

*Australian*

*Volume 3*

# *Nature Study Guide*

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*A weekly observation of  
Australian Wild life*

*Winter/  
Spring*



# Australian Nature Study

## *Guidebook*

A Weekly observation  
of Australian wild life.

*Winter and Spring*

*Volume Three*

*Marie Viljoen*

AUSTRALIAN  
NATURE STUDY  
*GUIDEBOOK*

*Winter and Spring*  
*Volume Three*

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# *Get in Touch!*

It is my hope this guide will encouraged you to marvel at God's creation and refresh your spirit as you explore and enjoy His gift to you.

[Nature Science for Aussie families](#) is a F.B. Group where outdoor mamas share their adventures, explorations and activities to motivate, encourage and support one another. We'd love to have you [come along side us](#) and share in our joy of the outdoors.

[Become a part of our email community](#) for additional support and free resources that'll enrich your nature study encounters by subscribing to our monthly Nature Study Journal [here](#).

You can also find me at:

[Instagram: nature study australia](#)

[Facebook: Nature Study Australia](#)

[Nature Study Australia Forum](#)

# Acknowledgements

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for guiding my steps.

A warm thank you  
to the photographers  
who kindly contributed their photographs  
for this guide.

# WELCOME!

A while ago, I was introduced to Charlotte Mason's educational philosophies and the study of nature. I was inspired by a friend and set out to find resources that would guide me through this new adventure, however I became disheartened rather quickly as I discovered there were few Australian materials to be found. I bought a few American based nature studies and realised it wasn't going to work for those of us in Australia. Our seasons were the opposite and our wildlife quite unique.

The ideal nature study guide for me would:

- Guide me through the seasons.
- Integrate subjects such as English, science, geography, history and art.
- Contain activities for multiple ages.
- Have the flexibility to grow into a unit study.
- Include note booking pages.
- Include information on a topic.
- Contain a list of helpful resources.
- Be adaptable.

The Australian Nature Study Guidebook: Weekly Observations of Australian Wildlife was born out of this need. I hope you'll be inspired to embark on adventures into the great outdoors, and enjoy making precious memories with your children, while seeking out the gems each season has to offer.

As a Christian, my writing will be flavoured with a Christian worldview and as home educators, we have the liberty to take what we need from a resource and leave what we don't, so you have the freedom to tailor this guide to your unique family and personal beliefs. We all have the same goal in mind: to give our children an exceptional education fashioned to their own capabilities and interests.

The information included in this guide can be used by all home educators regardless of your preferred learning style. It is flexible and easily tailored to your preference whether it be Charlotte Mason, Unit Studies, Unschooling, Project-Based, Classical or Traditional.



*“For the LORD is a great God, a great King above all gods. The depths of the earth are in His hand, and the mountain peaks are His. The sea is His; he made it. His hands formed the dry land. Come, let us worship and bow down; let us kneel before the LORD our Maker.”*

*Psalm 95:3-6*

# STARTING OUT

*“There is so much in the world for us all if we only have the eyes to see it.” ~ L.M. Montgomery*

## **Let’s Get Started**

This section will provide information on the topic being researched before you head out doors, so that you are armed with the knowledge you need to answer questions when they’re fired at you. It is by no means exhaustive. Instead of reinventing the wheel, I’ll be referring you to helpful resources or links on the weeks theme if you’d like to research it further and dig deeper.

## **Nature Rambles**

A nature ramble can be a five-minute hunt in the backyard or an hour of exploration in the bush. If for some reason you’re not able to wander outside, you can still study nature inside, whether it’s in a reference book, the Daddy Long Legs in the corner or the ants in the sugar bowl.

If a five-minute spontaneous, backyard ramble is what you prefer, then continue doing what’s working for you and glean what you need from this guide. However, if you have a personality like mine, and prefer nature walks a little more structured, this section will help you focus on a topic to observe. Search for a place you can visit regularly and make it your favourite go-to spot for nature walks.

