

**FIELD INSTRUCTIONS
FOR THE ANNUAL INVENTORY OF
CALIFORNIA, OREGON, AND WASHINGTON
2010**



**SUPPLEMENT FOR:
FIRE EFFECTS AND RECOVERY STUDY

FOREST INVENTORY AND ANALYSIS
RESOURCE MONITORING AND ASSESSMENT PROGRAM
PACIFIC NORTHWEST RESEARCH STATION
USDA FOREST SERVICE**

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CHAPTER 1 FIRE EFFECTS AND RECOVERY STUDY

This field guide supplemental describes the data items to record for Fire Effects and Recovery Study (FERS) plots; it is a supplement to the 2010 Field Instructions for the Annual Inventory of California, Oregon, and Washington (i.e., “2010 PFSL manual”).

These plots are pre-selected; data items are required as specified when FIRE PLOT = Y. Additional information is collected on these plots, along with any other required measurements for the plot (e.g., P2 and P3 data). P2 measurements are always done when FIRE PLOT = Y, whether the fire plot is on panel that year or not; P3 measurements are only done if the fire plot is also a P3 plot on panel that year.

SECTION 1.1 FIRE PLOT INFORMATION

Several fire data items for Tree, Ground Surface Cover, Understory Vegetation, Down Woody Material, and Fire Plot Photographs will be collected when PLOT IN FIRE PERIMETER = Y. If PLOT IN FIRE PERIMETER = N, only the data items in Subsection 1.1.2 Fire Plot Information Collected in the Field, are recorded for this study.

SUBSECTION 1.1.1 DOWNLOADED FIRE PLOT INFORMATION

Item 1.1.1.1 FIRE PLOT (PNW) [FIRE_PLOT]

This is a downloaded code identifying if the plot has been selected as a FERS plot. It is assigned in the office prior to the field visit and cannot be updated in the field.

When collected:	All plots	
Field width:	1 character	
Tolerance:	N/A	
Values:	Code	Definition
	Y	Plot has been selected as a FERS plot
	N	Plot is not a FERS plot

Item 1.1.1.2 FIRE NAME (PNW) [FIRE_NAME]

This is a downloaded item identifying the name of the fire. It is assigned in the office prior to the field visit, and cannot be updated in the field.

When collected:	FIRE PLOT = Y	
Field Width:	40 characters	
Tolerance:	N/A	
Values:	English language words, phrases and numbers	

SUBSECTION 1.1.2 FIRE PLOT INFORMATION COLLECTED IN THE FIELD

Item 1.1.2.1 PLOT IN FIRE PERIMETER (PNW) [PLOT_IN_FIRE_PERIMETER]

Record whether any portion of the plot falls within the “field observed” perimeter of the main fire or a spot fire (a fire detached from and caused by the main fire). Mentally draw an outline around the obvious perimeter of the main fire or spot fire to help determine this. It might be helpful for crews to assess this upon approaching the plot area. Record “spot fire” and approximate size (acres or square feet) in PLOT NOTES if the plot is located in a spot fire. **Caution: the plot does not have to be affected by fire to be within the fire perimeter. Fire behavior often leads to unburned pockets.**

When collected:	FIRE PLOT = Y	
Field width:	1 Character	
Tolerance:	No errors	
Values:	Code	Definition
	Y	Plot falls within the perimeter of the main fire or a spot fire
	N	Plot does not fall within the perimeter of the main fire or a spot fire

Item 1.1.2.2 DISTANCE TO FIRE EFFECTS (PNW) [DIST_TO_FIRE_EFFECTS]

Record, to the nearest foot, the shortest distance (horizontal) from plot center (the cedar stake at subplot 1) to the closest area visibly affected by fire. This measurement should be accurately measured if the distance for this data item is less than 200 feet. If the distance is greater than or equal to 200 feet, this value can be estimated. Use resources available (photographs, helicopter, etc.) for estimated distances. Record zero if plot center has burned and use "9999" for distances of 9999 feet and greater.

When collected:	FIRE PLOT = Y
Field width:	4 digits
Tolerance:	+/- 5 percent if ≤ 200 feet, +/- 15 percent if > 200 feet
Values:	0000 - 9999

Item 1.1.2.3 PLOT DIRECTLY AFFECTED BY FIRE (PNW) [PLOT_AFFECTED_BY_FIRE]

Record whether the plot area was burned or directly affected by fire. The plot area includes any of the four macroplots (or within the hectare plot, if installed). Walk around plot area to look for wilting/dying foliage, scorching, burning, charred soil, and other physical effects of fire. These physical effects should be found within the specified area of the plot and not be a result of any physical displacement (Example: charred log that rolled downhill from its original location onto the plot that has no other physical effects from fire would be coded as "N").

When collected:	PLOT IN FIRE PERIMETER = Y	
Field width:	1 Character	
Tolerance:	No errors	
Values:	Code	Definition
	Y	Plot is directly affected by fire
	N	Plot is not directly affected by fire

SECTION 1.2 GROUND SURFACE COVER

This section describes the ground surface cover data to be recorded on each individual microplot (6.8-foot horizontal radius sample area). **This includes characterizing areas below plants and below pieces of wood that are not in contact with the ground.** The basal cover of live grass and other live non-woody plant stems is ignored; record the cover of the substrate from which these stems emerge as best you can. For example, if grass emerges from lightly charred exposed humus, record the cover under PERCENT LIGHT CHAR EXPOSED HUMUS as if the area occupied by the grass stems is completely covered by the humus. The goal is to characterize the post-fire state of the soils.

After recording the data items in Subsection 1.2.1, Ground Surface Cover Data Items, estimate the cover and measure the depth of new litter (data items in Subsection 1.2.2, New Litter Cover). After new litter is assessed, it may be physically removed to aid in estimating cover and measuring the depth of the remaining components. New litter is always disregarded in this way when assessing the depth and cover of the remaining components. Cover for the remaining components should add up to 100 percent.

Evaluate the 6.8-foot radius sample area and record the percent cover for each surface cover type. Include the cover type component up to 1.0 feet height, or on an object that is on the ground. For example, include moss on a 14.0 inch diameter log which is on the ground.

Depth measurements are taken at four sampling points located 6.8 feet from the center of the sampling area on cardinal directions (north, east, south, west); mark each location with a small piece of flagging or a nail to facilitate QA inspection.

The objective of the data items in Subsection 1.2.4, Previous Litter Cover, through Subsection 1.2.7, Depth of Exposed Humus (Previous Litter Cover, Depth of Previous Organic Layer when Previous Litter Exists, Exposed Humus Cover, Depth of Exposed Humus), is to determine the cover and depth of pre-fire surface organic matter after new litter is removed. Surface organic matter includes humus and previous (pre-fire) litter. Do not dig below the previous letter to see if there is humus. Some microplots will have both humus and previous litter exposed after removal of the new litter (example: previous litter is partially burned off and humus is exposed in patches), therefore coverage will be recorded for both. However, depth measurements for each cardinal direction can only be greater than zero for one or the other (e.g., when DEPTH OF PREVIOUS ORGANIC LAYER NORTH is greater than zero, then DEPTH OF EXPOSED HUMUS NORTH must equal zero).

Note: Beginning in 2010, standardized GROUND SURFACE COVER NOTES are required for cover of surface water and cover of surface volcanic ash, when they exist, as a percentage of the 6.8-foot sample area. The cover of water should be recorded as "WATER CVR " followed by the percent cover value (e.g., "WATER CVR 10"). The cover of surface volcanic ash should be recorded as "VOLASH CVR " followed by the percent cover value (e.g., "VOLASH CVR 25"). The cover of volcanic ash should not be recorded separately in GROUND SURFACE COVER NOTES if it is incorporated into the humus or other component, although its presence should be noted.

