

Bobcat Population Analyses 2018

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Abstract

Age and reproductive data obtained from 6,488 bobcats harvested during the 1983-2015 seasons and data from the winter furbearer track survey were used to evaluate Wisconsin's bobcat population. Analysis suggested that fall population size in northern Wisconsin increased from about 1,600 to an estimate of around 3,500 bobcats in fall 2017. The population in the southern portion of Wisconsin is unknown, but indices suggest a stable population. Overall, Wisconsin's bobcat population appears to be robust.

Methods

Data yielded from carcasses provide several important sources of data. Successful hunters and trappers are required to register their bobcat, in person, at a DNR station and submit the skinned carcass for examination and analysis. The sex, date of harvest, and county of harvest are recorded for each carcass. A canine tooth is extracted and aged by counting annuli in the cementum (Matson's Lab, Milltown, Montana). Ovaries and uteri are extracted from all female carcasses and examined for the presence/numbers of placental scars. Bobcat population estimates for northern Wisconsin are determined by incorporating data on harvest size and composition and age-specific reproductive rates into a modified version of Minnesota's Furbearer Population Model.

Results

Biological samples were obtained from 495 bobcats (322 males, 157 females, 16 unknown) during the 2016-17 season. Age information from those carcasses is not yet available. Data from the carcasses collected from 1983 through the 2016-17 season are summarized in Tables 1 and 2.

The age structure of harvested bobcats changed substantially during 1983-2016 with proportion of adults (≥ 2.5 year old) increasing over time (Table 1). The increasing trend in the proportion of adults, and of males, in the harvest over the past 32 years is likely primarily due to increasing selection for larger bobcats by harvesters.

Harvest, age, and reproduction data were incorporated into the Minnesota Furbearer Population Model. Analyses suggest that the fall bobcat population in northern Wisconsin ranged from around 1,600 in the 1980s to over 3,500 now (Fig. 1).

The fall 2018 population prediction from the model for the portion of Wisconsin north of State Highway 64 is approximately 3,500. We recommended, and the WDNR Furbearer Advisory Committee supported, a harvest of 550 bobcats north of Highway 64 and 250 bobcats south of Highway 64 for the 2018 season. The 2018-19 bobcat season will be the ninth year with a split season with period 1 occurring October 20th – December 25th and period 2 December 26th – January 31st. The quota will be allocated evenly between the two seasons. To prevent harvest from exceeding quota, a phone-in registration system is in place to allow for season closure if the harvest quota is met.

Table 1. Ages of bobcats harvested in Wisconsin, 1983-2016.

Year	No. Aged	Percent in age class						
		Kits	1	2	3	4	5	6+
1983	84	23.8	31.0	14.3	13.1	6.0	3.6	8.3
1984	97	25.8	25.8	10.3	13.4	13.4	6.2	5.2
1985	168	32.1	30.4	10.7	7.1	5.4	7.1	7.1
1986	158	27.9	27.9	11.4	7.0	8.2	4.4	13.3
1987	221	31.7	26.7	16.7	10.4	3.6	2.3	8.6
1988	127	34.7	30.7	10.2	8.7	4.7	3.2	7.9
1989	103	23.3	26.2	17.5	12.6	9.7	3.9	6.8
1990	86	44.2	23.3	15.1	7.0	3.5	2.3	4.6
1991	57	26.3	28.1	24.6	12.3	7.0	0.0	1.8
1992	181	21.6	28.2	16.6	9.9	9.4	6.6	7.7
1993	129	23.3	23.3	17.8	19.4	3.9	7.8	4.7
1994	153	23.5	24.8	15.7	9.8	7.8	6.5	11.8
1995	77	23.4	19.5	13.0	13.0	6.5	10.4	14.3
1996	109	26.6	21.1	18.3	9.2	11.0	2.8	11.0
1997	139	23.0	18.7	22.3	10.8	10.1	5.0	10.1
1998	169	26.6	23.1	17.2	10.1	8.9	2.4	11.8
1999	140	28.6	15.0	16.4	13.6	10.0	7.9	8.6
2000	227	20.7	18.1	15.9	14.5	12.3	6.2	12.3
2001	111	15.3	17.1	26.1	23.4	7.2	3.6	7.2
2002	162	14.2	17.9	20.4	16.7	16.0	7.4	7.4
2003	257	17.5	12.8	16.0	17.9	16.0	8.6	11.3
2004	295	22.0	19.3	12.5	12.9	9.5	10.2	13.6
2005	388	19.6	18.8	14.4	15.0	10.8	8.0	13.4
2006	266	12.8	21.1	16.2	16.5	12.0	4.9	16.5
2007	351	21.4	19.7	18.8	11.1	8.5	6.8	13.7
2008	292	16.1	21.9	22.6	15.4	7.2	4.5	12.3
2009	214	15.9	16.8	21.5	18.7	9.3	5.1	12.6
2010	241	10.0	8.7	34.0	14.9	9.1	8.7	14.1
2011	211	5.2	15.6	28.0	17.5	12.8	7.1	13.7
2012	169	16.0	8.3	13.0	18.9	14.8	13.0	16.0
2013	119	10.1	16.8	21.0	16.8	12.6	4.2	18.5
2014	182	14.3	14.3	19.8	11.5	14.3	8.2	17.6
2015	323	13.0	20.1	14.6	19.2	8.0	9.0	16.1
2016	259	12.4	18.8	20.4	15.2	11.2	6.8	15.2
All Years	6,265	19.8	20.1	17.9	14.0	9.7	6.5	12.0

