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## Summary of Key Points

- Recent antlerless harvests have been sufficient to stabilize deer numbers in most WMUs.
- Vermont had a relatively easy winter in 2023.
- Yearling antler beam diameters, fawn weights, and other physical condition metrics are below optimal levels in many areas, indicating that deer numbers have exceeded the level their habitat can support long-term.
- Deer populations in eight WMUs are projected to be above their respective population objectives in 2023. The recommended antlerless harvest is intended to reduce deer populations in these WMUs.
- Populations in all other WMUs will be close to their respective population objectives and the recommended antlerless harvest is intended to stabilize populations and provide additional harvest opportunities.
- The recommended permit allocations are expected to result in the harvest of 3,257 antlerless deer during the antlerless (early muzzleloader) and December muzzleloader seasons. This would result in an estimated total harvest from all seasons of approximately 8,262 antlerless deer.

## Executive Summary

The Vermont Fish and Wildlife Department estimates there will be approximately 139,000 white-tailed deer on the Vermont landscape prior to the start of the 2023 deer hunting seasons. This represents an increase of 2 percent from the retrospective 2022 pre-hunt estimate. Deer populations in 8 Wildlife Management Units (WMU) are expected to be above their respective density objectives established in the *2020-2030 Big Game Management Plan*. The remaining 13 WMUs will have deer densities close to their respective density objectives. Deer are not evenly distributed across Vermont. As a result, harvest management strategies that account for regional differences in deer density are essential to the health and proper management of Vermont's deer herd.

For deer to be healthy and productive, deer populations must be kept below the carrying capacity of the habitat through the regulated harvest of antlerless deer. Biological information collected annually by the Department, including reproductive data, fawn and yearling body weights, and yearling antler size, indicate that deer populations have exceeded the level the habitat can support long-term in some parts of Vermont. Deer populations must be reduced or maintained below the limits of their habitat or physical condition will continue to decline, habitat damage will increase, and populations will become unstable and susceptible to substantial winter mortality.

The winter of 2023 was relatively easy for deer throughout most of Vermont. Increased antlerless harvests in recent years will limit deer population growth in many areas, but some growth is still expected. Antlerless harvests will need to be maintained or increased to reduce deer densities in those WMUs that remain above objective and to stabilize populations in other WMUs at their current level.

To achieve established density objectives, the Department recommends the harvest of 8,262 antlerless deer during the 2023 hunting seasons. The Department recommends that antlerless harvest be authorized during the archery and youth/novice seasons in all WMUs. After accounting for expected archery and youth/novice season harvests, the Department recommends that 3,257 antlerless deer be harvested, by permit, during the antlerless-only muzzleloader season in late October and the December muzzleloader season. Achieving this harvest requires the issuance of 22,000 WMU-specific antlerless permits distributed among 19 of Vermont's 21 WMUs (12 percent more permits than the 19,400 allotted in 2022).

Three public hearings were held March 20, 23, and 24, 2023 to gather comments on the deer herd. Approximately 94 members of the public participated in these hearings. Two additional public hearings will be held May 9 and 11, 2023.

## 2023 Muzzleloader Antlerless Harvest Recommendation

Pursuant to 10 V.S.A. §§4081, 4082 and 4084, and Appendix Chapter 1 §2c, hereafter is the Department's 2023 antlerless harvest and youth season recommendation. Based on population estimates, a harvest of 8,262 antlerless deer is recommended during the 2023 hunting seasons. This includes 5,004 antlerless deer harvested during the archery, youth, and novice seasons, and 3,257 antlerless deer harvested, by permit, during the antlerless (October muzzleloader) and December muzzleloader seasons. Adult females are typically 84 percent of the total antlerless deer harvest, so harvesting this number of antlerless deer would yield approximately 6,904 adult does.

## Population Status

The 2022 deer hunting seasons saw a buck harvest one percent higher than the previous 3-year average (see *2022 Vermont White-tailed Deer Harvest Report* for more information). Seven WMUs had retrospective population estimates in 2022 that exceeded their respective population objectives established in the *2020-2030 Big Game Management Plan*. The winter of 2023 was relatively easy for deer in most of the state; however, increased antlerless harvests in recent years are expected to limit deer population growth in most WMUs.

## Winter Severity 2023

The Department has long recognized the influence that winter weather can have on Vermont's deer herd and has been collecting winter severity data since 1970. Between December 1 and April 15, volunteers record one winter severity index (WSI) point for each day with at least 18 inches of snow on the ground, and one point for each day the temperature reaches 0°F or below. These data have proven useful to describe deer population dynamics; however, how well deer survive winter depends largely on three factors: 1) body condition of deer as winter begins, 2) availability of quality deer wintering habitats, and 3) the timing of snow in the fall and snowmelt in spring. Snow cover that remains late into spring can cause significant negative impacts by delaying spring green up and, consequently, reducing fawn survival.

The winter of 2023 was relatively easy for deer, with a state-wide average WSI of 16 points (**Figure 1**). This was well below the 30-year median of 36. All WMUs experienced an easier-than-normal winter (**Figure 2**). Statewide, the month of January was the easiest on record, and December–February collectively was the easiest on record. While March brought more normal conditions, the lack of deep snow across much of the state for much of the winter allowed deer to utilize habitats outside of traditional wintering areas and access the best available foods. As a result, overwinter mortality was minimal.

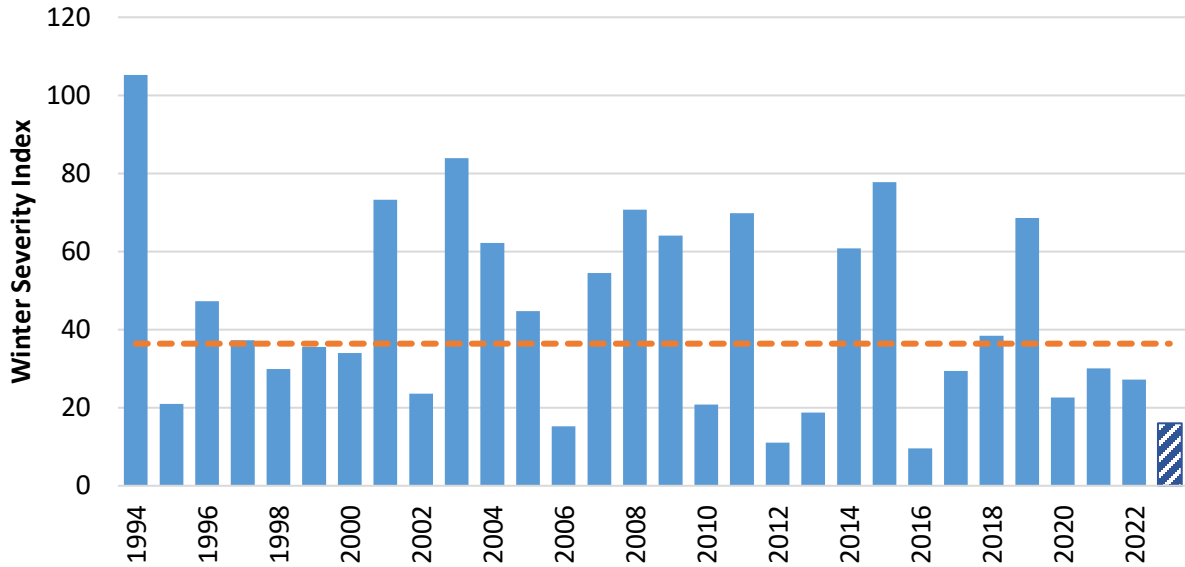


Figure 1. Statewide winter severity index (WSI), 1994–2023. The dashed line shows the 30-year median of 36.4.

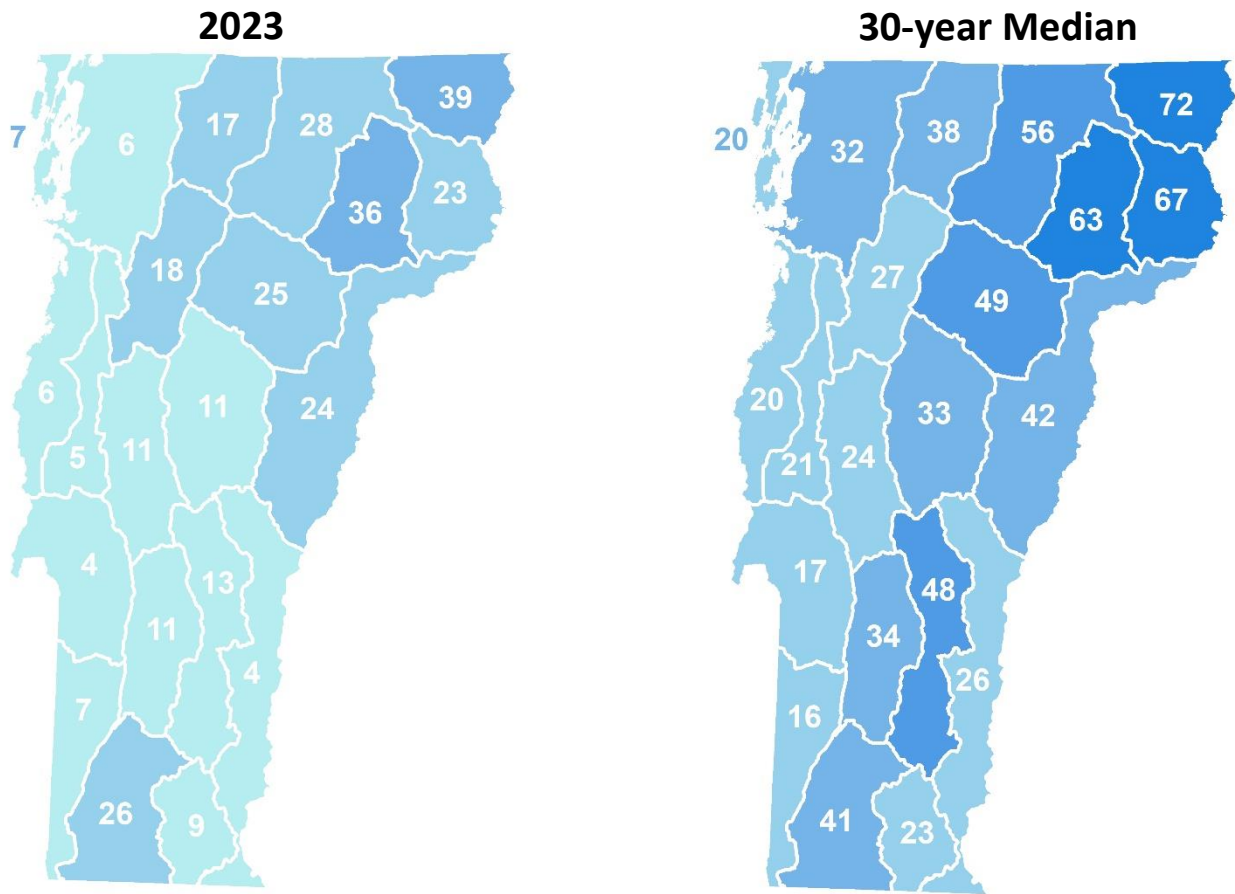
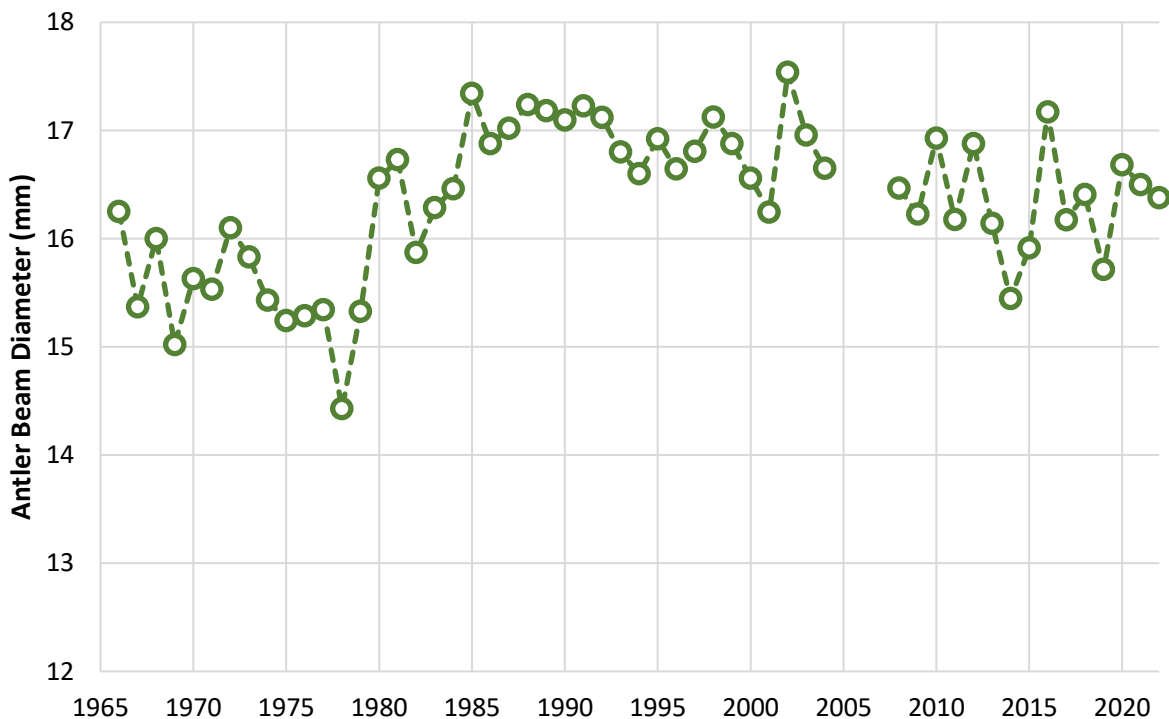


Figure 2. Winter severity index by Wildlife Management Unit in 2023 and the 30-year median.

### Population Health

Biological information collected annually by the Department, including reproductive data, fawn and yearling body weights, and yearling antler size, indicate that deer populations have exceeded the level the habitat can support long-term in some parts of Vermont (**Figure 3**, see Appendix A for individual WMU information). In many cases, this does not appear to be a new problem. Instead, this appears to be a subtle but chronic problem that may have occurred for decades in some areas. Declines in measures like yearling antler beam diameter have been slow (**Figure 3**); therefore, it takes many years of data to separate the trend from normal annual variation.

Health concerns are most pronounced in central Vermont but are evident in many parts of the state (see Appendix A for more detail). In most cases, the Department believes the primary driver of declines in physical condition was not a recent increase in deer abundance, but rather a slow, steady decline in the quality of deer habitat. Deer abundance has been relatively stable during the past 15 years, and, arguably, the past 30 years. However, Vermont’s forests are aging and the amount of young forest (less than 20 years old), which provides critical forage for deer, is declining. Other factors, including hunter access to private land, proliferation of invasive plants, and climate change are also important, and make the problem and any solutions more complex. The simple result, however, is that the habitat cannot support the number of deer it used to, and it is likely that carrying capacity will continue to decline. Deer populations must be reduced below the limits of their habitat or physical condition will continue to decline, habitat damage will increase, and populations will become unstable and more susceptible to disease and substantial winter mortality.



**Figure 3. Antler beam diameter of yearling bucks in Vermont, 1965–2022. Data are from deer examined at biological check stations.**

## Population Projections and Management Objectives

Although the winter of 2023 was relatively easy for deer, increased antlerless harvests in recent years will limit population growth in most areas. Importantly, deer densities remain above population objectives in several WMUs and recent management efforts are only beginning to affect some of those populations. To provide healthy habitats and thereby keep deer healthy and productive, deer densities must be kept at established objectives (Figure 8). Maintaining a healthy deer herd is the best way to mitigate the potential effects of winter weather and provide a stable population over the long term.

Based on analysis of herd demographic data, hunter effort, deer sighting rates (Figure 4), buck harvests (Figure 5), antlerless deer harvests, and winter severity data (Figure 2), the Department expects deer numbers to remain stable in most areas with minor increases in a few WMUs (Figures 6 and 7). Importantly, eight WMUs will have deer densities that exceed their respective population objectives (Figure 8), and the Department’s intent is to reduce deer densities in those areas (Figures 9). Other WMUs will have deer densities that are within two deer per square mile of their population objective and the intent is to stabilize those populations at or near their current level.

