

# Port Phillip NatureSpot Project Report

Port Phillip EcoCentre, June 2020



Department of  
Environment, Land,  
Water & Planning

Report prepared for the City of Port Phillip, June 2020

All photographs submitted by citizen scientists through the Port Phillip NatureSpot website.  
Images of maps and graphs © CrowdSpot 2020

## Acknowledgements

The Port Phillip EcoCentre acknowledges the Boon Wurrung People of the Kulin Nation, the Traditional Owners of the land in which this project took place. We pay our respects to Elders past, present and emerging, and acknowledge that sovereignty was never ceded. We are grateful for the First People's continuous sharing of living cultures, connections to Country and our local biodiversity.

We would like to thank all citizen scientists who contributed biodiversity data to the NatureSpot project, intern Minh Do for assisting species identification, local naturalists for their expertise, and photographers Adam and Ron in particular for beautiful photos of colourful insect life and birds. The EcoCentre recognises significant cooperative adaptations to facilitate citizen science during a year with extraordinary weather and public health risks -- in particular we thank the patience and innovations of Reiko Yamada, Renae Walton, Neil Blake, Ben Francischelli, and Josh Solomonsz.

The NatureSpot project was a collaboration between the Port Phillip EcoCentre and CrowdSpot, delivered for the City of Port Phillip between November 2019 and June 2020. The project was funded through the Department of Environment Land Water and Planning (DELWP) Caring for Our Local Environment grant program.



*A welcome garden pollinator, this Hover fly is collecting nectar from Correa alba, a native shrub that provides shelter and food to local birds and insects.*

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## Executive Summary

Research increasingly demonstrates that urban biodiversity plays a vital role in conservation, while also supporting human health and effective climate change adaptations. However, there is insufficient understanding of what flora and fauna exist as a baseline in most urban areas, and there has been no systematic monitoring of biodiversity on privately held land, which comprises 75% of Port Phillip. To address this, **NatureSpot** was a citizen science biodiversity project that took place in the City of Port Phillip between 7 November 2019 and 19 June 2020<sup>1</sup>.

Port Phillip EcoCentre collaborated with CrowdSpot's web developers to design online community maps of flora and fauna spotted across the municipality. Project objectives were to 1) gather data in the private realm such as backyards, balconies, residential streets, parks and schools; and 2) raise community awareness on the importance of urban ecology and provide tools and support for resident and business participation in protecting and enhancing biodiversity.

Conducted in parallel with the professional collation of local naturalists' historical records, the citizen science of NatureSpot contributes to Council's first comprehensive attempt to catalogue a complete record of biodiversity across the City of Port Phillip, including the private realm.

The EcoCentre identified six parks in Port Phillip as representative sites to both conduct seasonal public surveys and to train citizen scientists on survey methods and mapping 'spots' using the project website. As Victorian public events scheduled for autumn were restricted in response to the COVID-19 virus, a range of online interactive social media 'live streams' and a video clip library were created to continue community engagement.

Data collected during the public training surveys, and subsequent spots submitted by citizen scientists, provide seasonal and ecological insights into the urban ecology of Port Phillip. These datasets and collection methods can inform Port Phillip's *Biodiversity Study and Action Plan*. Due to the limited number of surveys and ad hoc observation model, it is acknowledged that NatureSpot forms only an indicative representation of local biodiversity. Despite the limitation, the community engagement objectives of the project were demonstrably achieved.

A total of 692 sightings (spots) were submitted during data submission period (7 November 2019 to 16 April 2020). Spots submitted were 72% fauna and 28% flora. The digital platform engaged with a total of 644 people, 172 active contributors and an additional 472 users who visited the website to view data on the map.<sup>2</sup>

The project verified 21 species never previously recorded in Port Phillip.<sup>3</sup>

The community reported that NatureSpot increased their awareness of local biodiversity and allowed them to more closely observe smaller flora and fauna, and species interactions. Some early learning centres utilised the website as an education resource, bringing students out for surveys at nearby parks. School students also took up the survey as a remote learning exercise during the COVID-19 pandemic.

To further enrich urban ecology in Port Phillip, more community education on local biodiversity is recommended, as well as enhancing landscapes within private gardens to improve habitat corridors, and connecting residents and schools to 'Friends' groups and local experts. In the short term, the EcoCentre will continue to contribute through winter and spring citizen science surveys funded by the Australian Communities Environment Program.

There is longer term, ongoing opportunity to undertake such initiatives as part of City of Port Phillip's *Biodiversity Action Plan*, to achieve complementary engagement, environmental and climate benefits across our city.

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<sup>1</sup> This report provides insights into data collected during the data submission period (7 November 2019 to 16 April 2020). The website remained open, however data submitted after the study period is omitted from the findings.

