



## About This Method



This document helps you to monitor Feral Pigs using Dung Counts. This method has been developed from [Monitoring Techniques for Vertebrate Pests: Feral Pigs, B. Mitchell & S. Balogh \(NSW Department of Primary Industries\)](#). You can find more information on the Monitoring Country website: [monitoringcountry.org.au](http://monitoringcountry.org.au) or scan the QR code.



This method has three parts: **1. Get Ready**, **2. Out on Country** and **3. Back in the Office**. Each part can be undertaken separately but you must complete all three parts to finish the method. At the end of the document, you will find guidance for all the gear you need - [Gather Your Gear – Complete List](#).

We recommend you read the whole document before you start.

## Part 1: Get Ready



### GATHER YOUR GEAR



#### Equipment required for this part:

- Tablets/phones with:
  - ability to take photos
  - data collection and navigation systems
- Laptop or computer with software for:
  - mapping (like QGIS, Google Earth)
- GPS device (recommended)
- Reference documents or field guides:
  - Feral Pig signs guide (to print and laminate)

### KEEP IN MIND



Make sure there is a clear [monitoring question](#) and that the [method](#) you have selected will answer the monitoring question.



## ENVIRONMENTAL MONITORING METHOD:

# Feral Pig Dung Counts

If this is the first time you are monitoring, you will need to [design the survey](#): what are you monitoring, where will you survey, and when and how often you will survey?



### When?

Prepare well before heading out on Country so that you have time to gather gear 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 (like QGIS, Google Earth) and/or [monitoring point generator](#)
- Navigation systems (like Avenza, GPS)
- Data collection systems (like Fulcrum, datasheets)



### 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 licences or ethics permits](#)
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



*If you have done this monitoring before, it is best to do the surveys at the same time and same sites so that you can compare the data to previous surveys and see if there have been changes.*

1. Plan which dates you will conduct surveys
  - You will set up and clear the sites, then re-visit them after one month
  - You can revisit multiple times but always wait one month in between
  - Avoid surveying when heavy rain or strong winds are forecast





## ENVIRONMENTAL MONITORING METHOD:

# Feral Pig Dung Counts

2. Gather Feral Pig [records in your area](#) and identify where potential Feral Pig habitat is.
  - Such as from Traditional Owners, Atlas of Living Australia (ALA) or government databases.
3. Use the [monitoring point generator](#) or GIS mapping software to select your sites
  - Sites are typically 4 km x 4 km, usually near a creek line or a dam
  - If you want/have more than one site, spread sites at least 5 kilometres apart
  - If you are monitoring to see the effect of feral pig management, do the monitoring in the same area you are managing. You can also choose a control site (an area without management) for comparison.
  - Randomly place 100 plots (10 metres x 2 metres) within each site, making sure the plots don't overlap
4. Give each site and plot a unique name, and export and save the location data in your data management system
5. Prepare maps of sites and load sites onto navigation devices
6. Plan how you will record information on Country (electronic or paper data forms)
7. Plan your [data management system](#) - how you will store dung count data
8. Check **GATHER YOUR GEAR** lists for **Get Ready**, **Out on Country** and **Back in the Office** ([complete list on last page](#)) and get any equipment you don't have.
  - See [buying guide\(s\)](#) for advice

## Train

1. Check the **Training and skills** requirements for **Get Ready**, **Out on Country** and **Back in the Office** steps and arrange any training or expertise that you need.
2. Run everyone involved in the survey through the plan.
  - Be clear on how many people will be involved, what everyone will be doing, and what they will need to do the survey.
3. Prepare guides for identifying Feral Pig dung
4. Run a training session for all rangers involved in the survey to learn or refresh:
  - a. How to use the devices (tablets/phones, GPS)
  - b. How to use data collections apps and record data
  - c. How to identify Feral Pigs and their habitat

## Next Section – Part 2: Out on Country

### Feral Pig Dung Counts

Get Ready

On Country

In Office

Gear List

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National Environmental Science Program

We acknowledge Aboriginal and Torres Strait Islanders as the Traditional Owners and Custodians of Country and recognise their continuing connection to and stewardship of land, water, and sea. We honour their culture, customs, and community. We pay our respects to their Ancestors, Elders, and future leaders.

## ENVIRONMENTAL MONITORING METHOD:

# Feral Pig Dung Counts



## Part 2: Out on Country



### GATHER YOUR GEAR



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

- Tablets/phones
- Power bank (optional)
- GPS device and spare batteries (recommended)
- Reference documents or field guides: Feral Pig signs guide
- Hammer, mallet, or picket driver (for transect setup)
- 30 metre measuring tape (for transect setup)
- 10 metre piece of rope
- Ruler

#### One set of this equipment for each plot:

- 2 star pickets

### KEEP IN MIND



#### When?

The first dung count is done one month after the plots are set up. All later counts are done one month apart.



#### Who?



At least 2 rangers per site



#### Training and skills

Make sure everyone knows the plan.

