

Wildlife Friendly Gardening in Southwestern Australia

Guide 2

Wildlife Monitoring Manual

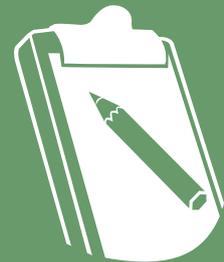
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THE UNIVERSITY OF
**WESTERN
AUSTRALIA**



Perth NRM



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We thank all our project partners that have provided support and advice on this project:

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Disclaimer

Any participants taking part in the monitoring activities described in this manual does so at their own risk. All wildlife monitoring techniques for this project have been approved by the University of Western Australia's Animal Ethics Committee, application number: 2021/ET000799.

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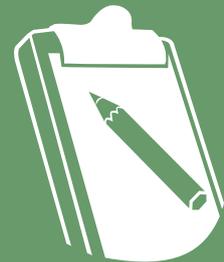


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Purpose of this Guide - Monitor Your Garden!

This document provides a guide for residents in southwestern Australia (Figure 1) to monitor:

1. Vertebrate wildlife (animals with a backbone) in their gardens and
2. The use of wildlife friendly structures by animals.

The data collected by citizens will be used in research to understand the potential biodiversity benefits of wildlife friendly gardening.

This resource has been produced as part of a citizen science research project; 'Turning Gardeners into Conservationists: Using Gardens to Conserve Wildlife' led in partnership by the University of Western Australia and Perth NRM. This project is funded by the Australian Government's Inspiring Australia Science Engagement Programme. This guide only covers vertebrate monitoring and certain wildlife friendly structures that are the focus of the research project.

This guide does not:

- Provide a monitoring protocol for all animals in southwestern Australia
- Provide a monitoring protocol for all wildlife friendly gardening structures or activities

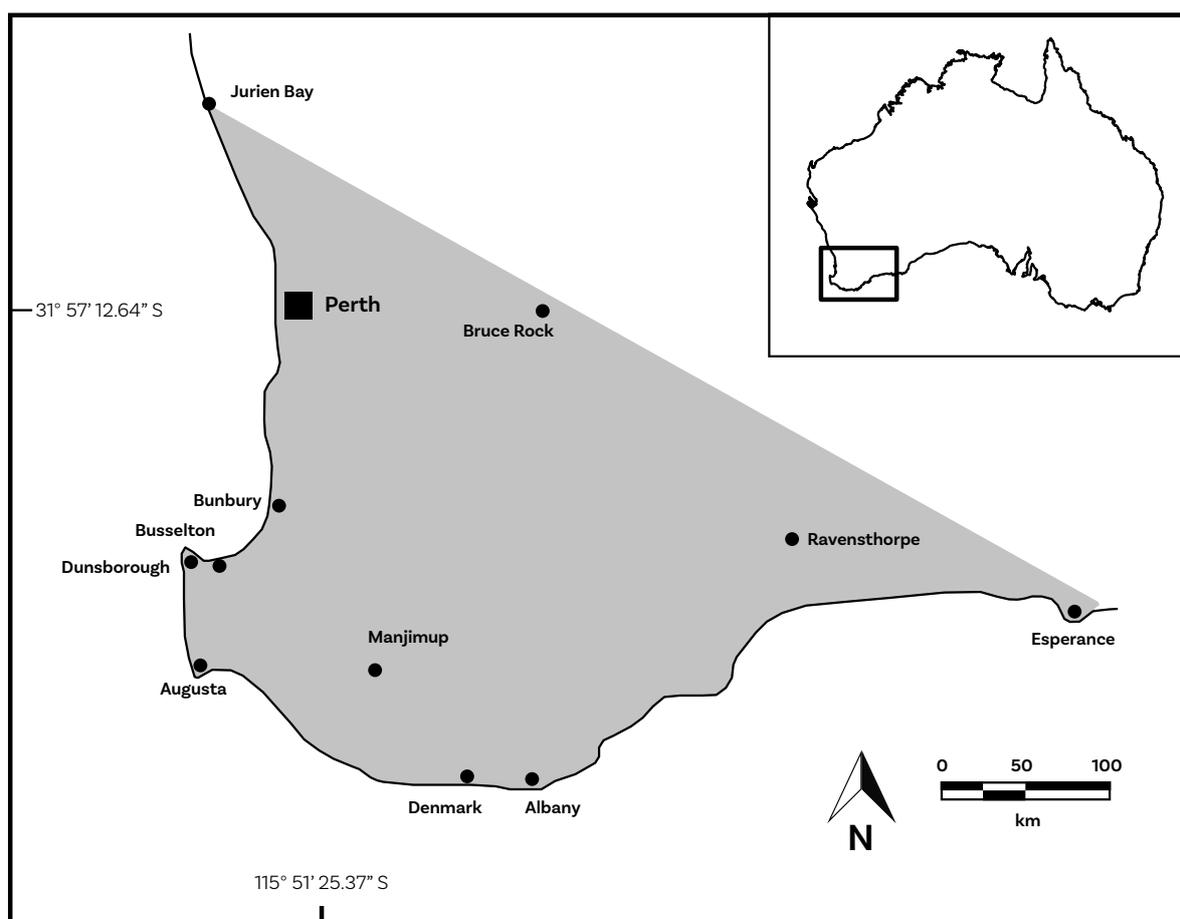


Figure 1: Map defining region covered by this monitoring guide: southwestern Australia, from Jurien Bay to Esperance.



What is Wildlife Friendly Gardening?

Wildlife friendly gardening is the manipulation of gardens by residents with the goal of providing habitat for wildlife. This can include providing water sources, food resources and shelter for wildlife. Common wildlife friendly structures that can be installed in gardens are ponds, bird baths, nest boxes, frog hotels, bee hotels and reptile shelters.

Participants in the Project

Over 1000 people in southwestern Australia registered to be a part of the Turning Gardeners into Conservationist project. If you are one of them - welcome! Thank you for generously donating your time to help us monitor wildlife in gardens and research whether wildlife friendly gardening has biodiversity benefits. The data you collect during this project will be directly used by researchers to investigate this knowledge gap. Thank you!

How to Use this Manual

This manual provides step-by-step instructions to monitor wildlife in your garden. The monitoring techniques are divided into two sections:

1. **General Garden Monitoring**

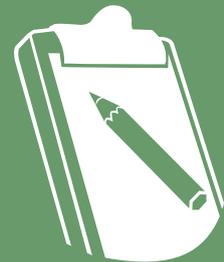
Describes five different techniques to monitor birds, frogs, mammals, and reptiles that use your garden.

2. **Wildlife Friendly Structure Monitoring**

Describes seven different techniques to quantify vertebrate animal use of your wildlife friendly structures. These structures include bird baths, ponds, frog hotels, bird boxes, possum boxes, bat boxes and reptile shelters.

For each monitoring technique, there are descriptions for the:

Monitoring Aim:	The key aim of the monitoring
Animals:	The animals that the technique targets
Equipment:	The equipment required to complete the monitoring
Timing:	The best times to monitor each animal type, and the survey frequency
Instructions:	Step by step instructions on how to carry out the surveys
Tips:	Some hints and tips to help complete the monitoring



Length and Frequency of Monitoring

We are aiming for weekly monitoring for most techniques, however, do not worry if you miss a week here and there. As much as you can manage is great! Participants can choose how long they would like to carry out the surveys, join us for the full 18-months, or try to aim for a minimum of three months!

It is up to you how many of the monitoring methods you undertake. You can undertake just one, or if you are keen - all of them! If time is a constraint for you, we would much rather you do one method regularly than multiple methods only occasionally.

Frequently Asked Questions

What equipment do I need to monitor my garden?

All techniques will require a pen or pencil and a field sheet. There is an associated field sheet for each monitoring technique; download your chosen technique field sheets from: <https://bit.ly/39Z9IGv>. If you do not have access to a printer you can copy sections into a notebook, this will become your field sheet - make sure you copy all sections so you do not miss any important information. It is handy to attach your field sheets to a clipboard for easy writing, as well as to keep your field sheets together.

Please see the 'Equipment' section within each monitoring technique to see specific requirements.

How will I identify the species I see in my garden?

To assist with identifying the species you see when monitoring, you can refer to our 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide.' This provides lists and images of the birds, frogs, mammals and reptiles you are likely to encounter in southwestern Australian gardens. There are also a few handy smartphone applications which can help you identify the species - so it's great to have your phone to use for apps, as a timer, or perhaps to capture any happy snaps on the way. For frogs and birds these are two very helpful apps that you can download:

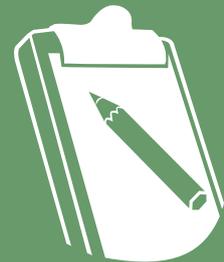


Aussie Bird Count
BirdLife Australia Ltd.



FrogID
Australian Museum





Frequently Asked Questions

Where do I enter my data?

Any data you collect for any of the monitoring methods needs to be entered here:

https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46

Alternatively, scan this QR code to take you to the data entry site:



Make sure you have your property ID number handy!

Do I need to do all of these monitoring methods?

No! Do as many as you have time for or are interested in.

How long do I have to monitor for?

The longer the better, but we are aiming for a minimum of three months.

What if I have to go away or can't monitor during certain periods of time?

That's ok! Try to undertake your surveys as regularly as this manual describes, but if you can't for some reason, don't worry! Just do what you can. All data you collect is great!

What if I don't see any wildlife during my surveys?

This is ok too and actually really important information to capture! If you don't see any wildlife during your survey please make sure you still enter your data and tell us you didn't see anything! This is just as important as surveys where you do see wildlife!