Microplot Cover Estimation Guide (Hint: 8.5" x 11" is equal to about 0.5 percent coverage)

percent	area (sq ft)	circle radius (ft)	square side length (ft)
1	1.4	0.6	1.2
10	14.5	2.1	3.8
20	29.0	3.0	5.3
30	43.5	3.7	6.6
40	58.0	4.3	7.6
50	72.6	4.8	8.5
60	87.1	5.2	9.3
70	101.6	5.6	10.0
80	116.1	6.0	10.7
90	130.6	6.4	11.4
100	145.2	6.8	12.0

SUBSECTION 1.2.1 GROUND SURFACE COVER DATA ITEMS

Item 1.2.1.1 SUBPLOT NUMBER (PNW) [SUBP]

Record the code corresponding to the number of the subplot containing the microplot to be sampled.

When collected:	All subplots	
Field width:	1 digit	
Tolerance:	No errors	
Values:	Code	Definition
	1	center subplot
	2	north subplot
	3	southeast subplot
	4	southwest subplot

Item 1.2.1.2 FIRE SUPPRESSION DISTURBANCE (PNW) [FIRE_SUPPRESS_DSTRB]

Record whether any of the microplot has been disturbed due to fire suppression efforts (fire line, water spray, tire ruts, etc.). Make a note in GROUND SURFACE COVER NOTES as to the type of disturbance and percentage of microplot disturbed.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2	
Field width:	1 character	
Tolerance:	No errors	
Values:	Code	Definition
	Y	Microplot has been disturbed due to fire suppression efforts
	N	Microplot has not been disturbed due to fire suppression efforts

Item 1.2.1.3 TOTAL SAMPLE AREA BURNED PERCENT (PNW) [TOT_SAMPLE_AREA_BURN_PCT]

Record the percent of the 6.8-foot radius sample area that was burned in the fire.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2	
Field width:	3 digits	
Tolerance:	+/- 10 percent	
Values:	000 - 100	

Item 1.2.1.4 ASPECT (PNW) [ASPECT]

Record the average direction (aspect) that the 6.8-foot radius sample area faces. Use just the area within the 6.8-foot radius when evaluating aspect, not the surrounding area. Record 999 for indeterminate aspects (multiple directions).

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2	
Field width:	3 digits	
Tolerance:	+/- 10 degrees	
Values:	Code	Aspect
	000	no aspect, slope < 5 percent
	001	1 degree
	002	2 degrees
	...	...
	...	...
	360	360 degrees, due north
	999	Indeterminate aspect

SUBSECTION 1.2.2 NEW LITTER COVER**Item 1.2.2.1 TOTAL NEW LITTER PERCENT COVER (PNW) [NEW_LITTER_TOT_CVR]**

Record the percentage of the 6.8-foot sample area covered by new litter that has fallen onto the ground since the fire. New litter for burn severity purposes is any needle, twig, or branch that is **less than or equal to** 2.9 inch diameter, seed cones of any size, and newly fallen burnt bark chips. TOTAL NEW LITTER PERCENT COVER must be greater than zero if any DEPTH OF NEW LITTER value is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2	
Field width:	3 digits	
Tolerance:	+/- 10 percent	
Values:	000 - 100	

Item 1.2.2.2 BARK PERCENT OF NEW LITTER (PNW) [NEW_LITTER_BARK_PCT]

Record the percentage of the TOTAL NEW LITTER PERCENT COVER that is comprised of bark chips or flakes that have fallen off trees since the fire. This does **not** include bark layers under TOTAL BROWN CUBICAL ROT PERCENT COVER. **Caution:** This is expressed as a percentage of the total new litter, not the 6.8-foot sample area.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LITTER PERCENT COVER > 0	
Field width:	3 digits	
Tolerance:	+/- 10 percent	
Values:	000 - 100	

SUBSECTION 1.2.3 DEPTH OF NEW LITTER

Depth of new litter is measured at four locations, 6.8 feet from the center of the sampling area on cardinal directions (north, east, south, west). **After** measuring the depth at a sample point, mark the point with flagging or a nail to facilitate later QA inspection. If TOTAL NEW LITTER PERCENT COVER is zero, DEPTH OF NEW LITTER values must be zero. If any DEPTH OF NEW LITTER value is greater than zero, TOTAL NEW LITTER PERCENT COVER must be greater than zero.

Item 1.2.3.1 DEPTH OF NEW LITTER NORTH (PNW) [NEW_LITTER_DEPTH_N]

Record the depth of the new litter at the north sampling point, to the nearest 0.1 inch, that has fallen onto the ground since the fire. If greater than zero, but less than 0.1 inch, round up to 0.1 so that indication of presence is not lost. If TOTAL NEW LITTER PERCENT COVER is zero, DEPTH OF NEW LITTER NORTH must be zero. If DEPTH OF NEW LITTER NORTH is greater than zero, TOTAL NEW LITTER PERCENT COVER must be greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2	
Field width:	4 digits	

Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.3.2 DEPTH OF NEW LITTER EAST (PNW) [NEW_LITTER_DEPTH_E]

Record the depth of the new litter of the east sampling point, to the nearest 0.1 inch, that has fallen onto the ground since the fire. If greater than zero, but less than 0.1 inch, round up to 0.1 so that indication of presence is not lost. If TOTAL NEW LITTER PERCENT COVER is zero, DEPTH OF NEW LITTER EAST must be zero. If DEPTH OF NEW LITTER EAST is greater than zero, TOTAL NEW LITTER PERCENT COVER must be greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.3.3 DEPTH OF NEW LITTER SOUTH (PNW) [NEW_LITTER_DEPTH_S]

Record the depth of the new litter of the south sampling point, to the nearest 0.1 inch, that has fallen onto the ground since the fire. If greater than zero, but less than 0.1 inch, round up to 0.1 so that indication of presence is not lost. If TOTAL NEW LITTER PERCENT COVER is zero, DEPTH OF NEW LITTER SOUTH must be zero. If DEPTH OF NEW LITTER SOUTH is greater than zero, TOTAL NEW LITTER PERCENT COVER must be greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.3.4 DEPTH OF NEW LITTER WEST (PNW) [NEW_LITTER_DEPTH_W]

Record the depth of the new litter of the west sampling point, to the nearest 0.1 inch, that has fallen onto the ground since the fire. If greater than zero, but less than 0.1 inch, round up to 0.1 so that indication of presence is not lost. If TOTAL NEW LITTER PERCENT COVER is zero, DEPTH OF NEW LITTER WEST must be zero. If DEPTH OF NEW LITTER WEST is greater than zero, TOTAL NEW LITTER PERCENT COVER must be greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

SUBSECTION 1.2.4 PREVIOUS LITTER COVER

For the following two items, estimate the cover of previous litter by burn status (unburned or light char). Previous litter for burn severity purposes is any needle, twig, or branch that is **less than or equal to** 2.9 inch diameter, and seed cones of any size. Note that other organic layers (humus, root mass, rotten wood) may be present, exposed and/or beneath the previous litter layer, but these are not to be considered in the estimate of previous litter cover. New litter is not included in previous litter measurements, so it must be disregarded, and may be physically removed if necessary, before assessing previous litter covers and depths.

