

# PRESCRIBED FIRE PLAN

**Narragansett Bay Research Reserve  
Rhode Island Department of  
Environmental Management**

## Prudence Island



## **Southeast Pine Barrens (Units 1-8)**

Revised by  
DAVE WALKER – RXB2  
with input from DFE and DFW Staff

**September 8, 2022**

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**ELEMENT 1:**

**SIGNATURE PAGE**

**ADMINISTRATIVE UNIT:** Narragansett Bay National Estuarine Research Reserve  
**PRESCRIBED FIRE NAME:** SE Pine Barrens 1-8  
**COMPLEXITY RATING:** Moderate

**PLAN UPDATE:** David Walker 10/24/2022  
*SIGNATURE* *DATE*

Dave Walker  
*PRINTED NAME*  
RI DEM  
*AGENCY*  
Prescribed Burn Boss Type 2 (RXB2)  
*QUALIFICATIONS*

**TECHNICAL REVIEW:** Alex Entrup 11/29/2022  
*SIGNATURE* *DATE*

Alex Entrup  
*PRINTED NAME*  
MassWildlife  
*AGENCY*  
Prescribed Burn Boss Type 2 (RXB2)  
*QUALIFICATIONS*

**APPROVED BY:** Tee Jay Boudreau 3/22/23  
*AGENCY ADMINISTRATOR* *SIGNATURE* *DATE*

Tee Jay Boudreau  
*PRINTED NAME*  
RI Department of Environmental Management  
*AGENCY*  
Deputy Chief of Division of Forest Environment  
*POSITION TITLE*

## **ELEMENT 2: AUTHORIZATION & GO/NO-GO CHECKLIST**

### **A: Agency Administrator Ignition Authorization**

**Instructions:** The Agency Administrator Ignition Authorization must be completed before a prescribed fire can be implemented. If ignition of the prescribed fire is not initiated prior to the expiration date determined by the agency administrator, a new authorization will be required.

Prior to signature the agency administrator should discuss the following key items with the fire management officer (FMO) or burn boss. Any additional optional instructions or discussion documentation will be attached to this document.

For information on responsibilities of the "Plan Preparer", "Technical Reviewer", and "Agency Administrator"; see the "Interagency Prescribed Fire Planning and Implementation Procedures Guide" 2014 version, at [www.nwccg.gov/sites/default/files/products/pms484.pdf](http://www.nwccg.gov/sites/default/files/products/pms484.pdf).

#### **Key Discussion Items**

- A. Has anything changed since the Prescribed Fire Plan was approved or revalidated?  
*Such as drought or other climate indicators of increased risk, insect activity, new subdivisions/structures, smoke requirements, Complexity Analysis Rating.*
- B. Have compliance requirements and pre-burn considerations been completed?  
*Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, smoke permits, state burn permits/authorizations.*
- C. Can all of the elements and conditions specified in Prescribed Fire Plan be met?  
*Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc.*
- D. Are processes in place to ensure all internal and external notifications and media releases will be completed?
- E. Have key agency staffs been fully briefed about the implementation of this prescribed fire?
- F. Are there circumstances that could affect the successful implementation of the plan?  
*Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity.*
- G. Have you communicated your expectations to the Burn Boss and FMO regarding if and when you are to be notified that contingency actions are being taken?
- H. Have you communicated your expectations to the Burn Boss and FMO regarding decisions to declare the prescribed fire a wildfire?

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#### **IMPLEMENTATION RECOMMENDED BY:**

(FMO OR PRESCRIBED FIRE BURN BOSS)

*Patrick MacMeekin*

SIGNATURE

03/24/2023

DATE

Pat MacMeekin

PRINTED NAME

Fire Program Manager

POSITION TITLE

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I am authorizing ignition of this prescribed fire between the dates of \_\_\_ / \_\_\_ / \_\_\_ and \_\_\_ / \_\_\_ / \_\_\_. It is my expectation that the project will be implemented within this time frame and as discussed and documented and attached to this plan. If the conditions we discussed change during this time frame, it is my expectation you will brief me on the circumstances and an updated authorization will be negotiated if necessary.

Additional Instructions or Discussion Documentation attached (Optional): Yes  No

#### **IGNITION AUTHORIZED BY:**

(AGENCY ADMINISTRATOR)

*Tee Jay Boudreau*

SIGNATURE

3/22/23

DATE

Tee Jay Boudreau

PRINTED NAME

Chief of Division of Forest Environment

POSITION TITLE

**B: Prescribed Fire Go/No-Go Checklist**

Preliminary Questions	Circle YES or NO	
A. Have conditions in or adjacent to the ignition unit changed, (for example: drought conditions or fuel loadings), which were not considered in the prescription development? If <b>NO</b> proceed with the Go/NO-GO Checklist below, if <b>YES</b> go to item B.	YES	NO
B. Has the prescribed fire plan been reviewed and an amendment been approved; or has it been determined that no amendment is necessary? If <b>YES</b> , proceed with checklist below. If <b>NO</b> , <b>STOP: Implementation is not allowed. An amendment is needed.</b>	YES	NO

GO/NO-GO Checklist	Circle YES or NO	
Have ALL permits and clearances been obtained?	YES	NO
Have ALL the required notifications been made?	YES	NO
Have ALL the pre-burn considerations and preparation work identified in the prescribed fire plan been completed or addressed and checked?	YES	NO
Have ALL required current and projected fire weather forecast been obtained and are they favorable?	YES	NO
Are ALL prescription parameters met?	YES	NO
Are ALL smoke management specifications met?	YES	NO
Are ALL planned operations personnel and equipment on-site, available and operational?	YES	NO
Has the availability of contingency resources applicable to today's implementation been checked and are they available?	YES	NO
Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?	YES	NO

If all the questions were answered "**YES**" proceed with a test fire. Document the current conditions, location and results. If any questions were answered "**NO**", **DO NOT** proceed with the test fire: Implementation is not allowed.

After evaluating the test fire, in your judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective?

Circle YES or NO  
YES      NO

**PRESCRIBED FIRE  
BURN BOSS:**

\_\_\_\_\_ SIGNATURE \_\_\_\_\_ DATE

\_\_\_\_\_ PRINTED NAME

\_\_\_\_\_ AGENCY

**RXB2**  
\_\_\_\_\_ QUALIFICATIONS

**ELEMENT 3: FINAL COMPLEXITY ANALYSIS SUMMARY**

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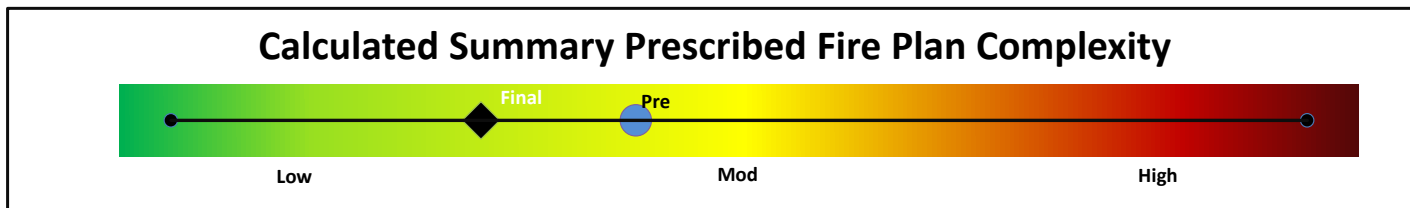
**See Next Page.**

**NWCG Prescribed Fire Summary and Final Complexity Worksheet , PMS 424-1**



Prudence Island Southeast		Quantity	Significance
Values	On-Site	Few	Mod
	Off-Site	Few	Low
	Public/Political Interest	Few	Mod

Element	Preliminary Risk	Post-Plan Risk	Technical Difficulty	Calculated Rating
Safety	Mod	Mod	Low	Mod
Fire Behavior	Mod	Mod	Mod	Mod
Resistance to Containment	Mod	Low	Low	Low
Ignition Procedures and Methods	Mod	Mod	Low	Mod
Prescribed Fire Duration	Mod	Low	Low	Low
Smoke Management	Mod	Low	Low	Low
Number and Dependence of Activities	Low	Low	Low	Low
Management Organization	Mod	Mod	Low	Mod
Treatment/Resource Objectives	Low	Low	Low	Low
Constraints	Mod	Mod	Mod	Mod
Project Logistics	Mod	Mod	Mod	Mod



Final Complexity Determination	Final Complexity Determination Rationale
<b>Mod</b>	The major contributors to the complexity rating are driven by the shrub and pitch pine fuel types that can be seasonally volatile along with the logistical planning and actions required to access the island. Timing of treatments require continued coordination with DFW to avoid impacts to the turtle population on the island. Additionally, limited burning has occurred to date on the island and as such presents a measure of the unknown for local residents requiring a degree of trust to be established and familiarization to the limited presence and smell of wildland smoke. Prudence Island is also extremely visible to the mainland communities of RI requiring additional efforts for general notification of our planned prescribed burns to alleviate any concerns. The actual operations of applying prescribed fire is relatively simple and easy to accomplish given the small unit sizes and organizational structure. Recommend Moderate

Signatures			
	Dave Walker Rx Burn Plan Preparer's Name	<i>David Walker</i> Preparer's Signature	<u>10/24/2022</u> Date
	Alex Entrup Technical Reviewer's Name	<i>Alex Entrup</i> Technical Reviewer's Signature	<u>11/29/2022</u> Date
	TeeJay Boudreau Agency Administrator's Name	<i>Tee Jay Boudreau</i> Agency Administrator's Signature	<u>3/22/23</u> Date

**ELEMENT 4: DESCRIPTION OF PRESCRIBED FIRE AREA**

**A: PHYSICAL DESCRIPTION**

**1: LOCATION**

Administrative Unit: Narragansett Bay National Estuarine Research Reserve  
 Ownership: State of Rhode Island; Rhode Island Department of Environmental Management  
 Town: Town of Portsmouth  
 County: Newport County  
 State: Rhode Island  
 Prescribed Fire Name: Southeast Pine Barrens (Units 1-8)  
 Topo Map: Prudence Island Quadrangle USGS  
 SW Corner Coordinates: D.D° Lat./Long. N 41.581° W 71.331°  
*Note: All Coordinates are in Datum WGS84*  
 Elevation: 0' to 115' above sea level

**2: SIZE**

SUBUNIT	1A	1B	1C	1D	2A	2B	2C	2D	2E	2F	3A	3B	—
ACRES	4	37	28	7	12	3	14	12	18	4	23	6	---

SUBUNIT	4A	4B	5A	5B	5C	5D	6A	6B	7A	7B	7C	8A	TOTAL
ACRES	8	22	5	29	12	4	5	23	37	2	7	40	362

**3: TOPOGRAPHY**

The site is defined by a central ridge with topography sloping toward the bay from the center of the island. A drainage is located between units 6 and 7 that drains toward the pier at the south end of the island. Average slope is roughly 3%. The steepest slopes are along the coastline in excess of 40%.

**4: PROJECT BOUNDARIES**

The project area is contained within the Narragansett Bay National Estuarine Research Reserve (NBNERR) Southeast Pine Barrens southern unit. The northern boundary is Albro Farm Rd on the western side and South Reserve Drive on the East. The West, South and East boundary consists of the Narragansett Bay shoreline.

**B: VEGETATION & FUELS DESCRIPTION**

Vegetation and fuel descriptions are based on field inspection and are classified using the NBNERR Habitat Classification GIS layer. Some small areas were reassigned to match the neighboring fuel model to simplify planning. The fuel models were assigned using the Scott and Burgan fire behavior prediction fuel model set:

Scott, J. H.; Burgan, R. E. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. General Technical Report RMRS-GTR-153.

**1: ON-SITE**

- Mixed Grasslands – 22 Acres – 6%  
 [Moderate Load, Humid Climate Grass (Dynamic) – GR6]  
 Units 3B and 5D are primarily grasslands. Mowed fire breaks along roadsides are managed as grasslands. There are small grassy areas along firebreaks in units 2 and 4. The grasslands are predominately switch grass and little bluestem. Flame lengths and rates of spread are expected to be high.
- Shrubby Grasslands – 8 Acres – 2%  
 [Moderate Load, Humid Climate Grass-Shrub (Dynamic) – GS3]  
 Shrubby grasslands are present in units 6A, 5B, 5C and 2E. The primarily fuel bed is switch grass intermixed with smilax vines, deciduous shrubs, and pitch pine regeneration. Flame lengths and rates of spread are expected to be high.



- Pitch Pine – Oak Woodlands/Forests and Shrublands – 256 Acres – 71%  
[Low Load, Humid Climate Shrub SH6]  
The majority of the planning area is pitch pine – oak woodlands or shrublands.
- Pitch Pine Thickets – 26 Acres – 7%  
[High Load, Humid Climate Shrub SH8]  
Dense pitch pine regeneration is the dominant fuel type in units 2F and portions of 2C and 4B. Pitch pine thickets also line a number of roadways. The thickets are difficult to walk through and can support high fire behavior. Rates of spread and flame lengths are expected to be high. Torching and crown fires are possible.
- Shrub Swamp – 51 Acres – 14%  
[Moderate Load, Humid Climate Timber-Shrub TU2]  
Wetlands dominate unit 7A and are present to a smaller degree in the eastern portions of unit 5, northern portion of unit 1, and some interior areas of unit 2. The fuels in the wetland areas are mixed hardwood forest, pitch pine – oak forests, and shrub swamps. The midstory is primarily a mix of vines and shrubs. Rates of spread are expected to be moderate and flame lengths low. Torching is possible in areas with pitch pine and/or smilax climbing into the crowns.

## 2: OFF-SITE

North: North of the unit fuels are generally less flammable than in the unit. North of unit 1 is mostly wetlands. Fire could carry in the wetlands, but fire behavior is expected to be low (TU2). North of unit 3 is the NBNERR headquarters. Most of the area adjacent to headquarters is green mowed grass. Beyond the headquarters and across Cram Road is upland oak forest with a heavy smilax understory. Fire could carry well through the oak areas. North of unit 8 is a neighborhood that contains some flammable areas intermixed with mowed lawns.

East: East of the planning area is Narragansett Bay and beach. Some coastal grasses and shrublands are present leading to the beaches (GS3).

South: South of the planning area is Narragansett Bay. Coastal grasses and shrubs are present south of Levesque Memorial Drive. There is infrastructure associated with the pier south of 5D.

West: West of the planning area is Narragansett Bay and the associated beach and coastal vegetation.

Interior: Between units 5, 6, 7, 8 is mostly wetland swamp. Portions are flammable (TU2), but many areas are wet and would only burn under extremely dry conditions. The vegetation is generally thick, shaded, dominated by shrubs and vines in the midstory.

## C: DESCRIPTION OF UNIQUE FEATURES AND RESOURCES

- Jurisdictional wetlands are scattered throughout the planning area.
- A powerline runs along the south boundary of unit 8, into the headquarters and to the pier area.
- The site is habitat to Rhode Island Wildlife Assistance Program (RIWAP) species. Ignition timing and unit selection should be coordinated with appropriate state biologists, particularly as it relates to Box Turtles.
- The site is a former US Navy facility and contains numerous structures associated with the former land use. There are 15 bunkers located in units 2A, 2C, 2D, 2E, 4B, 6A, 6B, and 7A. These bunkers are approximately 20 feet tall in the front. Because they are built into the landscape, it can be difficult to see where they are when approaching them from the sides or rear, which leads to a sheer drop in the front of the bunker. Fences exist on the tops of these bunkers, but caution should still be exercised when working in and around the above-mentioned subunits.
- Numerous interpretive signs are installed along roads throughout the planning area. The signs are mounted on wooden poles and could be susceptible to fire.

## ELEMENT 5:

## GOALS & OBJECTIVES

### A: GOALS

- Resource Management
  - Ecological restoration of pitch pine barrens, pine-oak woodlands, maritime grasslands/shrublands, and other native ecosystems.
  - Top-kill European larch regeneration and Autumn Olive.
  - Promote native warm season grasses in grassland areas.

- Hazard fuel reduction of surface fuels and overstory/mid-story thermal thinning.
- Training - wildland fire training through practical application in wildland fire behavior, fire suppression principles, and prescribed fire techniques.

**B: OBJECTIVES**

**1: RESOURCE OBJECTIVES**

- Greater than 40% of the surface layer burned in low or moderate severity.
- Greater than 50% of the low-woody vegetation layer burned in low or moderate severity.
- Less than 50% of the overstory trees with canopy scorch greater 50% of total canopy.