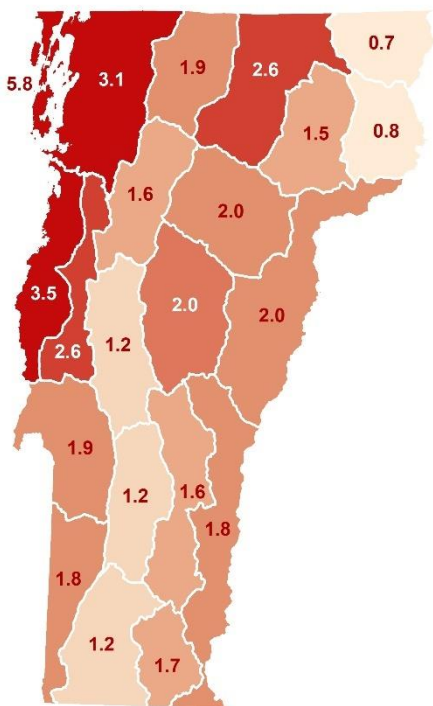


Figure 4. Deer seen per 10 hours of hunting by regular season deer hunters, 2020–2022.

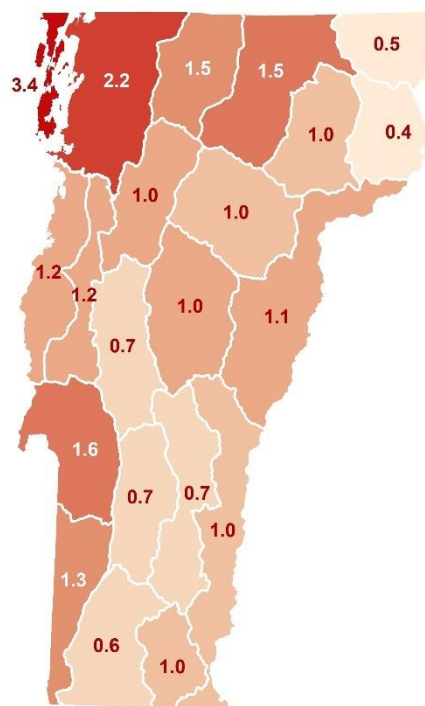


Figure 5. Adult buck harvest per square mile during the 2022 deer seasons. Buck harvest rate is affected by antler restrictions in some WMUs.

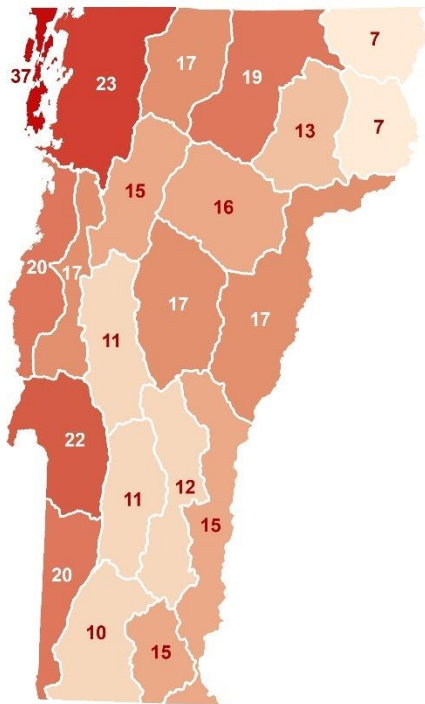


Figure 6. 2022 estimated deer density (deer per square mile of habitat), by WMU.

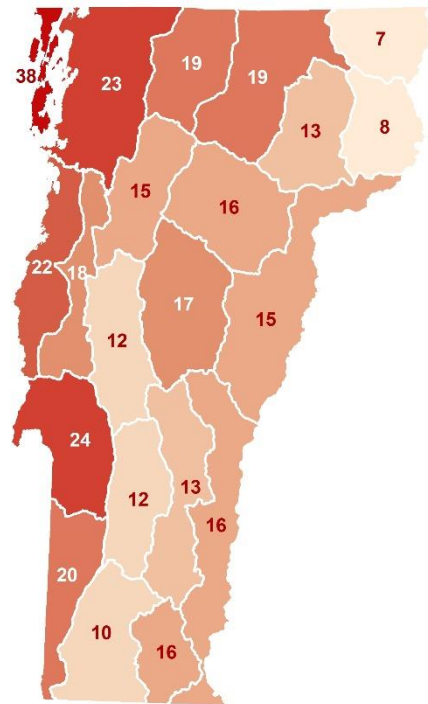


Figure 7. 2023 predicted deer density (deer per square mile of habitat), by WMU.

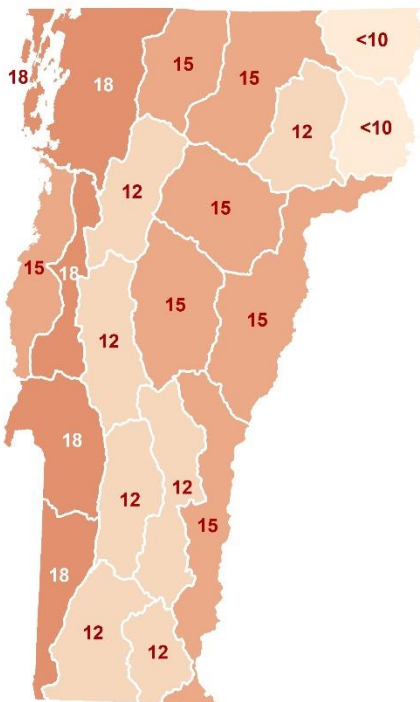


Figure 8. Deer density objectives (deer per square mile of habitat), by WMU.

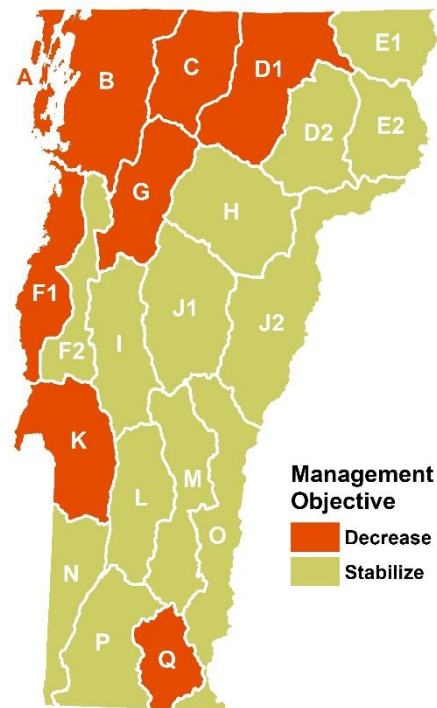


Figure 9. Desired change in the deer population, by WMU, to reach density objectives.



## Antlerless Harvest and Buck Age Structure Management

Antlerless harvests are an important tool for managing buck age structure and the overall buck hunting experience. The 2018 Big Game Survey found that 74% of Vermont hunters are interested in managing for older, larger deer. Further, the most important drivers of hunter satisfaction, after “just going deer hunting,” were “harvesting an older, larger-antlered buck” and “the amount of buck sign in the woods.” Providing additional antlerless harvest opportunities helps to reduce hunting pressure on bucks, allowing more bucks to survive to older ages. Increased antlerless harvests are also necessary to achieve a more balanced buck-to-doe ratio. Perhaps most importantly, a healthy deer population produces healthier, larger-antlered, larger-bodied bucks.

Ultimately, the Department would like to maintain the buck population at its current level. It may seem counterintuitive that this can be done with fewer does in the population, but age structure and birth rate data clearly indicate that it is possible. When does are in better physical condition they give birth to more fawns, and, more importantly, are able to raise more of those fawns to adulthood. This means that fewer, healthier does can recruit more deer into the population than a larger number of less-healthy does on over-browsed habitat. If the physical condition of deer can be improved, recruitment of fawns to adulthood will improve. Since half of fawns are male, this would allow the buck population to remain at its current level, or even increase, despite fewer does on the landscape.

## Antlerless Harvest Recommendation

### Archery Season

The Department believes it is appropriate to have all WMUs open to the taking of antlerless deer during the 2023 archery season. Antlerless harvest in archery season is a key component in deer population management in Vermont. Archery hunters tend to distribute their hunting effort and, as a result, harvest in areas with higher deer numbers. Therefore, archery harvest has a low impact in areas with fewer deer. Importantly, archery harvest allows hunters to better regulate local deer herds in areas with high deer densities, particularly areas where firearm hunting is limited.

### Youth and Novice Season

The Department is strongly committed to recruiting new hunters into Vermont’s deer hunting heritage. Based on this commitment and the importance of harvesting an adequate number of female deer each year, the Department recommends that the youth and novice season bag limit be one deer of either sex in all WMUs. This will provide these hunters with additional opportunity to harvest a deer and the opportunity to help properly manage Vermont’s deer herd. The Department also recommends that hunters during this season be able to take any buck, regardless of antler characteristics. It is critical that spike-antlered bucks be taken during this season so the Department can track their prevalence in the population (for population modeling) and obtain important biological information (e.g., weight, antler measurements) from this portion of the yearling buck population. This is the primary reason Department biologists examine deer during this season each year. This will have no impact on buck age structure management in WMUs that still have an antler restriction, as the buck harvest during this season is typically about five percent (four percent in 2022) of the overall buck harvest.

### Antlerless Permits

Antlerless permits are recommended for 19 of the state’s 21 WMUs in 2023. These permits may be filled during the early antlerless-only muzzleloader season in late October or during the December muzzleloader season. The Department recommends that a total of 22,000 antlerless permits be issued (12 percent more than the 19,400 approved for distribution in 2022). An increase in antlerless permits is recommended in six WMUs, while all other WMUs would have the same number of permits as allocated in 2022 (**Figure 10**). These recommendations are intended to move populations toward WMU-specific deer density and physical condition objectives established in the *2020-2030 Big Game Management Plan* (see Appendix A for additional detail). This permit allocation is expected to result in the harvest of an additional 3,257 antlerless deer above those harvested during the archery and youth/novice seasons. Harvesting this number of antlerless deer should yield approximately 2,769 adult female deer (85 percent of muzzleloader antlerless deer are adult does).

The total recommended antlerless harvest is slightly higher than the average antlerless harvest during 2020–2022, with most of the increase occurring in WMUs where deer populations remain above objectives. This recommendation continues to take advantage of new hunting regulations to achieve the higher antlerless harvests that are necessary to achieve WMU-specific deer density and physical condition objectives. Harvests are intended to maintain populations near their current level, or to reduce populations toward density objectives over several years, not all at once. Relatively high antlerless harvests will continue to be necessary in the future to maintain populations at desired densities, particularly when winters are mild and as deer condition and fawn recruitment rates improve.

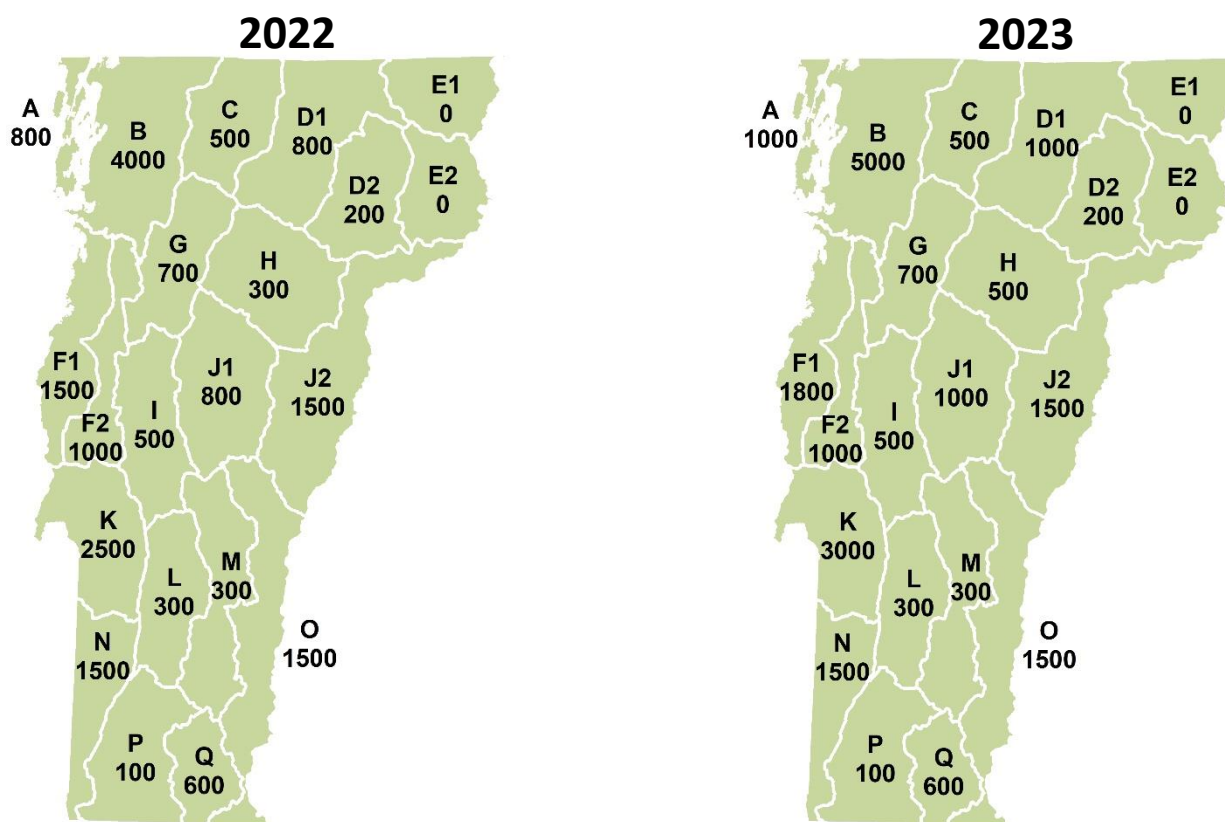


Figure 10. Antlerless permit allocations by wildlife management unit for 2022 and 2023 (proposed).

Table 1. Estimated deer densities and predicted antlerless deer harvests during the 2023 archery, youth/novice, and muzzleloader seasons, by wildlife management unit.

WMU	Deer per mi <sup>2</sup>			Muzzleloader Antlerless			Other Antlerless		2023 Total Antlerless	% of Doe Population Harvested	Doe Harvest per Mi <sup>2</sup>	Doe Harvest per 100 Bucks <sup>a</sup>
	Objective	2022	2023	Permits	Fill Rate	Harvest	Archery	Youth/Novice				
<b>A</b>	18	37	38	1000	14%	137	164	23	324	22%	3.84	124
<b>B</b>	18	23	23	5000	15%	766	717	148	1630	20%	2.21	115
<b>C</b>	15	17	19	500	20%	100	232	53	385	9%	0.83	58
<b>D1</b>	15	19	19	1000	21%	211	397	117	724	11%	1.05	68
<b>D2</b>	12	13	13	200	19%	38	160	36	234	8%	0.50	50
<b>E1</b>	<10	7	7	0		0	27	5	32	2%	0.09	18
<b>E2</b>	<10	7	8	0		0	21	3	23	2%	0.06	17
<b>F1</b>	15	20	22	1800	14%	245	175	30	450	11%	1.20	99
<b>F2</b>	18	17	18	1000	13%	127	161	30	318	11%	0.99	75
<b>G</b>	12	15	15	700	14%	97	156	13	266	8%	0.58	61
<b>H</b>	15	16	16	500	18%	92	305	43	440	9%	0.71	81
<b>I</b>	12	11	11	500	15%	73	108	15	195	7%	0.39	49
<b>J1</b>	15	17	17	1000	17%	171	322	44	537	10%	0.85	90
<b>J2</b>	15	17	15	1500	18%	267	392	71	730	11%	0.86	84
<b>K</b>	18	22	24	3000	13%	394	215	55	664	11%	1.27	81
<b>L</b>	12	11	12	300	13%	40	65	9	115	4%	0.26	36
<b>M</b>	12	12	13	300	15%	45	61	12	118	3%	0.22	32
<b>N</b>	18	20	20	1500	12%	173	130	36	340	9%	0.88	65
<b>O</b>	15	15	16	1500	14%	204	235	31	470	9%	0.72	72
<b>P</b>	12	10	10	100	15%	15	88	11	113	4%	0.21	33
<b>Q</b>	12	15	16	600	11%	63	88	3	155	7%	0.56	54
<b>STATE</b>				<b>22000</b>	<b>15%</b>	<b>3257</b>	<b>4217</b>	<b>787</b>	<b>8262</b>			

<sup>a</sup> In WMUs with an antler restriction, which reduces buck harvest, this number will be higher than a comparable area with no antler restriction.