<sup>2</sup> As of 28 May 2020: total spots 871, total users 807 (177 active, 630 viewers).

<sup>3</sup> [Verified species list](#) including 17 insects and 4 spiders that were first-time reports in Port Phillip





*Native Cockroach (Ellipsidion austral) was a new sighting at Elwood School Park. This sighting also contributed to the Atlas of Living Australia through the iNaturalist website.*



*A magnificent community submission showing ants harvesting honeydew from the excretion of treehopper nymphs. This is a form of symbiosis, wherein the ants protect the nymphs from predators in return for food.*



# The NatureSpot Project

## Objective

Urban biodiversity is becoming increasingly important as a growing body of research shows cities have a vital role to play in biodiversity conservation and management. Protecting and enhancing biodiversity also supports the health and wellbeing of communities and can contribute to effective climate change adaptation actions.<sup>4</sup>

NatureSpot is a citizen science project, wherein community members use an online mapping tool to upload photo records of flora and fauna observed in City of Port Phillip. Results will inform Council's *Biodiversity Action Plan*. In addition to encouraging residents to submit 'spots' of flora and fauna sighted in private properties, the EcoCentre delivered three seasons of NatureSpot surveys from November 2019 to April 2020. Each season consisted of six engagement events at selected sites within Port Phillip, as well as independent community citizen science surveys.

### Key objectives:

1. Gather data in private realm (backyards, balconies, rooftops) as well as parks, residential streets, foreshore and local school environments.
2. Raise community awareness of importance of urban ecology and provide tools and support to encourage residents and business to take action to protect and enhance biodiversity.

## Scope

### Ecological zones

Habitat zones that support biodiversity in the City of Port Phillip include foreshore reserves, large established parks, residential pocket parks, linear reserves including light rail reserves and Elwood canal, schools and home gardens. Community groups and individual local naturalists have historically surveyed nature reserves such as Albert Park Lake and some foreshore reserves. However, there has been no systematic monitoring of biodiversity on privately held land, which comprises 75% of all land in the City. Residential pocket parks, some of which provide a habitat of mostly native plants, also historically lacked information. The Project aimed to address this data gap by encouraging the community to surveys in private realms (streets, home gardens, school), and also selected six parks across the City with existing native planting and beneficial habitat structure to understand the biodiversity potential of these areas (see **Appendix 1. Overview of survey parks** for a summary of habitat features of each park selected).

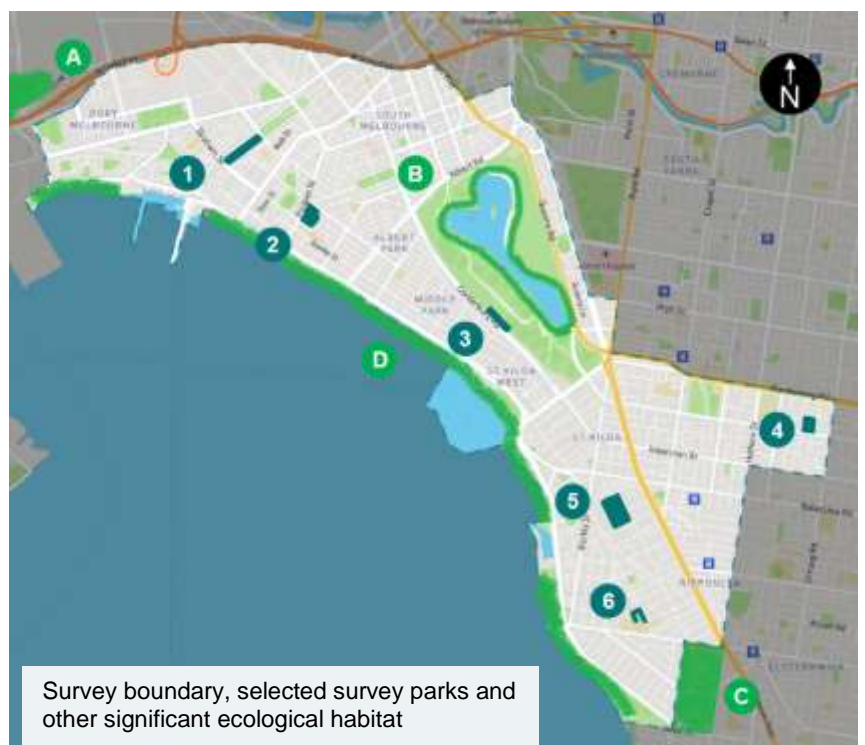
Other ecologically important habitats adjoining the City of Port Phillip include Westgate Park (City of Melbourne), Albert Park Lake Reserve (Parks Victoria), Elsternwick Park Nature Reserve (City of Bayside) and Port Phillip Bay foreshores. Regular bird surveys are conducted by community groups at these three parks and a wider range of fauna species is being monitored at Elsternwick Park Nature Reserve.

