

Monitoring Manual

for Grassland,
Shrubland and
Savanna Ecosystems

Volume I: Quick Start

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Cover illustration:

Collecting Line-point intercept data
in a south-central New Mexico desert grassland.

Long-Term Methods

Photo points

Use Photo points to qualitatively monitor how vegetation changes over time. Permanent photographs of a landscape are useful for detecting changes in vegetation structure and for visually documenting measured changes. Take at least one photo of each transect. If you take digital photos, be sure to print and store photos in plastic photo storage sheets. Slide the photo card (page 8) behind the photo in the plastic storage sheet. For more information on photo point monitoring, see the USFS Photo Point Monitoring Handbook (www.fs.fed.us/pnw/pubs/gtr526/).

Materials

- Tape measure (5 m (15 ft) minimum)
- Four 60 cm (2 ft) rebar stakes
- Four 60 cm (2 ft) 3/4-in PVC pipe
- Compass
- 35 mm or digital camera with a 50 mm-equivalent lens (1:1 ratio). If a wide angle, telephoto or zoom is used, be sure to record lens and camera information.
- Photo point (ID) board (chalk or whiteboard) or Photo point (ID) card (page 8) on a clipboard
- Thick marking pen
- One 1.5m (5 ft) long, 3/4-in diameter PVC pipe.

Standard methods (rule set)

1. Establish photo point

Rules

- 1.1 Drive center stake into ground, leaving less than 30 cm (1 ft) exposed.
- 1.2 Drive transect stakes into ground 5 m (15 ft) from center stake at 120° intervals to mark beginning of the three transects.
- 1.3 Cover stakes with 60 cm (3/4-in) PVC (optional for safety and visibility).
- 1.4 Mark the far end (50 m) of each transect with a stake if the location will be used for vegetation and/or soil measurements. Use same procedure described in 1.2 and 1.3.

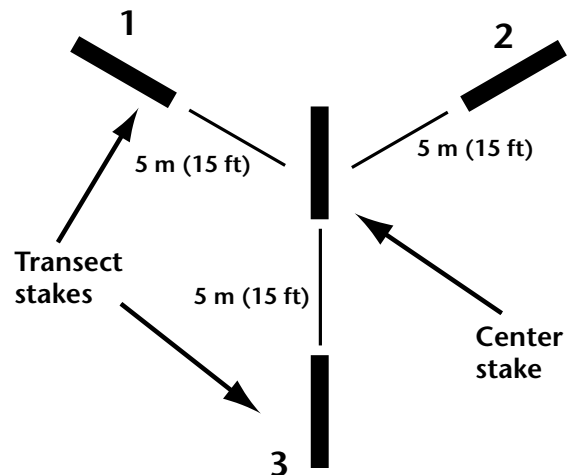


Figure 3. Transect stake locations for spoke design. Stakes mark beginnings of each transect. Base of stake located at bottom center of photo.

Ground cover photo option

Use each of the three transect stakes as one corner of a permanent plot (usually 1x1 m or 3x3 ft) and mark the other three corners with small stakes. Before taking the photo, mark the perimeter with a piece of rope or meter/yard sticks. Place the camera over the center of the plot at a standard height and take the photo.

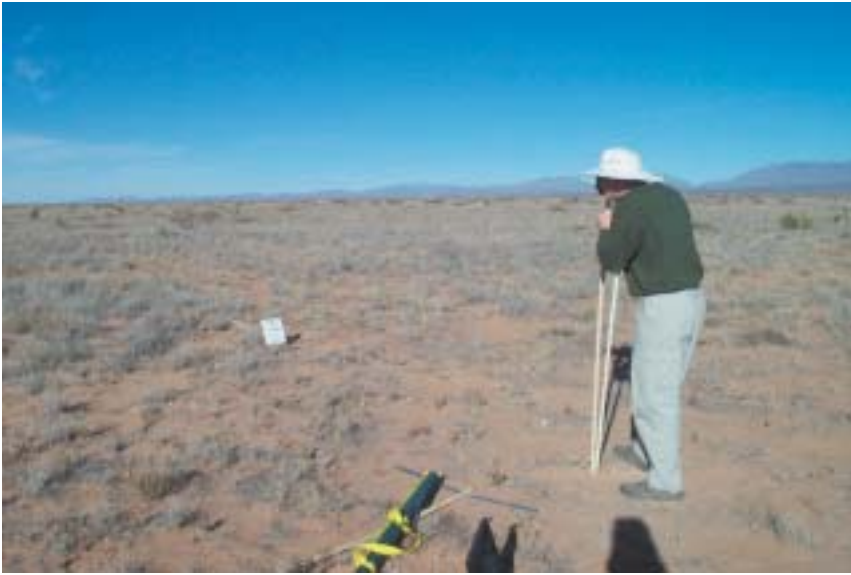


Figure 4. Photographer is at plot center and Photo point ID board marks beginning of one of the three transects.

Site:

Date:

Plot:

Line #:

Direction:

Figure 5. Photo point ID board.

2. Record photo information

Rules

- 2.1 Record date, location, precipitation and management history since the last photos were taken on a 7.5x12.5 cm (3x5 in) card or on one of the Short-Term Monitoring data forms (page 35 or 36).

3. Set up first photo

Rules

- 3.1 Remove PVC sleeve from center stake and replace with 1.5 m (5 ft) PVC pipe. Be sure that the pipe rests on the ground.
- 3.2 Label photo point ID board and lean it next to or hang it on the stake, marking the beginning of the first transect.

4. Take first photo (Fig. 4).

Rules

- 4.1 Set camera body on top of (1.5 m) center pole and point it down the first line.
- 4.2 Place bottom of nearest transect pole at the photo's bottom center.
- 4.3 Take photo.

5. Repeat Steps 3 and 4 for the other two photos.

Riparian note: At riparian sites, take two additional photos. Stand in mid-channel, hold camera 1.5 m (5 ft) above the ground and position bottom of viewfinder on a point located 5 m (15 ft) away. Take one photo facing upstream and one downstream.

Site:

Date:

Plot:

Line #:

Direction:

Photo point ID card