Table 2. Muzzleloader antlerless permit history by WMU, 2015–2022, and recommended permit allocation for 2023. Numbers in parentheses are the number of permits actually distributed.

<b>WMU</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>A</b>	900	1100	1100 (843)	1100 (720)	1100 (939)	1000	500	800	<b>1000</b>
<b>B</b>	3350	5500	5500	5500	5500	4500	3500	4000	<b>5000</b>
<b>C</b>	100	350	700	800	300	500	500	500	<b>500</b>
<b>D1</b>	100	300	500	1200	500	1000	800	800	<b>1000</b>
<b>D2</b>	0	100	300	800	300	500	300	200	<b>200</b>
<b>E1</b>	0	0	0	0	0	0	0	0	<b>0</b>
<b>E2</b>	0	0	0	0	0	0	0	0	<b>0</b>
<b>F1</b>	0	200	1200 (917)	1000 (900)	1000	1000	1300	1500 (1453)	<b>1800</b>
<b>F2</b>	0	700	1500 (1297)	1300	1300	1300	1000	1000	<b>1000</b>
<b>G</b>	100	300	300	300	300	700	700	700	<b>700</b>
<b>H</b>	100	750	900	1100	400	300	300	300	<b>500</b>
<b>I</b>	0	0	300	300	300	500	500	500	<b>500</b>
<b>J1</b>	0	300	750	1200	800	1500	1200	800	<b>1000</b>
<b>J2</b>	400	1500	1750	2500	2000	2000	1800	1500	<b>1500</b>
<b>K</b>	2250	4100 (3569)	4100 (2505)	4000 (2446)	4000 (2440)	3000	3000 (2795)	2500	<b>3000</b>
<b>L</b>	0	0	300	300	300	300	300	300	<b>300</b>
<b>M</b>	0	200	300	300	300	300	300	300	<b>300</b>
<b>N</b>	1850	2100 (1835)	2100 (1588)	2000 (1487)	2000 (1462)	2000	1800 (1642)	1500	<b>1500</b>
<b>O</b>	500	1200	2000	2600 (2300)	2000	2000	1500	1500	<b>1500</b>
<b>P</b>	0	0	0	0	0	100	100	100	<b>100</b>
<b>Q</b>	0	250	900 (692)	700 (604)	600	500	600	600	<b>600</b>
<b>STATE</b>	<b>9650</b>	<b>18950</b> (18254)	<b>24500</b> (21442)	<b>27000</b> (24057)	<b>23000</b> (20741)	<b>23000</b>	<b>20000</b> (19637)	<b>19400</b> (19353)	<b>22000</b>

Table 3. Muzzleloader antlerless permit fill rate by WMU, 2015–2022.

<b>WMU</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>A</b>	9%	10%	12%	19%	13%	17%	14%	11%
<b>B</b>	12%	15%	13%	19%	14%	18%	15%	14%
<b>C</b>	20%	29%	19%	33%	24%	23%	20%	20%
<b>D1</b>	10%	25%	28%	29%	24%	23%	19%	18%
<b>D2</b>		18%	18%	21%	21%	20%	17%	18%
<b>E1</b>								
<b>E2</b>								
<b>F1</b>		15%	11%	16%	13%	17%	13%	12%
<b>F2</b>		14%	11%	19%	12%	17%	11%	10%
<b>G</b>	7%	20%	16%	28%	14%	17%	12%	12%
<b>H</b>	12%	16%	17%	20%	18%	21%	18%	16%
<b>I</b>			11%	24%	15%	19%	14%	10%
<b>J1</b>		23%	19%	26%	19%	18%	14%	17%
<b>J2</b>	16%	20%	16%	23%	17%	21%	16%	18%
<b>K</b>	10%	13%	12%	18%	14%	16%	11%	12%
<b>L</b>			14%	31%	15%	17%	13%	9%
<b>M</b>		18%	15%	24%	13%	17%	13%	17%
<b>N</b>	9%	13%	12%	18%	11%	13%	11%	11%
<b>O</b>	15%	15%	15%	20%	11%	13%	13%	16%
<b>P</b>						17%	13%	14%
<b>Q</b>		11%	12%	18%	10%	13%	9%	11%
<b>STATE</b>	<b>11%</b>	<b>15%</b>	<b>14%</b>	<b>21%</b>	<b>14%</b>	<b>17%</b>	<b>14%</b>	<b>14%</b>

## Public Comments

Three public hearings were held March 20, 23, and 24, 2023 to gather comments on the deer herd. Approximately 94 members of the public participated in these hearings. Two additional public hearings will be held May 9 and 11, 2023.

## Appendix A: Population Status and Management Recommendations by WMU

Deer densities, habitat conditions, and winter severity can vary substantially from one part of Vermont to another. Additionally, these factors and the effects of historical deer densities have resulted in deer in some regions being in better physical condition than others. This results in variable deer population dynamics across the state; therefore, deer management prescriptions are made at the WMU level rather than statewide.

The Department is aware that deer densities (and other factors) vary within each WMU, sometimes substantially. Unfortunately, managing deer at a smaller scale than a WMU is not currently feasible given the structure of hunting regulations and the Department's ability to collect enough data. However, hunters generally do a good job of targeting areas of higher deer density within a WMU if they have sufficient access.

### Description of data provided for each WMU

**Area of deer habitat:** Deer habitat is all land that is not developed.

**Management Objective:** The desired change in the deer population (Increase, Decrease, Stabilize)

**Recommended Antlerless Harvest:** The recommended antlerless harvest for 2023 during the archery, youth/novice, and muzzleloader seasons. Archery and youth/novice antlerless harvests are based on the previous 3-year averages and adjusted for the expected change in deer numbers from 2022 to 2023. The number of permits required to achieve the recommended muzzleloader antlerless harvest is also shown.

**Deer Density:** Estimated pre-hunt deer density over the past 10 years based on retrospective population modelling and the projected density in fall 2023. The density objective established in the *2020-2030 Big Game Management Plan* is represented by a red line in the figure. The shaded green area shows  $\pm 2$  deer per square mile – the range in which the management objective will be to stabilize.

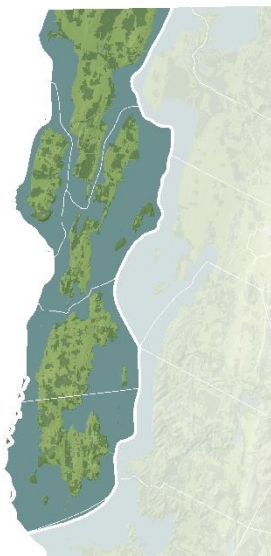
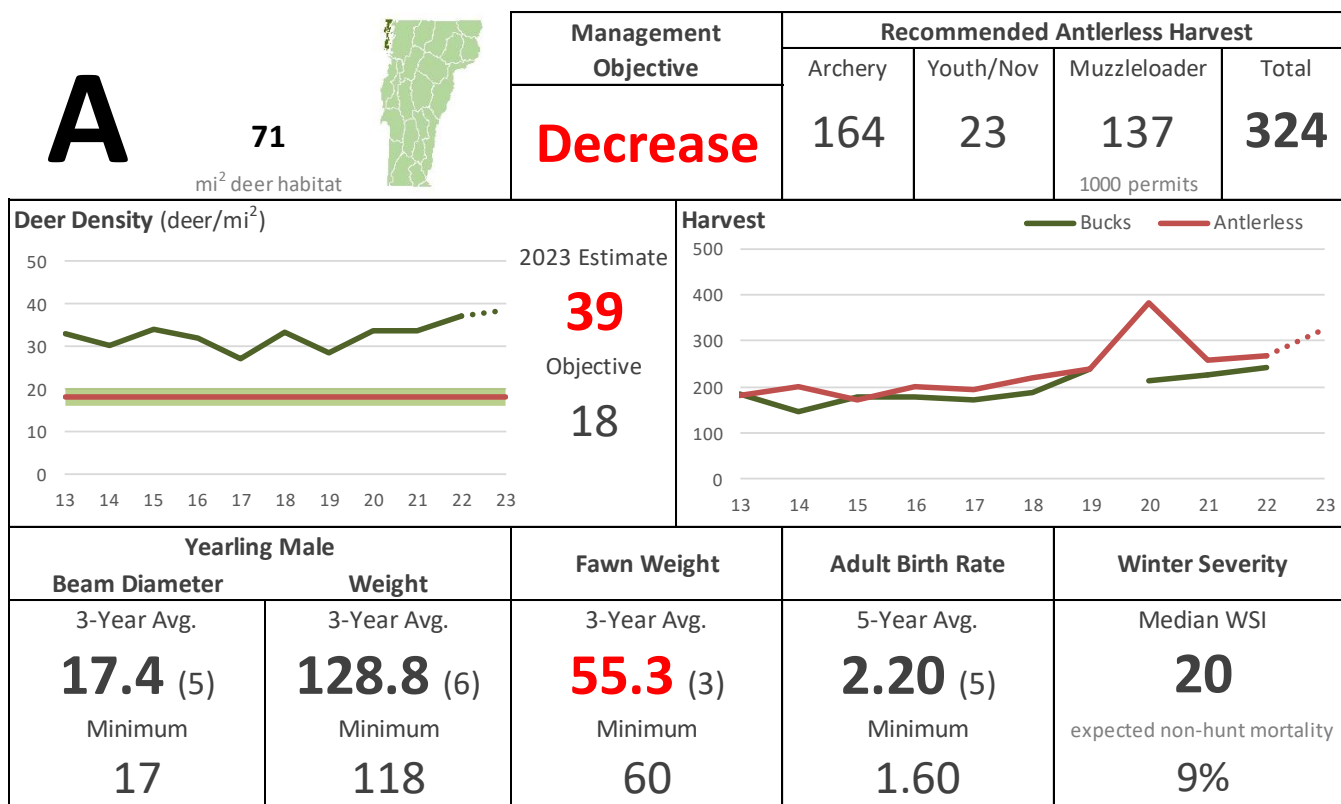
**Harvest:** The total buck and antlerless deer harvests during all seasons during the past 10 years. The proposed antlerless harvest for 2023 is shown by the dotted red line.

**Yearling Antler Beam Diameter/Yearling Male Weight/Fawn Weight:** These physical condition metrics are from deer examined by biologists at check stations. The average for the most recent three years of data is provided. Sample size is shown in parentheses. Minimum acceptable levels for each metric, established in the *2020-2030 Big Game Management Plan*, are also shown.

**Adult Birth Rate:** The average adult birth rate (fetuses per doe) over the past five years based on examinations of incidentally killed deer during February-May. Sample size is shown in parentheses. The minimum acceptable level established in the *2020-2030 Big Game Management Plan* is also shown.

**Winter Severity:** The median winter severity index in that WMU over the past 30 years and the expected adult doe mortality outside of the hunting seasons based on that winter severity.

**Red Numbers:** Numbers are red when a metric does not meet the objectives established in the *2020-2030 Big Game Management Plan*.

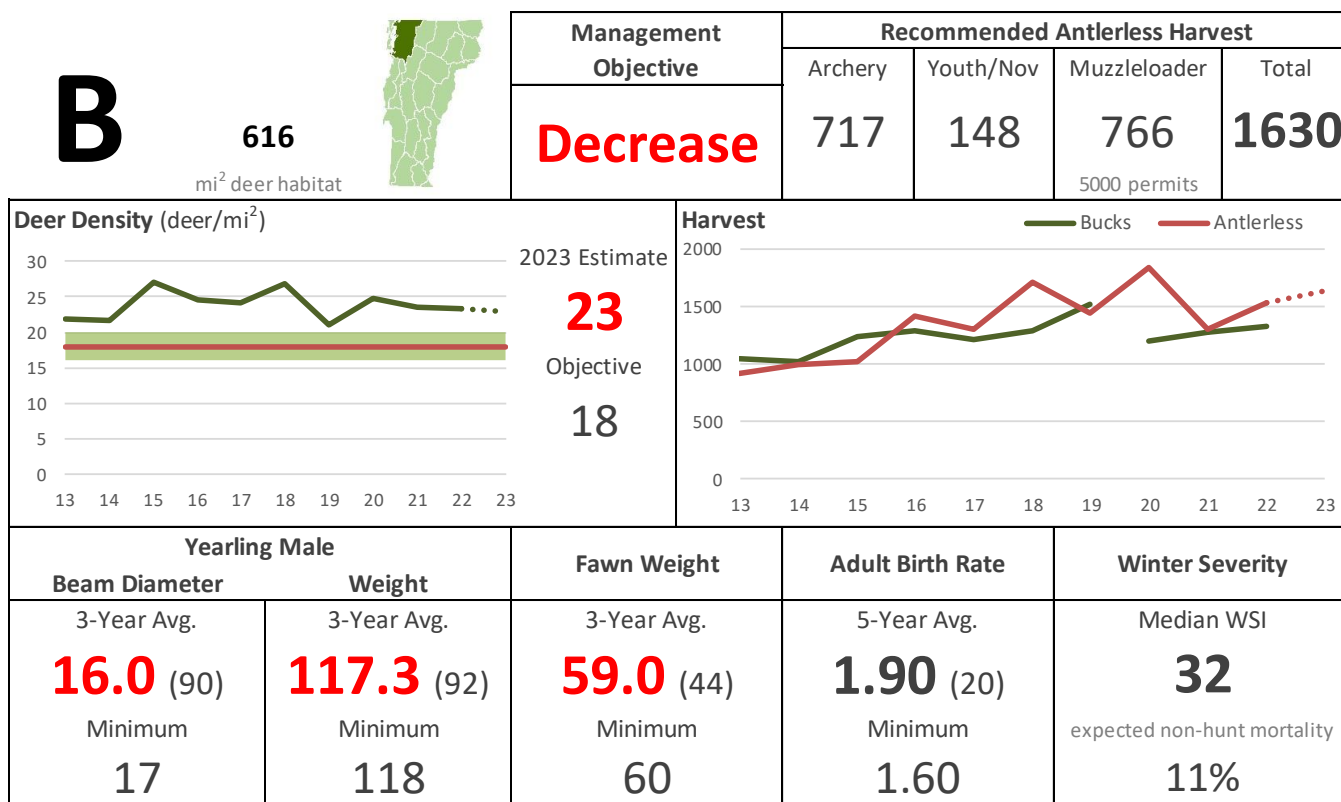


Wildlife Management Unit A encompasses the Champlain Islands (Grand Isle County). Winters here are among the least severe anywhere in Vermont and the habitat is relatively productive due to an abundance of agriculture. Despite high population density, physical condition of deer in this region remains good, presumably due to the abundance of agricultural habitat.

The abundant agriculture and other open land results in only 46% of the habitat being forested. This means the estimated density of 39 deer per square mile of habitat equates to 84 deer per square mile of forest. This density of deer is having significant impacts on forest ecosystems. The health of these ecosystems is the primary management concern in this region.

The archery antlerless harvest has increased in this WMU under the new regulations. However, it has not been sufficient to reduce deer numbers. The 2023 antlerless harvest recommendation is higher than recent years and should be sufficient to reduce deer numbers over time.

Limited hunter access to private land is a significant management challenge in this WMU.



