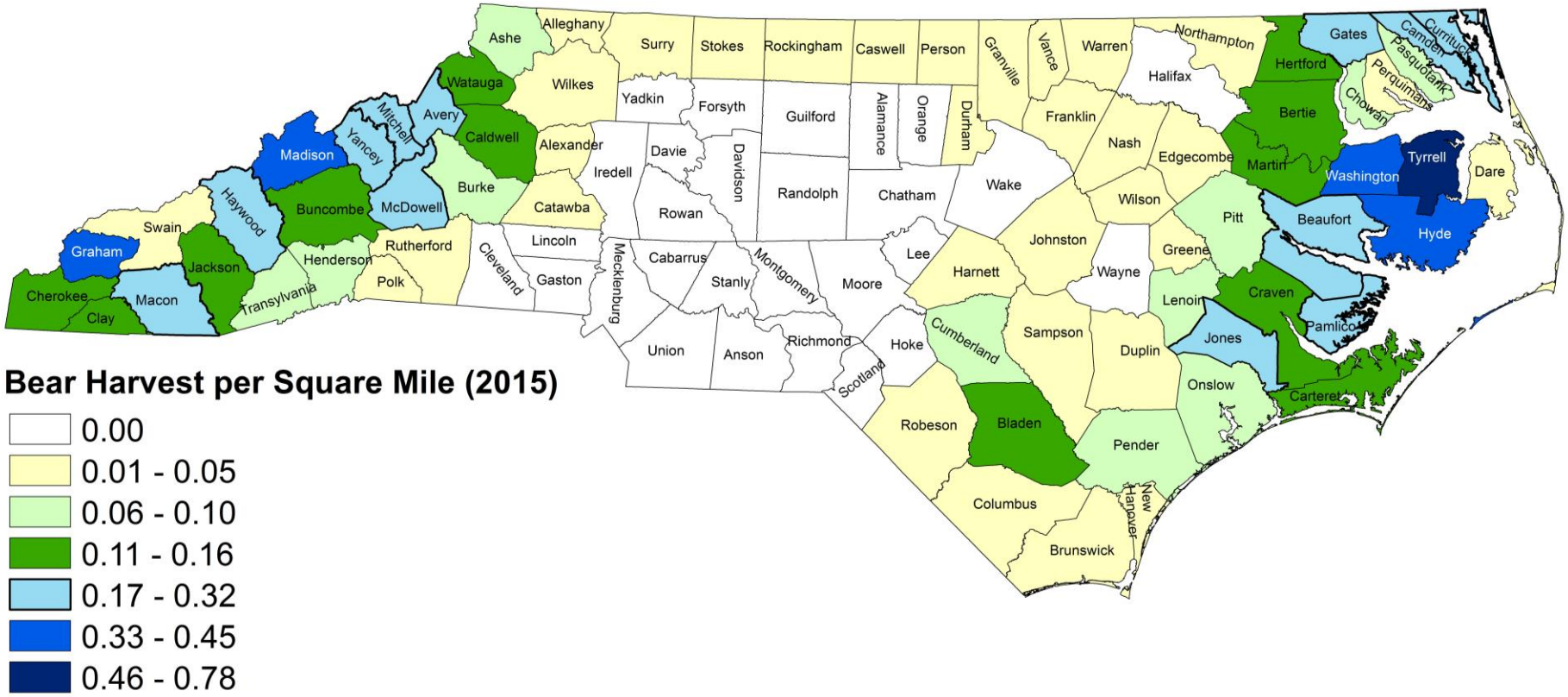


Figure 10. The 2015 reported harvest per square mile (mi^2) by county.

Bear Permit Hunt Harvest

Prior to 2009, information on bear harvest that occurred on three of the bear permit hunts was obtained through the voluntary permit hunt surveys and voluntary tooth submission. However, hunter response to the permit surveys was low; in 2008, average response rate to the permit surveys was 10%. The exception to this is the Dare Bombing Range Bear Permit hunt, which is well monitored by NCWRC staff, due to the limited number of permit hunt days and the ability to have an established stationary check station; there is only one entrance and exit to the permit hunt. In order to improve our ability to monitor harvest on Mt. Mitchell and Daniel Boone Bear Sanctuaries, which are within Pisgah Game Land, questions were added to the big game registration system, enabling permit hunters to provide the sanctuaries as the location of their bear harvest. NCWRC still relies on the permit survey and interactions with permit hunters to determine harvest on the Holly Shelter Bear Garden tract.

In 2015, 26 bears were harvested during bear permit hunts (Table 9) and NCWRC received tooth submissions from 61% of these bears. The increase in reported harvest on permit hunts was largely due the Mt. Mitchell Bear Sanctuary. Submission rates from bears taken on Mt. Mitchell Bear Sanctuary are the lowest of all permit hunts (41%). While harvest estimates for the Holly Shelter Bear Garden Tract are unknown, several permit houndsmen parties initiate the start of their bear hunt on the tract, with the remainder of the chase occurring off the tract within Holly Shelter Game Land.

Table 9. Reported bear harvest for bear permit hunts from 2006 through 2015.

Sanctuary	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Dare Bombing Range[1]	2	8	2	4	3	3	1	2	9	1
Daniel Boone Bear Sanctuary[2]	NS[3]	NS	NS	5	3	2	5	3	1	7
Holly Shelter Bear Garden Tract[4]	NS	0	0	0	0	0	1	1	NA[4]	NA[4]
Mt. Mitchell Bear Sanctuary[5]	NS	3	5	2	3	3	16	3	7	16
Pond Mountain[2]	NS	NS	NS	NS	NS	1	0	0	0	2
Texas Plantation[2]	NS	NS	NS	NS	NS	NS	NS	NS	NS	0
Total Registered Harvest	**2**	**11**	**7**	**11**	**9**	**9**	**23**	**9**	**17**	**26**

[1]Harvest based on check stations

[2]Harvest based on reported harvest to big game registration system

[3]NS: No season

[4]Harvest based on permit surveys from 2007-2013; no surveys conducted in 2014 and 2015

[5]From 2007-2008, harvest based on permit surveys; after 2009, harvest based on big game registration system

Mean weight and age of bears harvested on permit hunts can be seen in Table 10. Female bears harvested on the Dare Bombing Range permit hunt were older, but weighed less than the 10-year average observed for females harvested in the CBMU (Table 10 and Table 31). Male bears taken on the Dare Bombing Range permit hunt were similar in age, but smaller than male bears harvested the CBMU (Table 10 and Table 31). Male and female bears harvested on Daniel Boone Bear Sanctuary (DBBS) were older and heavier than male bears harvested in the MBMU. On Mt. Mitchell Bear Sanctuary, male bears were slightly older and heavier than male bears harvested in the remaining MBMU, while female bears on Mt. Mitchell were slightly older, but slightly lighter than female bears harvested in the MBMU (Table 10 and Table 31).

Table 10. Mean age (years), mean weight (lbs.) and samples sizes (n) of bears sampled on bear permit hunts (2006 through 2015).

	Age		Weight	
Permit Hunt	**Male**	**Female**	**Male**	**Female**
Dare Bombing Range	4.7 (n=11)	8.2 (n=23)	181 (n=11)	154 (n=21)
Daniel Boone	4.7 (n=11)	6.75 (n=4)	305 (n=9)	325 (n=1)
Mt. Mitchell	5.2 (n=16)	6.1 (n=20)	237 (n=16)	167 (n=13)
Pond Mountain	4.75 (n=2)	3.75 (n=2)	210 (n=1)	N/A

Harvest on Game Lands

The percent of the bear harvest that occurs on game lands has remained fairly stable from 1998 through 2015 (Table 11; Figure 11). While a majority of the mountain bear harvest occurs on game lands, most of the coastal bear harvest occurs on private lands. One reason for the regional difference is that in the mountain region there is a large amount of public lands (e.g. Pisgah National Forest, Nantahala National Forest), as well as private properties that are smaller than what is observed in the coast. In the coastal plain region, private properties tend to have a large amount of acreage (e.g. Weyerhaeuser, agricultural operations) that is more conductive to bear hunting with hounds. With human populations projected to increase in North Carolina and the increasing cost of leasing private lands, NCWRC game lands will become increasingly important in providing bear hunting opportunities.

Table 11. Percentage of North Carolina's registered bear harvest occurring on game lands, 1998 through 2015.

	CBMU		MBMU		Statewide	
Year	**Game land**	**Other**	**Game land**	**Other**	**Game land**	**Other**
1998	3%	97%	67%	33%	24%	76%
1999	6%	94%	67%	33%	27%	73%
2000	3%	97%	50%	50%	21%	79%
2001	6%	94%	63%	37%	22%	78%
2002	5%	95%	54%	46%	22%	78%
2003	5%	95%	56%	44%	25%	75%
2004	5%	95%	67%	33%	24%	76%
2005	6%	94%	55%	45%	23%	77%
2006	6%	94%	52%	48%	25%	75%
2007	8%	92%	61%	39%	26%	74%
2008	6%	94%	50%	50%	24%	76%
2009	6%	94%	43%	57%	24%	76%
2010	6%	94%	65%	35%	23%	77%
2011	6%	94%	48%	52%	24%	76%
2012	6%	94%	53%	47%	22%	78%
2013	3%	97%	42%	58%	19%	81%
2014	5%	95%	56%	44%	18%	82%
2015	5%	95%	44%	56%	20%	80%

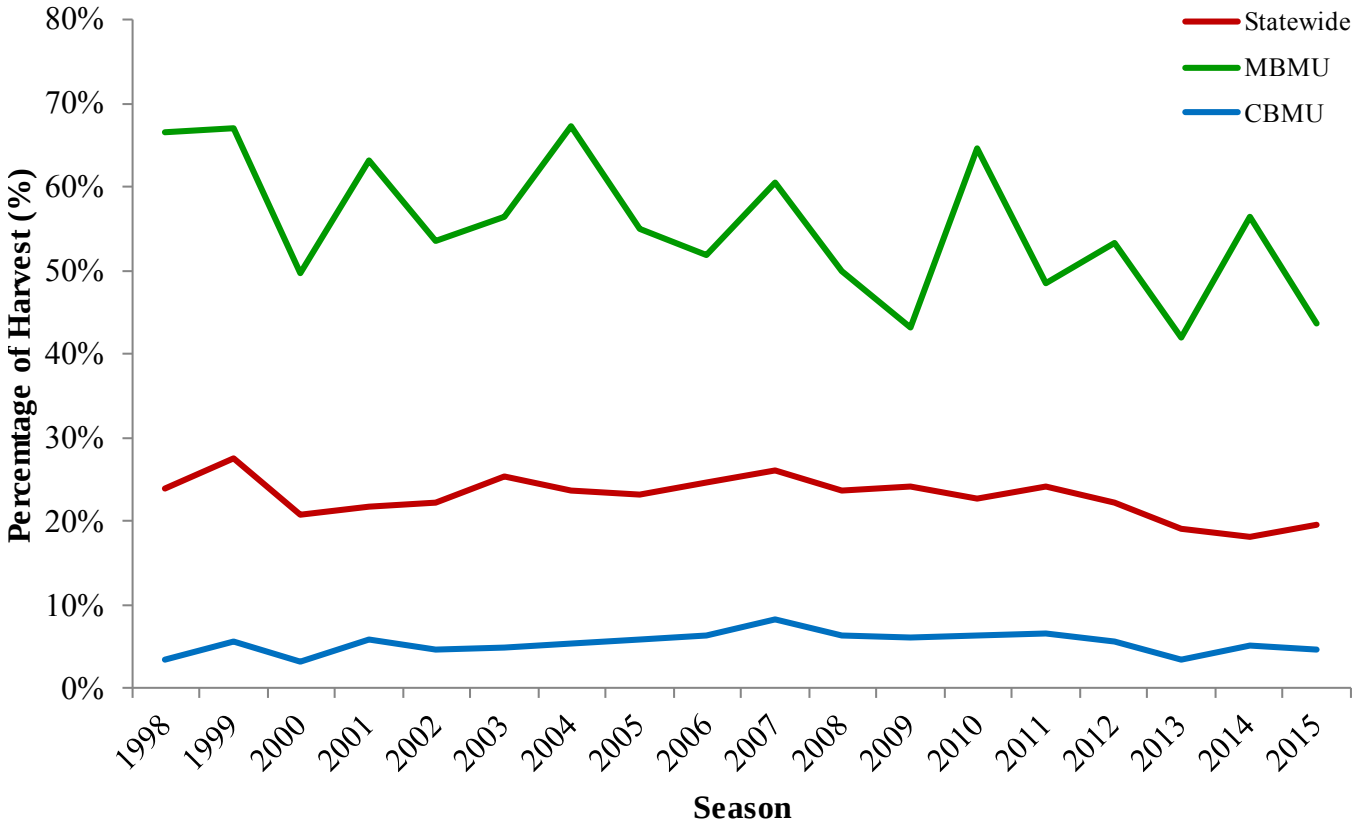


Figure 11. Percentage of registered bear harvest occurring on game lands, 1998 through 2015.

In the CBMU, a majority (66%) of the game land harvest occurs on five game lands from 2008 through 2015: Croaton National Forest (23%), Buckridge (17%), Bladen Lakes State Forest (10%), Alligator River (10%), and Chowan Swamp (6%; Table 12). During the 2015 bear season, 18 bears were harvested off of Buckridge Gamd Land, followed by Bladen Lakes State Forest (n=16). In the MBMU, 96% of the game land harvest occurs on Nantahala National Forest and Pisgah National Forest (Table 12). These two national forest comprise just over one million acres total and are the largest public lands in the mountain region in which bear hunting is allowed.

Table 12. Registered harvest on game lands in the MBMU and CBMU of North Carolina, 2008 through 2015.

Region	Game Land	2008[1]	2009	2010	2011	2012	2013	2014	2015	Total	%
CBMU	Alligator River	1	11	12	6	9	8	11	14	72	10%
	Angola Bay	2	2	6	6	3	4	2	3	28	4%
	Bachelor Bay	0	0	1	0	0	0	0	0	1	0%
	Bertie County[2]	0	2	0	1	1	0	1	0	5	1%
	Bladen Lakes State Forest	2	9	15	9	7	5	9	16	72	10%
	Buckridge	9	9	16	19	22	12	12	18	117	17%
	Cape Fear River Wetlands	0	1	1	0	0	0	0	0	2	0%
	Carteret County[2]	3	0	1	1	2	1	0	1	9	1%
	Chowan Swamp	1	5	5	6	10	4	4	3	38	6%
	Columbus County	0	3	0	0	0	0	2	0	5	1%
	Croatan	16	15	24	26	27	14	23	11	156	23%
	Dare	2	4	3	3	1	2	9	2	26	4%
	Dover Bay	0	0	0	1	0	0	1	0	2	0%
	Goose Creek	0	0	4	0	0	1	2	0	7	1%
	Green Swamp	0	0	0	0	1	0	0	1	2	0%
	Gull Rock	4	0	2	5	1	0	3	3	18	3%
	Holly Shelter	1	3	4	7	2	0	5	6	28	4%
	Juniper Creek	0	1	2	3	7	3	5	1	22	3%
	Lantern Acres	2	5	8	3	4	4	3	6	35	5%
	Light Ground Pocosin	0	0	0	0	1	0	0	0	1	0%
	New Lake	0	0	0	0	0	0	0	1	1	0%
	Neuse River	1	0	0	0	0	1	0	0	2	0%
	Pungo River	0	1	0	0	0	0	0	1	2	0%
	Stones Creek	1	0	0	0	0	0	0	0	1	0%
	Van Swamp	6	5	5	7	4	2	5	1	35	5%
	White Oak River	1	1	0	0	1	0	0	0	3	0%
MBMU	Buffalo Cove	1	0	0	0	1	3	0	2	7	0%
	Cold Mountain	6	9	5	7	5	11	7	10	60	2%
	Daniel Boone Bear Sanctuary	NS	5	3	2	5	3	1	7	26	1%
	Green River	1	1	0	2	0	1	2	3	10	0%
	Mitchell River	0	1	0	0	0	0	1	0	2	0%
	Mt. Mitchell Bear Sanctuary	0	2	3	3	16	3	7	16	50	1%
	Nantahala	120	281	242	318	287	271	187	298	2,004	54%
	Needmore	6	8	3	4	5	4	3	2	35	1%
	Pisgah	136	199	167	224	202	205	143	179	1,455	39%
	Pond Mountain	0	0	0	1	0	0	0	2	3	0%
	Sandy Mush	0	1	1	2	0	1	2	2	9	0%
	South Mountains	1	6	1	2	0	2	1	1	14	0%
	Three Top Mountain	1	0	0	0	1	1	1	1	5	0%
	Toxaway	2	5	3	1	1	1	2	0	15	0%

[1] Prior to 2008, registration system did not request data on name of game land where harvest occurred
[2] Possibly an error in reporting from hunters equating game land to county of harvest.

Harvest by Weapon Type

Since 1981, the requirement to report the weapon used for taking bears has changed throughout the years (Table 13). As of 2010, when a hunter registers a bear, s/he must indicate if a gun, bow, muzzleloader or crossbow was used. A majority of bears are harvested by use of gun, followed by bow, muzzleloaders, then crossbow.

Table 13. Composition of registered bear harvest by weapon from 1981 through 2015.

Year	Statewide Harvest	Gun	Muzzleloader	Bow	Crossbow	Unknown
1981	243	97%	N/A	N/A	N/A	3%
1982	323	97%	N/A	N/A	N/A	3%
1983	308	97%	N/A	N/A	N/A	3%
1984	482	95%	N/A	N/A	N/A	5%
1985	325	90%	N/A	N/A	N/A	10%
1986	407	100%	N/A	N/A	N/A	0%
1987	552	99%	N/A	N/A	N/A	1%
1988	536	100%	N/A	N/A	N/A	0%
1989	575	98%	N/A	N/A	N/A	2%
1990	760	99%	N/A	1%	N/A	0%
1991	715	95%	N/A	1%	N/A	4%
1992[1]	1,074	96%	0.1%	2%	N/A	3%
1993[2]	824	55%	0.0%	0%	N/A	45%
1994	785	60%	0.1%	1%	N/A	39%
1995	1,079	55%	0.0%	0%	N/A	45%
1996	1,010	57%	0.1%	0%	N/A	42%
1997	1,463	51%	0.0%	1%	N/A	48%
1998	1,300	52%	0.0%	0.1%	N/A	48%
1999	1,366	46%	0.3%	0.1%	N/A	53%
2000	1,490	41%	0.1%	0.3%	N/A	58%
2001	1,533	44%	0.1%	0.2%	N/A	56%
2002	1,485	43%	0.0%	1%	N/A	56%
2003	1,812	47%	0.1%	0.3%	N/A	52%
2004	1,497	43%	0.1%	0.3%	N/A	56%
2005	1,661	37%	0.2%	0.2%	N/A	62%
2006	1,800	41%	0.1%	0.1%	N/A	59%
2007	2,006	44%	0.1%	0.2%	N/A	56%
2008	2,162	58%	1%	3%	N/A	38%
2009[3]	2,468	93%	1%	5%	N/A	1%
2010	2,363	96%	1%	2%	0.30%	0.30%
2011	2,779	95%	1%	4%	0.54%	0.04%
2012	2,827	95%	1%	3%	0.81%	0%
2013	2,521	97%	1%	2%	0.40%	10%
2014	3,118	95%	1%	3%	0.61%	0.1%
2015	2,521	97%	1%	2%	0.40%	10%
Average[4]		**95%**	**1%**	**3%**	**1%**	**2%**

[1]From 1981-1992, weapon reported when hunters registered their bear.
[2] Weapon used based on sampled harvest.
[3] Type of weapon required when registering by all registration methods (i.e. big game harvest sheet, on-line and phone).
[4] Average calculated on data from 2009 through 2015 since these are the only years that complete data has been collected.

