



2021 VERMONT MOOSE HARVEST REPORT



FISH & WILDLIFE DEPARTMENT
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Most of the programs described in this report are funded through the *Federal Aid in Wildlife Restoration Program*. This program was initiated in 1937 as the Federal Aid in Wildlife Act and created a system whereby taxes are paid on firearms, ammunition and archery equipment by the public who hunts. Today this excise tax generates more than one hundred million dollars each year that are dedicated to state wildlife restoration and management projects across the United States. The State of Vermont uses these monies for acquiring land, and for restoring and managing wildlife. These excise tax dollars, coupled with state hunting license fees, have been the predominant source of money funding the successful restoration and management of Vermont’s wildlife resources.

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The MISSION of the Vermont Fish & Wildlife Department is the conservation of fish, wildlife, and plants and their habitats for the people of Vermont.

Vermont Fish & Wildlife Department

Agency of Natural Resources

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2021 Moose Harvest Report

Overview

Hunters harvested a total of 62 moose during Vermont's two moose hunting seasons in 2021, providing more than 70,000 servings of local, nutritious moose venison. The Department issued a total of 100 moose hunting permits for wildlife management units E1 and E2. These included 60 either-sex permits and 40 permits for antlerless moose only. Success rates for each season and permit type were close to historical norms for these WMUs (**Table 1**).

Hunting conditions were mixed during the 2021 seasons. October temperatures were generally above average, but quite variable during both the archery and regular seasons. Temperatures were relatively cool at the start of the archery season, but warmed as the season progressed. A few days of light precipitation helped provide quieter conditions for hunters. Opening weekend of the regular season saw temperatures in the

70s, which greatly reduced moose activity and limited the harvest. A cold front on Sunday brought several days of rain, cooler temperatures, and better hunting (**Table 2**).

Applications

A total of 5,707 people applied for the opportunity to hunt moose in Vermont in 2021. These included 5,213 applications for the regular season and 1,796 applications for the archery season, with many hunters applying for both seasons. Applications were received from every US state, the territory of Guam, and Quebec, Canada. Applicants included 3,959 Vermont residents and 1,748 non-residents.

Odds of winning a permit for an individual hunter vary greatly depending on residency, season applied for, veteran status, number of bonus points, and WMU and permit type selections.

Table 1. 2021 Moose permit distribution and harvest by season, permit type, and Wildlife Management Unit.

Season	Permit Type	WMU	Permits	Bulls	Cows	Male	Female	Total	% Success
						Calves	Calves		
Archery	Either-sex	E1	10	5	0	0	0	5	50%
		E2	6	1	1	0	0	2	33%
		Total	16	6	1	0	0	7	44%
Regular	Either-sex	E1	28	14	7	1	0	22	79%
		E2	16	11	1	0	0	12	75%
		Total	44	25	8	1	0	34	77%
	Antlerless-only	E1	24	0	12	1	0	13	54%
		E2	16	0	8	0	0	8	50%
		Total	40	0	20	1	0	21	53%
Regular Season Total			84	25	28	2	0	55	65%
All Seasons Total			100	31	29	2	0	62	62%

Archery Season (October 1–7, 2021)

The Department issued 15 either-sex permits by lottery for the archery season, and one auction permit winner elected to hunt the archery season. These 16 hunters harvested 7 moose (6 bulls, 1 cow) for a 44 percent success rate (**Table 1**).

The heaviest moose taken during the archery season weighed 896 pounds and was taken in Lemington. The widest spread (56 inches) and most antler points (21) were on a moose taken in Warren Gore that has been certified by the Vermont Big Game Trophy Club as the new state record archery moose.

Regular Season (October 16–21, 2021)

A total of 84 permits were issued for the regular season, including 79 permits issued by lottery, 3 Special Opportunity Permits issued through a sponsoring organization to youths with a life-threatening illness, and the remaining 2 auction permit winners. Forty of the permits issued by lottery were for antlerless moose only.

