



## PRESCRIBED FIRE PLAN

**State:** Massachusetts

**Site:** Long Point Wildlife Refuge

**Burn Unit Number/Name:** Long Cove 1, 2, 3

**Permit #:** \_\_\_\_\_

**Fire Planner(s):**

*Name:* Alex Belote

*Title:* Fire Management Specialist

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

**Burn Boss:**

*Name:*

*Title:*

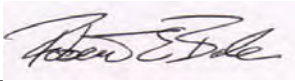
\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

**Fire Manager:**

*Name:* Bob Bale

*Title:* Fire Manager

  
\_\_\_\_\_  
*Signature*

4/28/12

*Date*

**TTOR Approval:**

*Name:* Kathy Abbott

*Title:* VP of Field Ops

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Date*

**Attachments:**

Preserve/site burn units map:

Yes

Contingency map(s):

Yes

Smoke Management/smoke sensitive areas map:

Yes

**1. GEOGRAPHIC INFORMATION**

County/State: Dukes County  
Town: West Tisbury, MA  
Ownership: The Trustees Of Reservations  
Lat/Long or UTM: 70°37'41.26' W, 41°21'55.53" N  
Unit Acres: 147 (Unit 1:89, Unit 2:12, Unit 3:46)

**2. EMERGENCY ASSISTANCE**

Fire: Martha's Vineyard Communication Center (508) 693-1212  
West Tisbury Fire Department 911, (508)-693-9555

Law Enforcement: Martha's Vineyard Communication Center (508) 693-1212  
West Tisbury Police Dept. (508) 693-0200  
Martha's Vineyard Communication Center (508) 693-1212  
Emergency Ambulance 911

Medical: Martha's Vineyard Communication Center (508) 693-1212  
Emergency Ambulance 911

Attorney: TNC-ERO, Ann Risso (617) 542-1908

**3. PERMITS**

Burn Permit/Notification Required? Yes  
Source(s): West Tisbury Fire Chief Manuel Estrella Fire Dept. (508)-693-9555

Air Quality Permit/Notification Required?  
Source(s): MA-DEP Southeast Regional Office Office 508-946-2845

**4. REQUIRED NOTIFICATIONS:**

See above.

## 5. UNIT DESCRIPTION

Vegetation Types	Fuel Models	% of Unit Area
Oak Forest	MV Custom Fuel Model For Oak Woodland, Untreated	70
Pitch Pine Woodland	MV custom Fuel Model For Pitch Pine, Untreated	20
Scrub Oak	MV Custom Fuel Model for Scrub Oak, Untreated	5
Wetland Shrubs	Moderate Load Humid Climate Shrubs (SH3)	5

### Burn Unit Description:

Long Cove Unit is 147 acres and is flat. 70 percent of the unit is oak woodland (*Quercus alba*, *Q. stellata*, *Q. velutina*) with an understory of huckleberry (*Gaylussacia baccata*), (Martha's Vineyard Custom Fuel Model for Oak Woodland, Untreated). Approximately 20 percent of the unit is pitch pine (*Pinus rigida*), (Martha's Vineyard Custom Fuel Model for Pitch Pine, Untreated). 5 percent of the unit is scrub oak (*Q. ilicifolia*), (Martha's Vineyard Custom Fuel Model for Scrub Oak, Untreated). 5 percent of the unit is wetland shrubs, (Moderate Load, Humid Climate Shrub, SH3).

Long Cove Unit is divided into three sub-units, designated 1, 2, and 3. Holding lines for this unit are dirt roads, two tracks, Long Cove Pond and soft mowed breaks ranging from 10 to 20 feet wide, depending on the proximal fuel loading. There is a residential area located directly to the north of the unit. This neighborhood has approximately 100 structures. Some of these houses have large yards and substantial defensible space. Many have little or no defensible space and thick fuels near structures. To the west of the unit are sub-units 4,6

and 8 of Middle Point burn unit. Fuels to the west consist of oak woodlands, scrub oak, pitch pine forest and mowed shrubs with a grassy component . To the south of the unit are sub-units 1, 2, and 3 of Nahommon's Neck Shrublands Unit. These sub-units have similar fuels to those found within the Long Cove Unit. To the east of the unit is privately owned land that has similar fuels to those found within the unit.

Sub-unit 1 is 89 acres and is predominantly oak woodland. There are areas of scrub oak and mature pitch pine stands. Scrubby Neck Road is the northern holding line. There is an area with several wooden tent platforms and piles of fencing material on the western side of the unit near the southwest corner. A break will be mowed around this area to exclude it from the burn. The western holding line is a mowed break; this break is 10-20 feet wide and passable by a type six engine. The southern holding line is a two track road with sections of dirt and sand. The eastern holding line is the Utility Road, a ten foot wide road that is mostly dirt and sand. There may be mowed breaks running from east to west across the unit that further divide Sub-unit 1.

Sub-unit 2 is 12 acres. The fuels in this sub-unit are oak woodland and pitch pine pitch pine and wetland shrubs. The wetland shrub fuels are found along Long Cove Pond. The northern holding line is a mowed break. The eastern holding line is Long Cove Pond. The southern holding line is a mowed break and the western holding line is the Utility Road.

Sub-unit 3 is 46 acres. The fuels in Sub-unit 3 are primarily oak woodlands, there are sections of pitch pine. Wetland shrubs are present along Long Cove Pond. There are many dead oak snags though out this sub-unit. The northern holding line is Scrubby Neck Road. The western holding line is Hugh's Thumb Road. The southern holding line is a soft mowed break. The western holding line is Long Cove Pond except for the very northern section which is a soft mowed break.

## **PRESCRIBED BURN JUSTIFICATION**

### **Type of Burn:**

- Ecological Management
- Training

### **Burn Unit Management Goal(s):**

- 1) To conserve, protect, and enhance the habitat of endangered, threatened, and/or special concern species that rely on the Oak woodlands - huckleberry and/or Pitch pine-scrub oak open vegetation structure
- 2) Treat unit with prescribed fire at a historic maintenance return interval of 3-5 years, restoring the natural fire regime to this sandplain community.
- 3) Reduce risk of wildfire to life, property and resources.