### Six survey parks:

1. Port Melbourne Rail Trail
2. Gasworks Arts Park
3. Canterbury Road Urban Forest
4. Te-Arai Reserve
5. St Kilda Botanical Gardens
6. Elwood School Park

### Other significant ecological habitat

- A. Westgate Park
- B. Albert Park Lake
- C. Elsternwick Park Nature Reserve
- D. Foreshore areas (including St Kilda Breakwater)



Survey boundary, selected survey parks and other significant ecological habitat

<sup>4</sup> Patterns and Drivers of Urban Biodiversity, <https://www.frontiersin.org/research-topics/9047/patterns-and-drivers-of-urban-biodiversity>



## Seasons

The Project was open for data submission for six months from 7 November 2019 to 16 April 2020. During this time, three seasonal survey focus weeks were designated to understand seasonal variations of flora and fauna and to hold community engagement events at the six parks. The surveys at the six parks were conducted during different times of the day at each season, in the morning, afternoon and twilight. Autumn park surveys were conducted independently by EcoCentre staff only, in accord with coronavirus public health protocols.

Focus weeks:	Spring	16 to 22 November 2019
	Summer	18 to 24 January 2020
	Autumn	4 to 10 April 2020

Survey Park	Spring	Summer	Autumn
Port Melbourne Rail Trail	16 Nov. 18:00-19:30	21 Jan. 15:30-17:00	8 Apr. 10:30-11:30
Gasworks Arts Park	19 Nov. 10:00-11:30	21 Jan. 19:00-20:30	8 Apr. 13:00-14:00
Canterbury Road Urban Forest	16 Nov. 13:30-15:00	21 Jan. 10:00-11:30	8 Apr. 18:00-19:00
Te-Arai Reserve	19 Nov. 13:30-15:00	22 Jan. 10:00-11:30	6 Apr. 18:00-19:00
St Kilda Botanical Gardens	16 Nov. 10:00-11:30	29 Jan. 19:00-20:30	4 Apr. 13:00-14:00
Elwood School Park	19 Nov. 18:00-19:30	22 Jan. 15:30-17:00	4 Apr. 10:30-11:30

Survey dates and times at survey parks

## Data collection

### Citizen science

Biodiversity data for the NatureSpot project was gathered through public participation, known as citizen science, where community members including non-professional scientists can contribute information to enable scientific research. NatureSpot adopted the citizen science method to:

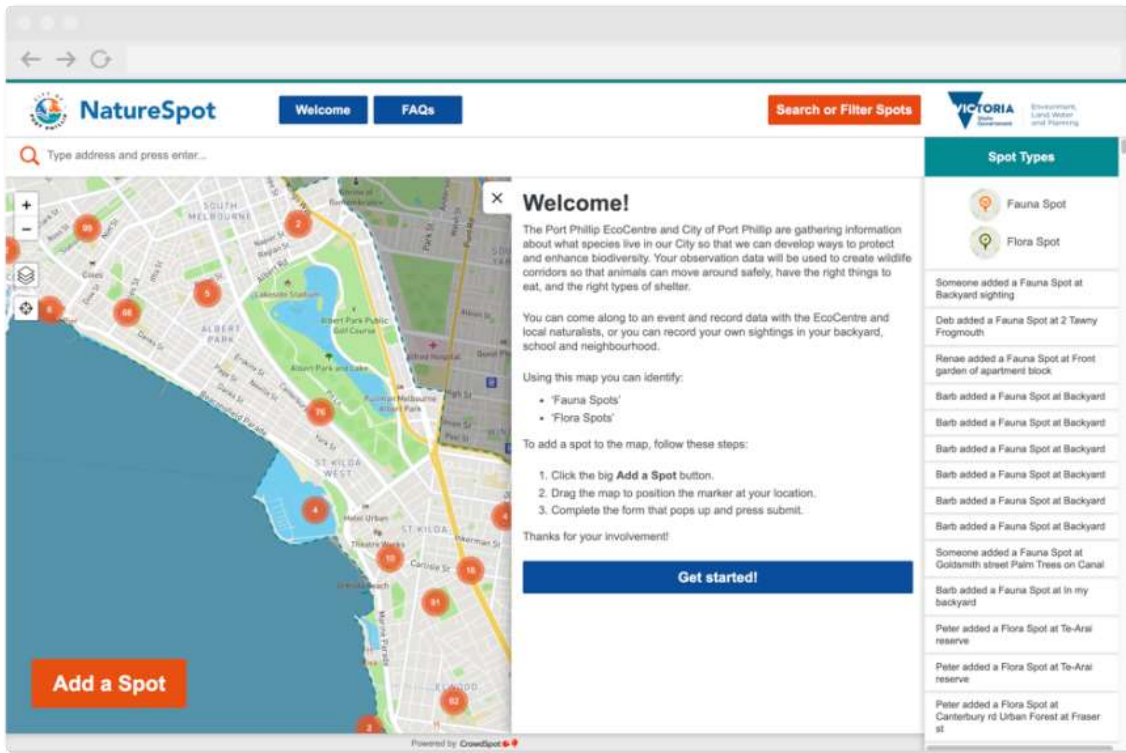
- capture existing knowledge from local amateur naturalists;
- capture encounters with nature by everyday people;
- gather data in private realm; and
- educate and support the community on participating in local biodiversity enhancement.

