

Prescribed Fire Complexity Rating System Guide Worksheet

Project Name GREENTREE FOUNDATION RX BURNS Number RBIM-NY-GTF01

Complexity elements:

1. Potential for Escape

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. The units are relatively small grassland components accessible by equipment. The perimeters of the fire units have routinely been mowed, and they will be mowed prior to ignition to create a wide buffer around the units. The fuels are grass models with no significant shrub component and therefore will burn with low spotting potential. Spot fires would each comprise small areas that are readily detected, accessed, and controlled by modest holding forces available on the burn. No dangerous ladder fuels or concentrations are near critical holding points. Ignition procedures do not create intense fire. Probability of ignition in fuels outside the unit is below 60% or doesn't apply due to isolation of the unit. There is no residual fire expected beyond the day of ignition.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Field review verified preliminary rationale.
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Moderate. The units are relatively isolated from the ownership boundary of the Greentree Foundation. One exception is that the Tower Unit is immediately adjacent to a neighboring golf course, but fuels there would preclude fire spread in any significant way. Other private, public and commercial ownerships are relatively distant from the burn units. An escape could result in moderate damage to vegetation, habitat, or improvements. No residences are expected to be involved. The fire could burn onto private or other Greentree Foundation lands. There would be moderate impact to the public or users. Some social or political concerns from an escape could be expected.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Moderate due to the values of adjacent ownerships. Although the above statement is true, the prescriptions and implementation actions in the Plan would limit escapes to spot fires immediately adjacent to burn areas.
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Access by equipment will easily preclude fire escape to adjacent lands both within the Greentree Foundation lands and to neighboring occupancies. Holding operations would normally be supervised at the Single Resource Boss level. The burn unit and allowable area is easily accessible to the holding resources identified in the plan. Weather conditions as identified in the Prescribed Fire Plan are normal for the area and season. All of the key implementation personnel are from the local area.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Plan addresses the concerns.

2. The Number and Dependency of Activities

Risk	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low. Activities are generally independent or only loosely dependent on other activities. Pre ignition prep work would be concluded as an independent phase and will make the burn units secure. Ignition and holding on burn days will require only a few activities using a small number of resources on small tracks of land that can be easily coordinated.
Final Rating: <i>Low Moderate High</i>	Low. Planned implementation is as described above.
Potential Consequences	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low: Coordination issues do not result in an increased risk of escape, threaten the completion of the project, failure to meet project objectives, or create a safety issue
Final Rating: <i>Low Moderate High</i>	Low
Technical Difficulty	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low. There are very few dependent activities. Completion of pre-ignition preparation work and day of ignition activities are not technically difficult. Minimal difficulty in coordinating the required activities
Final Rating: <i>Low Moderate High</i>	Low

3. Off-Site Values

Risk	Rationale
Preliminary Rating: <i>Low Moderate High</i>	High: The Greentree Foundation land ownership is surrounded by a major hospital; a nursing home; commercial, private and governmental infrastructure and transportation corridors. These are critical protection areas identified in the Plan.
Final Rating: <i>Low Moderate High</i>	High. You cannot escape the fact this is a green island surrounded by high off site values.
Potential Consequences	Rationale
Preliminary Rating: <i>Low Moderate High</i>	High: The expected fire behavior should cause minimal or no damage to off-site values, improvements, private or other Foundation lands and would be rated low. The consequence of smoke impacts to the Values identified above however is high. The result of this preliminary rating would be high due to potential smoke impacts.
Final Rating: <i>Low Moderate High</i>	Moderate. Smoke management procedures within the Plan mitigate the smoke exposure to off -site values.
Technical Difficulty	Rationale

Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Low. Protection of the off-site values requires no special management, equipment or skills. Technically developing and adhering to a fire prescription that precludes smoke from vectoring to surrounding values at risk and allows for rapid fuel consumption, smoke lifting and dispersion of smoke is not difficult. The grass fuels are light and will not create lingering smoke issues post ignition. Since the burn units are accessible to equipment mop up techniques will not be difficult to perform. The small size of the burn units and fuels involved make it possible to rapidly extinguish active fire if wind shifts out of prescription or the plume is not lifting and dispersing as planned.</p>
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Low. Plan incorporates all the recommendations above.</p>

4. On-Site Values

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Low: Few or no special internal features are present that require special attention in planning or implementation. There are few on-site values at risk or the values identified are generally considered low or minimal.</p>
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Low. On site review found very few special on site values at risk in the fire burn units.</p>
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Moderate. Damages could occur to the ornamental plants, grape arbor or sprinkler systems at the G7 unit. Low on other units.</p>
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Moderate for G7, Low for other units.</p>
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Moderate for unit G7. Protection of special features or on-site resource values requires the development of special ignition OR holding plans. Some pre-burn preparation work may be required. These special features include ornamental plants, a grape arbor and installed in ground sprinkler system. Other units are low.</p>
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	<p>Low. The Plan incorporates burning methodology in G7 unit that are not technically difficult to achieve. Patch lighting combined with progressive on site use of water/spray to protect the special features.</p>

