

Habitat Point Data Form <i>Eastside Shrubsteppe, Grassland, and Savanna</i>								
Observer:								
e-mail:			Phone 1:			Phone 2:		
Additional observers:								
Day:		Month:		Year:		Time:		
Wildlife area:		Point #:	Accuracy (meters):		Did you revise the location?			
Specific location (UTM or lat-long)	NAD:		Zone:	UTM-E:		UTM-N:		
	Latitude:			Longitude:				
Photos N:		Photos E:		Photos S:		Photos W:		
Other photos:								
Soil surface rank			Planted wheatgrass cover					
Are there any trees on the plot (Y or N)?			Moss and lichen cover					
Tree cover			Downy and Japanese brome cover					
Shrub cover			Russian thistle cover					
Name of dominant native shrub			Knapweed cover					
Cover of dominant native shrub			Dalmatian toadflax cover					
Grass and sedge cover								
Tree species (number by DBH class)	≤2.5 cm	>2.5-15 cm	>15-30 cm	>30-60 cm	>60-100 cm	>100 cm	Snags	Stumps
Ponderosa pine								
Other:								
Other:								
Additional notes or details:								

General header information

Observer: The primary observer should be identified by full name

e-mail: Provide the observer's e-mail address.

Phone 1: Provide the observer's phone number.

Phone 2: Provide a second number for the observer, if there is one.

Additional observers: List the names of additional observers.

Day: List the day of the month.

Month: List the number for the month of the survey.

Year: List the year (full 4 digits).

Time: List the time with a 24-hour clock (e.g., 13:30 = 1:30 PM).

Location details

Wildlife Area: Provide the name of the wildlife area.

Point #: List the number of the point (e.g., SL36).

Accuracy (meters): Provide the estimated GPS accuracy in meters.

Did you revise the location? Answer with 'yes' or 'no'. The basic reason for revising the location is that the exact point happened to be on, or close to, a border between ecosystem types. Each plot should extend outward 8 meters from the center point. However, if the point happens to fall in an area straddling 2 different ecosystems, it would be best to 'adjust' the location of the point further so that the ecological integrity assessment will be consistent for the identified ecosystem type. It is important in this situation to record the 'corrected' location.

Specific location (UTM or lat-long): Provide a specific location for the center of the survey plot using a GPS unit or smartphone. If the location is recorded as a UTM coordinate, the North American Datum (NAD – should appear in the 'settings for your GPS unit), zone (zone 11 for most of eastern Washington and zone 10 for western and portions of central Washington), UTM-E (UTM easting), and UTM-N (UTM northing) should be recorded (for example, 395627 east and 5275124 north). If the location is recorded as a latitude-longitude (lat-long), each coordinate should be recorded as accurately as possible, preferably using degrees and decimals, rather than degrees, minutes, and seconds.

Photo details (used for ecosystem assessments, not specifically for photo points)

It will be helpful to have a permanent record of what the plot looked like when you did your sampling. In most ecosystems this can be accomplished by taking 4 digital photographs while standing at the center of the plot. Generally use the widest angle possible (usually the default setting) and try to hold the camera about 1.5 meters above the ground (normal height while standing). Frame the photos so that the horizon is about $\frac{3}{4}$ up from the bottom of the photo. In a forested environment, the average base of the trees should be approximately in the vertical middle of the photo (example below). It is critical that photos include some of the understory. Take one pointing north (N or 360°), east (E or 90°), south (S or 180°), and west (W or 270°). In wetland ecosystems, take representative photos of the system, not necessarily at standard directions. The same guidance about framing still applies. When you upload the images it is preferable to rename each of the files with the Wildlife Area abbreviation provided followed by the plot number and the word North, East, South, OR West (for example: WRP_36_East.jpg).

Photos N, E, S, and W: Record the number and/or order in which photos are taken so that they can be correctly assigned. It is best to take the photos in the same order every time to avoid confusion. They should be uploaded in order.

Other photos: Record the number, order, and/or subject of additional photos. For example, it might be useful to photograph a dominant and/or unknown plant species.



Plot characteristics

Each plot is defined by an 8-meter radius around a center point. Although this point represents a circle, in some situations it may be advisable to not consider a small portion of the circle if it contains a different ecosystem type. Vegetation and soil characteristics should be estimated for area defined by the circle.

Soil surface rank (general condition of surface): This condition ranking should consider the current and historical impacts of disturbance. Some of these effects may be apparent, but others (old ruts) will be somewhat concealed by vegetation.

A: No evidence of soil alteration and/or erosion by man-made causes such as wheel tracks, livestock trails, and soil displacement. This does not count natural disturbance such as game trails and gopher mounds.