### Project website

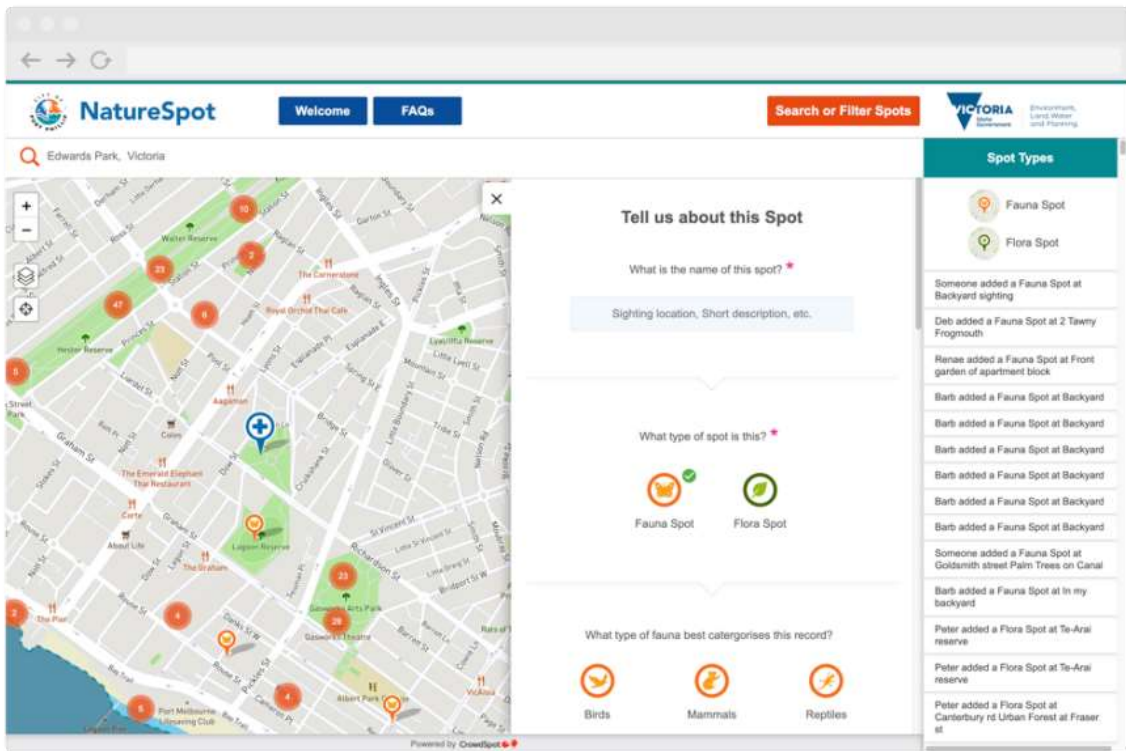
An interactive website was developed by CrowdSpot for the community to share their flora and fauna sightings in the City of Port Phillip and surrounding areas. Sightings were added by dropping a pin on the map, answering the survey questionnaire and uploading a photo.

The survey form contained a combination of location and subject descriptor fields (e.g. flora or fauna, habitat level). There were three ways people were able to actively contribute their input to the map. This includes:

1. Adding a 'Spot' to the map via the survey form (flora or fauna spots)
2. Commenting on existing spots on the map
3. Voting on existing spots on the map by clicking the 'Like' button



Welcome page of the NatureSpot website



Spots submission survey



*Curved, jelly-like masses of Moon snail eggs are often found on the local shorelines.*



*A Conical Moon snail, still living in its shell, moves around the sand seeking food.*



*A Superb Fairywren (*Malurus cyaneus*) takes shelter amongst Elwood's Coast saltbush (*Atriplex cinerea*).*



*Juvenile Pacific Gulls (*Larus pacificus*) (back) alongside Siver Gulls (*Chroicocephalus novaehollandiae*) (front).*

Spots from the foreshore



## Community engagement

### Survey events

Community survey events were held at the six designated parks during survey focus weeks in the spring and summer (the autumn public events were cancelled due to the COVID-19 pandemic). Volunteer citizen scientists were trained on biodiversity survey methods and observation skills, and how to submit 'spots' on the website. Local naturalists were also recruited to share their wealth of knowledge on local ecology.