### Specific Burn Objectives:

- 1) Reduce 1 Hour dead and down fuel load up to 90 percent.
- 2) Reduce 10 and 100 Hour dead and down fuels up to 75 percent.
- 3) Top kill up to 100 percent of shrubs.
- 4) Top kill up to 70% of mature pitch pine and tree oaks.

### 6. FUEL AND WEATHER PRESCRIPTION

<b>Required Parameters:</b>	<b>MAX</b>	<b>MIN</b>
Wind Direction(s)	ANY*	
Effective Wind speed (mph)	12	1
1-Hour Fuel Moisture (%)	15	5
10-Hour Fuel Moisture (%)	N/A	8
100-Hour Fuel Moisture (%)	N/A	14
Live Fuel Moisture (%)	N/A	N/A
Atmospheric Mixing Height (ft)	N/A	1500**

<b>Guidance Parameters:</b>	<b>MAX</b>	<b>MIN</b>
Air Temperature (°F)	90	33
Relative Humidity (%)	70	25
Days Since Rain	N/A	N/A
20 ft wind speed (mph)	25	0

#### **Combinations of parameters that will be excluded from the burn window:**

A combination of mid-flame wind speeds near the maximum allowed under the prescription and fuel moistures and relative humidity near the minimum allowed under the prescription will be excluded from the burn window. If the combination of these conditions occurs during ignition operations, then ignition will cease and the fire will be monitored until conditions moderate. If it is determined that conditions will not moderate, then the fire will be suppressed in the safest manner possible.

\* The large size of the unit and variability in the seasonal population of the houses in the vicinity of the unit allow for sections of the unit to be burned with any wind direction. A north component would be desirable for a large scale burn on this unit.

\*\* Minimum mixing height of 1500 feet is preferred. Lower mixing heights may be suitable depending on current and predicted wind direction, fuel loading, size of the burn area, pace of burning, ability of on-site resources to rapidly shut down the burn, and season of the burn. Should the burn boss choose to burn when forecast mixing heights are less than 1500 feet, the burn boss will consider deploying an off-site smoke spotter and maintaining frequent contact with the Island Communication Center, Airport Flight Tower, Martha's Vineyard Fire Tower, and appropriate Fire Chiefs.

## 7. PRESCRIBED FIRE BEHAVIOR

The burn should be conducted with moderate to high intensity to meet the goal of top-killing shrubs and reducing dead woody material while maintaining control and safety of the crew. Ignition patterns may include backing, flanking, point-source ignitions, and head firing. Fire behavior will be manipulated through varied ignition patterns and suppression techniques under direction of the burn boss.

## 8. PREDICTED BEHAVIOR FOR FREE BURNING

Martha's Vineyard Custom Fuel Model For Pitch Pine Untreated	ACCEPTABLE FIRE BEHAVIOR RANGE	
	MIN	MAX
Headfire rate of spread (ch/hr)	4.7	134.5
Headfire flame length (feet)	5.1	26.2
Backfire flame length (feet)	2.7	3.9
Spotting distance (mi)	0	.4
Probability of ignition (%)	15	66

Martha's Vineyard Custom Fuel Model for Scrub Oak, Untreated	ACCEPTABLE FIRE BEHAVIOR RANGE	
	MIN	MAX
Headfire rate of spread (ch/hr)	4.8	130
Headfire flame length (feet)	5.6	27.4
Backfire flame length (feet)	2.9	4.1
Spotting distance (mi)	0	.9
Probability of ignition (%)	15	66

Martha's Vineyard Custom Fuel Model for Oak Woodland, Untreated	ACCEPTABLE FIRE BEHAVIOR RANGE	
	MIN	MAX
Headfire rate of spread (ch/hr)	1.8	48
Headfire flame length (feet)	3.4	11.9
Backfire flame length (feet)	1.3	1.8
Spotting distance (mi)	0	.4
Probability of ignition (%)	15	66

Moderate Load, Humid Climate Shrub (SH3)	ACCEPTABLE FIRE BEHAVIOR RANGE	
	MIN	MAX
Rate of spread (ch/hr)	6	109.7
Headfire flame length (feet)	5.4	21.8
Backfire flame length (feet)	3.0	3.4
Spotting distance (mi)	0	.7
Probability of ignition (%)	15	66

## 9. SMOKE MANAGEMENT

**Smoke screening procedures completed?** Yes

**Map of smoke sensitive areas attached?** Yes

### **Desirable smoke behavior and smoke management actions:**

A roving smoke spotter will be dispatched as needed to monitor smoke lift and dispersal. The smoke spotter will report to the burn boss if road visibility is affected and/or smoke settles and concentrates in smoke sensitive areas. These areas include nearby residential areas, Edgartown-West Tisbury Road, Martha's Vineyard Airport, and local schools. Routine contact will be maintained with Martha's Vineyard emergency dispatch, the island's fire tower (if staffed), and if warranted the Martha's Vineyard Airport flight tower to gauge smoke impacts beyond the observational limits of the burn crew and smoke spotter.

Smoke impacts will be minimized by conducting the burn under good lift conditions. If warranted, ignition patterns and pacing will be adjusted to influence lift and the quantity of smoke produced. If good lift cannot be maintained, the burn will be terminated in the fastest and safest possible way. There is a neighborhood to the north of the unit; care will be taken not to put excessive smoke on these structures.

### **Smoke sensitive areas:**

There is a neighborhood located just north of the unit on the north side of Scrubby Neck Road. There are approximately 100 structures in the neighborhood. The closest of these structures are within 200 feet of the unit.