B: Faint evidence of soil alteration and/or erosion by man-made causes such as wheel tracks, livestock trails, and soil displacement. If the area has been burned, fire severity is low (slight and/or discontinuous charring of vegetation). Evidence of disturbance should be on <10% of area.

C: Clear evidence of soil alteration and/or erosion by man-made causes such as wheel tracks, livestock trails, and soil displacement. If the area has been burned,

fire severity is moderate (black ash evident). Evidence of disturbance should be on 10-25% of area.

D: Obvious evidence of soil alteration and/or erosion by man-made causes such as wheel tracks, livestock trails, and soil displacement. If the area has been burned, fire severity is severe (white or reddish ash and litter completely consumed). Evidence of disturbance should be on >25% of area.

Are there any trees on this plot?: Answer Y (yes) or N (no). If the answer is yes, use the drop-down menu for trees to count the trees by species and DBH class. If the answer is no, the following rank will not be needed.

Name of dominant native shrub: Record the name of the dominant shrub species from a drop down menu. If the species is not listed or is unknown, select “Other” or “Unknown” and take and upload a photo.

Cover: Estimate cover for key species and groups using the following cover categories: (0) absent; (1) present, but <1% cover; (5) 1-5% cover; (10) 5-10% cover; (25) 10-25% cover; (50) 25-50% cover; (75) 50-75% cover; and (100) 75-100% cover. One way to visualize this is to imagine yourself taking 100 steps on the plot. If a key feature appears at the tip of your shoe on 7 occasions, then the estimated cover is 7%.

Other ways to visualize this is to compartmentalize all of the key features into a circle around the center stake. Figure 1 below is one way to estimate how much area the feature takes up. The bold numbers represent the cover categories and the distances represent the radii for each concentric circle. For example if the shrub cover in the left were grouped into one circle in the right, the interval that would be represent the cover would be “10” (6-10% cover). The follow list includes some of the categories and species that would be evaluated, depending on the target ecosystem.

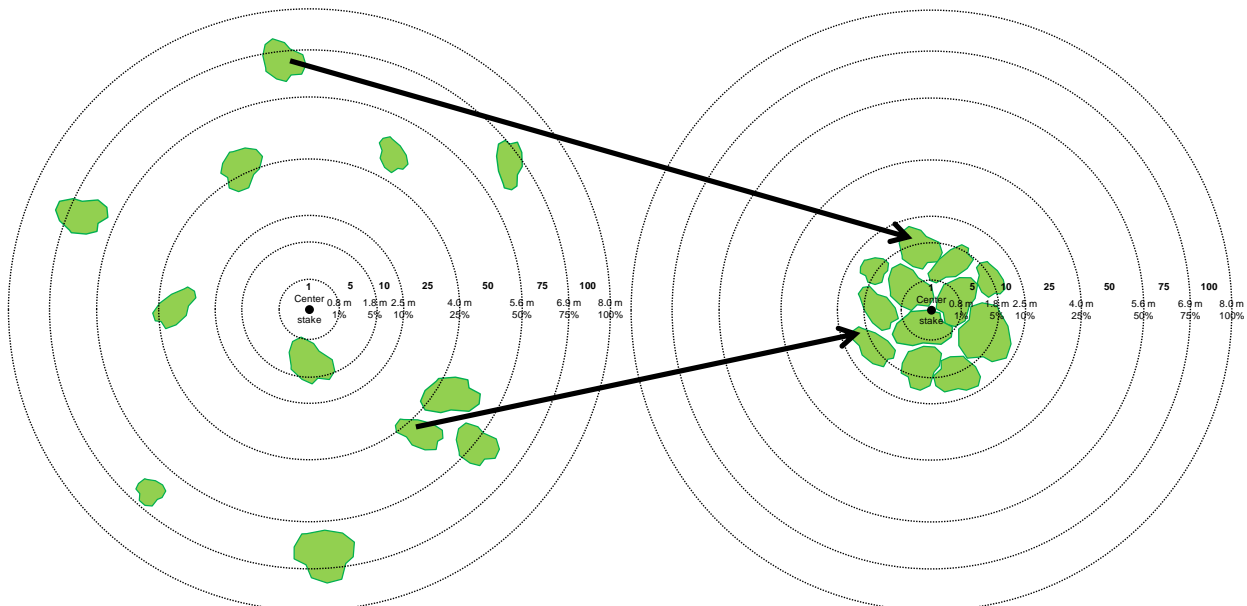


Figure 1. Compartmentalization method for estimating percent cover.