Surveys were facilitated by EcoCentre staff demonstrating biodiversity observation techniques, particularly on various habitat layers and where to find small insects. Event participants came from a range of demographics including families with small children, students, seniors, local naturalists and visitors. Many expressed they gained new knowledge, better understood the biological habitats of the local area, and gained new insight into the parks where they were frequent visitors. A total of 38 participants took part in the survey events across spring and summer, contributing 334 flora and fauna entries during the events. Participant numbers for the survey events were lower than anticipated due to unforeseen circumstances, impacted by bushfire smoke and severe storms in summer and pandemic in autumn. Nevertheless, most citizen scientists undertook surveys on their own time, submitting spots online whenever they came across a sighting.



*Citizen scientists sight a Tawny Frogmouth at St Kilda Botanical Gardens. "I walk through this park all the time, but learned so many new things today!"*

Survey Parks	No. Participants	No. Spots
Port Melbourne Rail Trail	7	74
Gasworks Arts Park	4	45
Canterbury Road Urban Forest	12	91
Te-Arai Reserve	2	49
St Kilda Botanical Gardens	7	43
Elwood School Park	6	32
<b>Total</b>	<b>38</b>	<b>334</b>

Participant numbers and spots contribution from park surveys

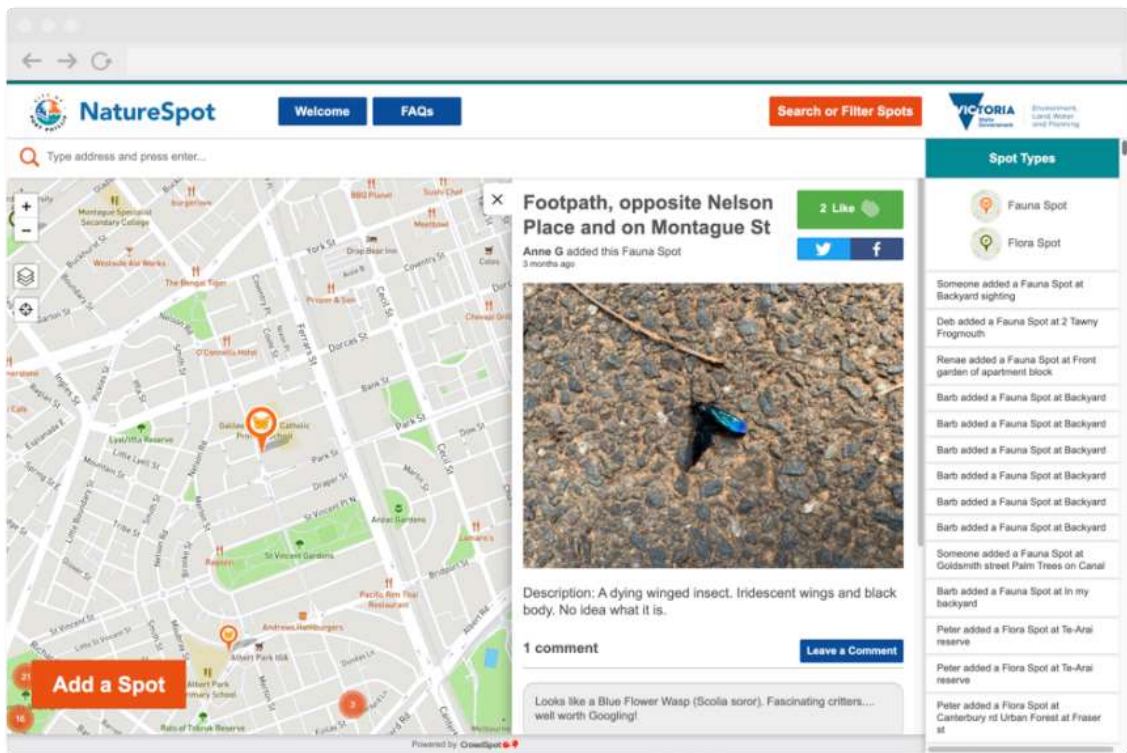


*Survey at Elwood School Park: An EcoCentre educator shows what can be found by close examination at ground level. Some bones of rodents were found, indicating owls or foxes may be present.*



