

6. CONDUCTING PHOTO-POINT MONITORING



PHOTO MIKE DUFFY

GRASSLANDS CONSERVATION COUNCIL OF BRITISH COLUMBIA

CONDUCTING PHOTO-POINT MONITORING

Photographic records are an important part of monitoring your grasslands. Photo-point monitoring involves taking three photos of the same site regularly with every assessment.

Comparison of these photos, along with the written notes made when they were taken, will give useful information about the status of your grassland—is the health of your grassland community improving, stable, or deteriorating? Consistent and repeated comparisons over time are key to effective monitoring.



Over time photo-point monitoring documents changes in the vegetation. It yields objective and visual documentation of the plant community (general species composition and structure). When applied consistently – yearly or every other year – photo-point monitoring provides an effective visual tool for comparison of the grassland community. PHOTO BRUNO DELESALLE

Assessing grassland status and trend over time is most accurate when you use a combination of grassland assessment and photo-point monitoring. This dual approach ensures that all indicators of grassland status are assessed and recorded for future reference, which is critical to repeatable and accurate comparisons. This will help you determine if your management strategies are achieving anticipated goals. They also help you make decisions regarding necessary management changes.

How to Do Photo-Point Monitoring

This section takes you through the process of setting up your photo-points, taking the pictures, and storing your records.

Before you go into the field, you will need the following equipment:

- **Camera (film or digital)**
The lens must have a zoom lens or a focal length of 50 mm.
- **Carpenter's tape measure**
5 or 10 meters long or a soft tape more than 10 metres long.
- **Stadia rod or second carpenter's tape**
- **Three pins per photo-point site**
Rebar pins of $\frac{3}{8}$ inch diameter are ideal as they are strong. Each pin should be 12 to 16 inches long with the top bent at least 90°. Painting the top of the pins a bright colour (red or blue) will make them easier to relocate in tall grass.
- **Hammer**
Small sledge hammer – 2 to 4 lbs
- **Photo Identifier Card and Photo Information Sheet**
One of each per site
- **Clipboard, paper and Photo Information Sheet**
- **Felt pen**
- **GPS unit**
If available
- **Compass, clinometer, and altimeter**
If available

Grassland Monitoring Photo Identifier Card

Ranch:

Pasture:

Transect #:

Photo #:

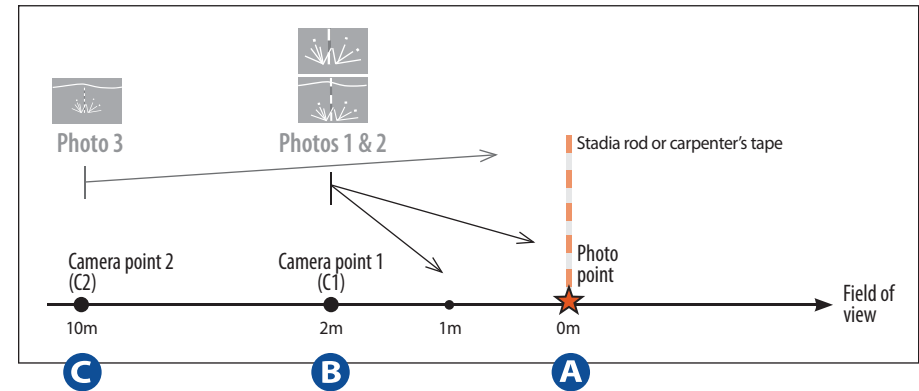
Date:

Time:

GRASSLAND MONITORING MANUAL FOR BRITISH COLUMBIA

A photo identifier card is important and should be placed in each photograph to assist identification of the photograph in later years.

Setting Your Pins



Step 1 Mark your photo points with pins

Once a site is selected, permanently mark your photo-points. Three pins are sufficient to allow plots to be quickly relocated in future years.

Install your first pin **A** at the Photo Point, which must be located in the representative part of the pasture that you wish to photograph.

Install your second pin **B** at Camera Point 1 (C1), which must be located 2 meters from the photo point pin. This is where you will stand to take your first photograph.

Continuing in a straight line, install your third pin **C** at Camera Point 2 (C2). It must be located 10 meters from the Photo Point (8 meters behind C1).

Make sure the pins are pounded in flush with the soil to minimize the effect of increased fertilizer input that can occur if the pins are used by perching birds. As well, pins may be a hazard if sticking out of the ground.

Tread lightly! Before you begin your installation, plan your movements carefully in order to minimize the impact of walking.

You are now ready to take pictures.



If a pin is lost, the remaining pins can be used to re-establish the photo-point or camera points. Take your original photographs into the field to precisely relocate camera points. This relocation is important for accurate comparison of photographs. PHOTO GLENDA MATHEW

Step 2

Fill in the top portion of the Photo Information Sheet

Select a blank photo information sheet (see Tab 8) and fill in the top portion, making sure to indicate whether or not you have completed a grassland assessment by checking either YES or NO at the bottom of the sheet.