## **Literature Jaunt**

I’ve included a list of children’s books from the library relevant to the theme of the week which will offer enjoyment and ignite excitement in the subject to be explored. Take your books with you on your outings and read them to the children outside. The studies do not rely on these books, so don’t stress if you can’t find a title or if you’re unable to visit the library. After reading a story to your children, ask them to narrate it back to you. Start with the youngest child so the older children are challenged further to recall what was read to them.

Please preview the books first to see if they meet your standards. There are a few books that have a secular worldview. I'd suggest skipping the historical viewpoints to the facts related to the study. Also ensure your children have a firm grounding in the creation of the world by God as then they'll be able to perceive evolution's point of view on historical science.

### Poetry Picnic

Reading poetry while enjoying a snack is so refreshing and I guarantee, that if the children aren't keen on poetry, they'll be there for refreshments. Pull out your blanket, and a snack to enjoy while reading the poems included in this section with your children. Due to copywrite laws, I've not included the poems in the guide, but most of them can be found with an internet search. The poems can be used as copy work, either as handwriting practice or as an addition to their nature journal entry. It can also be used for dictation and memory work.

*"It is the duty of parents to sustain a child's inner life with ideas as they sustain its body with food."*

*~ Charlotte Mason*

### Picture Study

Picture study is a fun way to include art appreciation into your schedule. Children are exposed to wonderful works of art and ideas. The artworks can be found by using the internet in a quick search. Charlotte Mason's method of picture study is for the children to look at the picture intently, and for as long as they need and then answer these few questions:

- Ask them what they saw and expect them to describe it in as much detail as they can. Start with the youngest child so the older children are challenged to include more detail.
- What time of day is it?
- What season do you think it is?
- Is there a story to the picture or is it a scientific sketch?
- Do you like the picture? Why or why not?

## **Digging Deeper**

In this section you'll find activities that will help the children to dig deeper into the nature study should they choose to. There are activities for research, science, crafts, writing, building projects and much more. Allow the children to choose an activity that's most appealing to them unless you'd like to take a unit study approach and work on these assignments over a few weeks. I've included assignments to be enjoyed by a variety of ages. As families, we know it's important to enjoy the outdoors together, and as busy people, we can save time by integrating all ages into one study.

## **Copy-work and Dictation**

Instead of using a poem as copy-work and dictation, you may prefer to use the scripture reference or a hymn I've included for the week. A friend suggested a while ago to me, and I've found it helpful for the younger years, to use dictation as copy-work/handwriting practice for the week. Monday through Thursday we use a hymn or poem as handwriting practice and finish on Friday by using it for dictation. This method has worked marvellously for us, especially if you're using the content for memorization.

## **A Note on Safety**

Australia has more deadly snakes than any other country in the world. It is also home to numerous poisonous spiders and sea creatures. Teaching our children to have a healthy respect for all creatures is wise. A general awareness while out and about will encourage them to be cautious when their curiosity perks up.

Please, never try to pick up a wild animal even if it's injured. There are people who specialise in capturing snakes or taking care of injured wildlife so it's better to contact them to help the creature. Encourage your children to respect all living things. They should not intentionally provoke, tease or mistreat any animal.

Depending on where you live in this vast country, it is possible to experience four seasons in one day. Always be prepared by wearing appropriate clothing and foot wear. Taking along spare clothing or swimming gear is always a great idea. It's wise to carry water with you on your walk with a source to refill as you need it as it can be dangerous to walk on sweltering summer days and I advise

against it; rather walk in the cool of the day or wait for a milder day to enjoy the outdoors. It's tempting to rest under the shade of a gum tree in the summer, but they tend to drop their branches when it's hot. Seek out shade in a safe place.

Your children will always appreciate a snack. Fruit is usually quite refreshing after a busy nature ramble. Don't forget to pack sunscreen, bug spray and hats. Keep it simple by keeping a field bag packed for such expeditions so all you'll need to do is add the snacks and water.

### **Optional Gear for Nature Exploration**

Only take what is necessary for your nature ramble or bush walk. Keep it simple and manageable.

- Nature Journals (One for you too!)
- Writing and/or Art Supplies
- Magnifying Lens
- Bug Container
- Butterfly Net
- Binoculars
- Camera
- Paper bags for collections
- Tape Measure
- Picnic Blanket
- Field Guides
- Compass

### **A Note on Seasons**

Australia has a variety of climate zones due to its size and there is no single seasonal pattern for the whole country.