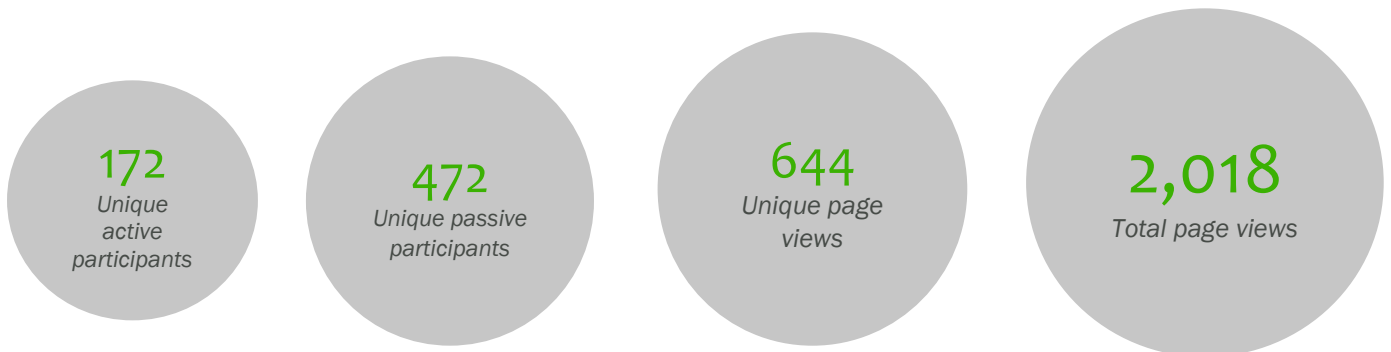
## Digital engagement

The NatureSpot website allowed the community to interact with existing spot sightings by adding comments, questions and click a 'like' button. EcoCentre staff regularly provided online comments and added ecological information on the species sighted.



An example of a spot submission, likes and comments.

The data collected through the map includes a combination of both active and passive participation. Active participation refers to user interactions where people have submitted their input by either adding a spot, comment or 'Like'. Passive participation refers to cases where users have explored the map, viewing and reading various contributions without actively making a submission.



Number of online participants and page views



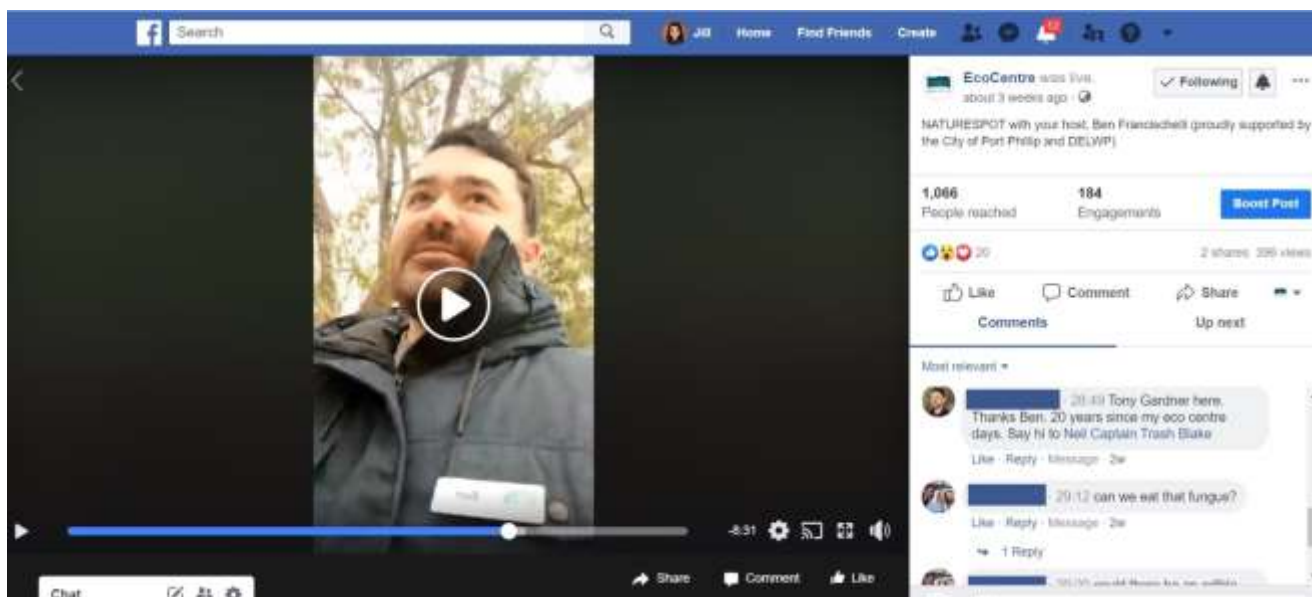
Examples of habitat in Port Melbourne.  
Left: Transverse Ladybird (*Coccinella transversalis*) on *Dianella*.  
Right: Hairy Spinifex in the sand dunes.

