

## Photo Point Monitoring



*Each section can be completed separately but you should read all three parts before starting. You need to complete all three parts to finish the monitoring method.*

### Part 1: Getting Ready



#### GATHER YOUR GEAR



##### Equipment required for this part:

- ☐ Electronic device(s) – charge ready for use and check that it has:
  - ability to take photos
  - data collection systems (app and form) (e.g. Fulcrum)
  - navigation system (e.g. Avenza) and site maps
- ☐ Laptop or computer with software for mapping (e.g. QGIS, ArcGIS, Google Earth)
- ☐ GPS device (recommended)



Remember to check **GATHER YOUR GEAR** lists for **Out on Country** and **Back in the Office**. See the full list of equipment needed to complete this monitoring method on the last page.

#### KEEP IN MIND



##### Why?

Make sure there is a clear aim for your monitoring project and that the method you have selected will give you the answers you need.

Think about whether it will be possible to capture the changes you want to keep an eye on over time by taking photos, and how often you will need to take repeat photos.



##### When?

Prepare well before heading out on Country so that you have time to gather equipment or train staff, if needed.



##### Who?



At least one ranger/staff to plan and prepare.



##### Training and skills

Staff involved in planning are trained and competent in:

- ☐ Mapping software (e.g. QGIS, ArcGIS, Google Earth)
- ☐ Navigation systems (e.g. Avenza, GPS)
- ☐ Data collection systems (e.g. Fulcrum, datasheets)

## ENVIRONMENTAL MONITORING METHOD:

# Photo Point Monitoring



### Check permissions

Consult with Traditional Owners, landholders and relevant government agencies and authorities, to determine appropriate access and approvals for environmental monitoring:

1. Where you can go – consult with the owners/managers of the land.
2. What you can do – check if you need scientific licencing, approvals or ethics.
3. What or who can you take photos of
4. What can be done with data and photos – who owns them, where will they be stored and how will data be interpreted and communicated.

## ACTIONS



### Make a plan and prepare

1. Plan which dates you will do the monitoring this year, and how often you will take repeat photos.
  - The aim of your monitoring can help you decide when and how often to take repeat photos.
  - You will need to baseline photos at the start of the monitoring and then repeat photos at least after significant changes at the site and at the end of the monitoring
2. If you are interested in a species or ecological community and this is the first year you are monitoring, gather records of the species or community in your area and identify areas to monitor. Such as from Traditional Custodians, Atlas of Living Australia (ALA) or government databases.
3. Select your sites
  - The aim of your monitoring can help you decide where and how many sites.
  - It's a good idea to pick areas that are easy to get to so that the monitoring can be done quickly.
  - Avoid putting sites on tracks, roads, cattle yards, bores and fences unless that is something that you want to monitor.
4. Give each site a unique name, and export and save the location data in your data management system
5. Prepare maps of sites/load sites onto navigation devices
6. Plan how you will record information on Country (e.g. Fulcrum electronic data forms), including how you will take the photos
  - A DSLR camera can be used to get high quality photos.

## ENVIRONMENTAL MONITORING METHOD:

### Photo Point Monitoring

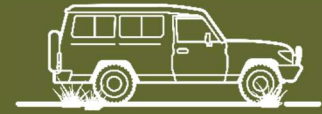
- If you don't have a DSLR camera available, photos can be taken on a phone or tablet. If you use an electronic data collection app, you may be able to take the photos in the app, which will then link the photos automatically to the site data.
7. Plan your data management system e.g. how you will store photos.
  8. Check **GATHER YOUR GEAR** lists for [Get Ready](#), [Out on Country](#) and [Back in the Office](#) (complete list of equipment on last page) and get any equipment you don't have. See DSLR buying guide(s) for advice on which cameras may be suitable to buy.
  9. Be clear on how many people will be involved and what everyone needs to do the work.
  10. Check the training requirements for [Get Ready](#), [Out on Country](#) and [Back in the Office](#) steps to ensure that rangers know how to use the devices, data collection apps, navigation systems etc. and how to identify different habitat types.