Table 2. *Reproductive rates of female bobcats harvested in Wisconsin, 1983-2016.*

Year	Pregnancy rates (%)		Mean number placental scars/preg.
	Yearlings	Adults	
1983	25	77	2.3
1984	11	59	2.6
1985	31	56	2.2
1986	33	70	2.6
1987	40	79	2.7
1988	72	94	3.1
1989	57	70	2.9
1990	27	70	3.1
1991	20	67	3.0
1992	38	71	2.4
1993	14	40	1.9
1994	27	75	2.8
1995	63	69	2.6
1996	71	92	2.8
1997	42	87	3.2
1998	29	75	2.7
1999	57	91	3.1
2000	44	72	3.3
2001	63	69	2.9
2002	54	90	3.0
2003	41	86	2.6
2004	32	74	3.0
2005	8	82	2.4
2006	32	67	2.6
2007	8	67	2.6
2008	0	41	2.2
2009	40	56	2.0
2010	0	54	2.3
2011	9	71	2.1
2012	14	49	2.2
2013	0	65	2.5
2014	0	56	2.7
2015	56	90	2.4
2016	48	88	2.9
Mean	33	71	2.7

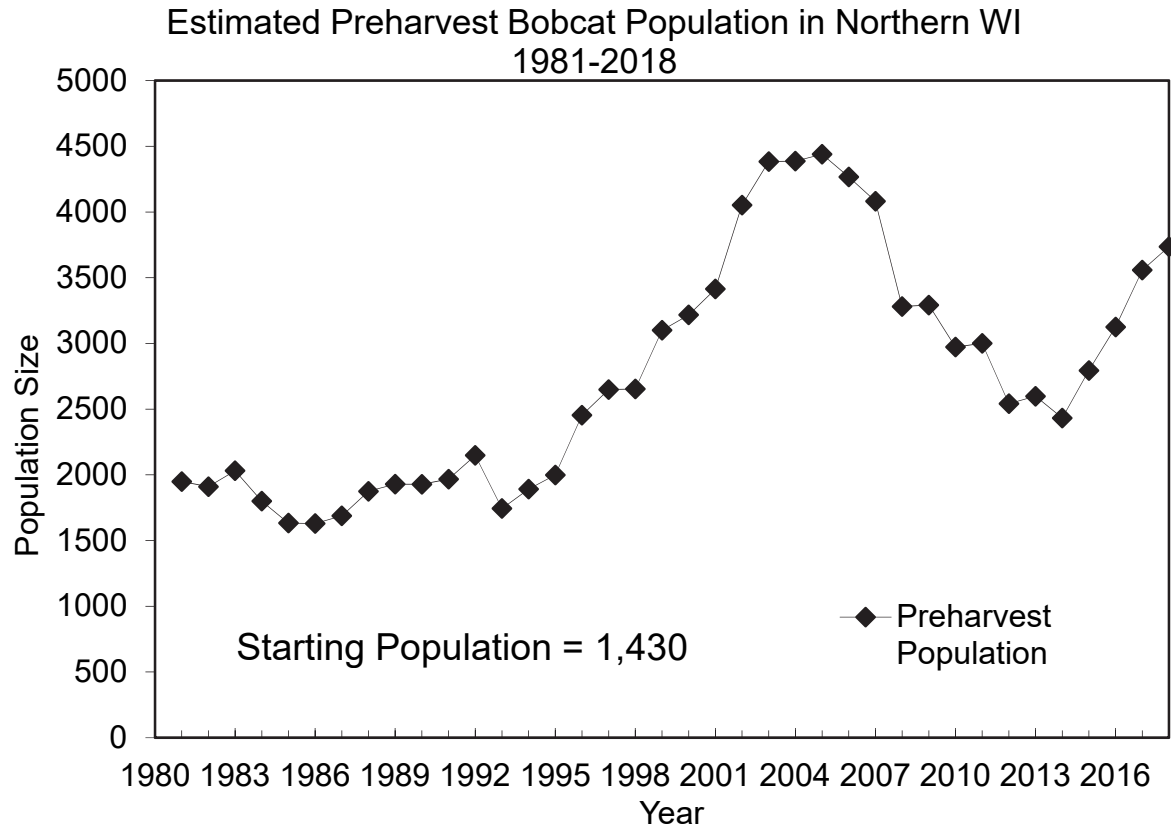


Figure 1. Prehunt bobcat population estimates for northern Wisconsin from the Furbearer Population Model 1981-2018.