### **List other smoke sensitive areas:**

- Private homes .5 miles to the east
- Private homes .4 miles to the west
- Private homes .6 miles to the southwest
- Private homes .6 mile to the Southeast
- Edgartown-West Tisbury Road 1 mile to the north.
- Martha's Vineyard Airport is 1.25 miles to the northeast
- West Tisbury School 2.5 miles to the northwest
- Martha's Vineyard Regional High School is 3.5 miles to the north
- Island Montessori School .9 miles west
- Katama Airport 5 miles to the east

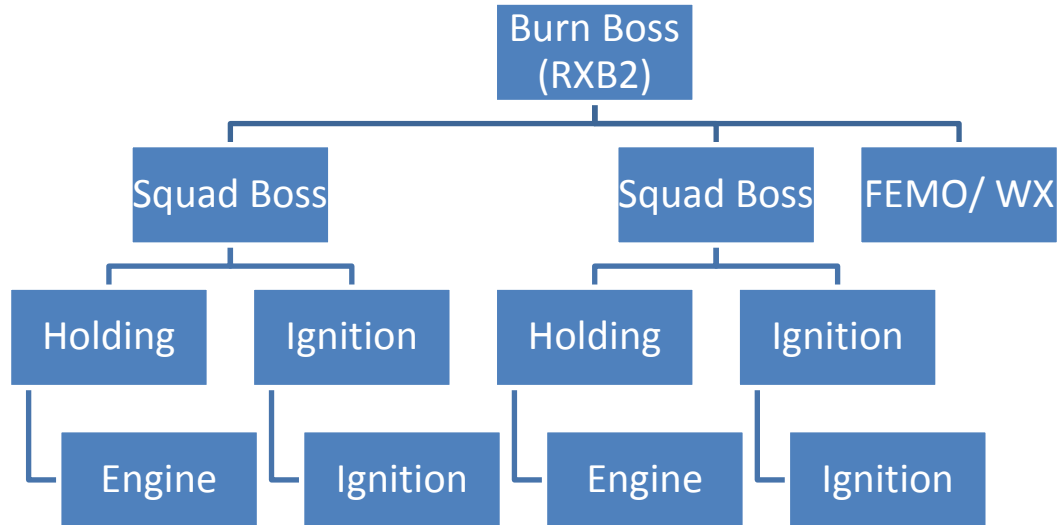
**10. CREW ORGANIZATION**

**Qualified burn boss:** 1 NWCG qualified Burn Boss (RXB1 or RXB2).

**Crew Number:** 12

**Organization chart attached?** Yes, see below

**Fitness & experience requirements:** Moderate



**11. EQUIPMENT**

Equipment Item	Number
Engines	2 engines if only sub-units 2 or 3 are being treated, 4 engines if treating sub-unit 1 or multiple sub-units simultaneously.
Drip Torch & Fuel	8
Backpack Pumps	4
Hand Tools	Misc.
PPE	1/person
First-aid Kit(s)	2
Two-Way Radios	6
Belt Weather Kit	1

**12. MANAGING THE BURN**

**Firebreak preparations:**

Roads and two tracks and mowed breaks that serve as fire breaks on the unit boundary will be cleared and limbed to provide reasonable access for a type six engine. Heavy fuels along the edges of the unit will be mowed to provide for a safer and more efficient burn. Pitch pine stands with ladder fuels within 50 feet of the unit boundary of the unit will be limbed, thinned, and /or otherwise treated to reduce the chances of group torching near the



line. A line will be mowed around the tent platforms and other fire sensitive resources located on the southwest side of Sub-unit 1.

All interior mowed breaks will be at least 10 feet wide and passable by a type 6 engine. The width of the line will be determined by the amount of fuel along the line. Mowing will be completed prior to the burn. If sufficient time has elapsed between the firebreak preparation and the burn day to allow re-growth that could make holding difficult, the lines will be re-mowed.

**Firing techniques and ignition pattern:**

Ignition operations will take crew safety into account and be based on current and expected fire behavior. Primary ignition operations will consist of burning out fuels from the perimeter of the burn unit using backing and flanking fires, which may be strip or point-source ignitions. Drip torches will be the primary ignition devices, with fusees, hand-thrown, and launch-able flares used as needed.

**Example Ignition Pattern:**

This example ignition pattern reflects selected day of burn conditions and is not intended to limit ignition operations to only this example. Actual day-of-burn wind directions or other conditions may dictate other test fire locations.

For Sub-Unit 1 with a north wind, the test fire will be lit at the southeast corner of the unit backing out the fuels with backing fire and creating an anchor point in the southeast corner of the sub-unit. If the fire and weather behavior is favorable for moving from test fire to the ignition phase, Squad 1 will move toward the west from the test fire, igniting backing fire and creating a black-line along the southern break, while Squad 2 moves north along the utility road doing the same. The pace of the squads will be monitored to avoid either flank from becoming vulnerable to control problems should a wind direction change occur. Internal strip flank and head fires and/or point source ignitions may be used if deemed necessary by the burn boss. Strip width and point source ignition spacing will be based on current and expected fire behavior. Crews will tie off the fire when they meet along the northern fire break.

**Crew communication:**

All crew communication will be face-to-face or by hand held radio. TNC frequencies will be used for radio communication. Cell phones will be used to communicate with the roving smoke spotter. At a minimum, the burn boss, squad bosses, FEMO, and two igniters will have radios. If available, all crew members will have a radio. Radios will be checked prior to the burn.

**Fire behavior and weather monitoring:**

Weather will be monitored prior to ignition, during the fire at least every hour and after completion of ignition. Fire behavior will be observed and noted by the designated fire weather monitor.

**Holding:**

Lines will be held with a combination of black-line and wet-line techniques. Holding will be coordinated with the interior ignition of the unit to avoid slop-over. Engines and backpack pumps will be used as water sources on the fireline as needed. Soft breaks will be patrolled to ensure fire does not carry beyond the unit perimeter.

Should fire behavior on the various firebreaks be observed to exceed that which can be safely managed by their respective assigned forces, the burn boss will consider options such as temporarily ceasing ignition until weather conditions moderate, reallocating holding resources, adjusting ignition patterns and pacing, and/or suppressing the fire in the unit if safely practicable. Examples of fire behavior that would be considered excessive include multiple spots outside the unit or flame lengths near the firebreaks greater than those able to be directly attacked safely with water (>8 ft.).

**Mop-up:**

The unit will be secured and smokes that will impact residential areas will be addressed by the end of the operational period. The burn boss will instruct all personnel on mop-up procedures and standards.

**Fire sensitive areas:**

There are private residences within the vicinity of the burn units. Measures such as stationing personnel or equipment near buildings may need to be taken to reduce risk these structures. There are tent platforms and piles of wood and fencing material located near the southwest corner of the unit. This area will be have a break mowed around it and will be monitored so the platforms and other resources are not damaged.