Grassland Monitoring Photo Information Sheet		GRASSLAND MONITORING MANUAL FOR BRITISH COLUMBIA
Grassland Community:	Big sagebrush and Bluebunch wheatgrass	
Site:	25 ha, uniform pasture, mainly bluebunch & shrub	
Observer(s):	Bill Ranger	
Date:	May 15, 2009	Time: 9 am
Name of Photographer:	Bill Ranger	
Plot Location/Site (GPS):	FB81 50°40' 21" 120°20' 21"	
Pasture Name:	Pasture B	
Photo Number:	B-2009-1	Comments (s): Camera point 1, Photo 1, Close-up
Photo Number:	B-2009-2	Comments (s): Camera point 1, Photo 2, Landscape
Photo Number:	B-2009-3	Comments (s): Camera point 2, Photo 3, Landscape
<input checked="" type="checkbox"/> YES	I have completed the Grassland Assessment Score Sheet (Ensure that you have referenced the site appropriately, as you will want to keep the photo points with the assessment results.)	
<input type="checkbox"/> NO	I did not complete the grassland assessment	

Plots should be located with a Global Positioning System (GPS) unit if available. This will allow them to be quickly re-located or re-established. If a GPS is not available (or as a back-up method to re-locate plots), the distance and direction to a permanent object such as a post, large rock, or other distinct, permanent feature can be recorded. A photograph from this point towards the photo-point can also be useful in re-locating plot pins.

Add comments containing any information that will help you interpret the images in subsequent years: grazing levels, annual growing conditions, presence of invasive plants, etc.

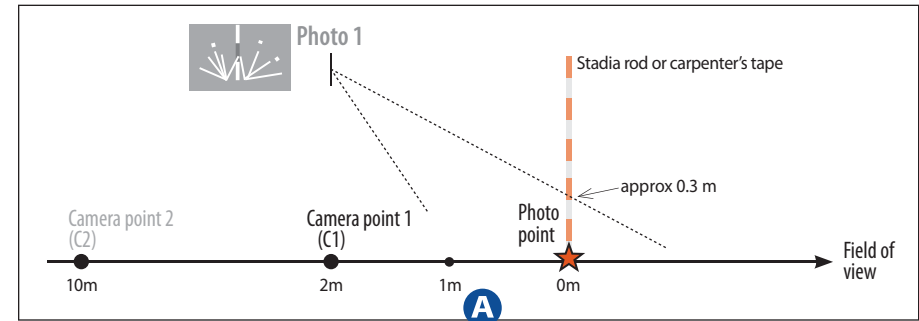
Step 3

Take three photographs

Given the prevalence of zoom lenses, you must ensure that your photographs are taken using a focal length equivalent to a 50 mm lens on a 35 mm camera.

To do this, stand over Camera Point 1 (C1) and adjust your zoom so that the bottom of the photograph is 1 meter in front of you **A** (halfway between C1 and the Photo Point) and the top of the image is 0.3 m above the photo point pin. This will give you a field of view that approximates a 50 mm lens.

Adjusting Zoom and Taking Photo 1



Note: Once the zoom is adjusted to fit these specifications, use this setting for ALL photos. This is very important.

Photo 1

Photo 1 is a close-up angled from eye level down towards the photo-point. It is taken from the exact spot where you adjusted your zoom, and uses the same field of view. Stand over the C1 pin, aim towards the photo-point, and place the bottom edge of your viewfinder or photo halfway between the camera point and the photo-point **A** at the 1 meter mark. The top of the viewfinder or photo should be 0.3 meters above the photo-point pin.

Take two photos. Later, you can select the better of the two.

Photo 2

Without adjusting the zoom on your camera, take a second photo from the same point (C1) to capture a landscape view. Stand above the C1 pin and tilt your camera upwards so that the photo-point pin is at the bottom edge of your viewfinder or photo.

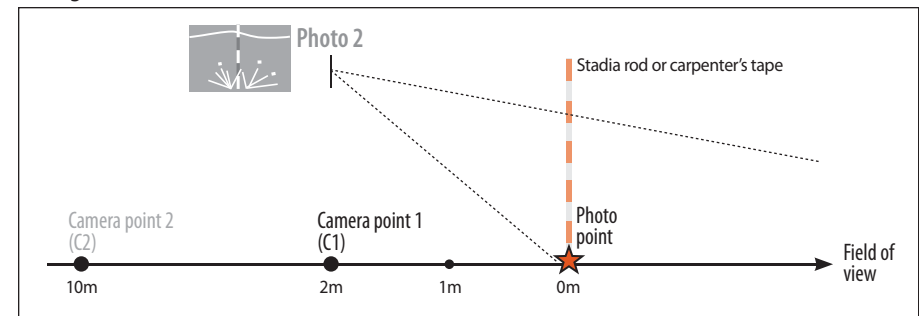
Take two photos here.