The temperate zones, including the grasslands and desert, experience a summer/autumn/winter/spring calendar as follows:

- Summer December – February
- Autumn March – May
- Winter June – August
- Spring September – November

While tropical zones have a Wet and Dry pattern. The tropics are divided into three climatic areas:

- Equatorial
- Tropical
- Subtropical

The tropical zones experience six months of wet weather (November-March) typically known as the Big Wet or Monsoon Season. The other six months are known to be the Dry Season (April-October).

Not every topic will coincide with your experience locally. In this case, simply change the topic to that which suits your environment or enjoy learning about the flora and fauna around Australia while experiencing the unique treasures in your own backyard.

Some agree that the European Calendar of four seasons does not match Australia's diversity in climate and environments. Research has been done on the Indigenous Seasonal Calendars so decide if they're more accurate. Investigate the Aboriginal Calendar for your area and observe the seasonal transitions. What do you think?

### **Notebook Pages**

You'll find note booking pages for pre-school, intermediate and advanced children. They have been designed by a friend to be a blessing to you. Copy, Go and Enjoy!

### **Starting a Nature Journal**

Nature journaling is a record of all your observations on nature rambles. It has proved to be an important component to studying nature. The note booking pages can be placed in plastic sleeves and filed as a nature journal reference or you could either make your own nature diaries as shown here for [pre-school](#), [primary](#) or simply buy an inexpensive A5 art book.

Take an interest in [nature journaling](#) yourself. Set the example and you'll inspire your child to do the same. If you're worried about your sketching ability, don't. Your diary is personal to you and its purpose is to record scientific data. Sketching ability is not important, and you'll eventually become comfortable the

more you practise. You may just surprise yourself and your children will enjoy watching what you do.

Basic entries in the journal would be:

- Your name and contact details on the first page should you misplace your diary.
- Date
- Time
- Weather – is it sunny, partly cloudy, cloudy or raining?
- Temperature
- Wind direction and force
- Location
- Sketch and label your subject

Advanced entries include:

- Latin names
- Information on sketched topic
- Timelines
- Diagrams
- Simple Surveys
- Lists of insects, birds, mammals, flowers, orchids, reptiles etc.
- Measurements
- Graphs
- Photographs which can show changes in seasons and environments.
- Maps
- Compass points and direction.
- Pressed flowers/leaves
- Poems
- Quotes
- Scripture
- Hymns

Nature journals have two themes: ongoing Journal which is a record of all you've observed year-round or a seasonal journal. Decide which one you'd prefer.

**You Can Do It!**

You may be wondering how on earth you're going to fit nature study into your busy schedule? Try integrating subjects and including all the children together as each one works at their own level. Another option would be to place nature study at the core of your curriculum.

If all the time you have is fifteen minutes, start with that. We strive to complete our book work Monday to Thursday and keep Fridays free as our nature study block.



# TAKING THE PLUNGE

## *Wildflowers*

### Let's Get Started

Flowers act like helicopter pads for insects by providing them with a colourful 'landing pad' and directing them towards the nectar provided by the plant with a pathway only they can see with their ultra-violet vision.



Pincushion Hakea

*Hakea laurina*

As the insects eat the nectar, gather pollen and redistribute it by flying from one flower to another, the insect aids the flower in its purpose to generate seed and grow a new generation of flowers. This provides us with a magnificent cycle of wildflowers every year to marvel over.

Flowering plants are from the group called Angiosperm which comes from two Greek words; angeion meaning 'vessel' and sperma meaning 'seed.' So the developing seeds are protected within an ovary, like a growing baby is protected in a mother's womb. Once the plant has completed its cycle and the seeds are mature, they spill on to the ground and wait for the right conditions before they'll sprout a new plant.

Flowers come in various sizes and shapes but they all have the same basic parts. Sepals protect the flower buds as they're forming, and once the flower opens, the sepal will support it. The petals are coloured brightly to attract insects, birds and animals to aid in the pollination process. The stamens carry the pollen grains needed to fertilize seeds while the sticky tip of the pistil receives the pollen grains. The pistil is at the centre of the flower and the ovary is at its base where the seed is contained.