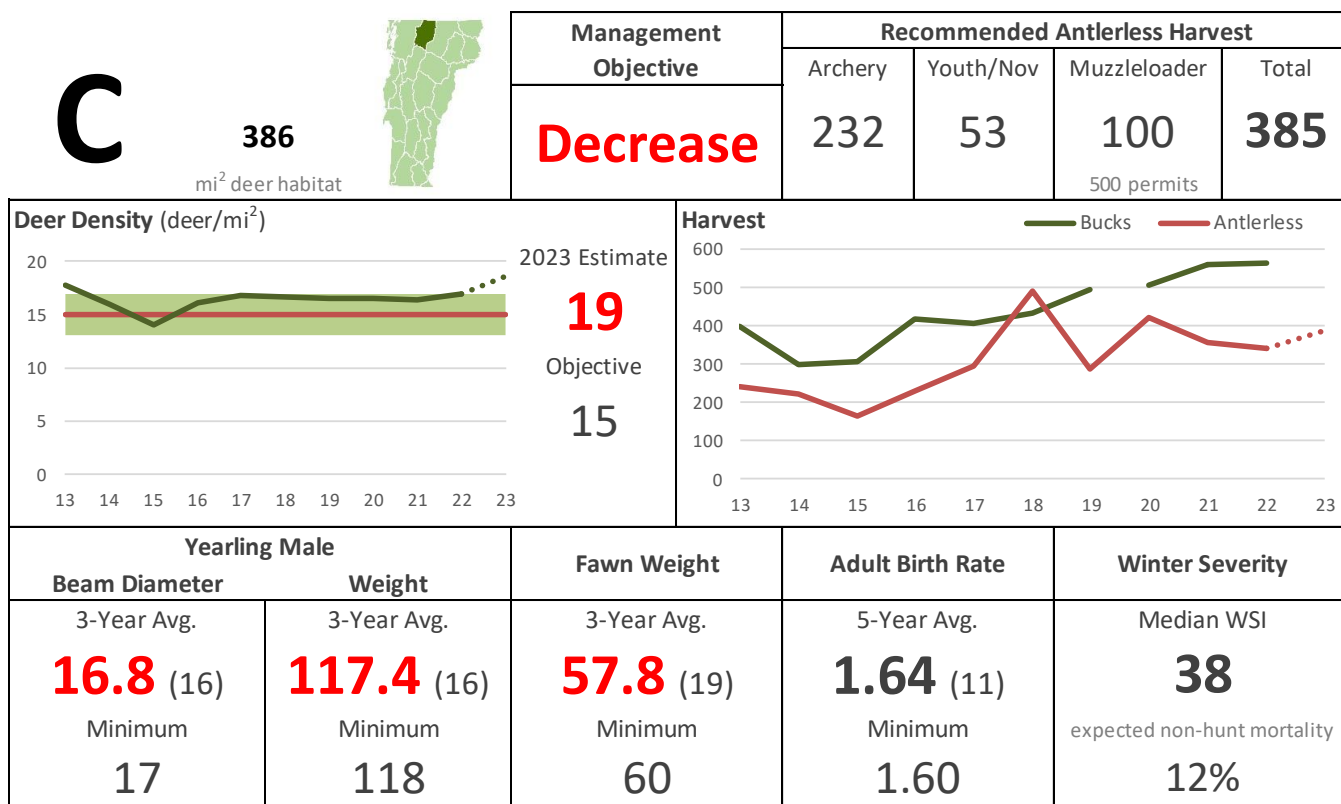
Wildlife Management Unit B encompasses the Champlain Valley north of the Winooski River. Severe winters are rare in this region and the habitat is relatively productive, with an ideal mix of forest and fields.

Physical condition of deer in this region is mediocre considering the quality of the habitat, indicating that deer densities have exceeded the level that the habitat can support long-term. This is further supported by widespread and often substantial evidence of deer impacts to forest ecosystems. It appears that recent increases in antlerless harvest may have stopped physical condition from declining, but have been insufficient to allow for improvement.

Deer density in this WMU has been above management objective for many years, but antlerless harvests achieved in 2018 and 2020 appear to have begun reducing the population. The recommended antlerless harvest in 2023 is higher than the 2021 and 2022 harvests in an attempt to reduce deer numbers more quickly.

Limited hunter access to private land is a significant management challenge in this WMU.

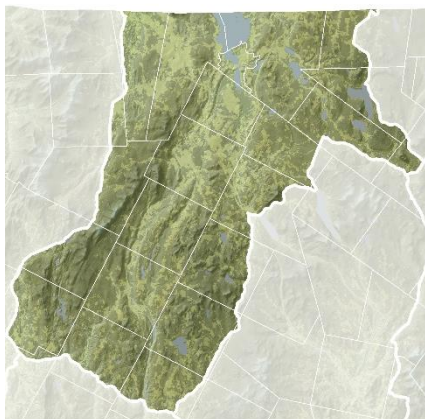
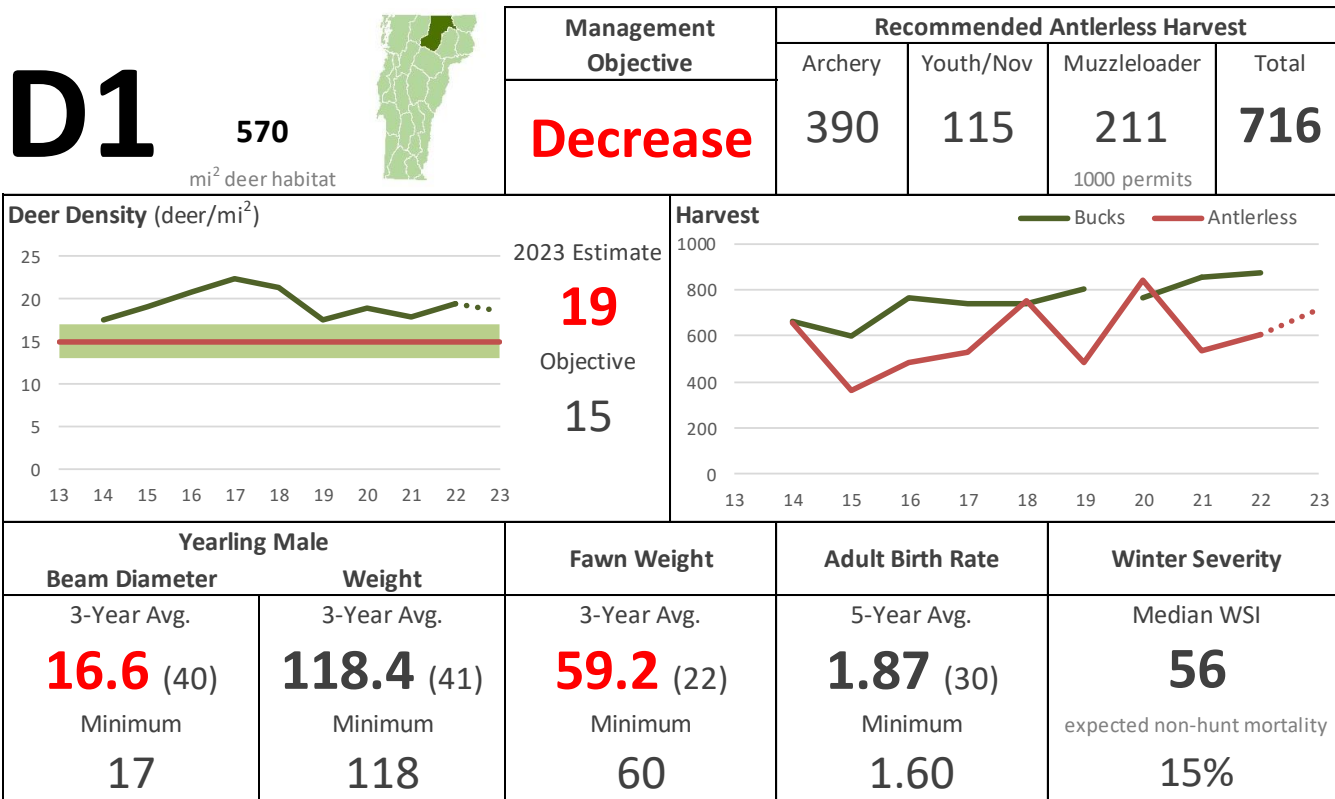




Wildlife Management Unit C encompasses the northernmost portion of the Green Mountains, from Johnson to the Canadian border. The westernmost portion of the WMU consists of lower elevation farmland similar to WMU B and has notably higher deer densities than higher elevation portions of the WMU.

Physical condition of deer in this WMU is mediocre and suggests that density has been near or slightly above the level the habitat can support for many years. This is presumably driven primarily by higher density in the western portion of the WMU and/or declining habitat quality in the more heavily forested, mountainous areas.

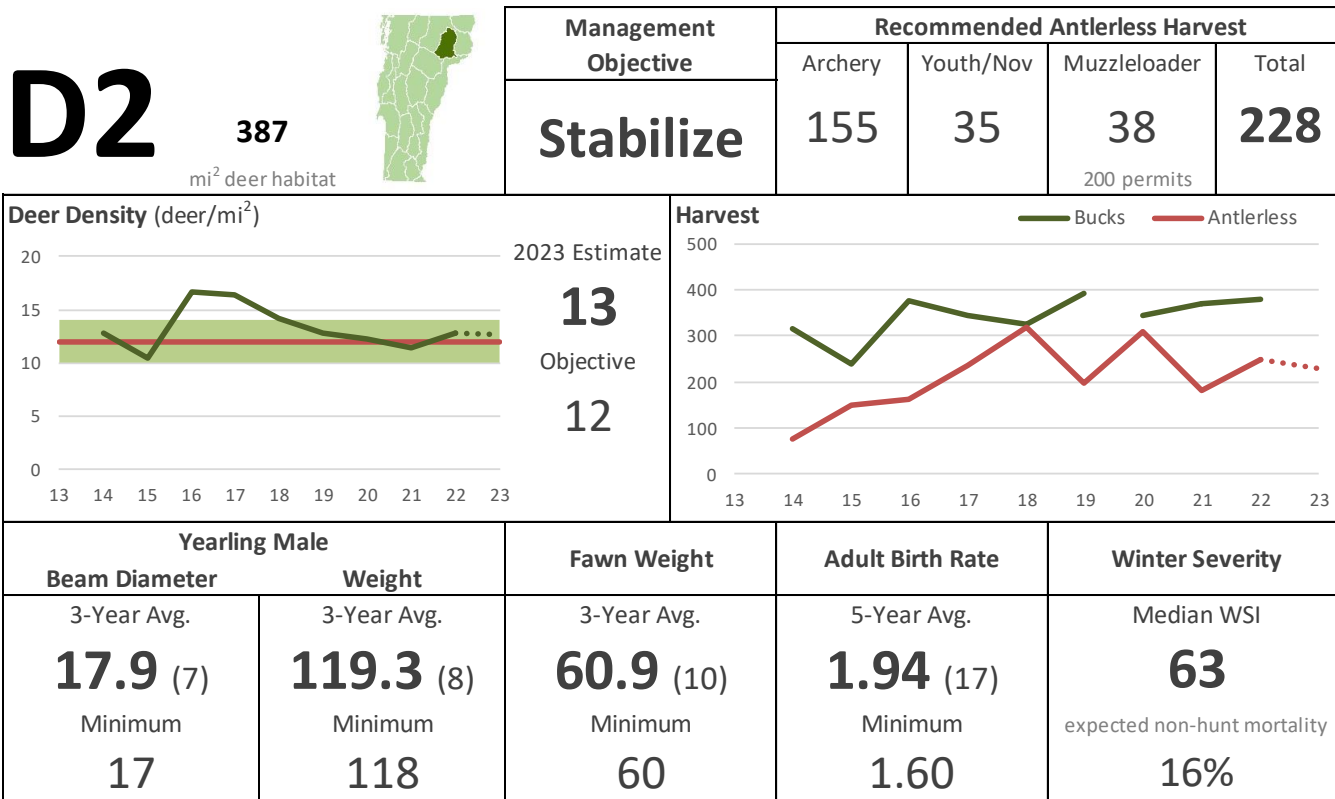
Deer density has remained relatively stable in this WMU over the past 10 years, and importantly has been above the current objective of 15 deer/mi<sup>2</sup> (albeit only slightly) since 2016. The projected increase in deer numbers in 2023 may not be accurate given the stability of the population over the previous 6 years. Due to uncertainty in that estimate, the 2023 recommended antlerless harvest is similar to the harvest achieved in recent years. Future antlerless harvests may need to be higher in order to reduce deer numbers and improve physical condition.



Wildlife Management Unit D1 is in the northern Vermont piedmont biophysical region. Deer habitat in this WMU is fairly productive, with a mix of forest and fields. Winters in this region tend to be more severe than much of the rest of the state, which limits the density of deer that can be supported long term.

Physical condition of deer in this WMU has been stable near the minimum acceptable levels. This is concerning, particularly given the amount of agriculture and general quality of habitat and suggests the population has been overabundant for many years.

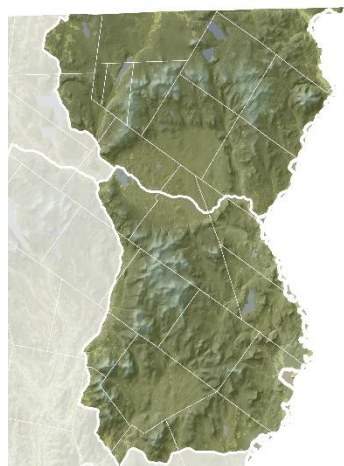
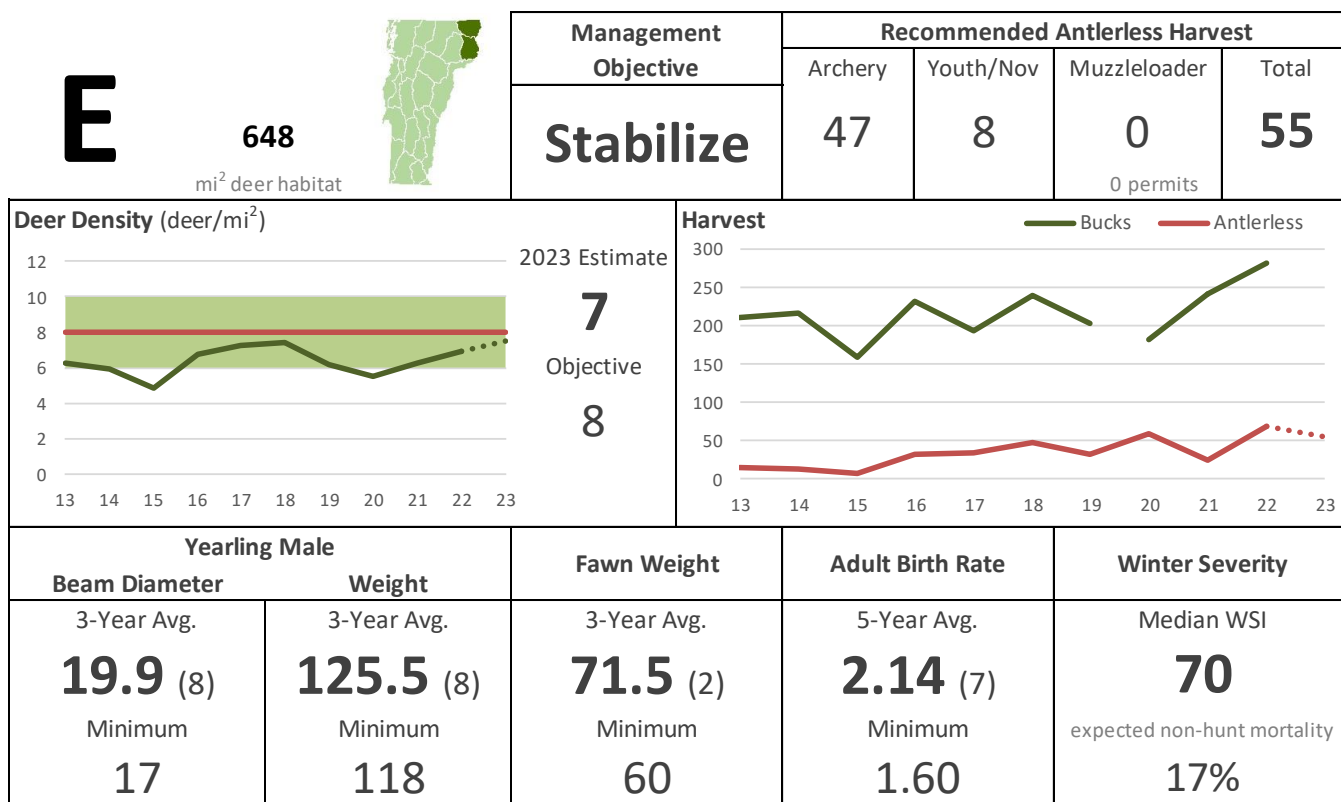
Recent higher antlerless harvests appear to have stabilized deer density in this WMU, but have been insufficient to reduce deer numbers when winters are easy or moderate. A slightly higher antlerless harvest is recommended in 2023, and will likely be necessary going forward to effectively reduce deer numbers and improve physical condition.



