



*White-Tailed Deer  
Management Program*

*2019 Deer Management Plan*

*September 23, 2019*



A Joint Publication of the  
Massachusetts Department of Conservation & Recreation and  
Massachusetts Division of Fisheries & Wildlife



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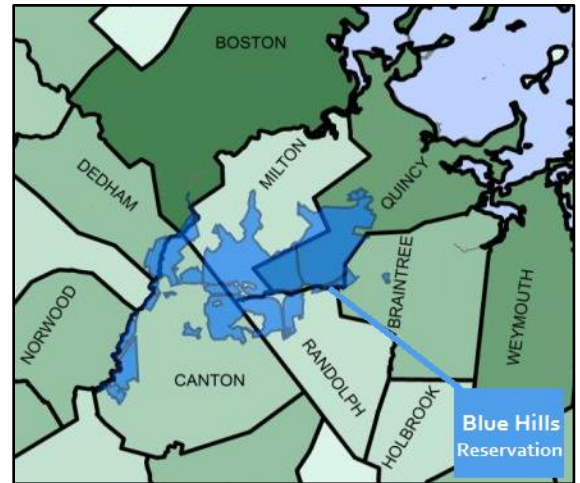
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## 1.0 The Blue Hills Reservation

The Massachusetts Department of Conservation and Recreation (DCR) manages and stewards the Blue Hills Reservation. The Reservation encompasses an area of over 7,000 acres and is situated less than ten miles south of downtown Boston in the communities of Braintree, Canton, Dedham, Milton, Quincy, and Randolph. A small portion of Fowl Meadow (north and west of the Neponset River) is located within the Hyde Park neighborhood of the City of Boston. The protection of this area as public open space began over 120 years ago with its establishment in 1893 by the Metropolitan Park Commission. As a public parkland and forested area, the Reservation contains a wide variety of natural resources, vegetation, wildlife, and cultural and archaeological resources, and its topography includes prominent hills (Great Blue Hill and Chickatawbut Hill), as well as open fields and several ponds and streams.



## 2.0 Context for Deer Management in the Blue Hills

The Massachusetts Department of Conservation and Recreation (DCR) and the Massachusetts Division of Fisheries and Wildlife (MassWildlife) have legislative mandates and missions to protect and manage a myriad of natural resources including forests, wildlife, and the habitats upon which a diversity of wildlife depends. From the canopy to the understory, healthy forest ecosystems are made up of trees and plants of multiple species and age classes and the diversity of vegetation provides suitable and sustainable habitat for a rich and varied wildlife community. From the perspective of long-term forest management, tree regeneration is critical to the long-term survival of forests and their ability to recover from natural disturbances. Forests that contain high deer population densities are vulnerable to deer over-browsing young trees, which can prevent forest regeneration. In addition, extremely high deer densities can promote the spread of some invasive species and significantly reduce biodiversity.

DCR's management of the Blue Hills Reservation is guided by the existence of a comprehensive Resource Management Plan (RMP) that was approved by the DCR Stewardship Council in April 2011 following a robust planning and development process involving input from local residents, stakeholders, and the Friends of the Blue Hills.<sup>1</sup> The Blue Hills RMP noted a growing concern over the size of the deer population within the Reservation and the impact of over-browse on rare plants and other vegetation throughout the Reservation. DCR has become increasingly concerned with the long-term health of the Reservation's forest and the ecological impacts of sustained high deer densities on this natural resource. The RMP explicitly recommended that the agency work with MassWildlife to estimate the size of the deer population, determine its impacts on the Reservation's natural resources, and discuss deer management options.<sup>2</sup>

<sup>1</sup> The Friends of the Blue Hills is a non-profit organization that works both independently and in cooperation with the DCR to preserve the natural resources of and enhance recreational opportunities in the Blue Hills Reservation. For more information visit: <http://friendsofthebluehills.org/>.

