

# Fire Fuel Protocol:

## Transect Measurements Data Sheet

School Name: \_\_\_\_\_

Observer Names: \_\_\_\_\_

Date: \_\_\_\_\_ Study Site Name (give your site a unique name): \_\_\_\_\_

Number of Transects: \_\_\_\_\_

### *Woody Fuel Counts*

	Transect 1	Transect 2	Transect 3	Transect 4
Direction of transect (True North)	90°	330°	270°	210°
Slope of transect (degrees)				
0-1 cm diameters (5-7 m mark)				
1-3 cm diameters (5-10 m mark)				
3-8 cm diameters (5-25 m mark)				

	Transect 5	Transect 6	Transect 7
Direction of transect (True North)	150°	90°	30°
Slope of transect (degrees)			
0-1 cm diameters (5-7 m mark)			
1-3 cm diameters (5-10 m mark)			
3-8 cm diameters (5-25 m mark)			

**8+ cm Diameters and Log Decay Classes (between 5-25 m along transect)**

LDC = Log Decay Class

Log	Transect 1	Transect 2	Transect 3	Transect 4
Azimuth (True North)	90°	330°	270°	210°
	Diameter (cm)/ LDC	Diameter (cm)/ LDC	Diameter (cm)/ LDC	Diameter (cm)/ LDC
1	/	/	/	/
2	/	/	/	/
3	/	/	/	/
4	/	/	/	/
5	/	/	/	/
6	/	/	/	/
7	/	/	/	/
8	/	/	/	/
9	/	/	/	/
10	/	/	/	/

Log	Transect 5	Transect 6	Transect 37
Azimuth (True North)	150°	90°	30°
	Diameter (cm)/ LDC	Diameter (cm)/ LDC	Diameter (cm)/ LDC
1	/	/	/
2	/	/	/
3	/	/	/
4	/	/	/
5	/	/	/
6	/	/	/
7	/	/	/
8	/	/	/
9	/	/	/
10	/	/	/

**LDC-Log Decay Classes**

- 1 = sound, needles intact (green or brown)
- 2 = sound, bark and branches present
- 3 = sound, bark partially intact, branches gone
- 4 = rotten, bark and branches gone
- 5 = rotten, more than half the log diameter above soil surface

**Summary of 8 +cm logs**

	Transect 1	Transect 2	Transect 3	Transect 4	Transect 5	Transect 6	Transect 7
Total 8+ cm logs							
Total rot class 1 logs							
Total rot class 2 logs							
Total rot class 3 logs							
Total rot class 4 logs							
Total rot class 5 logs							

**Shrub - Dead and Live Cover and Height Estimates at 15 m and 25 m Mark**

	Transect 1	Transect 2	Transect 3	Transect 4
Azimuth (True North)	90°	330°	270°	210°
	Live / Dead	Live / Dead	Live / Dead	Live / Dead
Cover 15 m mark Canopy Cover Class	/	/	/	/
Height 15 m mark (cm)	/	/	/	/
Cover 25 m mark Canopy Cover Class	/	/	/	/
Height 25 m mark (cm)	/	/	/	/

	Transect 5	Transect 6	Transect 7
Azimuth (True North)	150°	90°	30°
	Live / Dead	Live / Dead	Live / Dead
Cover 15 m mark Canopy Cover Class	/	/	/
Height 15 m mark (cm)	/	/	/
Cover 25 m mark Canopy Cover Class	/	/	/
Height 25 m mark (cm)	/	/	/

Table FF-2: Cover Classes

Cover Class	Percent
01	Less than 1 %
03	1 to 5%
10	5 to 15%
20	15 to 25%
30	25 to 35%
40	35 to 45%
50	45 to 55%
60	55 to 65%
70	65 to 75%
80	75 to 85%
90	85 to 95%
99	95 to 100%

**Herbaceous - Dead and Live Cover and Height Estimates at 15 m and 25 m Mark**

	<b>Transect 1</b>	<b>Transect 2</b>	<b>Transect 3</b>	<b>Transect 4</b>
Azimuth (True North)	90°	330°	270°	210°
	Live / Dead	Live / Dead	Live / Dead	Live / Dead
Cover 15 m mark Canopy Cover Class	/	/	/	/
Height 15 m mark (cm)	/	/	/	/
Cover 25 m mark Canopy Cover Class	/	/	/	/
Height 25 m mark (cm)	/	/	/	/

	<b>Transect 5</b>	<b>Transect 6</b>	<b>Transect 7</b>
Azimuth (True North)	150°	90°	30°
	Live / Dead	Live / Dead	Live / Dead
Cover 15 m mark Canopy Cover Class	/	/	/
Height 15 m mark (cm)	/	/	/
Cover 25 m mark Canopy Cover Class	/	/	/
Height 25 m mark (cm)	/	/	/

**Duff and Litter - Depth Measurements in Centimeters at 15 m and 25 m Mark**

	Transect 1	Transect 2	Transect 3	Transect 4
Azimuth (True North)	90°	330°	270°	210°
	Total Depth/ Duff Depth	Total Depth/ Duff Depth	Total Depth/ Duff Depth	Total Depth/ Duff Depth
15 m mark (cm)	/	/	/	/
25 m mark (cm)	/	/	/	/

	Transect 5	Transect 6	Transect 7
Azimuth (True North)	150°	90°	30°
	Total Depth/ Duff Depth	Total Depth/ Duff Depth	Total Depth/ Duff Depth
15 m mark (cm)	/	/	/
25 m mark (cm)	/	/	/

**Table FF-3: Fuel Types and Size Classes Used in Fire Management.** The classes of fuels used in this protocol. The diameters of the downed wood are often referred to the average length of time it takes to dry the wood.

Fuel Type	Size (twig, branch, or trunk diameter)	Description
Crown Foliage	Any	Living and dead crown foliage including needles and broad leaves
Crown Branchwood	0 to 3 cm	Live and dead crown woody branches
Shrub — Live	Any	Living woody plants – trees and shrubs less than 2 meters tall
Shrub — Dead	Any	Dead shrubby material suspended above ground. This includes trees and shrubs less than 2 meters tall.
Herbaceous - Live	Any	Live herbaceous plants including grasses, sedges, forbs, ferns, and lichen
Herbaceous — Dead	Any	Dead herbaceous plant parts above ground
Litter	None	Recently fallen needles, leaves, cones, and bark
Duff	None	Partially decomposed organic material below the litter layer
Downed Woody	0 to 1 cm	Takes 1 hour to dry woody twigs and branches
	1 to 3 cm	Takes 10 hours to dry woody twigs and branches
	3 to 8 cm	Takes 100 hours to dry woody branches
	8 + cm	Takes 1000 or more hours to dry branches and logs