Photos 1 and 2 will give you sufficient detail of the plant community to allow comparisons of grassland status over the years.

PHOTOS RICK TUCKER

Taking Photo 2



Taking Photo 3

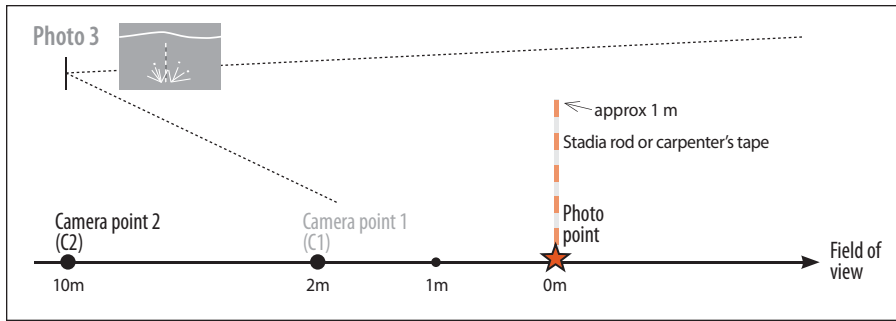


Photo 3

Take your third photo from Camera Point 2 (C2) which is 10 meters from the Photo Point. Stand over the C2 pin and centre the stadia rod in the middle of the image.

Take two photos here.

Step 4

Complete the Photo Information Sheet

When you have successfully taken your photographs, complete filling in the Photo Information Sheet.

Step 5

Fill in the Grassland Monitoring Summary Sheet

Once you have completed photo-point monitoring, accurately enter all information and photos into your Grassland Monitoring Summary Sheet (shown opposite). A template is provided in Tab 8 of this manual. An electronic version of the form can be downloaded from www.bcgrasslands.org

Make 4" x 6" prints from digital photographs. This will protect you from digital data loss and will allow you to store the photos with your record sheets. In the future, hard copy photos will be useful to carry when you return to the field to re-photograph the site.

All photographs and record sheets must be safely stored. Put all information sheets and photos into a binder. Use plastic pages designed to hold photos. If they are in electronic form, keep the Summary Sheet and photos on both a hard drive and a back-up disc or other hardware. Back-ups should be re-burned periodically. CDs may not be reliable for long-term storage.



Photo 3 gives you a broader view, setting your monitoring site in the landscape. PHOTO RICK TUCKER

Grassland Monitoring Summary Sheet

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Grassland Status Assessment

Site Pasture B Date monitoring began May 15, 2009
 GPS Location: N 50° 40' 21" E 120° 20' 21"
 Slope variable, rel. flat Aspect south Elevation 500m
 Grassland Type Big Sagebrush Bluebunch Wheatgrass

Specify year then enter score for each Assessment Question	YEAR 1	YEAR 3	YEAR 5	YEAR	YEAR
2009					
1. What is the composition of your plant community?	10				
2. Do you have the expected plant layers?	6				
3. How much litter do you have on the site?	4				
4. Is there existing or potential erosion on the site?	12				
5. Are invasive plants present on the site?	6				
Total Score	38				
Status	moderately altered				

Grassland Status Reference 76-100% Slightly Altered 51-75%
 Moderately Altered 26-50% Greatly Altered 0-25%

Grassland Photo Points

Year 1	Year 3	Year 5
 photo 1		photo 1
 photo 2		photo 2
 photo 3		photo 3

Comments and Notes: YEAR 1

Apparent trend is stable. Stability and productivity of site needs to be monitored carefully. Changes in grazing practices may be required and considered. Objective to move toward slightly altered condition.

Comments and Notes: YEAR 3

Comments and Notes: YEAR 5

Suggested Monitoring Schedule

If you are setting up a monitoring program for the first time, plan to complete photo-point monitoring on the first, third, and fifth years, then repeat every five years. You can alter this schedule to meet your own management objectives.

More frequent monitoring may be necessary if an event occurs which may have a significant effect on grassland status such as fire, invasive plant infestation, control treatment, or a change in grazing practice.

Finding Your Site in Future Years

It is important to record your GPS coordinates. If you do not have GPS, use a reference such as a steel post, an immovable rock, or another distinct feature in the pasture. Preferably, this feature should be within 5 meters of the monitoring site.

Take a photo of the general location. This will be useful for re-locating your site in the future.

Finally, write a detailed description on your photo information sheet, assuming that you will NOT be the one taking the next set of photos. These details will ensure that the directions are clear to future monitors.

Plan to complete photo-point monitoring on the first, third, and fifth years. Then repeat every five years.