**Next Section – Part 2: Out on Country**

## Photo Point Monitoring



### Part 2: Out on Country



#### GATHER YOUR GEAR



**One set of this equipment for each site:**

- ☐ Star picket
- ☐ Weatherproof tag and wire (recommended)

**One set of this equipment for each team:**

- ☐ Electronic device(s) – charged and ready to record data, take photos and navigate to sites
- ☐ Power bank – charged and ready to charge devices (optional)
- ☐ GPS device and spare batteries (recommended)
- ☐ Reference documents: original photos (printed and laminated, or stored on electronic device)
- ☐ DSLR camera – charged and with blank SD card (optional)
- ☐ Compass (or use the one of your GPS or electronic device)
- ☐ Measuring tape
- ☐ Hammer, mallet or picket driver
- ☐ Spray paint (optional)
- ☐ Small whiteboard or piece of paper/card
- ☐ Whiteboard or permanent markers

#### KEEP IN MIND



**When?**

It is best to take photos on a bright but cloudy day between 10 am and 4pm when the sun is high in the sky so that there aren't too many shadows



**Where**

Avoid trampling vegetation within the sites.



**Who?**



At least two people

The survey can be done with one person, but it's better to have someone else to help get the field of view correct.

## Photo Point Monitoring



### Training and skills

Make sure everyone knows the plan.

Field staff are trained and competent in:

- ☐ Navigation systems (e.g. Avenza, GPS)
- ☐ Data collection systems (e.g. Fulcrum, paper datasheets)
- ☐ Taking photos with DSLR cameras
- ☐ Using a compass

## ACTIONS



### Set up photo point site

If you are at a new site:

1. Use the navigation device (e.g. GPS) to find where the site should be.
2. Check that it is a good place to take a photo and move to a nearby area if needed.
  - Does it have a good field of view of what you want to monitor?
  - Will plants grow in front of the star picket and obscure the view?
  - Can you easily get to the site without trampling the vegetation at the site?
3. If you moved the site, record new coordinates on your navigation device.
4. Hammer in the star picket
  - The top of star picket should be 1.3 m above the ground.
5. It is a good idea to spray paint the top of the star picket so that it can easily be found next time.
6. It is also a good idea to attach a weatherproof tag with wire to the star picket and label it with the site name/number on it so that you can check you are at the correct site next time.



7. Record **site set up data**



### Take the photos

8. Take a photo of the site number (tag attached to star picket, or written on the whiteboard/piece of paper)
  - This can help keep track of what photos belong to what site.
  - It's a good idea to check that the star picket is still at the correct height.
9. Place the camera or device on top of the star picket and:
  - a. Face toward the north,
  - b. Make sure the camera is fully zoomed out,
  - c. Make sure you are taking a landscape photo – turn the phone or tablet onto their side

## ENVIRONMENTAL MONITORING METHOD:

# Photo Point Monitoring



- d. Make sure the sky only takes up a third of the image,
10. If this is a repeat photo, check that the field of view matches the original photo. The second person can hold up the original photo next to the photographer so that the field of view can be lined up.
11. Take the photo
12. Repeat steps 9 to 11 but take photos facing east, then south, then west
  - Always take the photos in the same order: north, east, south, west.

 13. Record **photo data**

## RECORD DATA



### Data to record when setting up sites

What to record	Required?	Notes
<i>Information to record about each site</i>		
Project name	Yes	Make it clear which project this data belongs to and its purpose
Date	Yes	Record the date the photo point site was setup
Personnel	Yes	Record the name of the people who set up the site - this is helpful if any questions come up about the data
Site name/number	Yes	Record the name/number of the site
Location coordinates	Yes	Record an accurate location (using a handheld GPS if possible) (latitude and longitude or eastings and northings)
Star picket height	Yes	Record the height of the top of the star picket. This is so that if something happens to the star picket, you can put another one in at the same height.
Fire age	Optional	Record the fire history of the site.
Habitat description and/or photo	Optional	Describe or take a photo of the habitat type and landscape features at the site. This can provide some landscape context to the photo point monitoring. Make note of which camera/tablet/phone it was taken on, and the filename of the photo (usually end in .JPG)
Vegetation description	Optional	Record the most common plant species and their condition.
Signs of disturbance	Optional	Types and causes of disturbance you can see at the site
Stories and notes	Optional	Record information or stories from Elders, and anything else worth noting about the area or animals.
Video	Optional	Record videos of information or stories from Elders, and rangers performing or describing the work they are doing.



## ENVIRONMENTAL MONITORING METHOD:

# Photo Point Monitoring



### Data to record when taking photos

What to record	Required?	Notes
<i>Information to record each time a site has photos taken</i>		
Project name	Yes	Make it clear which project this data belongs to and its purpose
Date	Yes	Record the date the photos were taken
Personnel	Yes	Record the name of the people who took the photos - this is helpful if any questions come up about the data
Site name/number	Yes	Record the name/number of the site
Photos and photo direction	Yes	<p>There should be 5 photos per site:</p> <ol style="list-style-type: none"><li>1. Site name</li><li>2. North</li><li>3. East</li><li>4. South</li><li>5. West.</li></ol> <p>Make note of which camera/tablet/phone they were taken on, and the filenames of each photo (usually end in .JPG)</p>
Notes about site changes	Optional	Make note of any significant changes that have happened at the site, like fire, signs of disturbance, plant growth etc.
Stories and notes	Optional	Record information or stories from Elders, and anything else worth noting about the area or animals.
Video	Optional	Record videos of information or stories from Elders, and rangers performing or describing the work they are doing.