Another way to estimate percent cover of key features is illustrated in Figure 2 below. This method involves dividing the habitat plot circle into quarters and estimating the percent cover of each habitat feature in that quarter. Continue around the circle in this fashion until all four quarter sections are done, then add up each feature's percent cover and divide by four to get the total percent cover for the entire plot (two 8-meter cords can be placed on the ground of the plot to create a quarter section as a visual aid to help with these measurements). Example: quarter #1 = 100% cover; quarter #2 = 50% cover; quarter #3 = 5% cover; quarter #4 = 0% cover. The grand total equals 155%. Divide this by 4, which equals 38.75%, or about 40% estimated cover. When recording in database, this estimate falls into the category of "50" (25-50% cover).

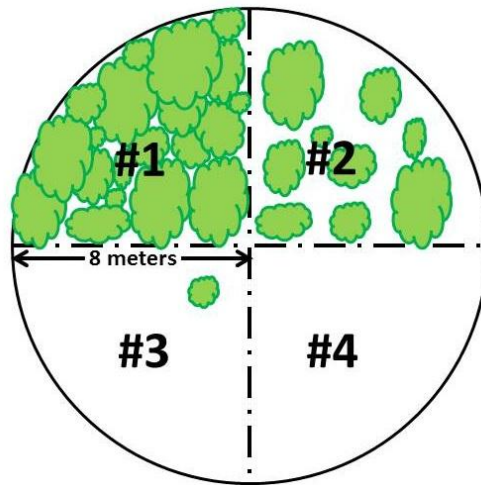


Figure 2. Quarter circle method for estimating percent cover.

Trees: Think about what proportion of the ground is shaded by tree species (above 1.3 meters or breast height). If this number is >0, then a drop-down menu (below) will be available for recording the number of trees by species and size class. Species should either be in the shrub category or tree category, but not both.

Shrubs: Combine all shrub species except for young tree species. Species should either be in the shrub category or tree category, but not both.

Dominant native shrub: Estimate the cover of the dominant native shrub species.

Grasses and sedges: Estimate the combined cover.

Planted wheatgrass (crested, intermediate, and tall wheatgrass): Estimate the combined cover for non-native species that are planted, often as part of conservation programs.

Mosses and lichens: Estimate the combined cover. Mosses and lichens decrease in disturbed open ecosystems in eastern Washington (biological soil crust).

Downy and Japanese brome: Estimate the combined cover.

Russian thistle: Estimate cover.

Knapweed: Includes the combined cover of all knapweeds.

Dalmatian toadflax: Estimate cover.

Tree density: Record the number of each tree species by DBH (diameter-at-breast-height or about 1.3 meters above the ground) category for all trees rooted on the plot. DBH can be measured with a specially-marked rope using marks to directly estimate DBH (marks at 15 cm, 30 cm, 60 cm, and 100 cm) or indirectly estimate DBH by estimating the circumference (marks at 47 cm for DBH of 15 cm, 94 cm for DBH of 30 cm, 188 cm for DBH of 60 cm, and 314 cm for DBH of 100 cm). Snags refer to dead trees at least 30 cm DBH and stumps refer to cut trees where the DBH would have been at least 30 cm. Because the tree has been cut, it is sufficient to measure the diameter at the height of the stump. Trees shorter than 1.3 meters (breast height) do not need to be recorded. The tree species will be listed in a ‘drop-down’ menu. If the species is not listed or is unknown, select “Other” or “Unknown” and take and upload a photo. See the spreadsheet for key species by ecosystem and wildlife area.

Tree species	≤2.5 cm	2.5–15 cm	15–30 cm	30–60 cm	60-100cm	>60 cm	Snags	Stumps
Species 1:								
Species 2:								

Additional notes: Record other items that did not fit in specific categories. This is also an opportunity to mention specific issues related to the ecosystem plot. For example, it would be useful to mention sources of disturbance such as the presence of structures or horses.

Timing of habitat assessments: Habitat assessments should be done when plant species are growing and/or flowering in spring and summer. Figure 3 is a timeline that provides general oversight for the best dates to collect habitat data for the assessments. During early or late growth years, start and end times may vary so please use your judgment. While this cannot be done for all species and geographic areas, by selecting an appropriate time, you can improve your experience.

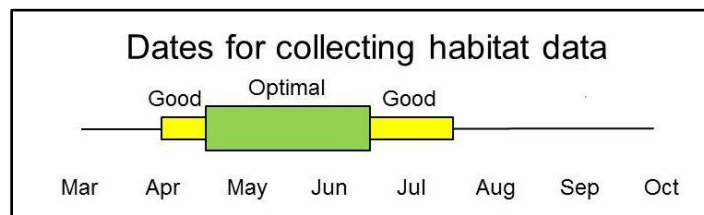


Figure 3. Dates for collecting habitat data