The plant life of Australia is amazing and botanists throughout the world have been fascinated with the unique and delicate beauty of our native flora. Australia is home to more than 24, 000 native species of plants with 85% being endemic, which means they only grow in Australia and nowhere else in the world.

Wildflowers are plants which grow naturally without cultivation. Most native flora in Australia grow in inhospitable environments where water is scarce and soil is poor. Wildflowers grow in bushland and reserves across the country, and they can also be found in parks and gardens as people move towards planting native flora instead of introduced exotic plant varieties.

Wildflowers in Western Australia give a six month show which starts in the North in June and sweeps down to the South Coast by December. Western Australia has the largest collection of wildflowers with 12, 000 species blooming during the wildflower season.

Some wildflowers are:

- [Melaleucas](#) which are known as paper barks or honey myrtles.
- [Callistemons](#) have bottlebrush shaped flowers.
- [Bush-peas](#) are small plants with red and yellow pea flowers. They're also known as 'Egg and bacon' peas. They come in a variety of colours too.
- [Grevilleas](#) are members of the Proteus family.
- [Hakea laurina](#) looks just like a pincushion. Hakea and Grevilliea flowers are similar.
- [Heaths](#) have small spiky leaves and tube like flowers.
- Yellow [Everlastings](#) are large golden daisy like flowers with hairy, sticky leaves. The Pink Everlastings are native to Western Australia.
- [Blue Pincushions](#) have bright blue flower heads which resemble 'button' daisies.
- [Emu Bushes](#) are fuchsia like flowers with many colour varieties including red, white, pink, purple, orange and yellow. Emus like to eat the fruit, hence their name.
- Then there are the delicate wildflower species like Early Nancy, Milk Maids and Chocolate Lilies.

Wildflowers live in plant communities within bushlands and forests just as people live in communities within towns and cities. When surveying plant communities, Botanists look at three things:

- [The Plant Life Form](#) explores how the plant grows individually - Its lifespan, shape, height and characteristics. Life Forms also occur in layers in different plant communities. The tallest layer is known as the overstory while the layers underneath are known as the understory. Plant Life Forms are further divided into two groups:

- Woody plants like trees and shrubs which are then split by their height:
  - Tall trees are 30m and over, medium trees are between 10m-30m and small trees are between 5m-10m.
  - Tall shrubs are classed as 1m and over while low shrubs are below 1m.
- Non woody plants like herbs, sedges and grasses with soft flexible stems and branches.
- The Plant Density looks at how closely the plants are growing together. The leaf cover of individual plants is assessed as is the leaf coverage in each layer of a plant community.

The following estimates are according to John Beard's Vegetation Survey Table of WA:

- Leaves of most plants touching is between 30% and 70%.
- Leaves of a few plants touching is between 10% and 30%.
- Leaves of no plants touching is less than 10%.
- The Plant Diversity considers how many different plants are growing together in a plant community. When assessing plant diversity it's usually the dominant plants which are listed. The dominant plants are the tallest or the most common in each plant community layer.

Plant communities across the country are diverse and life forms, plant density and diversity will be distinctive as the landscapes and soils change. Australian wildflowers are unique in design and within plant communities. We're blessed to have these magnificent specimens at our doorsteps to explore.

### **Further Exploring**

Amazing Facts about Australian Native Plants by Cathy Hope and Steve Parish

Key Guide to Australian Wildflowers by Leonard Cronin

Flower by Andrew Zuckerman

The Wonderland of Nature by Nuri Mass

- Flowers – and the Clever Things They Do, pg. 158-171

Exploring Creation with Botany by Fulbright

- Flowers, pg. 35

- Even the Flowers Obey, pg. 37
- Making Seeds, pg. 37
- Flower Dissection, pg. 38
- What Do You Remember, pg. 39
- Flower Families, pg. 41