<sup>2</sup> To view a copy of the approved 2011 Blue Hills Resource Management Plan and appendices please use the following links: <https://www.mass.gov/files/documents/2016/08/mz/sections1-4.pdf>  
<http://www.mass.gov/files/documents/2016/08/xd/appendices.pdf>

## 2.1 – Legislative Mandate

In addition to following the recommendations within the Blue Hills RMP, DCR and MassWildlife were issued a legislative mandate in the 2014 Environmental Bond Bill ([Chapter 286 of the Acts of 2014](#)), which was signed into law by former Governor Deval Patrick in August 2014. Specifically, Section 43 of the bond bill directs DCR (in consultation with MassWildlife) to “identify areas in which deer overpopulation is negatively impacting forestation, water resources, or plant growth on department-owned land” and “to develop and implement a harvest management plan for the identified areas.”

## 2.2 – Initiation of Deer Management in the Blue Hills

In light of each agency’s mission, the recommendations outlined in the Blue Hills RMP, the results of the deer abundance survey, and the legislative mandate detailed in the 2014 Environmental Bond Bill, DCR and MassWildlife began developing a deer management plan for the Blue Hills Reservation in late 2014. Recognizing that deer management activities can take several forms, both agencies worked together to analyze, assess, and consider the relative impacts and efficacy of several alternative management approaches for a location like the Blue Hills. This planning process and several public information sessions held in the fall of 2015 resulted in the release of a final [2015 Blue Hills Deer Management Plan](#) that recommended the phased implementation of annual controlled deer hunting similar to the very successful annual hunt managed by DCR’s Division of Water Supply Protection at the Quabbin Reservation.



## 3.0 Rationale & Objectives for Deer Management in the Blue Hills

The primary objective and rationale for developing and implementing a deer management program is to maintain an ecologically sustainable deer density that allows for the continuous growth and development of forest regeneration. In particular, DCR is trying to reduce the negative impacts that high deer densities have on the regenerating forest to ensure a healthy forest composed of an adequate diversity of tree species and age classes. DCR’s program for white-tailed deer management is not intended to provide a new recreational opportunity in the Blue Hills. Rather, the program provides a concrete, practical, and workable solution intended to deal with a critical environmental problem.

The decision to manage the overpopulation of deer in the Blue Hills Reservation is not related to the role of deer in the transmission of Lyme disease or other tick-borne illnesses. DCR recognizes the myriad of research demonstrating conflicting results with regard to the correlation between deer densities, tick abundance, and Lyme disease contraction rates among humans. Furthermore, attempting to solve Lyme disease (and other tick-borne illnesses) or reduce contraction rates among humans is not a goal of DCR’s deer management plan for the Blue Hills. Rather, as stewards of the Blue Hills Reservation, it is DCR’s objective to reduce (and in the long-term reverse) the negative impacts of high deer densities on the Reservation’s vegetation, promote the restoration of healthy habitat for other wildlife, and bring deer densities to a level more aligned with what the forest can sustain.



## 4.0 2019 Deer Abundance Surveying Efforts

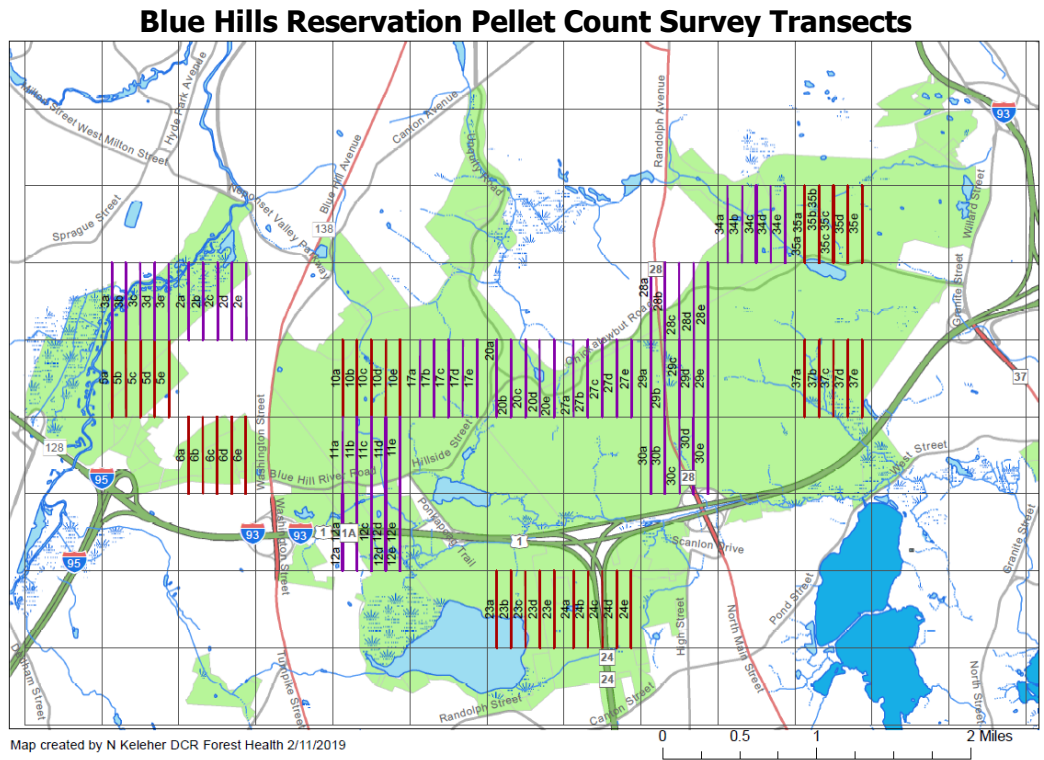
Between March and April of 2019, DCR conducted deer abundance surveys in the Blue Hills utilizing the pellet count survey methodology. This methodology has been used over the last two years in the Blue Hills and is also used by DCR’s Division of Water Supply Protection (DWSP) to estimate deer abundance at the Quabbin Reservoir Reservation.