**2: PRESCRIBED FIRE OPERATIONAL OBJECTIVES**

- Complete each prescribed fire within one operational period.
- Have no escapes or injuries.
- Have no smoke impacts to sensitive smoke receptors. Prevent smoke impacts to off-site receptors from exceeding 2.5 ppm (Environmental Protection Agency standard for “Unhealthy for Sensitive Groups”) and avoid creating prolonged periods of nuisance smoke generation.
- Minimize impacts to Box Turtles during treatment of subunits.
- Complete operations without preventable damage to equipment.
- Minimize smoke impacts on roadways.

**ELEMENT 6:**

**FUNDING**

**A: SOURCE(S)**

Funding for portions or all the burn operations will be managed by the landowner or manager.

**B: COST(S)**

All resources for planned prescribed fires for this unit will be funded from the participating agencies budget centers.

**ELEMENT 7:**

**PRESCRIPTION**

Prescribed burn operations may continue at the discretion of the burn boss if an environmental or fire behavior parameter is outside of prescription limits, if the observed and expected fire behavior is still within and expected to remain within control capabilities of the on-site resources. Adjustments to parameters, resources, and/or tactics must be documented in the burn plan. The changed parameter, resources, and/or tactics cannot result in an increase in the complexity level of the burn.

**A: ENVIRONMENTAL PRESCRIPTION**

If burning with a KBDI greater than 199 or a period without appreciable (>0.2”) precipitation of greater than 5 days; expect fires to burn deeply and persistently, mop-up to be difficult, a need to conduct mop-up over multiple days, and increased frequency of daily unit checks until significant precipitation occurs. An additional Type 6 or larger engine is required when the KBDI is greater than 199 (see Element 11.B).

<b>Environmental Parameters</b>	<b>Min.</b>	<b>Max.</b>	<b>Environmental Parameters</b>	<b>Min.</b>	<b>Max.</b>
Surface Wind Dir. (cardinal clockwise):	Any		EPA PM 2.5 Index:	0	75
20 Foot Wind Sp. (mph):	0	22	EPA Ozone Index:	0	50
Mid-flame Wind Sp. (mph):	0	8	1 Hour Fuel Moisture (%):	6	12
Mixing Height (ft):	1,200	None	10 Hour Fuel Moisture (%):	8	None
Transport Wind Sp. (mph):	8	None	Live Herbaceous Fuel Moisture (%):	None	None
Keetch-Byram Drought Index (KBDI):	None	299	Live Woody Fuel Moisture (%):	None	None
Max. Nighttime LVORI (if smolder is expected)	None	6	Air Temperature (°F):	35	90*
			Relative Humidity (%):	30	80

**Additional Environmental Parameters:**

\*No Burn will occur if heat index is over 105°F

\*\* If the three following conditions are met, the weather will be considered out of prescription.

- Dormant season (prior to green-up)
- Mid-flame wind speed greater than 6 mph
- RH less than 35%

**B: FIRE BEHAVIOR PRESCRIPTION**

Two or three days of drying would be acceptable to reach objectives. Following frost, two or more hours of drying may be needed before fuels are sufficiently cured.

Parameter	GR6	GS3	SH6	SH8	TU2	TL6
Max. Head ROS (ch/hr):	225	138	75	93	29	12
Min. Head ROS (ch/hr):	4	3	2	3	1	0
Max. Head FL (feet):	22	17	16	21	5	4
Min. Head FL (feet):	3	3	3	4	1	1
Max. Backing ROS (ch/hr):	7	4	3	3	1	1
Min. Backing ROS (ch/hr):	3	2	2	2	1	0
Max. Backing FL (feet):	4	3	3	4	1	1
Min. Backing FL (feet):	3	2	3	4	1	1

**ELEMENT 8:****SCHEDULING****A: IGNITION TIME FRAME & SEASON(S)**

Any season may be acceptable to reach objectives. Burning during different seasons will generate different vegetative responses. Spring fires can be used to favor warm season grasses, summer burns to reduce woody encroachment and fall burns to promote forbs. Growing season burns will reduce shrub vigor, while dormant season burns will likely increase stem density. Woodland burns in the first two weeks of May can cause high oak mortality. Recently cut or masticated areas with large amounts chipped fuel on the ground, or former logging decks, may create smolder and smoke issues if burned during the summer. Burning in late April to early May, low foliar moisture content in pitch pines may cause increased torching potential. Additionally, movement of the Eastern Box Turtle requires monitoring for presence within the burn units beginning mid to late April.

Previously unburned forested areas (portions of units 5-8) are likely best burned in the dormant season to meet objectives. Areas dominated by tall dense deciduous shrubs and vines should be burned in the dormant season to meet objectives.

Burning in the summer or fall may cause overnight smoldering. Fuels should be checked by an experienced individual to ensure that fire will not burn deeply into the ground or into heavy downed fuels. Dry stream beds and wetland areas should not be burned during the growing season under high KBDI (over 200) to prevent damage to herp habitat and prevent persistent smoldering in duff and litter.

**B: PROJECTED PROJECT DURATION**

Based on smoke management and holding considerations, coupled with typical weather conditions, it's expected that 1 to 5 subunits will be burned in a day. To complete all subunits in the unit will likely take 6 to 13 burn days over the course of at least two years.

Duration for a single day is expected to be approximately 8 to 10 hours from arrival time to departure. Briefing and setup should be approximately 2 hours, ignition and holding will be approximately 3 to 5 hours, mop-up will be approximately 1 to 2 hours (assuming low KBDI – below 100), and de-briefing and breakdown will be approximately 1 hour.

**C: CONSTRAINTS**

- There are currently no regulatory constraints on when a prescribed fire can occur.
- Coordinated preseason planning and eventual burn plan implementation with RIDEM, NBNERR, and Public Affairs staff for:

1) timely messaging and notification of the intent and purpose of the planned prescribed burn(s) to the public, stakeholders, and adjacent residents using the 60, 14, and day of notification process as outlined in the Prescribed Fire Management Handbook, and table below.

2) eliminating the potential for conflict with previously scheduled overnight activities (i.e. summer camps), the paraplegic hunting season, or bow hunting season (late October to early January).

- No burning should occur over the weekend (Friday-Sunday) of the Quonset Air Show (usually late May to early June).
- Timing of individual subunit treatments will be coordinated to minimize impacts to RIWAP species.

## D: OUTREACH AND NOTIFICATION

Outreach Type	Timing	Staff
Pre-Season RX Planning Meeting	3 months Prior to RX Season.	DEM Stakeholders, RI Public Affairs Office
Initial Public Media Release	1-2 months prior *	DEM Public Affairs (PA), Outreach Coordinator (OC)
2 <sup>nd</sup> Public Press and Radio Release	1-2 weeks prior **	FPM directed**, PA, OC
Pre-Burn Day notification – Phone and Doorknob hangers	w/i 48 hrs. of planned burn	FPM, Project Coordinator, RXBB, OC
Burn Day notification – Ph, email, doorknob hangers, community notice	Burn day AM	FPM, Project Coord., RXBB, PA, OC

\*Actual timing will be determined during the RX Plan scoping process and re-confirmed at the Pre-Season meeting.

## ELEMENT 9:

## PRE-BURN CONSIDERATIONS

### A: CONSIDERATIONS

#### 1: ON-SITE

- The burn plan should be reviewed and adjusted as needed based on changed objectives and conditions (Burn Boss/Technical Reviewer/Agency Administrator)
- Water resources will be identified prior to fire operations (Agency and/or Burn Boss)
  - Cistern use will be coordinated through Prudence Island Volunteer Fire Department. (Agency and/or Burn Boss)
  - A garden hose is available at the NBNERR Headquarters for filling engines but is insufficient for refilling during operations.
  - Reliable drafting sites are not available in the planning area. The pond in the northeast corner of unit 2C may hold enough water for drafting but should be verified prior to identify it as an available water source. (Agency and/or Burn Boss)
  - At least 800 gallons of water should be available for a burn day. If PIVFD cannot provide a tanker or engine, a portable tank should be set up. (Agency/Burn Boss)
- The burn subunit(s) will be closed during fire operations (Agency will post signs and coordinate with Burn Boss)
- Trails will be posted with signage indicating prescribed fire, as determined necessary by burn boss or agency personnel (Agency and Burn Boss)
- Downwind roads should be posted at the discretion of the Burn Boss. (Burn Boss)
- Gates should be opened in the burn unit and adjacent burn units. (Agency)
- Confirm staging area for prescribed fire and contingency resources (Burn Boss and/or Agency)
- Duff within targeted subunit(s) will be checked prior to ignition to evaluate potential for overnight smoldering. If any smoldering is expected, the unit *should not be burned with a maximum nighttime LVORI of 7 or higher.* (Burn Boss)
- Piles of woody debris produced from woodcutting should be identified. Abandoned log decks in unit 1C should be examined for smolder potential prior to ignition if not removed from site prior to burning. Any prep should be coordinated with burn boss when planning for the burn. (Agency)
- **Pre-Burn Preparation** (All line prep is the responsibility of the Agency)

- See Fire Line Map in Appendix A
- Line Prep
  - The firebreaks to be prepared should be based on the target units to be burned. Only the target unit(s) need to be prepped. Prepping additional units may improve options but are not necessary to conduct burn.
  - Ensure access for pickup truck size engine around all target subunits. (Agency)
  - Internal mowed breaks should be mowed 8 feet wide and passable by a Type 6 Engine (pickup truck size).
  - Optionally, ignition trails should be mowed through areas too dense to easily walk. Ignition trails should be mowed high (~1 ft high to allow for fire to cross) and passable on foot. Ignition trails allow for fire to be more effectively and safely applied to internal portions of units.

## 2: OFF-SITE

- Coordinate with participating agencies to arrange logistics concerning crew and equipment. (Burn Boss and Agency)
- Ferry transportation is required to get off-island resources onto Prudence Island. Tickets should be secured, and equipment staged prior to burn day. (Agency and Burn Boss)
- Confirm PIVFD, other appropriate town agencies, and residents of Stevens Landing and Mt. Pleasant Ave. are aware of prescribed fire activities. (Burn Boss and Agency)
- Notify neighbors of burn window. (Agency)

## B: METHOD FOR OBTAINING WEATHER AND SMOKE MANAGEMENT FORECAST(S)

All weather sites and frequencies are recommendations; the burn boss will adjust frequency and source based on availability of forecasts, needs, and conditions.

- NWS Fire Weather (Fire Weather & Red Flag Warnings), Point Forecast, and Hourly Weather Graphs are available at <http://www.weather.gov/box/fire> (use RIZ007 – Newport RI), and will be checked the day prior to the burn and the morning of the burn.
- Upper air soundings can be accessed at the NWS web page at <http://www.spc.noaa.gov/expert/soundings/> to run model data in bufkit or a similar program upper air soundings can be accessed at [http://www.meteo.psu.edu/bufkit/NEUS\\_HRRR\\_06.html](http://www.meteo.psu.edu/bufkit/NEUS_HRRR_06.html) (use station KOQU), and run in the bufkit program (or similar program) to project winds, dispersion conditions, and other variables. If the NWS Fire Weather page is not operating, running this model can provide missing smoke management information.
- HYSPLIT Trajectory and Concentration Models can be accessed at [http://www.arl.noaa.gov/HYSPLIT\\_info.php](http://www.arl.noaa.gov/HYSPLIT_info.php) and can be used for day of burn smoke management considerations.
- VSmoke – Web can be accessed at <http://weather.gfc.state.ga.us/GoogleVsmoke/vsmoke-Good2.html> and is designed to model smoke dispersion.
- A spot weather forecast request may be made on the NWS Fire Weather Page at <https://www.weather.gov/spot/>. This forecast is not always available if so, note that spot weather forecast was not accessible. Some federal partner organizations require a SPOT forecast to assist.
- RI DEM air quality conditions and forecasts can be accessed at <http://www.dem.ri.gov/programs/air/air-quality-forecast.php> or the US Environmental Protection Agency's AIRNOW Air Quality Index for PM 2.5 and Ozone can be acquired at <https://airnow.gov/>.

## C: NOTIFICATIONS

Notifications will be coordinated by Burn Boss and Agency.

Agency & Contact	Comments	Phone Number
NBNERR Stewardship Coordinator	Will coordinate date and time for a GO.	Office: (401) 683-7369
DEM Division of Air Resources	Notify Taylor Ryan of request to burn preseason and prior to ignition.	Office: (401) 222-2808 x2777012
Prudence Island Volunteer Fire Department ACTING Chief Kevin Blount	Will provide resources based on resource availability.	Office: (401) 683-1100 Cell: (774) 487-8668
DEM Fire Program Manager Pat MacMeekin	Prior to ignition. May provide resources.	Office: (401) 539-2356 Cell: (401) 662-9352

Quonset Airport	Prior to ignition. Notify that smoke may be in airshed.	Office: (401) 295-5020
Portsmouth Fire Department	Prior to ignition. Request that neighboring dispatch centers within sight of burn are notified of burn.	Office: (401) 683-1200 Alternate: (401) 683-1155

**ELEMENT 10:**

**BRIEFING**

At the burn boss' discretion the checklist may be adjusted to meet specific needs, however a copy of the completed checklist must be included in the burn file and the basic components of the above checklist must be retained.

**Briefing Checklist**

- |                                     |                             |
|-------------------------------------|-----------------------------|
| 1. Burn Organization                | 6. Ignition Plan            |
| 2. Burn Objectives                  | 7. Holding Plan             |
| 3. Description of Burn Area         | 8. Contingency Plan         |
| 4. Expected Weather & Fire Behavior | 9. Wildfire Conversion Plan |
| 5. Communications                   | 10. Safety                  |

Alternative Briefing Checklist Used? Yes / No

**BURN BOSS:**

\_\_\_\_\_ / \_\_\_\_\_  
*INITIALS* *DATE*

**ELEMENT 11:**

**ORGANIZATION & EQUIPMENT**

**A: POSITIONS**

Positions and number of staff are suggested for ease and efficiency of operations. The burn boss may adjust the listed positions and number of staff depending on site conditions, resources, expected fire behavior, and common crew experience levels. The minimum crew size is 9. Any adjustment must be of a type that will not affect the complexity of the burn and be documented in the burn plan or burn day log.

\*designates "or RI RX qualification equivalent".

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• 1 Burn Boss<br/><i>Prescribed Burn Boss Type 2</i></li> <li>• 2 Holding Bosses<br/><i>Firefighter Type 1*</i></li> <li>• 1 Firing Boss<br/><i>Firefighter Type 1*</i></li> </ul> | <ul style="list-style-type: none"> <li>• 4 Prescribed Burn Crew<br/><i>Firefighter Type 2/RXCM</i></li> <li>• 1 Fire Weather Observer (may have other responsibilities)<br/><i>Fire Effects Monitor, or Firefighter Type 2/RXCM</i></li> </ul> |
|---|--|

**B: EQUIPMENT**

The burn boss may adjust the amount and type of equipment needed based on site conditions, resources, expected fire behavior, crew size, and crew experience. The adjustment must be of a type that will not affect the complexity of the burn and will be documented in the prescribed fire plan.

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• 5 Drip Torches</li> <li>• 6 Backpack Pumps</li> <li>• 8 Hand Tools</li> <li>• 1 Chainsaw/Kit</li> </ul> | <ul style="list-style-type: none"> <li>• 2 Prescribed Burn Signs</li> <li>• 8 Radios</li> <li>• 1 First Aid Kit</li> <li>• 1 Weather Kit</li> </ul> | <ul style="list-style-type: none"> <li>• 1 Type 6 Engine or larger</li> <li>• 1 Type 7 Engines or UTV</li> <li>• 1 Leaf Blower</li> <li>• 1 T6 and crew when KBDI &gt;199</li> </ul> |
|--|---|--|

**C: SUPPLIES**

The burn boss may adjust quantities and types of supplies based on season, conditions, and size of crew. The adjustment must be of a type that will not affect the complexity of the burn and will be documented in the prescribed fire plan.

- 30 Gallons Drip Torch Fuel  
*NOTE: Drip torch amounts should be doubled for growing season burns.*

- 5 Gallons of Drinking Water  
*NOTE: Drinking water amounts should be doubled if ambient air temperature is forecast to be greater than 80° F, if forecast to be greater than 85° F 5 gallons should be an electrolyte sports drink.*

**ELEMENT 12:**

**COMMUNICATIONS**

**A: RADIO FREQUENCIES**

Frequencies will be identified, verified, and adjusted as needed prior to ignition and will be based on need and attending agencies. At a minimum, a tactical frequency will be identified for prescribed fire operations.