Frequently Asked Questions

What if I have a really big garden and can't search it all?

If your garden is too big to search entirely, choose to undertake the survey in a smaller part of your garden. If you do this, make sure you survey the same part of your garden each time. If you live on a rural property, your house garden is the best part to survey for this project! Make a note of what percentage of your property you searched as we will ask this question on the data entry site.

Can I keep my data and images?

Of course! Simply make a copy for yourself before you submit it to us.

What do I do if an animal I monitor as a part of this project seems unwell or injured?

We don't expect any of the monitoring techniques or wildlife friendly structures to cause harm to wildlife during this project.

In the unlikely event you see an animal with injuries or in distress **during your monitoring**, please follow the appropriate guidelines (below):

- **Serious injuries** (e.g. broken bones, lifelessness) - using a towel, immediately place the animal in a dark box (with air holes) or dark pillow case and transport to the closest vet. If the animal is unsafe to approach, or cannot be transported, call a vet to your property. **Notify your project contact at UWA or Perth NRM as soon as possible.**
- **Showing minor signs of discomfort** (e.g. shivering, rapid breathing, minor injuries) - leave it for 15 minutes and then re-inspect. If it is improving, leave it for another 15 minutes and then re-inspect once more. If it is still improving or fully recovered, then leave it undisturbed. If it appears no better or worsens at either inspection, then **take the animal to a vet and notify your project contact.**

If you find sick or injured wildlife anytime **outside of your wildlife monitoring activities**, call the Wildcare Helpline telephone referral service to seek advice on how to find care for the animal.

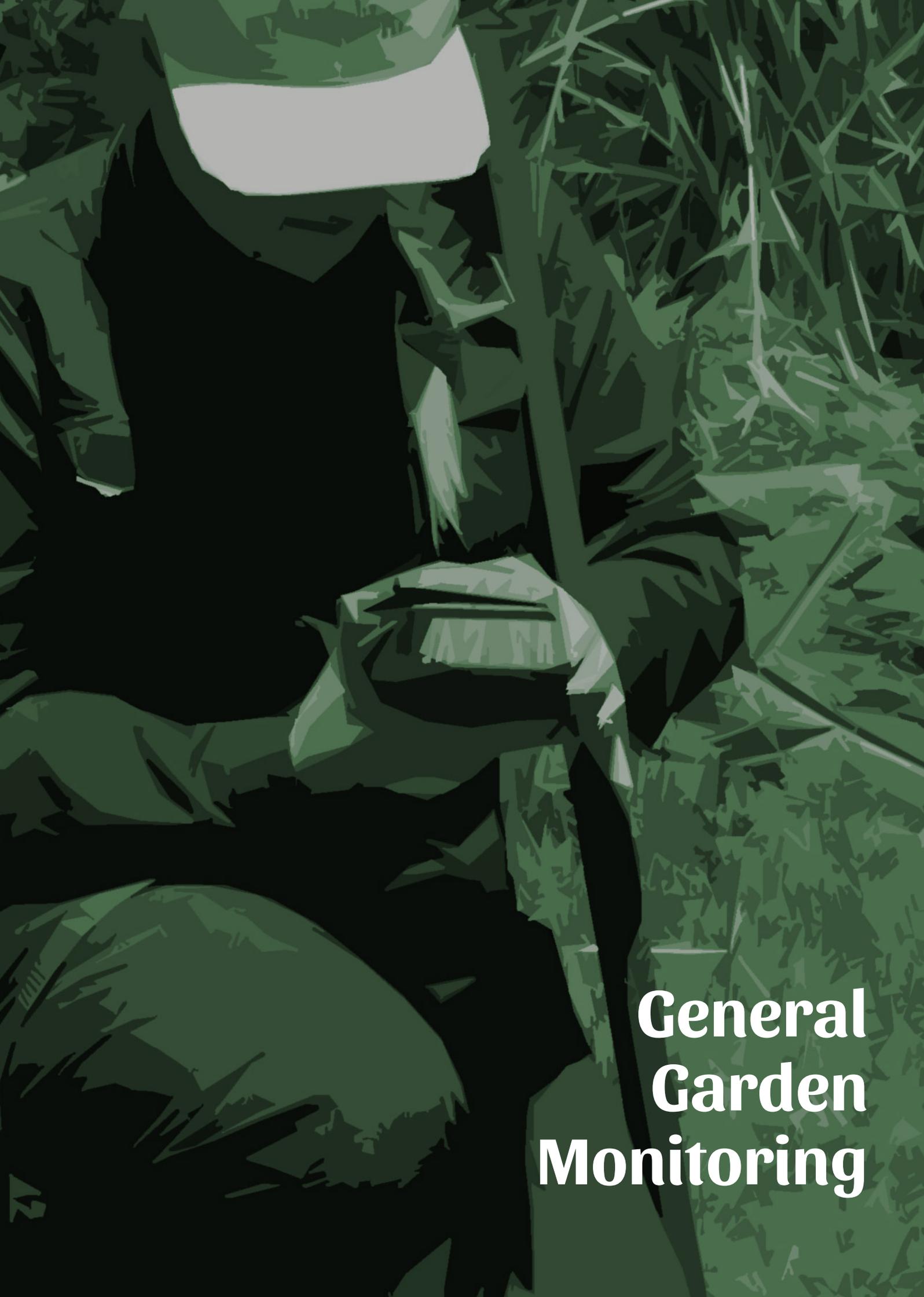


General Monitoring Guidelines

Be as quiet as possible and keep pets indoors during your surveys so you don't frighten animals away.

Our native Australian wildlife are wild, not pets, please do not touch or handfeed them. This project aims for citizens to view and monitor wildlife in their garden without disturbing them.

Please see the 'Tips' section under each technique for specific handy hints.

A person wearing a green uniform and a white visor is examining a plant in a field. The person is leaning over, and their hands are near the plant. The background is a dense field of green plants. The text "General Garden Monitoring" is overlaid in the bottom right corner.

General Garden Monitoring

Bird Counts



Monitoring aim

To count the number of birds that use your garden.

Animals

Birds.

Equipment

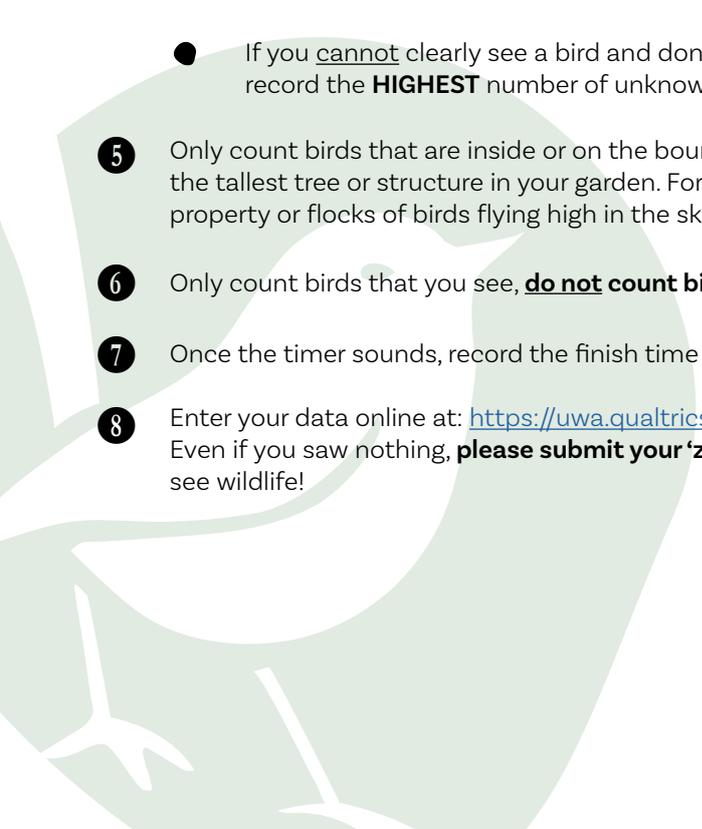
Timer, field sheet, pencil.

Timing

Once per week, sometime between sunrise and 10 am, or 2pm and sunset.

Instructions

- 1 Find a spot where you have a good view of your garden and where you won't frighten or deter birds. The edge of your garden, patios or decks are good choices to sit or stand. Make sure you count birds from the same spot in your garden every time you do a survey.
- 2 Fill in your site details on your field sheet and record the date and start time of your survey.
- 3 Set a timer for 20 minutes and watch your garden quietly. For every species of bird you see record the species and the **HIGHEST** number you saw at one time. For example, if you see 2 magpies at the 5 minute mark, then 7 magpies at the 10 minute mark and then 3 magpies at the 15 minute mark you would record 7, as this is the *highest* number of magpies you saw at one time.
- 4 Don't worry if you can't ID a bird!
 - If you can clearly see a bird and know it is different from other birds you have seen but don't know its name, call it a unique made-up name (e.g. 'Bird A', 'Bird B') and record the **HIGHEST** number of that bird you saw at one time. You may like to note some details about colour, size and bird type so you can identify it after the count.
 - If you cannot clearly see a bird and don't think you will be able to ID it later, call it "Unknown Bird" and record the **HIGHEST** number of unknown birds you saw at one time.
- 5 Only count birds that are inside or on the boundary of your property and that are no higher than 2 metres above the tallest tree or structure in your garden. For example, you would not count birds you see in your neighbour's property or flocks of birds flying high in the sky.
- 6 Only count birds that you see, **do not count birds that you hear**.
- 7 Once the timer sounds, record the finish time on your field sheet.
- 8 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!



Bird Counts



Aussie Bird Count
BirdLife Australia Ltd.