Item 1.2.4.1 PERCENT UNBURNED PREVIOUS LITTER (PNW) [PREV_LITTER_UNBURNED]

Record the percent of the 6.8-foot sample area covered by unburned litter that still exists from before the fire. Unburned previous litter shows no sign of charcoal. Other organic material below the previous litter layer may or may not be charred; quantification of light char will be based on previous litter only.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.4.2 PERCENT LIGHT CHAR PREVIOUS LITTER (PNW) [PREV_LITTER_LIGHT_CHAR]

Record the percent of the 6.8-foot sample area covered by lightly charred litter that still exists from before the fire. Lightly charred previous litter shows sign of charcoal. Other organic material below the previous litter layer may or may not be charred; quantification of light char will be based on previous litter only.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.5 DEPTH OF PREVIOUS ORGANIC LAYER WHEN PREVIOUS LITTER EXISTS

At each of four sampling points located 6.8 feet from the center of the sampling area on cardinal directions (N, E, S, W), record the depth of the previous organic layer, including previous litter, humus, root mass, and any **detached** wood (rotten or sound), only when previous litter (as so defined) makes up the top layer of organic material after removal of new litter. If previous litter does not cover a sample point (for example, the exposed cover there is mineral soil or humus), then the depth of previous organic layer at that point will be 0. Record depth to the nearest 0.1 inch.

Item 1.2.5.1 DEPTH OF PREVIOUS ORGANIC LAYER NORTH (PNW) [PREV_ORG_LAYER_DEPTH_N]

Record the depth of the previous organic layer at the north sampling point, including previous litter, humus, root mass, and detached wood (rotten or sound), only when previous litter makes up the top layer of organic material. If previous litter does not cover the sample point (for example, the exposed cover there is mineral soil or humus), then the depth of previous organic layer at that point will be zero. Disregard new litter when evaluating the depth. Record depth to the nearest 0.1 inch.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF EXPOSED HUMUS NORTH = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.5.2 DEPTH OF PREVIOUS ORGANIC LAYER EAST (PNW) [PREV_ORG_LAYER_DEPTH_E]

Record the depth of the previous organic layer at the east sampling point, including previous litter, humus, root mass, and detached wood (rotten or sound), only when previous litter makes up the top layer of organic material. If previous litter does not cover the sample point (for example, the exposed cover there is mineral soil or humus), then the depth of previous organic layer at that point will be zero. Disregard new litter when evaluating the depth. Record depth to the nearest 0.1 inch.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF EXPOSED HUMUS EAST = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.5.3 DEPTH OF PREVIOUS ORGANIC LAYER SOUTH (PNW) [PREV_ORG_LAYER_DEPTH_S]

Record the depth of the previous organic layer at the south sampling point, including previous litter, humus, root mass, and detached wood (rotten or sound), only when previous litter makes up the top layer of organic material. If previous litter does not cover the sample point (for example, the exposed cover there is mineral soil or humus), then the depth of previous organic layer at that point will be zero. Disregard new litter when evaluating the depth. Record depth to the nearest 0.1 inch.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF EXPOSED HUMUS SOUTH = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.5.4 DEPTH OF PREVIOUS ORGANIC LAYER WEST (PNW) [PREV_ORG_LAYER_DEPTH_W]

Record the depth of the previous organic layer at the west sampling point, including previous litter, humus, root mass, and detached wood (rotten or sound), only when previous litter makes up the top layer of organic material. If previous litter does not cover the sample point (for example, the exposed cover there is mineral soil or humus), then the depth of previous organic layer at that point will be zero. Disregard new litter when evaluating the depth. Record depth to the nearest 0.1 inch.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF EXPOSED HUMUS WEST = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

SUBSECTION 1.2.6 EXPOSED HUMUS COVER

Estimate the cover of exposed humus. Humus is defined as a soil layer dominated by organic material derived from the decomposition of plant and animal litter and deposited on either an organic or a mineral surface. This layer is distinguished from the previous litter layer in that the original organic material has undergone sufficient decomposition that the source of the material (e.g., individual plant parts) can no longer be identified. Humus existing underneath previous litter is not considered in this estimate. Disregard new litter when evaluating the coverage.

The sum of PERCENT UNBURNED EXPOSED HUMUS and PERCENT LIGHT CHAR EXPOSED HUMUS must be greater than zero if any DEPTH OF EXPOSED HUMUS value is greater than zero. If PERCENT UNBURNED EXPOSED HUMUS and PERCENT LIGHT CHAR EXPOSED HUMUS are both zero, no DEPTH OF EXPOSED HUMUS value should be recorded.

Item 1.2.6.1 PERCENT UNBURNED EXPOSED HUMUS (PNW) [PREV_HUMUS_UNBURNED]

Record the percentage of the 6.8-foot sample area covered by exposed humus that still exists from before the fire. Exposed humus is the decomposed organic layer that is not covered by previous litter.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.6.2 PERCENT LIGHT CHAR EXPOSED HUMUS (PNW) [PREV_HUMUS_LIGHT_CHAR]

Record the percentage of the 6.8-foot sample area covered by exposed humus that still exists from before the fire that is lightly charred. Light char humus is blackened and can still be identified.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.7 DEPTH OF EXPOSED HUMUS

At each of four sampling points located 6.8 feet from the center of the sampling area on cardinal directions (north, east, south, west), record the depth of humus (and any root mass and rotten wood existing below it) only when humus makes up the top layer of organic material. Note that any humus on the plot will have existed before the fire, as new humus does not form over a time period as short as a year. Disregard new litter when evaluating the depth. If exposed humus does not cover a sample point (for example, the exposed cover there is mineral soil or previous litter), then humus depth at that point will be zero. Record depth to the nearest 0.1 inch.

The sum of PERCENT UNBURNED EXPOSED HUMUS and PERCENT LIGHT CHAR EXPOSED HUMUS must be greater than zero if any DEPTH OF EXPOSED HUMUS value is greater than zero. If PERCENT UNBURNED EXPOSED HUMUS and PERCENT LIGHT CHAR EXPOSED HUMUS are both zero, no DEPTH OF EXPOSED HUMUS value should be greater than zero.

Item 1.2.7.1 DEPTH OF EXPOSED HUMUS NORTH (PNW) [PREV_HUMUS_DEPTH_N]

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF PREVIOUS ORGANIC LAYER NORTH = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.7.2 DEPTH OF EXPOSED HUMUS EAST (PNW) [PREV_HUMUS_DEPTH_E]

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF PREVIOUS ORGANIC LAYER EAST = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.7.3 DEPTH OF EXPOSED HUMUS SOUTH (PNW) [PREV_HUMUS_DEPTH_S]

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF PREVIOUS ORGANIC LAYER SOUTH = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

Item 1.2.7.4 DEPTH OF EXPOSED HUMUS WEST (PNW) [PREV_HUMUS_DEPTH_W]

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, DEPTH OF PREVIOUS ORGANIC LAYER WEST = 0
Field width:	4 digits
Tolerance:	+/- 5 tenths of an inch
Values:	00.0 - 24.0

SUBSECTION 1.2.8 EXPOSED MINERAL SOIL COVER**Item 1.2.8.1 TOTAL MINERAL SOIL PERCENT COVER (PNW) [MIN_SOIL_TOT_CVR]**

Record the percentage of the 6.8-foot sample area covered by surface mineral soil. Disregard new litter when evaluating the coverage. The following four surface mineral soil components (Item 1.2.8.2 through Item 1.2.8.5) are included in this item, and should total 100 percent if TOTAL MINERAL SOIL PERCENT COVER is greater than zero.