Hunters harvested 55 moose for a success rate of 65 percent. Hunters with either-sex permits harvested 34 moose for a 77 percent success rate, while hunters with antlerless only permits harvested 21 moose for a 53 percent success rate (Table 1).

The heaviest moose taken during the regular season weighed 792 pounds and was taken in East Haven. This moose also had the most antler points (19). The widest spread (56 inches) was on a bull taken in Averill (Table 3).

Table 2. 2021 Moose harvest by day during the archery and regular seasons.

Day of Season	Archery	Regular
1	3	8
2	0	14
3	2	18
4	2	9
5	0	3
6	0	3
7	0	-

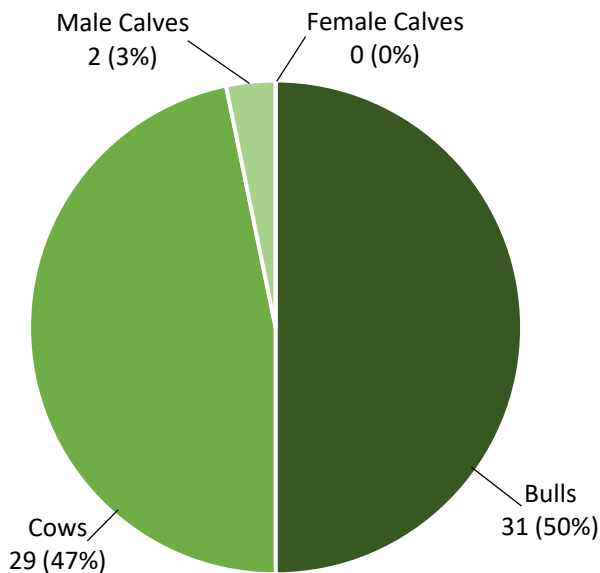


Figure 1. Sex and age composition of the 2021 moose harvest.

Biological Data Collection

Adult bulls comprised 50 percent of the harvest, while 47 percent were adult cows, and 3 percent were male calves (Figure 1).

Central incisor teeth were collected from all 60 adult moose to accurately determine their age. Yearlings comprised 20 percent of adult bulls and 29 percent of adult cows. Sixty one percent of bulls and 52 percent of cows were 4 years old or older. The oldest bulls were 11 years old, and the oldest cow was 15 years old.

Completely-dressed carcass weights were obtained from 57 moose. The average weight of yearling males was 476 lbs, while older bulls averaged 687 lbs. The average weight of yearling females was 402 lbs (Figure 2), while older females averaged 565 pounds. Generally, cows must reach a dressed weight of 440 lbs to reproduce.

Complete sets of ovaries were collected from 26 adult cows. Ovaries show how many ova (eggs) the cow released, and thus how many calves she would have the following spring. The average ovulation rate for 16 prime-aged cows (ages 3 and older) was 0.88 ova per cow (Figure 3). In healthy populations, ovulation rates for prime-aged cows are typically near 1.25 ova per cow.

The Department assessed winter tick loads on 50 moose harvested during the regular season. The average sample tick count on 21 adult bulls (25 ticks/bull), was similar to recent years (Figure 4).

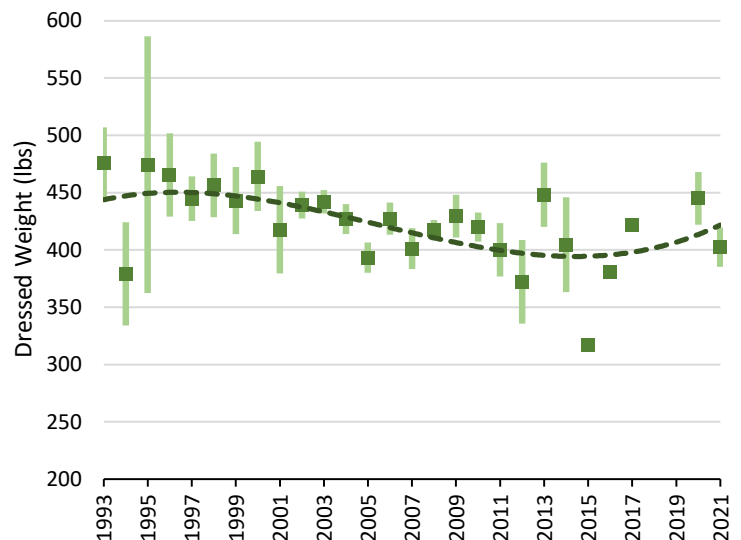


Figure 2. Mean dressed weight of yearling female moose harvested in WMU E, 1993–2021. Error bars show 80% confidence intervals.