Field staff are trained and competent in:

- Navigation systems (like Avenza, GPS)
- Data collection systems (like Fulcrum, paper datasheets)
- Identifying Feral Pig dung (and other signs)

## Feral Pig Dung Counts

Get Ready

On Country

In Office

Gear List

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Resilient  
Landscapes

National Environmental Science Program

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## ENVIRONMENTAL MONITORING METHOD:

# Feral Pig Dung Counts

## ACTIONS



Check that your electronic devices (tablets/phones, power banks, GPS, batteries) are charged before you head out.



### Set up plots

At each plot at the site:

1. Use the measuring tape to measure out 10 metres
2. Hammer in 2 star pickets at either end of the 10 metre line to mark out the centre line
  - Each plot is 10 metres long x 2 metres wide

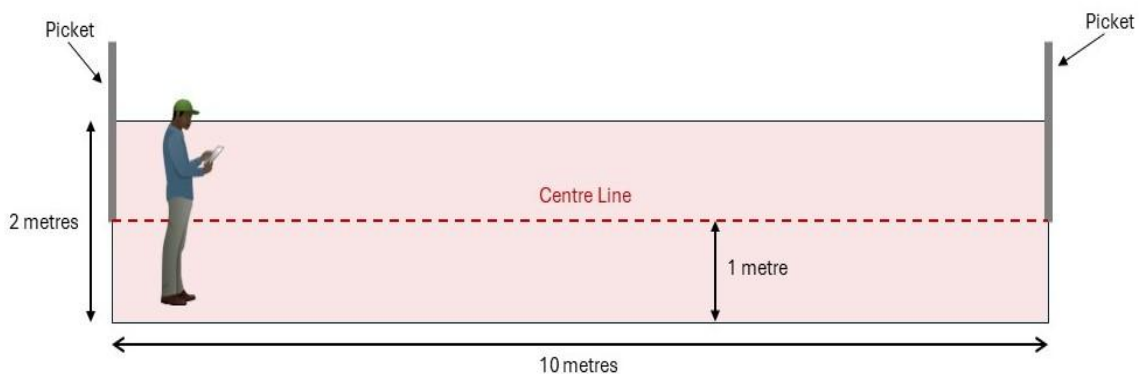


Diagram of plot setup for Feral Pig dung counts. Red shaded area is the area to be searched.

3. Clear away all dung from the plot
  - Make sure the dung is moved far enough away that it won't blow back into the plot.



4. Record **plot set up data**



### Dung Counts

1. Return to the plot after 1 month
2. Use the 10 metres piece of rope to mark the centre line between the 2 star pickets
3. Search for and count dung along the centre line, looking within 1 metre of either side of the line.
  - It can be useful to clear dung out of the plot as you find it to avoid double-counting.
  - Do not count dung outside of the plot.
4. If you are unsure about dung identification, take a photo of the dung with a ruler next to it for scale to identify when you are back at the office.



5. Record **dung count data**

6. After counting all of the dung, make sure all the dung has been cleared away.

## Feral Pig Dung Counts

Get Ready

On Country

In Office

Gear List

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**ENVIRONMENTAL MONITORING METHOD:**

**Feral Pig Dung Counts**

- Make sure the dung is moved far enough away that it won't blow back into the plot.
7. Repeat the dung counts at the same plots every month until the monitoring program is completed.

**RECORD DATA**



**Data to record when setting up plots**

What to record	Required?	Notes
<i>Information to record about each plot</i>		
Project name	Yes	Make it clear which project this data belongs to and its purpose
Date of set up	Yes	Record the date the plot was set up
Personnel	Yes	Record the name of the people who set up the plot - this is helpful if any questions come up about the data
Site name/number	Yes	This is the name of the site which contains your plots
Plot name/number		This is the name of the 10m x 2m plot that you set up
Location coordinates	Yes	Record an accurate location (using a handheld GPS if possible) (latitude and longitude or eastings and northings)
Habitat description	Yes	Describe the vegetation type and landscape features at the plot (like open Eucalypt woodland, grassy understorey next to seasonal creek)
Presence or absence of Feral Pig dung, tracks or other signs	Yes	Record whether Feral Pig dung was found in the plot during set up
Photo of plot	Optional	Take a photo of the plot and surrounding vegetation, and make note of which camera/tablet/phone it was taken on, and the filename of the photo (usually end in .JPG)
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:

# Feral Pig Dung Counts



### Data to record when counting Feral Pig dung

What to record	Required?	Notes
<i>Information to record about each plot searched</i>		
Project name	Yes	Make it clear which project this data belongs to and its purpose
Date of dung count	Yes	Record the date the plot was searched
Personnel	Yes	Record the name of the people who did the dung counts - this is helpful if any questions come up about the data
Site name/number	Yes	This is the name of the site which contains your plots
Plot name/number		This is the name of the 10m x 2m plot that you searched
Presence/absence of Feral Pig dung	Yes	Record whether there was Feral Pig dung found in the plot
Count of Feral Pig dung	Yes	Record how many Feral Pig dung pellets were counted inside the plot
Photo of site	Optional	Take a photo of the plot and surrounding vegetation, and make note of which camera/tablet/phone it was taken on, and the filename of the photo (usually end in .JPG)
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:

- Tablets/phones (or paper datasheets) that you used to record data
- Data management system (like databases, cloud storage, external hard drives)
- Laptop or computer with software for:
  - Spreadsheets (like Microsoft Excel)
  - Mapping (like QGIS, Google Earth)

### KEEP IN MIND



#### When?

Always try to complete this work as soon as you can after returning from your time on Country so that what you did and what you saw is fresh in your memory.