Supervisors and any crew that will be working independently of an immediate supervisor or out of visual and verbal communication distance with an immediate supervisor with a radio or adjacent resources should be issued a radio.

**COMMAND FREQUENCY(S):**

Channel	Receive freq./tone (PL)	Transmit freq./tone (PL)	Notes
RI 800 MHZ WAC7			Assigned through Dispatch for Mutual Aid comms
RI 800 MHZ WAC8			Assigned through Dispatch for Mutual Aid comms

**TACTICAL FREQUENCY(S):**

Channel	Receive freq./tone(PL)	Transmit freq./tone(PL)	Notes
NFFPC	159.2850	159.2850	Northeast Forest Fire Protection Compact use
R5 Fire	168.7375	168.7375	USFWS Regional Fire Tac authorized use RI AOP

**AIR OPERATIONS FREQUENCY(S):**

Channel	Receive freq./tone(PL)	Transmit freq./tone(PL)	Notes
NECC A/G O3	166.6125	166.6125	Contact NECC 603-536-6208 for deconfliction
			or National Comm Duty Officer 208-387-5644

**B: TELEPHONE NUMBERS**

Agency	Contact & Comments	Phone Number
NBNERR Prudence Island Property Manager	Caitlan Chaffee	Office: (401) 683-7365
<b>NBNERR Prudence Stewardship Coordinator</b>	Jonathan Mitchell	Office: (401) 683-7369
<b>Prudence Island Volunteer Fire Department</b>	ACTING Chief Kevin Blount	Office: (401) 683-1100 Cell: (774) 487-8668
<b>Portsmouth Fire Department</b>		Office: (401) 683-1200 Alternate Emergency: (401) 683-1155
Middletown Fire Department		Office: (401) 846-7888
Jamestown Fire Department		Office: (401) 423-0062
N. Kingstown Fire Department		Office: (401) 294-3346

Warwick Fire Department		Office: (401) 468-4000
Bristol Fire Department		Office: (401) 253-6912
Portsmouth Police Department		Office: (401) 683-0300
<b>Portsmouth Police Department</b>	Prudence Island Officer Tanis "Joe" Tavernier	Cell: (603) 991-5017
T.F. Greene Airport		Office: (401) 691-2000
Prudence Island Ferry		Office: (401) 683-0430
Shaw's Water Taxi	Bruce can deliver passengers anywhere in Narragansett Bay	Office: (401) 683-2021
RI DEM Division of Forest Environment	Chief Tee Jay Boudreau	Office: (401) 222-4700 x 2059
RI DEM Division of Forest Environment	Fire Program Manager Pat MacMeekin	Office: (401) 539-2356 Cell: (401) 662-9352
RI DEM Division of Fish and Wildlife	John Veale Wildlife Biologist	Office: (401) 789-0281 Cell: (401) 408-9931
US Coast Guard Sector Southern New England	Emergency for air or marine evacuation	Emergency: (508) 457-3211 Radio: 156.8 MHz Office: (508) 538-2300
Bristol Harbormaster Gregg Marsili	127 Thames Street, Bristol, RI 02809 Within nighttime smoke buffer	Office: (401) 253-1700
Prudence Island School Stephanie Jenness Administrative Assistant Linda Mosher Program Director Robyn Franczyk Elementary Education Coordinator	413 Broadway, Prudence Island, RI 02872 Within nighttime smoke buffer	Office: (401) 683-1857
Newport Hospital Emergency Room 20 Powel Ave. Newport, RI 02840	Nearest Emergency Room	Office: (401) 845-1120
Rhode Island Hospital Emergency Room 80 Dudley St. Providence, RI 02905	Level 1 Trauma Center	Office: (401) 444-4000
Rhode Island Hospital Burn Center 593 Eddy Street, Providence, RI 02903	Level 1 Burn Treatment Center	Office: (401) 444-5471
Sumner Redstone Burn Center, MA Gen. Hospital 55 Fruit Street, Boston, MA	Alternative Level 1 Burn Center	Office: (617) 726-3354

## **ELEMENT 13:**

## **SAFETY & MEDICAL**

### **A: SAFETY HAZARDS**

- Tick-Borne Diseases
- Fatigue, Heat Exhaustion, and Dehydration
- Rollover Potential
- Smoke Inhalation
- Smoke on Roadways
- Long ER Transport Time
- Wooden Power Poles
- Fast-moving Fire
- Uneven Terrain Holes and Depression
- Overhead Dangers
- Entrapment
- Tripping Hazards  
(Stumps, Branches, Vegetation, Barbed Wire, etc.)

### **B: HAZARD MITIGATION**

- If wind direction makes smoke on roadways likely, burn boss will direct smoke signs to be posted as needed.
- All crew will be briefed on tick-borne disease prevention and associated safety measures.
- Gates in critical locations near the unit will be unlocked on the burn day and gates will be clearly identified to the crew.



- Supervisors will maintain accountability of crew.
- Crew experiencing excessive smoke inhalation will have responsibilities rotated to give relief from smoke.
- Extra drinking water will be made available to crew and crew will be briefed on symptoms and treatment of heat exhaustion, dehydration, and fatigue. Supervisors will be reminded to watch for symptoms of heat exhaustion, dehydration, and fatigue.
- First Aid/CPR, EMT, and Paramedic qualified personnel will be identified during crew briefing in addition to the location and type of medical gear onsite.
- At a minimum one fire resource, will be First Aid and CPR certified.
- Driving of UTV or engines on steep side-slope will be avoided.
- Crew will be briefed on hazards associated with power lines (i.e. no spraying water toward lines), fire intensity will be minimized under lines, and poles will be prepped or ignited in a manner so that they do not catch fire.

### **C: EMERGENCY MEDICAL PROCEDURES**

- Victim will be stabilized and moved only if directly under threat that cannot be mitigated.
- The burn boss will be notified of the situation, location of patient, and assign qualified medical personnel to the patient.
- The burn boss or designee will activate EMS and put the most qualified burn crew member in direct communications with EMS. Follow Medical Emergency Guidelines and Procedures as outlined in IRPG.
- Qualified individuals will provide immediate first aid until EMS personnel arrive and relieve the first responder.
- PIVFD will coordinate transportation to Emergency Room.
- After the incident, an accident report will be filled out and a copy provided to the burn boss, property owner/manager, and the individuals home unit.
- Name of victim will not be used over radio.

### **D: EMERGENCY EVACUATION METHODS**

- The burn boss and identified on-scene medical lead will implement the medical plan to initiate EMS response and transport to the nearest appropriate treatment facility. Call 911 and provided symptoms and location. Stabilize victim in safe, accessible location. EMS dispatch will notify an ambulance and direct them to the patient.
- In the event an air evacuation is required for a patient the determination will be made by EMS staff and the ambulance service or fire department will facilitate the evacuation.
- If the US Coast Guard is required for evacuation, communication will be coordinated through PIVFD. US Coast Guard can be reached on radio frequency (156.8 MHz) or (508) 457-3211 in Woods Hole.

### **E: MEDICAL FACILITIES**

Newport Hospital  
 20 Powel Ave. Newport, RI 02840  
 Distance Approximately 20 Miles  
 Estimated Travel Time 70 Minutes  
 (401) 845-1120

Rhode Island Hospital Burn Center  
 593 Eddy Street, Providence, RI 02903  
 Distance Approximately 20 miles  
 Estimated Travel Time 70 minutes  
 (401) 444-5471

## Directions to Newport Hospital from PI Ferry Dock Bristol, RI

147 Thames St

Bristol, RI 02809

### Take Church St to Hope St

- 32 s (495 ft)
1. Head south on Thames St toward Church St  
102 ft
  2. Turn left onto Church St  
394 ft

### Take RI-114 S to W Main Rd in Middletown

- 22 min (11.5 mi)
3. Turn right at the 1st cross street onto Hope St  
0.8 mi
  4. Hope St turns slightly right and becomes Ferry Rd  
0.9 mi
  5. Continue onto RI-114 S/Mt Hope Bridge  
[i](#) Continue to follow RI-114 S  
2.4 mi
  6. Turn right onto RI-114 S/W Main Rd  
[i](#) Pass by Speedway (on the right in 6.7 mi)  
7.4 mi

### Continue on W Main Rd to your destination in Newport

- 6 min (1.6 mi)
7. Continue straight onto W Main Rd  
0.8 mi
  8. Continue straight onto Broadway  
0.6 mi
  9. Turn left onto Friendship St  
0.2 mi
  10. Turn right  
217 ft
  11. Turn right  
[i](#) Destination will be on the right  
154 ft

### Newport Hospital Emergency Room

20 Powel Ave, Newport, RI 02840

## **ELEMENT 14:**

## **TEST FIRE**

### **A: PLANNED LOCATION**

The test fire will be initiated in the unit on the downwind side unless otherwise determined by the burn boss. The test fire will be in representative fuels, with the burn not continuing beyond the test fire phase until the burn boss has determined that an accurate representation of expected fire behavior has been demonstrated. The burn will not continue unless objectives can be met and the burn can be conducted within prescription limits in a safe manner.

### **B: TEST FIRE DOCUMENTATION**

Weather conditions during the test fire will be recorded and added to the prescribed fire report package. Upon completion of the test fire, an announcement will be made to the crew stating whether the burn will continue or be shut down. This announcement should be documented in the burn day event log or by some other means.

## **ELEMENT 15:**

## **IGNITION PLAN**

All elements in the Ignition Plan may be adjusted by the burn boss to meet given conditions. The adjustment must be of a type that will not affect the complexity of the burn and will be documented in the prescribed fire plan.

\* designates "or RI RX equivalent qualification".

### **A: IGNITION STAFFING**

- 1 Firing Boss  
*Firefighter Type 1\**
- 1 Prescribed Burn Crew  
*Firefighter Type 2/RXCM*

### **B: FIRING DEVICES**

- Drip Torches
- Launched Flares
- Hand-thrown Flares
- Fusees
- Other Devices as Needed and Directed by the Firing or Burn Boss

### **C: FIRING METHODS**

Firing will be executed in a manner that meets burn and resource management objectives while still ensuring effective and safe holding operations. Ignition methods should prevent crown fire and torching near the fire line. Firing methods should minimize re-burn potential, torching near holding lines, and spotting distance. Additionally, when using strip head firing, circular firing, and ring firing patterns, care should be taken to maximize the ability of wildlife to escape direct impact from flaming fronts. The ignition team will coordinate all actions with the holding resources and the burn boss so that operations do not negatively impact one another.

### **D: FIRING TECHNIQUES**

- Backing and/or flanking fire on holding lines
- Head firing using single or multiple strip or dot fires
- Circular firing for completion of the unit after downwind portions have been burned out.

### **E: FIRING SEQUENCES**

- Establish blackline on the downwind lines.
- As blackline is extended on the downwind lines, commence interior ignition.
- Continue creating blackline on the downwind lines and igniting the interior until the majority of the unit is complete.
- Ensure that the upwind line is not ignited until interior ignition crew is out and the downwind holding line is secure.
- Continue until the unit is completed.

### **F: FIRING PATTERNS**

- On the downwind lines, establish black that is adequately wide to stop a head fire when used in combination with the hard breaks (fire breaks devoid of burnable material) or soft breaks (fire breaks that contain burnable material). Ensure that fire intensity near holding lines is sufficient to minimize the potential of re-burn.
- Extend fire into the unit from the black using appropriate firing techniques.
- Extend black along holding lines and continue igniting interior progressively as holding lines are completed.
- Ensure that interior ignition does not progress faster than the blacklining of the downwind holding lines.
- Complete the unit by ringing the final portion.
- Other techniques or strategies may be used to achieve objectives at the discretion of the burn boss or firing boss.

## **ELEMENT 16:**

## **HOLDING PLAN**

All elements in the Holding Plan may be adjusted by the burn boss to meet given conditions. The adjustment must be of a type that will not affect the complexity rating of the burn and will be documented in the prescribed fire plan.

### **A: HOLDING STAFFING**

- 2 Holding Bosses (1 if burning into black or beach)  
*Firefighter Type 1\**
- 2 or more Prescribed Burn Crew  
*Firefighter Type 2/RXCM*

### **B: HOLDING EQUIPMENT & WATER RESOURCES**

Water sources will be identified on the day of the prescribed burn. At a minimum, the nearest operational water source and the travel time and route will be identified in the crew briefing.

- 1 Drip Torch per Holding Team
- 2 Backpack Pumps per Holding Team
- Miscellaneous Hand Tools
- 1 Type 6 Engine or larger
- 1 Type 7 Engine-UTV or larger
- 1 Type 6 Engine when ERC >199

### **C: HOLDING PROCEDURES**

- The development of the downwind holding line will be the basis for the speed of the operation.
- Holding teams will coordinate with each other and the ignition team to avoid negative impact on adjacent resources.
- Spot fires and slop-overs will be suppressed using direct attack.
- The downwind holding line crew will be responsible for establishing black to improve the line.
- The upwind holding line crew will only ignite on their line when it will not negatively impact the other holding team or the ignition team. Careful coordination with the ignition team will be executed whenever igniting.

### **D: CRITICAL HOLDING POINTS & ACTIONS**

- A downwind patrol for possible spot fires is required.

- When holding on soft breaks (fire breaks that contain burnable material), care should be given to ensure that fire on the line does not rekindle or creep across the line.
- Numerous snags are present in areas with oak overstory, and larch stands that were previously burned. Care should be given to ensure that snags do not catch fire, and if on fire, are not causing spot fires.
- Wooden power poles are present in burn units. They should not be allowed to catch fire.

**ELEMENT 17:**

**CONTINGENCY PLAN**

Trigger Point	Action Needed
Multiple Spot Fires	Adjust ignition and increase downwind patrolling or shut down.
Slop-over	Suppress slop-over and shutdown burn if necessary.
Minor Injury	Assign first aid first responder to victim, identify source of injury, and shutdown burn if required.
Significant Injury	Assign first aid first responder to victim, identify source of injury, activate EMS, and shutdown burn.
Report of Critical Smoke Sensitive Area Being Impacted	Adjust ignition and monitor results; shut down burn if required.
Smoke Impacting Roadway	Smoke signs will be deployed. Ignition patterns adjusted or burn will be shut down. Law enforcement contacted if needed.
Wind Shift	Determine if the burn should continue or be shut down. If the burn continues adjust holding and ignition tactics as needed.
Objectives Not Being Met	Adjust ignition or shut down burn.
Unit is No Longer Within Prescription	Prescribed fire operations will cease, and the fire will be suppressed or managed to reduce and/or mitigate hazards.
Escape Fire	Notify the fire department, shutdown the prescribed burn, and suppress the escape.

**ELEMENT 18:**

**WILDFIRE CONVERSION PLAN**

**A: WILDFIRE CRITERIA**

The burn boss will consider the prescribed fire an escape when a fire leaves the unit and one or both of the following conditions exist:

- The fire has exceeded or is expected to exceed on-site initial attack capabilities.
- The fire has or is expected to move northward of the Project Area as described in Element #4.

**B: ESCAPED FIRE INCIDENT COMMAND**

The senior Prudence Island Volunteer Fire Department officer, or RIDEM Division of Forest Environment officer, or other mutual aid designee will serve as the Incident Commander (IC) in the event of an escape unless otherwise pre-arranged. If no Fire Department is present, the burn boss will serve as the IC until relieved. Upon the Fire Department assuming command the burn boss will immediately transition all command authority to the IC, provide as much pertinent information as possible, confirm accountability of all prescribed fire resources, and announce the transition to the prescribed burn crew. The burn boss will assign a liaison from the burn crew to the IC and designate a supervisor in charge of the prescribed burn crew to direct suppression actions by the prescribed burn crew in coordination and under the direction of the IC. The burn boss can serve in any one of these two capacities or may perform the tasks of both positions – as directed by the IC.

**C: NOTIFICATIONS**

Emergency 911  
 Prudence Island Volunteer Fire Department, Acting Chief Kevin Blount

Emergency: 911  
 Office: (774) 487-8668

#### **D: INITIAL ATTACK CONTINGENCY LINES**

Fuels adjacent to the prescribed unit are generally similar to the unit fuels. If fire has entered a neighboring burn unit, indirect attack may be used if deemed the best option by the burn boss.

