Appendix H

PENNSYLVANIA PRESCRIBED FIRE COMPLEXITY RATING WORKSHEET

Site:	Unit:	Agency:	Date:
Complexity Score (circle)			
Low (44-80 pts)	***Moderate (81-150 pts)***	***High (151-220 pts)***	

Weighting Factor x Complexity Value = Total points. Sum of Total points = Complexity Score. ***Assign each complexity value as a 1, 2, 3, 4, or 5.***

Complexity Element	Weighting Factor	Complexity Value (1-5)	Total Points	***Rationale and/or Mitigation Procedures*** (Use for clarification of rationale and/or Complexity Value.)
1. Safety	5			
2. Difficulty of Containment	5			
3. Fuels and Fire Behavior	5			
4. Wildland / Urban Interface	5			
5. Objectives	4			
Sub Total (Page 1)				

Complexity Element	Weighting Factor	Complexity Value (1-5)	Total Points	***Rationale and/or Mitigation Procedures***	
6. Management Organization	4				
7. Contingency Planning and Resources	4				
8. Natural, Cultural, Social Values	3				
9. Air Quality Values	3				
10. Logistics	3				
11. Tactical Operations	2				
12. Cooperator Coordination	1				
Sub Total		**Page 2**		**Additional Comments:**	
		Page 1			
Complexity Score					**Rated by:**

Complexity Element	Complexity Value Evaluation Examples (Not all items necessarily need to be present)		
	1	3	5
1. Safety **Weighting Factor - 5**	▪ All safety issues have been identified and mitigated.	• A number of significant issues have been identified and some of them are difficult to address through mitigation.	• Complex safety issues exist.
2. Difficulty of Containment **Weighting Factor - 5**	• Low threat of escape past unit boundaries. • Probability of Ignition<50%. • Boundaries naturally defensible or firebreaks easily installed and defended. • Secondary control lines strong and easily accessed by vehicles and/or crew.	• Moderate threat of escape from unit boundaries. • 50<Probability of Ignition<70% • Moderate risk of slopover or spot fires. • Fuel type produces numerous firebrands. • Secondary control lines difficult to access or not secure.	• High threat of escape from unit boundaries. • Probability of Ignition>70%. • High risk of slopover or spot fires. • Secondary control lines non-existent or inadequate without significant resource commitment.
3. Fuels and Fire Behavior **Weighting Factor - 5**	• Low variability in slope & aspect. • Weather uniform and predictable. • Surface fuels (grass and/or needles) only. • No drought present or predicted within burn period. • Duff or organic soils will not ignite.	• Moderate variability in slope & aspect. • Weather variable but predictable. • Ladder fuels present and torching expected. • Fuel types/loads variable. • Dense, tall shrub or mid-seral forest communities. • Drought index indicates normal to moderate drought conditions; present expected within burn period. • Upper level of duff or organic soil will burn.	• High variability in slope & aspect. • Weather variable and difficult to predict. • Extreme fire behavior and/or stand replacement fire. • Fuel types/loads highly variable. • Altered fire regime, hazardous fuel /stand density conditions. • Drought index indicates severe drought conditions; present or expected within burn period. • Significant portions duff or organic soils will burn.
4. Wildland / Urban Interface **Weighting Factor - 5**	• No risk to people or property within or adjacent to fire, or values to be protected are easily mitigated. • Potential damage from escape low.	• Several values to be protected. • Mitigation through planning and/or preparations is complex. • May require some commitment of specialized resources. • Potential damage from escape moderate.	• Numerous values and/or high values to be protected. • Severe damage likely without significant commitment of specialized resources with appropriate skill levels. • Potential damage from escape high.