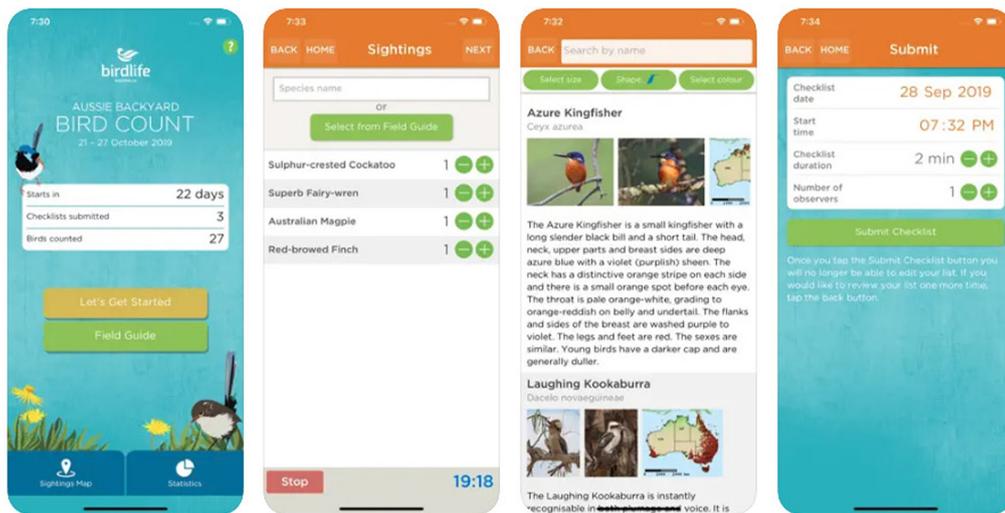


Figure 2: Download the Aussie Bird Count app to help you ID birds. You can search the species name or filter based on bird size, shape and colour to ID the birds you have seen.

Tips

- Be as quiet as possible during your survey so you don't frighten birds away.
- Keep pets indoors during your survey.
- Undertake your bird survey from the same spot each week.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- You can also use the Aussie Bird Count app or Bird Finder (<https://www.birdsinbackyards.net/finder>) to help you identify birds. These will help you by filtering on bird shape, size and colour.

Bird Counts

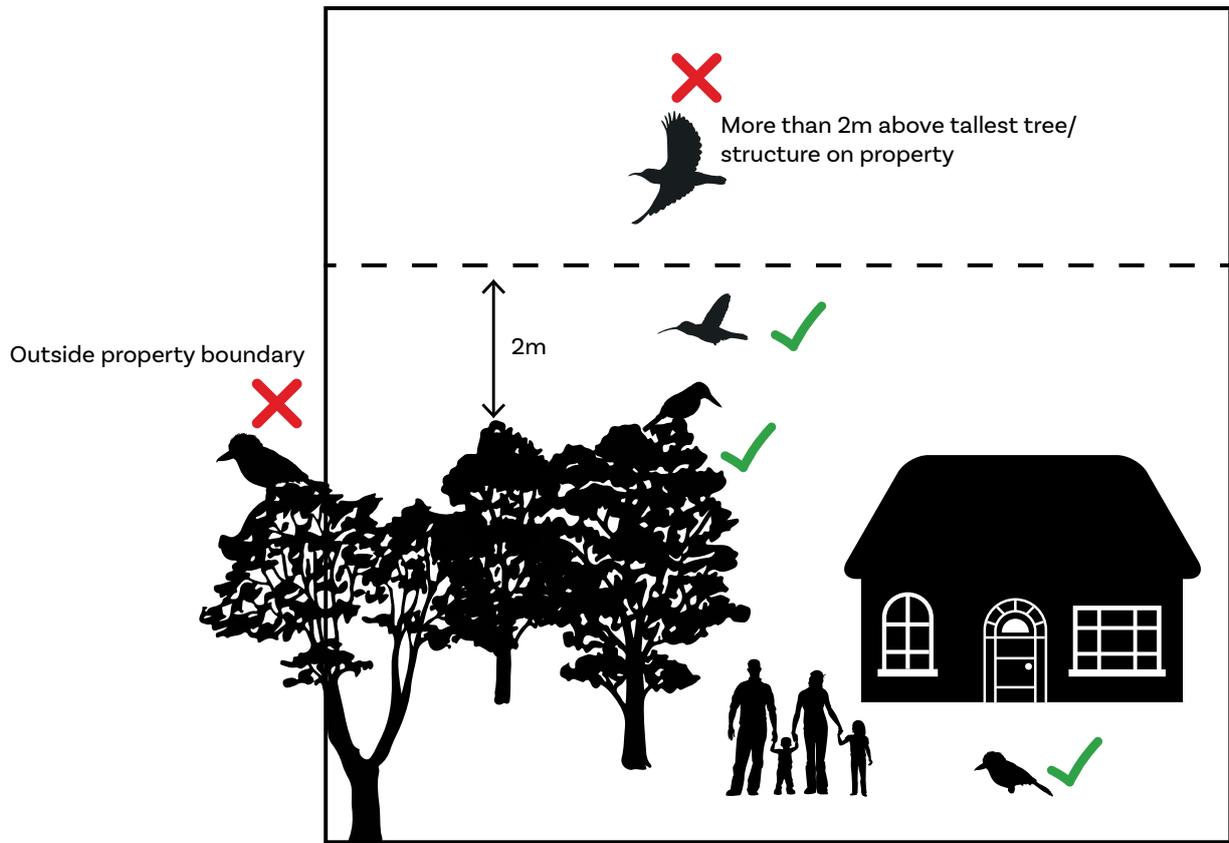
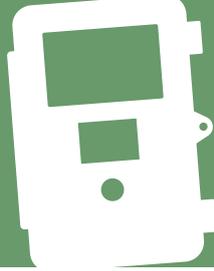


Figure 3: Only count birds that are inside your property boundary and that are no higher than 2 m above the tallest tree or structure in your garden.



Camera Trapping



Monitoring aim

To record the activity of animals in your garden.

Animals

Birds, mammals, reptiles.

Equipment

1 motion sensing infrared camera, 8 AA batteries, 1 SD card, one wooden stake or metal star picket, hammer or sledgehammer, one camera tie, field sheet, pencil, camera lead, computer.

Timing

10 nights every month. Avoid setting and pulling in the camera in wet weather.

Instructions

- 1 Find a spot in your garden that is reasonably clear of vegetation and won't have people walking in front of it too often. Please also keep in mind people's privacy when placing your camera.
- 2 Plan to place the camera so that it faces roughly south and is at least 3 m away from the nearest obstacle (e.g. fence, tree trunk). The camera should be at a 90 degree angle to the ground. Facing it south will reduce glare from the sun.
- 3 Hammer in a star picket/stake until it is firm in the ground and no longer wobbles (at least 50 cm deep).
- 4 Open clasps on camera and insert new (or fully charged) batteries and SD card into the camera.
- 5 Move the switch to SETUP (up one click). You will hear a beep and the set up screen will turn on. See Figure 5 on page 16 for a labeled picture of your camera.
- 6 Check all the settings are correct.
 - Press Menu
 - Use the down arrows to get to each setting category and the left and right arrows to change the settings under each category.
 - Save your change for each setting category by pressing OK before moving to the next setting.
 - The camera should be on the following settings:

Camera Mode:	Photo
Photo Size:	14MP
Video Size:	Leave as is - not relevant
Photo Burst:	3 Photos
Video Length:	Leave as is - not relevant
Set Clock:	Check time and date are correct. Time format is HH:MM:SS. Date format is YY/MM/DD.
Time Lapse:	Off
PIR Trigger:	Low
PIR Interval:	0 Sec
Work Hour:	Off
Game Call:	Off
Language:	English
Beep Sound:	On
Camera Posit:	Off
Recycle Storage:	Off
Format SD:	Do not change (this will return the camera to default settings)
Default Set:	Do not change (this will return the camera to default settings)
Version:	Leave as is - not relevant

Camera Trapping



- 7 Once you have checked the settings, click MENU to exit the menu.
- 8 Turn camera OFF (down one click). Close the camera.
- 9 Attach camera to the star picket/stake with the camera tie approximately 30-40 cm above ground level so that it faces south. Ensure the camera is securely attached and does not wobble.
- 10 Open the camera and turn it ON (up two clicks). The set up screen will be black. Close the camera and fasten clasps. Check that the red light on the front of the camera is flashing. It will flash around 10 times for 10 seconds before stopping.
- 11 Fill in your site details on your field sheet. Record the SD card number and the date and time you started the camera on your field sheet.
- 12 Leave the camera in your garden for 10 nights.
- 13 After the 10 nights, open up the camera and switch to OFF (down two clicks).
- 14 Record the date and time that you turned the camera off on your field sheet.
- 15 Remove the camera. You may wish to leave the star picket/stake in the ground to save you hammering it in again the following month.
- 16 Plug the camera into your computer using the camera lead. Make sure the SD card is still in the camera. This looks similar to a USB drive on your computer.
- 17 Copy the images from the camera and upload to the drop box the researchers have given you a link to. You can keep a copy of the images on your computer too if you wish.
- 18 Once you have uploaded the images to the drop box account, delete all images on the camera and unplug the camera. The camera is now ready to use again.
- 19 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
- 20 When you set up the camera during the following months, make sure you install it in exactly the same location and facing the same way as the first time. You can take a photo on your mobile to remind you of the camera position.



Camera Trapping



Straight, at least 3m from nearest obstacle, no vegetation



Too close to the nearest obstacle



Not straight, facing upwards



Facing vegetation that will sway in wind



Figure 4: Ensure you place your camera straight (at a 90 degree angle to the ground), at least 3 m from the nearest obstacle and with no vegetation in front of it that will trigger the camera in the wind.