Note: Exposed Brown Cubical Rot Cover (Subsection 1.2.10), that only shows the imprint (gray ghost) of being present and is completely consumed is represented as mineral soil.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.8.2 PERCENT UNBURNED MINERAL SOIL (PNW) [MIN_SOIL_UNBURNED]

Record the percentage of TOTAL MINERAL SOIL PERCENT COVER that is comprised of mineral soil that shows no sign of charcoal.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL MINERAL SOIL PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.8.3 PERCENT LIGHT CHAR MINERAL SOIL (PNW) [MIN_SOIL_LIGHT_CHAR]

Record the percentage of TOTAL MINERAL SOIL PERCENT COVER that is comprised of mineral soil that is blackened.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL MINERAL SOIL PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.8.4 PERCENT MODERATE CHAR MINERAL SOIL (PNW) [MIN_SOIL_MOD_CHAR]

Record the percentage of TOTAL MINERAL SOIL PERCENT COVER that is comprised of mineral soil that is ash (gray) colored.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL MINERAL SOIL PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.8.5 PERCENT DEEP CHAR MINERAL SOIL (PNW) [MIN_SOIL_DEEP_CHAR]

Record the percentage of TOTAL MINERAL SOIL PERCENT COVER that is comprised of mineral soil that is charred an orange color.

In situations where soils are particularly orange, deep char soil should only be coded if there is a high, sustained heat source in close proximity (stump, down log, etc.) as there is otherwise a significant danger of confusing unburned soil with deep char soil. It is recommended that in such situations, crews pick up two baggies of soil from a clearly unburned area (e.g., outside the fire) to use as reference when evaluating soil color on the microplot (with one of the baggies of soil wetted and the other dry).

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL MINERAL SOIL PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.9 EXPOSED ROCK COVER

Note: Beginning in 2010, surface water cover is recorded in combination with cover of exposed surface rock. The cover of surface water should also be recorded separately in GROUND SURFACE COVER NOTES using a standard note of "WATER CVR " followed by the cover of water as a percentage of the 6.8-foot sample area (e.g., "WATER CVR 10").

Item 1.2.9.1 TOTAL ROCK PERCENT COVER (PNW) [ROCK_TOT_CVR]

Record the percentage of the 6.8-foot sample area covered by surface rock and water. Disregard new litter when evaluating the coverage. The following three rock and water components are included in this item, and should total 100 percent if TOTAL ROCK PERCENT COVER is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.9.2 PERCENT UNBURNED ROCK (PNW) [ROCK_UNBURNED]

Record the percentage of TOTAL ROCK PERCENT COVER that is comprised of all surface water and/or surface rock that shows no sign of charcoal or being burnt.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL ROCK PERCENT COVER > 0
Field width:	3 digits

Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.9.3 PERCENT LIGHT CHAR ROCK (PNW) [ROCK_LIGHT_CHAR]

Record the percentage of TOTAL ROCK PERCENT COVER that is comprised of of rock that is blackened around the edges.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL ROCK PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.9.4 PERCENT MODERATE CHAR ROCK (PNW) [ROCK_MOD_CHAR]

Record the percentage of TOTAL ROCK PERCENT COVER that is comprised of rock that is surrounded by orange or gray mineral soil, completely burned over. Moderate char also includes rocks that are heavily charred.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL ROCK PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.10 EXPOSED BROWN CUBICAL ROT COVER

Item 1.2.10.1 TOTAL BROWN CUBICAL ROT PERCENT COVER (PNW) [BRWN_CUBICAL_ROT_TOT_CVR]

Record the percentage of the 6.8-foot sample area covered by surface brown (brown or white) cubical rotten wood (including associated bark layers when present, but not bark chips), not yet rotten down (detached) wood, and basal area of live and dead attached woody material (includes trees and woody shrubs). Only the area where such wood is in contact with the surface is to be considered in this cover, for example, for a curved stick in contact with the ground at only a couple of points, only the area of the contact points would be considered brown cubical rot cover. Brown cubical rot is a separate category and is not included in the litter layer. Disregard new litter when evaluating the coverage of brown cubical rot. The following three brown cubical rot components are included in this item, and should total 100 percent if TOTAL BROWN CUBICAL ROT PERCENT COVER is greater than zero.

Note: Brown cubical rot that only shows the imprint (gray ghost) of being present and is completely consumed is now recorded in Subsection 1.2.8, Exposed Mineral Soil Cover.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.10.2 PERCENT UNBURNED BROWN CUBICAL ROT (PNW) [BRWN_CUBICAL_ROT_UNBURNED]

Record the percentage of TOTAL BROWN CUBICAL ROT PERCENT COVER that is comprised of unburned brown cubical rot that shows no sign of charcoal or being burnt.

For live and dead attached woody material, including trees and woody shrubs, evaluate only the area immediately in contact with the ground surface. To be included in PERCENT UNBURNED BROWN CUBICAL ROT, the entire surface of the piece must be unburned where it contacts the ground surface.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL BROWN CUBICAL ROT PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.10.3 PERCENT LIGHT CHAR BROWN CUBICAL ROT (PNW)

[BRWN_CUBICAL_ROT_LIGHT_CHAR]

Record the percentage of TOTAL BROWN CUBICAL ROT PERCENT COVER that is comprised of brown cubical rot pieces that, when considering their entire 3-dimensional surface, have only part of their surface burned.

For live and dead **attached** woody material, including trees and woody shrubs, evaluate only the surface area immediately in contact with the ground surface. For an attached piece to contribute to PERCENT LIGHT CHAR BROWN CUBICAL ROT, it must be only partially burned around its circumference where it contacts the ground surface.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL BROWN CUBICAL ROT PERCENT COVER > 0
Field width:	3digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.10.4 PERCENT MODERATE CHAR BROWN CUBICAL ROT (PNW)

[BRWN_CUBICAL_ROT_MOD_CHAR]

Record the percentage of TOTAL BROWN CUBICAL ROT PERCENT COVER that is comprised of brown cubical rot pieces that, when considering their entire 3-dimensional surface, have their entire surface burned.

For live and dead **attached** woody material, including trees and woody shrubs, evaluate only the surface area immediately in contact with the ground surface. For an attached piece to contribute to PERCENT MODERATE CHAR BROWN CUBICAL ROT, it must be burned all the way around its circumference where it contacts the ground surface.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL BROWN CUBICAL ROT PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.11 EXPOSED NEW MOSS COVER**Item 1.2.11.1 TOTAL NEW MOSS PERCENT COVER (PNW) [NEW_MOSS_TOT_CVR]**

Record the percentage of the 6.8-foot sample area covered by surface moss that has grown in since the fire. Disregard new litter when evaluating the coverage. The following four moss components are included in this item, and should total 100 percent if TOTAL NEW MOSS PERCENT COVER is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.11.2 PERCENT UNBURNED NEW MOSS (PNW) [NEW_MOSS_UNBURNED]

Record the percentage of TOTAL NEW MOSS PERCENT COVER that is comprised of new moss growing on unburned material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW MOSS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.11.3 PERCENT LIGHT CHAR NEW MOSS (PNW) [NEW_MOSS_LIGHT_CHAR]

Record the percentage of TOTAL NEW MOSS PERCENT COVER that is comprised of new moss growing on lightly charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW MOSS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.11.4 PERCENT MODERATE CHAR NEW MOSS (PNW) [NEW_MOSS_MOD_CHAR]

Record the percentage of TOTAL NEW MOSS PERCENT COVER that is comprised of new moss growing on moderately charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW MOSS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.11.5 PERCENT DEEP CHAR NEW MOSS (PNW) [NEW_MOSS_DEEP_CHAR]

Record the percentage of TOTAL NEW MOSS PERCENT COVER that is comprised of new moss growing on deeply charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW MOSS PERCENT COVER > 0
Field width:	32 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.12 EXPOSED PREVIOUS MOSS COVER

Note: Beginning in 2010, cover of exposed previous lichens, liverworts, and fungi are recorded in combination with cover of exposed previous moss.