Non-Resident (NR) Bear Harvest

Until Oct. 1, 2011, determining the annual number of NR bear hunters was difficult. Prior to Oct. 1, 2011, non-residents (NRs) were required to obtain a NR bear/wild boar license prior to hunting bear. Because the NR bear license was combined with wild boar, not all NRs who purchased the NR bear/wild boar license were hunting bear. Another difficulty in determining the number of NR bear hunters was that NRs who purchased a NR lifetime sportsman license prior to May 24th, 1994 are exempt from purchasing a NR bear license. In 2011, these exempt lifetime NRs comprised 7% of the non-resident registered bear harvest. Lastly, during 2011, 26% of successful NR bear hunters who registered their harvested bear did not purchase the NR bear license. Some of these successful NRs may have been exempt from having to purchase the separate bear license, while other NRs were illegally hunting without the required NR bear license.

After Oct. 1, 2011, wild boars were reclassified as feral hogs and non-resident hog hunters were no longer required to purchase the separate license. This improved our efforts to estimate the number of NR bear hunters. However, due to NR lifetime license exemptions, other exemptions, and illegal activity, we continued to underestimate the number of NR bear hunters in North Carolina.

In July 1, 2014 the bear e-stamp was created and is required for all hunters before taking any bear within North Carolina. For NR hunters, they must have the bear e-stamp if they hunt bears, even if they are exempt from purchasing the NR bear license. The bear e-stamp will provide a more accurate estimate of NR hunters who hunt bears in North Carolina. While the number of bear e-stamps issued to NR bear hunters has increased by 9% from 2014 to 2015, the number of NR bear licenses purchased has declined by 14% (Table 14). In 2015, only 38% of NRs were required to purchase the bear e-stamp; 62% of NRs were exempt from purchasing the bear e-stamp due to their NR lifetime license and received it free upon request(Table 14).

During 2015, a majority of NR bear hunters were from Virginia (19%), Tennessee (12%), South Carolina (9%) and Florida (8%). NR bear hunters came from 44 of 50 states and 3 different countries. It is estimated that successful NR bear hunters comprised 12% of the registered bear harvest (Table 14; Figure 12). A majority of successful NR bear hunters hunted with the assistance of hounds in both the CBMU and MBMU (Table 15). Sixty-two percent and 70% of bears harvested by NR bear hunters in the CBMU and MBMU, respectively, were male during the 2015 season (Table 15). This sex ratio of male bears harvested by NR bear hunters is slightly higher than that of the overall reported harvest (Table 4).

Fifteen percent and 8% of the reported harvest in the CBMU and MBMU, respectively, was by non-residents (Table 16). In the CBMU, Pasquotank (36%) and Tyrrell (30%) counties had the highest percentage of non-residents in the reported harvest. In the MBMU, Clay (24%) and Madison (19%) counties had the highest percentage of non-residents in the reported harvest (Table 16). Of the non-residents reporting a harvest in North Carolina, a majority (75%) occurred in the CBMU (Table 16). Tyrrell (n=80, 29%) and Hyde (n=56, 20%) counties were the top two counties for non-resident bear harvest in the CBMU. In the MBMU, non-residents harvested the highest number of bears from Madison County (n=23, 25%; Table 16).

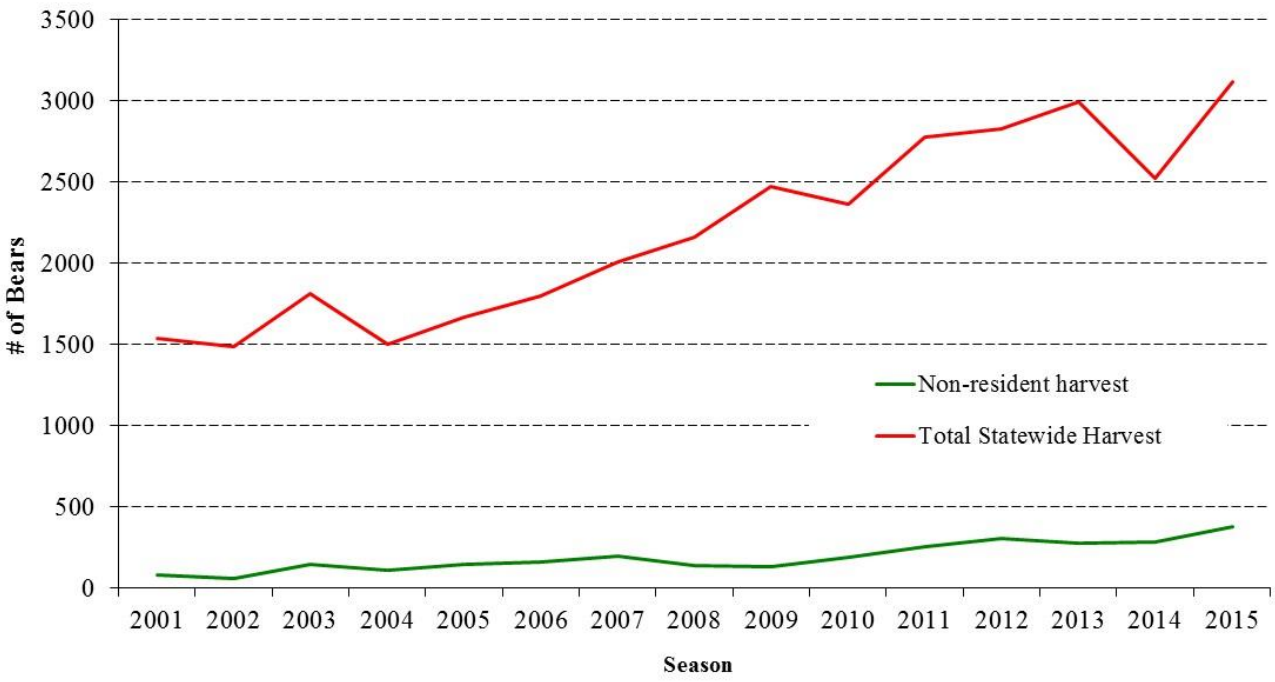


Figure 12. Number of bears harvested by non-residents and total number of bears harvested statewide from 2001 through 2015.

Table 14. Non-resident (NR) bear license sales, NR bear e-stamps, and harvest from 2001 through 2015.

Year	NR Bear Licenses Issued	NR Bear E-Stamps Issued	NRs paid for Bear E-stamp[1]	NR[2] Male Harvest	NR Female Harvest	Total NR Harvest	NR Composition of Statewide Harvest
2001	698	NA	NA	45	37	82	5%
2002	1,075	NA	NA	39	17	56	4%
2003	1,126	NA	NA	91	51	142	8%
2004	1,123	NA	NA	73	36	109	7%
2005	695	NA	NA	93	49	142	9%
2006	1,124	NA	NA	90	71	161	9%
2007	1,201	NA	NA	115	79	194	10%
2008	1,107	NA	NA	81	59	140	6%
2009	1,080	NA	NA	93	39	132	5%
2010	1,071	NA	NA	123	67	190	8%
2011[3]	1,127	NA	NA	150	106	256	9%
2012	1,194	NA	NA	179	126	305	11%
2013	1,216	NA	NA	159	114	273	9%
2014	1,149	2,490	974	175	107	282	11%
2015	991	2,702	1,041	239	134	373	12%
Total	**15,977**	**5,192**	**2,015**	**1,745**	**1,092**	**2,837**	

[1]All NRs are required to have bear e-stamp, but NRs with lifetime licenses prior to July 1, 2014 receive it free upon request.
[2] Male and female reported harvest includes NRs who were exempt from purchasing a NR bear license.
[3] In October 2011, license changed to non-resident bear license, as wild boar was reclassified to feral hog.

Table 15. Sex ratio and method of harvest of successful non-resident bear hunters who registered a bear, 2002 through 2015.

	CBMU		MBMU		CBMU		MBMU	
Year	Male	Female	Male	Female	Still	Dog	Still	Dog
2002	68%	32%	72%	28%	N/A	N/A	N/A	N/A
2003	65%	35%	61%	39%	N/A	N/A	N/A	N/A
2004	64%	36%	74%	26%	N/A	N/A	N/A	N/A
2005	61%	39%	78%	23%	N/A	N/A	N/A	N/A
2006	53%	47%	61%	39%	N/A	N/A	N/A	N/A
2007	60%	40%	57%	43%	N/A	N/A	N/A	N/A
2008	57%	43%	58%	42%	N/A	N/A	N/A	N/A
2009	67%	33%	77%	23%	47%	53%	5%	95%
2010	64%	36%	67%	33%	31%	69%	6%	94%
2011	56%	44%	63%	37%	22%	78%	14%	86%
2012	58%	42%	60%	40%	38%	62%	8%	92%
2013	58%	42%	59%	41%	36%	64%	16%	84%
2014	62%	38%	62%	38%	38%	62%	14%	86%
2015	62%	38%	70%	30%	43%	58%	10%	90%

Table 16. Non-resident reported harvest by county for 2015 hunting season.

Region	County	Non-Resident (NR) Harvest	% of the NR Harvest	Total Harvest	% of Harvest by NR
CBMU	Beaufort	37	13%	201	18%
	Bertie	6	2%	81	7%
	Bladen	6	2%	90	7%
	Brunswick	1	0%	31	3%
	Camden	9	3%	63	14%
	Carteret	2	1%	36	6%
	Craven	7	3%	67	10%
	Currituck	6	2%	40	15%
	Gates	11	4%	77	14%
	Hertford	10	4%	48	21%
	Hyde	56	20%	233	24%
	Jones	5	2%	116	4%
	Lenoir	3	1%	26	12%
	Martin	10	4%	56	18%
	Onslow	1	0%	49	2%
	Pamlico	6	2%	53	11%
	Pasquotank	5	2%	14	36%
	Pender	2	1%	53	4%
	Perquimans	1	0%	10	10%
	Sampson	1	0%	20	5%
	Tyrrell	80	29%	264	30%
	Washington	15	5%	105	14%
	CBMU Total	**280**	**75%**	**1880**	**15%**
MBMU	Ashe	1	1%	29	3%
	Avery	1	1%	48	2%
	Buncombe	2	2%	61	3%
	Burke	1	1%	33	3%
	Caldwell	2	2%	51	4%
	Cherokee	12	13%	65	18%
	Clay	7	8%	29	24%
	Graham	14	15%	116	12%
	Haywood	2	2%	117	2%
	Henderson	4	4%	28	14%
	Jackson	4	4%	63	6%
	Macon	7	8%	87	8%
	Madison	23	25%	120	19%
	McDowell	2	2%	81	2%
	Mitchell	4	4%	37	11%
	Rutherford	1	1%	14	7%
	Swain	1	1%	24	4%
	Transylvania	1	1%	33	3%
	Wilkes	1	1%	29	3%
	Yancey	2	2%	83	2%
	MBMU Total	**92**	**25%**	**1199**	**8%**

Hunter Harvest Surveys

Until the 2014 bear season, the NCWRC had no method for identifying bear hunters. While the NCWRC was unable to identify bear hunters, we attempted to estimate the number of bear hunters in North Carolina by conducting a mail survey of licensed hunters about every 3 years since the 1950s. From 1976 through 2001, the survey did not ask bear-related questions. However, starting with the 2005-06 hunter harvest survey, the NCWRC asked hunters about bear harvest. While we have no long-term data on bears from this survey within the last 30 years, we have data on hunter effort from six time periods (Table 17).

However, the precision of the estimates for bear harvest statistics have high standard error (SE) due to under-sampling of bear hunters. During the 1980's, NCWRC biological staff stated that the SE should be less than 10% in order to have reliable estimates; the inability to reduce SE was one reason staff stopped asking bear-related questions on the survey for several years. Pollock and Wen (2009) stated that "adequate" precision should have a SE of less than 20% of the estimate and that "good" precision would have a SE of less than 10%.

Starting in the 2010-2011 season, the hunter harvest survey increased the number of licensed hunters surveyed from 2% to 4% in order to create more precise estimates for game species of special interest, such as black bear. The survey was also changed to an annual survey to provide better annual correlations to seasonal regulatory changes and proposal evaluations and to provide more precise trend estimates for respective game species.

Table 17. Survey results from hunter harvest surveys from 2005-06 through 2015-16 seasons.

Survey Year	# of Survey Respondents	Estimated # Bear Hunters	Estimated Trips Afield	Hunter Success Rate	Mean # of Hunting Days per Hunter
2005-06	180	17,369 (±1,237)	112,633 (±9,227)	13%	6.5
2007-08	187	18,393 (±904)	132,031 (±14,882)	17%	7.2
2010-11	327	15,902 (±1,677)	115,560 (±16,942)	15%	7.3
2011-12	333	15,570 (±1,628)	109,459 (±14,667)	18%	7.0
2012-13	324	17,097 (±1,809)	130,004 (±20,059)	15%	7.6
2013-14	330	18,094 (±1,897)	138,834 (±18,975)	18%	7.7
2014-15	374	19,977 (±1,955)	130,219 (±15,615)	15%	6.5
2015-16	446	26,536 (±2,357)	182,259 (±18,514)	14%	6.9

Bear e-stamp holder survey

In July 1, 2014, the bear e-stamp became a requirement for both residents and non-residents who hunted bears during the regulated bear hunting season in North Carolina. The implementation of the bear e-stamp allowed the NCWRC to identify potential bear hunters for the first time. In January 2015, the NCWRC initiated a survey of all holders of the bear e-stamp from the 2014 bear hunting season. This survey will be conducted annually in order to monitor changes in the number of active bear hunters and bear hunter success rates. In addition, biological staff can gain information on specific harvest statistics (e.g., hunter effort and success by method). This data will aid in evaluating future regulatory proposals, as well as help biological staff demonstrate cause-effect relationships of several factors that influence harvest levels, such as regulatory and statutory changes, number of bear hunters, changes in hunting methods, and changes in bear population levels.

Results from each question of the 2015 bear e-stamp holder survey can be seen in Appendix A. During the 2015 bear hunting season, 79,743 hunters had a valid bear e-stamp, of which 64% received for free due to exemptions (e.g., lifetime license holder prior to July 1, 2014, land owner who hunts on their land; Table 18). Based on respondents to the survey, it is estimated there were 20,747 active bear hunters during the 2015 regulated bear hunting season (Table 18). Still hunting was the method used most often in all three management units, though hound hunters were most successful at harvesting a bear (Table 19; Appendix A).

Table 18. Results of bear e-stamp holder survey for the 2014-15 and 2015-16 survey years.

Survey Year	# Bear E-stamp holders	# Paid Bear E-stamp holders	# of Survey Respondents	Response Rate	# Hunted Specifically for Bear	Estimated # Bear Hunters	% Respondents Harvested Bear
2014-15	70,391	24,205 (34%)	31,292	44%	26.4%	18,580	7.1%
2015-16	79,743	28,185 (36%)	28,273	37%	26.0%	20,747	6.7%

Table 19. Estimated number of active bear hunters by method and bear management unit during the 2015 bear hunting season.

Bear Plan BMU	Method	Estimated # Bear Hunters[1]	% of Method
CBMU	Dog	5,220	36%
	Still / Stand	9,310	64%
MBMU	Dog	2,831	47%
	Still / Stand	3,228	53%
PBMU	Dog	127	8%
	Still / Stand	1,521	92%

[1]Estimated # of bear hunters includes hunters who used both methods and/or hunted in greater than one bear management unit.

Bear Cooperator Program Participation

The Black Bear Cooperator Program lets hunters directly participate with the NCWRC in monitoring the bear population when they voluntarily submit biological information from their harvested bear to the NCWRC. Age and sex information gathered from biological samples are used for analyzing the age structure of the harvested population and for population reconstruction modeling. Hunter submissions are critical to the program's success. Participating hunters receive an age report on their harvested bear, as well as a blaze orange black bear cooperator hat. For information on how to participate and instructions on removing the upper pre-molars from a bear, please visit: ncwildlife.org/bearcooperator

Participation: The number of bear teeth submitted by hunters statewide has declined since the 1990's (Table 18, Figure 13), despite intensive efforts expended by WRC staff during the bear hunting seasons. In order to increase submission rates, the NCWRC in 2014 started mailing bear cooperator envelopes to all holders of the Bear E-stamp prior to and during the regulated bear hunting season. These are self-addressed, postage-paid envelopes that allow the hunter to place both upper pre-molar teeth in the envelope, fill out information on the envelope, then place the envelope in a mailbox. There was an increase in submission rates in 2014, but submission rates declined in all bear management units in 2015 (Figure 13, Table 20). For the third year in a row, tooth submission rates in the CBMU (56% submission rate) exceeded that in the MBMU (53% submission rate). Since the cooperator program was initiated in 1976, the MBMU had higher submission rates than the CBMU; however, submission rates from the CBMU started to exceed that of the MBMU in 2012. The PBMU had the lowest submission rate during the 2015 season (41%, Table 20).

The higher submission rates in the CBMU is likely due to a combination of outreach efforts to assist hunters in participating in the Black Bear Cooperator Program and an increase in roving check stations during the first week of the CBMU seasons. The decline in submission rates in the MBMU is partly due hunter disapproval of recent enforcement activities and regulatory changes.

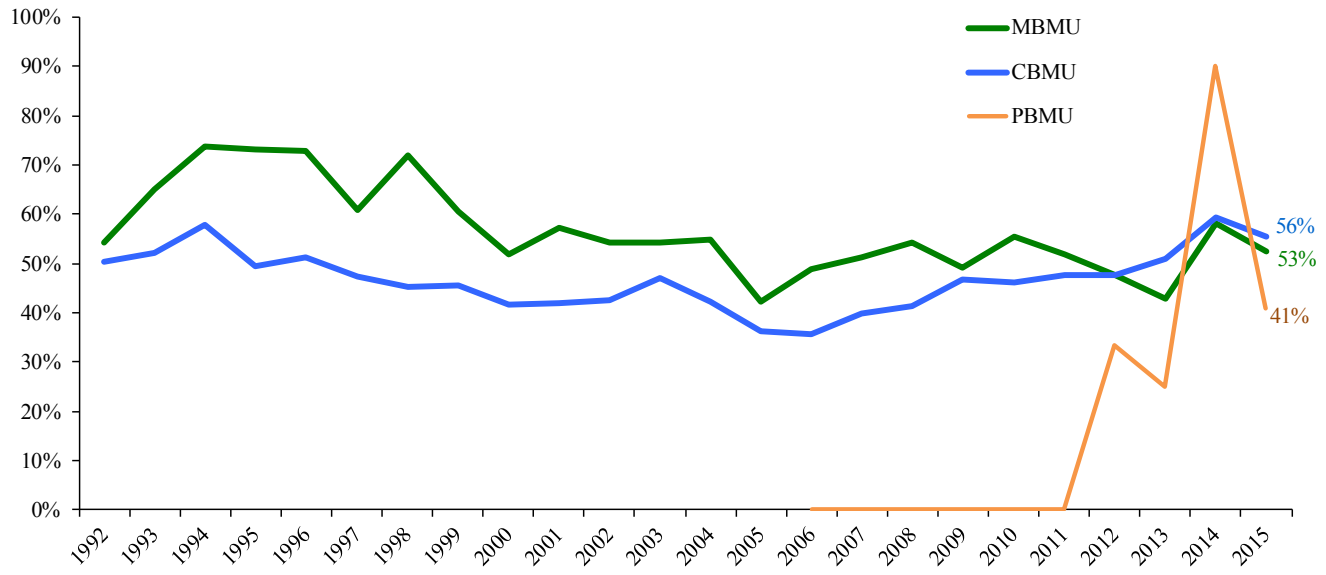


Figure 13. Percentage of registered bears that are sampled by NCWRC for aging from 1976 through 2015.

Table 20. Percent of registered black bears in each bear management region that are sampled by NCWRC from 1976 through 2015 (ns=no season).