Wildlife Management Unit D2 is located in the Northeast Kingdom. Higher elevation portions of the unit are heavily forested while lower elevations, particularly along the Passumpsic river valley, include more open land and agriculture. As a result, deer density is higher in lower elevation areas in the southeastern part of the unit.

Winters in this WMU are often severe, which limits deer density, particularly in the higher elevation areas, and helps keep deer in good physical condition. However, several of the lower elevation towns (e.g., Burke, Lyndon, St. Johnsbury) have seen record or near-record harvests in recent years, suggesting the deer population in this part of the WMU is growing.

The antlerless harvest recommendation is intended to maintain the population at 12 deer/mi<sup>2</sup>. Most antlerless harvest, particularly during the archery season, tends to be concentrated in the lower elevation, higher density parts of the WMU. The Department will also be considering an expanded archery zone around St. Johnsbury to further increase antlerless harvests in this area where complaints about deer damage to gardens and landscaping are common.

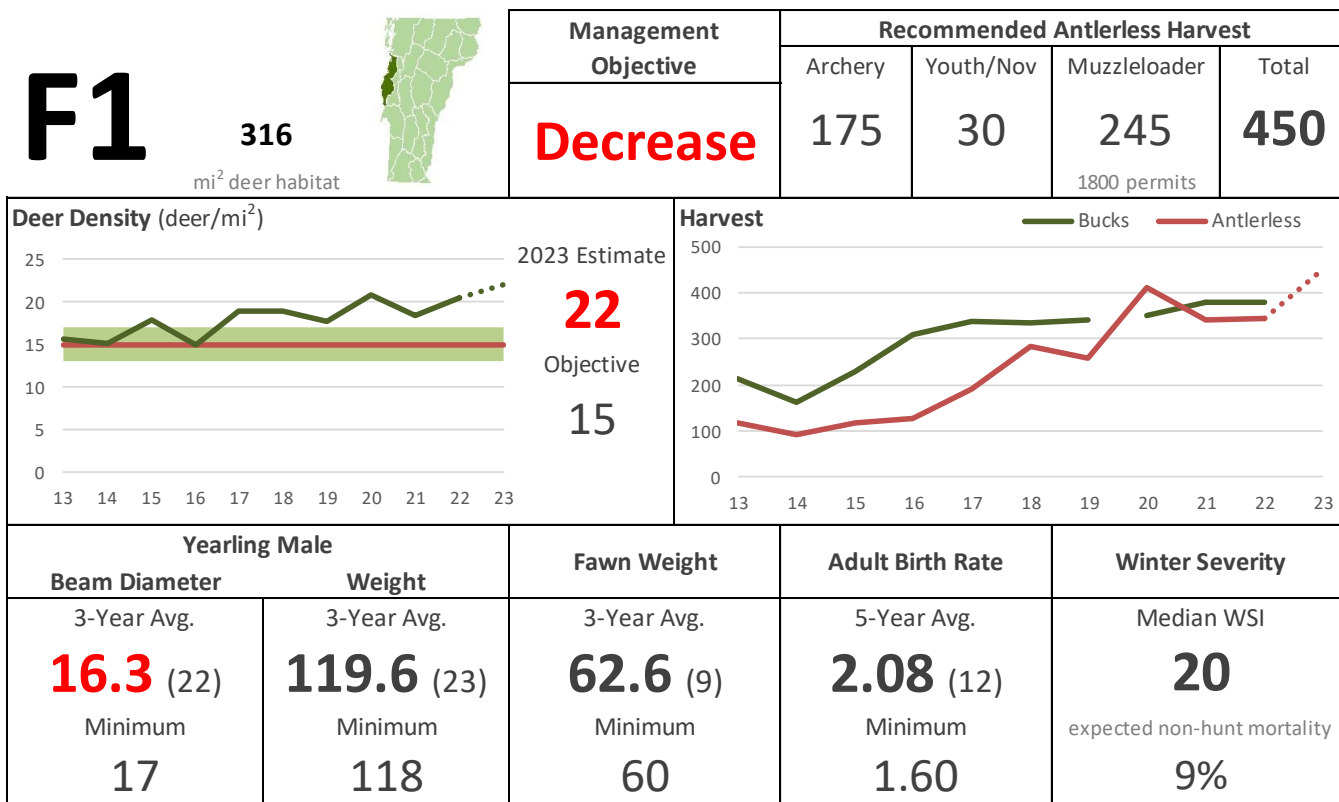


Wildlife Management Units E1 and E2 are located in the northeast corner of Vermont in the northeast highlands biophysical region. This region regularly experiences severe winters which limit deer density.

These WMUs are heavily forested, but young forest is abundant due to widespread commercial timber harvesting. As a result, summer deer habitat is relatively high quality. It is the quantity and quality of winter habitat, specifically mature softwood cover, that limits deer abundance in this region.

Additionally, deer in this region must coexist with a relatively abundant moose population. Because they largely compete for the same resources at certain times of year, the densities of both species must be considered in management decisions. The current density objective in these WMUs considers both the relationship between deer and moose and the limited quantity and quality of current deer winter habitat. Maintaining deer density below 10/mi<sup>2</sup> helps minimize the risk of brainworm infection in moose and allows deer winter habitats to improve.

Deer density remains well below the 10/mi<sup>2</sup> threshold and has been relatively stable over the past 10 years. The current antlerless recommendation provides additional harvest opportunity to archery and youth/novice hunters and will have no effect on the population.

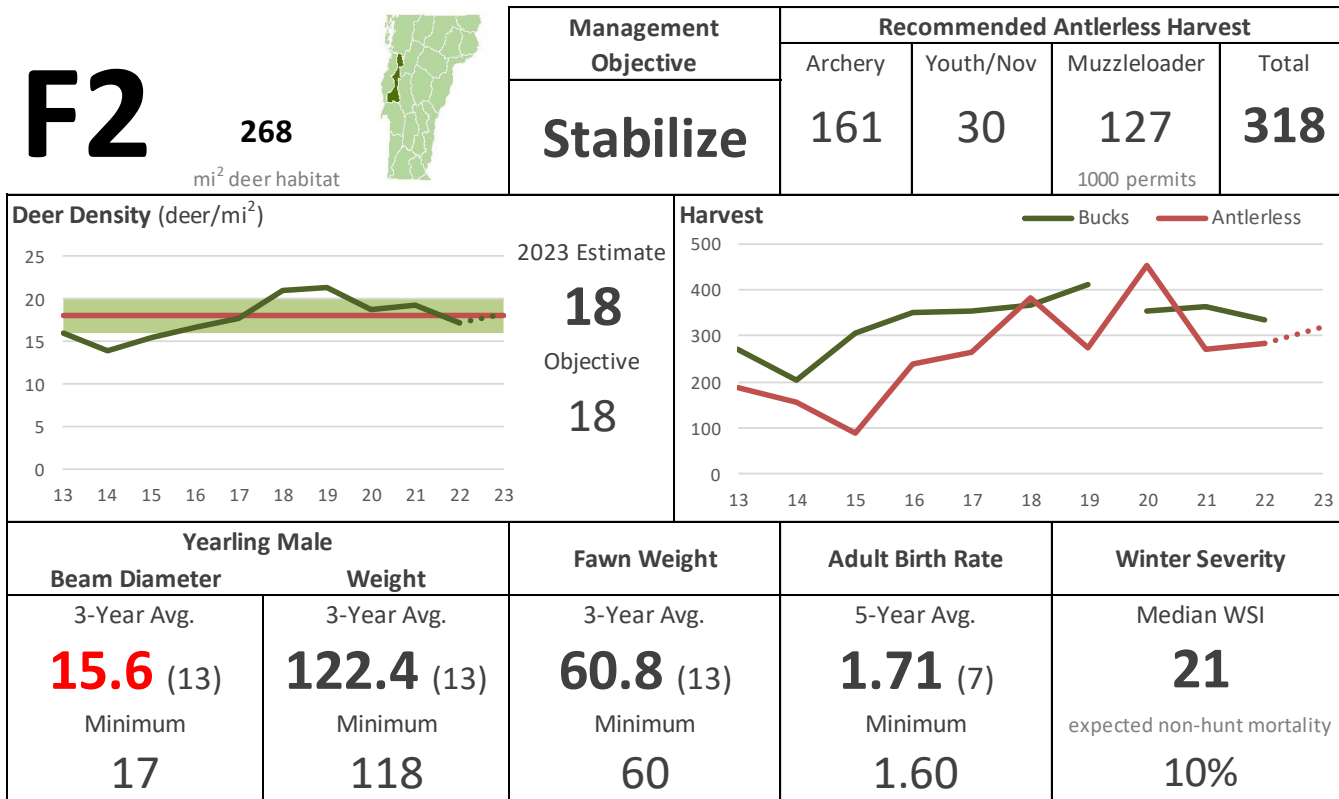


Wildlife Management Unit F1 is in the southern Champlain Valley, from Burlington south through the heavily agricultural regions of Addison County. Winters are relatively easy for deer in this part of Vermont and the abundance of agriculture results in excellent deer habitat. This is reflected in the physical condition of the deer, which is consistently among the best in the state.

The abundance of agriculture and otherwise open land results in only 33% of this WMU being forested. The current density of 22 deer/mi<sup>2</sup> of habitat therefore equates to 68 deer/mi<sup>2</sup> of forest. These high densities have caused widespread and significant impacts to forest ecosystems, including many of the uncommon natural communities that are found in this region.

Deer density has increased steadily over the past decade, with many towns having record or near-record harvests each year. The recent increases in antlerless harvest may have helped to slow this increase, and possibly stabilize the population, but harvests have been insufficient to reduce deer density toward the objective. The recommended antlerless harvest represents an increase over the harvest achieved in recent years. Consistently higher antlerless harvests will be necessary to reduce the population and maintain it at the objective level.

Limited hunter access to private land is a significant management challenge in this WMU.



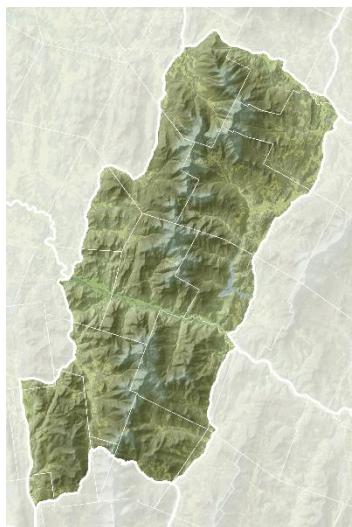
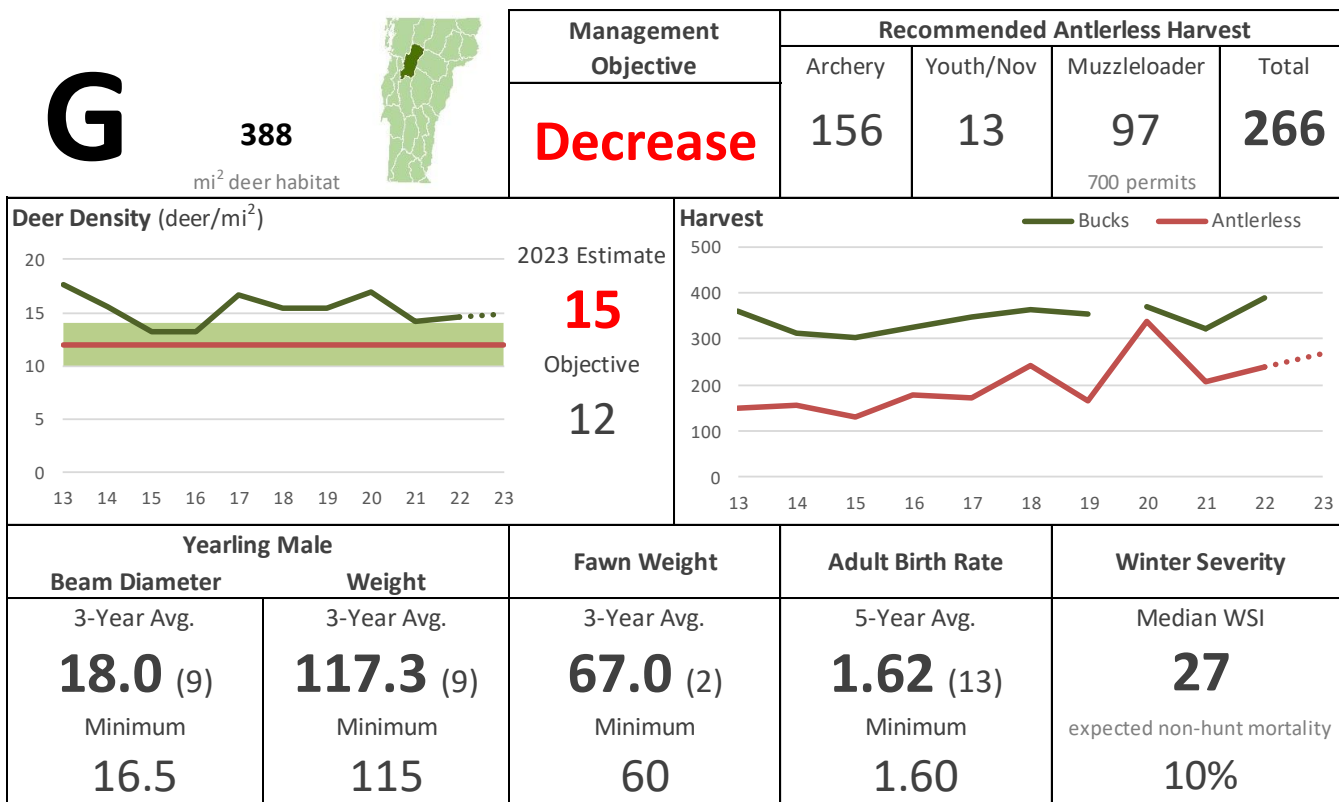
Wildlife Management Unit F2 is located in the southern Champlain Valley in the foothills of the Green Mountains. Winters here are relatively easy for deer and the habitat is generally good with a mix of forest and field.

Considering the prevalence of agriculture and mild winters, the mediocre condition of yearling bucks is concerning. This suggests that deer density has exceeded the level the habitat can support. Indeed, deer impacts to forest ecosystems are common in this WMU.

Many towns in this WMU have experienced record or near record harvests in the past few years. However, recent increases in the antlerless harvest appear to have stabilized the population near the objective.

The current antlerless harvest recommendation is similar to the harvest achieved in recent years, and will be necessary to maintain the population near the objective level.