Item 1.2.12.1 TOTAL PREVIOUS MOSS PERCENT COVER (PNW) [PREV_MOSS_TOT_CVR]

Record the percentage of the 6.8-foot sample area covered by moss, lichens, liverworts, and fungi that **existed before the fire**. Disregard new litter when evaluating the coverage. The following two moss, lichens, liverworts, and fungi components are included in this item, and should total 100 percent if TOTAL PREVIOUS MOSS PERCENT COVER is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.12.2 PREVIOUS UNBURNED MOSS PERCENT COVER (PNW) [PREV_MOSS_UNBURNED]

Record the percentage of TOTAL PREVIOUS MOSS PERCENT COVER that is comprised of unburned moss, lichens, liverworts, and fungi that **existed before the fire**.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL PREVIOUS MOSS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.12.3 PREVIOUS LIGHT CHAR MOSS PERCENT COVER (PNW) [PREV_MOSS_LIGHT_CHAR]

Record the percentage of TOTAL PREVIOUS MOSS PERCENT COVER that is comprised of lightly charred or scorched/fire-killed moss, lichens, liverworts, and fungi that **existed before the fire**.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL PREVIOUS MOSS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.13 EXPOSED NEW LIVERWORT COVER**Item 1.2.13.1 TOTAL NEW LIVERWORTS PERCENT COVER (PNW)** [LVRWRT_TOT_CVR]

Record the percentage of the 6.8-foot sample area covered by growing liverworts **which have grown in since the fire**. Disregard new litter when evaluating the coverage. The following four liverwort components are included in this item, and should total 100 percent if TOTAL NEW LIVERWORTS PERCENT COVER is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.13.2 PERCENT UNBURNED NEW LIVERWORTS (PNW) [LVRWRT_UNBURNED]

Record the percentage of TOTAL NEW LIVE LIVERWORTS PERCENT COVER that is comprised of liverworts growing on unburned material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LIVERWORTS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.13.3 PERCENT LIGHT CHAR NEW LIVERWORTS (PNW) [LVRWRT_LIGHT_CHAR]

Record the percentage of TOTAL NEW LIVE LIVERWORTS PERCENT COVER that is comprised of liverworts growing on material that is lightly charred.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LIVERWORTS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.13.4 PERCENT MODERATE CHAR NEW LIVERWORTS (PNW) [LVRWRT_MOD_CHAR]

Record the percentage of TOTAL NEW LIVE LIVERWORTS PERCENT COVER that is comprised of liverworts growing on material that is moderately charred.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LIVERWORTS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.13.5 PERCENT DEEP CHAR NEW LIVERWORTS (PNW) [LVRWRT_DEEP_CHAR]

Record the percentage of TOTAL NEW LIVE LIVERWORTS PERCENT COVER that is comprised of liverworts growing on material that is deeply charred.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LIVERWORTS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.14 EXPOSED NEW LICHEN AND FUNGUS COVER

Note: Beginning in 2010, exposed new fungus cover is recorded in combination with cover of exposed new lichens.

Item 1.2.14.1 TOTAL NEW LICHEN AND FUNGUS PERCENT COVER (PNW) [LICHEN_TOT_CVR]

Record the percentage of the 6.8-foot sample area covered by lichens and fungi **which have grown in since the fire**. Disregard new litter when evaluating the coverage. The following four lichen and fungus components are included in this item, and should total 100 percent if TOTAL NEW LICHEN AND FUNGUS PERCENT COVER is greater than zero.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.14.2 PERCENT UNBURNED NEW LICHEN AND FUNGUS (PNW) [LICHEN_UNBURNED]

Record the percentage of TOTAL NEW LICHEN AND FUNGUS PERCENT COVER that is comprised of lichens and fungi growing on unburned material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LICHEN AND FUNGUS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.14.3 PERCENT LIGHT CHAR NEW LICHEN AND FUNGUS (PNW) [LICHEN_LIGHT_CHAR]

Record the percentage of TOTAL NEW LICHEN AND FUNGUS PERCENT COVER cover that is comprised of lichens and fungi growing on lightly charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LICHEN AND FUNGUS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.14.4 PERCENT MODERATE CHAR NEW LICHEN AND FUNGUS (PNW) [LICHEN_MOD_CHAR]

Record the percentage of TOTAL NEW LICHEN AND FUNGUS PERCENT COVER that is comprised of lichens and fungi growing on moderately charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LICHEN AND FUNGUS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

Item 1.2.14.5 PERCENT DEEP CHAR NEW LICHEN AND FUNGUS (PNW) [LICHEN_DEEP_CHAR]

Record the percentage of TOTAL NEW LICHEN AND FUNGUS PERCENT COVER that is comprised of lichens and fungi growing on deeply charred material.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, TOTAL NEW LICHEN AND FUNGUS PERCENT COVER > 0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 - 100

SUBSECTION 1.2.15 GROUND COVER NOTES**Item 1.2.15.1 GROUND SURFACE COVER NOTES (PNW) [NOTES]**

Record notes pertaining to ground surface cover data items when needed.

Note: Beginning in 2010, standardized notes are required for cover of water and cover of surface volcanic ash, when they exist, as a percentage of the 6.8-foot sample area. The cover of water should be recorded as "WATER CVR " followed by the percent cover value (e.g., "WATER CVR 10"). The cover of surface volcanic ash should be recorded as "VOLASH CVR " followed by the percent cover value (e.g., "VOLASH CVR 25"). The cover of volcanic ash should not be recorded separately in GROUND SURFACE COVER NOTES if it is incorporated into the humus or other component, although its presence should be noted.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2, when needed for ground surface cover data items found under Section 1.2 (Ground Surface Cover)
Field Width:	2000 Characters
Tolerance:	N/A
Values:	English language words, phrases and numbers

SECTION 1.3 UNDERSTORY VEGETATION

The following is an additional P2 Vegetation Profile data item collected for fire plots.

Item 1.3.0.1 PERCENT NEWLY SPROUTED SHRUB COVER (PNW) [FIRE_EFFECT_SHRB_SPRT_CVR_PNWRS]

Record the total percentage of cover of shrubs, to the nearest one percent of the 24-foot radius subplot, that have sprouted since the fire. If cover is greater than zero but less than one percent, enter "01". If no newly sprouted shrub cover exists, enter zero. Include sprouts from previous roots, root collars, and stumps. Do not include individual shrubs or seedlings that are not sprouts.

When collected:	When PLOT DIRECTLY AFFECTED BY FIRE = Y: all subplots when accessible forest land condition classes (CONDITION CLASS STATUS = 1) total $\geq$ 50 percent of the subplot; or when measurable nonforest land condition classes (CONDITION CLASS STATUS = 2 and ADMINISTRATIVE FOREST CODE = 501 - 599) and forest land condition classes (CONDITION CLASS STATUS = 1) total $\geq$ 50 percent of the subplot.
Field width:	3 digits
Tolerance:	Cover estimates should be within one class of actual cover, based up the cover classes: 1-5%, 6-10%, 11-20%, 21-40%, 41-60%, 61-80%, and 81-100%
Values:	000 to 100

SECTION 1.4 DOWN WOODY MATERIALS

This section describes modifications to the standard coarsewoody debris (CWD) procedures used for Oregon, Washington, and California P2 and P3 plots.