Recent advances in pellet count survey methodology have allowed more accuracy in these surveys. Counting deer droppings instead of individuals has several distinct advantages:

- Deer droppings are easy to see, don't move, and can be counted over a longer period of time.
- Counting droppings is relatively straightforward and can be done with a minimal amount of equipment or personnel.
- Pellet count surveys allow a finer-scale look at deer numbers by area within the Reservation.
- Pellet counts allow data to be collected in a more representative and random way in and around the Reservation and does not rely on the roads and trail network, which can limit the bias and lead to more realistic estimates of density.

In addition to this, a recently-published paper has provided a solid frame work for conducting this type of survey over large forested areas.<sup>3</sup> For additional information regarding this survey methodology and how deer densities are calculated, readers are encouraged to read Section 7 of the [2016 Program Overview & Results / 2017 Results of Deer Abundance Surveying](#) report.

In order to conduct this survey, grids of points 805 meters (1/2 mile) apart were laid out in a north-south and east-west direction across the Reservation. Depending upon the size of each study area, 3-9 points were randomly selected. At each selected point, a second grid was constructed comprised of five (5) transects 800 meters (1/2 mile) long and spaced 150 meters (500 feet) apart. Each originally selected point formed the mid-point of the middle transect. All points and lines were generated in ArcGIS and transferred to hand-held GPS units that were used for navigation. In some cases, the total 805 meter line could not be created because the transect continued off of DCR property, entered a waterbody, etc. All transects were laid out in true north/south orientation. The map below delineates the pellet survey transects used to estimate deer densities in 2019.



<sup>3</sup> DeCalesta, D.S. 2013. Reliability and precision of pellet-group counts for estimating landscape-level deer density. *Human-Wildlife Interactions* 7(1):60-68.

The table below lists the various survey sites and provides density estimates for the 2019 pellet survey. For comparative purposes, density estimates from the 2018 and 2017 pellet surveys are also provided. For additional information regarding previous year pellet surveys, readers are encouraged to read Section 7 of the [2016 Program Overview & Results / 2017 Results of Deer Abundance Surveying](#) report and Section 4 of the [2018 Blue Hills Deer Management Plan](#).

Study Site	2019 Density Estimate (# of deer/mi <sup>2</sup> )	2018 Density Estimate (# of deer/mi <sup>2</sup> )	2017 Density Estimate (# of deer/mi <sup>2</sup> )
Fowl Meadow/Little Blue	47.1 / mi <sup>2</sup>	Not Surveyed	136.4 / mi <sup>2</sup>
Great Blue/Houghton's Pond	20.4 / mi <sup>2</sup>	22.5 / mi <sup>2</sup>	25.4 / mi <sup>2</sup>
Wampatuck/Chickatawbut	17.8 / mi <sup>2</sup>	29.6 / mi <sup>2</sup>	29.5 / mi <sup>2</sup>
Ponkapoag/Brookwood Farm/Nike Site	21.7 / mi <sup>2</sup>	11.2 / mi <sup>2</sup>	20.4 / mi <sup>2</sup>
Blue Hills – Overall	26.4 / mi <sup>2</sup>	Not Calculated	51.6 / mi <sup>2</sup>