Tips

- Place your camera out of sight from roads or other public places to avoid theft.
- Install the camera in exactly the same location and facing the same way for every survey.
- Do not place any food or other wildlife attractants in front of the camera.
- Do not delete any images from the camera before they have been saved to the drop box link.
- Avoid opening the camera in the rain, to protect it from water damage.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.

Camera Trapping

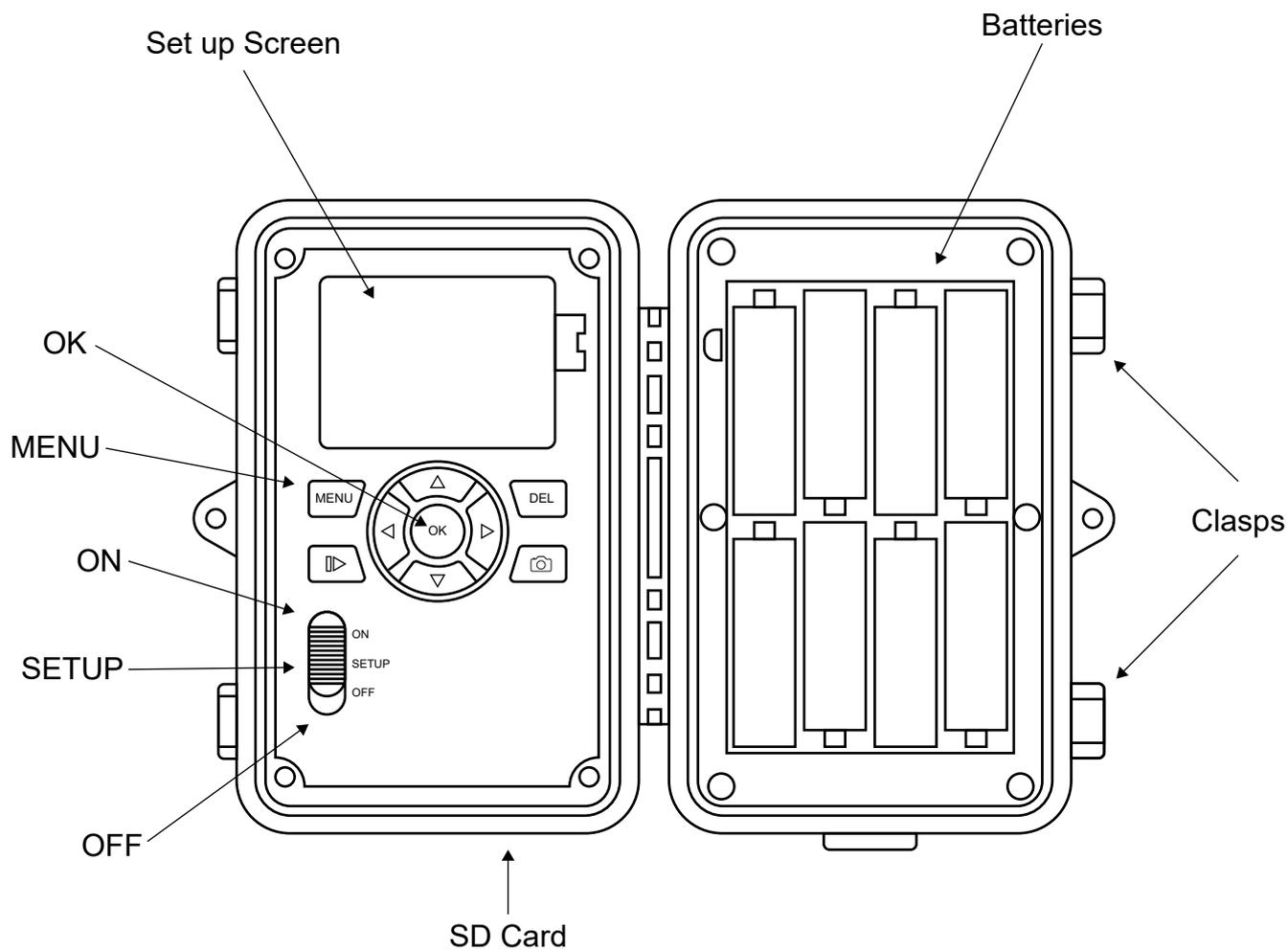


Figure 5: Internal camera layout.



Figure 6: Ensure the camera is placed with the black square at the top (left image) and that it is fastened to the stake straight (at a 90 degree angle to the ground) and securely (right image).

Camera Trapping

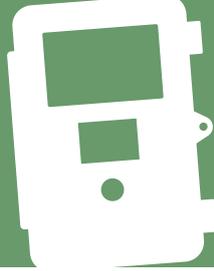


Figure 7: Example of the types of images captured using camera traps. **Left:** a mudlark (*Grallina cyanoleuca*). **Right:** A quenda (*Isoodon fusciventer*).





Frog Searches

Monitoring aim

To count the number of frogs that use your garden.

Animals

Frogs.

Equipment

Head torch, field sheet, pencil.

Timing

Once per week sometime between after-dark and midnight. Prioritise nights after or during rainfall. If there has been no rain all week, don't worry! Still do your weekly survey.

Instructions

- 1 Once dark, turn your head torch on and place on head.
- 2 Fill out your site details on your field sheet and record the date and start time of your survey.
- 3 Walk very slowly and quietly around your garden and visually scan all structures in your garden for frogs. This includes the ground, ponds, damp areas, trees, shrubs, rocks, wood piles, and other ground-structures. Also be sure to check rock crevices, cracks, log holes, and frog hotels. Keep your eyes out for movement, their body shape and eye shine to find frogs!
- 4 Try to search your garden systematically (e.g. from left to right) so you don't accidentally look in the same part of your garden twice.
- 5 When you see a frog, record what species it is and count the **TOTAL** number of individuals you see of each species as you walk around your garden. For example, if you see one motorbike frog in your front garden and then two in your back garden, you would record three motorbike frogs. Make sure you don't count the same individual more than once.
- 6 Don't worry if you can't ID a frog!
 - If you can clearly see the frog and know it is different from other frogs you have seen but don't know its name, call it a unique made-up name (e.g. 'Frog A', 'Frog B') and record the **TOTAL** number of that frog you saw. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see the frog and don't think you will be able to ID it later, call it "Unknown frog" and record the **TOTAL** number of unknown frogs you saw.
- 7 Only count frogs that are inside or on the boundary of your property. Only count frogs that you see, **do not count frogs that you hear**.
- 8 Continue searching your garden until you have looked at all structures. Record the finish time on your field sheet. It should take you a minimum of 10 minutes to complete your survey.
- 9 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

Frog Searches



Figure 8: Download the Frog ID app to help you ID frogs. Tap 'Explore' and then 'Filter'. Turn 'Near Me' on and then filter based on frog 'Adult body size' and 'Colour'. On the 'Explore' Screen you can also search species name using the search symbol.

Tips

- Be as quiet as possible when walking so you don't scare frogs away.
- When you find a frog, make sure you only shine your light on it for a minute or two at the most to avoid hurting its eyes.
- If you have a very large garden (e.g. a rural property) you can choose to undertake the survey in a smaller part of your garden. If you do this, make sure you survey the same part of your garden each time.
- Only start your survey once it's dark enough. You can tell it is dark enough if you need a torch to see.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- You can also use the Frog ID app to help identify frogs. We recommend you only filter on location (turn 'near me' on), frog size and colour.

Reptile Searches



Monitoring aim

To count the number of reptiles that use your garden.

Animals

Lizards, snakes, turtles.

Equipment

Small torch to illuminate dark areas, field sheet, pencil.

Timing

Once per week sometime between sunrise and sunset. Avoid rainy, cold days and extremely hot days to undertake your surveys.

Instructions

- 1 Fill in your site details on your field sheet and record the date and start time of your survey.
- 2 Walk very slowly and quietly around your garden and visually scan all structures in your garden for reptiles. This includes the ground, trees, shrubs, rocks, wood piles, reptile shelters, sheds, roofs and other man-made structures.
- 3 Use a torch to inspect dark shelter sites like rock crevices, cracks and any burrows that you see on your walk.
- 4 Very gently lift light rocks, pavement and wood that are loose in your garden and look underneath them for reptiles. Be very careful not to drop the objects you are lifting to avoid crushing any animals.
- 5 Try to search your garden systematically (e.g. from left to right) so you don't accidentally look in the same part of your garden twice.
- 6 When you see an animal, record what species it is and count the **TOTAL** number of individuals you see of each species as you walk around your garden. For example, if you see two king skinks in your front garden and then three in your back garden, you would record five king skinks. Make sure you don't count the same individual more than once.
- 7 Don't worry if you can't ID a reptile!
 - If you can clearly see the reptile and know it is different from other reptiles you have seen but don't know its name, call it a unique made up name (e.g. 'Lizard A', 'Lizard B') and record the **TOTAL** number of that reptile you saw. You may like to note some details about colour, size and reptile type so that you can identify it after the count.
 - If you cannot clearly see the reptile and don't think you will be able to ID it later, call it "Unknown reptile" and record the **TOTAL** number of unknown reptiles you saw.
- 8 Only count reptiles that are inside or on the boundary of your property.
- 9 Continue searching your garden until you have looked at all structures. Once completed, record the finish time on your field sheet. It should take you a minimum of 10 minutes to complete your survey.
- 10 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

Reptile Searches



CAUTION

Some reptiles can cause injury and even death. Take precautions such as wearing gloves and closed in shoes and lifting the shelter away from you when inspecting to reduce your chance of injury. If bitten, seek medical attention immediately.