Year	CBMU	MBMU	PBMU
1976	31%	97%	ns
1977	23%	75%	ns
1978	51%	90%	ns
1979	48%	69%	ns
1980	36%	69%	ns
1981	58%	74%	ns
1982	38%	58%	ns
1983	44%	88%	ns
1984	29%	77%	ns
1985	32%	80%	ns
1986	24%	74%	ns
1987	42%	77%	ns
1988	38%	61%	ns
1989	36%	55%	ns
1990	34%	57%	ns
1991	30%	61%	ns
1992	50%	54%	ns
1993	52%	65%	ns
1994	58%	74%	ns
1995	50%	73%	ns
1996	51%	73%	ns
1997	47%	61%	ns
1998	45%	72%	ns
1999	46%	60%	ns
2000	42%	52%	ns
2001	42%	57%	ns
2002	43%	54%	ns
2003	47%	54%	ns
2004	42%	55%	ns
2005	35%	42%	N/A[1]
2006	36%	49%	0%
2007	40%	51%	0%
2008	41%	54%	0%
2009	47%	49%	0%
2010	46%	55%	N/A
2011	48%	52%	0%
2012	48%	48%	33%
2013	51%	43%	25%
2014	58%	60%	90%
2015	53%	56%	41%

[1] N/A: Submission rates not available because no bears were harvested in that region.

County Participation: Participation in the bear cooperator program varied widely by county during 2015 (0%-100%; Table 21). Warren, Yancey, Burke, Perquimans, and Hertford counties had the highest participation rates in the state while hunters in eight counties (Durham, Harnett, Nash, Vance, Alleghany, Wilson, Alexander and New Hanover) submitted no teeth. Hunters in Polk (11%), Transylvania (21%) and Martin (23%) counties had the lowest participation rates.

Table 21. Percent of registered black bears in each county that are sampled by NCWRC (2009-2015; ns=no season).

County	2009	2010	2011	2012	2013	2014	2015	Average
ALAMANCE	ns	ns	ns	ns	ns	N/A[1]	N/A	**N/A**
ALEXANDER	N/A	N/A	0%	N/A	N/A	100%	0%	**33%**
ALLEGHANY	33%	0%	50%	33%	0%	50%	0%	**24%**
ASHE	31%	60%	29%	42%	32%	75%	52%	**46%**
AVERY	20%	24%	13%	28%	31%	48%	54%	**31%**
BEAUFORT	44%	51%	48%	59%	52%	59%	57%	**53%**
BERTIE	52%	59%	52%	53%	38%	40%	40%	**49%**
BLADEN	39%	43%	44%	44%	41%	55%	63%	**46%**
BRUNSWICK	32%	54%	25%	28%	27%	46%	39%	**34%**
BUNCOMBE	62%	61%	16%	55%	36%	37%	34%	**43%**
BURKE	67%	25%	57%	45%	53%	79%	85%	**59%**
CALDWELL	28%	7%	42%	48%	35%	27%	49%	**34%**
CAMDEN	45%	58%	52%	44%	51%	53%	65%	**57%**
CARTERET	43%	36%	26%	34%	53%	50%	39%	**42%**
CASWELL	ns	ns	ns	ns	ns	0%	33%	**17%**
CATAWBA	0%	N/A	N/A	N/A	N/A	N/A	N/A	**0%**
CHATHAM	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
CHEROKEE	75%	71%	74%	72%	90%	69%	66%	**74%**
CHOWAN	50%	33%	71%	41%	67%	81%	38%	**54%**
CLAY	67%	69%	56%	58%	62%	72%	55%	**63%**
CLEVELAND	0%	N/A	N/A	33%	0%	100%	N/A	**33%**
COLUMBUS	35%	24%	29%	34%	64%	43%	44%	**37%**
CRAVEN	34%	37%	61%	67%	75%	88%	73%	**61%**
CUMBERLAND	20%	44%	50%	24%	35%	56%	28%	**39%**
CURRITUCK	46%	21%	38%	59%	46%	74%	60%	**50%**
DARE	86%	100%	100%	33%	67%	90%	50%	**69%**
DAVIE	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
DUPLIN	10%	28%	38%	6%	55%	36%	73%	**36%**
DURHAM	ns	ns	ns	ns	ns	N/A	0%	**0%**
EDGECOMBE	ns	ns	ns	33%	0%	14%	44%	**26%**
FORSYTH	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
FRANKLIN	ns	ns	ns	ns	ns	N/A	33%	**N/A**
GASTON	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
GATES	71%	61%	37%	67%	64%	59%	73%	**61%**
GRAHAM	55%	62%	59%	67%	94%	64%	53%	**65%**
GRANVILLE	ns	ns	ns	ns	ns	100%	25%	**63%**
GREENE	100%	N/A	0%	25%	20%	0%	50%	**28%**
GUILFORD	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
HALIFAX	100%	33%	67%	25%	29%	50%	N/A	**43%**
HARNETT	ns	ns	ns	ns	ns	N/A	0%	**N/A**
HAYWOOD	43%	49%	62%	32%	24%	37%	35%	**40%**
HENDERSON	3%	40%	14%	24%	5%	57%	25%	**24%**
HERTFORD	66%	72%	73%	73%	64%	72%	77%	**71%**

Table 21 continued…

County	2009	2010	2011	2012	2013	2014	2015	Average
HOKE	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
HYDE	52%	52%	57%	57%	59%	63%	64%	**57%**
IREDELL	N/A	N/A	N/A	N/A	N/A	0%	N/A	**0%**
JACKSON	47%	25%	62%	15%	10%	46%	52%	**37%**
JOHNSTON	ns	ns	ns	0%	N/A	N/A	50%	**0%**
JONES	55%	51%	51%	50%	73%	78%	70%	**60%**
LEE	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
LENOIR	31%	38%	55%	38%	52%	72%	46%	**50%**
LINCOLN	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
MACON	60%	74%	57%	54%	33%	90%	75%	**63%**
MADISON	49%	57%	45%	56%	45%	73%	47%	**53%**
MARTIN	4%	11%	4%	16%	8%	33%	23%	**14%**
MCDOWELL	67%	60%	57%	48%	59%	58%	54%	**58%**
MITCHELL	45%	47%	55%	55%	60%	73%	57%	**56%**
MONTGOMERY	ns	ns	ns	ns	ns	100%	N/A	**100%**
NASH	ns	ns	ns	ns	N/A	N/A	0%	**N/A**
NEW HANOVER	0%	0%	67%	67%	100%	40%	0%	**39%**
NORTHAMPTON	38%	43%	13%	40%	13%	36%	56%	**31%**
ONSLOW	38%	30%	61%	43%	51%	73%	63%	**50%**
ORANGE	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
PAMLICO	18%	33%	32%	24%	44%	36%	43%	**34%**
PASQUOTANK	43%	50%	50%	82%	63%	52%	71%	**54%**
PENDER	41%	32%	47%	53%	46%	61%	40%	**45%**
PERQUIMANS	33%	20%	60%	71%	30%	64%	80%	**50%**
PERSON	ns	ns	ns	ns	ns	75%	43%	**59%**
PITT	25%	17%	25%	35%	42%	51%	50%	**32%**
POLK	0%	0%	0%	0%	0%	20%	11%	**4%**
RANDOLPH	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
ROBESON	ns	ns	ns	ns	ns	N/A	50%	**N/A**
ROCKINGHAM	ns	ns	ns	ns	ns	100%	33%	**67%**
RUTHERFORD	10%	63%	33%	10%	20%	57%	36%	**33%**
SAMPSON	25%	7%	41%	24%	42%	54%	70%	**35%**
SCOTLAND	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
STOKES	ns	ns	ns	100%	0%	0%	63%	**41%**
SURRY	36%	100%	20%	18%	0%	17%	38%	**33%**
SWAIN	68%	13%	70%	46%	43%	64%	54%	**51%**
TRANSYLVANIA	6%	19%	28%	14%	6%	39%	21%	**19%**
TYRRELL	51%	65%	55%	44%	54%	69%	45%	**59%**
VANCE	ns	ns	ns	ns	ns	0%	0%	**0%**
WAKE	ns	ns	ns	ns	ns	N/A	N/A	**N/A**
WARREN	ns	ns	ns	0%	50%	50%	100%	**63%**
WASHINGTON	42%	41%	33%	35%	42%	47%	55%	**42%**
WATAUGA	0%	0%	22%	10%	0%	38%	54%	**18%**
WAYNE	ns	ns	ns	N/A	N/A	0%	N/A	**0%**
WILKES	35%	33%	21%	23%	13%	0%	45%	**24%**
WILSON	ns	ns	ns	60%	33%	33%	0%	**32%**
YADKIN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**
YANCEY	74%	81%	83%	82%	73%	88%	87%	**81%**

[1] N/A: Submission rates not available because no bears were harvested in that county.
[2] ns: No season

Participation by hunting methods: Two types of hunting methods are utilized in North Carolina, still/stand and dog hunting. The use of dogs to "strike" and "tree" bears has been a technique that goes back centuries. North Carolinians developed a strain of hound to hunt bears, known as the Plott Hound, which has been designated by the Legislature as the official state dog of North Carolina. Still hunting or stand hunting is also an important hunting method. This is a technique whereby hunters place stands on either trails, field edges, or in areas frequented by bears to feed.

Since 2009, NCWRC biological staff has been able to collect information on method of hunt by hunters reporting their harvest, allowing us to compare reported harvest to the sampled harvest. Bear houndsmen participation in the Bear Cooperator Program has been substantially higher than participation by still hunters (Table 20). In 2015, 60% of houndsmen in the MBMU and CBMU who harvested a bear also submitted biological information. But still hunter submission rates have improved since the NCWRC started sending out bear cooperator packets to all Bear e-stamp holders; in 2015, 31% to 48% of still hunters submitted a biological sample from their harvested bear, an increase from prior averages (Table 22).

Table 22. Bear Cooperator Program participation rates (%) of still hunters and houndsmen in the three bear management units of North Carolina (2009-2015).

	CBMU		MBMU		PBMU	
	Still	**Dogs**	**Still**	**Dogs**	**Still**	**Dogs**
2009 Participation Rates	23%	58%	15%	66%	0%	N/A[1]
2010 Participation Rates	26%	57%	18%	63%	N/A[2]	N/A
2011 Participation Rates	22%	59%	19%	64%	0%	N/A
2012 Participation Rates	29%	58%	20%	54%	50%	N/A
2013 Participation Rates	32%	60%	18%	53%	0%	50%
2014 Participation Rates	46%	65%	34%	62%	47%	80%
2015 Participation Rates	48%	60%	31%	60%	43%	25%

[1] N/A: Submission rates not available because no bears were harvested by hound hunters in that management unit.
[2] N/A: Submission rates not available because no bears were harvested by hound hunters in that management unit.

Houndsmen participation is likely higher than still hunters due to their greater awareness of the Bear Cooperator Program. Since data collection began in 1969, NCWRC staff have worked closely with houndsmen in the collection biological samples, such as sex, weight, age and location of harvest. In addition, party leaders regularly collect biological samples from all bears harvested by their party and submit them to NCWRC staff at the end of the bear season. Houndsmen are also more visible to NCWRC roving check stations, and have more established hunt clubs, so NCWRC staff are able to identify houndsmen during the bear season. In contrast, still hunters are individuals that are more difficult to identify by NCWRC staff during the bear season. A portion of the still harvest is opportunistic to deer hunting; these hunters are not traditional bear hunters and less likely to be aware of the Bear Cooperator Program and other black bear monitoring efforts.

Method of Harvest

Prior to 2008, the WRC was able to track method of harvest only through information provided voluntarily by hunters when they submitted a premolar tooth for aging. In 2008, the big game registration system started requesting method of harvest from hunters registering their harvested bear on-line or via phone. . In 2009, the NCWRC requested information on method of take through all three registration systems. However, we refined the question on the big game cooperator sheets in 2010 to improve data collection; the question on method of take was changed to a "yes/no" question.

Use of dogs remains the primary method used to assist in harvesting bears in North Carolina (66% in 2015; Table 23). Since the big game registration system reflects all reported bear harvests, the data we collect voluntarily from bear hunters appears to be biased towards bear hunters using dogs, likely due to their awareness of the bear cooperator program. The reported harvest likely reflects the true method of harvest used by bear hunters in North Carolina.

Table 23. Method of harvest from voluntary tooth submission and from big game registration system, 1990-2015.

	Tooth Submission Data			Registered Harvest		
Season	Dog	Still	Unknown	Dog	Still	Unknown
1990	97%	0%	3%	N/A	N/A	N/A
1991	81%	17%	2%	N/A	N/A	N/A
1992	76%	22%	2%	N/A	N/A	N/A
1993	77%	22%	0.6%	N/A	N/A	N/A
1994	77%	23%	0.4%	N/A	N/A	N/A
1995	74%	24%	2%	N/A	N/A	N/A
1996	79%	20%	1%	N/A	N/A	N/A
1997	78%	20%	2%	N/A	N/A	N/A
1998	75%	24%	1%	N/A	N/A	N/A
1999	77%	21%	2%	N/A	N/A	N/A
2000	77%	23%	0.3%	N/A	N/A	N/A
2001	81%	17%	1%	N/A	N/A	N/A
2002	81%	17%	2%	N/A	N/A	N/A
2003	81%	17%	2%	N/A	N/A	N/A
2004	82%	16%	3%	N/A	N/A	N/A
2005	82%	16%	2%	N/A	N/A	N/A
2006	85%	13%	2%	N/A	N/A	N/A
2007	84%	14%	2%	N/A	N/A	N/A
2008[1]	87%	12%	0.6%	37%	25%	38%
2009[2]	84%	16%	0.5%	63%	36%	0.1%
2010	84%	15%	0.5%	69%	30%	0.1%
2011	88%	12%	0.0%	71%	29%	0.0%
2012	83%	16%	0.8%	68%	31%	0.1%
2013	82%	18%	0.1%	69%	31%	0.0%
2014	74%	24%	2.6%	68%	32%	0.0%
2015	73%	27%	0.6%	66%	34%	0.0%

[1]In 2008, the big game registration system started collecting information on method of hunting on-line and via telephone.
[2]In 2009, the big game registration system added method of harvest to the big game cooperator sheets.

Regional method of harvest: The majority of bears harvested in the CBMU and MBMU are by houndsmen, while most bears taken in the PBMU are by still hunters (Table 24). Still hunting of bears is more common in the CBMU and the PBMU, than in the MBMU. In 2009, 2011, 2013, and 2015 the percentage of bears taken by still hunters increased in the MBMU. This is likely due the low abundance of hard mast during these years; when there is a lack of hard mast, bears are more attracted to unnatural food sources, such as bait, and look for food over larger unfamiliar areas, making them more accessible to hunters.

Table 24. Method of harvest by bear management unit, based on 2009[1] through 2015 registered harvest.

	CBMU			MBMU			PBMU	
Year	**Still**	**Dog**	**Unknown**	**Still**	**Dog**	**Unknown**	**Still**	**Dog**
2009[1]	39%	59%	1.7%	33%	66%	0.3%	100%	0%
2010[2]	36%	64%	0.1%	15%	84%	0.3%	0%	0%
2011	31%	69%	0.1%	27%	73%	0.0%	100%	0%
2012	36%	64%	0.2%	24%	76%	0.0%	67%	33%
2013	33%	67%	0%	29%	71%	0.0%	50%	50%
2014	37%	63%	0.1%	14%	86%	0%	75%	25%
2015	37%	63%	0%	26%	74%	0%	90%	10%

[1]In 2009, the big game registration system started collecting information on method of hunting on all three registration methods (i.e. on-line, telephone, big game cooperator sheets).
[2] In 2010, method of harvest on the big game cooperator sheets was refined to improve data collection.

District and County method of harvest: While use of dogs is the primary method of bear harvest in most wildlife districts, still hunters took 85% and 89% of harvested bears in District 7 and District 5, respectively (Table 25). Of the remaining wildlife districts, District 9 had the highest percent of bears taken by houndsmen (82%; Table 25).

Table 25. Method of harvest by district, based on the 2015 registered harvest.

District	Dogs	Still	% Dogs	% Still
1	624	382	62%	38%
2	396	261	60%	40%
3	17	22	44%	56%
4	143	46	76%	24%
5	2	16	11%	89%
6	0	0	N/A	N/A
7	16	93	15%	85%
8	247	101	71%	29%
9	619	133	82%	18%
Statewide	2,064	1,054	66%	34%

During 2015, still hunters harvested 100% of the bears in 15 counties, while houndsmen harvested 100% of the bears in 1 county (Wilson County, n=2 bears, Table 26). Of the counties in which bear harvest occurred, houndsmen harvested the majority of the bears in 39 counties, both methods harvested bears in equal ratios in 6 counties, and still hunters harvested the majority of bears in 27 counties (Table 26). No harvest took place in 28 counties. Almost half of counties where still hunters took a majority of the bears occurred in the PBMU. In the counties where an equal ratio of methods (1:1) occurred for harvested bears, 5 of the 6 counties were in the CBMU. Five of 9 counties in which 90 to 100% of bears were harvested by houndsmen were in the MBMU (Macon, Jackson, Graham, Clay, Cherokee; Table 26). In the CBMU, Wilson (100%), Martin (96%), Pasquotank (93%) and Sampson counties (90%) had the highest percent of bears taken by houndsmen.

Table 26. Method of harvest by county, based on the 2015 registered harvest.

County	Still	Dog
Alamance	N/A[1]	N/A
Alexander	100%	0%
Alleghany	100%	0%
Anson	N/A[1]	N/A
Ashe	97%	3%
Avery	35%	65%
Beaufort	33%	67%
Bertie	27%	73%
Bladen	26%	74%
Brunswick	26%	74%
Buncombe	46%	54%
Burke	36%	64%
Cabarrus	N/A[1]	N/A
Caldwell	24%	76%
Camden	29%	71%
Carteret	44%	56%
Caswell	100%	0%
Catawba	100%	0%
Chatham	N/A[1]	N/A
Cherokee	6%	94%
Chowan	23%	77%
Clay	7%	93%
Cleveland	N/A[1]	N/A
Columbus	33%	67%
Craven	24%	76%
Cumberland	22%	78%
Currituck	50%	50%
Dare	100%	0%

County	Still	Dog
Davidson	N/A[1]	N/A
Davie	N/A[1]	N/A
Duplin	33%	67%
Durham	100%	0%
Edgecombe	50%	50%
Forsyth	N/A[1]	N/A
Franklin	67%	33%
Gaston	N/A[1]	N/A
Gates	31%	69%
Graham	8%	92%
Granville	75%	25%
Greene	50%	50%
Guilford	N/A[1]	N/A
Halifax	N/A[1]	N/A
Harnett	100%	0%
Haywood	12%	88%
Henderson	50%	50%
Hertford	23%	77%
Hoke	N/A[1]	N/A
Hyde	48%	52%
Iredell	N/A[1]	N/A
Jackson	8%	92%
Johnston	100%	0%
Jones	31%	69%
Lee	N/A[1]	N/A
Lenoir	58%	42%
Lincoln	N/A[1]	N/A
Macon	8%	92%
Madison	17%	83%
Martin	4%	96%
McDowell	22%	78%
Mecklenburg	N/A[1]	N/A
Mitchell	49%	51%
Montgomery	N/A[1]	N/A
Moore	N/A[1]	N/A
Nash	100%	0%
New Hanover	100%	0%
Northampton	50%	50%

County	Still	Dog
Onslow	35%	65%
Orange	N/A[1]	N/A
Pamlico	100%	0%
Pasquotank	7%	93%
Pender	42%	58%
Perquimans	60%	40%
Person	86%	14%
Pitt	34%	66%
Polk	89%	11%
Randolph	N/A[1]	N/A
Richmond	N/A[1]	N/A
Robeson	50%	50%
Rockingham	100%	0%
Rowan	N/A[1]	N/A
Rutherford	57%	43%
Sampson	10%	90%
Scotland	N/A[1]	N/A
Stanly	N/A[1]	N/A
Stokes	100%	0%
Surry	100%	0%
Swain	13%	88%
Transylvania	58%	42%
Tyrrell	46%	54%
Union	N/A[1]	N/A
Vance	100%	0%
Wake	N/A[1]	N/A
Warren	75%	25%
Washington	40%	60%
Watauga	65%	35%
Wayne	N/A[1]	N/A
Wilkes	79%	21%
Wilson	0%	100%
Yadkin	N/A[1]	N/A
Yancey	18%	82%

[1] N/A: Percent method of harvest not available because no bears were harvested in that county.