The 2019 pellet survey provided an overall density estimate of 26.4 deer/mi<sup>2</sup> for the Blue Hills. The four years of controlled hunting has contributed to the observed population decreases within the huntable areas as well as a noticeable population reduction across the larger Blue Hills area. In general, the results of the 2019 pellet survey show deer numbers that are lower than they were in 2017 and 2018. However, throughout most of the Reservation, deer densities continue to exceed MassWildlife's statewide goal of 6-18 deer/mi<sup>2</sup>, which is important for reducing impacts to the habitat and forest within and around the Blue Hills Reservation.



## 5.0 Context & Need for Continued Deer Management

### 5.1 – Long-Term Effort & Commitment

In the [2015 Blue Hills Deer Management Plan](#), DCR and MassWildlife noted that most deer management programs designed to address extremely high deer densities typically start with an aggressive reduction phase during the initial years. Once densities are reduced to a suitable level, a long-term management phase can be implemented utilizing more moderate hunting effort in order to maintain the accomplishments achieved during the reduction phase. This model was successfully implemented as part of the Quabbin Reservoir Watershed deer management program, which began in 1991 with nine (9) days of shotgun hunting. Within a few years, deer densities at the Quabbin were substantially reduced and the program moved from a reduction phase toward a maintenance phase. Today, the Quabbin hunt takes place using a rotation system over the course of only four (4) days in an effort to maintain current deer densities.

In the Blue Hills, however, hunting had not been allowed for over 100 years. As such, DCR decided in 2015 to implement a controlled hunt on a more limited scale with the goal of working toward expanding the controlled hunt program in order to achieve more aggressive reductions in future years. This phased approach was explicitly outlined in the [2015 Blue Hills Deer Management Plan](#) and in accordance with this plan, DCR has gradually expanded the size of the huntable areas over the course of four years from 2,980 acres in 2015 to 4,155 acres in 2018 (this includes areas opened to archery and shotgun hunting). In addition, while the 2015 hunt only allowed

for use of shotguns, the limited use of archery was introduced in certain designated areas during the 2016 hunt and was continued in 2017 and 2018.<sup>4</sup>

DCR and MassWildlife also made it clear within the [2015 Blue Hills Deer Management Plan](#) that successful deer management would require a long-term effort and commitment since any reductions achieved can be quickly erased through deer reproduction and migration in the absence of any management. The Quabbin Reservoir provides a prime example of how long-term commitment to deer management is essential. The program has been in operation for over 25 years and has worked effectively to maintain densities below 20 deer/mi<sup>2</sup>.

## 5.2 – Continued Deer Overabundance

In 2019, DCR conducted pellet count surveys similar to 2017 and 2018. Results from the 2019 survey can be found in Section 4 of this plan. Based on the results of this year’s survey, the deer density estimates indicate that deer numbers are still above desired levels. While four years of deer reductions likely led to population decreases within the huntable areas and a slight population reduction across the larger area, deer densities still remain above the statewide goal of 6-18 deer/mi<sup>2</sup> of forest that is important for reducing impacts to the habitat and forest within and around the Blue Hills Reservation.

## 5.3 – Commitment to Continued Deer Management in 2019

The use of licensed public hunters in managing deer populations is one of the most widely used management methods employed throughout the United States. In Massachusetts, it is the primary management tool supported by MassWildlife and has been shown to be successful in addressing situations involving deer overabundance and vegetation over-browse. The Quabbin Reservoir controlled deer hunt is the most notable example. In addition, DCR manages thousands of acres of forest and parkland across the Commonwealth where licensed hunters are allowed to hunt during the regulated seasons. Moreover, regulated hunting is an activity that DCR fully supports by providing public land for hunters to engage in this management activity.