Figure 11: When you come across small rocks, pieces of wood or other small objects, carefully lift the rock away from you and inspect underneath for reptiles. Be sure to lower objects back down gently. Wear gloves to protect your hands.

Tips

- Be as quiet as possible when walking so you don't scare reptiles away.
- Be very careful not to drop the objects you are lifting to avoid crushing any animals.
- Lift objects away from you and by the furthest edge when inspecting underneath them.
- Wear gloves and closed shoes for protection.
- When you find an animal with your torch, make sure you only shine your light on it for a minute or two at the most to avoid hurting its eyes.
- If you have a very large garden (e.g. a rural property) you can choose to undertake the survey in a smaller part of your garden. If you do this, make sure you survey the same part of your garden each time.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.

Reptile Searches

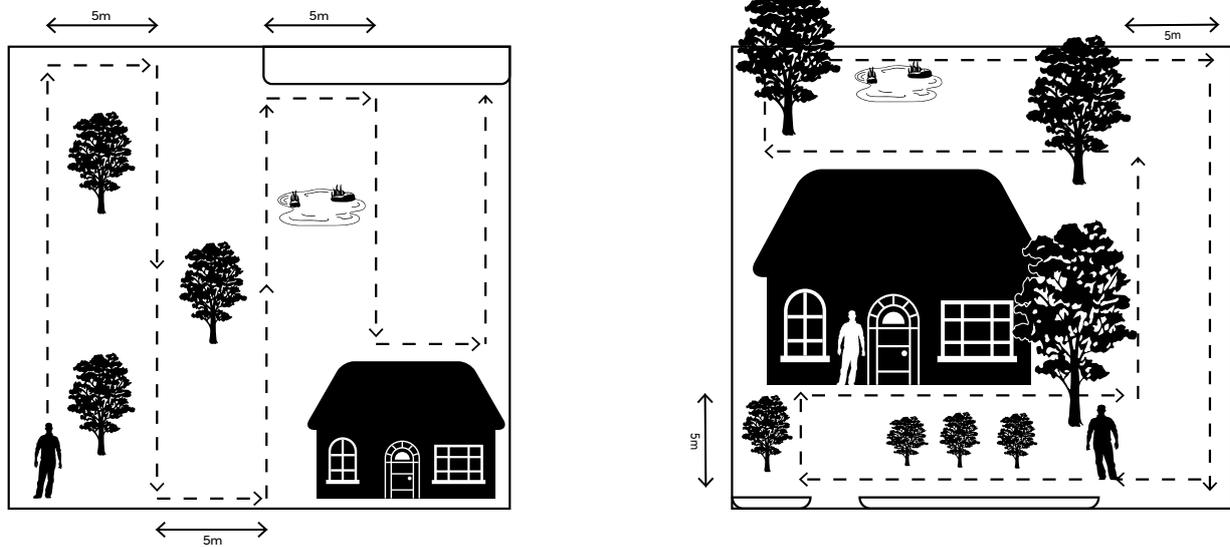


Figure 12: Examples of how to systematically search your property. Make a rough map of your monitoring path to use in future surveys, making sure you cover the entire area.



Spotlight Surveys for Tree-dwelling Wildlife



Monitoring aim

To count the number of geckos, phascogales and possums that use your garden.

Animals

Geckos, phascogales, possums.

Equipment

1 head torch (350-700 lumen), batteries, field sheet, pencil.

Timing

Once per week sometime between after-dark and midnight. Avoid nights during a full moon or rain.

Instructions

- 1 Once dark, turn your head torch on and place on head.
- 2 Fill in your site details on your field sheet and record the date and start time of your survey.
- 3 Walk very slowly around your garden and with the light from your head torch, scan all structures in your garden for wildlife. This includes the ground, trees, shrubs, fences, sheds, roofs, and other man-made structures. You are looking for eye shine!
- 4 Try to search your garden systematically (e.g. from left to right) so you don't accidentally look in the same part of your garden twice.
- 5 When you see an animal, record what species it is and tally the **TOTAL** number of individuals you see of each species as you walk around your garden. For example, if you see two brushtail possums in your front garden and then one in your back garden, you would record three brushtail possums. Make sure you don't count the same individual more than once.
- 6 Don't worry if you can't ID an animal!
 - If you can clearly see an animal and know it is different from other animals you have seen but don't know its name, call it a unique made-up name (e.g. 'Possum A', 'Possum B') and record the **TOTAL** number of that animal you saw. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see an animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animals you saw.
- 7 Only count animals that are inside or on the boundary of your property. Only count animals that you see, **do not count animals that you hear.**
- 8 Continue searching your garden until you have looked at all structures. Once completed record the finish time on your field sheet. It should take you a minimum of 10 minutes to complete your survey.
- 9 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

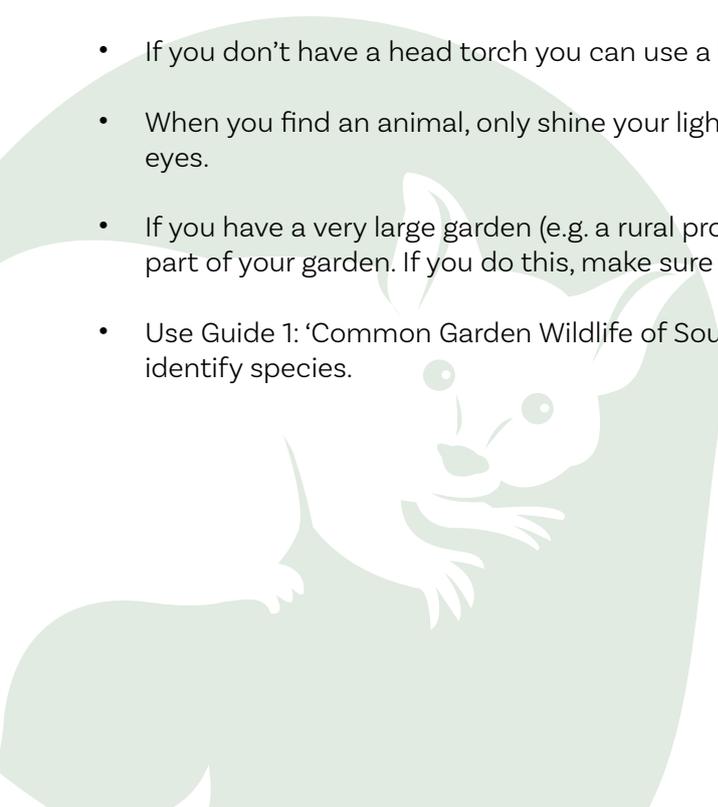
Spotlight Surveys for Tree-dwelling Wildlife



Figure 13: **Left:** A spotlight surveyor with a head torch and field sheet.
Right: The eye-shine of a possum. Look for two white or yellow glowing eyes.

Tips

- Be as quiet as possible when walking so you don't scare animals away.
- Only start your survey once it's dark enough. You can tell it is dark enough if you need a torch to see.
- If you don't have a head torch you can use a handheld torch held at eye level.
- When you find an animal, only shine your light on it for a minute or two at the most to avoid hurting its eyes.
- If you have a very large garden (e.g. a rural property) you can choose to undertake the survey in a smaller part of your garden. If you do this, make sure you survey the same part of your garden each time.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.