5. Fire Behavior

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Fuels are uniform and/or loading is light and can be characterized using a single fuel model. Terrain varies from flat or is on the slopes and aspects are uniform, leading to a relatively unvarying fire. Winds, microclimate, and other fire conditions are relatively uniform. Fire behavior is highly predictable. Fire is primarily a two dimensional surface fire and any vertical development is isolated and insignificant. Intensity of active burning head fires on the burn units would be of short duration strip heads at intervals that can be titrated to achieve desirable results. Head and flank fires will not be ignited until a solid backing fire blackline is established on the windward edges of the burn perimeter.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Plan incorporates above measures.
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Moderate. High intensity fire behavior can threaten fire escape outside the unit into adjacent grass or timber/shrub fuels. Fire behavior outside of the primary unit boundary would be about the same as that experienced within the unit, but modeling runs can be used to verify expected fire behavior outside the unit. This rating may trend to low upon further detailed examination of the units. Most of the units have a higher load of native grasses within the burn unit and are adjacent to areas that are mowed, consist of pasture grasses that will not carry fire or have roads or other barriers.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. The fuels to be burned within the units are the grass fuels that will burn. There are wide breaks along the perimeters of the grass units to burn that will not burn.
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Pre-treatment mowing adjacent to the burn units in the grass fuels is easily accomplished. Following the established ignition sequence will further reduce adverse consequences of unexpectedly intense undesirable fire behavior. Fire behavior is such that holding forces can control most or all spot fires and slopovers using direct attack tactics. No on-site operational fire behavior assessments or calculations are needed..
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low

6. Management Organization

Risk	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low. A small number of people are required to implement the prescribed fire. A single person may fill several positions. A single level of supervision is all that is needed (i.e. Burn Boss plus lighters and holders). The preferred option for ignition and holding will require few personnel and equipment. All activities will be conducted line of sight with close ground communications. Pre-treatment activities are routine grounds keeping normally conducted by Greentree Foundation staff.
Final Rating: <i>Low Moderate High</i>	Low
Potential Consequences	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low Problems related to supervision or communication are expected to be minimal. On site evaluation will determine if this preliminary rating needs increase to moderate due to the fact that Greentree Foundation staff members who will be assisting on the burn have no wildland fire suppression training. Considerations to add additional trained holding and ignition staff should be given during detailed assessment.
Final Rating: <i>Low Moderate High</i>	Low. The Plan calls for an RXB2 with two FFT2 trained assistants in addition to the Greentree staff.
Technical Difficulty	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low. The duties to be performed by Greentree Foundation staff will be overseen by a highly qualified and experienced prescribed fire burn boss and maybe additional trained firefighters. The activities they will conduct will be relatively normal types of activities they perform (operating spray trucks, operating mowers). The pre-treatment work will reduce the need for untrained staff to work in close proximity to active fire.
Final Rating: <i>Low Moderate High</i>	Low. Greentree staff will be using their own equipment in much the same way they normally use it. The equipment is very suitable to the needs of the project.

7. Public and Political Interest

Risk	Rationale
Preliminary Rating: <i>Low Moderate High</i>	High. There were no prescribed burns in Nassau County Long Island since the 1990's prior to us successfully burning at Greentree in April 2017. Past wildfire events in Long Island (1995 Sunrise Fires, 2012 fires near Brookhaven National Lab, Ridge and Manorville) potentially can create a concern about prescribed fire by the general public. There are multiple high values at risk adjacent to or near the Greentree Foundation property.
Final Rating: <i>Low Moderate High</i>	Moderate. We burned 2 units at Greentree in April 2017 with no negative feedback from neighbors or stakeholders. We had meetings with the Northwell and other stakeholders.

Potential Consequences	Rationale
Preliminary Rating: <i>Low Moderate High</i>	High. Public and stakeholder concerns about this project could result in non-support or even prompt elected officials in Manhasset to ban such projects.
Final Rating: <i>Low Moderate High</i>	Low. The tone of stakeholders and elected officials appears supportive.
Technical Difficulty	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Moderate. Requires dedicated time prior to the burns from the unit public affairs officer and or Greentree President and staff. Public information stations or public meetings may be warranted. May require special media releases or field trips. Some specific members of the public or political entities may need to be notified directly. Outreach activities about this project need to be a part of a campaign to engender community and stakeholder support. A lot of public feeling, reflected in the media, has also reflected the need for prescribed burning projects to reduce the threat of large fires in the Long Island ecosystem. NY DEC is supportive of prescribed burning projects. The Central Pine Barrens Commission has recently solicited a contract to increase prescribed fire activities for Long Island areas under their Commission scope. The New York Wildfire and Incident Management Academy, formed under the direction of the Central Pine Barrens Commission has been performing wildfire suppression and prescribed fire training to hundreds of paid and volunteer firefighters in Long Island for the past decade plus.
Final Rating: <i>Low Moderate High</i>	Moderate. Outreach and information activities above will be performed.