In light of DCR’s commitment to long-term deer management in the Blue Hills and in order to continue the successful efforts undertaken between 2015 and 2018, DCR and MassWildlife will continue to implement controlled hunting in the Blue Hills in 2019. Based upon the experience of implementing and assessing the outcomes of four controlled hunts and the success of controlled hunting efforts in 2018, DCR and MassWildlife will implement a controlled hunting plan in 2019 that enhances the archery hunt while reducing the number of days and acres included in the shotgun hunt. All areas included in this year’s hunts have already been opened to either shotgun or archery hunting in prior years. The remaining sections of this plan provide details regarding logistics for this year’s permitted archery and controlled shotgun hunts.



## 6.0 Phase 1: Permitted Archery Hunting During November

Over the last several years (and even prior to DCR’s initiation of controlled deer hunting in the Blue Hills Reservation) a number of private property owners near or adjacent to the Blue Hills have voluntarily allowed archery hunters onto their land during the annual archery season to hunt deer. This informal program has been successful in harvesting a number of deer each year and highlights the importance of cooperation between landowners and deer hunters. In some cases, archery hunting may be the best practical solution to hunt smaller parcels. There are some areas within the Blue Hills Reservation that may be challenging to hunt during the shotgun season but lend themselves well to limited archery hunting.

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<sup>4</sup> Since initiating this deer management program, DCR and Mass Wildlife have released annual program reports highlighting results of each controlled hunt. To view a copy of each year’s report, please use the following links: [2015 Program Overview & Results](#), [2016 Program Overview & Results](#), [2017 Program Overview & Results](#) and [2018 Program Overview & Results](#).



### 6.1 – Timing and Length

To supplement the efforts already taking place on nearby and adjacent private property and to enhance DCR's overall Deer Management Program for the Blue Hills Reservation, DCR will permit limited archery hunting in certain designated areas of the Blue Hills on Mondays through Thursdays between **November 11<sup>th</sup>** and **November 27<sup>th</sup>**. In accordance with state hunting regulations, hunters will be allowed to start hunting one-half hour before sunrise to one-half hour after sunset.

### 6.2 – Management Areas and Hunter Distribution

Archery hunting will be limited to the areas of the Reservation listed below and outlined on the map on the next page. Given the results of the pellet survey in the Chickatawbut and Wampatuck zones, these areas have been added to the archery hunt and removed from this year's shotgun hunt. The goal in doing so is to begin to transition these areas toward a maintenance phase.

In order to organize and distribute hunters effectively, archery hunters will be separated into two groups and each group will be assigned to one of two archery zones. Each zone will include several management areas. Hunters assigned to Zone 1 may hunt in any of the management areas listed within that zone. Hunters assigned to Zone 2 may hunt in any of the management areas listed within that zone. Hunting zones and the management areas within each zone are outlined in the table below:

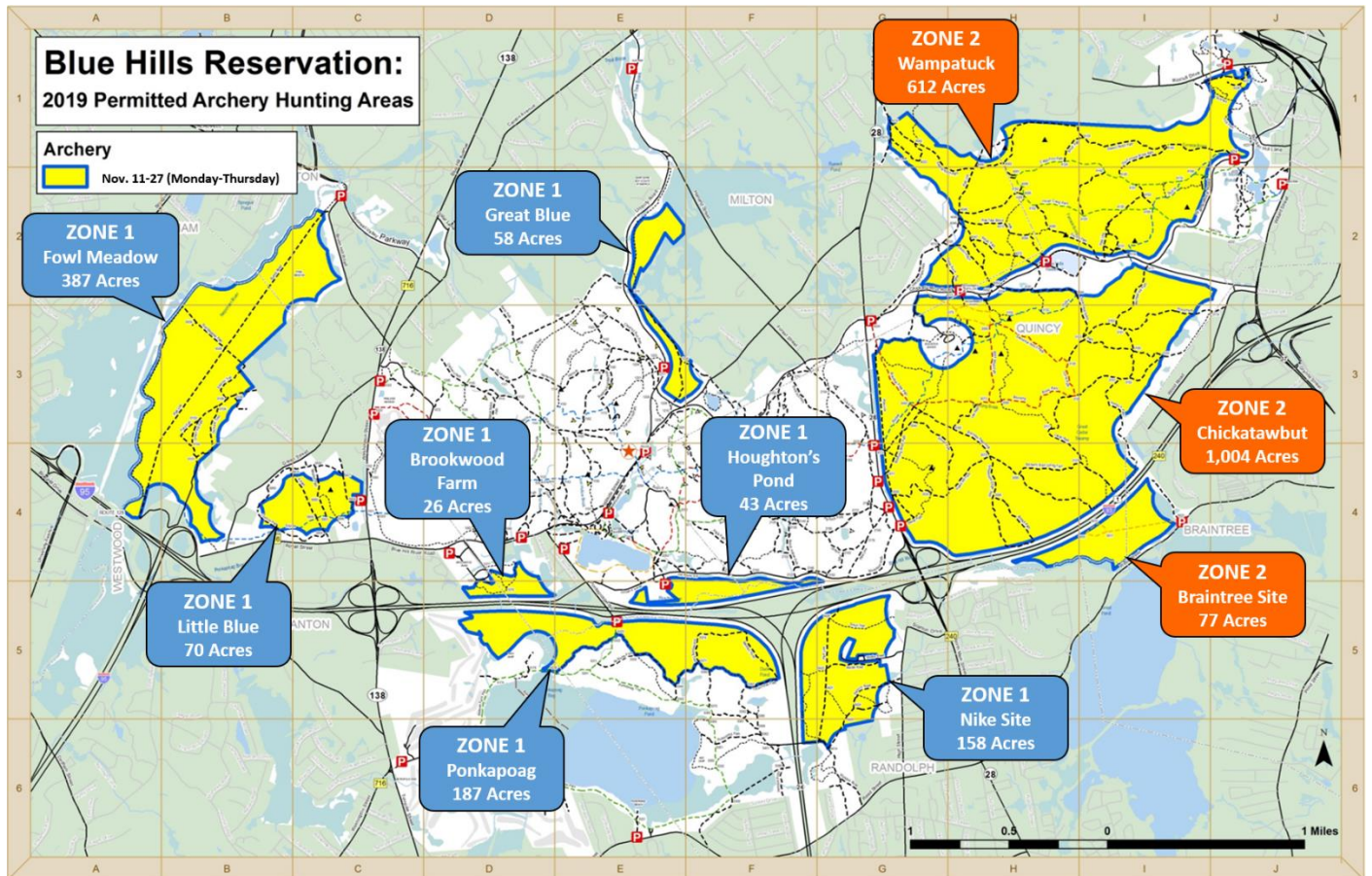
Archery Zone	Management Area	Acres Open to Hunting (Per Management Area)	Acres Open to Hunting (Per Zone)	Number of Hunters
ZONE 1	Fowl Meadow	387	929	100
	Little Blue	70		
	Brookwood Farm	26		
	Great Blue	58		
	Houghton's Pond	43		
	Ponkapoag	187		
	Nike Site	158		
ZONE 2	Chickatawbut	1,004	1,693	125
	Wampatuck	612		
	Braintree Site	77		
<b>TOTAL</b>		<b>2,622</b>	<b>2,622</b>	<b>225</b>

### 6.3 – Hunter Selection and Access Permitting

Licensed archery hunters must complete and submit an application to DCR to participate in this archery hunting opportunity. All applicants are required to have a valid 2019 Massachusetts hunting license.

From among the applicant pool, DCR will conduct a random lottery to select 225 archery hunters to receive access permits. These access permits will be valid on all days in which archery hunting will be allowed in designated areas of the Reservation (as outlined above) during the month of November and permitted hunters will be allowed to hunt based upon their schedule and availability. Given this flexibility, it is highly unlikely that there will be 225 archery hunters in designated management areas on any given day.

If selected to participate, any archery hunter under the age of 18 must be accompanied while hunting by an adult over the age of 21 who is also a registered hunter possessing a valid Massachusetts hunting license. The accompanying adult must attend the mandatory orientation session and will not be allowed to hunt.



#### 6.4 – Antlerless Permits

MassWildlife will make antlerless deer permits specific to the Blue Hills Reservation available to applicants selected to receive an archery access permit. Upon successful completion of a hunter orientation session, hunters will be able to purchase their antlerless permits online or at any licensed vendor. Hunters selected to participate will be required to purchase at least two (2) antlerless permits. The use of any Zone 10 antlerless permits will be prohibited from use in the Blue Hills.

#### 6.5 – Hunter Orientation

All archery permittees will be required to complete an orientation. Among other topics, the orientation will cover the elements of the Blue Hills deer Management Plan, the goals and objectives of the program, an orientation to the area, and safety considerations. Any selected archery hunter who fails to fulfill this requirement will not receive an access permit and will not be allowed to hunt in the Blue Hills.