**Water:**

A portable pump will be set up on Long Cove Pond prior to burning. If Long Cove Pond is brackish at the time of the year the burn is executed additional water sources may be used. Additional water sources may include a portable tank or other water source with at least 1000 gallons.

**CONTINGENCY PLAN**

**Contingencies:**

Escape Routes and Safety Zones will be identified to all personnel prior to ignition. Escape routes will be along the mowed lines or road. Once solid black has been established it will serve as the primary safety zone.

On-site resources will conduct initial attack operations to suppress all fire occurring outside of the unit. Ignition will cease during suppression operations except where needed to maintain control of the fire. The squad boss nearest to the spot fire will head the suppression efforts. The burn boss and remaining resources will remain in charge of controlling the prescribed burn. Ignition within the prescribed burn unit can commence at the discretion of the burn boss after all fire outside of the unit has been extinguished.

Should fire cross the burn unit breaks and exceed the capability of direct attack, secondary control lines may be used. To the west is of this unit is the Middle Point Unit. There are mowed firebreaks within this unit that may be used to contain the fire if it runs in this direction. Deep Bottom Road and Middle Point Road run north to south paralleling the western fire break of the unit and could be used as a secondary control lines to the west. To the east of the unit are thick fuels, but little in the way of values at risk. If the fire leaves the unit in this direction it may be necessary to fall back to the Watcha Club Road, which runs north to south and parallels Hugh's Thumb Road, (the Eastern Holding line). South of the unit there are units that are in under management and may have recently been burned or mowed, these areas may be used to help bring the fire under control if it leaves the unit to

the south. There are also mowed paths and two tracks to the south of the unit. There are several buildings owned by the Trustees of reservations to the south of the unit. To the north of the unit are roads and private yards that could be used as secondary control lines. These lines are in or near residential or otherwise developed areas. The risks and consequences of using these secondary control lines are very high as some are very close to residences and structures.

The burn boss is authorized to declare an escape. If an escape is declared, the Martha's Vineyard Communications Center and the Town of West Tisbury Fire Chief will be notified and additional suppression forces requested. The ranking responding Fire Department Officer will assume incident command.

Should the burn boss become unavailable to perform duties while operations are taking place, the most qualified person (designated by the burn boss during briefing) will assume command of the position. The burn will be shut down if the crew falls below the minimum staffing and/or qualifications requirements.

Secondary control lines:

- North: Residential Neighborhood, Driveways, Vineyard Meadows Farm Road, Waldron's Bottom Road, Charles Neck Road, Jackson Road
- South: Two-tracks and dirt roads
- East : Watcha Club Road, and Big Home Road
- West : Deep Bottom Road, Middle Point Road

### **SAFETY AND MEDICAL PLAN**

All personnel on the burn with medical training will be identified during briefing. The location of all first aid kits will also be made known during briefing.

- Secure the scene to prevent further harm and ensure responders safety. Immediately notify Burn Boss.
- Assess the victim, **refer to Incident Response Pocket Guide.**
- Burn Boss will call for EMS assistance if necessary.
- Administer First Aid, monitor patient status until fit or released to EMS personnel. Keep a written record of treatments and send copy with patient, if applicable.
- After the burn is complete, the burn boss will submit an incident report to the Fire Manager.

### **13. DOCUMENTATION**

Review of Laws and Regulations complete?	Yes
Site Fire Management Plan complete?	Yes
Site Wildfire Response Plan complete?	Yes

### **14. LEGAL CONSIDERATIONS:**

The site is owned and managed by The Trustees of Reservations.

Releases/waivers required?	Yes – License Agreement
Releases/waivers attached?	No – On file at TTOR and TNC offices

## PRE-BURN GO/NO GO CHECKLIST AND CREW BRIEFING

Site Name:

Burn Unit:

Date:

Has the area (inside and outside the unit) experienced unusual drought conditions or does it contain above-normal fuel loadings which were not considered in the prescription development? If YES, go to question below. If NO, continue with Section A.	YES	NO
If YES, have appropriate changes been made to plans for ignition, holding, mop-up and patrol? If YES, continue with Section A. If NO, <b>stop</b> and consult Fire Manager.		

### A. PRIOR TO CREW BRIEFING

- Fire Unit is as described in plan and copy of plan is on site.
- Required firebreaks complete and are consistent with current and predicted conditions.
- Certified Burn Boss present, permits obtained. Give permit #'s:
- Required number of crew present with required protective clothing.
- Weather forecast obtained and within prescription. Long-range forecast checked for chance of severe weather.
- Official and neighbor notifications complete.
- Required equipment for holding, weather monitoring, ignition and suppression is on-site and functioning.
- Crew has reviewed equipment.
- Planned ignition and containment methods are appropriate for current and predicted conditions.
- Planned contingencies and mop-up are appropriate for current and predicted conditions.
- List of emergency phone numbers are in each vehicle.
- Off-site contingency resources are operational and available.

### B. CREW BRIEFING

- Each crew member has a map

#### Each item below has been discussed with crew:

- Burn unit size and boundaries.
  - Burn unit hazards and safety issues, including LCES.
  - Purpose of burn, anticipated fire and smoke behavior.
  - Organization of crew and assignments.
  - Methods of ignition, holding, mop-up, communications.
  - Contact with the public; traffic concerns.
  - Location of main roads, vehicles, keys, and nearest phone.
  - Location of back-up equipment, supplies, and water.
  - Contingencies for escaped prescribed fire.
  - Contingencies for medical emergency
  - WUI concerns.
- Answer questions from crew.

### C. PRIOR TO IGNITION

- On-site weather and fuel conditions are within prescription and consistent with forecast.
- Test burn conducted; fire and smoke behavior within prescribed parameters.

**NOTE AND JUSTIFY ANY MODIFICATIONS TO PLAN:**

When burn is completed, fill out Post-Burn Checklist on next page, sign and date form.