Using the same procedures and codes established for P2 and P3 plots, collect the following CWD measurement on the additional tally pieces specified.

Item 1.4.0.1 PERCENT OF LOG CHARRED BY FIRE (PFSL) [CHRCO_PNWR]

PERCENT OF LOG CHARRED BY FIRE for this study is a modified version of the PERCENT OF LOG CHARRED BY FIRE data item (Item 11.2.7.6) included in the Field Instructions for the Annual Inventory of California, Oregon, and Washington; it includes additional pieces of coarse woody debris:

- Addition of tally pieces 3.0 inches to 19.9 inches
- Addition of tally pieces in decay class 4

For all logs **greater than or equal to** 3.0 inches diameter at the point of intersection **and** in DECAY CLASS 1, 2, 3, or 4, record a 1-digit code that represents the percentage of the log's surface area that has been charred by fire. Only examine the visible surface of the log. This data will be used by wildlife biologists to determine the impact fire has had on wildlife habitat. Wildlife tend to avoid charred logs because fire seals the wood making it slow to rot and hard to excavate.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, All subplots where accessible forest-land condition classes ≥ 50 percent of the subplot and each measurable nonforest land condition class (CONDITION CLASS STATUS = 2 and ADMINISTRATIVE FOREST CODE = 501-599), All tally pieces ≥ 3.0 inches Transect Diameter <u>and</u> Decay 1, 2, 3, and 4	
Field width:	1 digit	
Tolerance:	± 1 class	
Values:	Code	Definition
	0	None of the log is charred by fire
	1	Up to 1/3 of the log is charred by fire
	2	1/3 to 2/3 of the log is charred by fire
	3	2/3 or more of the log is charred by fire

SECTION 1.5 FIRE PLOT PHOTOGRAPHS

This section describes procedures for taking digital photographs of the plot area.

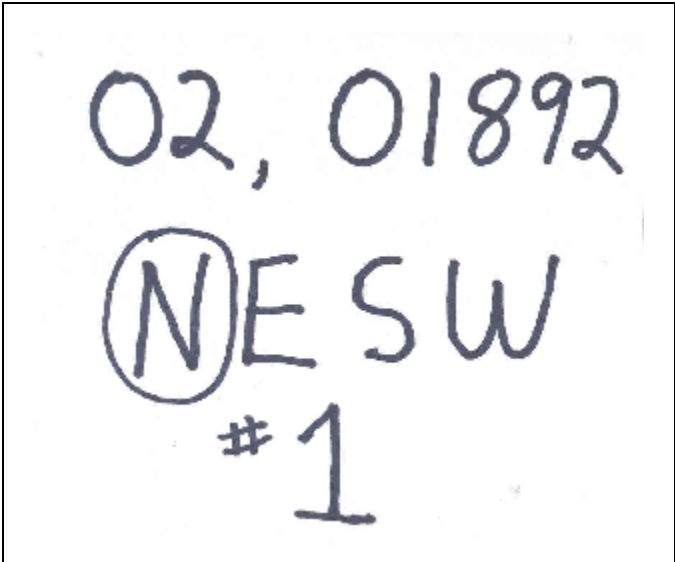
Photos are taken at cardinal directions from the plot center.

It is important to photograph both the tops of the trees and the ground. It may be necessary to take photos with the camera oriented horizontally and vertically.

Each photograph must include a clearly marked sheet of paper or similar label with the following information:

- STATE
- PLOT NUMBER
- Letter identifying the cardinal direction (N, E, S, W)
- Number identifying the photograph number taken from that cardinal position (1, 2, 3, etc.)

Label example:



Be sure not to obscure too much of the photo frame with the label.

Fire plot photograph post-field processing:

- All photos are to be transferred from the camera to the C:\Midas\MidasData\Work\pnwrs\Explanations folder on the laptop and labeled electronically in **.jpg format. The file name should match the plot file name, appended with cardinal direction, photo number for that cardinal direction, "fire", and ".jpg"**.
- Label example = CA.107.06694.05.10.P2.400.STD_N_1_fire.jpg
- The next photo for the same cardinal direction would be labeled CA.107.06694.05.10.P2.400.STD_N_2_fire.jpg
- After labeling, save the photos in the C:\Midas\MidasData\Work\pnwrs\Explanations folder.
- Using WinZIP, zip all photos for the plot into a single file named with the Midas plot file name plus "_photos.zip" (example = CA.107.06694.05.10.P2.400.STD_photos.zip). This ZIP file must be saved in the C:\Midas\MidasData\Work\pnwrs\Explanations folder.

When collected:	PLOT IN FIRE PERIMETER = Y, SUBPLOT STATUS = 1 or 2
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SECTION 1.6 TREE DATA ITEMS

The following tree variables (unless specified otherwise) are collected on fire plots when PLOT DIRECTLY AFFECTED BY FIRE = Y in addition to the standard P2 remeasurement requirements for trees and saplings on the plot.

SUBSECTION 1.6.1 TREE FLAGS

Item 1.6.1.1 PRE FIRE TREE STATUS (PNW) [PRE_FIRE_TREE_STATUS]

Record the code that corresponds to whether the tree was alive or dead at the time immediately preceding the fire. Use information and clues such as previous data, notes, decay, signs of insects, etc. to help make this determination.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1, 2, or 3	
Field width:	1 Character	
Tolerance:	No errors	
Values:	Code	Definition
	1	Tree was alive at time of fire
	2	Tree was dead at time of fire

SUBSECTION 1.6.2 CROWN DATA ITEMS

Item 1.6.2.1 LENGTH TO BOTTOM OF CROWN (PNW) [LEN_TO_BOTTOM_OF_CRWN]

Record the length of the bole, to the nearest foot, from the root collar to the lowest branch of the pre-fire live crown at point of attachment to the stem. Use the lowest pre-fire branch regardless of any gaps between branches or sections of the pre-fire crown. Use scorched branches, branch remnants, and branch stubs as indicators of the pre-fire crown. For California, Oregon, and Washington do not rely solely on live crown ratio from a pre-fire visit for guidance, as such ratios were assessed as compacted crown ratios and would overstate the length to bottom of crown. If the pre-fire crown is undeterminable, record 999.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRE FIRE TREE STATUS = 1, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT ≥ 1.0 (NOTE: DBH ≥ 1.0 indicates that this will not be collected on trees that are down & dead, removed, PRESENT TREE STATUS = 0, etc.)	
Field width:	3 digits	
Tolerance:	+/- 10 percent	
Values:	0 to 400, 999	

SUBSECTION 1.6.3 COMPACTED CROWN PERCENT BY BURN STATUS

Record to the nearest percent, the percentage of the pre-fire compacted live crown ratio that is currently unburned, scorched, or burned. It is sometimes helpful to mentally “compact” sections of crown in each category (e.g., visualize separate unburned sections as one continuous length). It will be helpful to consult live crown ratio from a pre-fire visit as these crown percent by burn status estimates **are** based on previously measured compacted crown ratios. These three data items should total 100 percent for each tree.