Complexity Element	Complexity Value Evaluation Examples (Not all items necessarily need to be present)		
	1	3	5
5. Objectives **Weighting Factor - 4**	• Prescriptions broad. • Easily achieved objectives.	• Reduction of both live and dead fuels. • Moderate to substantial changes in two or more strata of vegetation. • Objectives judged to be moderately hard to achieve. • Objectives may require moderately intense fire behavior.	• Precise treatment of fuels and multiple ecological objectives. • Major change in the structure of 2 or more vegetative strata. • Conflicts between objectives and constraints. • Requires a high intensity fire or a combination of fire intensities that are difficult to achieve.
6. Management Organization **Weighting Factor - 4**	• Span of control held to 2 - 3. • 6 - 12 person crew and 1 - 2 engines.	• Span of control held to 4 – 5. • Multiple resources required (engines, dozers, terra torch, etc.). • 8 - 20 person crew and 1 - 3 engines.	• Span of control greater than 5 – 7. • Multiple branch, divisions or groups. • Specialized resources needed to accomplish objectives. • Organized management team required (Fire Use or Incident Management).
7. Contingency Planning and Resources **Weighting Factor - 4**	• Adequate contingency resources on site.	• Contingency resources limited or have more than a 15 - 30 minutes response time.	• Contingency resources limited or have more than a 30+ minutes response time.
8. Natural, Cultural, and Social Values **Weighting Factor - 3**	• No risk to natural, cultural, and/or social resources within or adjacent to fire, or mitigation through planning and preparations is adequate.	• Several values to be protected. • Mitigation through planning and/or preparations is complex. • May require some commitment of specialized resources.	• Numerous values and/or high values to be protected. • Severe damage likely without significant commitment of specialized resources with appropriate skill levels.
9. Air Quality Values **Weighting Factor - 3**	• Few smoke sensitive areas near fire. • Smoke produced for 1 or fewer burning periods. • Air quality agencies generally require only initial notification and/or permitting. • No potential for scheduling conflicts with cooperators.	• Multiple smoke sensitive areas, but smoke impact mitigated in plan. • Smoke produced for 2-3 burning periods. • Infrequent consultation with air quality agencies is needed. • Low potential for scheduling conflicts with cooperators.	• Multiple smoke sensitive areas with complex mitigation actions required. • Health or visibility complaints likely. • Smoke produced for greater than 3 burning periods. • Smoke sensitive Class I air-sheds. • Frequent consultation with air quality agencies is needed. • High potential for scheduling conflicts with cooperators.

Complexity Element	Complexity Value Evaluation Examples (Not all items necessarily need to be present)		
	1	3	5
10. Logistics **Weighting Factor - 3**	• Easy access. • Duration of fire is 1 day (holding or monitoring).	• Difficult access. • Duration of fire support between 2 and 3 days. • Logistical position assigned. • Anticipated difficulty in obtaining resources.	• No vehicle access. • Duration of support is greater than 3 days. • Multiple logistical positions assigned. • High difficulty in obtaining resources.
11. Tactical Operations **Weighting Factor - 2**	• Simple ignition patterns with only one igniter inside the unit. • Ignition complete within one burning period. • Single ignition method used. • Resources required for 1 day. • Holding requirements minimal.	• Multiple firing methods and/or sequences with two igniters inside the unit at once. • Use of specialized ignition methods (i.e., terra-torch or Premo-Mark III). • Ignition continues for two burning periods. • Resources required for 2 to 3 days. • Holding actions to direct or delay fire spread.	• Complex firing patterns highly dependent upon local conditions. • Simultaneous use of multiple firing methods and/or sequences, greater than 2 igniters inside unit. • Simultaneous ground and aerial ignition. • Use of heli-torch. • Resources required for over 3 days. • Multiple mitigation actions at variable temporal and spatial points identified. • Aerial support for mitigation actions desirable or necessary.
12. Cooperator Coordination **Weighting Factor - 1**	• Cooperators not involved in operations. • No concerns.	• Simple joint-jurisdiction fires. • Some competition for resources. • Some concerns.	• Complex multi-jurisdictional fires. • High competition for resources. • High concerns.