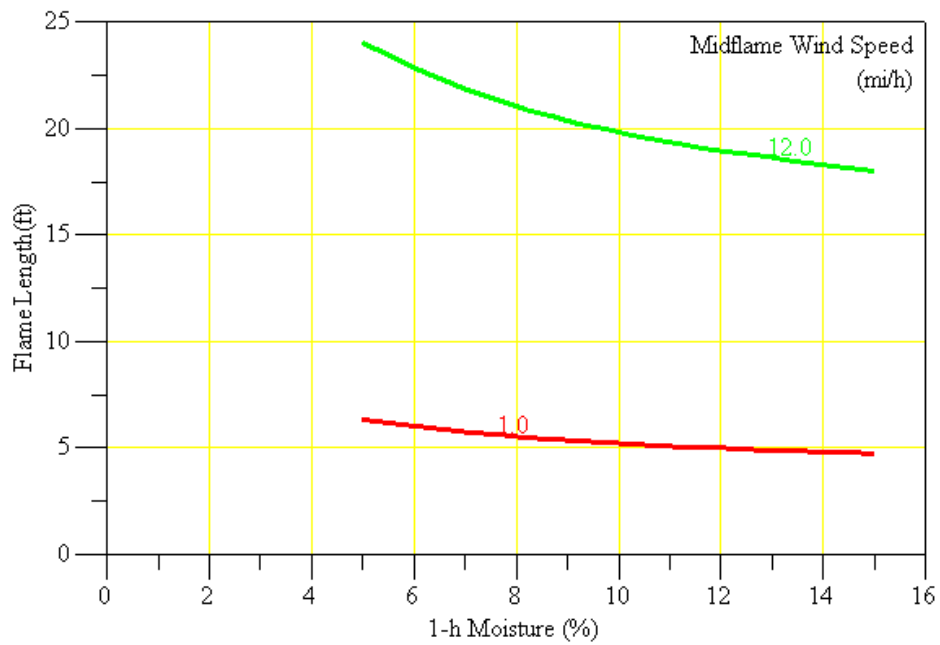
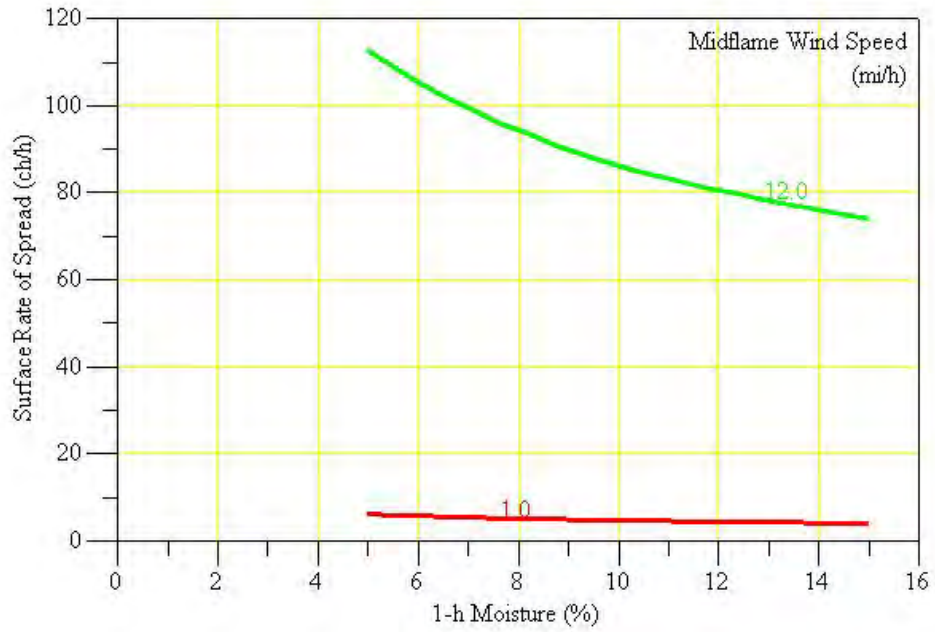
**Post Burn Checklist**

- Mop-up completed as described in burn plan.
- Night patrol assigned, if needed.
- Day shift assigned for days following burn, if needed.
- Notifications of completed burn, if required.

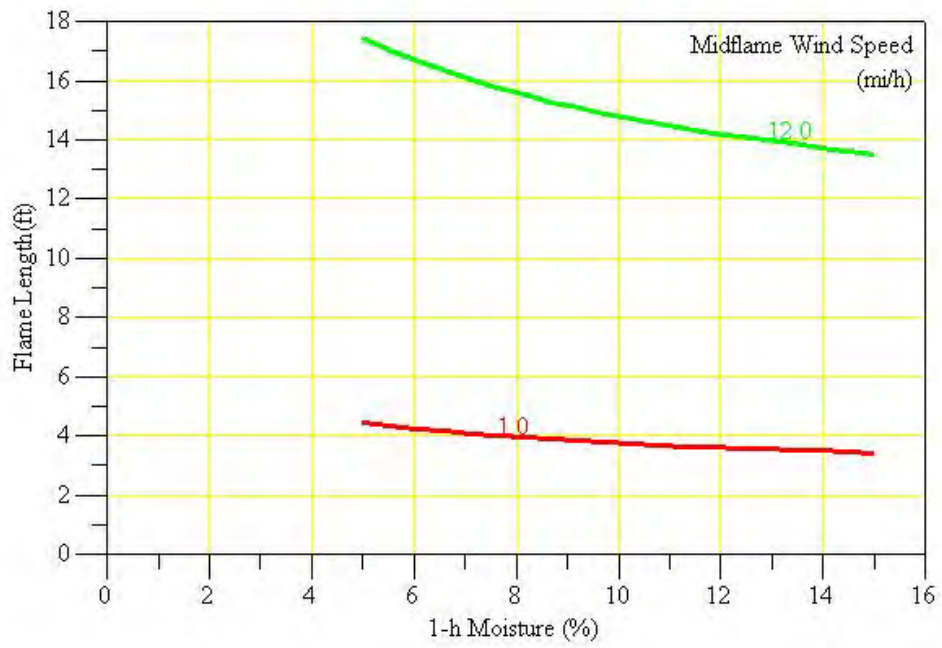
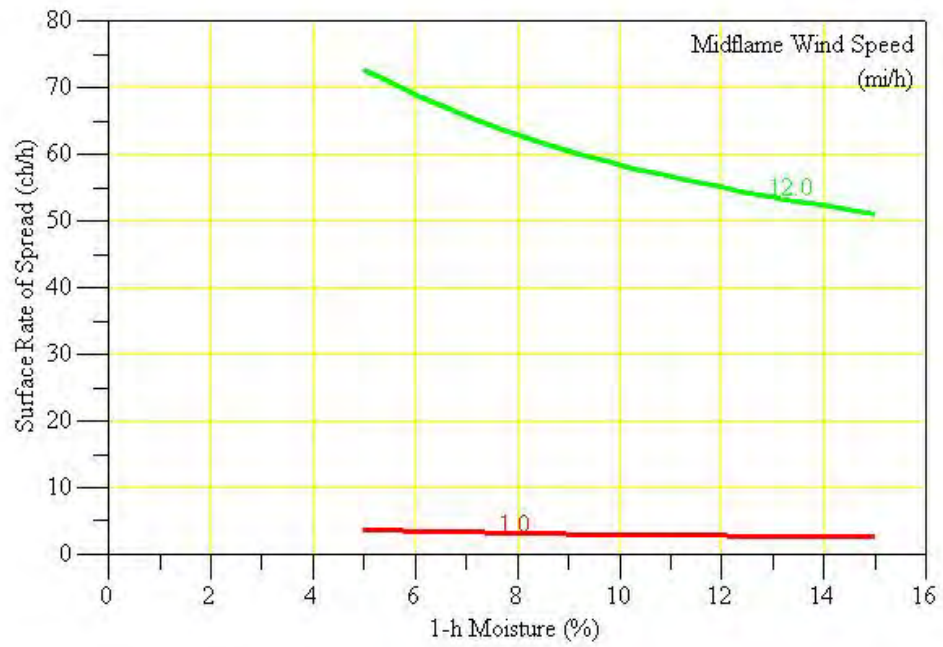
**Burn Boss:**