Item 1.6.3.1 COMPACTED CROWN PERCENT UNBURNED (PFSL)
[COMPACTED_CRWN_UNBURNED_PCT]

Percent of the pre-fire compacted crown ratio currently with green needles and live branches. Include branches that have sprouted after the fire.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRE FIRE TREE STATUS = 1, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT ≥ 1.0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 to 100

Item 1.6.3.2 COMPACTED CROWN PERCENT SCORCHED (PFSL)
[COMPACTED_CRWN_SCORCHED_PCT]

Percent of the pre-fire compacted crown ratio currently with needles and branches scorched brown, red, orange, yellow or black. Note that in some cases, needles of scorched crown may have fallen and be absent from branches.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRE FIRE TREE STATUS = 1, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT ≥ 1.0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 to 100

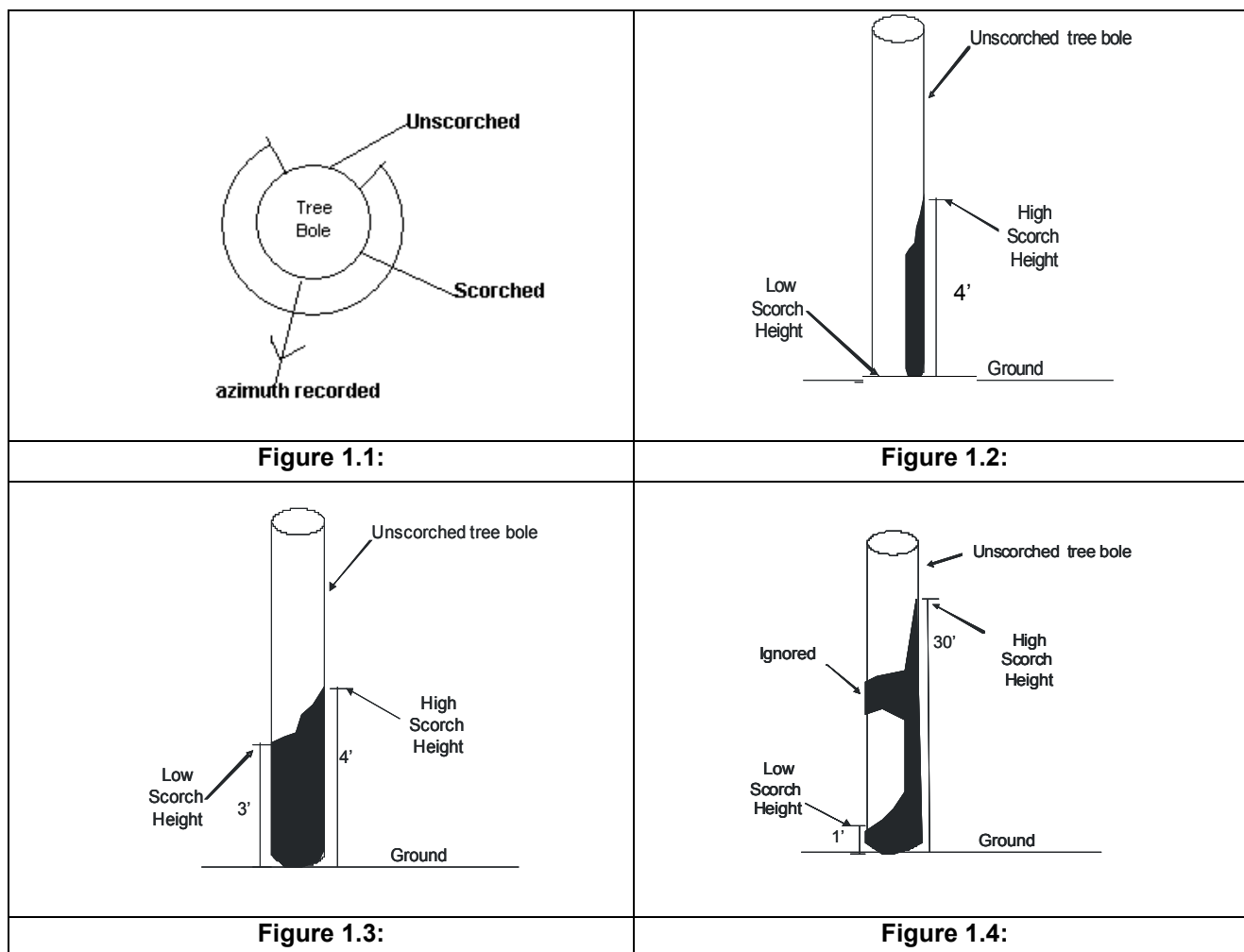
Item 1.6.3.3 COMPACTED CROWN PERCENT BURNED (PFSL) [COMPACTED_CRWN_BURNED_PCT]

Percent of the pre-fire compacted crown ratio currently with **branches** burned up and missing, or heavily scorched black and devoid of needles and fine twigs.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRE FIRE TREE STATUS = 1, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT ≥ 1.0
Field width:	3 digits
Tolerance:	+/- 10 percent
Values:	000 to 100

SUBSECTION 1.6.4 BOLE SCORCH HEIGHT AND AZIMUTH

Record, to the nearest foot and degree, the height and azimuth of scorch on tree boles (see Figures 1.1 through 1.4). Scorch is where the tree bole has been burned or blackened by fire. If the tree is not scorched, or is completely scorched along its entire length and circumference, record the appropriate code for BOLE SCORCH SEVERITY. Both scorch heights and azimuths should then be populated with 999. If it is difficult to tell the scorch height and azimuth on the bole due to the bark coming off from beetles, birds or peeling, make a note in the TREE NOTES. **The bole refers to the stem of the tree from the root collar to the top of its ACTUAL LENGTH.**



Item 1.6.4.1 BOLE SCORCH SEVERITY (PNW) [BOLE_SCORCH_SEVERITY]

Record the code that corresponds to the degree the tree bole has been scorched. Include the entire bole from the root collar to the top of the tree's ACTUAL LENGTH. **Check around the entire tree's circumference when deciding whether the tree bole is entirely scorched or unscorched.**

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT ≥ 1.0	
Field width:	1 Character	
Tolerance:	No errors	
Values:	Code	Definition
	0	Tree bole is entirely un scorched
	1	Tree bole is partially scorched
	2	Tree bole is entirely scorched

Item 1.6.4.2 LOW SCORCH HEIGHT (PNW) [LOW_SCORCH_HT]

From the root collar, record to the nearest foot, the lowest point at which the bole is **not** scorched. In Figure 1.2 this value would be zero. In Figure 1.3 this value would be 3 feet and in Figure 1.4 this would be 1 foot. Any other scorch that may occur above the low scorch (Figure 1.4) is considered part of the HIGH SCORCH HEIGHT. LOW SCORCH HEIGHT equals 999 when the entire tree is either burned or unburned. When the entire tree is burned, LOW SCORCH HEIGHT equals 999 and STEM BASE PERCENT BLACK equals 100; When the entire tree is unburned, LOW SCORCH HEIGHT equals 999 and STEM BASE PERCENT BLACK equals zero. When LOW SCORCH HEIGHT equals zero; STEM BASE PERCENT BLACK must be 0 - 99. If LOW SCORCH HEIGHT is greater than zero, STEM BASE PERCENT BLACK must be 100.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0
Field Width:	3 digits
Tolerance:	+/- 10 percent of actual tree length
Values:	0-400, 999

Item 1.6.4.3 LOW SCORCH AZIMUTH (PNW) [LOW_SCORCH_AZIMUTH]

Record, to the nearest degree, the direction the lowest bole scorch faces. Measure the azimuth from the inside of the tree out. If the entire tree is burned or unburned, or LOW SCORCH HEIGHT is equal to HIGH SCORCH HEIGHT, then LOW SCORCH AZIMUTH equals 999.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0
Field Width:	3 digits
Tolerance:	+/- 10 degrees
Values:	001 - 360, 999

Item 1.6.4.4 HIGH SCORCH HEIGHT (PNW) [HIGH_SCORCH_HT]

Record, to the nearest foot, the highest extent of bole scorch. HIGH SCORCH HEIGHT equals 999 if the entire tree is either burned or unburned. In Figures 1.2 and 1.3 HIGH SCORCH HEIGHT is 4 feet. In Figure 1.4, HIGH SCORCH HEIGHT is 30 feet. Note: HIGH SCORCH HEIGHT would be rounded to zero if the scorch extends to less than 0.5 feet above the root collar. If the scorch corkscrews around the tree, the highest scorch on the tree is the HIGH SCORCH HEIGHT. Please make a note in TREE NOTES if scorch was corkscrewed around tree. The PDR will provide a warning when the LOW SCORCH HEIGHT equals HIGH SCORCH HEIGHT. However, this is possible (e.g., when LOW SCORCH HEIGHT equals 1.6 feet and HIGH SCORCH HEIGHT equals 2.4 feet, both would be recorded as 2).