Spotlight Surveys for Tree-dwelling Wildlife

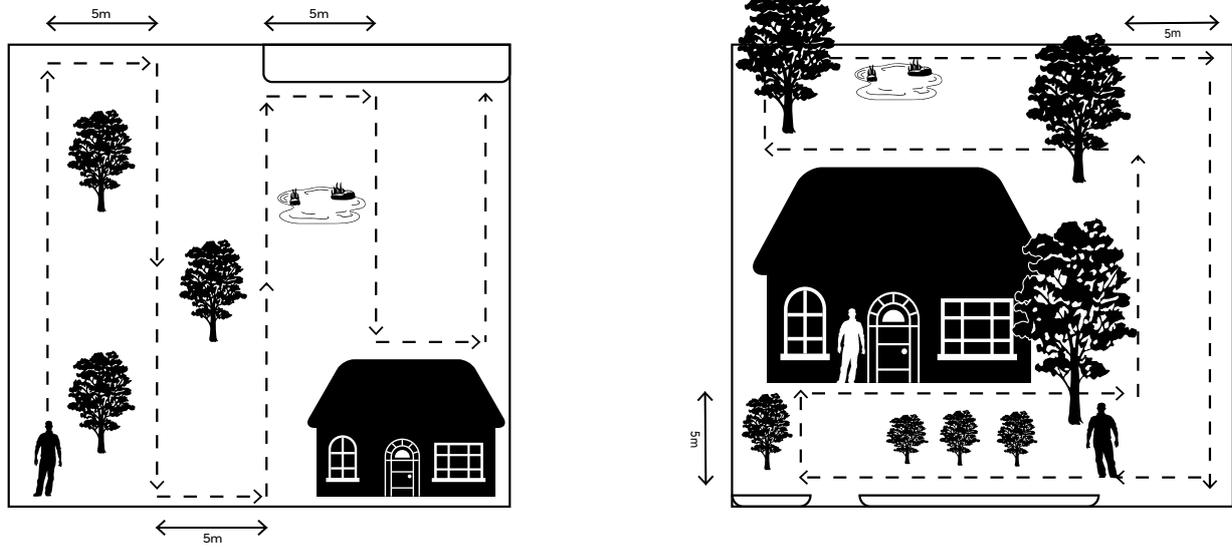
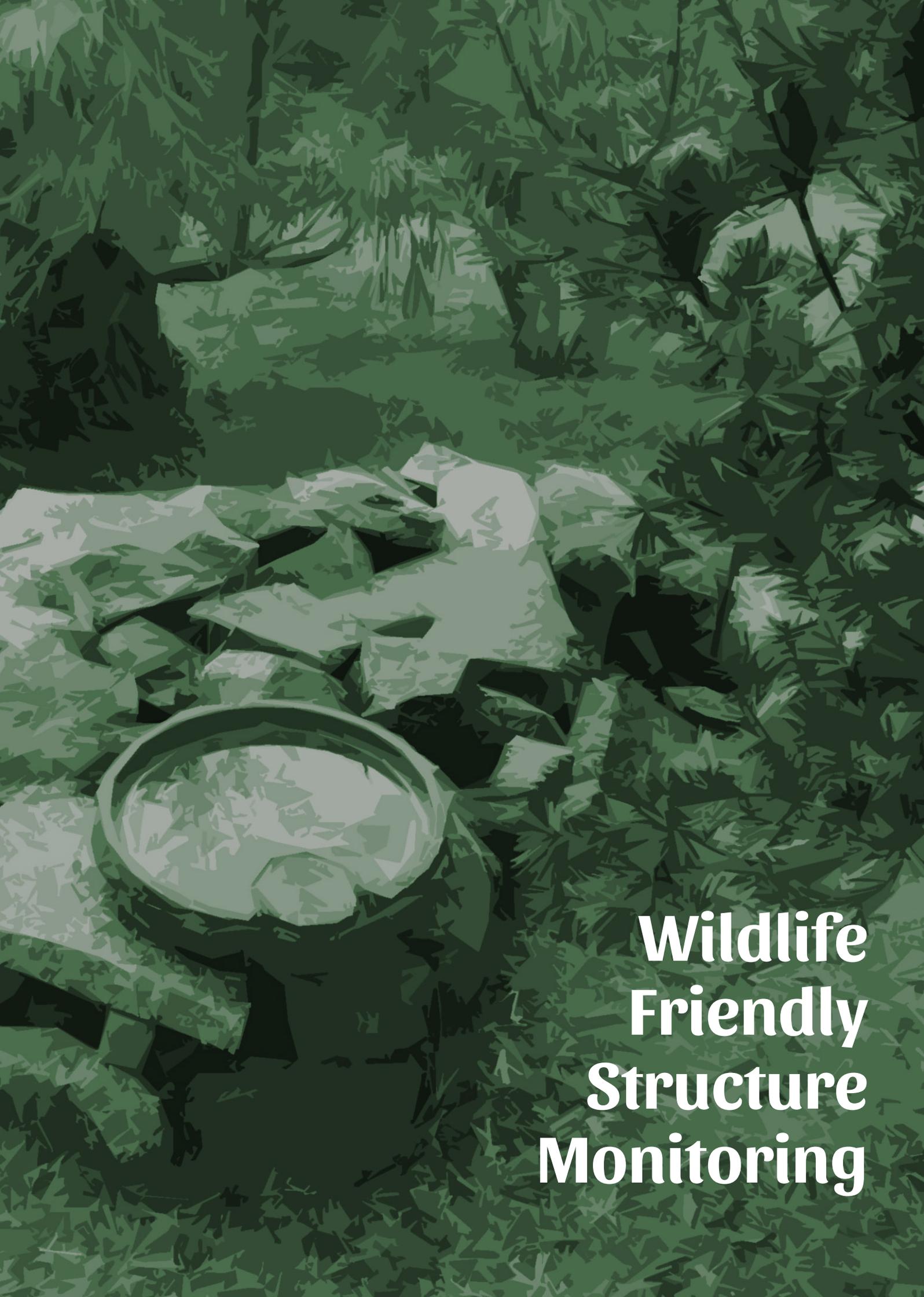


Figure 14: Examples of how to systematically search your property. Make a rough map of your monitoring path to use in future surveys, making sure you cover the entire area.





**Wildlife
Friendly
Structure
Monitoring**

Bat Box Inspection



Monitoring aim

To record whether bats are using your bat box.

Animals

Bats.

Equipment

Field sheet, pencil, bat box.

Timing

Once per week sometime between 9 am and 5 pm.

Instructions

- 1 Fill in your site details on your field sheet and record the date and time of your inspection.
- 2 Look at your bat box and on the ground underneath for signs of guano (e.g. bat poo and poo stains). Pay particular attention to the bat ladder that leads into your bat box.
- 3 Record whether you saw fresh guano on the ground and whether you saw guano stains on the box.
- 4 Brush away any guano on the ground so you can inspect for fresh guano next time.
- 5 If you have more than one bat box in your garden, repeat steps 1-4 for each box.
- 6 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!



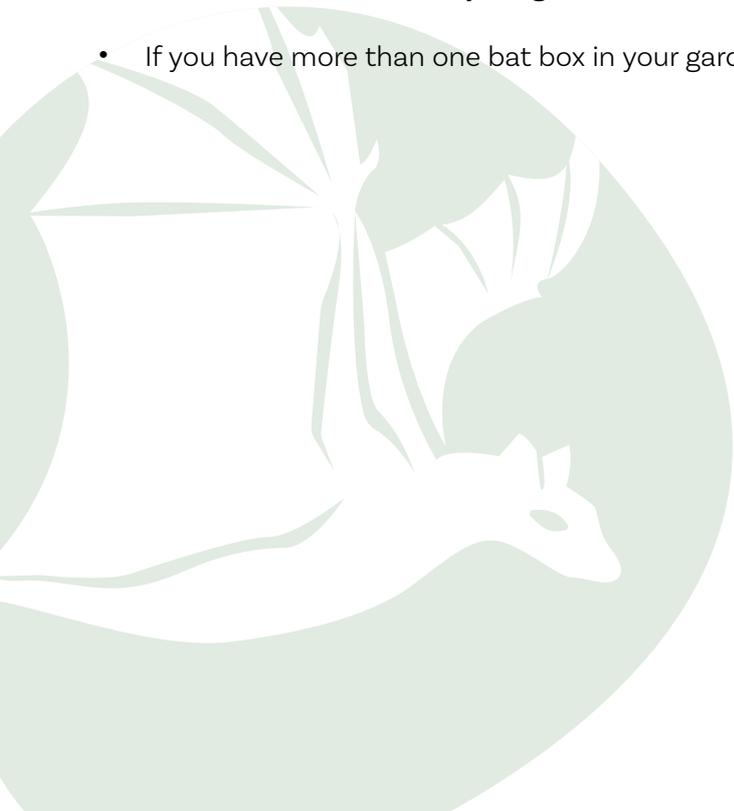
Bat Box Inspection



Figure 15: Bat guano (aka: pool). Look for evidence of guano on the ground below your bat box and for guano stains on the bottom of your bat box. (Photo: Tony Hodge)

Tips

- Be as quiet and quick as possible when checking your bat box so that you minimise stress to bats.
- Do not touch or move anything inside the bat box.
- If you have more than one bat box in your garden, check every box and record what you see for each.



Bird Bath Monitoring



Monitoring aim

To count the number of bird and frog visits to bird baths.

Animals

Birds, frogs.

Equipment

Timer, field sheet, pencil, bird bath.

Timing

Once per week sometime between sunrise and 10 am, or 2pm and sunset.

Instructions

- 1 Find a spot where you have a good view of your bird bath (between 5-10m away) and where you won't frighten or deter animals. The edge of your garden, patios or decks are good choices to sit or stand. Make sure you count animals for the same bird bath every time you do a survey.
- 2 Fill in your site details on your field sheet and record the date and start time of your survey.
- 3 Set a timer for 20 minutes and watch your bird bath quietly.
- 4 Record what species you see visit the bird bath and tally the **TOTAL** number of visits you saw for each species during your 20 minute survey. For example, if you see a new Holland honeyeater visit the bird bath at the 5 minute mark, 10 minute mark and then again at the 15 minute mark you would record 3 visits, as this is the total number of new Holland honeyeater visits you saw. It doesn't matter if it is the same individual or a new one – count every visit!
- 5 If more than one individual of the same species visits the bird bath at the same time include all as 'visits'. For example, if 3 red wattle birds use the bird bath at once and then five minutes later 1 red wattle bird visits again, you would count 4 visits.
- 6 Only count visits if the animal makes contact with the water (i.e. don't count birds that only perch on the edge).
- 7 Don't worry if you can't ID an animal!
 - If you can clearly see the animal and know it is different from other animals you have seen but don't know its name, call it a unique made up name (e.g. 'Bird A', 'Bird B') and record the **TOTAL** number of visits that species made to the bird bath. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see an animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animal visits to the bird bath.
- 8 Once the timer sounds, record the finish time on your field sheet.
- 9 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