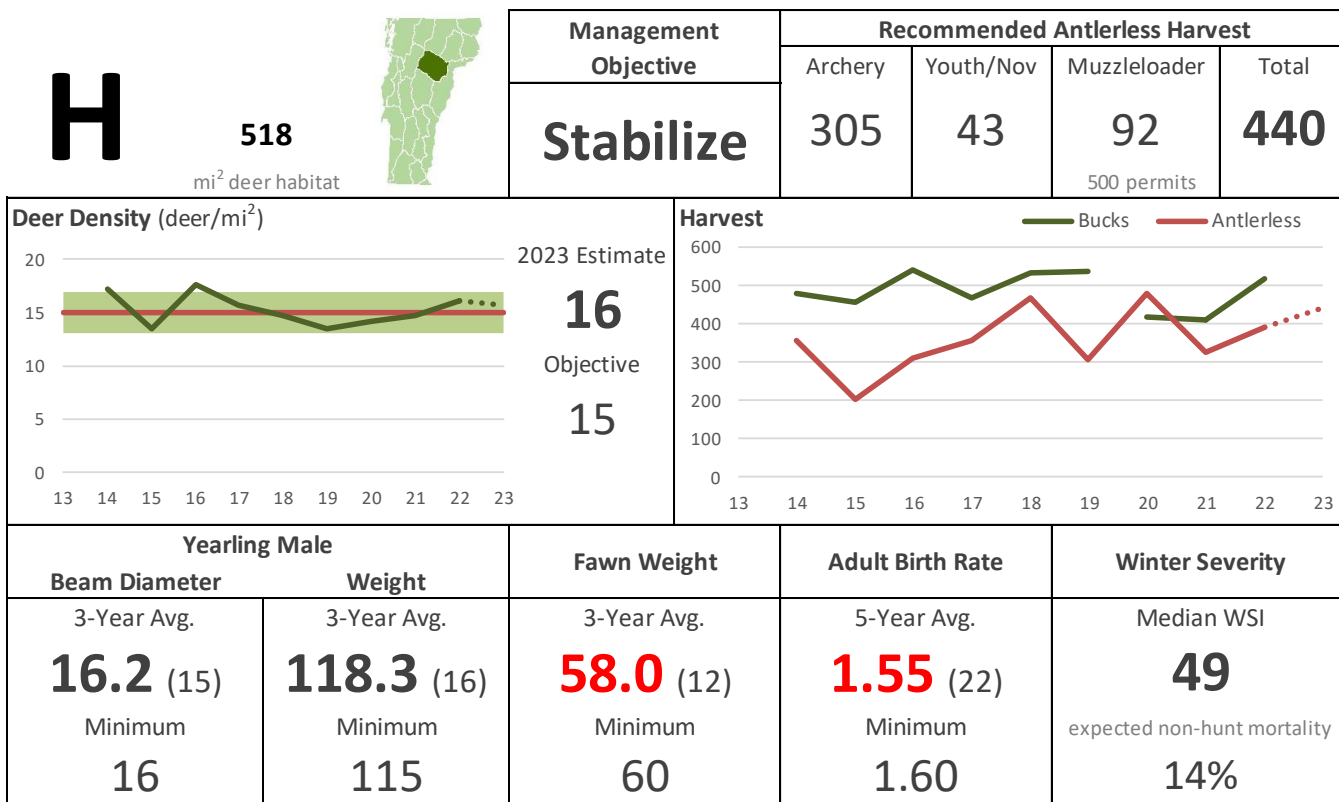
Limited hunter access to private land is a significant management challenge in this WMU.



Wildlife Management Unit G is in the northern Green Mountains from the Appalachian Gap (Rte 17) north to Johnson. This area is heavily forested and mountainous, and includes both Camel’s Hump and Mount Mansfield. Deer habitat is poor due to the unproductive mountain terrain and very limited young forest habitat. Winters here can occasionally be severe, but are often more moderate at lower elevations where deer typically spend the winter.

Deer density in this unit is low at higher elevations, but moderate to high at lower elevations, particularly on the western edge of the unit. Physical condition of deer was below optimal levels for many years, although it has improved recently. This indicates that density had exceeded what the habitat can support, likely for many years, and was the primary basis for setting the current population objective in this unit at 12 deer/mi<sup>2</sup>.

Past antlerless harvests have had no clear effect on deer numbers in this WMU, although they may be slowly declining. The recommended antlerless harvest in 2023 is similar to recent years. This should reduce deer numbers if winter severity is normal, which will help to maintain the improved physical condition.

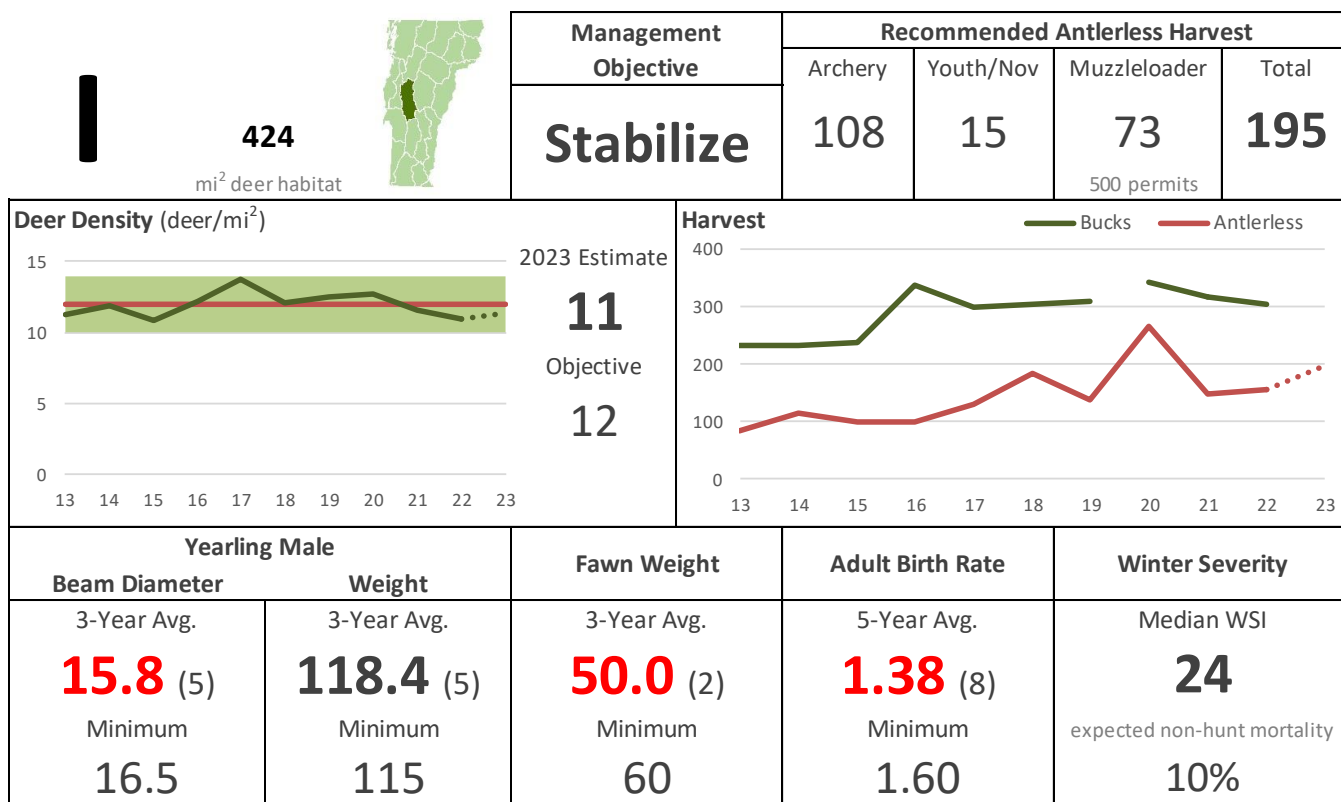


Wildlife Management Unit H is located in north-central Vermont, from Stowe east to Groton and Barre-Montpelier north to Hardwick. Habitat quality for deer varies considerably in this unit, and that is reflected in local deer densities. Lower elevation areas closer to Montpelier and Barre have more agriculture and open land and easier winters, resulting in relatively high deer density. The remainder of the WMU is higher elevation (including the Worcester and Groton ranges) and heavily forested. Winters are more severe in these areas and habitat quality is generally poor. As a result, deer density is lower.

Physical condition of deer in this WMU is generally mediocre, although trends in yearling antler beam diameter and weight are encouraging. The current overall density of deer in this WMU should be sustainable; however, it will be important to achieve and maintain higher antlerless harvests in the Barre-Montpelier area where deer are overabundant. The Department will be considering an expanded archery zone to address this concern.

Most of the antlerless harvest in this WMU occurs during archery season and is heavily concentrated closer to Barre and Montpelier. The recommendation for 2023 allows additional antlerless harvest opportunity in the muzzleloader seasons and should help to stabilize deer numbers near the objective.

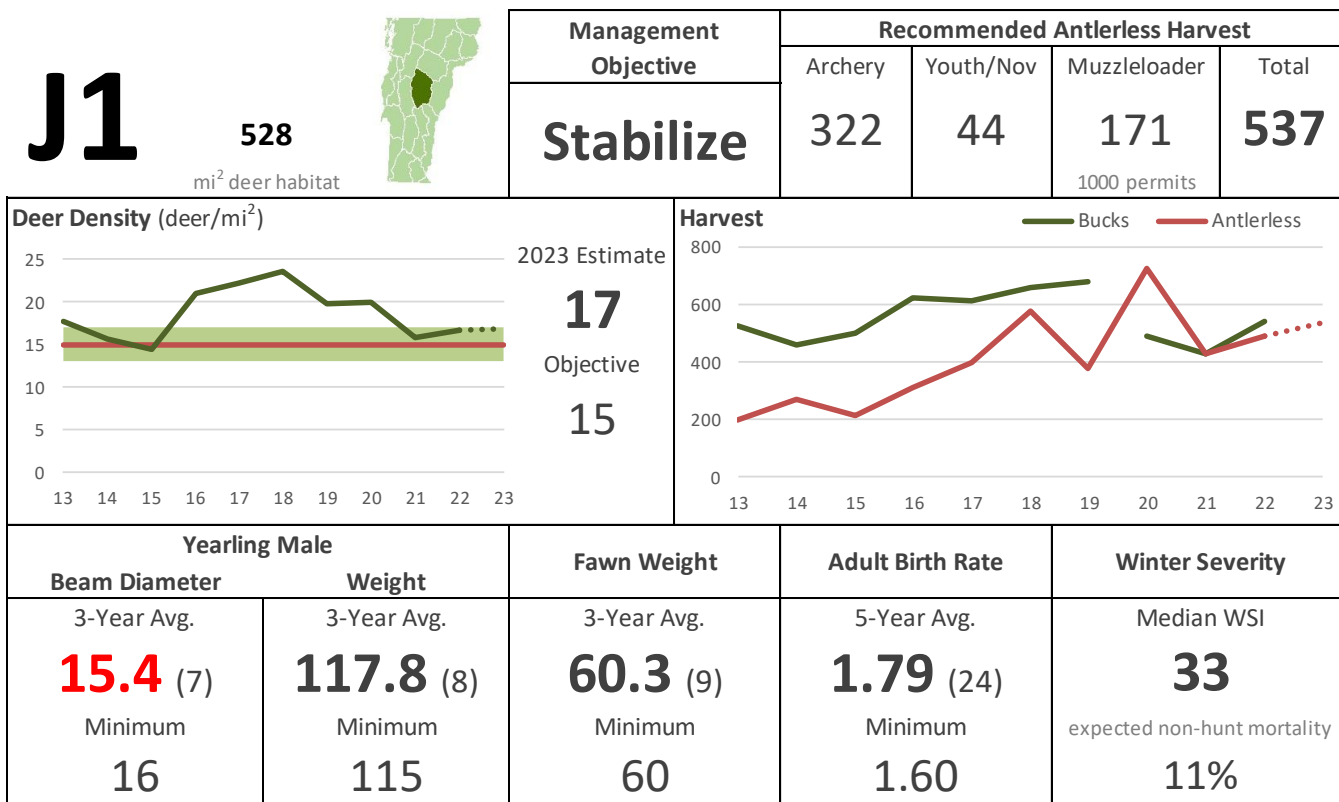




Wildlife Management Unit I is located in the central Green Mountains, from Route 4 in Killington north to the Appalachian Gap (Rte. 17). Deer habitat is generally poor due to the unproductive mountain terrain and very limited young forest habitat. Winters here can occasionally be severe but are often more moderate at lower elevations where deer typically spend the winter.

Deer density in this unit is low at higher elevations, but can be moderate to high at lower elevations, particularly on the western edge of the unit. The birth rate and fawn weights are concerning, but sample sizes are limited. It appears that higher antlerless harvests since 2017 have helped to stabilize the population at the objective of 12 deer/mi<sup>2</sup>.

The recommendation for 2023 is to continue with that harvest level to maintain current deer numbers and provide additional harvest opportunity.

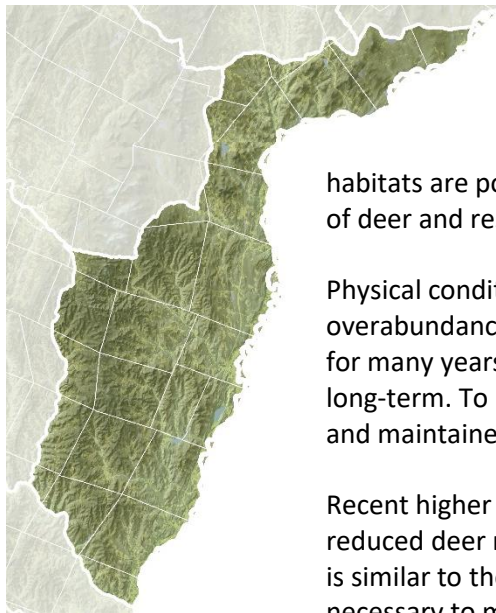
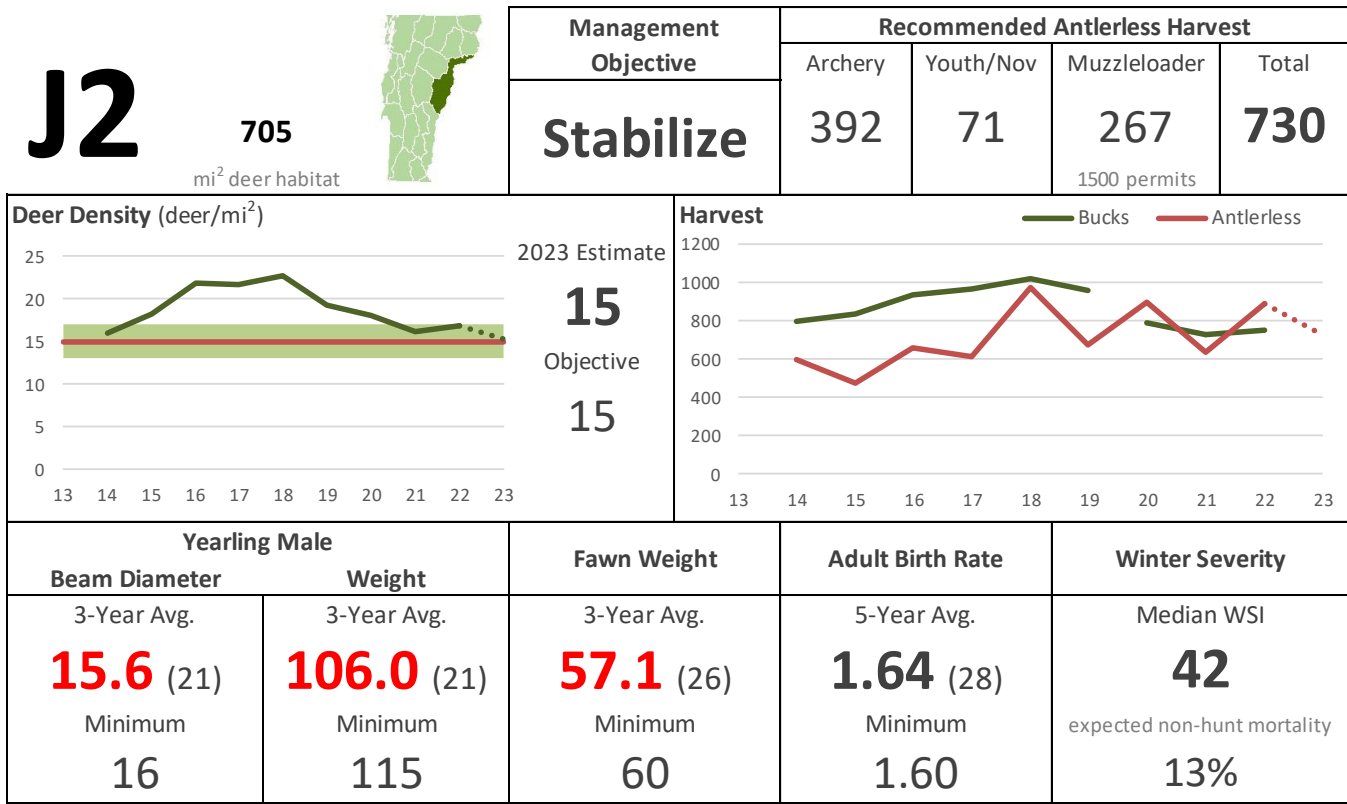


Wildlife Management Unit J1 is located in central Vermont. It encompasses the area from route 100 east to route 110 in Tunbridge and Chelsea, and from route 2 south to Bethel. Habitat quality for deer varies considerably in this unit, and that is reflected in local deer densities. Eastern parts of the WMU are hilly with an almost ideal mix of forest and field resulting in relatively high deer density. Conversely, the western half of the WMU is more mountainous and heavily forested. Habitat quality is poorer and, as a result, deer density is lower.