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0
Field Width:	3 digits
Tolerance:	+/- 10 percent of actual tree length
Values:	0 - 400, 999

Item 1.6.4.5 HIGH SCORCH AZIMUTH (PNW) [HIGH_SCORCH_AZIMUTH]

Record, to the nearest degree, the direction the highest bole scorch faces. Measure the azimuth from the inside of the tree out. HIGH SCORCH AZIMUTH equals 999 if the entire tree is either burned or unburned or if the maximum HIGH SCORCH HEIGHT is equal in every direction.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0
Field Width:	3 digits
Tolerance:	+/- 10 degrees
Values:	001 - 360, 999

SUBSECTION 1.6.5 ADDITIONAL FIRE EFFECTS DATA ITEMS FOR TREES

Item 1.6.5.1 STEM BASE PERCENT BLACK (PNW) [STEM_BASE_PCT_BLACK]

Record, to the nearest percent, the proportion of the main stem circumference (at the base of the tree above the forest floor surface) that is blackened. If LOW SCORCH HEIGHT equals zero, STEM BASE PERCENT BLACK must be less than 100. STEM BASE PERCENT BLACK equals zero if the tree/snag is completely unburned.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0	
Field width:	3 digits	
Tolerance:	+/- 15 percent	
Values:	000 to 100	

Item 1.6.5.2 SNAG STATUS (PNW) [SNAG_STATUS]

Record the appropriate code that describes the current status of branches on dead tally trees.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0	
Field width:	1 digit	
Tolerance:	No errors	
Values:	Code	Definition
	0	Some branches present after fire
	1	Branchless due to fire
	2	Had no branches prior to fire

Item 1.6.5.3 BARK BEETLE STATUS (PNW) [BARK_BEETLE_STATUS]

Record the appropriate code describing bark beetle activity. Note: For dead trees (PRESENT TREE STATUS = 2) use codes 0, 3, or 4 only.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1 OR 2, DIAMETER AT BREAST HEIGHT $\geq$ 1.0	
Field width:	1 digit	
Tolerance:	No errors	
Values:	Code	Description
	0	No beetle damage
	2	Successful current beetle attack: foliage still green, boring dust, pitching (live trees only - PRESENT TREE STATUS = 1)
	3	Last year's successful beetle attack: fading foliage, boring dust, pitching
	4	Older beetle attack (Examples: Top kill: top of tree dead with no green needles remaining, completely red with no or dead buds, or "gray" because the needles have fallen off; may have green needles on lower live portion of tree)

Item 1.6.5.4 FIRE EFFECTS CAUSE OF DEATH (PNW) [FIRE_EFFECTS_CAUSE_OF_DEATH]

Record whether the most recent fire was the primary cause of death for the tree.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 2, PRE FIRE TREE STATUS = 1	
Field width:	1 digit	
Tolerance:	No errors	
Values:	Code	Definition
	Y	The fire is the primary cause of death
	N	The fire is not the primary cause of death

Item 1.6.5.5 POST FIRE TREE STATUS (PNW) [POST_FIRE_TREE_STATUS]

Record the appropriate code describing post-fire tree impacts. This is used for post -fire tree assessment.

When collected:	PLOT DIRECTLY AFFECTED BY FIRE = Y, PRESENT TREE STATUS = 1,2, or 3	
Field width:	2 digits	
Tolerance:	No errors	
Values:	Code	Definition
	00	No change from pre-fire status due to fire impact. Top is still attached.
	11	Pre-fire broken/missing top. Top was broken or missing before the fire.
	12	Pre-fire down. (PRESENT TREE STATUS = 1 or 2)
	13	Pre-fire cut/removal. (PRESENT TREE STATUS = 3)
	21	Post-fire broken/missing top. Top broken/missing as a result of the fire.
	22	Post-fire down. (PRESENT TREE STATUS = 1 or 2)
	23	Post-fire cut/removal tally tree. (PRESENT TREE STATUS = 3)

Item 1.6.5.6 TREE NOTES (CORE 5.27) [NOTES]

Record notes pertaining to the FERS tree data items in the TREE NOTES (Item 8.11.1.1 in the Field Instructions for the Annual Inventory of California, Oregon, and Washington).

When collected:	All trees, as needed
Field Width:	2000 Characters
Tolerance:	N/A
Values:	English language words, phrases and numbers

SECTION A.2 GROUND SURFACE COVER DATA FORM

State Code _____ Plot Number _____ Date ____/____/____

Subplot Number:	1	2	3	4
Fire Suppression Disturbance				
Total Sample Area Burned Percent				
Aspect				
Total New Litter Percent Cover				
Bark Percent of New Litter				
Depth of New Litter North				
Depth of New Litter East				
Depth of New Litter South				
Depth of New Litter West				
Percent Unburned Previous Litter				
Percent Light Char Previous Litter				
Depth of Previous Organic Layer North				
Depth of Previous Organic Layer East				
Depth of Previous Organic Layer South				
Depth of Previous Organic Layer West				
Percent Unburned Exposed Humus				
Percent Light Char Exposed Humus				
Depth of Exposed Humus North				
Depth of Exposed Humus East				
Depth of Exposed Humus South				
Depth of Exposed Humus West				
Total Mineral Soil Percent Cover				
Percent Unburned Mineral Soil				
Percent Light Char Mineral Soil				
Percent Moderate Char Mineral Soil				
Percent Deep Char Mineral Soil				
Total Rock Percent Cover				
Percent Unburned Rock				
Percent Light Char Rock				
Percent Moderate Char Rock				
Total Brown Cubical Rot Percent Cover				
Percent Unburned Brown Cubical Rot				
Percent Light Char Brown Cubical Rot				
Percent Moderate Char Brown Cubical Rot				
Total New Moss Percent Cover				
Percent Unburned New Moss				
Percent Light Char New Moss				
Percent Moderate Char New Moss				
Percent Deep Char New Moss				
Total Previous Moss Percent Cover				
Previous Unburned Moss Percent Cover				
Previous Light Char Moss Percent Cover				
Total New Liverworts Percent Cover				
Percent Unburned New Liverworts				
Percent Light Char New Liverworts				
Percent Moderate Char New Liverworts				
Percent Deep Char New Liverworts				
Total New Lichen and Fungus Percent Cover				
Percent Unburned New Lichen and Fungus				
Percent Light Char New Lichen and Fungus				
Percent Moderate Char New Lichen and Fungus				
Percent Deep Char New Lichen and Fungus				
Ground Surface Cover Notes:				
Percent Newly Sprouted Shrub Cover				
Percent of Log Charred by Fire	*Collect along with standard P2 & P3 procedures for DWM			