#### 6.6 – Public Recreational Access

General public access for recreation will not be restricted in those areas in which hunting will take place. Members of the general public who choose to enter those areas in which hunting will be taking place are advised to take proper precautions by wearing blaze orange clothing, vests, and hats.



## 7.0 Phase 2: Controlled 2-Day Shotgun Hunt

As was done in the last four years, DCR and MassWildlife will implement a controlled shotgun hunt during the annual shotgun season in 2019. This year, the shotgun hunt will be reduced from four days to two days. Furthermore, archery hunting will not be permitted during these two days of hunting.

### 7.1 – Timing & Length

The timeframe for the 2019 controlled shotgun hunt will be during the annual shotgun season in early December. Although the shotgun season in Massachusetts lasts approximately two weeks, the 2019 controlled hunt will feature only two (2) days of hunting on the following days:

- Tuesday, December 3<sup>rd</sup>
- Thursday, December 5<sup>th</sup>

### 7.2 – Hunting Implements

During this two-day hunt, participants will be allowed to use shotguns with slugs only. Buckshot will be prohibited from use in the Blue Hills. No archery hunting will be allowed during these two days of hunting.

### 7.3 – Hunter Selection and Access Permitting

The 2019 Blue Hills controlled shotgun hunt will feature an access permitting component whereby interested hunters will need to complete and submit an application to DCR. All applicants must have a valid 2019 Massachusetts hunting license and those who live in the Commonwealth of Massachusetts must also have a valid FID or LTC card. Using a random lottery system, permittees will be selected from among the pool of applicants. There will be no fee to apply to the 2019 controlled hunt.

DCR will select one group of 80 shotgun hunters and each hunter will be permitted to hunt during both days of the hunt.

Applications for shotgun hunting will allow for up to two (2) applicants (one “primary applicant” and one “co-applicant”). To promote fairness, hunters listed as the “primary applicant” on one application **cannot** be listed as a “co-applicant” on another application. Similarly, hunters listed as a “co-applicant” on one application **cannot** submit a separate application in which they are the “primary applicant.”