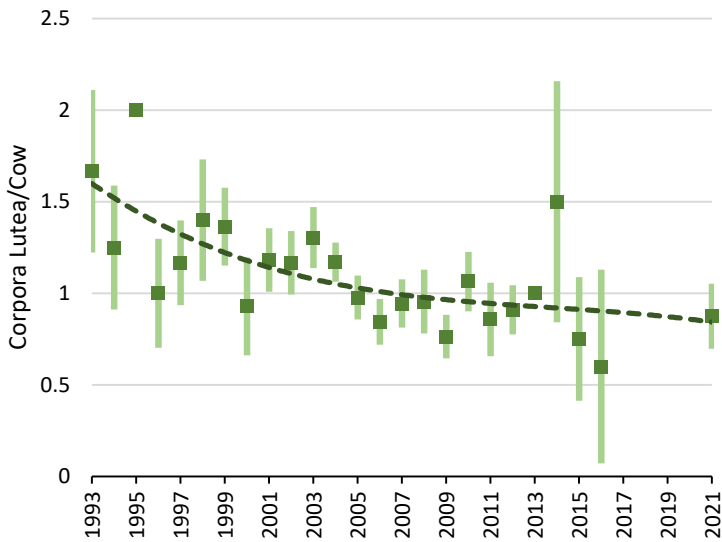


Figure 3. Ovulation rate of prime-aged cow moose (age 3 and older) harvested in WMU E, 1993–2021. Error bars show 80% confidence intervals.

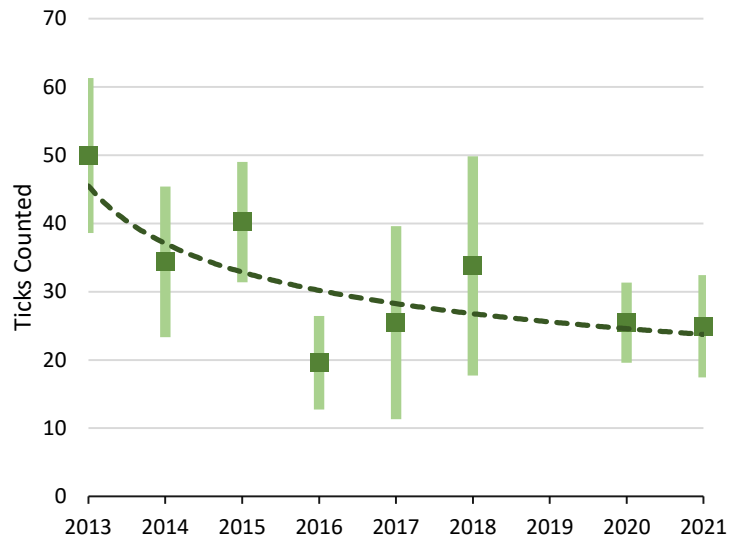


Figure 4. Winter tick counts on adult bull moose harvested in WMU E, 2013–2021. Error bars show 95% confidence intervals. Counts are conducted in 4 small areas on the moose and represent only a small fraction of the total winter tick load.

Geographic Distribution

Moose were taken in 16 different towns. Towns with the highest harvests were Bloomfield (12), Averill (11), and Granby (7). **Figure 5** shows the harvest locations for moose taken in 2021.

Looking to the Future

The management objective for wildlife management units E1 and E2 continues to be the reduction of the moose population to reduce the impacts of winter ticks and improve the health of moose. The harvest of 29 cow moose in 2021 was an important step in that direction.