Sex Ratio by method of harvest and region: Statewide, a majority of bears harvested by all hunters were male (Table 27). During the 2015 season, still hunters in the CBMU harvested more females (51%) than males, whereas still hunters in the MBMU and PBMU harvested a greater ratio of males (Table 27). Typically, when mast is fair to poor in the MBMU, still hunters are likely to harvest a greater ratio of females than in years with good mast crop. This is due to the poor acorn crop causing bears to travel more extensively, making them more vulnerable to harvest and more likely to be attracted to artificial food sources. However, in 2015, despite a poor to fair mast crop, still hunters still maintained a bias for harvesting male bears. Houndsmen in all three bear management units showed greater selectivity for male bears than female bears (Table 27).

Table 27. Sex ratio by method of harvest based on the 2010 through 2015 registered harvest.

		CBMU		MBMU		PBMU		Statewide	
	Method	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
2010	**Dog**	68% (n=737)	32% (n=345)	62% (n=347)	38% (n=211)	0% (n=0)	0% (n=0)	66% (n=1,084)	34% (n=556)
	Still	52% (n=323)	48% (n=295)	73% (n=74)	27% (n=28)	0% (n=0)	0% (n=0)	55% (n=397)	45% (n=323)
2011	**Dog**	64% (n=706)	36% (n=394)	66% (n=564)	34% (n=295)	0% (n=0)	0% (n=0)	65% (n=1,271)	35% (n=689)
	Still	55% (n=278)	45% (n=224)	61% (n=191)	29% (n=120)	100% (n=1)	0% (n=0)	58% (n=469)	42% (n=344)
2012	**Dog**	63% (n=748)	37% (n=438)	59% (n=440)	41% (n=309)	100% (n=1)	0% (n=0)	61% (n=1,189)	39% (n=747)
	Still	51% (n=332)	49% (n=323)	63% (n=145)	37% (n=86)	100% (n=2)	0% (n=0)	54% (n=479)	46% (n=409)
2013	**Dog**	65% (n=781)	35% (n=419)	60% (n=512)	40% (n=339)	100% (n=2)	0% (n=0)	63% (n=1,295)	37% (n=758)
	Still	53% (n=307)	47% (n=273)	52% (n=185)	48% (n=171)	50% (n=1)	50% (n=1)	53% (n=493)	47% (n=445)
2014	**Dog**	62% (n=773)	38% (n=441)	57% (n=311)	43% (n=233)	60% (n=3)	40% (n=2)	61% (n=1,047)	39% (n=676)
	Still	53% (n=369)	47% (n=323)	68% (n=61)	32% (n=29)	87% (n=13)	13% (n=2)	56% (n=443)	44% (n=354)
2015	**Dog**	65% (n=771)	34% (n=405)	66% (n=585)	35% (n=297)	100% (n=4)	0% (n=0)	66% (n=1,360)	34% (n=702)
	Still	49% (n=344)	51% (n=357)	63% (n=199)	37% (n=118)	77% (n=27)	23% (n=8)	54% (n=570)	46% (n=483)

Sex ratio by method, district and county: In all 8 wildlife districts where bear harvest occurred, houndsmen harvested a higher ratio of male bears than female bears (Table 28). Still hunters widely varied in the sex ratio of the bear harvest among the 8 districts (13% to 54% female; Table 28). Houndsmen and still hunters harvested the highest ratio of males in Districts 5 and 7 (Table 28). The heavily skewed sex ratio of the harvest in these two districts is partly because male bears tend to comprise a greater majority of any recently expanded bear population. These districts have experienced expansions in occupied bear range within the last 10 years, whereas there have been long established bear populations in the remaining districts with a bear hunting season. Houndsmen harvested the highest ratio of females in District 8 (36% female), while still hunters harvested the highest ratio in District 2 (54% females) and District 4 (54% females).

Table 28. Sex ratio by method of harvest by district based on 2015 registered harvest.

	Dogs		Still		Dogs		Still		All Methods	
District	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	414	208	199	183	67%	33%	52%	48%	61%	39%
2	267	129	119	142	67%	33%	46%	54%	59%	41%
3	9	8	11	10	53%	47%	52%	48%	53%	47%
4	83	60	21	25	58%	42%	46%	54%	55%	45%
5	2	0	14	2	100%	0%	88%	13%	89%	11%
7	12	4	62	31	75%	25%	67%	33%	68%	32%
8	159	88	58	43	64%	36%	57%	43%	62%	38%
9	414	205	86	47	67%	33%	65%	35%	66%	34%

Table 29. Method of harvest by county and sex, based on the 2015 registered harvest.

	Still			Dog			Unknown		
	Male	Female	Total	Male	Female	Total	Male	Female	County total
Alamance	0	0	0	0	0	0	0	0	0
Alexander	0	1	1	0	0	0	0	0	1
Alleghany	5	3	8	0	0	0	0	0	8
Anson	0	0	0	0	0	0	0	0	0
Ashe	17	11	28	1	0	1	0	0	29
Avery	11	6	17	18	13	31	0	0	48
Beaufort	26	40	66	86	49	135	0	0	201
Bertie	7	15	22	34	25	59	0	0	81
Bladen	10	13	23	38	29	67	0	0	90
Brunswick	2	6	8	11	12	23	0	0	31
Buncombe	16	12	28	22	11	33	0	0	61
Burke	7	5	12	17	4	21	0	0	33
Cabarrus	0	0	0	0	0	0	0	0	0
Caldwell	8	4	12	25	14	39	0	0	51
Camden	8	10	18	28	17	45	0	0	63

	Still			Dog			Unknown		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**County total**
Carteret	7	9	16	18	2	20	0	0	36
Caswell	2	1	3	0	0	0	0	0	3
Catawba	1	0	1	0	0	0	0	0	1
Chatham	0	0	0	0	0	0	0	0	0
Cherokee	2	2	4	42	19	61	0	0	65
Chowan	2	1	3	7	3	10	0	0	13
Clay	1	1	2	12	15	27	0	0	29
Cleveland	0	0	0	0	0	0	0	0	0
Columbus	2	1	3	4	2	6	0	0	9
Craven	8	8	16	31	20	51	0	0	67
Cumberland	3	5	8	18	10	28	0	0	36
Currituck	11	9	20	9	11	20	0	0	40
Dare	1	1	2	0	0	0	0	0	2
Davidson	0	0	0	0	0	0	0	0	0
Davie	0	0	0	0	0	0	0	0	0
Duplin	2	3	5	7	3	10	0	0	15
Durham	1	0	1	0	0	0	0	0	1
Edgecombe	3	1	4	2	2	4	0	0	8
Forsyth	0	0	0	0	0	0	0	0	0
Franklin	1	1	2	1	0	1	0	0	3
Gaston	0	0	0	0	0	0	0	0	0
Gates	13	11	24	41	12	53	0	0	77
Graham	4	5	9	67	40	107	0	0	116
Granville	3	0	3	1	0	1	0	0	4
Greene	1	0	1	1	0	1	0	0	2
Guilford	0	0	0	0	0	0	0	0	0
Halifax	0	0	0	0	0	0	0	0	0
Harnett	1	0	1	0	0	0	0	0	1
Haywood	9	5	14	79	24	103	0	0	117
Henderson	10	4	14	8	6	14	0	0	28
Hertford	4	7	11	15	22	37	0	0	48
Hoke	0	0	0	0	0	0	0	0	0
Hyde	63	48	111	79	42	121	0	0	232
Iredell	0	0	0	0	0	0	0	0	0
Jackson	2	3	5	33	25	58	0	0	63
Johnston	1	1	2	0	0	0	0	0	2
Jones	14	22	36	56	24	80	0	0	116
Lee	0	0	0	0	0	0	0	0	0

	Still			Dog			Unknown		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**County total**
Lenoir	7	8	15	6	5	11	0	0	26
Lincoln	0	0	0	0	0	0	0	0	0
Macon	6	1	7	62	18	80	0	0	87
Madison	15	5	20	69	31	100	0	0	120
Martin	1	1	2	33	21	54	0	0	56
McDowell	5	13	18	37	26	63	0	0	81
Mecklenburg	0	0	0	0	0	0	0	0	0
Mitchell	13	5	18	12	7	19	0	0	37
Montgomery	0	0	0	0	0	0	0	0	0
Moore	0	0	0	0	0	0	0	0	0
Nash	1	0	1	0	0	0	0	0	1
New Hanover	1	0	1	0	0	0	0	0	1
Northampton	2	6	8	3	5	8	0	0	16
Onslow	8	9	17	22	10	32	0	0	49
Orange	0	0	0	0	0	0	0	0	0
Pamlico[1]	31	22	53	0	0	0	0	0	53
Pasquotank	1	0	1	10	3	13	0	0	14
Pender	9	13	22	28	3	31	0	0	53
Perquimans	2	4	6	2	2	4	0	0	10
Person	5	1	6	1	0	1	0	0	7
Pitt	5	8	13	12	13	25	0	0	38
Polk	8	0	8	1	0	1	0	0	9
Randolph	0	0	0	0	0	0	0	0	0
Richmond	0	0	0	0	0	0	0	0	0
Robeson	1	0	1	0	1	1	0	0	2
Rockingham	3	0	3	0	0	0	0	0	3
Rowan	0	0	0	0	0	0	0	0	0
Rutherford	7	1	8	3	3	6	0	0	14
Sampson	2	0	2	12	6	18	0	0	20
Scotland	0	0	0	0	0	0	0	0	0
Stanly	0	0	0	0	0	0	0	0	0
Stokes	6	2	8	0	0	0	0	0	8
Surry	7	1	8	0	0	0	0	0	8
Swain	2	1	3	11	10	21	0	0	24
Transylvania	11	8	19	8	6	14	0	0	33
Tyrrell	65	55	120	114	29	143	0	0	263
Union	0	0	0	0	0	0	0	0	0

	Still			Dog			Unknown		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**County total**
Vance	1	0	1	0	0	0	0	0	1
Wake	0	0	0	0	0	0	0	0	0
Warren	2	1	3	1	0	1	0	0	4
Washington	21	21	42	42	21	63	0	0	105
Watauga	12	5	17	6	3	9	0	0	26
Wayne	0	0	0	0	0	0	0	0	0
Wilkes	15	8	23	5	1	6	0	0	29
Wilson	0	0	0	2	1	3	0	0	3
Yadkin	0	0	0	0	0	0	0	0	0
Yancey	6	9	15	47	21	68	0	0	83
Total	**570**	**483**	**1053**	**1360**	**702**	**2062**	**0**	**0**	**3115**

[1] Pamlico: Session law 1983, c. 448 prohibits taking bears with dogs.

Weights of Sampled Harvested Bears

Mortality information from harvested bears, including the collection of premolar teeth and reproductive tracts, began in 1969. NCWRC staff continue to work closely with bear hunters to collect biological data from harvested bears. Age and sex information gathered from biological samples are used for analyzing the age structure of the harvested population and for population reconstruction modeling.

During the 2015 hunting season, one bear was sampled that were weighed over 700 lbs. (Table 30). This male bear was harvested in Hyde County during the December season and weighed 757 lbs. It qualified as a top ten bear by weight in North Carolina (#6; Table 31). Hyde County has produced the 2nd and 3rd largest bears in North Carolina, and 5 of the top ten bears have been harvested in Hyde County. Since 1976, 20 harvested bears that were sampled by NCWRC staff weighed over 700 lbs. (Table 32).

Table 30. Number of harvested bears sampled that weighed greater than 400 lbs. during the 2015 hunting season.

	2015 Hunting Season			
Weight Category	**Statewide Total**	**MBMU**	**CBMU**	**PBMU**
400-499 lbs	125	18	106	1
500-599 lbs	77	4	73	0
600-699 lbs	19	1	18	0
700-799 lbs	1	18	1	0

Table 31. Top ten male bear weights recorded by NCWRC from 1976 through 2015.

Rank	Year	County	Region	Type of Hunt	Weight	Sex	Age
1	1998	CRAVEN	C	DG	880	M	10.75
2	2014	HYDE	C	DG	784	M	9.75
3	2014	HYDE	C	ST	782	M	9.75
4	2012	WASHINGTON	C	DG	780	M	6.75
4	2013	CRAVEN	C	DG	780	M	8.75
5	2009	HYDE	C	ST	760	M	6.75
6	2016	HYDE	C	DG	757	M	8.75
7	2007	DARE	C	ST	752	M	7.75
8	2001	GATES	C	DG	742	M	9.75
9	2001	BEAUFORT	C	DG	740	M	13.75
10	2012	HYDE	C	DG	735	M	11.75

Table 32. Number of harvested male bears sampled that weighed greater than 500 lbs., 1976 through 2015, North Carolina.

Weight Category	Number of Bears	MBMU	CBMU	PBMU
> 500 lbs.	1,014	44	969	1
> 600 lbs.	248	6	242	0
> 700 lbs.	20	0	20	0
> 800 lbs.	1	0	1	0

Table 33. Mean age and weight for harvested bears sampled during the 2015 season from North Carolina.

			Mean Age (yr.)		Mean Weight (lbs.)	
Season	**Region**	**Hunting Method**	**Male**	**Female**	**Male**	**Female**
2015	CBMU	Still Hunters	5.0	5.2	331	182
		Houndsmen	4.3	5.6	329	216
		All Hunters	*4.5*	*5.4*	330	204
2015	MBMU	Still Hunters	2.6	4.6	230	198
		Houndsmen	3.3	5.3	224	178
		All Hunters	*3.2*	*5.2*	225	181
2015	PBMU	Still Hunters	2.1	3.1	275	228
		Houndsmen	0.75	N/A	120	N/A
		All Hunters	*2.0*	*3.1*	259	228
2006-2015 (10-yr. average)	CBMU	Still Hunters	5.1	5.2	349	183
		Houndsmen	4.5	5.2	331	210
		All Hunters	*4.6*	*5.2*	*334*	*203*
2006-2015 (10-yr. average)	MBMU	Still Hunters	3.2	4.8	232	185
		Houndsmen	3.6	5.4	217	169
		All Hunters	*3.6*	*5.3*	*218*	*170*
2006-2015 (10-yr. average)	PBMU	Still Hunters	2.3	2.8	254	228
		Houndsmen	4	4.8	258	224
		All Hunters	*2.6*	*3.4*	*255*	*226*

Overall, both male and female bears sampled in the CBMU during the 2015 hunting season weighed more, on average, than bears in the MBMU (All hunters; Table 33). The mean weight of male bears in the CBMU was 115 lbs. and 71 lbs. heavier than male bears in the MBMU and PBMU, respectively (Table 33). This difference in weight between bears in the bear management units is expected as bears in the MBMU are dependent on availability of natural food sources (i.e., soft and hard mast) that fluctuate annually in abundance, which can limit how much weight they can gain. In addition, natural food sources in the MBMU are only available during late spring through fall. The opposite occurs in the CBMU; not only are food sources (e.g., soft mast, hard mast, agricultural crops) relatively stable from year to year, but these food sources are available during a longer period of time during the year, due to the longer growing season. Much of the PBMU has a recently expanded bear population, in which younger, thus smaller, male bears will more likely comprise the population and the harvest. However, submission rates were low in the PBMU (41%, n=16), so interpretation of weight results is limiting.

For the 2015 season, females sampled from houndsmen were heavier than females sampled from still hunters in the CBMU (Table 33). The opposite occurred in the MBMU, where lighter females were sampled from houndsmen vs. still hunters. Weights of males sampled from both still hunters and houndsmen were similar in the CBMU and the MBMU. Limited interpretation should be given to these results, since we are unable to sample all harvested bears and submission rates from still hunters remain

lower than houndsmen in both the CBMU and MBMU (Table 20). Still hunters, and hunters in general, are more likely to provide information on larger bears vs. smaller bears.

MBMU weights: The average ($\bar{x}$) weight of harvested male bears sampled in the MBMU has varied over the past 16 years (blue bars; Figure 14). The average weight of male bears sampled was lowest in 2010 ($\bar{x}$=182 lbs.) and highest in 2002 ($\bar{x}$=236 lbs.). In 2015, the average weight of male bears sampled was 225 lbs., a significant increase from the 2014 season ($\bar{x}$=198 lbs.; $p<0.05$). A contributor to the higher weights of harvested male bears during the 2015 season is that the good mast crop in fall 2014 likely contributed to bears being in better nutritional condition during 2015. The 2014 fall mast crop was the 2nd highest since the NCWRC started conducting mast surveys in 1983.

Unlike harvested MBMU male bears, the average ($\bar{x}$) weight of harvested female bears sampled in the MBMU has remained fairly stable over the past 16 years (red bars; Figure 14), with weight varying by no more than 25 lbs. during this time period. The average weight of female bears was lowest in 2011 ($\bar{x}$=157 lbs.) and highest in 2012 ($\bar{x}$=182 lbs.), which was a significant difference in weight ($p<0.05$). In 2015, the average weight of harvested female bears was 181 lbs., a slight increase from the 2014 and 2013 seasons, but not significant. But the 2015 sampled weight for females was the 2nd highest sampled weight since 2000, and was significantly higher than several previous seasons, likely reflecting the good mast crop in fall 2015, which contributed to bears being in better nutritional condition during 2015. The overall stability in female weights likely reflects hunter selectivity and the fact that female bears are limited in size, due to variation in natural food supplies and the energetic demands of raising cubs.

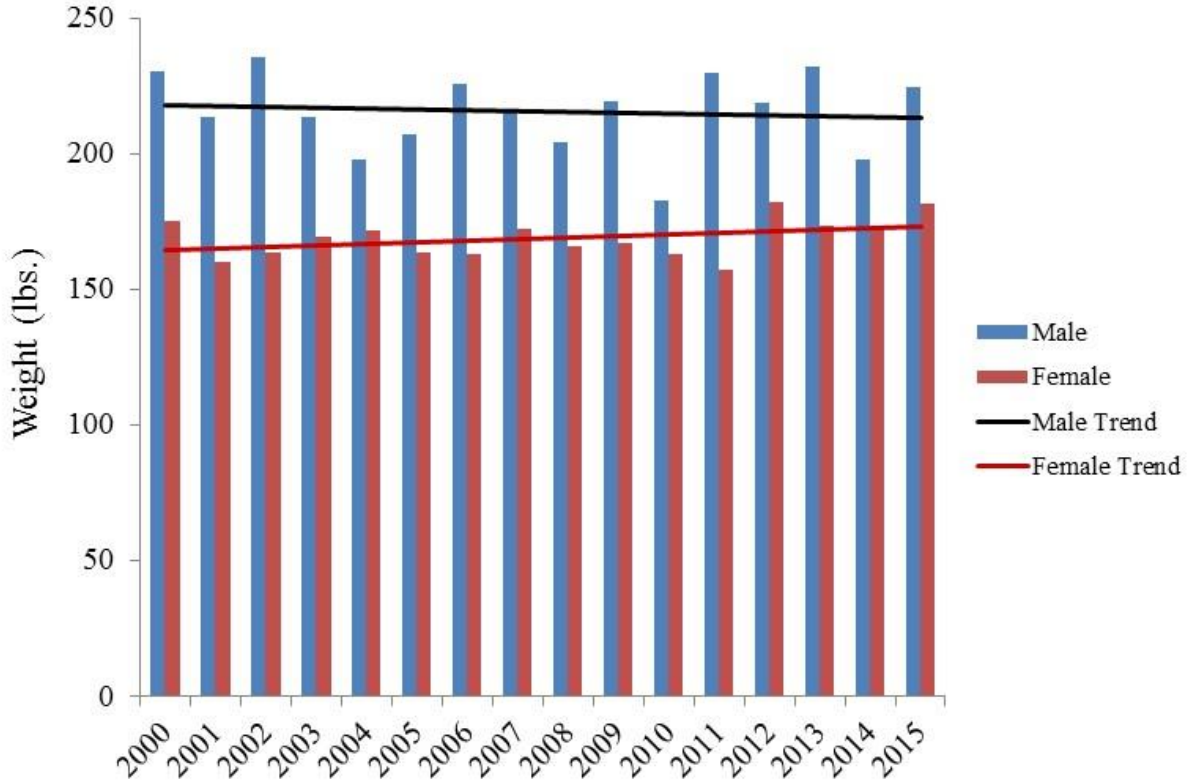


Figure 14. Average weight of harvested male and female bears sampled in the MBMU, 2000-2015.