North: Immediately north of unit 1 is the Albro Farm Rd., which contains a grassy break under the powerline. Structures are w/ ¼ of road. The road should be a suitable fire break. North of units 3 and 6 is the NBNERR headquarters. There is defensible space around the headquarters and fuels south and east of the headquarters are wet and unlikely to carry fire. North of unit 8 is South Reserve Drive which also has a grassy firebreak.

East: East of units 1-5 is dense wetland forest. The area could carry fire, but it should be much lower fire behavior than in the unit. East of unit 7 is beach. Fuels east of unit 8 should remain consistent with unit 8 fire behavior.

South: South of the burn area is Narragansett Bay. There are some buildings and a pier that would need to be protected in the event of approaching fire.

West: West of the unit is Narragansett Bay. Fire would need to be tied into black so it would not move north along the beach into the Stevens Landing neighborhood.

#### **E: EXTENDED ATTACK ACTIONS**

The Incident Commander will oversee all extended attack activities. The prescribed burn crew will assist and report to the IC through the chain of command established during the incident. If possible, a staffed staging area should be established. The following are general tactical recommendations that should be considered in the event of an escape:

North: Most of the area north of unit 1 is known as the Crow's Swamp and should be suitable for direct attack. The Steven's Point neighborhood is north of 1B and has some residences that would need to be protected. The yards could serve as anchor points in the event of escape. A few residences are located along Mt. Pleasant Rd. and should be protected if fire escaped to the north. Any fire north of unit 8A would be in the WUI and engaged with direct attack and structure protection.

East: East of the burn area is Narragansett Bay.

South: South of the burn area is Narragansett Bay. There are some buildings and a pier that would need to be protected in the event of approaching fire.

West: West of the unit is Narragansett Bay. Fire would need to be tied into black so it would not move north along the beach into the Stevens Landing neighborhood.

### **ELEMENT 19: SMOKE & AIR QUALITY MANAGEMENT**

#### **A: COMPLIANCE**

- Notify Prudence Island Volunteer Fire Department of intent to burn prior to ignition. (see notifications for contact information).
- Notify RI DEM Division of Air Resources of intent to burn prior to ignition. The notification shall be emailed to [taylor.ryan@dem.ri.gov](mailto:taylor.ryan@dem.ri.gov).
- Residents and visitors shall be notified of the prescribed burn activities by means of posting of physical placards on significant roadways, access trails, and neighborhood areas adjacent to the burn zone(s) as well as notice(s) in newspaper(s) of local circulation or social media.

#### **B: PERMITS**

- Verify that exemption for Air Pollution Control Regulation No. 4 has been granted. See above for email notification to DEM Division of Air Resources.
- Prudence Island Volunteer Fire Department Burn verbal or written permission to burn (a.k.a. Permit to Kindle a Fire) from chief or duty officer prior to ignition.

#### **C: SMOKE SENSITIVE AREAS**

Smoke management methods from "Managing Smoke at the Wildland –Urban Interface" were used to identify the following Smoke Sensitive Areas. When using this method, the maximum burn size is 50 acres at any one time. Individual burns may be over 50 acres, but the Burn Boss should make smoke impact considerations. The 500' and three ¼ distance

buffers of the 0.75, 1.0 and 1.5-mile buffers are used for daytime burning and the three (0.75, 1.0 and 1.5-mile) full distance buffers are used to identify potential low visibility impact if the unit smolders during nighttime conditions. Fuel Category F ("Any other native understory fuel type under 3 feet high") was used for smoke buffers. For 20-foot winds less than 5 mph, Smoke Sensitive Areas were identified with projections from the extreme edges of the burn units.

If subunits are burned with a wind direction where smoke is predicted to travel into subdivisions or across roads immediately adjacent, notifying downwind residences, posting signs, or using a detail for traffic control may be required. Subdivisions within the 500' buffer should be notified of any burns, particularly if the smoke column does not lift up and over developments.

#### **Daytime Sensitive Areas**

##### 500' Buffer

Smoke Sensitive Areas fall within the 500' initial buffer.

- NBNERR Headquarters Northeast of unit 3
- Stevens Point neighborhood north of unit 1
- Neighborhoods north of unit 8

##### ¼ of 0.75 Mile Buffer

Smoke Sensitive Areas fall within the ¼ of 0.75-mile buffer for the 61 to 70 Dispersion Index buffer.

- See 500-foot daytime buffer list

##### ¼ of 1.0 Mile Buffer

Smoke Sensitive Areas fall within the ¼ of 1.0-mile buffer for the 51 to 60 Dispersion Index buffer.

- See ¼ of 1.0 -mile daytime buffer list
- Broadway to the North
- Narragansett Ave. to the Northeast

##### ¼ of 1.5 Mile Buffer

Smoke Sensitive Areas fall within the ¼ of 1.5-mile buffer for the 41 to 50 Dispersion Index buffer.

- See ¼ of 1.5-mile daytime buffer list

#### **Nighttime Sensitive Areas**

##### 500' Buffer

Smoke Sensitive Areas fall within the 500' initial buffer.

- NBNERR Headquarters Northeast of unit 3
- Stevens Point neighborhood north of unit 1
- Neighborhoods north of unit 8

##### 0.75 Mile Buffer

Smoke Sensitive Areas fall within the 0.75-mile buffer for the 61 to 70 Dispersion Index buffer.

- See 500-foot nighttime buffer list
- Broadway to the North
- Narragansett Ave. to the Northeast
- Prudence Island School to the North

##### 1.0 Mile Buffer

Smoke Sensitive Areas fall within the 1.0-mile buffer for the 51 to 60 Dispersion Index buffer.

- See 0.75-mile nighttime buffer list
- Stevens Point neighborhood to the North

##### 1.5 Mile Buffer

Smoke Sensitive Areas fall within the 1.5-mile buffer for the 41 to 50 Dispersion Index buffer.

- See 1.0-mile nighttime buffer list
- All residences on the East Shore south of the ferry dock.
- Bristol Harbor to the East

### **D: SMOKE MANAGEMENT & MITIGATION**

General mitigation practices:

- A general area-wide notification should be made via a radio, print announcement, telephone calls, press release in local paper, or social media.
- Occasional smoke patrols will be in place for downwind roadways.
- Maintain communications with fire departments in expected smoke shed.
- Burn with conditions favorable to lift and dispersion.
- Create a strong convective column to lift smoke above surrounding receptors.
- Dilute smoke by burning only a portion of the unit if lift and dispersion are not favorable for the entire unit.
- Dispatch smoke patrols in areas that could be impacted and if impacted evaluate need to shutdown burn.
- Minimize overnight smoldering to avoid possible fog associated with burning near the coast.

- If overnight LVORI is predicted to be 7 or greater, overnight smoldering should be minimized to the greatest extent possible.
- If residual smoke is present at dusk, monitor throughout the night. All Smoke Sensitive Areas and be prepared to mitigate impacts.
- Do not burn under an Air Quality Action Alert Day.
- If project fuels are in the subunit, residual smoke may be more significant than typical for a grass or shrub unit burn. If KBDI is 99 or greater, any piles of debris should be checked for dry fuel depth and considered for smoldering potential prior to burn.

## **ELEMENT 20:**

## **MONITORING**

All monitoring outlined may be adjusted by the burn boss and agency representative to meet given conditions. The adjustment must be of a type that will not affect the complexity rating of the burn and will be documented in the prescribed fire plan.

A Fire Weather Observer or Fire Effects Monitor assigned to the burn will use a prescribed burn event/weather form will be used to document fuels, weather, fire behavior, smoke dispersal, and burn severity information for the prescribed fire.

### **A: FUELS INFORMATION**

At a minimum, fine dead fuel moisture will be calculated. Downed dead fuel moistures for 1, 10, and 100-hour fuels may be measured using a protimeter (if available) periodically during the burn. The KBDI values and trend for the previous day will be weighed prior to ignition. Additionally, for the period of late April and May foliar moisture content for pitch pine for the previous day should be tracked if burning in a pitch pine unit.

### **B: WEATHER MONITORING**

Weather will be recorded prior to the test fire. Fire weather will be recorded every 60 minutes or as directed by the burn boss. Before the test fire is ignited, probability of ignition should be calculated and should be re-calculated each time fire weather is recorded.

### **C: FIRE BEHAVIOR MONITORING**

Flame length, rate of spread, and residence time should be estimated hourly and recorded by fuel type. Photos of fire behavior should be taken periodically with the approximate location and direction recorded. Representative before and after photos should be taken.

### **D: MEASURING OBJECTIVES**

A burn summary will be completed by the burn boss using information compiled from burn day records. Burn severity index will be completed by designated crew members for interpretation and incorporation in the summary prepared by the burn boss. The summary will evaluate the success of each prescribed burn objective as related to prescribed fire operations.

### **E: SMOKE DISPERSAL**

Communication should be maintained with the local fire departments to ascertain if receptors are being impacted by smoke.

If concerns of negative smoke impacts arise, a smoke monitor will be dispatched to check potential problem areas and inform the burn boss and the fire effects monitor of conditions.

## **ELEMENT 21:**

## **POST-BURN ACTIVITIES**

All post-burn activities may be adjusted by the burn boss to meet given conditions. The adjustment must be of a type that will not affect the complexity of the burn and will be documented in the prescribed fire plan.

- An After-Action Review should be conducted with the crew.
- Notification of operational status should be provided to RIDEM AA, Fire, and Police shift supervisors at end of day.
- The unit needs to be checked every day between 1100 and 1400 by a fire-trained person until an appreciable rain event and/or the burn boss declares the unit is 100% out. If KBDI is greater than 200 or dry conditions occur immediately following the burn, the frequency of checks should be increased.
- The burn day summary (Fire Summary Report) should be completed within 7 days by the Burn Boss.
- The burn file should be assembled and filed by NBNERR staff.

# APPENDIX A:

# MAPS & PHOTOS



Photos of typical fuels, fuel breaks, roads, bunkers, aerial hazards and power lines associated with burn units.

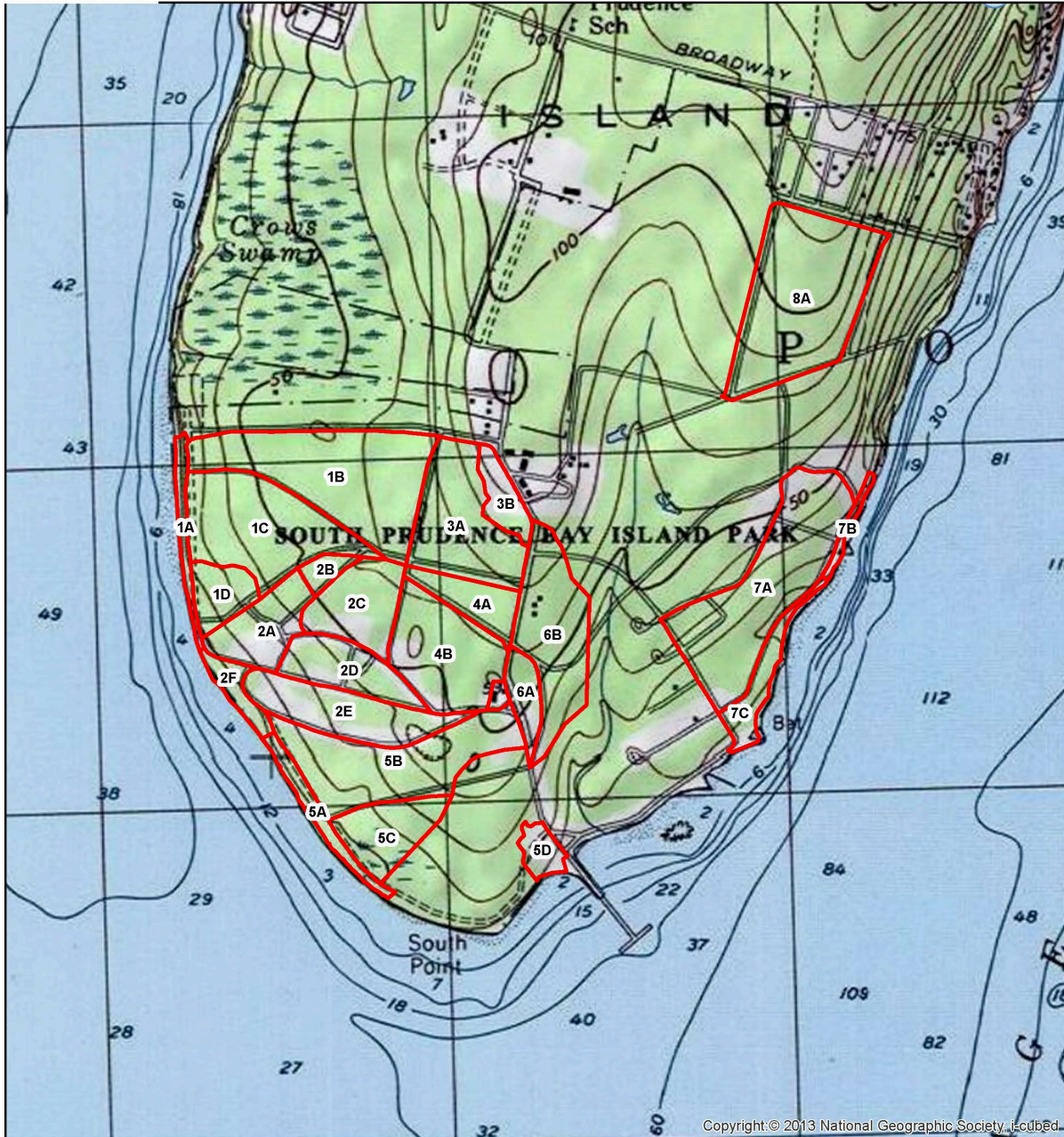




Narragansett Bay  
Research Reserve

# Prudence Island Prescribed Burn Plan

## Burn Units Topographic Map



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### Legend

 Burn Units



This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE-FFM, USGS, National Geographic

Produced by:  Northeast  
Forest and Park Management LLC



Narragansett Bay  
Research Reserve

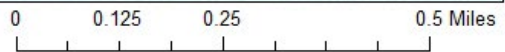
# Prudence Island Prescribed Burn Plan

## Burn Units and Acres



### Legend

- Burn Units
- Bunkers
- NBNERR Buildings



This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE FFM, USGS, National Geographic

Produced by: Northeast  
UNIVERSITY OF MASSACHUSETTS



# Prudence Island Prescribed Burn Plan

## Burn Units and Acres Roads and Wetlands



### Legend

- Burn Units
- Wetlands
- Bunkers
- NBNERR Buildings
- Streams
- Road Surface
- Paved Road
- Gravel Road
- Dirt Road
- Trail