**Date:**

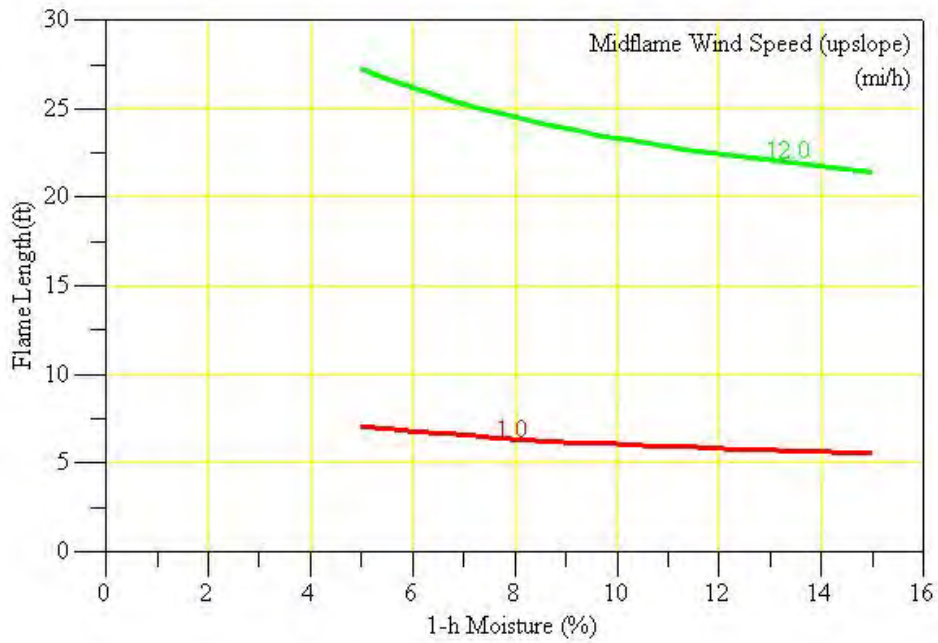
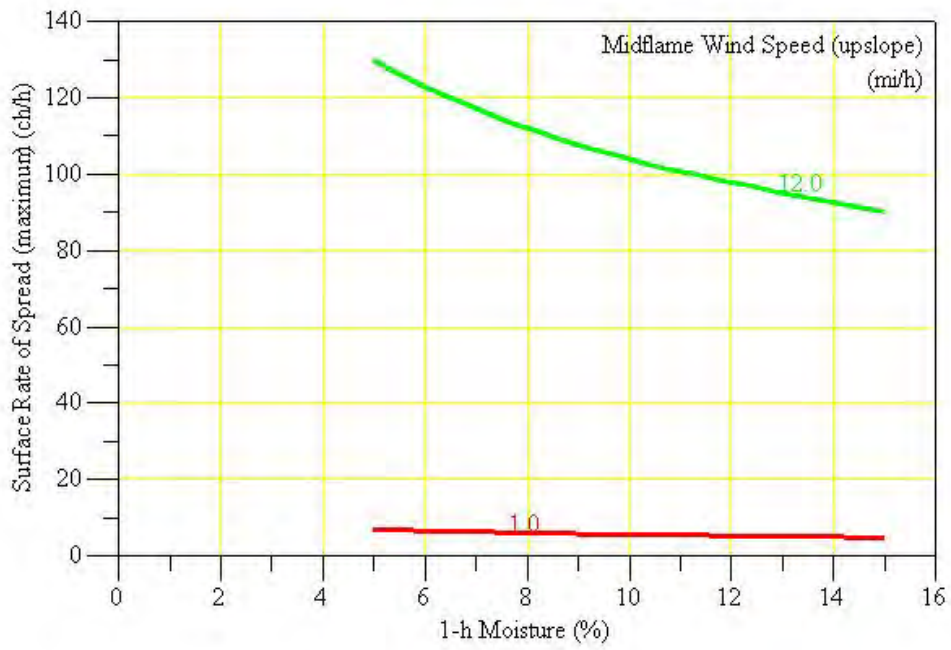
### Martha's Vineyard Custom Fuel Model for Pitch Pine, Untreated