Zoom: The Invisible World of Plants by Camilla De La Bedoyere

1000 Things You Should Know About Plants by Miles Kelly Publishing

### Related Internet Links

[Flora of Australia | Wikipedia](#)

[The Wildflowers of Western Australia | Australian Geographic](#)

[Australian Wildflowers | Western Australia Now and Then](#)

[WA Wildflowers | Burkes Backyard](#)

[Native Garden in Perth | Burkes Backyard](#)

### Nature Ramble

For your nature ramble this week consider searching for wildflowers within a Conservation Park. Please be mindful of where you step as you explore and appreciate the delicate life of small plants. Take photographs of the landscape to study the plant forms, density and diversity. If possible, take photos of various landscapes to compare them.

Photograph the flowers and leaves of the individual wildflowers you find. Measure the plants height, how wide it spreads across and the size of its leaves and blossoms. How many petals does the flower have? Take note of the plants pollinators and the soil it's growing in. Is it a tall plant or a creeper? Is it growing in full sun or in a shady spot? Do you notice any thorns or hairs? Is it a woody or non woody plant? Does it have a scent? What other plants are growing alongside the wildflower? Are there many others of the same kind? Is there evidence of the plant life cycle? How many colours do you notice around you?

**Please abide by the park rules and don't pick or collect flowers as they are protected. Take photographs and leave nothing but footprints.**

## Literature Jaunt

[Wildflower: The Life and Art of Ellis Rowan](#) by Cassey Liberman

[Sidewalk Flowers](#) by JonArno Lawson

[Flowers are Calling](#) by Rita Gray

[Miss Rumphius](#) by Barbara Cooney

[Boronia Babies](#) by May Gibbs Read Aloud

[Flannel Flowers and Other Bush Babies](#) by May Gibbs Read Aloud

[A Gospel of Wildflowers](#) by Anthony Footit

*“We find God in so many things, in flowers wakened with each spring, in butterflies and sunsets grand, we see God’s love - we touch God’s hand.”*

*~ Emilie Barnes*

## Poetry Picnic

[Wildflowers of Australia](#) by Mrs C.J. Carleton

## A Scripture:

“Consider how the wildflowers grow: they don’t labour or spin thread. Yet, I tell you, not even Solomon in all his splendour was adorned like one of these. If that’s how God clothes the grass, which is in the field today and thrown into the furnace tomorrow, how much more will he do for you – you of little faith?”  
Luke 12:27-28.

## A Hymn

Consider the Lilies by Patty Green [lyrics and music.](#)

## Picture Study

[Flowers and Salmon Gum Trees of the Northern Territory](#) by Margaret Preston

## Digging Deeper

### Young Students:

- [Create a wildflower and butterfly](#) using toilet paper rolls.
- Sing a Song of Flowers [here](#).
- [Plant wildflowers in your backyard](#). The bees and butterflies will be grateful to you for thinking of them.
- Draw a daisy like [this one](#).
- Use the wildflower notebook page to draw your wildflower.
- Discuss and draw the [lifecycle of a plant](#).

### Older Students:

- [Plant wildflowers](#) in your backyard for the bees, butterflies and birds.
- Use the wildflower notebook page to sketch and record your observations of wildflowers.
- Draw a scenery of flowers like [this](#).
- Compare woody plants to non woody plants. Sketch a picture of both in your journal and write down the differences between them.
- Create a collage of the park you visited using pictures from magazines of foliage and trees. Show the diversity and density of the overstory and the understory.
- While out on the wildflower walk, place a hoop or section off a 1m x 1m block of interesting bushland with pegs and string. Draw a table with three columns named:
  - Common Plant Name
  - Sketch
  - Tally

Name the plants, sketch them and count how many are within your square metre. Discuss the density and diversity of the plants in your table.

- Choose one wildflower to study and sketch it in your field journal. Consider the following:
  - What is the flower shape? Is it:
    - Open?
    - Composite?
    - Tubular?
    - Cylindrical flower head like a Callistemon?
    - Cupped?