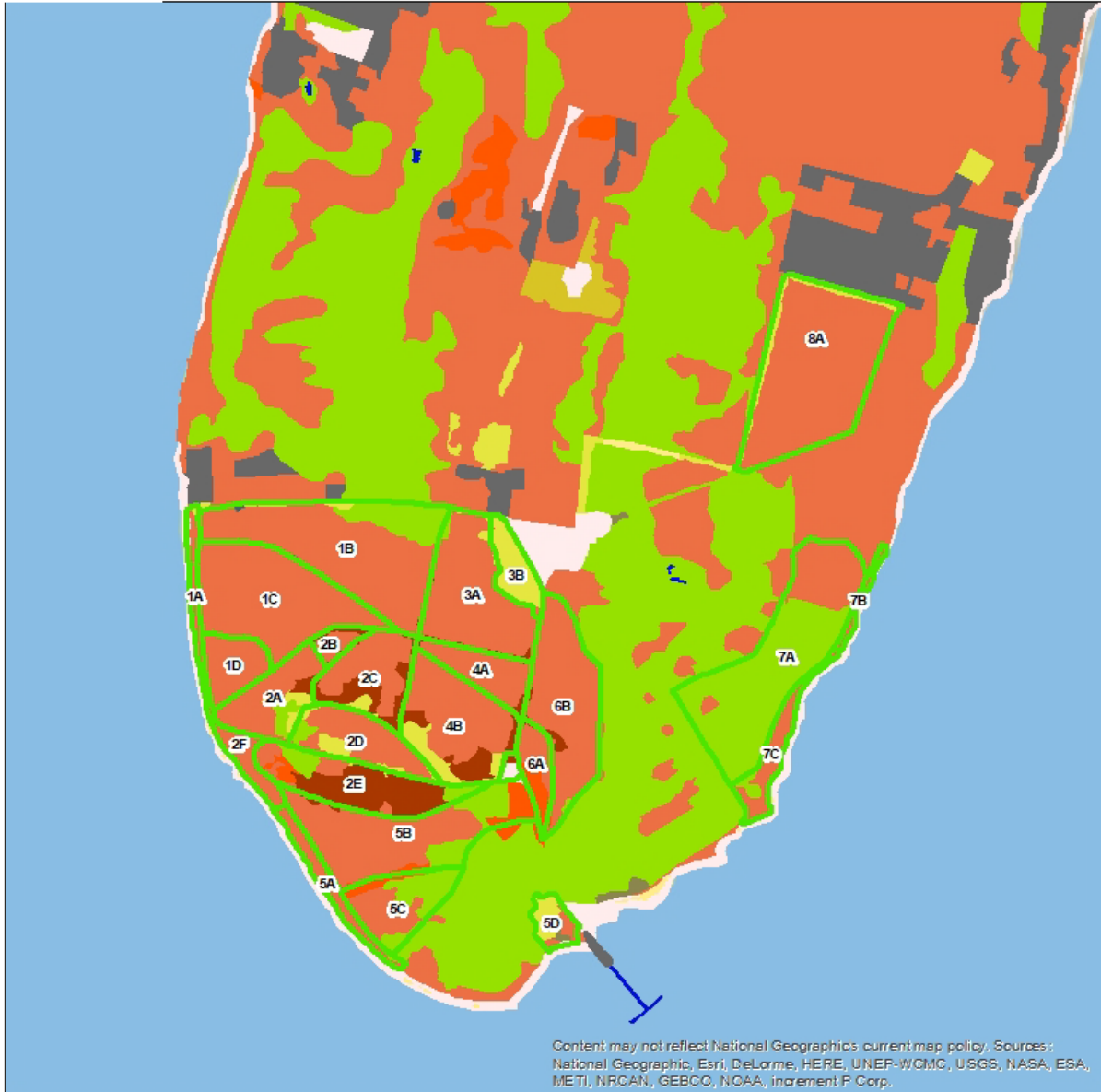
This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE FFM, USGS, National Geographic

Produced by: Northeast



Narragansett Bay Research Reserve

# Prudence Island Prescribed Burn Plan Fuel Model Map



## Legend

Burn Units FM40



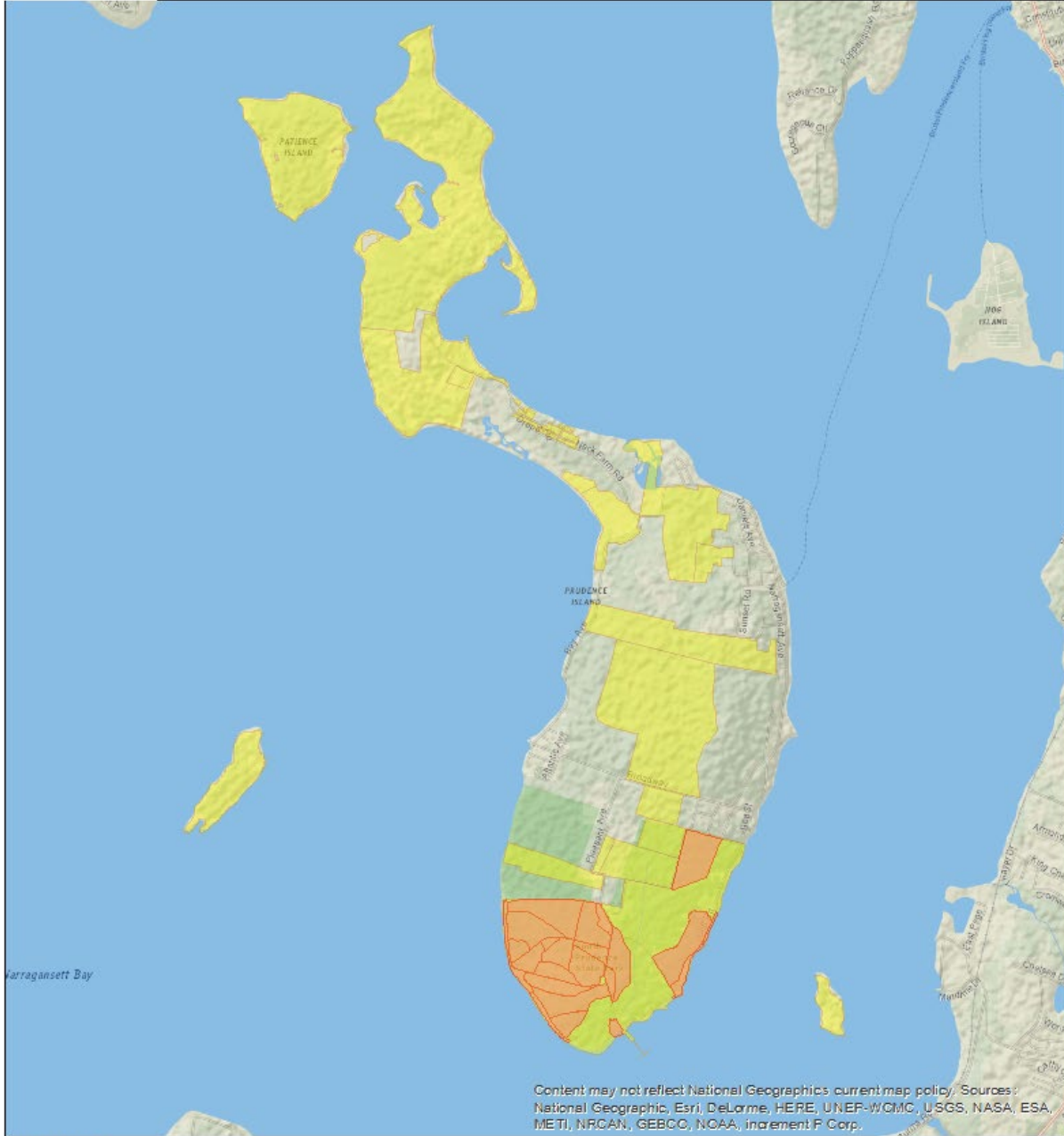
This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE-FM, USGS, National Geographic

Produced by: Northeast





Narragansett Bay  
Research Reserve

# Prudence Island Prescribed Burn Plan Area Map



## Legend

 Burn Units  NBNERR Boundary

0 0.5 1 2 Miles

This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE-FFM, USGS, National Geographic

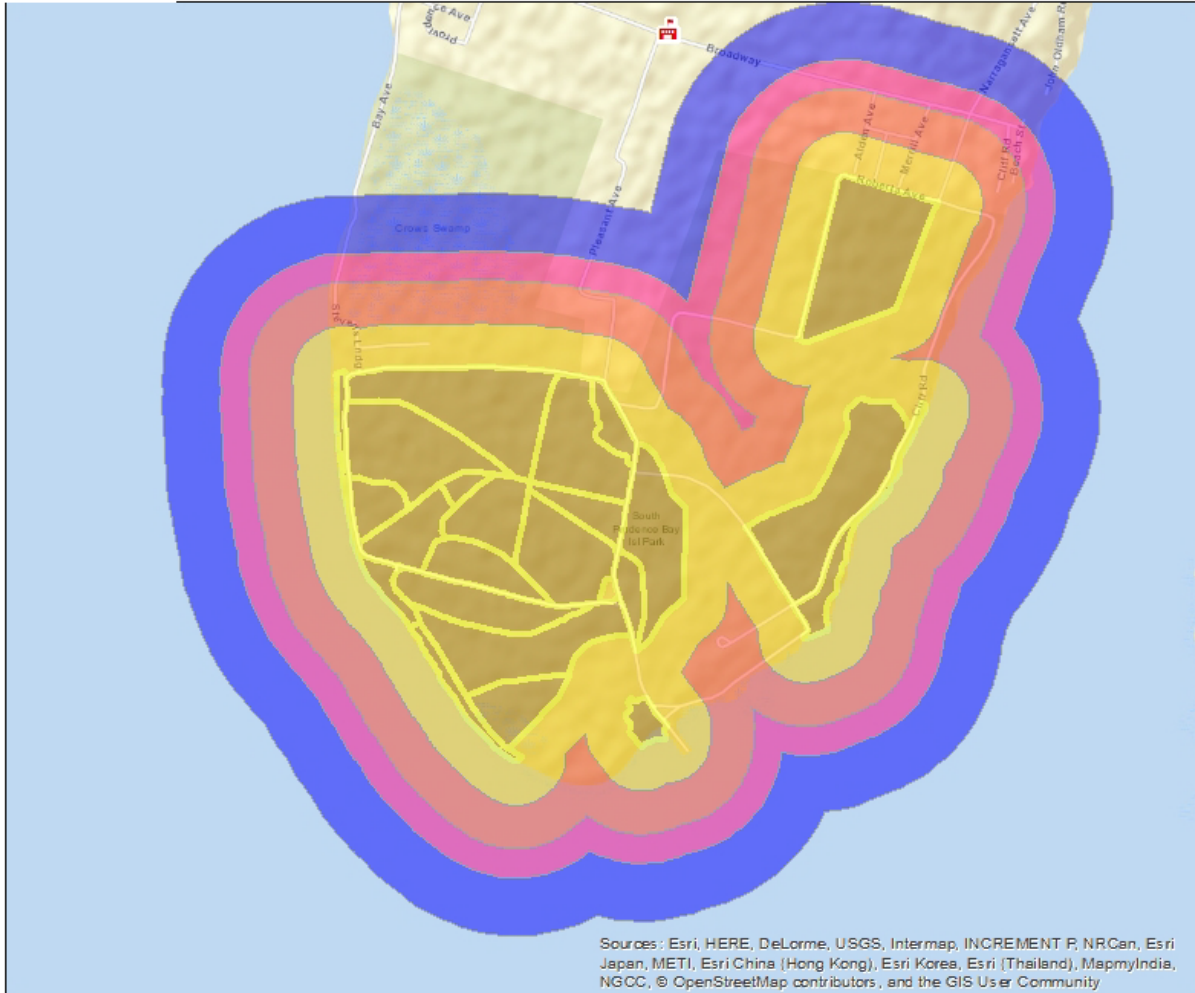
Produced by:  Northeast  
NARRAGANSETT BAY



Narragansett Bay Research Reserve

# Prudence Island Prescribed Burn Plan

## Daytime Smoke Buffers



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

### Legend

#### Smoke Sensitive Receptors

Schools

#### Daytime Smoke Buffers

- Unit
- 500-Foot Buffer
- 1/4 of 0.75-Mile Buffer
- 1/4 of 1.0-Mile Buffer
- 1/4 of 1.5-Mile Buffer

Smoke methods from "Managing Smoke at the Wildland-Urban Interface" were used to identify the following Smoke Sensitive Areas. When using this method, the maximum burn size is 50 acres at any one time. Fuel Category F (native vegetation under 3 feet in height) was used. The 500' and three 1/4 distance buffers of the 1.5, 1.0 and 0.75-mile buffers are used for daytime burning and the three (1.5, 1.0 and 0.75-mile) full distance buffers are used to identify potential low visibility impact if the unit smolders during nighttime conditions.

This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE-FRM, USGS, National Geographic

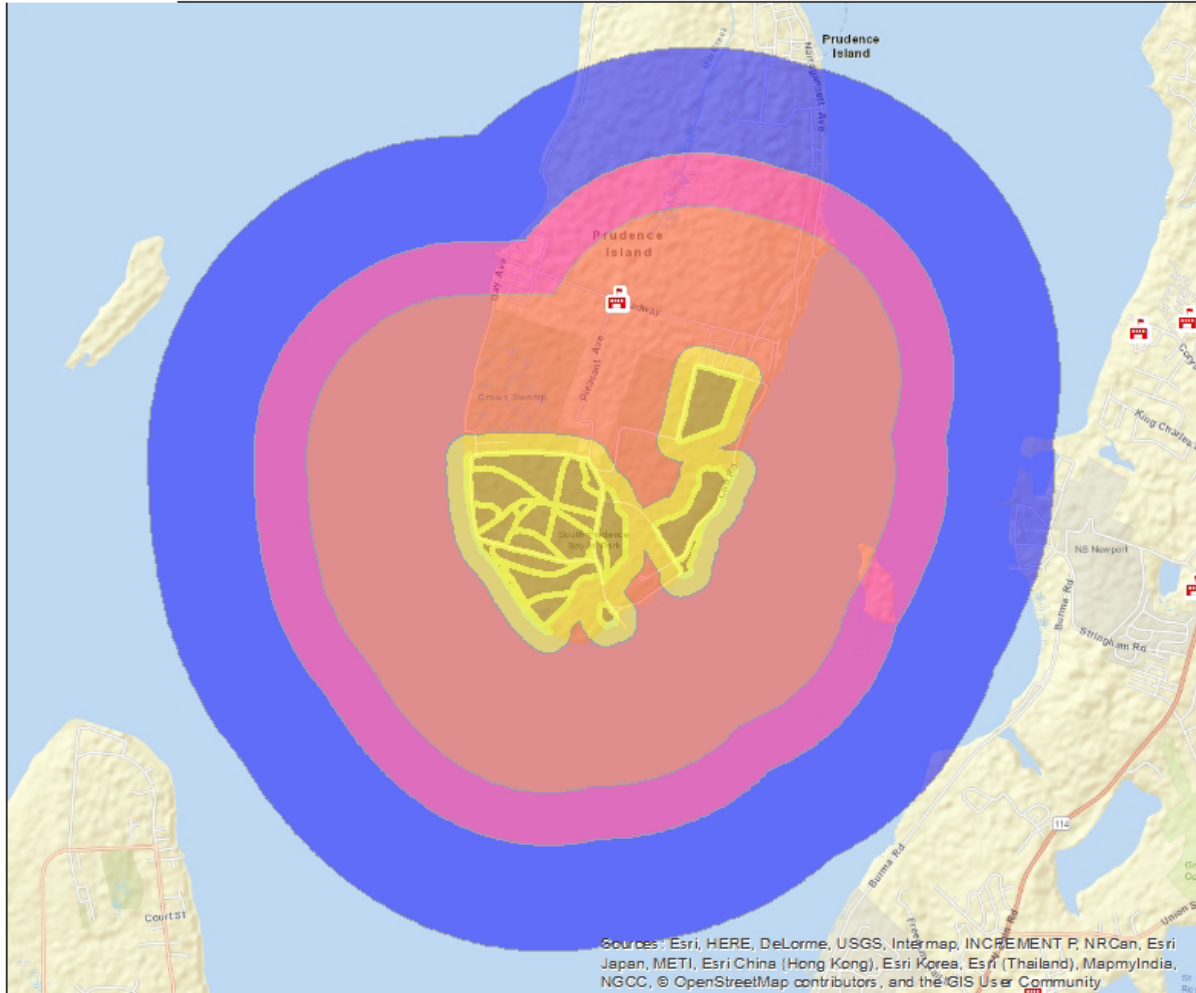
Produced by: Northeast



Narragansett Bay Research Reserve

# Prudence Island Prescribed Burn Plan

## Nighttime Smoke Buffers



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

### Legend

#### Smoke Sensitive Receptors

Schools

#### Nighttime Smoke Buffers

- Unit
- 500-Foot Buffer
- 0.75-Mile Buffer
- 1.0-Mile Buffer
- 1.5-Mile Buffer

Smoke methods from "Managing Smoke at the Wildland-Urban Interface" were used to identify the following Smoke Sensitive Areas.

When using this method, the maximum burn size is 50 acres at any one time. Fuel Category F (native vegetation under 3 feet in height) was used. The 500' and three 1/4 distance buffers of the 1.5, 1.0 and 0.75-mile buffers are used for daytime burning and the three (1.5, 1.0 and 0.75-mile) full distance buffers are used to identify potential low visibility impact if the unit smolders during nighttime conditions.