8. Fire Treatment Objectives

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Objectives are limited to easily achieved fuel reduction or ecosystem maintenance. The necessary fire behavior is easily created, managed, and monitored.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low.
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. The Greentree Foundation has been working toward the goal of restoring native grass habitats (and associated fauna) for the past seven years. This project is just a start of using prescribed burning to achieve these goals. If the outcome of the first project of this kind fails to meet the objectives, it provides a foundation for optional strategies in the future. Other opportunities to meet objectives will be available. Other management activities are not dependant on the completion of the project. Failure to meet objectives would have few or no adverse impacts on natural resources.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low. Measures to achieve the objectives are easy to complete and there are few or no restrictions on techniques. Limited pre-burn monitoring is needed to determine if the unit is in prescription. These burns are not technically difficult to perform.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low

9. Constraints

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low No constraints related to access, water sources, firelines, specific tactics, or equipment use exist. There are few or no scheduling restrictions other than avoiding high level security conference times on site.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low Project can be implemented whenever it is in prescription. Tactics and burn activities are not limited.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low Constraints do not increase the difficulty of completing the project.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low

10. Safety

Risk	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low Safety issues are easily identifiable and mitigated. Potential hazards are typical and easily addressed in briefings. Activities can be characterized as high frequency/low risk. Fatigue and exposure to safety risks are limited.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Moderate There is moderate potential for adverse impacts to public health and safety due to smoke.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Moderate
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low Minimal potential for serious accidents/injuries to firefighters or the public.
Final Rating: <i>Low</i> <i>Moderate</i> <i>High</i>	Low

11. Ignition Procedures/Methods

Risk	Rationale
Preliminary Rating: <i>Low</i> Moderate High	Low Firing sequence and timing is straightforward with no special issues or techniques. The entire burn unit area is readily visible to the Ignition Specialist/Burn Boss.
Final Rating: <i>Low</i> Moderate High	Low
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> Moderate High	Low Firing methods and procedures do not pose a safety concern to personnel, compromise project objectives, or increase the risk of an unexpected or adverse event.
Final Rating: <i>Low</i> Moderate High	Low
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> Moderate High	Low There is no need for special firing equipment, techniques, or patterns. Firing procedures are simple and ignition team is small. Use of only one type of ignition device is planned. The ignition pattern requires minimal supervision of the lighters to achieve project objectives and manage safety concerns.
Final Rating: <i>Low</i> Moderate High	Low

12. Interagency Coordination

Risk	Rationale
Preliminary Rating: Low <i>Moderate</i> High	Moderate This preliminary rating assumes that pre ignition coordination will be needed with the Manhasset Fire Department, either regarding participation or pre burn inspection and approval. These partners may have interests or concerns with the project that are easily addressed and satisfied
Final Rating: <i>Low</i> Moderate High	Moderate LOW. STAKEHOLDERS SUPPORTIVE
Potential Consequences	Rationale
Preliminary Rating: Low <i>Moderate</i> High	Moderate Interagency coordination issues may delay project implementation or require minor modifications to the prescribed fire plan.
Final Rating: Low <i>Moderate</i> High	Moderate
Technical Difficulty	Rationale
Preliminary Rating: Low <i>Moderate</i> High	Moderate Implementation may require special attention to certain interagency details, such as communications and standards for operations. Fire Department resources may be generally available but some restrictions on their use may be present.

Final Rating: <i>Low Moderate High</i>	Moderate
--	----------

13. Project Logistics

Risk	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low The project requires minimal logistical support with no specific logistic function assigned. Supplies needed to conduct the burn are readily available and no special transportation or storage needs have been identified. No special equipment or communications needs have been identified. Project duration is 2 days or less.
Final Rating: <i>Low Moderate High</i>	Low. Each burn unit will be completed in one day or less, although multiple units may be done on one given day. Greentree and other staffing is available
Potential Consequences	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low Problems related to logistics will not increase the risk of escape, affect the completion of the project or create a safety concern.
Final Rating: <i>Low Moderate High</i>	Low
Technical Difficulty	Rationale
Preliminary Rating: <i>Low Moderate High</i>	Low No special logistical support issues. Supervisors normally handle their own support needs. Supplies and personnel are readily available and easy to obtain.
Final Rating: <i>Low Moderate High</i>	Low. Greentree has a well equipped staff using their own equipment.