- Orchid?
  - Pea?
  - Globular flowerhead like a Billy Button?
  - Spidery flowerhead like a Grevillia?
- What are the flower arrangements? Is it:
  - Spiked?
  - Raceme?
  - Panicle?
- How many petals does the flower have?
- What is the colour of the flower, leaves and stem?
- What are the leaf arrangements? Are they:
  - Opposite
  - Decussate
  - Alternate
  - Whorled?
- What are the leaf shapes?
- What are the leaf margins?
- What is the leaf venation?
- Draw the anatomy of a flower like [this one](#).

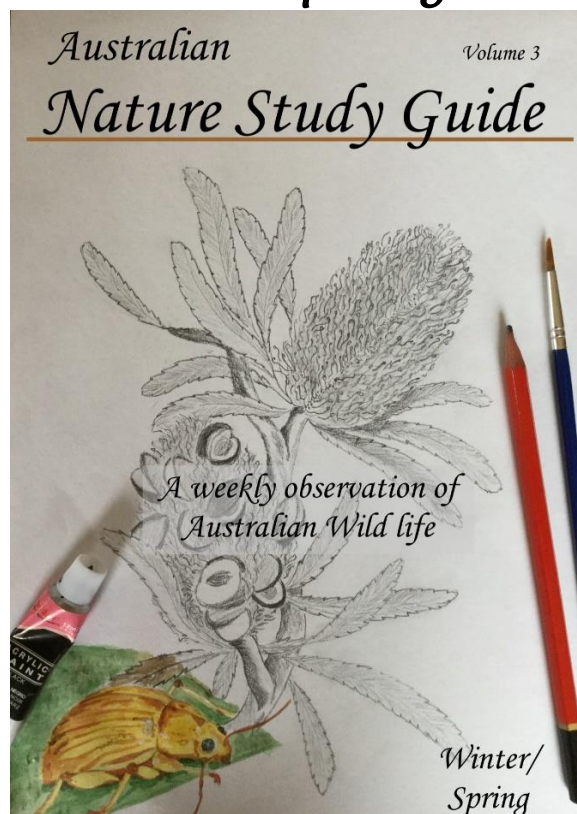
#### Oldest Students:

- [Paint wildflowers in watercolour.](#)
- Sketch a scientific illustration of a wildflower you find on the nature walk inside your field journal. John Muir Laws shows you how [here](#).
- Use the wildflower notebook page to sketch and record your observations of wildflowers. Use the circle to zoom in on a plant part which interests you.
- Map plants in their environment along a transect line using [this resource](#) to guide you.
- [Research Walter Bitterlichs invention](#) of a gauge that is able to measure the density of trees within forests.
- Carefully dissect a flower and examine the plant parts.
- Using the photographs you took of the wildflower landscapes, observe and discuss the following:
  - How many colours can you see in the photograph?
  - What shapes can you see? Are there any cone shaped trees?
  - Identify the overstory, middle and understory of the vegetation.
  - How many different plants can you find?

- Which is the most dominant species in each layer of vegetation?
- Can you name the plants in the photo?
- What kind of animals, birds and insects live here?
- Is there more land or sky in the picture? Why?
- Can you see bare soil? Why?
- Compare this photograph with other landscape pictures. What is different and what is the same?
- Make a simple sketch of the bushland or forests you explored showing the overstory, middle and understory of the vegetation and make a list of the dominant plant species in each layer. Using the above Vegetation Survey Table, decide on the plant density percentage within each layer.
- Start a wildflower calendar by creating a simple table of the plants you notice flowering and recording the date. You can add a simple sketch or a photograph of each flowering wildflower throughout the year.

*Did you enjoy this lesson?*

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for Winter/Spring [HERE!](#)*





**About the Author:** Marie Viljoen has been home educating for ten years. She shares her life with her wonderful husband. She lives on the land with four of her five children who enjoy helping dad and raising dogs, calves, ducks, goats and pigs. Two of her daughters have graduated so far and she's the grandparent of one **precious granddaughter** so far.



*Marie Viljoen*

In those rare moments when there's time to breath and cappuccinos and chocolate are bliss, she loves to read, bush walk and journal. Above all, she adores her Saviour and exploring His exquisite creation brings her joy while sharing the experience with her children. She's so excited for the opportunity to write and share nature discoveries with you.