This map is intended for planning only and is not for legal purposes or boundary definitions. Sources: NBNERR, RIGIS, ESRI, NE-FRM, USGS, National Geographic

Produced by: Northeast

**APPENDIX B:**

**FIRE BEHAVIOR & SMOKE MODELING DOCUMENTATION**

**1: FIRE BEHAVIOR (ROS & FL)**

*Fire Behavior: Moderate Load Humid Climate Grass (D) GR6 (106)*

*Held Constant: 10H Fuels at 10%, 100H Fuels at 12%, 30% Live Fuel Moisture (Herbaceous & Woody) and 0% Slope [Run in BEHAVEPLUS v. 5.0.5]*

<b>Surface Rate of Spread (ch/hr) - Head Fire</b>													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	7	18	38	65	97	134	174	219	267	318	373	431	491
5	7	16	35	59	89	122	160	200	244	292	341	394	450
6	6	15	32	55	82	113	147	184	225	268	314	363	414
7	6	14	30	51	76	104	136	171	208	248	291	336	383
8	5	13	28	47	70	97	126	159	194	231	270	312	356
9	5	12	26	44	66	91	118	148	181	216	253	292	333
10	5	11	24	41	62	85	111	140	170	203	238	274	313
11	4	11	23	39	58	80	105	132	161	192	225	259	296
12	4	10	22	37	55	76	100	125	153	182	213	246	281
13	4	10	21	35	53	73	95	120	146	174	204	235	268
14	4	9	20	34	51	70	91	114	140	167	195	225	257

<b>Flame Length (ft) - Head Fire</b>													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	5	7	10	13	16	18	20	23	25	27	29	31	33
5	4	7	10	12	15	17	19	21	23	25	27	29	31
6	4	6	9	11	14	16	18	20	22	24	26	27	29
7	4	6	9	11	13	15	17	19	21	23	24	26	27
8	4	6	8	10	12	14	16	18	20	21	23	25	26
9	4	5	8	10	12	14	15	17	19	20	22	23	25
10	3	5	7	9	11	13	15	16	18	20	21	22	24
11	3	5	7	9	11	13	14	16	17	19	20	22	23
12	3	5	7	9	11	12	14	15	17	18	20	21	22
13	3	5	7	9	10	12	13	15	16	18	19	20	22
14	3	5	7	8	10	12	13	15	16	17	19	20	21

<b>Surface Rate of Spread (ch/hr) - Backing Fire</b>													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	7	5	6	6	7	7	8	8	8	8	8	8	8
5	7	4	5	6	6	7	7	7	7	7	7	7	7
6	6	4	5	5	6	6	6	7	7	7	7	7	7
7	6	4	4	5	5	6	6	6	6	6	6	6	6
8	5	3	4	5	5	5	6	6	6	6	6	6	6
9	5	3	4	4	5	5	5	5	5	5	5	5	5
10	5	3	4	4	4	5	5	5	5	5	5	5	5
11	4	3	3	4	4	4	5	5	5	5	5	5	5
12	4	3	3	4	4	4	4	4	5	5	5	5	5
13	4	2	3	4	4	4	4	4	4	4	4	4	4
14	4	2	3	3	4	4	4	4	4	4	4	4	4

<b>Flame Length (ft) - Backing Fire</b>													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	5	4	4	5	5	5	5	5	5	5	5	5	5
5	4	4	4	4	4	5	5	5	5	5	5	5	5
6	4	3	4	4	4	4	4	4	4	4	4	4	4
7	4	3	4	4	4	4	4	4	4	4	4	4	4
8	4	3	3	4	4	4	4	4	4	4	4	4	4
9	4	3	3	3	4	4	4	4	4	4	4	4	4
10	3	3	3	3	3	3	4	4	4	4	4	4	4
11	3	3	3	3	3	3	3	3	3	3	3	3	3
12	3	3	3	3	3	3	3	3	3	3	3	3	3
13	3	3	3	3	3	3	3	3	3	3	3	3	3
14	3	2	3	3	3	3	3	3	3	3	3	3	3



## Fire Behavior: Moderate Load Humid Climate Grass-Shrub (D) GS3 (123)

*Held Constant: 10H Fuels at 10%, 100H Fuels at 12%, 30% Live Fuel Moisture (Herbaceous & Woody) and 0% Slope [Run in BEHAVEPLUS v. 5.0.4]*

Surface Rate of Spread (ch/hr) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	4	12	26	43	61	82	103	127	151	177	204	232	260
5	4	12	25	41	58	78	99	121	145	169	195	221	249
6	3	11	24	39	56	75	95	116	138	162	186	212	238
7	3	11	23	37	54	72	91	111	133	156	179	203	229
8	3	11	22	36	52	69	88	107	128	150	172	196	220
9	3	10	21	35	50	67	85	104	124	145	166	189	213
10	3	10	21	34	48	64	82	100	120	140	161	183	206
11	3	10	20	33	47	63	79	97	116	136	156	178	200
12	3	9	19	32	46	61	77	94	113	132	152	173	194
13	3	9	19	31	44	59	75	92	110	128	148	168	189
14	3	9	18	30	43	58	73	90	107	125	144	164	184

Flame Length (ft) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	3	6	8	10	12	13	15	16	18	19	20	22	23
5	3	5	8	10	11	13	14	16	17	18	20	21	22
6	3	5	7	9	11	12	14	15	17	18	19	20	21
7	3	5	7	9	11	12	14	15	16	17	18	20	21
8	3	5	7	9	10	12	13	14	16	17	18	19	20
9	3	5	7	9	10	11	13	14	15	16	17	19	20
10	3	5	7	8	10	11	13	14	15	16	17	18	19
11	3	5	7	8	10	11	12	13	15	16	17	18	19
12	3	5	6	8	9	11	12	13	14	15	16	17	18
13	3	4	6	8	9	11	12	13	14	15	16	17	18
14	3	4	6	8	9	10	12	13	14	15	16	17	18

Surface Rate of Spread (ch/hr) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	4	3	4	4	4	5	5	5	5	4	4	4	4
5	4	3	4	4	4	4	4	4	4	4	4	4	4
6	3	3	4	4	4	4	4	4	4	4	4	4	4
7	3	3	3	4	4	4	4	4	4	4	4	4	4
8	3	3	3	4	4	4	4	4	4	4	4	4	4
9	3	3	3	3	4	4	4	4	4	4	4	4	3
10	3	3	3	3	4	4	4	4	4	4	3	3	3
11	3	2	3	3	3	3	4	3	3	3	3	3	3
12	3	2	3	3	3	3	3	3	3	3	3	3	3
13	3	2	3	3	3	3	3	3	3	3	3	3	3
14	3	2	3	3	3	3	3	3	3	3	3	3	3

Flame Length (ft) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	3	3	3	3	4	4	4	4	4	4	3	3	3
5	3	3	3	3	3	3	3	3	3	3	3	3	3
6	3	3	3	3	3	3	3	3	3	3	3	3	3
7	3	3	3	3	3	3	3	3	3	3	3	3	3
8	3	3	3	3	3	3	3	3	3	3	3	3	3
9	3	3	3	3	3	3	3	3	3	3	3	3	3
10	3	3	3	3	3	3	3	3	3	3	3	3	3
11	3	2	3	3	3	3	3	3	3	3	3	3	3
12	3	2	3	3	3	3	3	3	3	3	3	3	3
13	3	2	3	3	3	3	3	3	3	3	3	3	3
14	3	2	3	3	3	3	3	3	3	3	3	3	3

## Fire Behavior: Low Load Humid Climate Shrub (S) SH6 (146)

*Held Constant: 10H Fuels at 10%, 100H Fuels at 12%, 30% Live Fuel Moisture (Herbaceous & Woody) and 0% Slope [Run in BEHAVEPLUS v. 5.0.4]*

Surface Rate of Spread (ch/hr) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	2	10	19	29	39	49	60	71	82	93	104	116	128
5	2	10	18	27	37	47	57	67	78	89	100	111	122
6	2	9	17	26	35	45	55	65	75	85	96	106	117
7	2	9	17	25	34	43	53	62	72	82	92	103	113
8	2	9	16	24	33	42	51	60	70	79	89	99	109
9	2	8	16	24	32	41	50	59	68	77	87	96	106
10	2	8	15	23	31	40	48	57	66	75	84	94	103
11	2	8	15	23	31	39	47	56	65	73	83	92	101
12	2	8	15	22	30	38	46	55	63	72	81	90	99
13	2	8	14	22	29	37	45	54	62	71	79	88	97
14	2	7	14	21	29	37	44	53	61	69	78	87	95

Flame Length (ft) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	3	7	9	11	12	14	15	16	17	18	19	20	21
5	3	6	9	10	12	13	14	16	17	18	19	20	21
6	3	6	8	10	11	13	14	15	16	17	18	19	20
7	3	6	8	10	11	12	14	15	16	17	18	18	19
8	3	6	8	9	11	12	13	14	15	16	17	18	19
9	3	6	8	9	11	12	13	14	15	16	17	18	18
10	3	6	8	9	10	12	13	14	15	16	16	17	18
11	3	6	7	9	10	11	13	14	14	15	16	17	18
12	3	5	7	9	10	11	12	13	14	15	16	17	18
13	3	5	7	9	10	11	12	13	14	15	16	17	17
14	3	5	7	9	10	11	12	13	14	15	16	16	17

Surface Rate of Spread (ch/hr) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	2	3	3	3	3	3	3	3	2	2	2	2	2
5	2	2	3	3	3	3	3	2	2	2	2	2	2
6	2	2	3	3	3	3	2	2	2	2	2	2	2
7	2	2	2	3	2	2	2	2	2	2	2	2	2
8	2	2	2	2	2	2	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2	2	2	2	2	2	2

Flame Length (ft) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	3	4	4	4	4	4	4	4	3	3	3	3	3
5	3	3	4	4	4	4	3	3	3	3	3	3	3
6	3	3	3	3	3	3	3	3	3	3	3	3	3
7	3	3	3	3	3	3	3	3	3	3	3	3	3
8	3	3	3	3	3	3	3	3	3	3	3	3	3
9	3	3	3	3	3	3	3	3	3	3	3	3	3
10	3	3	3	3	3	3	3	3	3	3	3	3	3
11	3	3	3	3	3	3	3	3	3	3	3	3	3
12	3	3	3	3	3	3	3	3	3	3	3	3	3
13	3	3	3	3	3	3	3	3	3	3	3	3	3
14	3	3	3	3	3	3	3	3	3	3	3	3	3

## Fire Behavior: Moderate Load, Humid Climate Timber-Shrub TU2 (162)

*Held Constant: 10H Fuels at 10%, 100H Fuels at 12%, 30% Live Fuel Moisture (Herbaceous & Woody) and 0% Slope [Run in BEHAVEPLUS v. 5.0.5]*

Surface Rate of Spread (ch/hr) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	3	6	9	13	18	23	28	33	39	46	52	59
5	1	3	5	9	12	17	21	26	31	37	43	49	55
6	1	2	5	8	12	16	20	25	29	35	40	46	52
7	1	2	5	8	11	15	19	23	28	33	38	43	49
8	1	2	4	7	10	14	18	22	27	31	36	41	47
9	1	2	4	7	10	13	17	21	25	30	35	40	45
10	1	2	4	7	10	13	16	20	24	29	33	38	43
11	1	2	4	6	9	12	16	20	24	28	32	37	41
12	1	2	4	6	9	12	15	19	23	27	31	35	40
13	1	2	4	6	9	12	15	18	22	26	30	34	39
14	1	2	4	6	8	11	14	18	21	25	29	33	38

Flame Length (ft) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	2	3	3	4	4	5	5	6	6	7	7	8
5	1	2	3	3	4	4	5	5	6	6	7	7	7
6	1	2	2	3	4	4	5	5	5	6	6	7	7
7	1	2	2	3	3	4	4	5	5	6	6	6	7
8	1	2	2	3	3	4	4	5	5	5	6	6	7
9	1	2	2	3	3	4	4	5	5	5	6	6	6
10	1	2	2	3	3	4	4	4	5	5	5	6	6
11	1	2	2	3	3	3	4	4	5	5	5	6	6
12	1	1	2	3	3	3	4	4	5	5	5	6	6
13	1	1	2	2	3	3	4	4	5	5	5	6	6
14	1	1	2	2	3	3	4	4	4	5	5	5	6

Surface Rate of Spread (ch/hr) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	0	1	1	1	1	1	1	1	1	1	1	1

Flame Length (ft) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1

## Fire Behavior: Moderate Load Broadleaf Litter TL6 (186)

*Held Constant: 10H Fuels at 10%, 100H Fuels at 12%, 30% Live Fuel Moisture (Herbaceous & Woody) and 0% Slope [Run in BEHAVEPLUS v. 5.0.5]*

Surface Rate of Spread (ch/hr) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	1	2	4	5	7	9	11	14	16	19	22	25
5	1	1	2	3	5	7	8	10	13	15	17	20	22
6	1	1	2	3	4	6	8	10	12	14	16	18	21
7	1	1	2	3	4	6	7	9	11	13	15	17	19
8	1	1	2	3	4	5	7	8	10	12	14	16	18
9	1	1	2	3	4	5	6	8	10	11	13	15	17
10	1	1	2	2	4	5	6	8	9	11	12	14	16
11	1	1	2	2	3	5	6	7	9	10	12	14	16
12	0	1	1	2	3	4	6	7	8	10	12	13	15
13	0	1	1	2	3	4	5	7	8	10	11	13	14
14	0	1	1	2	3	4	5	6	8	9	11	12	14

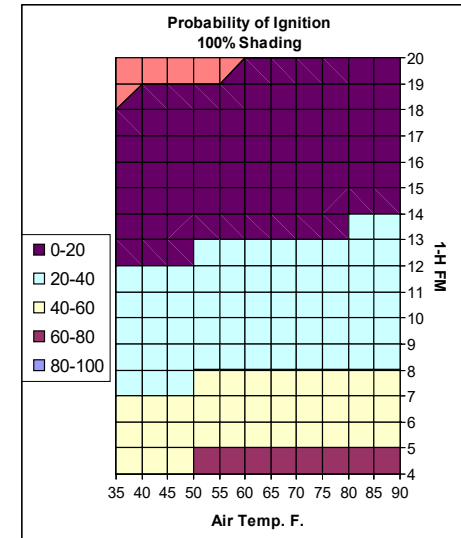
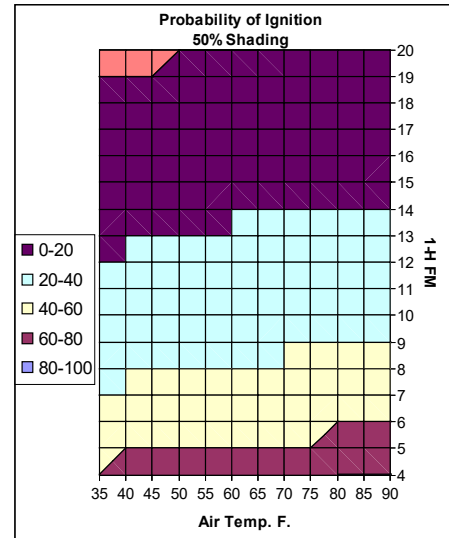
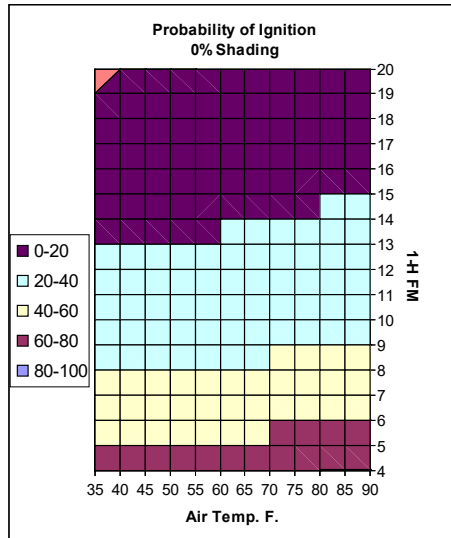
Flame Length (ft) - Head Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	1	2	2	3	3	3	4	4	5	5	5	5
5	1	1	2	2	3	3	3	4	4	4	4	5	5
6	1	1	2	2	2	3	3	3	4	4	4	4	5
7	1	1	2	2	2	3	3	3	3	4	4	4	5
8	1	1	1	2	2	2	3	3	3	4	4	4	4
9	1	1	1	2	2	2	3	3	3	3	4	4	4
10	1	1	1	2	2	2	3	3	3	3	4	4	4
11	1	1	1	2	2	2	3	3	3	3	4	4	4
12	1	1	1	2	2	2	2	3	3	3	3	4	4
13	1	1	1	2	2	2	2	3	3	3	3	4	4
14	1	1	1	2	2	2	2	3	3	3	3	4	4

Surface Rate of Spread (ch/hr) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	0	0	0	0	0	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0	0	0	0	0	0	0
7	1	0	0	0	0	0	0	0	0	0	0	0	0
8	1	0	0	0	0	0	0	0	0	0	0	0	0
9	1	0	0	0	0	0	0	0	0	0	0	0	0
10	1	0	0	0	0	0	0	0	0	0	0	0	0
11	1	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0

Flame Length (ft) - Backing Fire													
1-hr Moisture	Midflame Wind Speed (mph)												
	0	1	2	3	4	5	6	7	8	9	10	11	12
4	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1

## 2: PROBABILITY OF IGNITION

[Run in BEHAVE by Remsoft Professional v. 5.0]



**APPENDIX C: COMPLEXITY ANALYSIS & JHA**

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - VALUES**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens		
<b>Category</b>	<b>Quantity</b>	<b>Significance</b>	<b>Description</b>	
<b>V a l u e s</b>	On-Site	Multiple	Mod	The unit contains wetlands, critical habitat, threatened species, power poles, public roads, and old military infrastructure.
	Off-Site	Few	Low	Some Roadways and neighborhoods are present within the daytime smoke buffers.
	Public/Political Interest	Few	Mod	The property is visited by public but will be temporarily closed and posted during prescribed burning. Smoke impacts in the community could impact the prescribed fire programs in the region. Impacts to threatened species could limit future management options.