#### Who?



At least one person to manage the data



#### Training and skills

Staff managing data are trained and competent in:

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

### ACTIONS



#### Data entry, analysis and reporting

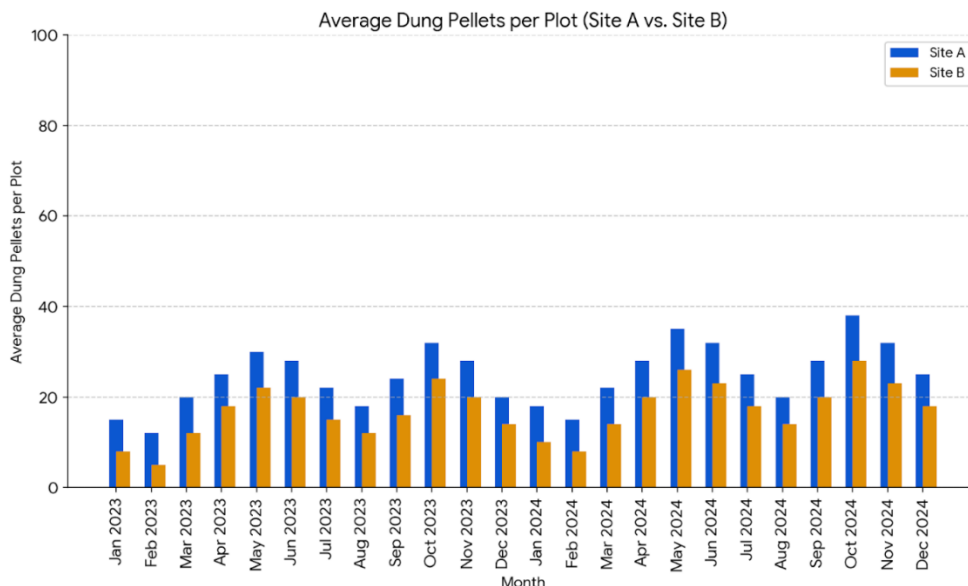
1. Record a summary of what you did and why, any observations (like weather conditions, fire history, site condition), anything that went wrong or didn't work and things that worked well.
2. Review any photos that were taken of dung that needed to be identified
3. Upload the **site setup and dung count data** to your data management system.



## ENVIRONMENTAL MONITORING METHOD:

# Feral Pig Dung Counts

- Recommended: get someone else to proof the data to check for mistakes.
4. Upload any photos or videos taken during the survey to your data management system.
  5. Import the data into a spreadsheet
  6. Calculate each site's average number of dung per plot for each month's monitoring:
    - a. Add up the dung counts for all plots within each site
    - b. Divide the total dung count by 100 (this is the number of plots within a site, change the number to match what you actually surveyed like if you surveyed 95 plots, divide the total dung count by 95).
  7. Create a simple graph of each site's average dung per plot for each month you have monitored



8. In GIS mapping software, create a map of where Feral Pig dung were found
9. Discuss with the ranger team or community the results of the monitoring, any reasons for the presence or absence of Feral Pigs, and if there have been any changes compared to previous years or months
  - Consider whether trends might be related to your management (like Feral Pig control) to check how well management is working, or if you need to make adjustments.
10. Share the data according to any data sharing or funding agreements you have made

### Next section – Full Equipment List

## Feral Pig Dung Counts

Get Ready

On Country

**In Office**

Gear List

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## Gather Your Gear – Complete List



The complete **GATHER YOUR GEAR** list for **Get Ready**, **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 (like Fulcrum)</li> <li>App for navigation (like Avenza)</li> <li>[list other apps needed]</li> </ul>	✓	✓	✓	✓
Power bank <ul style="list-style-type: none"> <li>Charged</li> </ul>	<b>Recommended</b>		✓	
Laptop or computer with software for: <ul style="list-style-type: none"> <li>Mapping (like QGIS, ArcGIS, Google Earth)</li> <li>Spreadsheets (like Microsoft Excel)</li> <li>[list other software needed]</li> </ul>	✓	✓	✓	✓
GPS (like Garmin handheld device) & spare batteries	<b>Recommended</b>	✓	✓	
Feral Pig signs reference documents and/or field guides	✓	✓	✓	
Star pickets <ul style="list-style-type: none"> <li>2 per plot</li> </ul>	<b>For site set up only</b>		✓	
Hammer, mallet or picket driver	<b>For site set up only</b>		✓	
30 m tape measure	<b>For site set up only</b>		✓	
10 m piece of rope	✓		✓	
Ruler	✓		✓	
Data management system (like cloud storage)	✓			✓