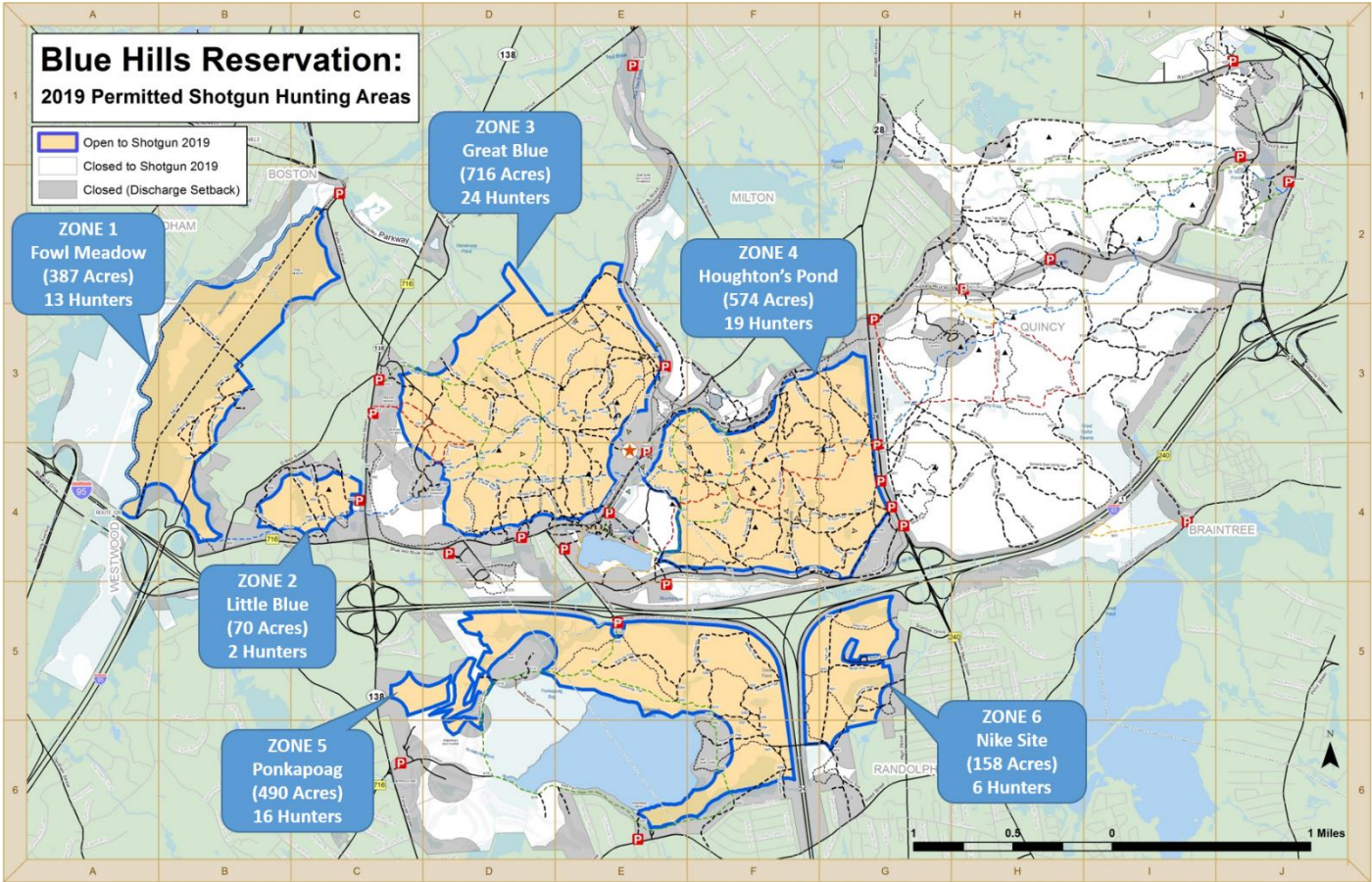
Hunters who are under the age of 18 and possess a valid Massachusetts hunting license may apply as either a “primary applicant” or a “co-applicant” on one application. Any hunter under the age of 18 who applies as the “primary applicant” must list a “co-applicant” who is over the age of 21 and is also a registered hunter possessing a valid Massachusetts hunting license.

### 7.4 – Management Zones and Hunter Distribution

In order to organize and distribute hunters effectively, the Blue Hills will be sub-divided into several management zones. Zone assignments will be based upon order of selection during the random lottery. Permittees will be required to stay within their assigned zone while hunting. Controlled hunting will only be allowed in designated areas of the Blue Hills Reservation and within the boundaries that have been identified on the map on the next page. Hunter distribution shall be determined using a ratio of one (1) shotgun hunter per thirty (30) acres.

The designated hunting areas have been divided into the following six (6) management zones and, based upon the acreage opened to hunting; each zone will have the following number of hunters:

Management Zone	Acres Open to Hunting	Number of Hunters
1 - Fowl Meadow	387	13
2 - Little Blue	70	2
3 - Great Blue	716	24
4 - Houghton's Pond	574	19
5 - Ponkapoag	490	16
6 - Nike Site	158	6
<b>TOTAL</b>	<b>2,395</b>	<b>80</b>



**7.5 – Antlerless Permits**

MassWildlife will make antlerless deer permits specific to the Blue Hills Reservation controlled shotgun hunt available to applicants that are selected for an access permit. Upon successful completion of the orientation requirement, hunters will be able to purchase their antlerless permits online, or at any licensed vendor. Hunters selected to participate in the hunt will be required to purchase two (2) antlerless permits. The use of any Zone 10 antlerless permits will be prohibited from use in the Blue Hills.

**7.6 – Hunter Orientation**

All shotgun permittees will be required to complete an orientation. Among other topics, the orientation will cover the elements of the Blue Hills Deer Management Plan, the goals and objectives of the program, an orientation to

the area, safety considerations, and area assignments. Any selected shotgun hunter who fails to fulfill this requirement will not receive an access permit and will not be allowed to hunt in the Blue Hills.

### **7.7 – Public Recreational Access**

General public access for recreation will not be restricted in those areas in which hunting will take place. Members of the general public who choose to enter those areas in which hunting will be taking place are advised to take proper precautions by wearing blaze orange clothing, vests, and hats.