CBMU Weights: From 2000 through 2015, average ($\bar{x}$) weights of harvested male bears sampled in the CBMU remained fairly stable (blue bars; Figure 15), likely reflecting year-round stable food resources (e.g., hard mast, agricultural crops). However, in 2008 the average weight of harvested male bears declined to 309 lbs., which was the lowest average weight recorded during the past 16 years. The highest average weights for harvested males occurred during the 2006 ($\bar{x}$=354 lbs.) and 2012 ($\bar{x}$=352 lbs.) seasons. In 2015, the average weight of harvested male bears sampled was 330 lbs., which was similar to the sampled weights from the 2014 season ($\bar{x}$=329 lbs., Figure 15).

The average ($\bar{x}$) weight of harvested female bears sampled in the CBMU has also remained fairly stable over the past 16 years, ranging from $\bar{x}$=189 lbs. to $\bar{x}$=212 lbs. (red bars; Figure 15). The heaviest average weight occurred during the 2004 and 2009 seasons ($\bar{x}$=212 lbs.). In 2015, the average weight of female bears sampled was 204 lbs., a slight increase from the 2013 and 2014 seasons (209 lbs. and 205 lbs., respectively; Figure 15).

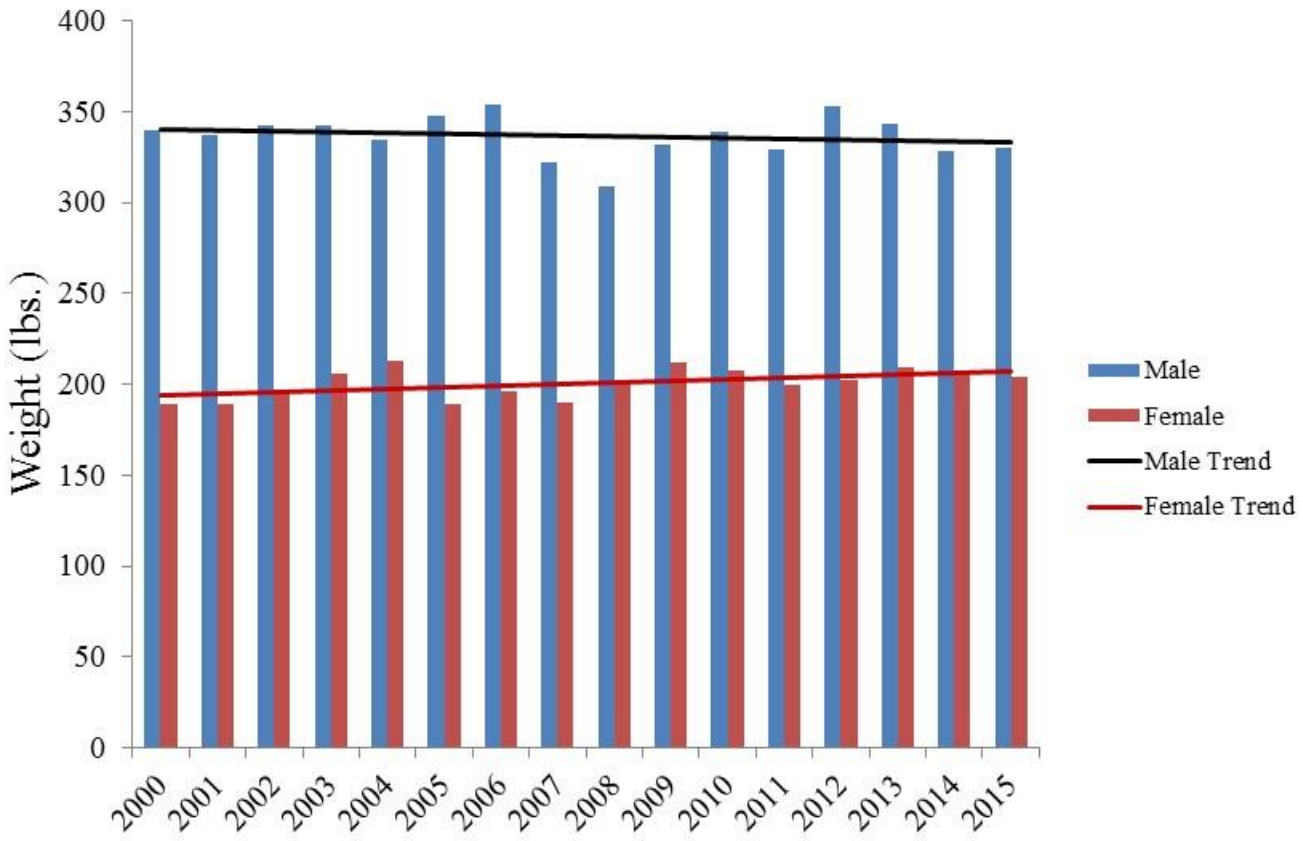


Figure 15. Average weight of harvested male and females bears sampled in the CBMU, 2000-2015.

Ages of Sampled Harvested Bears

During the 2015 bear hunting seasons, the oldest bears harvested were a male and female bear that were 18.75 (425 lbs.) and 22.75 years old (250 lbs.); both bears were harvested in the CBMU by houndsmen. The oldest bear harvested in North Carolina was a 26.75 year old female bear taken in 2003 by a still hunter in the MBMU (Table 34). The oldest male bears harvested in North Carolina were both 23.75 years old and taken in the CBMU in 2005 and 2013 (Table 34). The oldest male bear taken in the MBMU was 22.75 years old harvested by houndsmen in 1969.

Table 34. Top five bear ages, based on sampled harvest, recorded by NCWRC from 1969 through 2015.

Rank	Year	County	Region	Type of Hunt	Sex	Age	Weight
1	2003	McDowell	MBMU	ST	F	26.75	200
2	2011	Beaufort	CBMU	ST	F	24.75	180
3	2005	Bertie	CBMU	ST	M	23.75	460
3	2009	Chowan	CBMU	DG	F	23.75	NA
3	2013	Chowan	CBMU	DG	F	23.75	150
3	2003	Haywood	MBMU	DG	F	23.75	NA
3	2013	Hyde	CBMU	ST	M	23.75	545
3	1998	Madison	MBMU	DG	F	23.75	NA
3	2005	McDowell	MBMU	DG	F	23.75	100
3	2005	Pamlico	CBMU	ST	F	23.75	275
4	2015	Bladen	CBMU	DG	F	22.75	250
4	1969	Graham	MBMU	DG	M	22.75	NA
4	2000	Graham	MBMU	DG	F	22.75	NA
4	2009	Macon	MBMU	DG	F	22.75	140
5	2013	Bertie	CBMU	DG	F	21.75	285
5	2011	Hyde	CBMU	ST	M	21.75	320
5	1990	Onslow	CBMU	Unknown	F	21.75	200
5	1995	Tyrrell	CBMU	ST	F	21.75	NA
5	1992	Yancey	MBMU	DG	F	21.75	NA

Table 35. Number of harvested bears sampled that were greater than 15 years old, 1969 through 2015, North Carolina.

Age (yrs.)	Number of Bears	MBMU	CBMU
15.75	108	24	84
16.75	60	16	44
17.75	45	16	29
18.75	20	4	16
19.75	17	5	12
20.75	20	3	17
21.75	5	1	4
22.75	4	3	1
23.75	9	4	5
24.75	1	0	1
26.75	1	1	0

CBMU Ages: From 2005 through 2009, the average ($\bar{x}$) age of harvested male bears sampled in the CBMU declined from $\bar{x}$=5.3 years old to $\bar{x}$=4.2 years old (blue bars; Figure 16). Since 2009, the average age of male bears harvested has slightly increased and varied, reaching $\bar{x}$=5.0 years old during the 2013 season. During the 2015 season, the average age of sampled males was 4.5 years old.

From 2005 through 2015, the average ($\bar{x}$) age of harvested female bears sampled in the CBMU has varied significantly, ranging from 4.8 yrs. old to 7.1 yrs. old (red bars; Figure 16). Average age of female bears peaked in 2003 ($\bar{x}$=7.1 yrs. old) and from the 2009 season through the 2012 season, female age at harvest declined from $\bar{x}$=6.0 yrs. old to $\bar{x}$=4.8 yrs. old (Figure 16). However, the average age of females sampled increased to $\bar{x}$=5.4 yrs. old during the 2015 season (Figure 16).

MBMU Ages: There has been variation in the average ($\bar{x}$) age of harvested male bears over the past 11 years, likely due to annual changes in hard mast abundance, which heavily influences harvest pressure (blue bars; Figure 17). The average age harvested was lowest during the 2015 seasons ($\bar{x}$=3.2 yrs. old), and highest during the 2011 and 2013 ($\bar{x}$=4.0 yrs. old) seasons. The average age of harvested male bears sampled during the 2015 season ($\bar{x}$=3.2 yrs. old) was significantly lower than the 2011, 2012, and 2013 seasons ($p \leq 0.05$).

The average ($\bar{x}$) age of harvested female bears sampled has also varied significantly from 2005 through 2015 (red bars; Figure 17). As with males in the MBMU, this variation is likely due to annual changes in hard mast abundance, which heavily influences harvest pressure. The average age harvested was lowest during the 2001 season ($\bar{x}$=4.1 yrs. old) and highest during the 2011 season ($\bar{x}$=6.2 yrs. old). The average age of harvested female bears sampled during the 2015 season was $\bar{x}$=5.2 yrs. old (Figure 17).

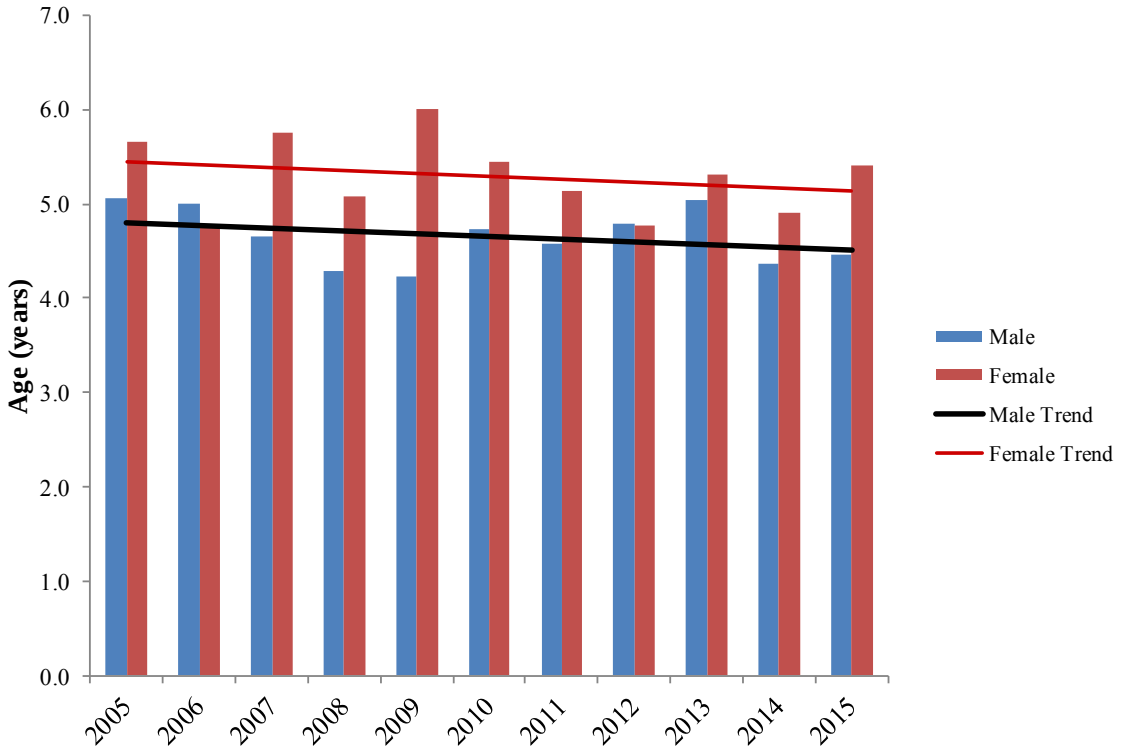


Figure 16. Average age of harvested male and female bears sampled in the CBMU, 2005-2015.

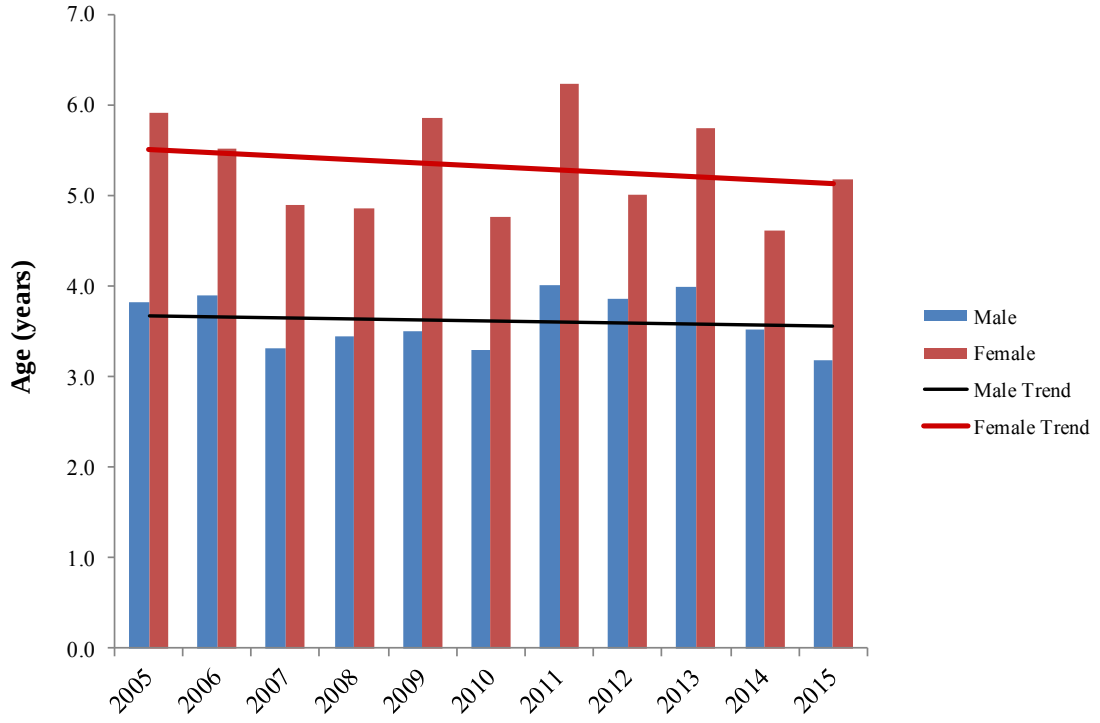


Figure 17. Average age of harvested male and female bears sampled in the MBMU, 2005-2015.

Population Estimates

Our bear population estimates and population growth rates are based on a population reconstruction model which relies on biological data collected voluntarily from harvested bears. This model reconstructs the age structure of the bear population three years prior to when the biological data is collected. For example, biological data collected during the 2015 harvest season reconstructs the size of the bear population in 2012 (Figure 18). Therefore, impacts of harvest on the bear population are not known until three years after any regulatory change has occurred. Because of this lag time, caution should be taken in setting specific harvest levels for bears until a more robust population model can be identified and developed. In addition, population reconstruction is sensitive to changes in harvest levels, so population trends may follow harvest trends (Figure 19). Lastly, population reconstruction relies on the assumption that the sampled harvest reflects the actual harvest (e.g., % younger bears in the harvest equals % younger bears in sampled harvest). Anecdotal evidence indicates the sampled harvest is biased towards older bears, because hunters are less interested in receiving age results from younger bears (e.g., yearlings, subadults). Other indices, such as variations in the number of bear hunters, hunter effort and hunter success rates, can be used to monitor impacts of harvest and regulatory changes on the bear population. These indices can also be used to verify population trends observed in the population reconstruction model. Starting in July 1, 2014, the NCWRC implemented a bear stamp that will assist in monitoring these indices on an annual basis.

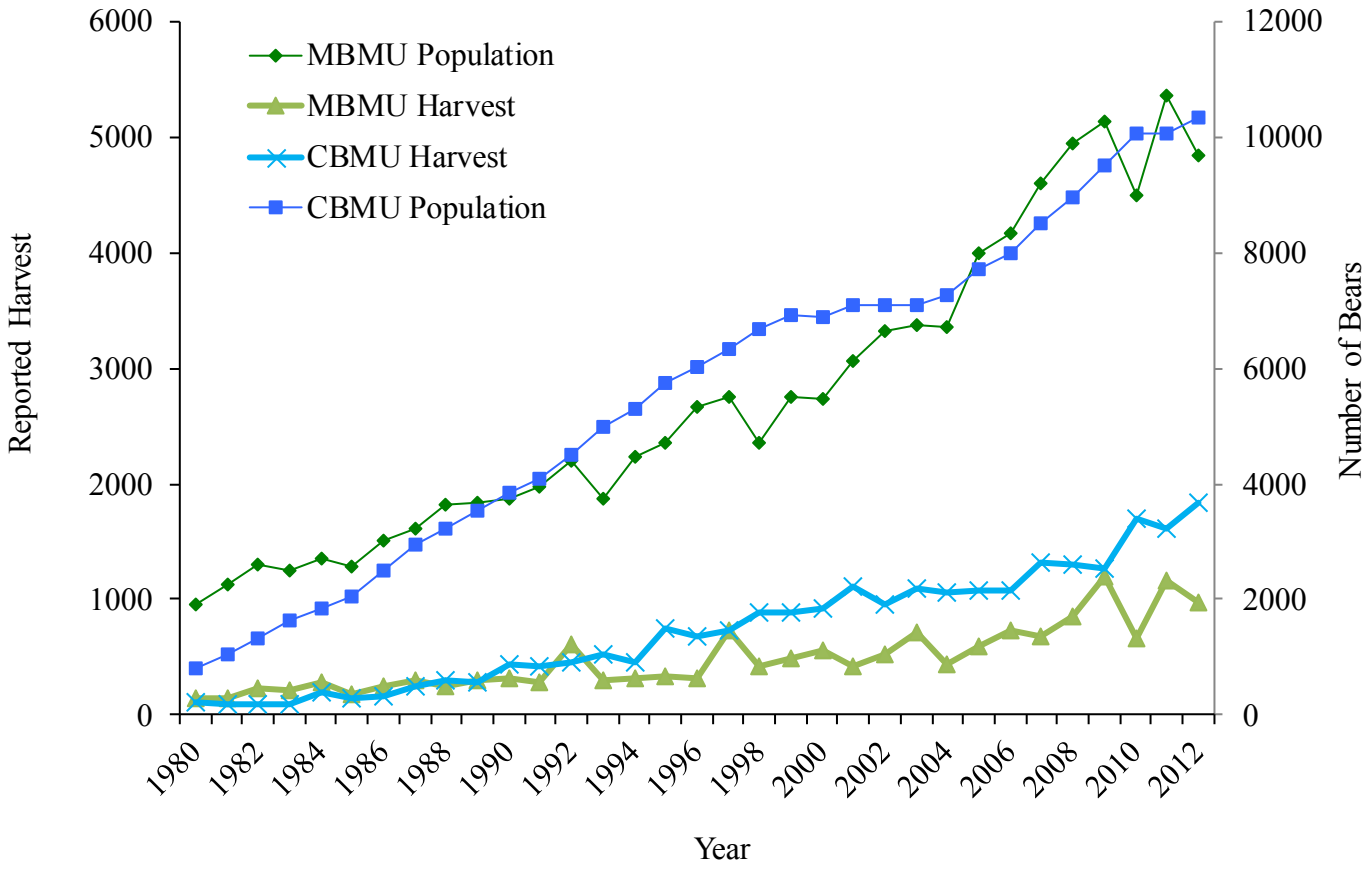


Figure 18. Estimated and projected black bear population in North Carolina, 1980-2012.