Next section – **Part 3: Back in the Office**

# Part 3: Back in the Office



## GATHER YOUR GEAR



### Equipment required for this part:

- ☐ Electronic device(s) that you used to record your data
- ☐ Data management system, e.g. cloud storage
- ☐ Laptop or computer with software for spreadsheets (e.g. Microsoft Excel) and mapping (e.g. QGIS, ArcGIS, Google Earth)
- ☐ SD card with images from the DSLR camera (if used to take photos)

## KEEP IN MIND



### When?

Always try to complete this work as soon as you can after returning from your time on Country so that photos don't get lost or deleted.



### Who?



At least one person to manage the photos and data



### Training and skills

Staff managing data are trained and competent in:

- ☐ Mapping software (e.g. QGIS, ArcGIS, Google Earth)
- ☐ Spreadsheet software (e.g. Microsoft Excel)
- ☐ Data collection systems (e.g. Fulcrum, datasheets)
- ☐ Data management systems (e.g. databases, cloud storage, external hard drives)

## ACTIONS



### Data entry, analysis and reporting

1. Record a summary of what you did and why, any observations (e.g. weather conditions, fire history, site condition), anything that went wrong or didn't work and things that worked well.
2. Upload the **site set up and photo data** to your data management system.
  - Recommended: get someone else to proof the data to check for mistakes.
3. Load the site photos onto your computer, organise them and upload them to your data management system.





## ENVIRONMENTAL MONITORING METHOD:

### Photo Point Monitoring

- Be careful that you don't mix up photos that were taken from different directions and different sites.
  - A folder for each site and for each date is a good way to organise them.
  - Rename each photo file with the name/number of the site, order/direction of the photo, and the date.
4. Upload any other photos or videos taken during the survey to your data management system.
  5. Compare the photos from each site to the photos taken previously, and note down if there have been any changes
  6. Discuss with the ranger team or community the results of the monitoring and if there have been any changes to previous years.
    - Consider whether trends might be related to your management (e.g. fire management or feral herbivore control) to check how well management is working, or if you need to make adjustments.
  7. Share the data according to any data sharing or funding agreements you have made

**Next section – Full Equipment List**

## Gather Your Gear – Complete List



The complete **GATHER YOUR GEAR** lists for **Get Ready**, **Out on Country** and **Back in the Office**.

Gear List	Required?	Get Ready	On Country	In Office
Electronic device(s): <ul style="list-style-type: none"> <li>Charged</li> <li>Ability to take photos</li> <li>App for data collection (e.g. Fulcrum)</li> <li>App for navigation (e.g. Avenza)</li> </ul>	✓	✓	✓	✓
Power bank <ul style="list-style-type: none"> <li>Charged</li> </ul>	Recommended		✓	
Laptop or computer with software for: <ul style="list-style-type: none"> <li>Mapping (e.g. QGIS, ArcGIS, Google Earth)</li> <li>Spreadsheets (e.g. Microsoft Excel)</li> </ul>	✓	✓		✓
GPS (e.g. Garmin handheld device) & spare batteries	Recommended	✓	✓	
Original photos reference documents <ul style="list-style-type: none"> <li>Printed and laminated or kept on electronic device</li> </ul>	✓		✓	
Star picket <ul style="list-style-type: none"> <li>One per site</li> </ul>	Site set up only		✓	
Measuring tape	✓		✓	
Hammer, mallet or picket driver	✓		✓	
Spray paint	Optional		✓	
Weatherproof tag and wire <ul style="list-style-type: none"> <li>One per site</li> </ul>	Recommended		✓	
Small whiteboard or piece of paper/card	Optional		✓	
Whiteboard or permanent markers	Optional		✓	
Compass <ul style="list-style-type: none"> <li>Alternatively use the one of the GPS or electronic device</li> </ul>	Optional		✓	
DSLR camera <ul style="list-style-type: none"> <li>Charged</li> <li>Blank SD card</li> </ul>	Optional		✓	✓
Data management system (e.g. cloud storage)	✓			✓