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - PRELIMINARY RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens
<b>Element</b>	<b>Preliminary Risk</b>	<b>Risk Rating Descriptors</b>
<b>Safety</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Safety issues are pronounced and require detailed briefings, with certain hazards requiring special caution.</li> <li>• A small organization with a single branch result in modest exposure of personnel to hazards.</li> <li>• Adverse impacts to public health and safety are possible.</li> <li>• At least one activity is low frequency/high risk.</li> <li>• Fatigue and extended exposure to hazards are anticipated.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Bunkers could pose risk of falling.</i></li> <li>• <i>Ticks present in the area.</i></li> <li>• <i>Powerlines are within the unit.</i></li> <li>• <i>Numerous snags are present.</i></li> </ul>
<b>Fire Behavior</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Fuels vary within the unit, both in loading and arrangement.</li> <li>• Fire behavior may present control challenges that are easily mitigated.</li> <li>• Medium fuel loadings with some high concentrations are present.</li> <li>• Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems.</li> <li>• Local winds and burning conditions may vary enough to cause shifts in fire behavior that briefly exceed modeled fire behavior and threaten</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Excessive fire behavior could cause spot fires.</i></li> <li>• <i>Torching pitch pine can cause long range spotting.</i></li> <li>• <i>Project debris can smolder.</i></li> <li>• <i>Smilax into treetops could cause torching.</i></li> </ul>
<b>Resistance to Containment</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Potential for multiple wildfire mechanisms such as spot fires or slop overs that can propagate at moderate rates of spread but can be held by prompt holding actions.</li> <li>• Some fuel concentrations or ladder fuels exist near critical holding points.</li> <li>• Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines.</li> <li>• The probability of ignition in fuels outside of control lines is low to moderate.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Crown fire potential is moderate.</i></li> <li>• <i>Fuels outside the unit are generally less flammable than inside the unit.</i></li> <li>• <i>Good breaks are present around much of the area.</i></li> </ul>

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - PRELIMINARY RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens
<b>Element</b>	<b>Preliminary Risk</b>	<b>Risk Rating Descriptors</b>
<b>Ignition Procedures and Methods</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Multiple firing sequences patterns and timing must be coordinated to meet project objectives and reduce the risk of an unexpected or adverse event.</li> <li>• Specific fire intensities or ROS are somewhat critical for meeting resource objectives but are readily attained by placing local skill sets in firing boss positions.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Internal ignitions through dense vegetation can be difficult.</i></li> <li>• <i>Building black can be difficult in numerous of the fuel models present.</i></li> <li>• <i>Disorientation due to limited visibility or difficult terrain can cause ignitors to get too far from line and send excess fire at line.</i></li> <li>• <i>Thick understory can cause difficulty in communication between ignitors</i></li> </ul>
<b>Prescribed Fire Duration</b>	<b>Low</b>	<ul style="list-style-type: none"> <li>• Ignition operations should be accomplished within one operational period.</li> <li>• Burn unit is small in size and residual burning is not expected after primary burn out of the unit.</li> <li>• Decrease in seasonal severity is expected.</li> <li>• Short time frame does not require special logistical support.</li> <li>• Mop-up is minimal or none is anticipated/planned.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>All fire operations should be accomplished within one operating period.</i></li> <li>• <i>Unit size is small.</i></li> <li>• <i>Smoldering should be limited if burning under preferred conditions.</i></li> </ul>
<b>Smoke Management</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Noticeable smoke will be produced creating at least some public concern.</li> <li>• Short-term health or safety concerns related to smoke exposure may occur if actual weather deviates from forecasted.</li> <li>• Nearby communities are highly conscious of smoke from wildland fire.</li> <li>• Some possibility for a NAAQS exceedance violation.</li> <li>• The prescription or ignition portions of the plan need to consider smoke management.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Roads and neighborhoods are near the unit, but can be mitigated.</i></li> <li>• <i>Smoke may collapse over the Narragansett Bay and impact coastal communities.</i></li> </ul>



**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - PRELIMINARY RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens
<b>Element</b>	<b>Preliminary Risk</b>	<b>Risk Rating Descriptors</b>
<b>Number and Dependence of Activities</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Several activities depend on achievement of previous or concurrent actions.</li> <li>• Several activities are interactive.</li> <li>• Communication is routine for coordination of activities and project success.</li> <li>• The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>When burning multiple subunits, moderate coordination is required.</i></li> <li>• <i>Communication with nearby suppression resources is required.</i></li> <li>• <i>Considerable line prep is required prior to ignition.</i></li> <li>• <i>Refilling water may require coordination if a tender is not readily available</i></li> </ul>
<b>Management Organization</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders).</li> <li>• Special skills or supervision required for one function (RXB2 is suggested).</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Multiple agencies with multiple chains of command are usually required for fire operations.</i></li> <li>• <i>Two or more levels of supervision are needed.</i></li> </ul>
<b>Treatment/Resource Objectives</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Issues are present that hamper or may prevent meeting treatment resource objectives.</li> <li>• Failure to meet objectives could have short-term adverse impacts.</li> <li>• Associated resources could be damaged if the prescribed fire did not meet resource objectives.</li> <li>• Few critical holding points.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Mowed areas can be difficult to carry and may smolder</i></li> <li>• <i>Areas with dense midstory and vines may not carry fire after green-up.</i></li> </ul>

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - PRELIMINARY RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens
<b>Element</b>	<b>Preliminary Risk</b>	<b>Risk Rating Descriptors</b>
<b>Constraints</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Constraints exist with some constraints imposing limits on implementing the prescribed fire or achieving objectives.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Limits on fire implementation are primarily related weather prescription.</i></li> <li>• <i>Seasonality may be a constraint</i></li> <li>• <i>Because the site is on an island, it tends to have higher winds and humidity than the neighboring inland areas.</i></li> </ul>
<b>Project Logistics</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Some phases of the prescribed fire may require logistical support in order to safely meet project objectives.</li> <li>• Limited amount of special equipment or communication equipment requiring more intensive logistical support may be needed to complete the project.</li> </ul>
		<ul style="list-style-type: none"> <li>• <i>Numerous notifications and resource requests are required.</i></li> <li>• <i>Coordination of moving equipment from the mainland can be difficult.</i></li> </ul>

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens		
<b>Element</b>	<b>Preliminary Risk</b>	<b>Post-Plan Risk</b>	<b>Risk Rating Descriptors</b>	<b>Elements/Actions in RX Fire Plan Addressing Risk</b>
<b>Safety</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Safety issues are pronounced and require detailed briefings, with certain hazards requiring special caution.</li> <li>• A small organization with a single branch results in modest exposure of personnel to hazards.</li> <li>• Adverse impacts to public health and safety are possible.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Detailed safety briefing.</i></li> <li>• <i>Closing areas near fire to the public.</i></li> </ul>
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	
<b>Fire Behavior</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Fuels vary within the unit, both in loading and arrangement.</li> <li>• Fire behavior may present control challenges that are easily mitigated.</li> <li>• Medium fuel loadings with some high concentrations are present.</li> <li>• Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Wide fire breaks and multiple contingency lines</i></li> </ul>
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	
<b>Resistance to Containment</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Potential for multiple wildfire mechanisms such as spot fires or slopovers that can propagate at moderate rates of spread but can be held by prompt holding actions.</li> <li>• Some fuel concentrations or ladder fuels exist near critical holding points.</li> <li>• Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Wide fire breaks and multiple contingency lines</i></li> </ul>
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens		
<b>Element</b>	<b>Preliminary Risk</b>	<b>Post-Plan Risk</b>	<b>Risk Rating Descriptors</b>	<b>Elements/Actions in RX Fire Plan Addressing Risk</b>
<b>Ignition Procedures and Methods</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>Multiple firing sequences patterns and timing must be coordinated to meet project objectives and reduce the risk of an unexpected or adverse event.</li> <li>Specific fire intensities or ROS are somewhat critical for meeting resource objectives but are readily attained by placing local skill sets in firing boss positions.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
			<ul style="list-style-type: none"> <li><i>No additions or modifications.</i></li> </ul>	
<b>Prescribed Fire Duration</b>	<b>Low</b>	<b>Low</b>	<ul style="list-style-type: none"> <li>Ignition operations should be accomplished within one operational period.</li> <li>Burn unit is small in size and residual burning is not expected after primary burn out of the unit.</li> <li>Decrease in seasonal severity is expected.</li> <li>Short time frame does not require special logistical support.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
			<ul style="list-style-type: none"> <li><i>No additions or modifications.</i></li> </ul>	
<b>Smoke Management</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>Noticeable smoke will be produced creating at least some public concern.</li> <li>Short-term health or safety concerns related to smoke exposure may occur if actual weather deviates from forecasted.</li> <li>Nearby communities are highly conscious of smoke from wildland fire.</li> <li>Some possibility for a NAAQS exceedance violation.</li> </ul>	<ul style="list-style-type: none"> <li><i>Smoke patrols will be used on downwind roads</i></li> <li><i>Monitoring LVORI and potential for smolder</i></li> <li><i>Checking duff and project fuel moisture</i></li> </ul>
			<ul style="list-style-type: none"> <li><i>No additions or modifications.</i></li> </ul>	

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN RISK**

Prescribed Fire Plan Name:		Prudence Island Southeast Pine Barrens		
Element	Preliminary Risk	Post-Plan Risk	Risk Rating Descriptors	Elements/Actions in RX Fire Plan Addressing Risk
Number and Dependence of Activities	Mod	Mod	<ul style="list-style-type: none"> <li>• Several activities depend on achievement of previous or concurrent actions.</li> <li>• Several activities are interactive.</li> <li>• Communication is routine for coordination of activities and project success.</li> <li>• The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation.</li> </ul>	•
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	
Management Organization	Mod	Mod	<ul style="list-style-type: none"> <li>• Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders).</li> <li>• Special skills or supervision required for one function (RXB2 is suggested).</li> </ul>	•
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	
Treatment/Resource Objectives	Mod	Mod	<ul style="list-style-type: none"> <li>• Issues are present that hamper or may prevent meeting treatment resource objectives.</li> <li>• Failure to meet objectives could have short-term adverse impacts.</li> <li>• Associated resources could be damaged if the prescribed fire did not meet resource objectives.</li> <li>• Few critical holding points.</li> </ul>	• <i>Coordination with RI DEM biologists to minimize impacts to threatened species.</i>
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN RISK**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens		
<b>Element</b>	<b>Preliminary Risk</b>	<b>Post-Plan Risk</b>	<b>Risk Rating Descriptors</b>	<b>Elements/Actions in RX Fire Plan Addressing Risk</b>
Constraints	Mod	Mod	<ul style="list-style-type: none"> <li>• Constraints exist with some constraints imposing limits on implementing the prescribed fire or achieving objectives.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Multiple permits required.</i></li> </ul>	
Project Logistics	Mod	Mod	<ul style="list-style-type: none"> <li>• Some phases of the prescribed fire may require logistical support in order to safely meet project objectives.</li> <li>• Limited amount of special equipment or communication equipment requiring more intensive logistical support may be needed to complete the project.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Coordination with local fire department.</i></li> <li>• <i>Ensuring ferry tickets are available.</i></li> </ul>
			<ul style="list-style-type: none"> <li>• <i>No additions or modifications.</i></li> </ul>	

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN TECHNICAL DIFFICULTY**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens	
<b>Element</b>	<b>Post-Plan Risk</b>	<b>Technical Difficulty</b>	<b>Rating Descriptors</b>
<b>Safety</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Potential serious accidents/injuries or multiple accidents/injuries to personnel or public are mitigated by standard safety briefings and identified in existing risk assessments/JHA.</li> <li>• Special emphasis is needed for some elements of LCES. Some standard preparation work and/or project design features are required.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Detailed briefings help mitigate safety concerns.</i></li> <li>• <i>Escape routes need to be continually evaluated in smilax and dense vegetation.</i></li> </ul>
<b>Fire Behavior</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Some special provisions for safety are needed to protect personnel.</li> <li>• Fire behavior variations are minimal and do not require multiple fuel models to account for the fire behavior.</li> <li>• At least one barrier or containment opportunity exists.</li> <li>• Fire behavior is such that holding resources may need to use indirect tactics to control some spot fires and slopovers.</li> <li>• Occasional on-site fire behavior assessments or calculations may be needed and can be performed as a collateral duty.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Ignition strategies should mitigate fire behavior concerns.</i></li> <li>• <i>Young pitch pine can cause spotting and high fire behavior</i></li> </ul>

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN TECHNICAL DIFFICULTY**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens	
<b>Element</b>	<b>Post-Plan Risk</b>	<b>Technical Difficulty</b>	<b>Rating Descriptors</b>
<b>Resistance to Containment</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Several types of resources are involved in the holding operation.</li> <li>• Some portions of the burn unit and project area are not easily accessible to the holding resources.</li> <li>• Expected fire behavior outside the unit may require developing indirect attack options.</li> <li>• Areas outside of the project area have specific suppression action constraints or are on other jurisdictional lands that may limit containment efforts.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Critical holding areas will be accessible by engine.</i></li> </ul>
<b>Ignition Procedures and Methods</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• The need for multiple firing devices, sequences, techniques, or patterns has been identified.</li> <li>• Firing procedures are somewhat complex in at least some portions of the project area and a single Firing Boss (FIRB) is used.</li> <li>• Two different types of ignition devices are planned.</li> <li>• The ignition pattern requires direct control of the lighters to achieve project objectives and manage safety concerns.</li> <li>• Communications may require the use of a command (repeater) and at least two tactical frequencies will be used.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Ignitors will maintain communication.</i></li> </ul>
<b>Prescribed Fire Duration</b>	<b>Low</b>	<b>Low</b>	<ul style="list-style-type: none"> <li>• Ignition and mop-up operations are usually completed in 1 to 2 operational periods.</li> <li>• Mop-up and patrol is typical with minimal resource and equipment needs.</li> <li>• Standard press release is sufficient for public notification.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Overnight fire should be avoided.</i></li> <li>• <i>Moderate smolder is acceptable, but extended mop-up is difficult because of distance from mainland.</i></li> </ul>



**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN TECHNICAL DIFFICULTY**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens	
<b>Element</b>	<b>Post-Plan Risk</b>	<b>Technical Difficulty</b>	<b>Rating Descriptors</b>
<b>Smoke Management</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• ERTs and SMTs require skilled application of the prescribed fire prescription.</li> <li>• Some considerations are needed in the prescription or ignition portions of the plan to employ ERTs, and SMTs.</li> <li>• Wind parameters are constrained but easy to achieve.</li> <li>• Sensitive receptors exist.</li> <li>• Burn window/opportunities are reduced by the required weather/dispersion conditions.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Few smoke sensitive receptors, but smolder potential is a possibility.</i></li> </ul>
<b>Number and Dependence of Activities</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Holding and lighting require close coordination and are dependent on each other to prevent spots or slopovers.</li> <li>• Continuous communication is necessary for successful project completion.</li> <li>• Some pre-burn considerations are required before ignition.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Radio communication is necessary.</i></li> <li>• <i>Close coordination between ignition and holding required.</i></li> </ul>
<b>Management Organization</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• At least one primary team member may need to come from outside of the local unit and may not be familiar with local factors.</li> <li>• The numbers of qualified personnel available on the local unit are limited.</li> <li>• Special skills or supervision required for one function (RXB2 suggested).</li> <li>• Some pre-burn preparation work may require special organizational planning and/or coordination.</li> <li>• Protection of resource values requires extra considerations when developing certain elements of the prescribed fire plan.</li> </ul>
			<ul style="list-style-type: none"> <li>• <i>Prescribed fires usually require multiple agencies with different chains of command and suppression responsibilities.</i></li> </ul>