Bird Bath Monitoring

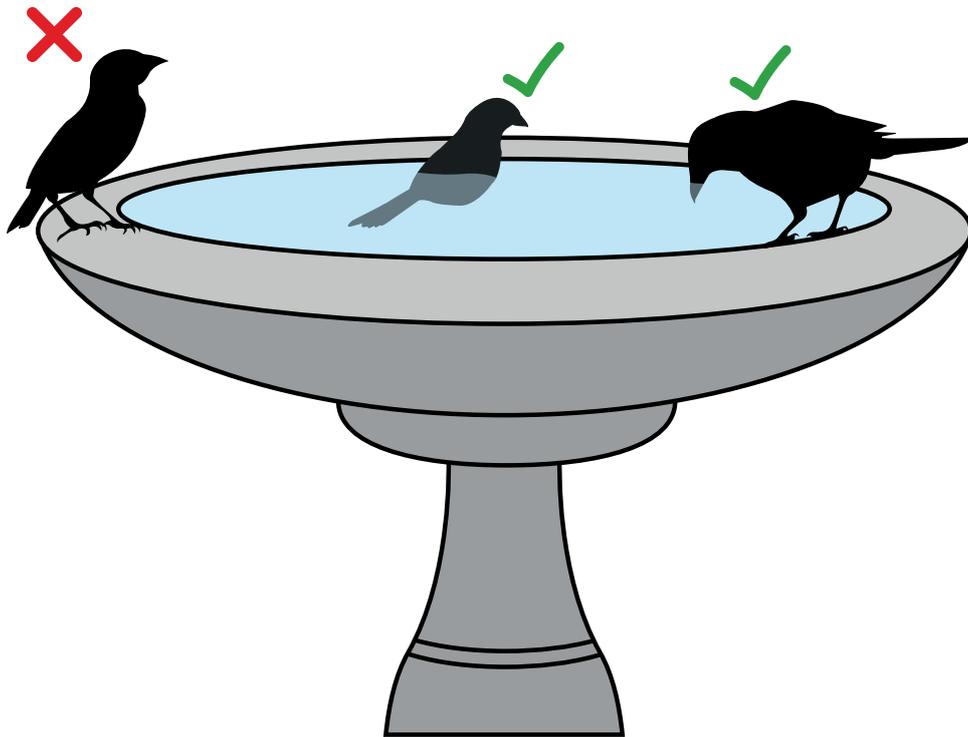


Figure 16: Only count visits when an animal makes contact with the water in your bird bath.

Tips

- Be as quiet as possible during your survey so you don't frighten animals away.
- Keep pets indoors or confined during your survey.
- Undertake your survey for the same bird bath each week.
- Make sure you have a good view of your bird bath (between 5-10 m away).
- Ensure your bird bath is regularly cleaned and re-filled with water.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- You can also use the Aussie Bird Count app or Bird Finder (<https://www.birdsinbackyards.net/finder>) to help you identify birds and the Frog ID app to help you identify frogs.



Aussie Bird Count
BirdLife Australia Ltd.



FrogID
Australian Museum



Bird Box Inspection



Monitoring aim

To record how frequently birds (or other animals) use your bird box.

Animals

Birds.

Equipment

Field sheet, pencil, bird box.

Timing

Once per week between 10 am and 2 pm.

If you see eggs or chicks in the box reduce your inspections to once every four weeks until the chicks have fledged (left the box). You can then return to weekly inspections.

Instructions

- 1 Fill in your site details on your field sheet and record the date and time of your inspection.
- 2 Before looking in the box, give the side a very light tap so that you don't alarm any birds in the box and give them an opportunity to fly away before you open the lid. Pay close attention to any bird that flies out so that you can try to identify it.
- 3 Lift the lid (if it has one) very slowly and peak into the box. If there is an adult bird there, quickly look to see if you recognise the species and if there are any eggs or chicks in view before gently closing the lid and leaving as quietly as possible. It is OK if you can't see any eggs or chicks or can't ID the adult bird! Do not attempt to move the adult to get a better look.
 - If you can clearly see the animal and know it is different from other animals you have seen but don't know its name, call it a unique made up name (e.g. 'Bird A', 'Bird B') and record the **TOTAL** number of that animal in the bird box (or that flew out). You may like to note some details about colour, size and bird type so that you can identify it after the count.
 - If you cannot clearly see the animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animals in the bird box (or that flew out).
- 4 If there is no adult in the box, check if there are any eggs or chicks before gently closing the lid. Try to be as quick as possible so that you don't stop animals from coming back to the box.
- 5 Record on your data sheet whether you saw an adult bird, eggs and/or chicks. If you saw an adult bird and know the species, also record the species name.
- 6 If you see an animal other than a bird in your nest box be sure to also record this species!
- 7 If you have more than one bird box in your garden, repeat steps 1-6 for each box.
- 8 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

Bird Box Inspection



Figure 17: First tap the box to allow adult birds to vacate the box. Then gently take off the lid (if it has one) and inspect inside.

Tips

- Be as quiet and quick as possible when checking your bird box so that you minimise stress to animals.
- Be very careful not to drop the lid (if it has one) when checking the box.
- Do not touch or move anything inside the bird box.
- If you have more than one bird box in your garden, check every box and record what you see in each box.
- A handheld mirror can be used to help you look into the box.
- If you need a ladder to reach your box make sure the ladder is placed on a solid, level surface and you keep at least three limbs on the ladder at all times.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- Use the Aussie Bird Count app or Bird Finder (<https://www.birdsinbackyards.net/finder>) to help you identify birds.



Aussie Bird Count
BirdLife Australia Ltd.





Frog Hotel Inspection

Monitoring aim

To record how frequently frogs use your frog hotel.

Animals

Frogs.

Equipment

Torch, field sheet, pencil, frog hotel.

Timing

Once per week sometime between 10 am and 2 pm.

Instructions

- 1 Fill in your site details on your field sheet and record the date and time of your inspection.
- 2 Very quietly peak into the frog hotel. If you can't see, you can use a torch to brighten the hotel. Only shine your light for a minute or two at the most to avoid hurting the frog's eyes.
- 3 Record on your data sheet whether you saw a frog in the hotel and the species name if you know it.
- 4 It is ok if you don't recognise the species! Do not attempt to move the frog to get a better look.
 - If you can clearly see the frog and know it is different from other frogs you have seen but don't know its name, call it a unique made up name (e.g. 'Frog A', 'Frog B') and record the **TOTAL** number of that frog in the hotel. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see the frog and don't think you will be able to ID it later, call it "Unknown frog" and record the **TOTAL** number of unknown frogs in the hotel.
- 5 If you have more than one frog hotel in your garden, repeat steps 1-4 for each hotel.
- 6 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!





Frog Hotel Inspection



Figure 18: Quickly and quietly peer into your frog hotel to inspect for frogs.

Tips

- Be as quiet and quick as possible when checking your frog hotel so that you minimise stress to frogs.
- When you find a frog, make sure you only shine your light on it for a minute or two at the most to avoid hurting its eyes.
- Do not touch or move anything inside the frog hotel.
- If you have more than one frog hotel in your garden, check every hotel and record what you see for each.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- Use the Frog ID app if you need help identifying the frogs that you see. We recommend you only filter on location (turn 'near me' on), frog size and colour.



FrogID
Australian Museum





Pond Monitoring

Monitoring aim

To count the number of animal visits to ponds.

Animals

Birds, mammals, reptiles, frogs.

Equipment

Timer, field sheet, pencil, pond.

Timing

Once per week sometime between sunrise and 10am, or 2pm and sunset.

Instructions

- 1 Find a spot where you have a good view of your pond (between 5 – 10 m away) and where you won't frighten or deter animals. The edge of your garden, patios or decks are good choices to sit or stand. Make sure you count animals for the same pond every time you do a survey.
- 2 Fill in your site details on your field sheet and record the date and start time of your survey.
- 3 Set a timer for 20 minutes and watch your pond quietly.
- 4 Record what species you see and tally the **TOTAL** number of visits you saw for each species during the 20 minute survey. For example, if you see a bandicoot visit the pond at the 5 minute mark, 10 minute mark and then again at the 15 minute mark you would record 3 visits, as this is the total number of bandicoot visits you saw. It doesn't matter if it is the same individual or a new one – count every visit!
- 5 If more than one individual of the same species visits the bird bath at the same time include all as 'visits'. For example, if 3 red wattle birds use the pond at once and then five minutes later 1 red wattle bird visits again, you would count 4 visits.
- 6 Only count visits if the animal makes contact with the water.
- 7 Don't worry if you can't ID an animal!
 - If you can clearly see the animal and know it is different from other animals you have seen but don't know its name, call it a unique made up name (e.g. 'Species A', 'Species B') and record the **TOTAL** number of visits that animal made to the pond. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see the animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animal visits to the pond.
- 8 Once the timer sounds, record the finish time on your field sheet.
- 9 Walk to your pond and inspect for the presence of tadpoles. Record whether you see tadpoles in your pond on your field sheet.
- 10 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!

Pond Monitoring

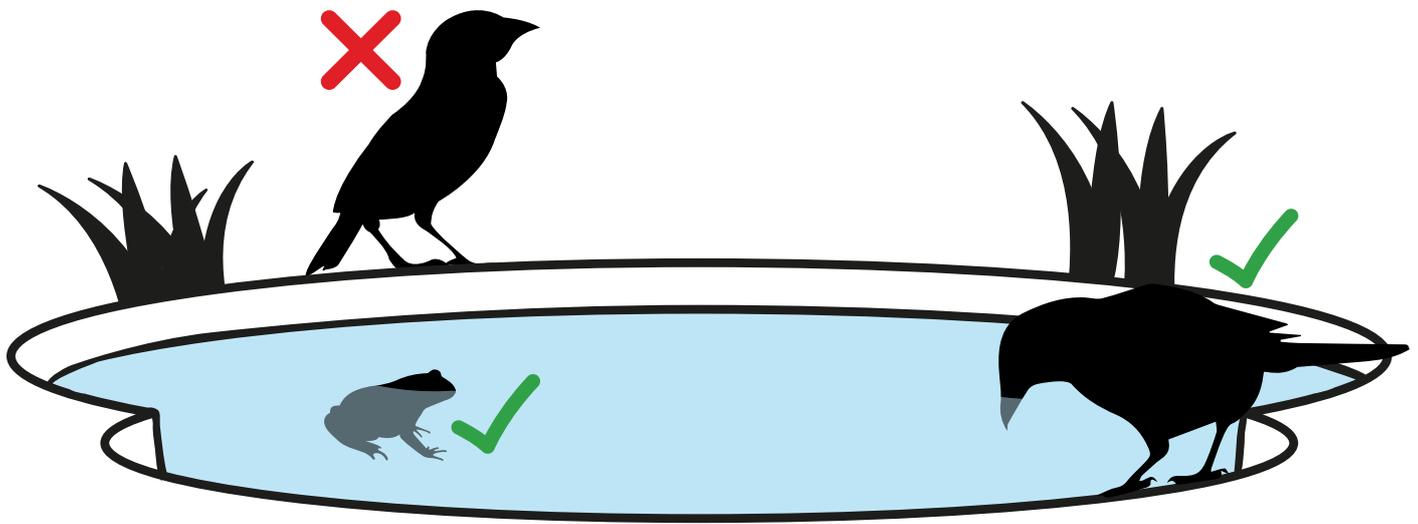


Figure 19: Only count visits when the animal makes contact with the water in your pond.