# Martha's Vineyard Custom Fuel Model for Oak Woodland, Untreated

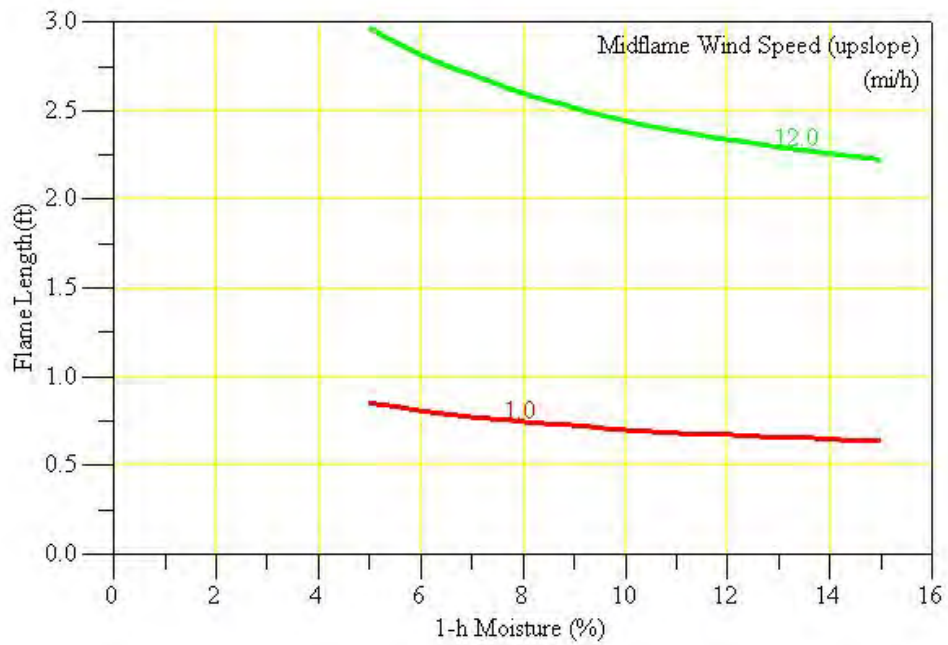
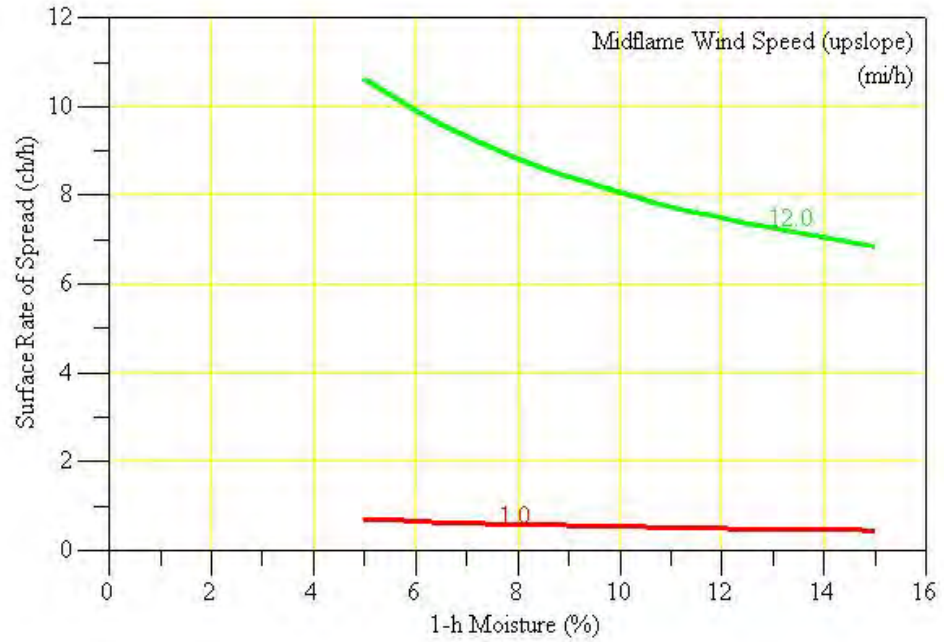


### Martha's Vineyard Custom Fuel Model for Scrub Oak, Untreated





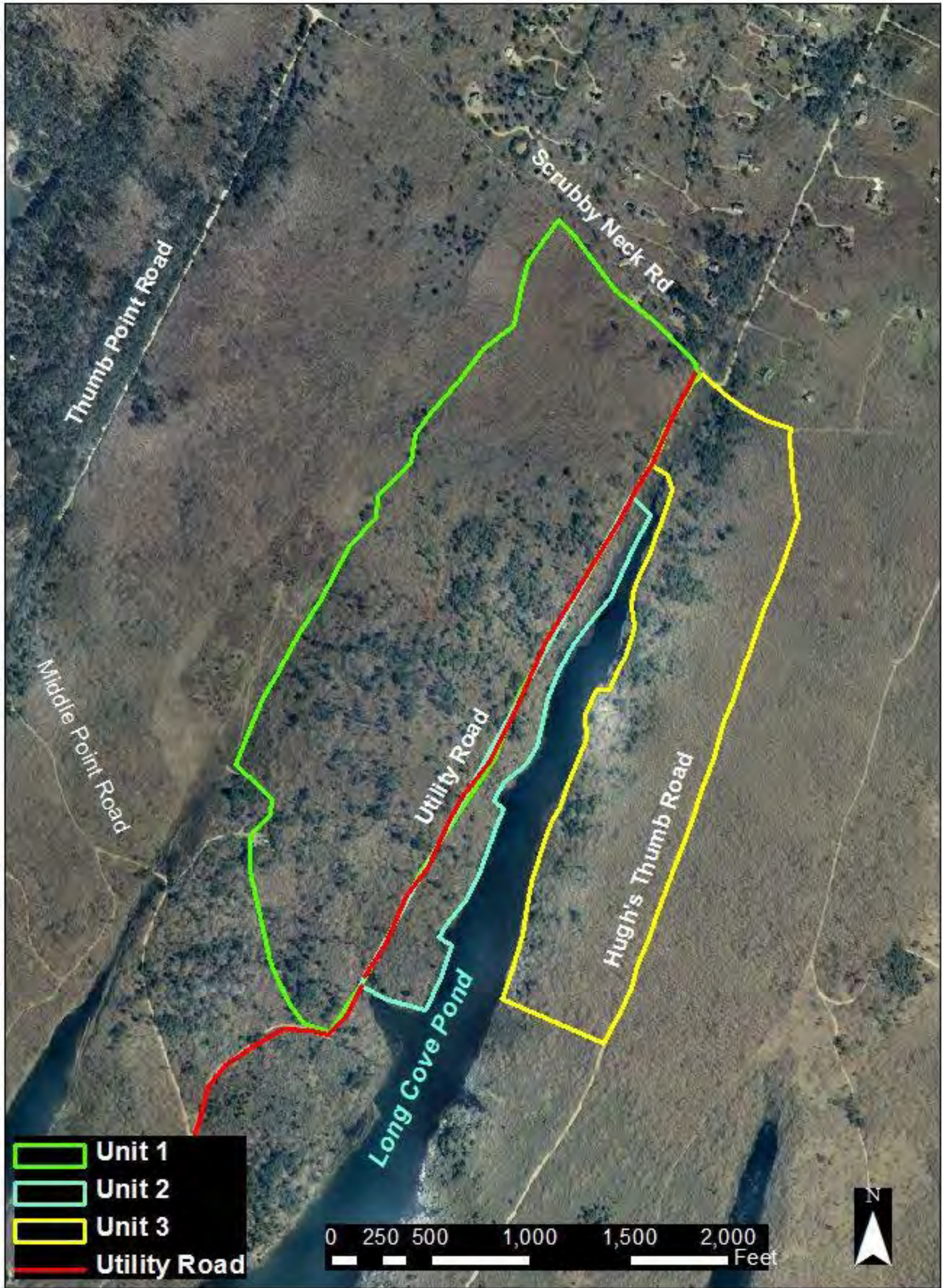
### Martha's Vineyard Custom Fuel Model for Scrub Oak, Mowed