**PRESCRIBED FIRE PLAN COMPLEXITY ANALYSIS - POST-PLAN TECHNICAL DIFFICULTY**

<b>Prescribed Fire Plan Name:</b>		Prudence Island Southeast Pine Barrens	
<b>Element</b>	<b>Post-Plan Risk</b>	<b>Technical Difficulty</b>	<b>Rating Descriptors</b>
<b>Treatment/Resource Objectives</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• There are several resource objectives to meet.</li> <li>• Measures to achieve the objectives are either 1) easy to complete but there are restrictions on the techniques or 2) moderately difficult to complete and there are few or no restrictions on techniques.</li> <li>• Additional monitoring of fire behavior and weather is needed to determine if prescribed fire objectives are being met.</li> <li>• Other opportunities to meet objectives are very limited in a given year.</li> </ul> <p><i>• No additions or modifications.</i></p>
<b>Constraints</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Some constraints are not easily accommodated and increase the difficulty of completing the project or achieving objectives.</li> <li>• Some prescribed fire parameters are dependent upon marginal environmental conditions.</li> <li>• The length of time to complete the project and the size of the organization may need to be increased.</li> </ul> <p><i>• No additions or modifications.</i></p>
<b>Project Logistics</b>	<b>Mod</b>	<b>Mod</b>	<ul style="list-style-type: none"> <li>• Project implementation requires a small logistical support operation.</li> <li>• Logistical support may be combined with other functions.</li> <li>• Obtaining some personnel may require additional contacts and advanced scheduling.</li> <li>• Additional support may be needed for out-of-area personnel.</li> <li>• Project duration may require a resupply to ensure successful remote prescribed fire implementation.</li> </ul> <p><i>• Coordination required to get resources onsite from off-island.</i></p>

## PRESCRIBED FIRE PLAN JOB HAZARD ANALYSIS

**Prescribed Fire Plan Name:** Prudence Island Southeast Pine Barrens

Activity(s) and Potential Hazard	Initial Risk Rating			Hazard Controls and Assignments	Residual Risk Rating			Residual Risk Tolerance
	Severity	Probability	Hazard		Severity	Probability	Hazard	
<ul style="list-style-type: none"> <li>Travel to Burn Project Site</li> <li>Travel to Home Unit/Residence</li> </ul> <p>Motor Vehicle Accident (Other Vehicles, Hazardous Road Conditions, Poor Visibility, and Fatigue/Sleepiness)</p>	Majo	Seldo	Medium	<p>The Burn Boss and project/site manager will communicate motor vehicle accident controls to agency contacts/chief of parties/supervisors and drivers.</p> <ul style="list-style-type: none"> <li>Adequate rest before travel</li> <li>Practice defensive driving</li> <li>Obey posted speed limits</li> </ul>	Majo	Unlikel	Low	<p><b>ACCEPTABLE: Negligible</b> given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>
<ul style="list-style-type: none"> <li>Burn Setup</li> <li>Burn Operations</li> <li>Mop-Up</li> <li>Burn Breakdown</li> </ul> <p>Motor Vehicle Accident (Other Vehicles, Hazardous Road Conditions, Poor Visibility, and Fatigue/Sleepiness)</p>	Major	Seldom	Medium	<p>The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate motor vehicle accident controls to agency contacts/chief of parties/supervisors and drivers.</p> <ul style="list-style-type: none"> <li>Defensive driving</li> <li>Obey posted speed limits</li> <li>Use backup spotters</li> <li>Use chock blocks and/or emergency brakes when parked</li> </ul>	Moderate	Unlikel	Low	<p><b>ACCEPTABLE: Negligible</b> given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>
<ul style="list-style-type: none"> <li>Burn Setup</li> <li>Burn Operations</li> <li>Mop-Up</li> <li>Burn Breakdown</li> </ul> <p>General Accidents (cuts, abrasions, back/lifting injury, hearing damage, &amp; eye injuries)</p>	Moderate	Seldom	Low	<p>The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate general accident controls to supervisors and crew.</p> <ul style="list-style-type: none"> <li>Appropriate PPE (gloves, eye protections, and foot protection)</li> <li>Practice appropriate lifting techniques</li> <li>Location of first aid kits known to supervisors and crew</li> </ul>	Minor	Seldom	Low	<p><b>ACCEPTABLE: Negligible</b> given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>

## PRESCRIBED FIRE PLAN JOB HAZARD ANALYSIS

Prescribed Fire Plan Name: Prudence Island Southeast Pine Barrens											
Activity(s) and Potential Hazard		Initial Risk Rating			Hazard Controls and Assignments			Residual Risk Rating			Residual Risk Tolerance
<ul style="list-style-type: none"> <li>• Burn Setup</li> <li>• Burn Operations</li> <li>• Mop-Up</li> <li>• Burn Breakdown</li> </ul> Fuel Mixing and Refueling		Severity	Probability	Hazard	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate fuel mixing and refueling controls to supervisors and crew. <ul style="list-style-type: none"> <li>• Eye protection and gloves</li> <li>• Fill with funnels and secondary containment</li> <li>• Use appropriate fuel mixes</li> <li>• Mark all containers using tags with mix, date, and mixers initials</li> </ul>			Severity	Probability	Hazard	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.
		Moderat	Possibl	Medium				Moderat	Seldo	Low	
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> UTV Accident (Uneven Terrain/Rolling, Excessive Speed, & Unfamiliarity With UTV Operation)		Severity	Probability	Hazard	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate motor vehicle accident controls to drivers. <ul style="list-style-type: none"> <li>• Drivers will be familiar with safe operation of UTV</li> <li>• Driver and passenger will wear seat belts when UTV is in motion</li> <li>• Fireline PPE will be worn and fireline helmets will be worn with chinstrap – goggles will be worn in the absence of a windshield</li> <li>• UTV will be operated off-highway only, at safe speeds, and cautiously when on slopes</li> <li>• Backup spotters will be used</li> <li>• Chock blocks and/or emergency brakes will be used when parked</li> </ul>			Severity	Probability	Hazard	See UTV-ATV Assessment
		Seldom	Unlikely	Unlikely				Unlikely	Unlikely		
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> ATV Accident (Uneven Terrain/Rolling, Excessive Speed, & Unfamiliarity With ATV Operation)		Severity	Probability	Hazard	•The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate motor vehicle accident controls to drivers. <ul style="list-style-type: none"> <li>• Drivers will be familiar with safe operation of ATV</li> <li>• Fireline PPE will be worn and fireline helmets will be worn with chinstrap – goggles will be worn</li> <li>• UTV will be operated off-highway only, at safe speeds, and cautiously when on slopes</li> <li>• Emergency brakes will be used when parked</li> </ul>			Severity	Probability	Hazard	See UTV-ATV Assessment
		Possible	Seldom	Seldom				Seldom	Seldom		

## PRESCRIBED FIRE PLAN JOB HAZARD ANALYSIS

**Prescribed Fire Plan Name:** Prudence Island Southeast Pine Barrens

Activity(s) and Potential Hazard	Initial Risk Rating			Hazard Controls and Assignments	Residual Risk Rating			Residual Risk Tolerance
	Severity	Probability	Hazard		Severity	Probability	Hazard	
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> <p>Operating near busy roads (Burn personnel and other vehicles on main roads, smoke on road, poor visibility)</p>	Major	Seldom	Medium	<p>The Burn Boss, Holding Specialist(s), and Ignition Specialist will communicate hazards of walking or driving near or on busy roads to all crew. The following will help mitigate potential accidents.</p> <ul style="list-style-type: none"> <li>• Defensive driving</li> <li>• Use of emergency lights and headlights</li> <li>• Evaluate need of traffic detail to slow/direct traffic on main roads</li> <li>• Post "Smoke Ahead" and "Prescribed Burn" signs as needed</li> <li>• Crossing of road only to be at direction of supervisor</li> </ul>	Major	Unlikely	Low	<p>ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>
<ul style="list-style-type: none"> <li>• Burn Operations</li> </ul> <p>Extreme Fire Behavior</p>	Major	Seldom	Medium	<p>The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate extreme Fire behavior controls to supervisors and crew.</p> <ul style="list-style-type: none"> <li>• Escape routes and safety zones</li> <li>• Crew will wear full wildland fire PPE, to include fire shelters</li> </ul>	Minor	Seldom	Low	<p>ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> <p>Power Line Hazard</p>	Catastrophic	Unlikely	Medium	<p>The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate power line hazard controls to supervisors and crew.</p> <ul style="list-style-type: none"> <li>• Avoid working under power lines</li> <li>• Do not spray water on or near power lines</li> <li>• Minimize heat, direct flame contact, and heavy smoke impacts on power lines</li> </ul>	Major	Unlikely	Low	<p>ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.</p>

## PRESCRIBED FIRE PLAN JOB HAZARD ANALYSIS

**Prescribed Fire Plan Name:** Prudence Island Southeast Pine Barrens

Activity(s) and Potential Hazard	Initial Risk Rating			Hazard Controls and Assignments	Residual Risk Rating			Residual Risk Tolerance
	Severity	Probability	Hazard		Severity	Probability	Hazard	
<ul style="list-style-type: none"> <li>Burn Operations</li> <li>Mop-Up</li> </ul> <p>Chain Saw Operation</p>	Major	Possible	High	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate Chain Saw controls to supervisors and crew. <ul style="list-style-type: none"> <li>PPE should be worn (eye protection, ear protection, hard hat, chaps, boots, and appropriate clothing)</li> <li>Only qualified saw operators will be authorized to operate chain saws</li> <li>Spotters will be provided for sawyers</li> <li>Make location of first aid kits known to supervisors and crew</li> </ul>	Moderate	Unlikely	Low	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.
<ul style="list-style-type: none"> <li>Burn Operations</li> <li>Mop-Up</li> </ul> <p>Environmental Hazards (Burns, Poison Ivy, Bees, Lyme Disease, Illness, Tripping/Falling, Snags, Smoke/CO Exposure, Dehydration, Heat Injury, and Cold Injury)</p>	Moderate	Possible	Medium	The Burn Boss, Holding Specialist(s) and ignition specialist will communicate environmental hazards controls to supervisors and crew. <ul style="list-style-type: none"> <li>Identify First Aid CPR trained crew and first aid kit locations</li> <li>Tick-Borne Disease prevention</li> <li>Importance of proper hydration</li> <li>Other Environmental/Environment Hazards based on potential exposure</li> </ul>	Moderate	Seldom	Low	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.
<ul style="list-style-type: none"> <li>Burn Operations</li> </ul> <p>Ignition</p>	Moderate	Possible	Medium	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate ignition controls to supervisors and crew. <ul style="list-style-type: none"> <li>Wear appropriate PPE (gloves, eye protection, boots, and Aramid clothing with sleeves down)</li> <li>Use proper fuel mix</li> </ul>	Moderate	Unlikely	Low	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.

## PRESCRIBED FIRE PLAN JOB HAZARD ANALYSIS

**Prescribed Fire Plan Name:** Prudence Island Southeast Pine Barrens

Activity(s) and Potential Hazard	Initial Risk Rating			Hazard Controls and Assignments	Residual Risk Rating			Residual Risk Tolerance
	Severity	Probability	Hazard		Severity	Probability	Hazard	
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> <p>Tool Use</p>	Moderat	Possibl	Medium	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate tool use controls to supervisors and crew. <ul style="list-style-type: none"> <li>• Appropriate PPE (gloves, boots, clothing, and eye protection)</li> <li>• Proper spacing should be maintained</li> <li>• Proper tool use and foot should be used</li> </ul>	Mino	Unlikel	Low	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.
	Severity	Probability	Hazard		Severity	Probability	Hazard	
<ul style="list-style-type: none"> <li>• Burn Operations</li> <li>• Mop-Up</li> </ul> <p>Pump Operation</p>	Moderate	Seldom	Low	The Burn Boss, Holding Specialist(s), Ignition Specialist will communicate pump operation controls to supervisors and crew. <ul style="list-style-type: none"> <li>• Wear eye and ear protection</li> <li>• Pressurized water operations wear eye protection and gloves</li> </ul>	Minor	Unlikely	Low	ACCEPTABLE: Negligible given common safe job procedures are applied. Continual vigilance necessary to maintain assurance that risk remains at this level.
	Severity	Probability	Hazard		Severity	Probability	Hazard	

*Tee Jay Boudreau* 3.22.23

**PRESCRIBED FIRE PLAN UTV/ATV RISK ASSESSMENT**

**Prescribed Fire Plan Name:** Prudence Island Southeast Pine Barrens

**OHV List-A --- ATV/UTV Make/Model/Configuration Covered**

- UTV Type 7 Engine

<b>Rating Category</b>	<b>Rating Description</b>	<b>Rating</b>
Speed of Operation	<u>Under 10 mph</u>	1
Maximum Slope in Any Direction	<u>Slight (&lt; 25% of mfg'r's maximum)</u>	1
Surface Type	<u>Soil</u>	9
Surface Condition	<u>Firm</u>	1
Surface Configuration	<u>Ruts/Bumps/Irregularities (&lt; 6")</u>	1
Load Weight	<u>≥ 76% &amp; ≤ 100% of mfg'r's Recommended Max.</u>	16
Load Type	<u>Liquid in a Baffled Container</u>	4
Accessibility of Use Area for Emergency Response	<u>Generally Accessible</u>	4
Time Operating Vehicle by Same Rider in a Single Workday	<u>≥ 4 Hour &amp; ≥ 8 Hours</u>	9
Distraction of Other Tasks While Operating Vehicle	<u>Moderate Distractions</u>	4
<b>TOTAL RATING LIST-A:</b>		<b>50</b>
<b>FINAL RISK ASSESSMENT RATING LIST-A:</b>		<b>MODERATE HAZARD</b>



**APPENDIX D:**

**TECHNICAL REVIEWER CHECKLIST**

PRESCRIBED FIRE PLAN ELEMENTS	S/U	COMMENTS
1. Signature Page	S	All comments were addresses during the review of the plan.
2. Go/No-Go Checklists	S	All comments were addresses during the review of the plan.
3. Complexity Analysis Summary	S	All comments were addresses during the review of the plan.
4. Description of Prescribed Fire Area	S	All comments were addresses during the review of the plan.
5. Goals and Objectives	S	All comments were addresses during the review of the plan.
6. Funding	S	All comments were addresses during the review of the plan.
7. Prescription	S	All comments were addresses during the review of the plan.
8. Scheduling	S	All comments were addresses during the review of the plan.
9. Pre-Burn Considerations	S	All comments were addresses during the review of the plan.
10. Briefing	S	All comments were addresses during the review of the plan.
11. Organization and Equipment	S	All comments were addresses during the review of the plan.
12. Communications	S	All comments were addresses during the review of the plan.
13. Safety and Medical	S	All comments were addresses during the review of the plan.
14. Test Fire	S	All comments were addresses during the review of the plan.
15. Ignition Plan	S	All comments were addresses during the review of the plan.
16. Holding Plan	S	All comments were addresses during the review of the plan.
17. Contingency Plan	S	All comments were addresses during the review of the plan.
18. Wildfire Conversion	S	All comments were addresses during the review of the plan.
19. Smoke and Air Quality Management	S	All comments were addresses during the review of the plan.
20. Monitoring	S	All comments were addresses during the review of the plan.
21. Post-burn Activities	S	All comments were addresses during the review of the plan.
Appendix A: Maps	S	All comments were addresses during the review of the plan.
Appendix B: Fire Behavior Modeling	S	All comments were addresses during the review of the plan.
Appendix C: Complexity Analysis	S	All comments were addresses during the review of the plan.
Appendix D: Job Hazard Analysis	S	All comments were addresses during the review of the plan.
Appendix E: Technical Reviewer Checklist	S	All comments were addresses during the review of the plan.
Other	S	All comments were addresses during the review of the plan.

**S = Satisfactory, U = Unsatisfactory**

**Recommended for Approval:**

**Not Recommended for Approval:**

**TECHNICAL REVIEW:**

*Alex Entrup*

SIGNATURE

11/26/2022

DATE

Alex Entrup

PRINTED NAME

MassWildlife

AGENCY

Prescribed Burn Boss Type 2 (RXB2)

QUALIFICATIONS