No moose hunting permits will be issued in other regions of Vermont until populations reach hunting thresholds established in the *2020-2030 Big Game Management Plan*. The Department will present its 2022 Moose Harvest Recommendation to the Fish and Wildlife Board in February.

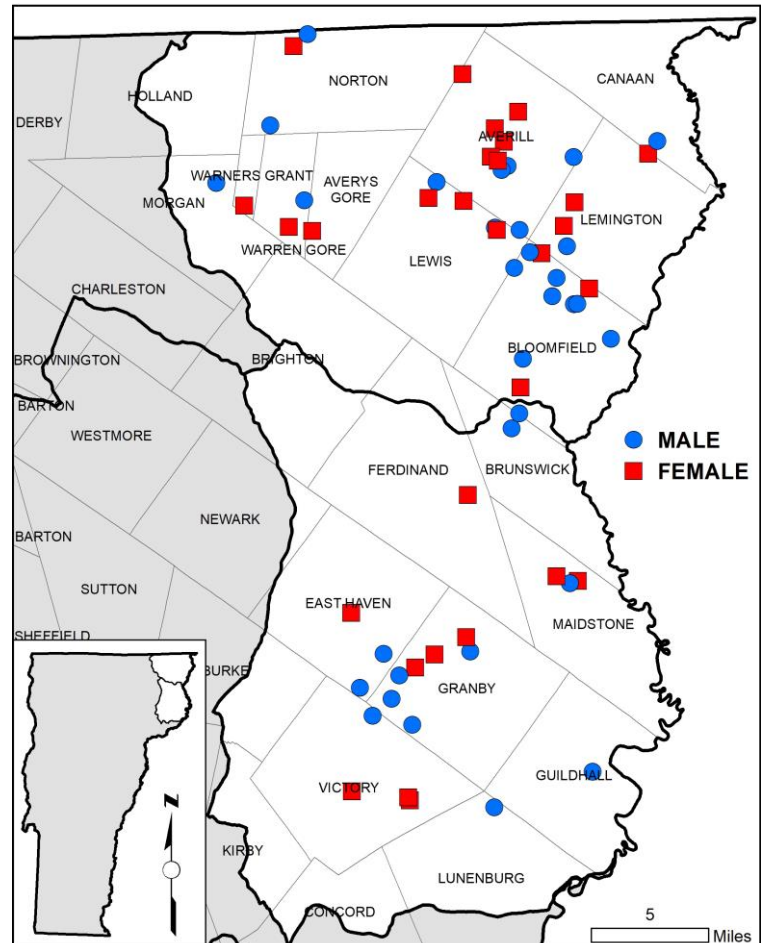


Figure 5. Harvest locations of moose taken during the 2021 moose hunting seasons.

Table 3. Moose harvested during the 2021 moose hunting seasons.