Based on the population reconstruction model, the bear population was estimated to be 4,850 bears in the MBMU and 10,358 bears in the CBMU during 2012 (Figure 18). These estimates do not include the bear populations that live on designated bear sanctuaries and other lands in which harvest does not occur (e.g., Asheville Watershed, Pocosin Lakes National Wildlife Refuge). In addition, submission rates from District 7, which comprises 11 counties in the MBMU, is relatively low, so the model will underestimate the population in the MBMU as a result. Thus, these population estimates are likely conservative. Using estimates of population growth rates, as well as conservative bear population estimates on sanctuaries, it is projected that in 2015, there are approximately 5,776 bears in the MBMU and 13,459 bears in the CBMU. Combining the CBMU and the MBMU there are an estimated 19,234 bears in North Carolina. Currently, we are unable to estimate the number of bears in the PBMU.

Non-Harvest Mortality

Human-induced mortality is the greatest source of black bear mortality in North Carolina (Figure 19). Hunting remains the primary cause of mortality in black bears, with vehicle collisions being the second leading cause of mortality.

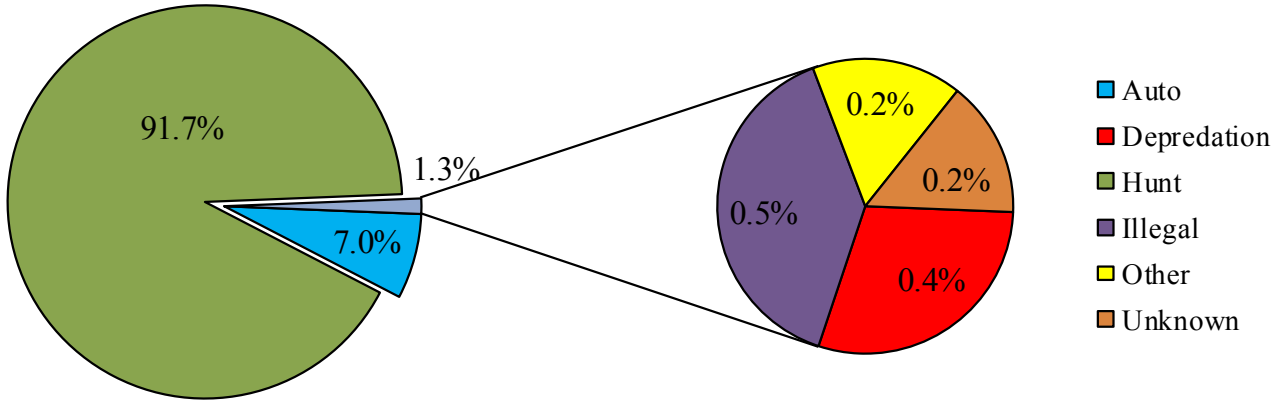


Figure 19. Causes of mortality among bears sampled by NCWRC from 1969 through 2015.

During 2015, there were 296 non-harvest mortalities in North Carolina (Table 36); 86% of these mortalities were from vehicle collisions. Vehicle-caused mortalities increased 31% from the prior year and was the 2nd highest number on record (n=273; Figure 20). Seventy-three percent of vehicle-caused mortalities occurred in the CBMU during 2015 (Figure 21), likely reflecting the higher bear population and number of highways in that region. A majority of vehicle-caused mortalities occur in October, followed by November and June (Figure 22; Figure 23). The increase in the number of roadkills that occur in June is primarily due to increased movements by younger bears; when the female's offspring are just over a year old, they will separate from their mother sometime after den emergence (late April through mid-June) and disperse until they establish a home range. Male yearlings and subadults tend to travel further from their natal home range than females, thus they comprise the majority of roadkills (Figure 23 and Figure 24).

The increases in roadkills that occur in October and November is due to increased travel by both male and female bears in search of foods (Figure 22; Figure 23). During fall, black bears must consume mass amounts of food to prepare their body for winter, when they must rely on their body fat for nutrition, maintenance, production of cubs and lactation. The need to find foods in fall in order to have adequate body fat for the lactation and the production of cubs is likely the main reason female adults (>3 years old) comprise the majority of roadkilled female bears (Figure 25).

Table 36. Non-harvest mortalities by district during 2015.

District	Vehicle	Depredation	Illegal	Other	Unknown	Total
1	120	16	2	2	0	140
2	45	0	2	0	1	48
3	6	0	0	0	0	6
4	15	0	0	0	0	15
5	1	0	0	0	0	1
6	0	0	0	0	0	0
7	3	0	0	0	1	4
8	11	1	2	0	1	15
9	54	6	4	2	1	67
Total	**255**	**23**	**10**	**4**	**4**	**296**

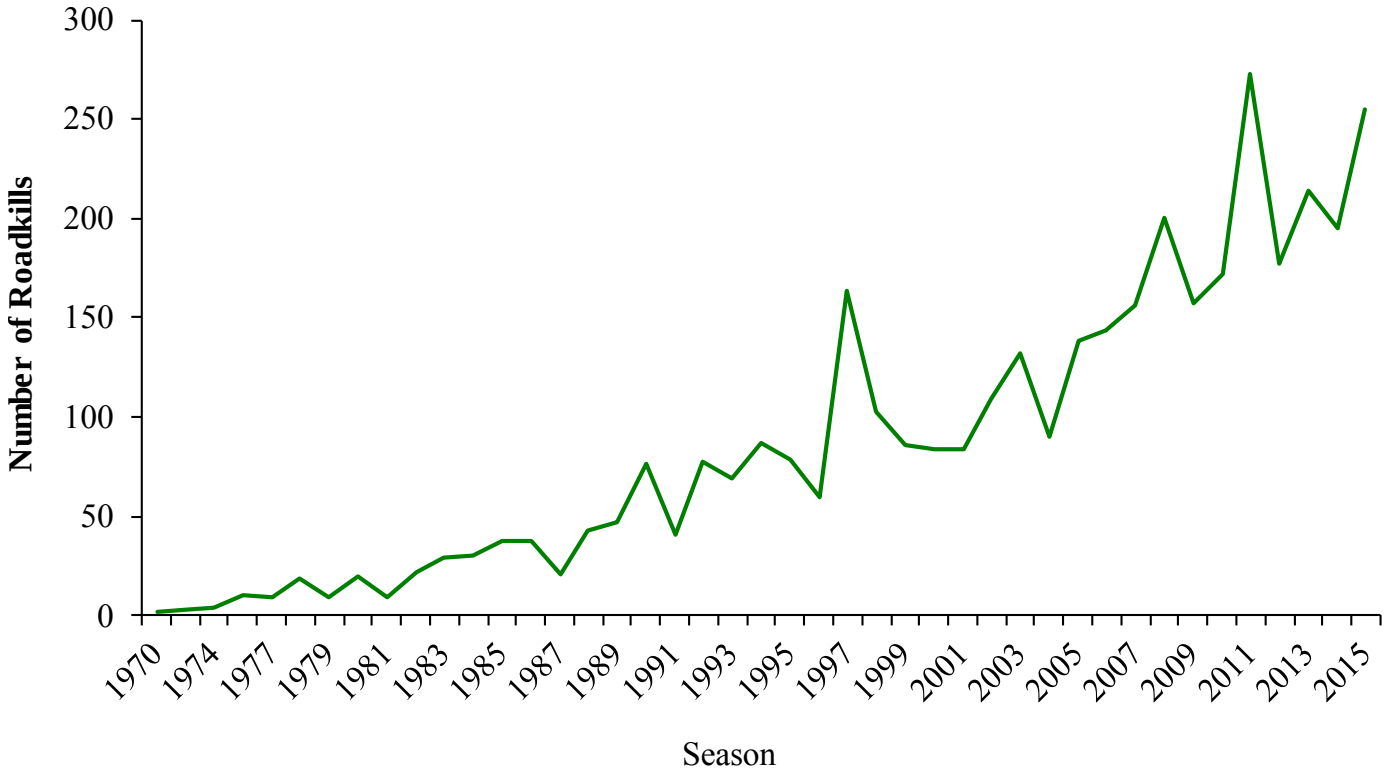


Figure 20. Total number of vehicle-caused black bear mortalities in North Carolina from 1970 through 2015.

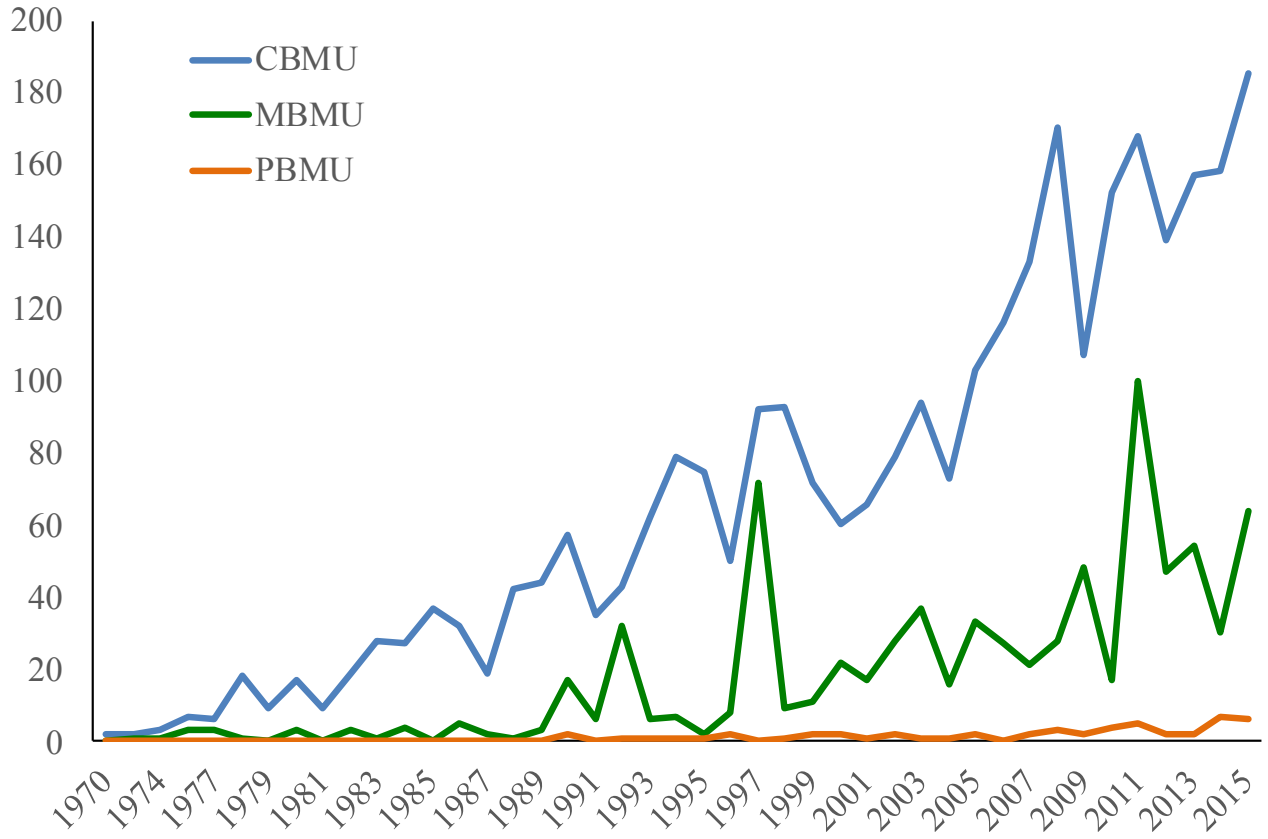


Figure 21. Total number of vehicle-caused black bear mortalities in North Carolina from 1970 through 2015 by bear management unit.

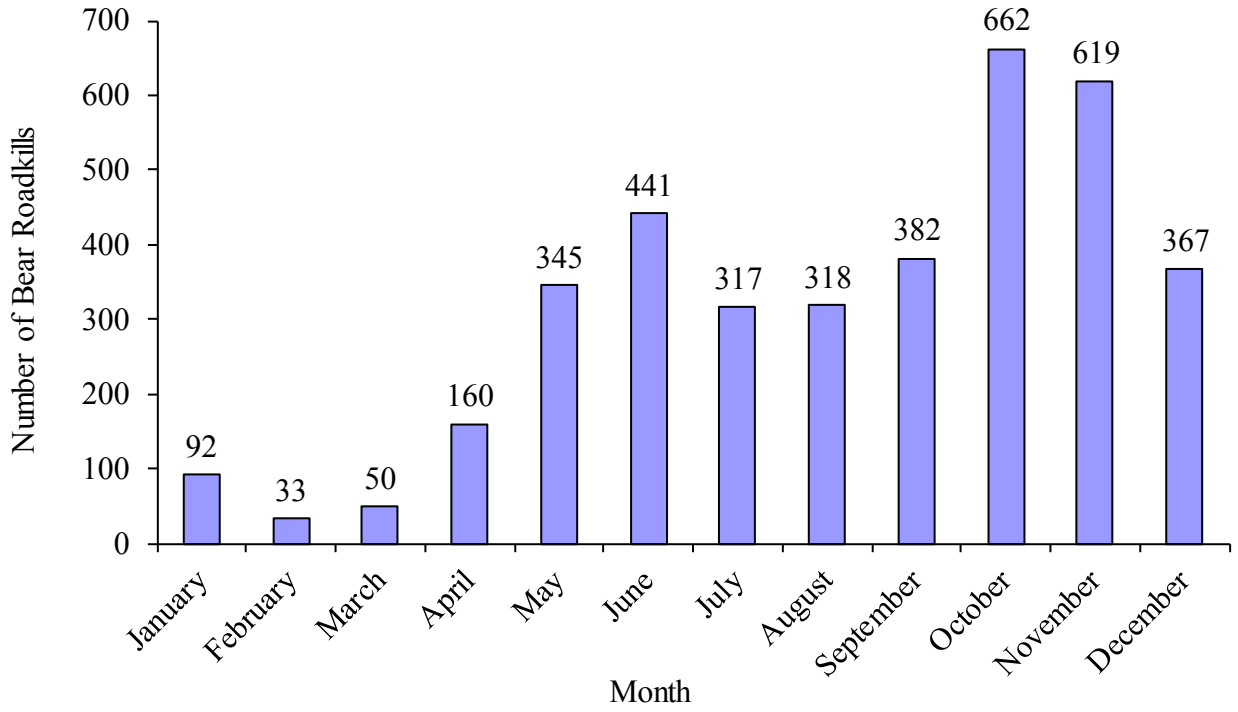


Figure 22. Number of vehicle-caused mortalities by month in North Carolina, 1970-2015.

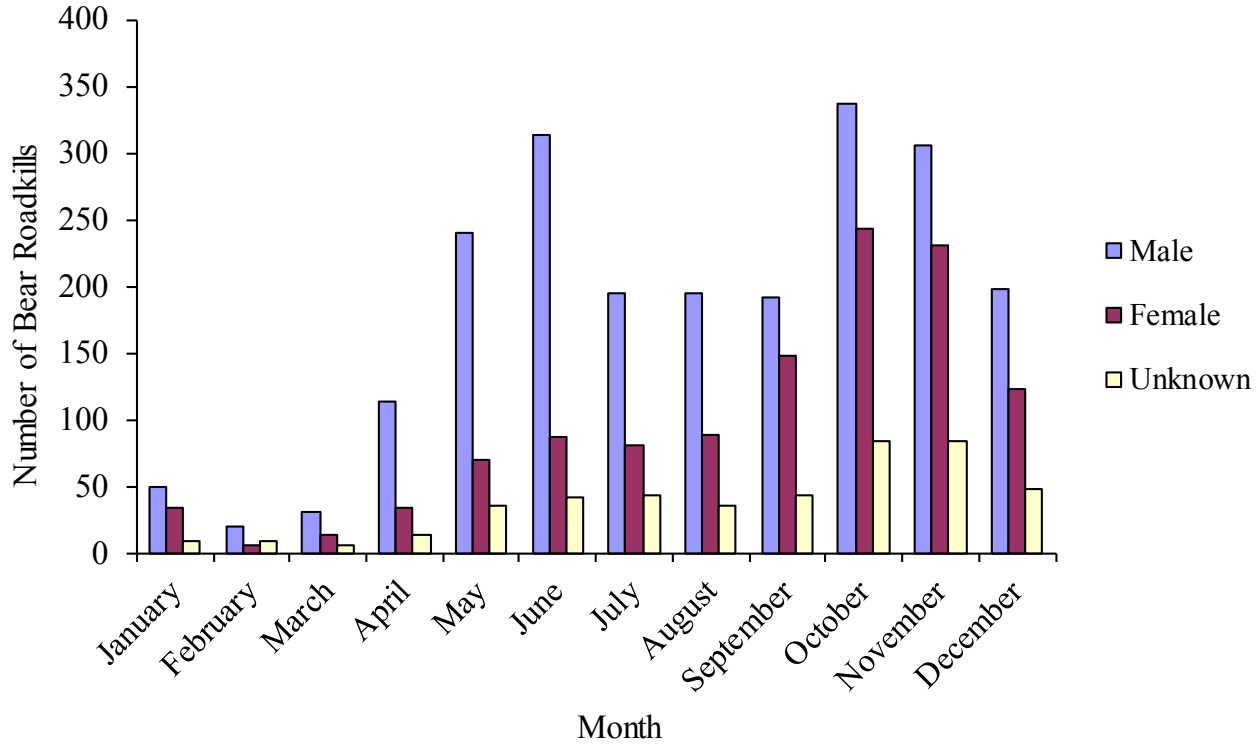


Figure 23. Number of vehicle-caused mortalities by month and by sex in North Carolina, 1970 through 2015.