Physical condition of deer in this WMU has been poor for many years, but appears to be improving. Poor condition is presumably related to declining habitat quality and historical overabundance of deer. Clearly, deer density in this unit had exceeded the level the habitat can support long-term. Recent population reductions appear to be having the desired effect of improving physical condition.

Recent higher antlerless harvests and the moderately severe winter of 2019 have reduced the population in this WMU. The recommended antlerless harvest in 2023 is similar to the harvests achieved in recent years. This level of harvest will be necessary to maintain the population near the objective level, particularly when winters are mild.

It will also be important to increase antlerless harvest in the Barre-Montpelier area where deer are overabundant and conflicts are more likely. The Department will be considering an expanded archery zone to address this concern.

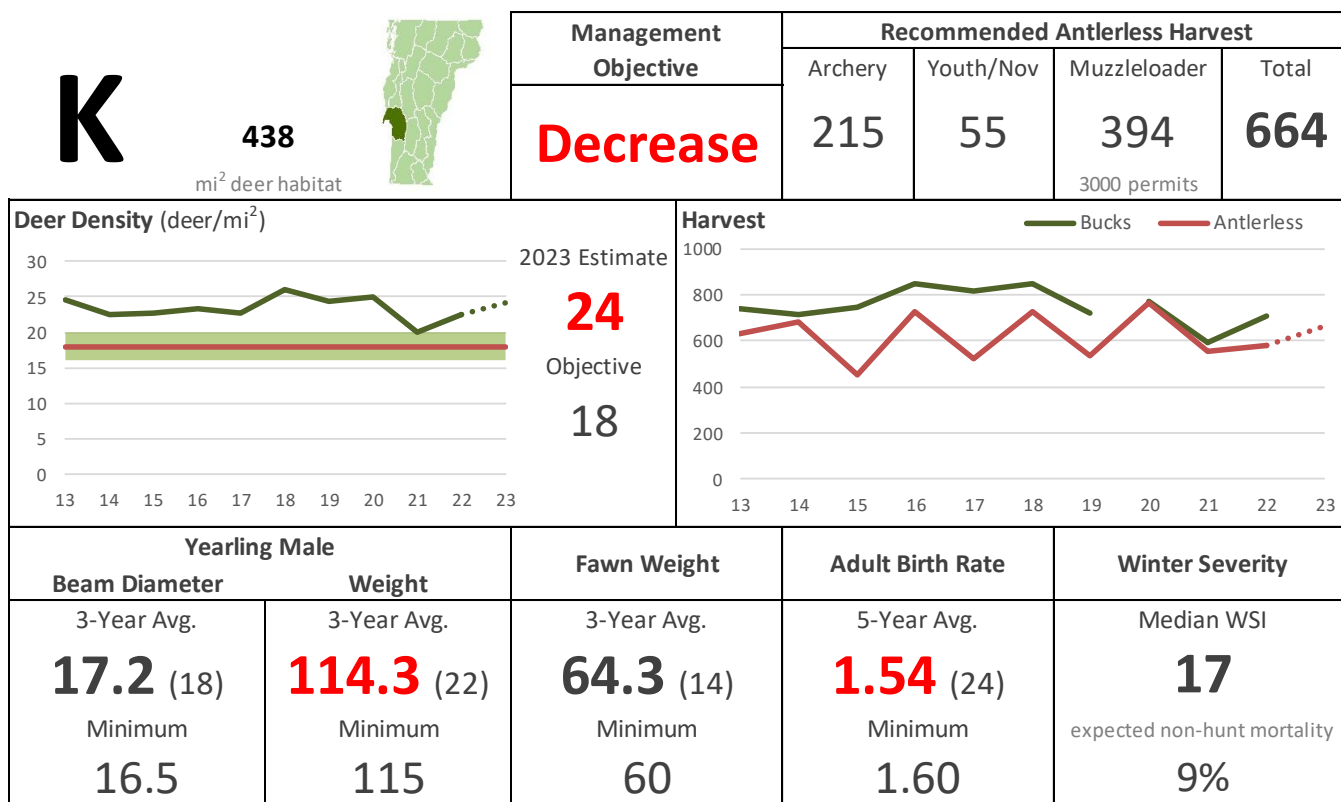


Wildlife Management Unit J2 encompasses the Connecticut River Valley from Lunenburg to White River Junction. Winters can occasionally be severe but are typically moderate to easy. The habitat contains a desirable mix of forest and field but forest habitats are poor quality due to a lack of young forest and historical overabundance of deer and resultant chronic overbrowsing.

Physical condition of deer in this WMU is poor. This is presumably related to historical overabundance of deer and declining habitat quality, as these metrics have been low for many years. Clearly, deer density has exceeded the level the habitat can support long-term. To improve the health of deer in this WMU, deer density must be reduced and maintained at the objective level.

Recent higher antlerless harvests and the moderately severe winter of 2019 have reduced deer numbers in recent years. The recommended antlerless harvest in 2023 is similar to the harvest achieved in recent years. This level of harvest will be necessary to maintain the population near the objective level, particularly when

winters are mild.

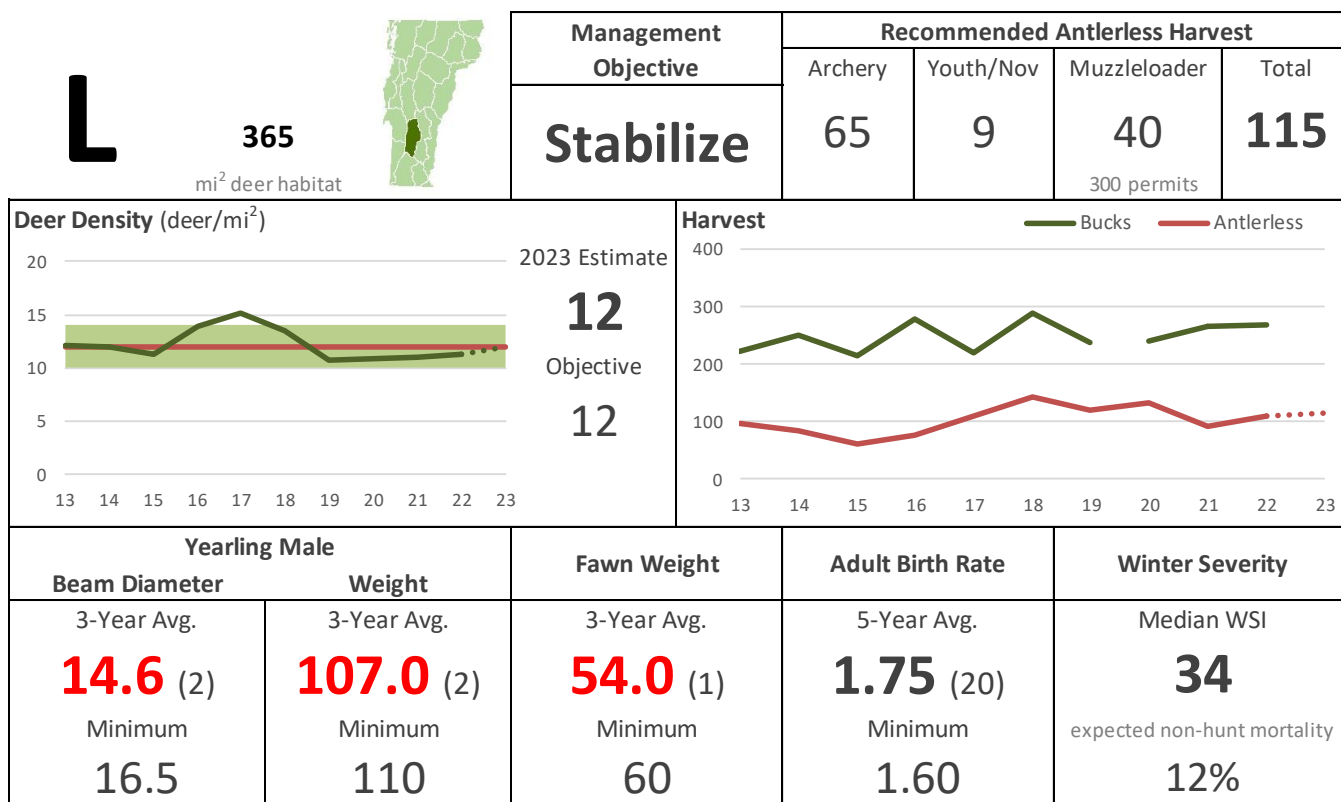


Wildlife Management Unit K is located in the Western Foothills biophysical region, encompassing areas west of US Route 7 from Brandon south through Rutland to Danby. This region has relatively easy winters and habitat with a good mix of forest and field. Importantly, oak is abundant and widespread and is an important factor in maintaining mediocre physical condition of deer despite chronic overabundance.

Deer browse damage to forest regeneration is ubiquitous throughout the WMU and has been occurring for decades in many areas. Chronic overabundance of deer has significantly impacted forest ecosystems and contributed to the proliferation of invasive species.

Following an apparent population decline in 2021 that was likely related to reduced hunting effort following a local EHD outbreak, the density estimate in 2022 returned to levels typical of this WMU over the past decade. The recommended antlerless harvest in 2023 is similar to the harvest achieved in recent years and likely represents the maximum harvest achievable under current regulations. A higher antlerless harvest will be necessary to achieve deer density objectives and bring the deer population into balance with what the habitat can support long-term.

Limited hunter access to private land is a significant management challenge in this WMU.

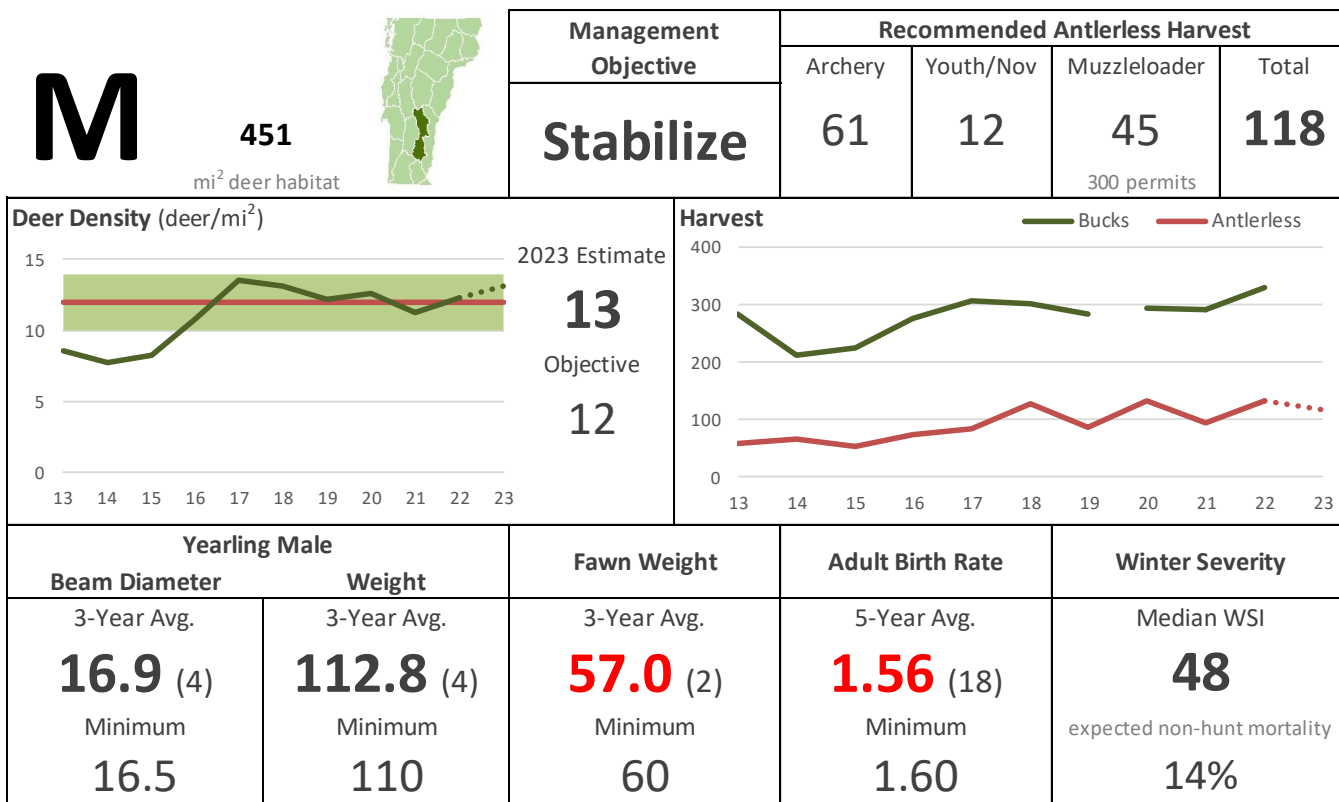


Wildlife Management Unit L is located in the southern Green Mountains, from US Route 4 in Killington south to route 30 in Winhall. Deer habitat is generally poor due to the unproductive mountain terrain and very limited young forest habitat. Winters here can occasionally be severe but are often more moderate at lower elevations where deer typically spend the winter.

Deer density in this unit is low at higher elevations, but can be moderate to high at lower elevations on the western edge of the unit, particularly closer to Rutland.

Physical condition metrics are below desired levels, but sample sizes have been limited. Importantly, the population has not grown over the past 10 years despite very limited antlerless harvests. This suggests that habitat quality is the primary factor limiting deer density in this WMU.

The recommended antlerless harvest is intended to maintain the population at its current level. It is similar to recent antlerless harvests and will provide reasonable antlerless harvest opportunities and help address higher deer densities along the western edge of the unit without impacting overall deer numbers.

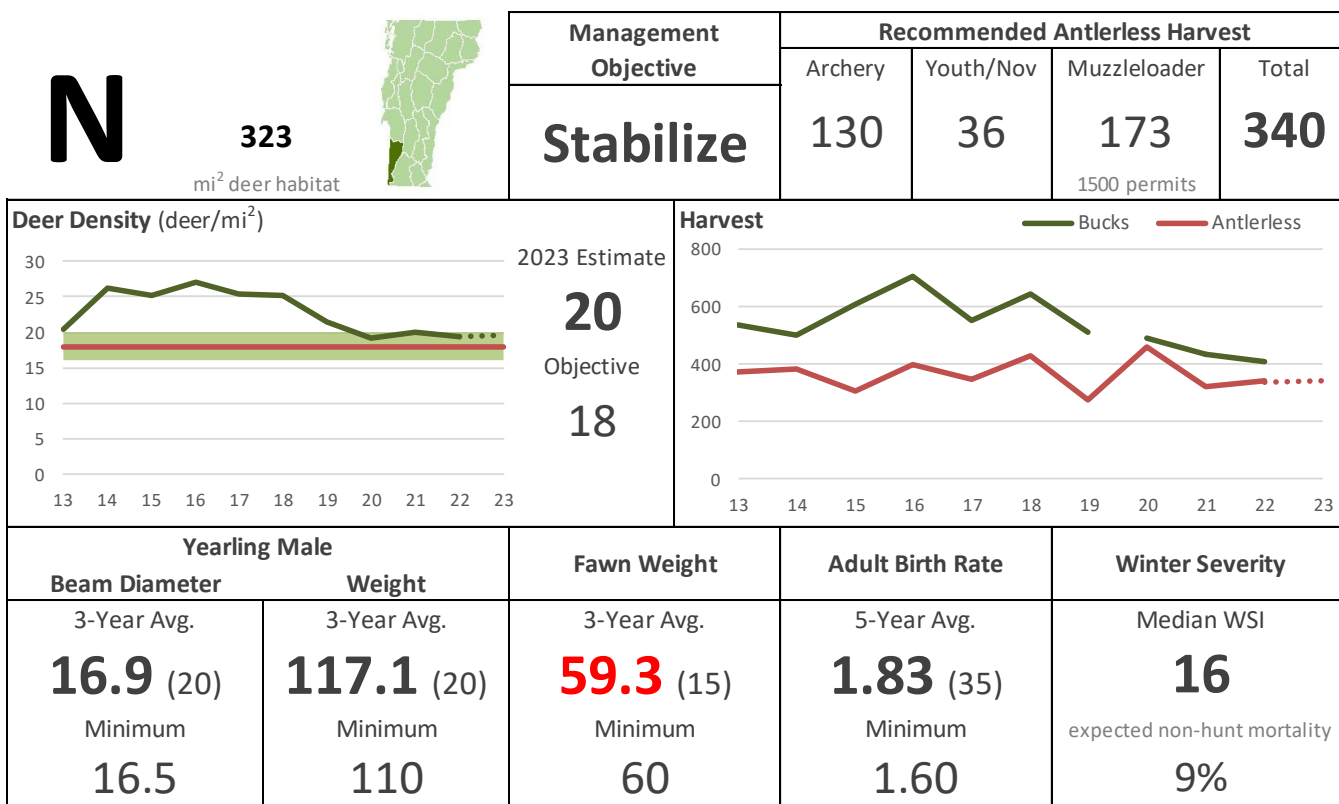


Wildlife Management Unit M is located in the eastern foothills biophysical region from Stockbridge south to Townshend. Deer habitat is generally poor due to the heavily forested, unproductive mountain terrain and limited young forest. Winters here can occasionally be severe but are often more moderate at lower elevations where deer typically spend the winter.