Tips

- Be as quiet as possible during your survey so you don't frighten animals away.
- Keep pets indoors or confined during your survey.
- Undertake your survey for the same pond each week.
- Make sure you have a good view of your pond (between 5-10 m away).
- Ensure your pond is regularly cleaned and re-filled with water.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.
- You can also use the Aussie Bird Count app or Bird Finder (<https://www.birdsinbackyards.net/finder>) to help you identify birds and the Frog ID app to help you identify frogs.



Aussie Bird Count
BirdLife Australia Ltd.



FrogID
Australian Museum



Possum Box Inspection



Monitoring aim

To record how frequently possums (or other animals) use your possum box.

Animals

Possums.

Equipment

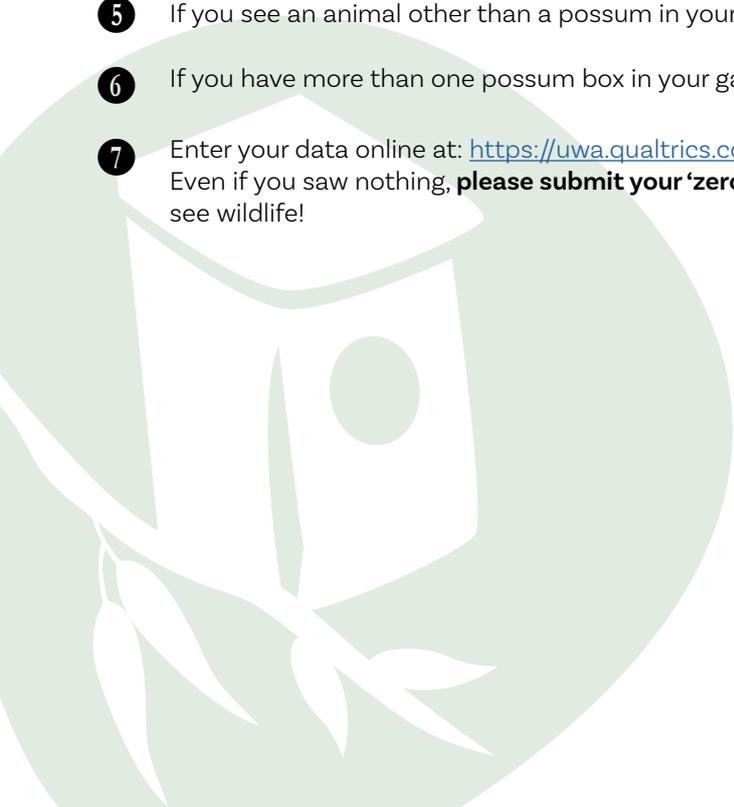
Field sheet, pencil, possum box.

Timing

Once per week sometime between 9 am and 5 pm.

Instructions

- 1 Fill in your site details on your field sheet and record the date and time of your inspection.
- 2 Lift the lid (if it has one) very slowly and peak into the box.
- 3 Check if there is a possum (or other animal) in the box, before gently closing the lid and leaving as quietly as possible. It is ok if you don't recognise the species! Do not attempt to move the animal to get a better look.
 - If you can clearly see the animal and know it is different from other animals you have seen but don't know its name, call it a unique made up name (e.g. 'Possum A', 'Possum B') and record the **TOTAL** number of that animal in the box. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see the animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animals in the box.
- 4 Record on your data sheets whether you saw a possum in the box and the species name if you know it.
- 5 If you see an animal other than a possum in your nest box be sure to also record this species!
- 6 If you have more than one possum box in your garden, repeat steps 1-5 for each box.
- 7 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!



Possum Box Inspection



Figure 20: Quickly and quietly peek into your possum box before retreating. If you have to lift the lid to look in your box, make sure you lower the lid gently when finished.

Tips

- Be as quiet and quick as possible when checking your possum box so that you minimise stress to animals.
- Be very careful not to drop the lid (if it has one) when checking the box.
- Do not touch or move anything inside the possum box.
- If you have more than one possum box in your garden, check every box and record what you see for each.
- A handheld mirror can be used to help you look into the box.
- If you need a ladder to reach your box make sure the ladder is placed on a solid, level surface and you keep at least three limbs on the ladder at all times.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.

Reptile Shelter Inspection



Monitoring aim

To record how frequently reptiles and frogs use your reptile shelter.

Animals

Lizards, snakes, frogs.

Equipment

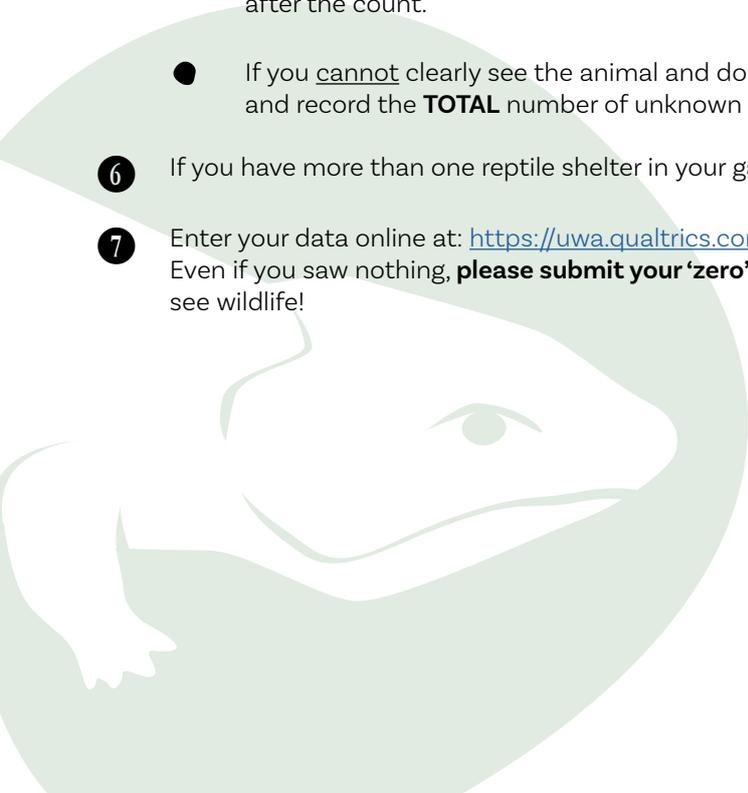
Field sheet, pencil, reptile shelter, gloves.

Timing

Once per week sometime between 10 am and 2 pm.

Instructions

- 1 Fill in your site details on your field sheet and record the date and time of your inspection.
- 2 Lift the reptile shelter very slowly and peak underneath. If you have a rock pile or log pile, simply inspect the surface and crevices.
- 3 Check for the presence of frogs or reptiles, before gently lowering the reptile shelter and leaving as quietly as possible. It is OK if you don't recognise the species! Do not attempt to move the animals to get a better look.
- 4 Record on your data sheet any reptile or frog species you see using the reptile shelter and how many of each species you saw. For example, if you see one marbled gecko and two motorbike frogs under your reptile shelter you would record these species and the number for each.
- 5 Don't worry if you can't ID an animal!
 - If you can clearly see the animal and know it is different from other animals you have seen but don't know its name, call it a unique made up name (e.g. 'Species A', 'Species B') and record the **TOTAL** number of that animal under the shelter. You may like to note some details about colour and size so that you can identify it after the count.
 - If you cannot clearly see the animal and don't think you will be able to ID it later, call it "Unknown animal" and record the **TOTAL** number of unknown animals using the shelter.
- 6 If you have more than one reptile shelter in your garden, repeat steps 1-5 for each shelter.
- 7 Enter your data online at: https://uwa.qualtrics.com/jfe/form/SV_enVPu21PfmZSy46
Even if you saw nothing, **please submit your 'zero' survey!** These are just as important as the surveys where you see wildlife!



Reptile Shelter Inspection



CAUTION

Some reptiles can cause injury and even death. Take precautions such as wearing gloves and closed in shoes and lifting the shelter away from you when inspecting to reduce your chance of injury. If bitten, seek medical attention immediately.



Figure 21: When inspecting your shelter make sure you lift the paver away from you and by the furthest edge. Wear gloves and closed in shoes for protection.

Tips

- Be as quiet and quick as possible when checking your reptile shelter to minimise stress for reptiles and frogs.
- Be very careful not to drop your reptile shelter when checking underneath for reptiles and frogs.
- Do not touch or move anything using the reptile shelter.
- If you have more than one reptile shelter in your garden, check every shelter and record what species you see using each shelter.
- Lift the reptile shelter away from you and by the furthest edge when inspecting your shelter. Wear gloves and closed in shoes for protection.
- Use Guide 1: 'Common Garden Wildlife of Southwestern Australia - Vertebrate Species ID Guide' to help identify species.