In total, there were 172 active participants who submitted input on the map and 644 unique page viewers. As a result, we can determine that there were 472 passive participants, those who came to the website to read and learn rather than submit. There were 13 average daily page views and the peak of 143 page views occurred upon project launch.



Total number of views per day over the engagement period

In addition to the project website, social media was used to promote neighbourhood surveys and to share knowledge on local biodiversity. The EcoCentre produced seven videos on animals and plants of Port Phillip, along with two instructional videos on how to observe and record a sighting on the NatureSpot platform. During the COVID-19 pandemic, EcoCentre staff held 'live stream' surveys walks on Facebook and Instagram where they engaged with viewers on an online Q&A. These videos cumulatively had over 2300 views as of end May 2020.



Facebook live stream survey walk from Gasworks Arts Park, 4 April 2020

## Schools engagement

NatureSpot was promoted to early learning centres and schools in Port Phillip to utilise the online mapping tool as an outdoor education resource to deepen student learning on local biodiversity. Some early learning centres conducted their own surveys at nearby reserves and pocket parks (Garden City Reserve and Te-Arai Reserve).

Two planned school site surveys were cancelled due to restrictions of the COVID-19 pandemic. In lieu of onsite surveys, the EcoCentre created lesson plans for remote-learning students to conduct surveys from home and compare habitat with other students in the neighbourhood. Over 150 submissions were made from students in Middle Park and Albert Park area in May 2020.



*"Two birds were looking at each other"*



*Observing cicada nymph shells*



*"Is it a bee or a wasp?"*



*"The sound of many many bees in the blossoms of the gum tree"*

Spot submissions from young citizen scientists



## Community response

Port Phillip Council's initiative to undertake a biodiversity survey was welcomed by the community and environmental 'Friends' groups. Spots were submitted by various demographics, including families and children who were seeking to learn more about local biodiversity, as well as experienced naturalists and EcoCentre volunteers who wanted to contribute to citizen science. Participants reported gaining new observation skills to examine different habitat levels, and that as a result of the project they now notice more nature around them.

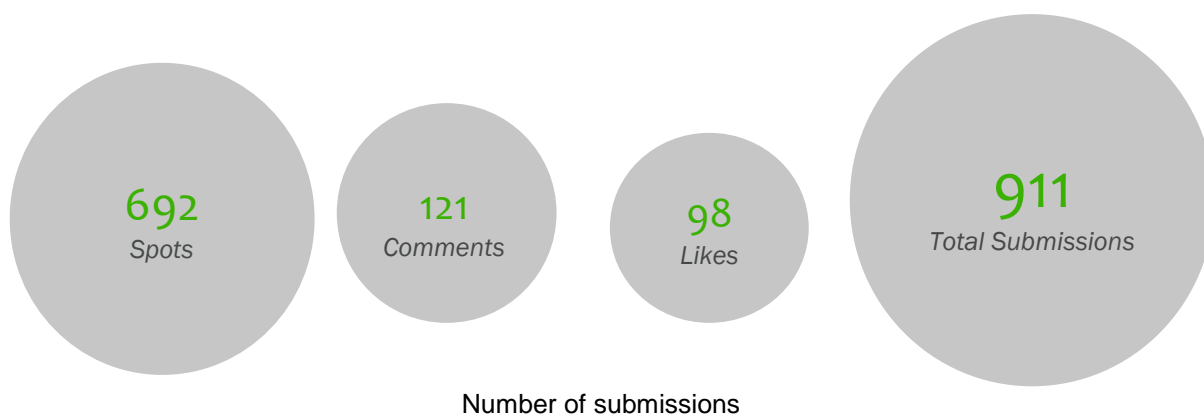
NatureSpot survey results were presented via a digital volunteer celebration event on 21 May 2020 during National Volunteer Week, attended by approximately 35 EcoCentre volunteers. Study results and a new guide to providing habitat on private land will continue to be promoted and distributed through 2020.

Participants valued the project for its potential to engage citizens with their local environment through a mobile platform, learn and feel connected with the urban ecology, and contribute to the enhancement of urban biodiversity and climate change adaptations. Many expressed that they would like to take part in similar projects in the future.