Deer density in this unit is variable, but generally low.

Physical condition metrics are near minimum levels, but sample sizes have been low. Physical condition of deer is not currently concerning, and the current density of deer should be sustainable. The population increased in 2016 and 2017 following exceptionally easy winters but has otherwise been stable for many years despite very minimal antlerless harvests. This, and the current physical condition of the deer, suggests that habitat is the primary factor limiting deer density.

The recommended antlerless harvest is intended to maintain the population at its current level. It is similar to recent antlerless harvests and will provide additional antlerless harvest opportunities with little or no effect on the population.



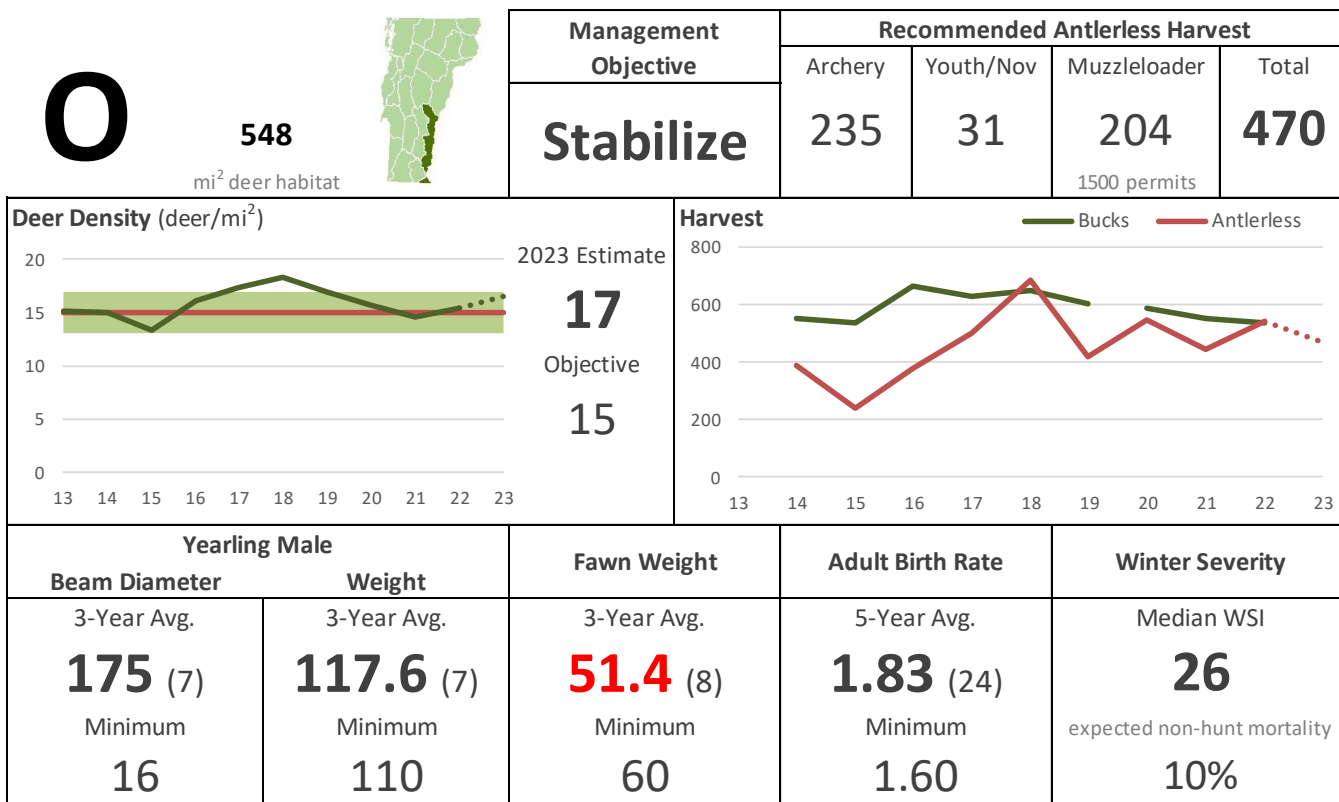
Wildlife Management Unit N is in the southwest corner of Vermont, including parts of the Taconic Mountains and Vermont Valley biophysical regions. This region has easy winters, productive soils, and habitat with a good mix of forest and field.

Deer browse damage to forest regeneration is ubiquitous and has been occurring for decades in most areas. Chronic overabundance of deer has significantly impacted forest ecosystems and contributed to the proliferation of invasive species. Importantly, oak is abundant and widespread and is likely an important factor in maintaining physical condition at mediocre levels.

Physical condition of deer is concerning, particularly given the productivity of the soils, mild winters, and abundance of oak. Presumably, this is related to chronic overabundance and declining amounts of young forest. Deer densities must be maintained at lower levels to improve the health of the deer and the forest ecosystems.

The deer population in this region appears to have declined from 2017 to 2020 and is now stable slightly above the target density. The decline appears to have been caused by poor fawn recruitment during those years. Antlerless harvests have been consistent for many years (despite Department efforts to increase them), and likely represent the maximum harvest achievable under current regulations. The recommended harvest is similar to that achieved in recent years and will be necessary to maintain the population close to the objective.

Limited hunter access to private land is a significant management challenge in this WMU.



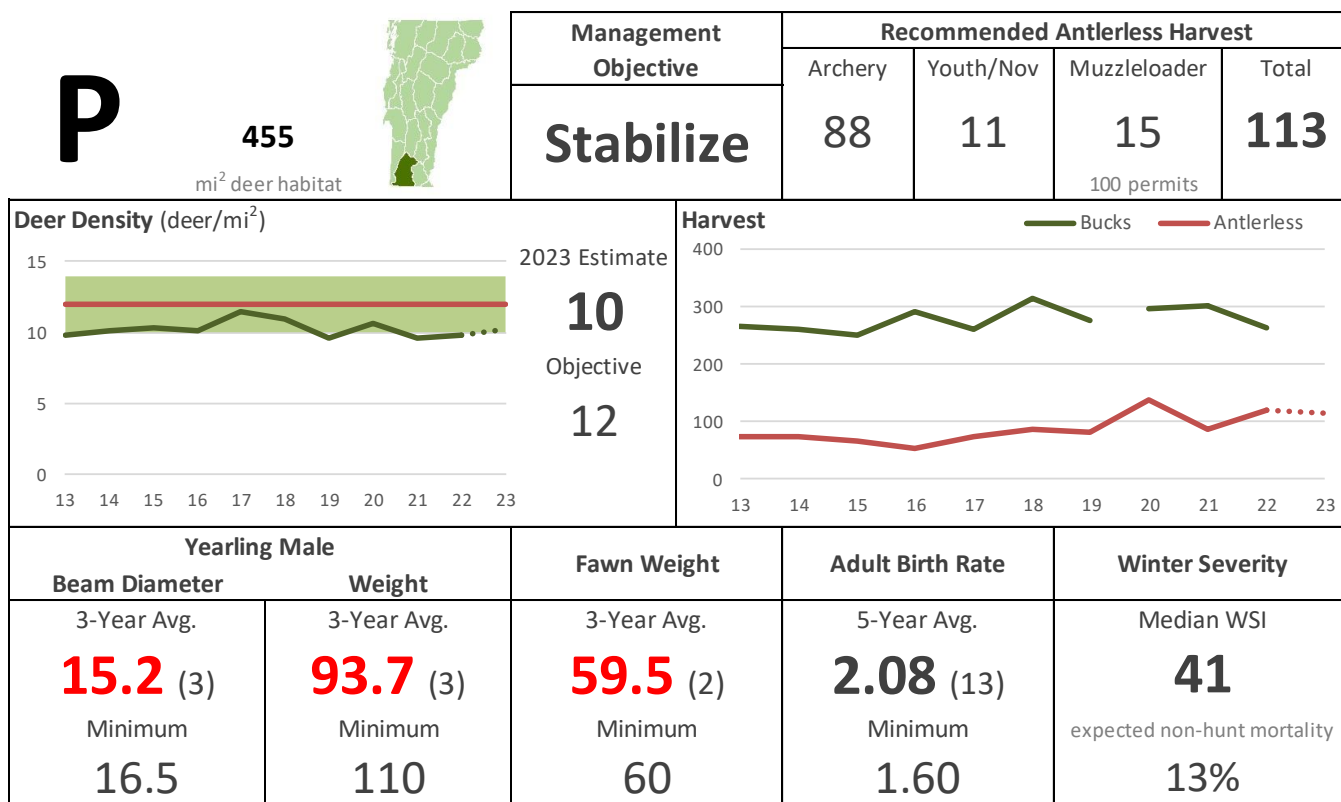
Wildlife Management Unit O encompasses the Connecticut River Valley from White River Junction south to Massachusetts. Winters here are relatively easy for deer and the habitat contains a good mix of forest and field.

Deer browse damage to forest regeneration is common throughout the WMU and has been occurring for decades in many areas. Chronic overabundance of deer has significantly impacted forest ecosystems and contributed to the proliferation of invasive species. This, combined with declining amounts of young forest, has contributed to the generally poor quality of forest habitats. Physical condition of deer is mediocre, but appears to be improving. This provides additional evidence that past deer numbers were at or above the level the habitat could support for many years.

Recent antlerless harvests have helped stabilize deer numbers near the objective level, and will need to continue. The recommended antlerless harvest is similar to that achieved in recent years.

Deer density does vary within this unit due to both habitat quality and hunter access to private land. Limited hunter access to private land is a substantial management challenge.



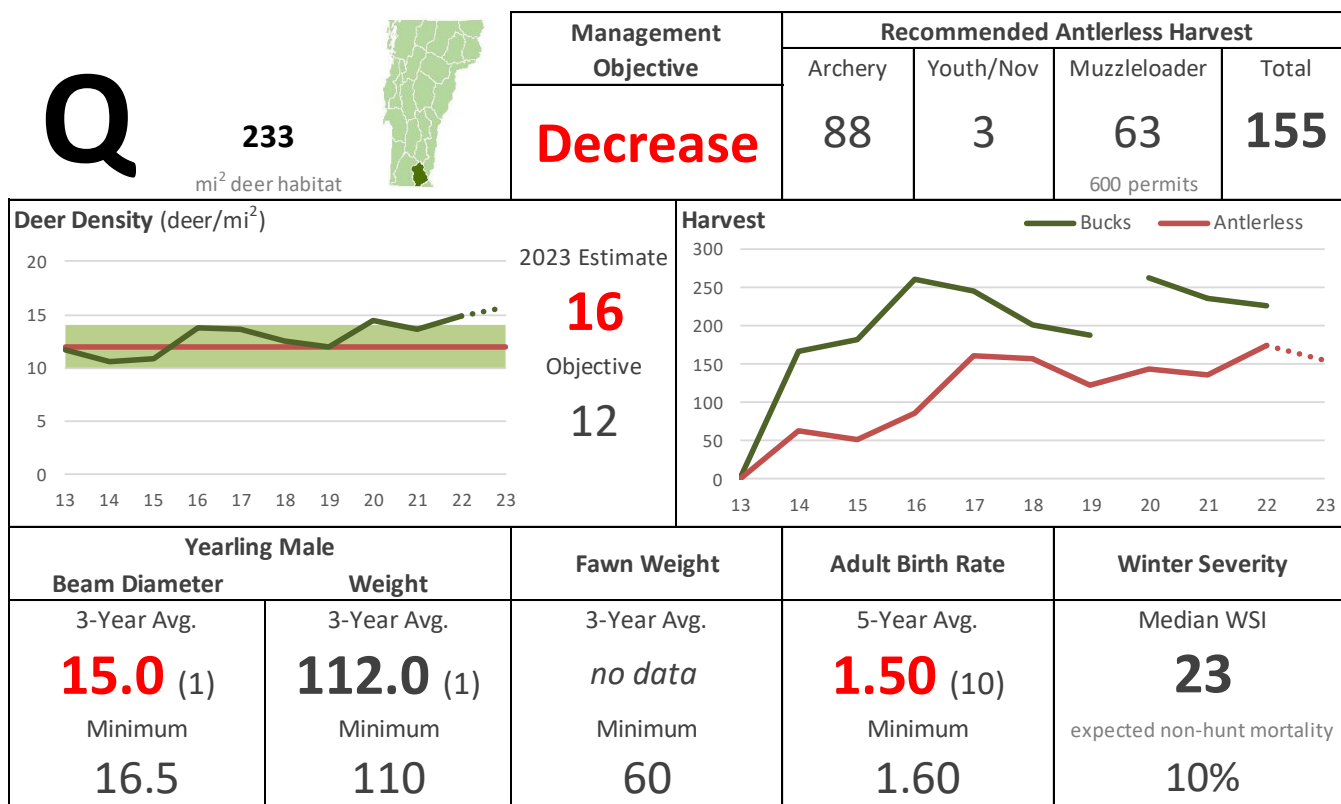


Wildlife Management Unit P is in the southern Green Mountains, from the Massachusetts border north to Winhall. This high elevation, mountainous, heavily forested unit contains some of the poorest quality deer habitat in the state. Winters are often severe, particularly at higher elevations. However, many deer can migrate to lower elevation areas along the southern and western edge of the unit where winters are much more moderate.

Physical condition of deer in this unit is concerning, but small sample sizes limit inference from these data. However, deer density has remained around 10 deer/mi<sup>2</sup> over the past 10 years despite very minimal antlerless harvest, suggesting that deer numbers are limited by habitat quality.

A lower density objective may be appropriate in this WMU, but deer impacts to forest ecosystems are uncommon and the Department is hopeful that increased timber harvesting on National Forest lands will improve habitat quality and allow for some population growth.

Deer harvests have been steadily increasing near Bennington and in towns along the Massachusetts border. Some of these towns have had near-record harvests in recent years. Given this trend, the Department would like to continue issuing a small number of antlerless permits in this WMU. Most antlerless permits are likely to go to landowners, which will increase the likelihood that deer are harvested from areas of higher deer density.



Wildlife Management Unit Q is located in the eastern foothills biophysical region from Massachusetts north to Townshend. Habitat quality is relatively poor in this small, heavily forested WMU, primarily due to a lack of young forest habitat. Winters here are relatively easy for deer. Generally, deer density is highest near Brattleboro and lower to the north and west as elevation increases.

Physical condition metrics are currently below minimum acceptable levels, but samples sizes have been very low which limits inference from these data.

The deer population appears to be slowly increasing. The recommended antlerless harvest maintains the higher harvest levels achieved in recent years and is intended to reduce, or at least stabilize, the deer population.

Evidence of deer damage to forest ecosystems is common near Brattleboro. Unfortunately, deer harvest is limited by the town’s firearm discharge ordinance. As a result, the Department will be considering an expanded archery zone to reduce deer impacts in this area.