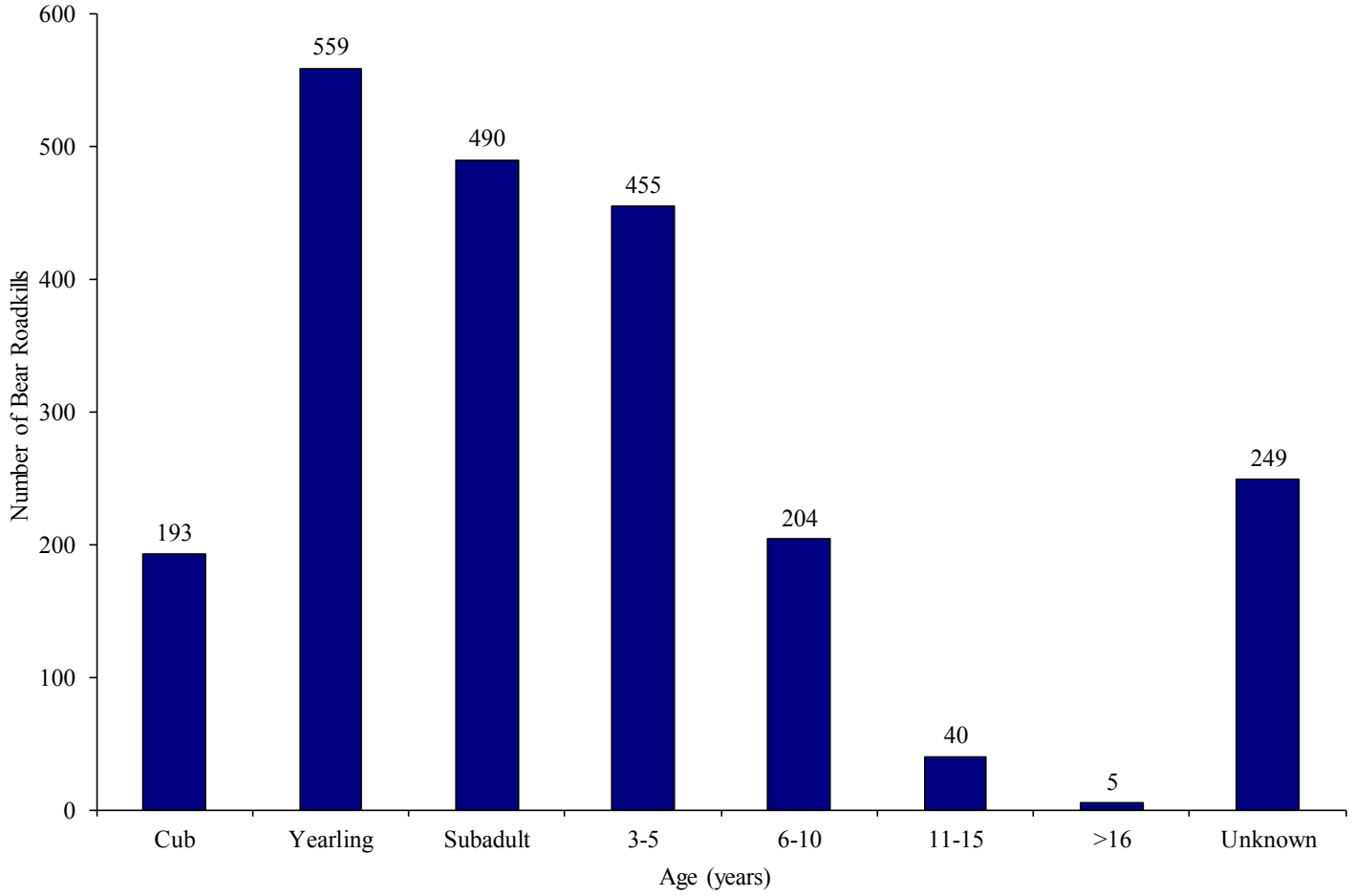


Figure 24. Number of vehicle-caused mortalities of male bears by age category in North Carolina, 1970-2015.

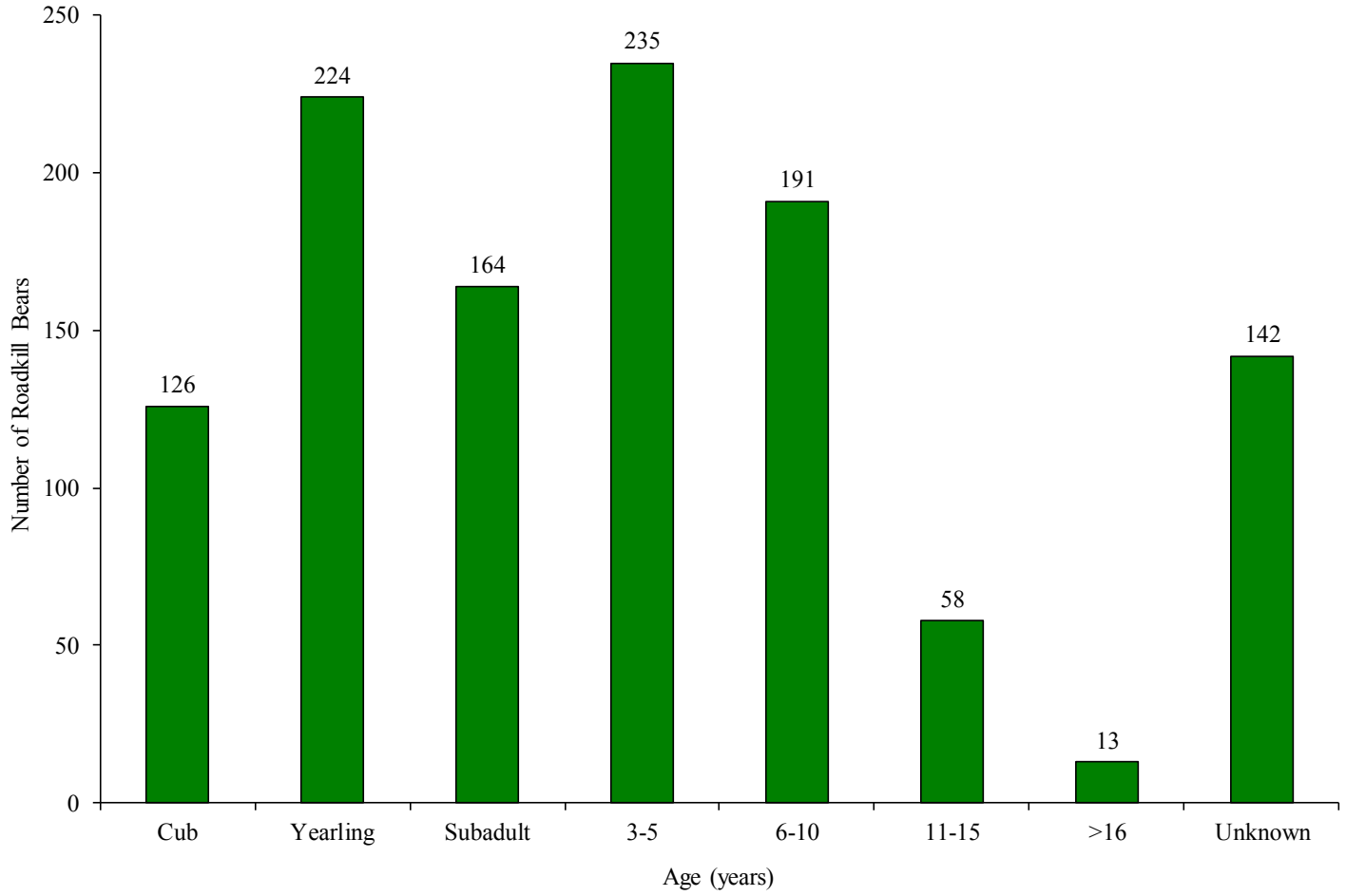


Figure 25. Number of vehicle-caused mortalities of female bears by age category in North Carolina, 1970-2015.

Human-Bear Interactions

Since 1993, WRC biological staff have recorded human-bear interaction reports (Table 37; Figure 26). A human-bear interaction includes both bear observations and conflicts with bears. This information not only aids in tracking bear population trends, behavior and occurrences, but helps the WRC predict when most interactions may occur (Figure 26, Figure 28, Figure 29) and identify common sources of conflict so that we can properly address human-bear interactions and provide effective technical guidance to resolve conflicts.

In 2015, observations and complaints about black bears increased 32%, from 511 in 2014 to 674 in 2015 (Table 37; Figure 26). This was the 2nd highest recorded number of human-bear interactions since the NCWRC started recording this data. The increase was likely due to a poor hard mast crop in the late summer and fall, as well as increased NCWRC staff that collect interaction data. As in past years, the MBMUhad the highest number of human-bear interactions (73% of total complaints), particularly District 9, which comprised 62% of all interactions (Table 37). The high number of human-bear interactions in District 9 is largely driven by the high human population in Buncombe County, coupled with high bear densities in this area, due to limited hunter access, topography that aids in bear dispersal, and the high amount of artificial food resources in and around Asheville (e.g., bird feeders, purposeful feeding).

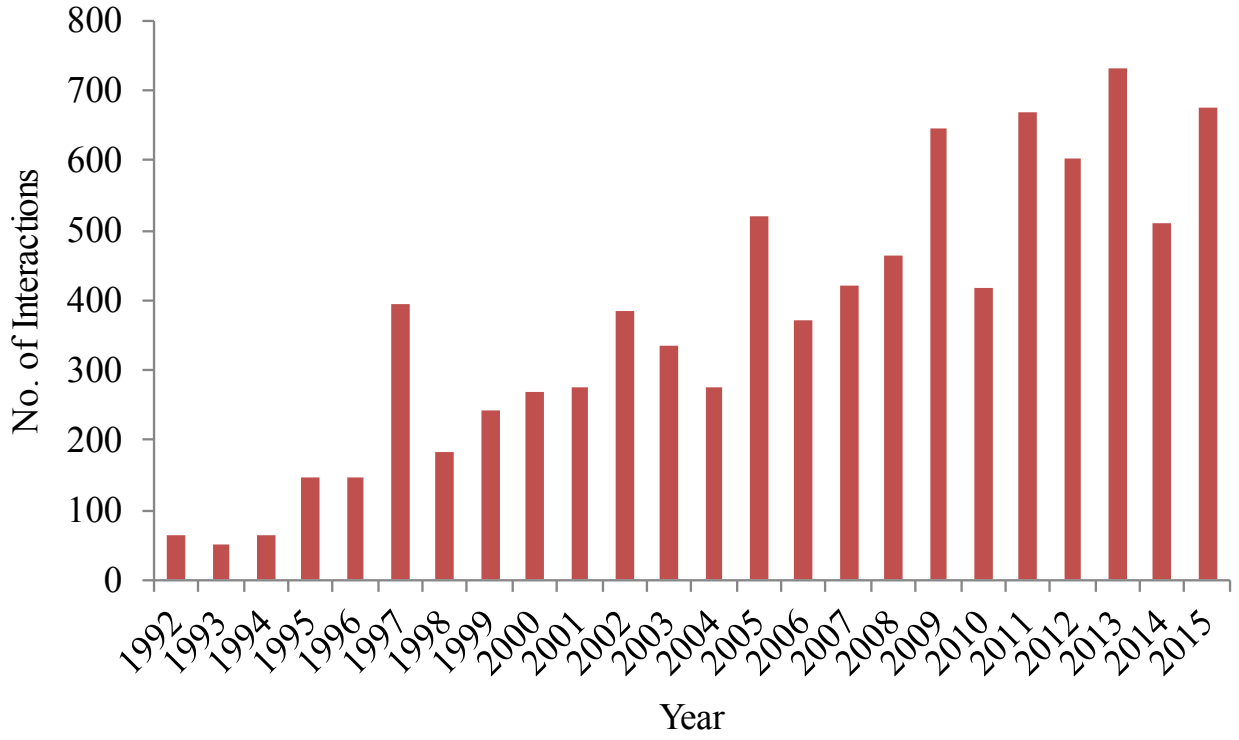


Figure 26. Number of human-bear interactions by year in North Carolina, 1993 through 2015.

Table 37. Number of Black Bear Complaints Received by District Biologists, 1993-2015.

District	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	12	14	22	7	9	7	2	6	9	17	30	31	21	44	46	48	53	48	58	70
2	12	16	7	8	3	10	10	8	12	19	14	9	3	27	33	22	25	52	49	40
3	2	6	4	4	2	5	3	0	16	12	13	13	12	22	11	17	14	6	5	6
4	6	7	3	5	6	5	6	7	8	6	5	15	5	9	9	11	17	11	11	14
5	0	0	0	1	4	9	10	8	11	16	12	7	13	11	6	14	12	14	12	18
6	0	0	0	0	1	0	0	0	0	0	4	4	3	3	0	8	3	15	6	6
7	11	21	29	32	4	7	13	15	12	16	29	27	30	34	15	29	24	46	36	39
8	15	37	20	27	40	18	55	82	40	51	37	41	70	91	63	97	70	74	62	63
9	101	296	107	160	201	216	278	226	184	397	232	271	302	405	234	425	385	465	272	419
Totals	**159**	**397**	**192**	**244**	**270**	**277**	**377**	**352**	**292**	**534**	**376**	**418**	**459**	**646**	**417**	**671**	**603**	**731**	**511**	**674**

North Carolina Wildlife Resources Commission District Boundaries

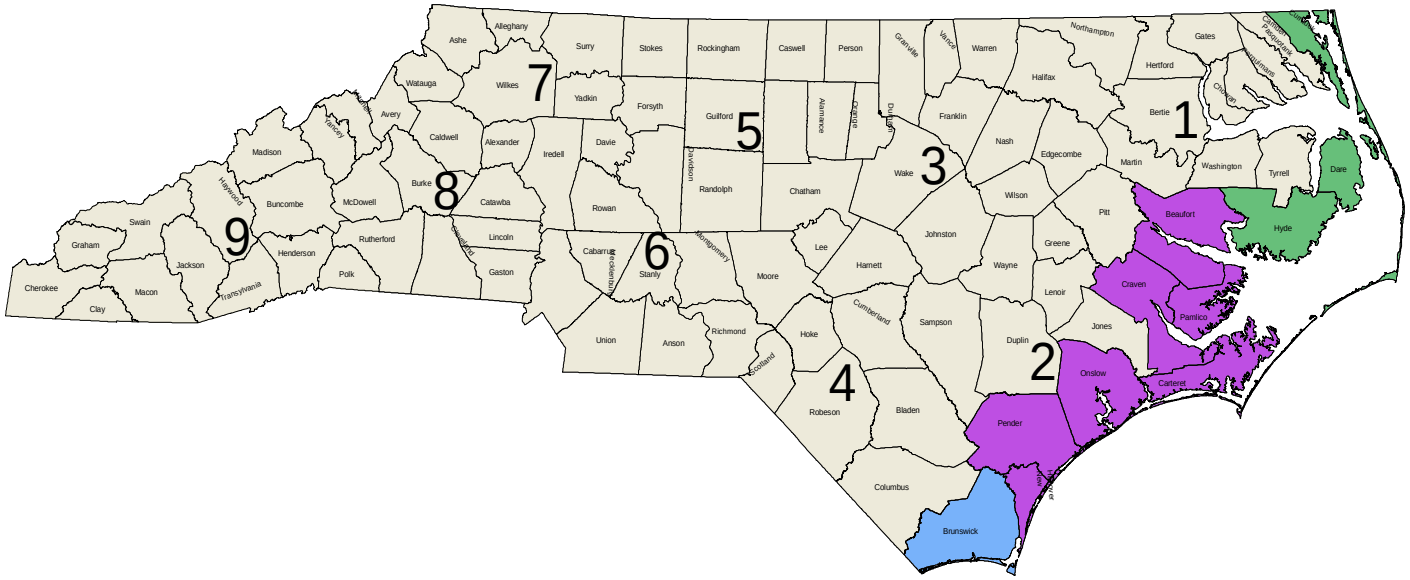


Figure 27. The nine wildlife districts of the North Carolina Wildlife Resources Commission.

Since 1993, a majority of observations and complaints about black bears occur in May through July (Figure 27), when bears are more active due to increased traveling to locate scarce spring natural food resources. Due to scarce natural foods, bears may become more attracted to unnatural foods, such as bird feeders and garbage. May and June are also the time of year when yearling bears are dispersing away from their mothers and more likely to encounter human development and unnatural food sources. Unlike the 23-year trend, human-bear interactions in 2015 did not decline in August, likely due to the fair to poor mast crop that occurred in the MBMU (Figure 29 and Figure 30).

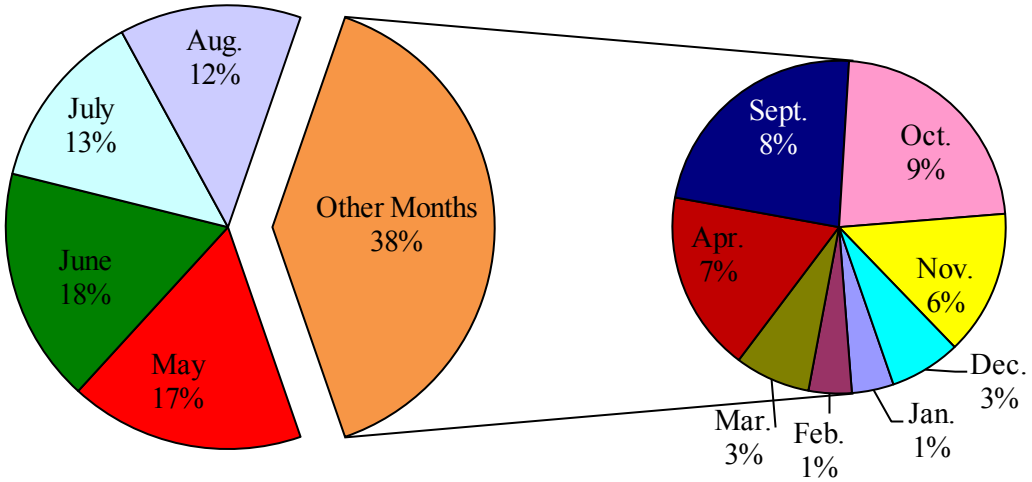


Figure 28. Percentage of statewide black bear observations and complaints by month for 1993-2015.

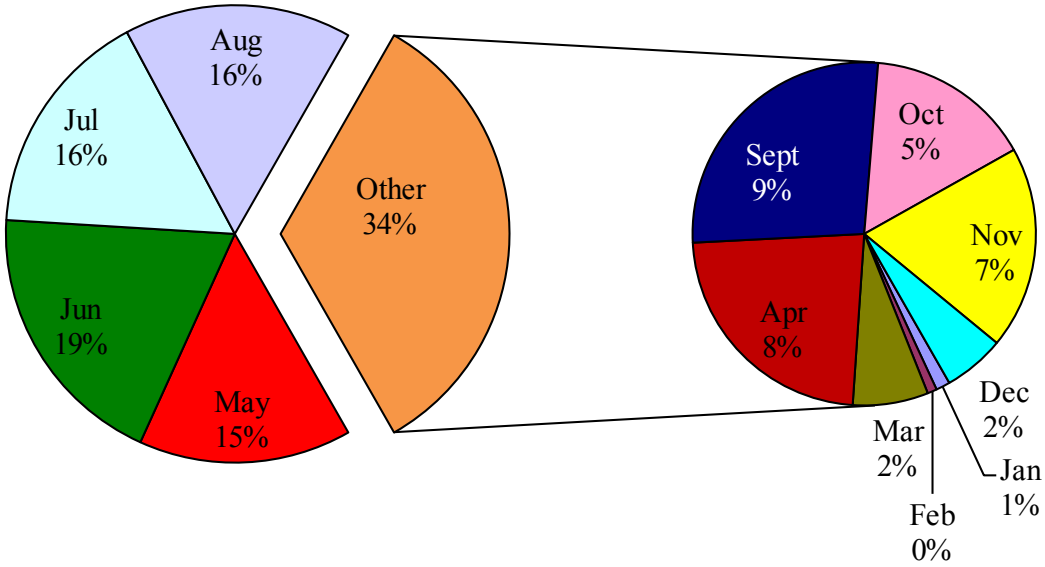


Figure 29. Percentage of statewide black bear observations and complaints by month for 2015.