# Long Cove Unit

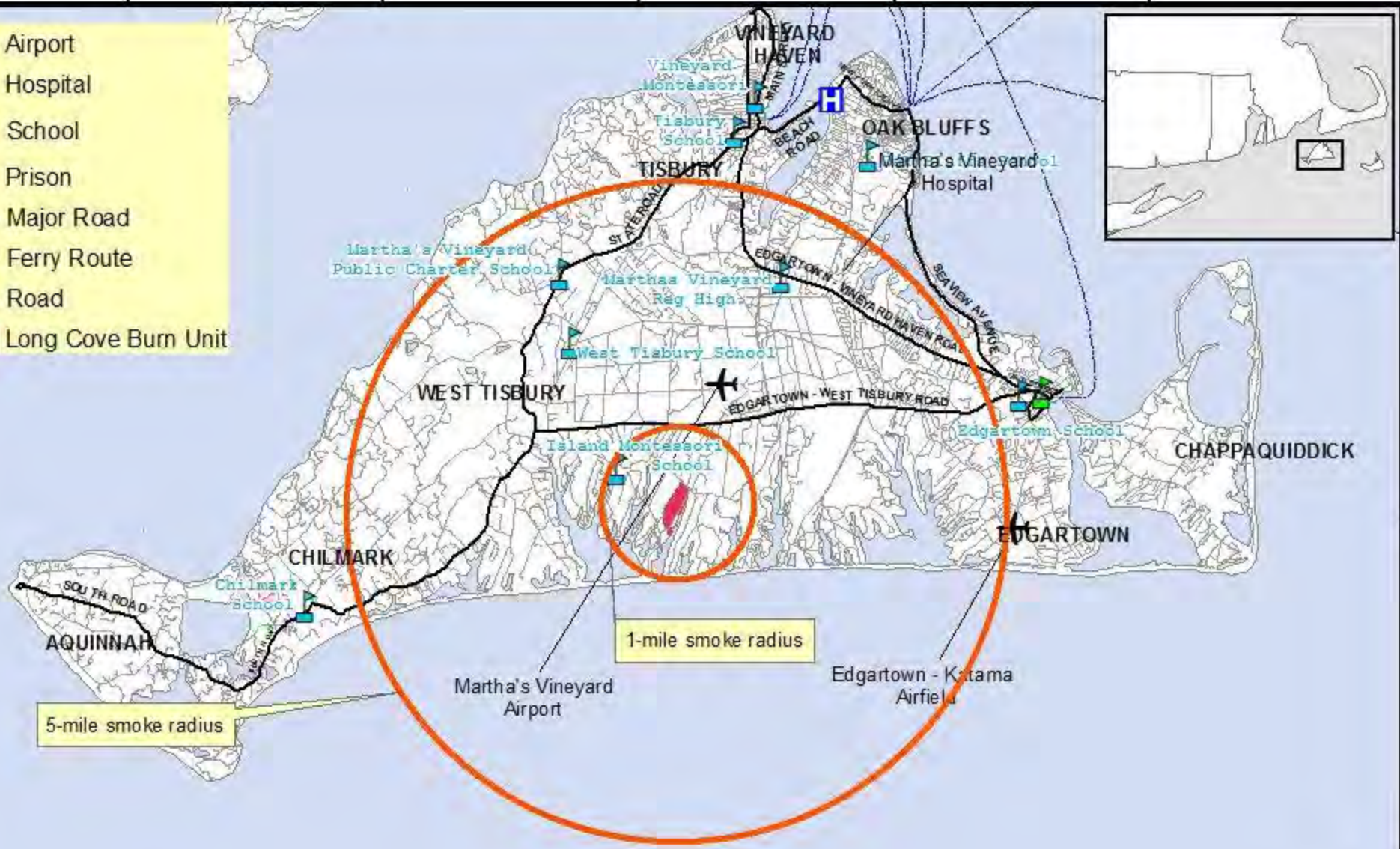


# Long Cove Unit

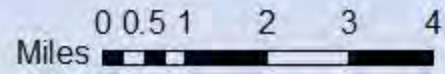


# Long Cove Smoke Map

-  Airport
-  Hospital
-  School
-  Prison
-  Major Road
-  Ferry Route
-  Road
-  Long Cove Burn Unit



Source: Mass GIS, TNC-MAFO  
Contact: Bob Bale, TNC-MAFO  
Long Cove Smoke.mxd  
Created 2/2012



70°48'0"W      70°45'12"W      70°38'24"W      70°33'36"W      70°28'48"W

41°25'24"N  
41°21'00"N  
41°16'48"N