HUNTER	SEASON	WMU	TOWN	SEX	WEIGHT (lbs)	SPREAD (in)	POINTS	AGE
ABBOTT	REGULAR	E2	BLOOMFIELD	M	640	47.5	17	9
BEAUVAIS	REGULAR	E2	MAIDSTONE	M	582	33.5	10	2
BILLIEL	REGULAR	E2	GRANBY	M	582	32	9	1
BIRMINGHAM	ARCHERY	E2	GRANBY	F	552			7
BLACK	REGULAR	E1	LEWIS	F	551			8
BURNHAM	REGULAR	E1	AVERILL	M	440	20	5	1
CARPENTER	REGULAR	E1	NORTON	F	611	30	9	2
CARRIER	REGULAR	E2	GRANBY	M	479	19	5	1
CHAPIN	REGULAR	E1	LEWIS	F	630			3
CHARNEY	REGULAR	E2	LUNENBURG	M	404	18	3	1
COOK	REGULAR	E2	FERDINAND	F	398			1
CORMAN	REGULAR	E1	CANAAN	M	611	36.5	12	2
CUSHING	REGULAR	E1	AVERILL	F	364			1
DAVIS	REGULAR	E2	VICTORY	F	472			2
DECKER	REGULAR	E1	LEWIS	M				0
DENNETT	REGULAR	E1	BLOOMFIELD	M	620	31	6	2
DUFFY	REGULAR	E1	AVERILL	M	703	47	12	11
FARROW	ARCHERY	E1	WARREN GORE	M	868	56	21	8
FUHRMAN	REGULAR	E1	LEMINGTON	F	415			1
GAIOTTI	REGULAR	E1	AVERILL	F	645			8
GARDNER	ARCHERY	E1	BLOOMFIELD	M	553	37.5	8	2
GAUDETTE	REGULAR	E1	BLOOMFIELD	M		24	2	1
GODIN	REGULAR	E2	MAIDSTONE	F	512			4
GRATTON	REGULAR	E1	AVERILL	F	462			1
HARRINGTON	REGULAR	E2	GRANBY	M		33.5	11	2
JONES	REGULAR	E1	AVERILL	F	624			9
JONES	REGULAR	E1	BLOOMFIELD	M	757	44	15	6
KIMBALL	REGULAR	E1	BLOOMFIELD	F	504			5
KIPP	REGULAR	E2	EAST HAVEN	M	792	54	19	8
KULIS	ARCHERY	E1	BLOOMFIELD	M	583	25	3	4
LABELLE	ARCHERY	E1	LEMINGTON	M	896	55	20	5
LALUMIERE	REGULAR	E2	EAST HAVEN	M	760	38	12	9
LANPHEAR	REGULAR	E1	WARREN GORE	F	405			1
LARSEN	REGULAR	E1	AVERILL	F	571			12
LAWTON	REGULAR	E1	BLOOMFIELD	M	610	29	5	11
LEACH	REGULAR	E2	VICTORY	F	357			1
MACKILLOP	REGULAR	E2	GUILDHALL	M	733	45.5	16	7
MASCITTI	REGULAR	E1	BLOOMFIELD	M	736	50.5	15	8
MCMURRAY	REGULAR	E2	MAIDSTONE	F				1
MCNALLY	REGULAR	E2	GRANBY	M	600	36	14	3
MESSIER	REGULAR	E1	AVERILL	M	748	56	18	6
NEEDHAM	REGULAR	E2	GRANBY	F	625			11
PARADEE	REGULAR	E1	LEMINGTON	F	532			5
PECK	REGULAR	E1	MORGAN	M	731	46.5	14	6
PERRY	ARCHERY	E1	AVERILL	M	684	37.5	10	5
RAIN	REGULAR	E2	EAST HAVEN	F	590			3
REILLY	REGULAR	E2	FERDINAND	M	762	47	12	4

Table 3. Moose harvested during the 2021 moose hunting seasons, continued.

HUNTER	SEASON	WMU	TOWN	SEX	WEIGHT (lbs)	SPREAD (in)	POINTS	AGE
SMITH	REGULAR	E1	LEMINGTON	F	530			5
STEFANIAK	REGULAR	E1	NORTON	F	524			8
STINSON	REGULAR	E1	BLOOMFIELD	F	584			2
STUART	REGULAR	E1	AVERILL	M	271			0
SYKES	REGULAR	E1	AVERY'S GORE	F	540			10
SYKES	REGULAR	E1	WARREN GORE	F	522			3
TATRO	REGULAR	E2	VICTORY	F	588			15
TETREAUULT	REGULAR	E1	LEWIS	F	416			1
TREADGOLD	REGULAR	E1	BLOOMFIELD	M		48.5	18	6
WATERS	REGULAR	E1	NORTON	M	716	46.5	17	6
WELLER	REGULAR	E1	LEMINGTON	F	495			5
WELLS	REGULAR	E1	BLOOMFIELD	M	668	40	14	4
WILLEY	ARCHERY	E2	VICTORY	M	724	39.5	10	5
WILLIAMS	REGULAR	E2	GRANBY	F	661			5
WRIGHT	REGULAR	E1	AVERILL	M	590	32.5	13	2