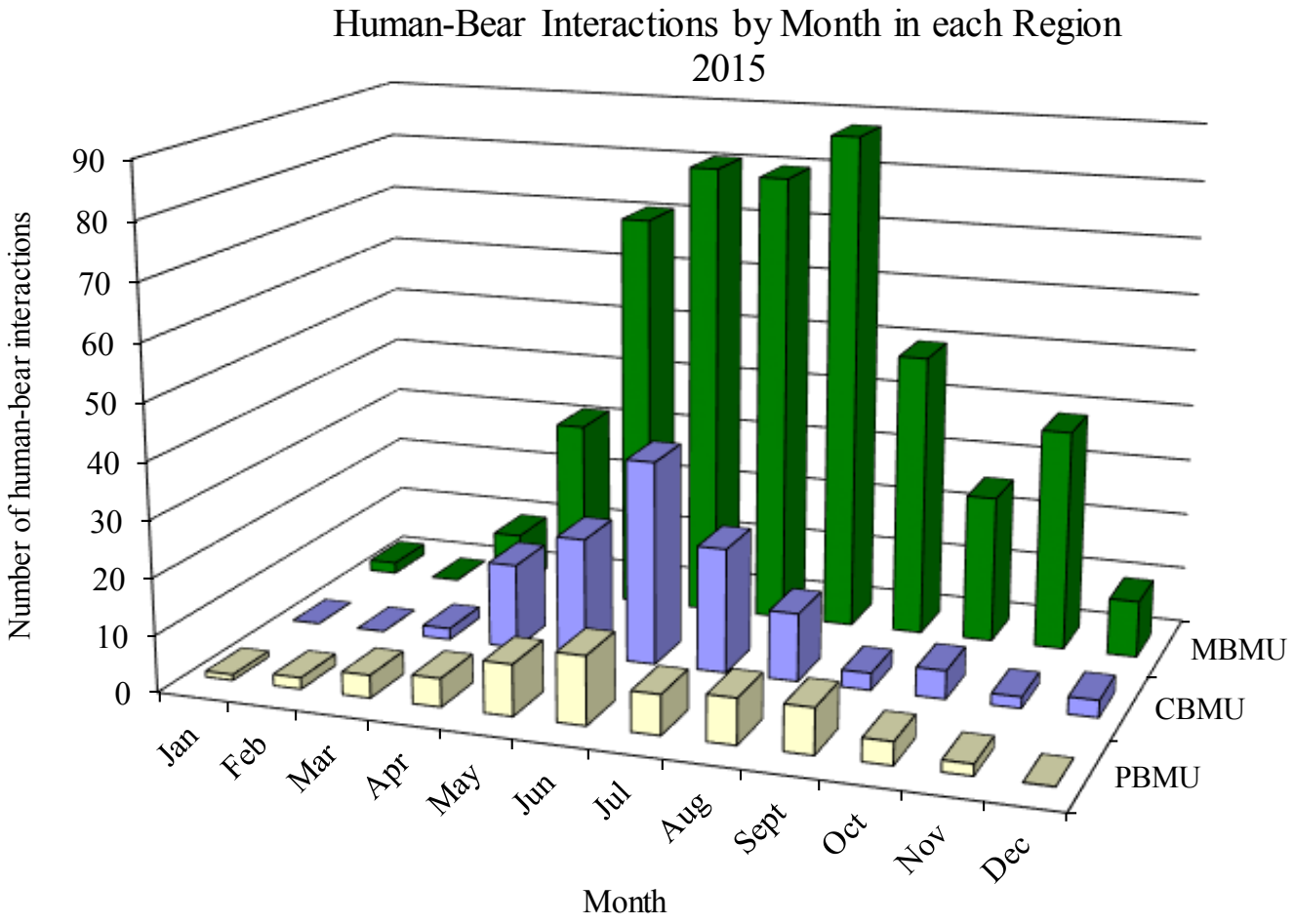


Figure 30. Number of human-bear interactions by month and bear management unit in 2015 in North Carolina.

Soft Mast Surveys

Summer soft mast surveys have been conducted in conjunction with the Sardine Bait Station Survey (SBSS). During summer 2006, based on an agreement with the member states of the SABBSG, we did not conduct the SBSS. Because of the new schedule, the summer soft mast survey will be conducted in odd years in the future. The previous survey was conducted in 2013 and the next survey was conducted during the summer of 2015. Summer soft mast production varied on a local basis with some areas failing to produce any significant fruit of certain species while producing "fair" to "good" crops of others. The 2013 summer blackberry and pokeberry were above the long-term average, while blueberry and huckleberry were below all overall averages (Table 38). Blueberry, blackberry, and pokeberry produced fair crops, while huckleberry production was poor (Table 38).

Table 38. Results of Mountain Summer Soft Mast Surveys, 1993-2015[1].

Year	Blueberry	Huckleberry	Blackberry	Pokeberry
1993	3.20	3.60	3.80	2.40
1994	3.20	3.50	3.50	1.40
1995	1.90	2.50	3.10	1.20
1996	2.00	2.00	3.40	1.50
1997	2.80	3.00	3.80	2.00
1998	1.90	1.20	3.30	2.33
1999	2.72	2.45	2.90	1.78
2000	2.70	2.72	2.99	1.64
2001	2.27	2.73	2.87	0.87
2002	1.87	2.22	3.55	1.32
2003	2.27	2.74	3.20	1.02
2004	1.67	1.61	4.25	1.41
2005	1.57	1.41	4.07	1.48
2007	2.11	1.23	2.48	1.84
2009	2.08	2.06	2.78	1.09
2011	1.69	1.53	3.28	1.37
2013	1.87	1.07	3.73	1.89
2015	2.14	1.38	3.97	2.28
Average	**2.21**	**2.15**	**3.37**	**1.59**

[1] After 2005, summer soft mast surveys are conducted every two years.

Numerical Rating = Crop Quality

0.0 to 2.0 = Poor	2.1 to 4.0 = Fair
4.1 to 6.0 = Good	6.1 to 8.0 = Excellent

The 2015 fall soft mast survey, which is conducted in conjunction with the hard mast survey, yielded varying results by species (Table 39). Overall, soft mast production was below production observed in 2014 and below long-term averages (Table 39). As usual, local areas experienced variable production of fall soft mast.

Table 39. Results of Mountain Fall Soft Mast Surveys, 1993-2015.

Year	Pokeberry	Cherry Index	Grapes Index	Blackgum
1993	2.00	2.70	2.10	0.40
1994	3.10	2.00	3.80	1.70
1995	2.70	5.00	2.20	1.80
1996	2.40	1.60	3.30	1.80
1997	4.20	1.30	3.10	0.80
1998	4.63	2.67	2.80	1.50
1999	2.40	2.70	3.25	1.10
2000	2.20	2.70	3.30	1.00
2001	2.80	3.30	4.18	2.33
2002	1.10	2.45	2.73	1.27
2003	2.33	3.00	2.55	2.22
2004	1.67	2.70	3.00	1.44
2005	2.45	2.09	1.36	1.55
2006	3.73	2.00	3.17	2.50
2007	2.08	1.58	2.73	0.67
2008	2.91	4.64	4.08	2.58
2009	1.92	1.82	2.33	1.83
2010	2.90	5.80	4.80	1.40
2011	2.50	1.67	2.33	1.42
2012	2.50	1.08	2.92	1.00
2013	2.00	2.75	2.75	1.08
2014	2.55	3.91	4.55	2.18
2015	2.17	2.09	2.23	1.82
Average	**2.60**	**2.64**	**2.99**	**1.49**

Numerical Rating = Crop Quality

0.0 to 2.0 = Poor	2.1 to 4.0 = Fair
4.1 to 6.0 = Good	6.1 to 8.0 = Excellent

Hard Mast Surveys

NCWRC personnel have surveyed hard mast in the Mountain Region of North Carolina since 1983. From 1983-2005, North Carolina's hard mast surveys were conducted and reported using a method developed by Whitehead (1969) with slight modifications (Wentworth et al. 1992). Beginning with the 2006 survey, we are using a new protocol and formula for determining mast indices (Greenberg and Warburton 2007). The new protocol only requires simple calculation of percent crown with acorns in the field. In order to maintain consistency with the old technique, the new technique uses statistically verified equations to convert mast index values to numbers previously used with the Whitehead (1969) method. Hard mast results reported in this document utilize the techniques described in Greenberg and Warburton (2007) and are described using the scale used by our agency since 1983. Due to small sample sizes, results will no longer be reported for individual routes for hickory and beech, but overall values for these species will be reported.

A total of 1,412 trees were sampled including 570 from the white oak group, 661 from the red oak group, 144 hickories, and 37 beeches. Combining all groups of species, mast was rated as fair, with an overall index of 2.09 (Table 40), which is a decrease from last year's good mast crop. Since 1983, North Carolina has experienced 20 years in which the hard mast index was rated as fair. Including only the oak species, mast production rated as poor (1.92; Table 40).

White oak production rated as poor (1.07; Table 40) and was below the long-term average of 1.86. Red oak production rated as fair (2.65; Table 38) and below the long-term average (2.81) for the species. Hickory production rated as fair (2.64) and slightly above the long-term average (2.33) for the species (Table 38). Beech production (5.77) was good, which was an increase from last year's poor production rating and well above the long-term average (4.09; Table 40).

This season's hard mast crop was the twentieth year since 1983 in which the overall hard mast index was fair. Fall hard mast productivity declined sharply in 2015 from the good hard mast crop that occurred in 2014. This year, red oak and hickory production rated as fair, while white oak production was poor. Beech production was good. Surrounding states (Virginia, Tennessee, South Carolina, Georgia) also reported that overall white and red oak productivity was poor to fair. This year's poor to fair mast production reflects the declines in mast production typically observed after a previous fall of good hard mast production (Figure 4).

Table 40. Hard Mast Survey Results for Western North Carolina, 1983-2015.

Year	White Oak	Red Oak	All Oaks	Hickory	Beech	Total
1983	1.43	2.59		1.99	5.51	2.25
1984	1.08	2.73		3.05	4.28	2.30
1985	2.01	3.66		0.80	3.06	2.80
1986	1.32	1.98		2.25	5.22	1.90
1987	1.16	0.56		3.57	5.75	1.31
1988	3.16	4.07		2.04	4.25	3.57
1989	0.43	4.89		2.78	6.44	3.14
1990	1.85	2.62		1.20	1.89	2.17
1991	2.38	1.93		3.75	6.89	2.43
1992	1.07	2.45		0.72	1.17	1.78
1993	0.65	3.58		2.43	4.77	2.48
1994	2.06	3.48		2.02	6.20	2.85
1995	2.80	5.60		2.48	0.36	4.22
1996	3.70	1.99		2.81	4.31	2.72
1997	0.53	1.79		1.17	2.35	1.29
1998	2.26	4.68		3.27	4.70	3.69
1999	3.28	2.76		2.80	6.22	3.05
2000	0.50	2.11		2.73	5.71	1.82
2001	2.83	4.92		2.88	3.97	3.98
2002	1.90	3.01		1.75	3.44	2.47
2003	1.24	0.68		3.58	5.42	1.33
2004	3.99	2.93		1.32	1.65	3.09
2005	0.70	3.11		1.86	4.30	2.14
2006	1.70	1.40	1.50*	3.20	4.10	1.80
2007	3.02	1.19	2.04*	0.73	2.71	1.90
2008	1.01	2.40	1.76*	3.82	4.34	2.06
2009	0.48	2.47	1.55	1.72	5.58	1.67
2010	3.46	3.97	3.75	3.50	0.87	3.66
2011	1.17	2.22	1.74	1.30	4.96	1.76
2012	1.87	2.68	2.31	2.01	3.14	2.29
Average	**1.83**	**2.82**	**2.09**	**2.32**	**4.12**	**2.46**

Numerical Rating = Crop Quality

0.0 to 2.0 = Poor	2.1 to 4.0 = Fair
4.1 to 6.0 = Good	6.1 to 8.0 = Excellent

* Not reported for prior years.

Bait Station Surveys

A total of 830 bait stations were set in areas of occupied bear range in western North Carolina during July 2015. After removing 25 stations disturbed by non-target animals, 805 stations were visited 381 times by black bears for a visitation rate of 47% (Figure 30). This rate is a slight increase in visitation rates since 2013. The decline in visitation rates since 2009 reflect a host of factors, including record rainfall that occurred during the summer 2013 and changes made to the survey lines in 2011 and 2013. These changes included the removal of several bait stations and survey lines, and the addition of 4 new survey lines. No changes were made to survey lines in 2015.

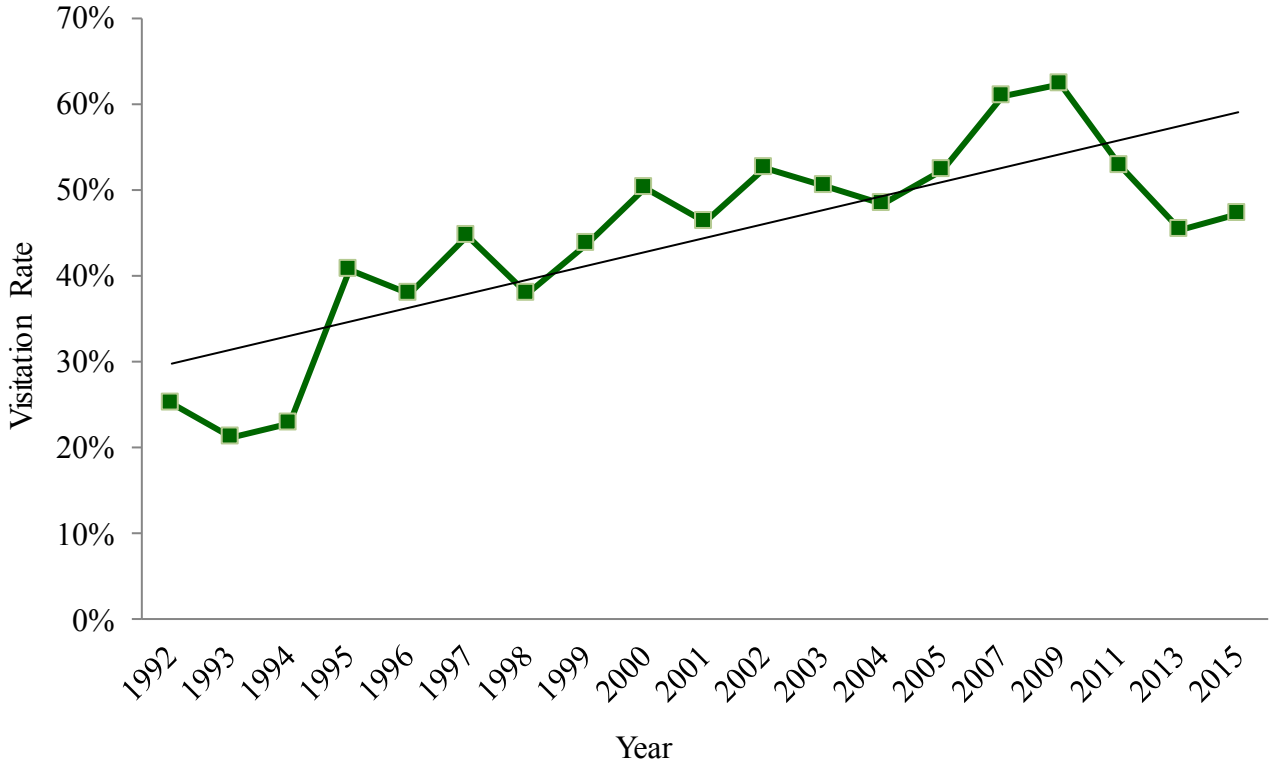


Figure 31. Mountain Black Bear Bait Survey Visitation Rate (%), 1992-2015.

North Carolina Wildlife Resources Commission (NCWRC)
Black Bear Hunter Survey

Attention Bear e-Stamp holder: The NCWRC is conducting this survey to help us make the best management decisions for black bears and bear hunters. Please take a few minutes to complete this important questionnaire, **even if you did not hunt for bears during the 2015 season.**

«First_Name» «Middle_Name» «Last_Name» «Suffix»
«Address_1_»
«Address_2_»
«City» «State_» «Zip» «Zip_4»

WRC Customer Number:
«WRCcustomernumber»

<u>Your response is very important</u>. Your response will help us determine the annual number of active bear hunters in North Carolina and hunter success rates by harvest method. Your information will also help us determine if changes in harvest levels are due to changes in hunting methods, the number of bear hunters, or actual changes in the bear population. This information will assist us in evaluating both current and future regulations and statutes, as well as management options.

Your answers are completely confidential.

We appreciate you taking an active part in the management of North Carolina's wildlife resources.

Please complete the following black bear hunter survey and return it in the enclosed business reply envelope.

Sincerely,

Colleen Olfenbuttel, Black Bear and Furbearer Biologist

2015-16 Bear e-Stamp Holder Survey

It is important that you complete and return this survey even if you did not hunt or harvest a bear.

1. What is the most important reason you obtained the Bear e-Stamp? ☑ **Check only one**

   - **23**%: It was free with my lifetime license (if purchased prior to July 1, 2014), but I did not intend to hunt bears.
   - **7%**: I did not know I was issued a Bear e-Stamp until I received this survey.
   - **7%**: Did not answer question

   If you checked one of the boxes above, please skip 1a and <u>proceed to Question 2</u>.

   - **64%**: I obtained the Bear e-Stamp, because I might have hunted and harvested a bear during the past 2015 season.

     1a**.** Which of these two statements best described your hunting plans for the past 2015 season?

     - **17%**: Did not answer question
     - **53%**: I usually hunt bears every year and planned on hunting bears in 2015.
     - **30%**: I usually don't hunt bears in North Carolina, but planned on hunting bears during the 2015 season because **(check all that apply)**:
       - **15%**: there is a new bear season in my county.
       - **16%**: all hunters can now use the aid of unprocessed bait.
       - **77%**: I might see a bear while hunting other game species.
       - **29%**: there are more bears where I hunt.
       - **14%**: Other reason

2. Have you hunted specifically for bears in North Carolina <u>*before*</u> the **2015** season?
   37%: Yes **60%**: No **3%**: did not answer

3. Do you plan on hunting specifically for bears during the <u>*upcoming*</u> **2016** bear hunting season?
   36% Yes **20%**: No **42%**: Not sure **2%**: did not answer

4. Which *best* describes your bear hunting efforts <u>*during*</u> the **2015** season: ☑ **check <u>only one</u> box**

   - **40%**: I did not hunt for bears during the 2015 season.
     If you checked this box, you are now finished with the survey!
     Please return the survey in the self-addressed envelope. Thank you!

   - **33%**: I hunted specifically for <u>other game species</u> (deer, feral hogs, squirrel, etc…), but may have taken a bear had I seen one.
     If you checked this box, skip Questions 5 & 6. <u>Please proceed to Question 7</u>.

   - **14%**: I specifically hunted for <u>bear</u> on one or more trips in 2015.
   - **12%**: I hunted <u>bears</u> and <u>deer</u> at the same time.

5. Still or Stand Hunting (*skip this question if you did not still or stand hunt for bears*):

Bear Management Unit	Est. # of hunters	Number of Days You Hunted	Reported Harvest	Effort (Harvest/Days)	Success Rate
CBMU	9,310	103,206	702	1.14	13%
MBMU	3,228	36,349	317	0.87	10%
PBMU	1,521	42,837	35	0.08	2%

6. Dog Hunting (*skip this question if you did not use dogs to hunt for bears*):
If you hunted in a group, do not record hunting activity for others with whom you hunted.
.

Bear Management Unit	Est. # of hunters	Number of Days You Hunted	Reported Harvest	Effort (Harvest/Days)	Success Rate
CBMU	5,220	41,631	1,178	1.69	13%
MBMU	2,831	36,972	882	2.39	31%
PBMU	127	1,972	4	0.20	3%

7. Which hunting method(s) did you use to hunt bears during the 2015 season? ☑ **all that apply.**

31%: Still or Stand Hunt *with* aid of bait*

8%: Dog Hunt *with* aid of bait*

47%: Still or Stand Hunt *without* aid of bait

15%: Dog Hunt *without* aid of bait

*bait means unprocessed foods, such as corn, peanuts, and sweet potatoes.

8. Are you a commercial bear hunting guide for other hunters? **0.2%**: Yes **99.8%**: No
9. Are you a hunting party leader for other bear hunters? **1.5%**: Yes **98.5%**: No

10. Did you harvest a bear during the 2015 season: ☑ **check one box below**

93%: No, I did not harvest a bear

5%: Yes, while hunting specifically for bear

0.3%: Yes, while hunting specifically for other game bear

1%: Yes, while hunting for both deer & bear

11. Please select from the following to describe why you harvested your particular bear: ☑ **all that apply**

8%: My first bear harvested

59%: Bear was large enough for me

14%: Only bear I had the opportunity to harvest

12%: Bear was fighting/injuring dogs

8%: Last opportunity for me to harvest a bear for the season

36%: First bear I saw while hunting

18%: Targeted commonly-seen bear

11%: Other