14. Smoke Management

Risk	Rationale
Preliminary Rating: <i>Low</i> Moderate <i>High</i>	Moderate Smoke concerns are moderate and some concerns require special mitigation in the prescription. The project will produce smoke visible to the public for short periods of time on different burn days. Smoke exposures or amounts may cause some health or safety concerns over a short period of time. Members of the public and stakeholders have expressed some concerns about smoke.
Final Rating: Low <i>Moderate</i> <i>High</i>	Low. Experience on site in 2017 showed that the established prescriptions and narrow strip head ignition methods can control smoke generation and issues.
Potential Consequences	Rationale
Preliminary Rating: <i>Low</i> Moderate <i>High</i>	MODERATE: Roads, and some residences may experience short-term decreases in visibility. A few health related complaints may occur. Minor smoke intrusions may occur into smoke sensitive areas, but below levels that trigger regulatory concern. Project personnel may be exposed to dense smoke for short periods of time.
Final Rating: <i>Low</i> Moderate <i>High</i>	Moderate
Technical Difficulty	Rationale
Preliminary Rating: <i>Low</i> Moderate <i>High</i>	MODERATE: Some considerations are needed in the prescription OR ignition portions of the plan. Burn window/opportunities are reduced by the required weather/dispersion conditions. Normal coordination with air quality officials is required. Some mitigation measures or additional smoke modeling may be needed to address potential concerns with smoke impacts. Specific smoke monitoring may be required to determine smoke plume heights and directions. Rotating project personnel out of dense smoke is necessary but easy to accomplish.
Final Rating: Low <i>Moderate</i> <i>High</i>	LOW: Prescription and ignition sequence in the plan are easy to meet. Normal coordination with air quality officials is required. Specific smoke monitoring may be required to determine smoke impacts but is simple to accomplish.. Rotating project personnel out of dense smoke is necessary but easy to accomplish.

COMPLEXITY RATING SUMMARY –FINAL ASSESSMENT RESULTS

RISK	OVERALL RATING	<u>LOW/MODERATE</u>
POTENTIAL CONSEQUENCES	OVERALL RATING	<u>MODERATE</u>
TECHNICAL DIFFICULTY	OVERALL RATING	<u>LOW / MODERATE</u>
SUMMARY COMPLEXITY RATING		<u>MODERATE</u>

RATIONALE: The purpose of the complexity rating summary is to perform an analysis of overall complexity of management of a prescribed burn project. This process evaluates criterion for 14 complexity elements. The process is done at two stages.... One is done during the preliminary planning phase of a prescribed fire project based on a relatively brief overview by the preparer of the issues and physical dynamics of the project. In doing so preliminary issues that affect project complexity can be identified. That provides an opportunity, during the detailed research and preparation of the Prescribed Burn Plan, for the planner to focus on the issues of greatest concern to successful planning and implementation. The second phase of the Complexity Rating Summary comes after the Plan has been prepared. At that time the mitigations and actions identified in the Plan can be evaluated to see if they reduce the or increase the overall complexity rating.

The process evaluates each of these 14 different aspects of planning/doing a prescribed burn from three aspects, Risk, Potential Consequences and Technical Difficulty.

The preliminary complexity rating showed a strong bias that operational aspects of conducting these prescribed burns at Greentree Foundation are fundamentally low complexity. The actual tactical operations, fuels and fire behavior, and most other operational aspects are of LOW complexity. The fact that the project site is adjacent to facilities and infrastructure that are smoke sensitive, is planned in a high density population area that has little or no experience with wildland fire, let alone prescribed fire, and is dealing with uncertain support of stakeholders creates an overall preliminary assessment of MODERATE complexity.

In the final complex rating summary, after numerous aspects incorporated by on-site evaluation and planning considerations the overall rating remains the same as the preliminary.... An overall Moderate complexity rating.

Once again I would emphasize that the operational components of the Plan are virtually all of LOW complexity. Even the concerns of the preliminary survey regarding G7 values at risk have been reduced in the final complexity through the ignition and holding actions identified in the Plan.

The only HIGH rating in final analysis was for Factor 3, Off Site Values. The hospital and surrounding infrastructure of the surrounding areas does not go away. Operationally the threats to these areas have been mitigated through planning, but the consequences and values don't diminish. The acceptance of the burns, politically and by adjacent stakeholders is also a driving force for the overall Moderate rating.

I would say that implementation wise the complexity of this prescribed fire plan is Low. Politically with adjacent values at risk and potential consequences it drives it to and maintains the overall complexity rating of MODERATE, the same rating of the Preliminary Survey.



Prepared by: Robert Panko RBIM LLC Date: 01/25/2020

Approved by: _____ Date: _____
(Agency Administrator)