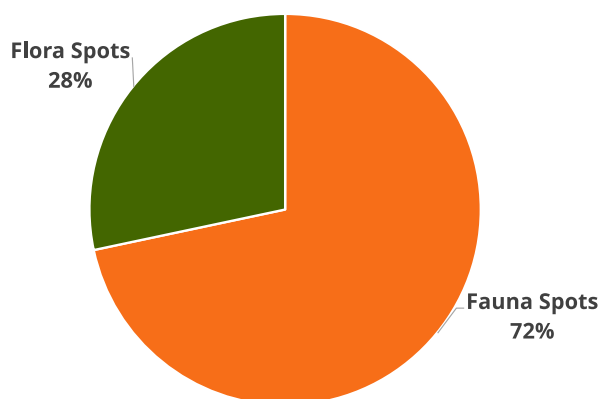
## Findings

### Spot submissions overview

During the six-month course of the project (7 November 2019 to 16 April 2020), a total of 911 submissions were made on the website, consisting of 692 biodiversity spots, 121 comments and 98 likes.<sup>5</sup>

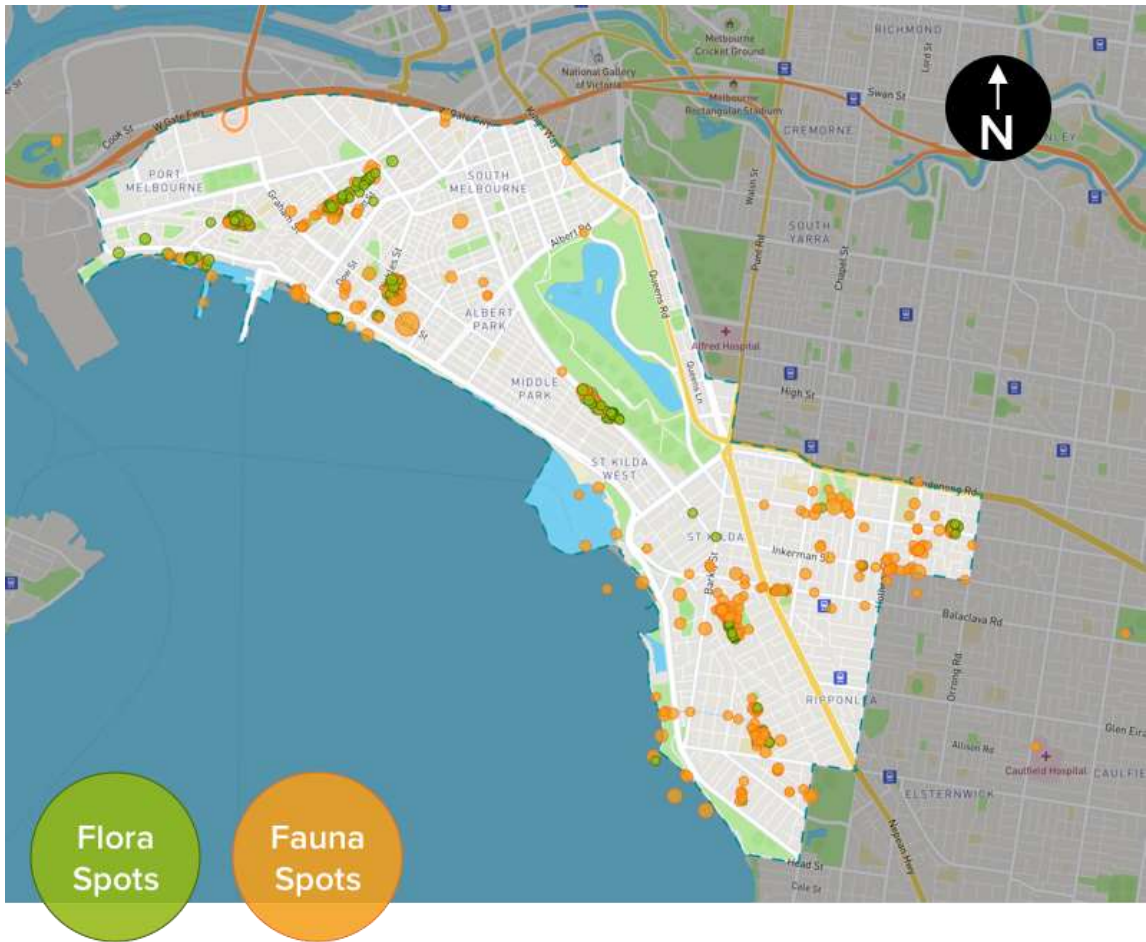


72% (496) of spots submitted were of fauna (see Appendix 2); and 28% (196) were of flora sightings (see Appendix 3). Most sightings were made on public land (74%) such as parks, foreshore and streets. Submissions from private land (16%) came from home and balcony sightings, as well as schools. The remaining 10% of submissions did not answer the question on land type. Overall, insects, birds and native plants were the top three types of submissions made. Familiarity bias or phone-camera-friendly shots may be the reason for these results, as well as the seasonal abundance of insect populations that naturally occurs in spring and summer compared to other types of fauna.

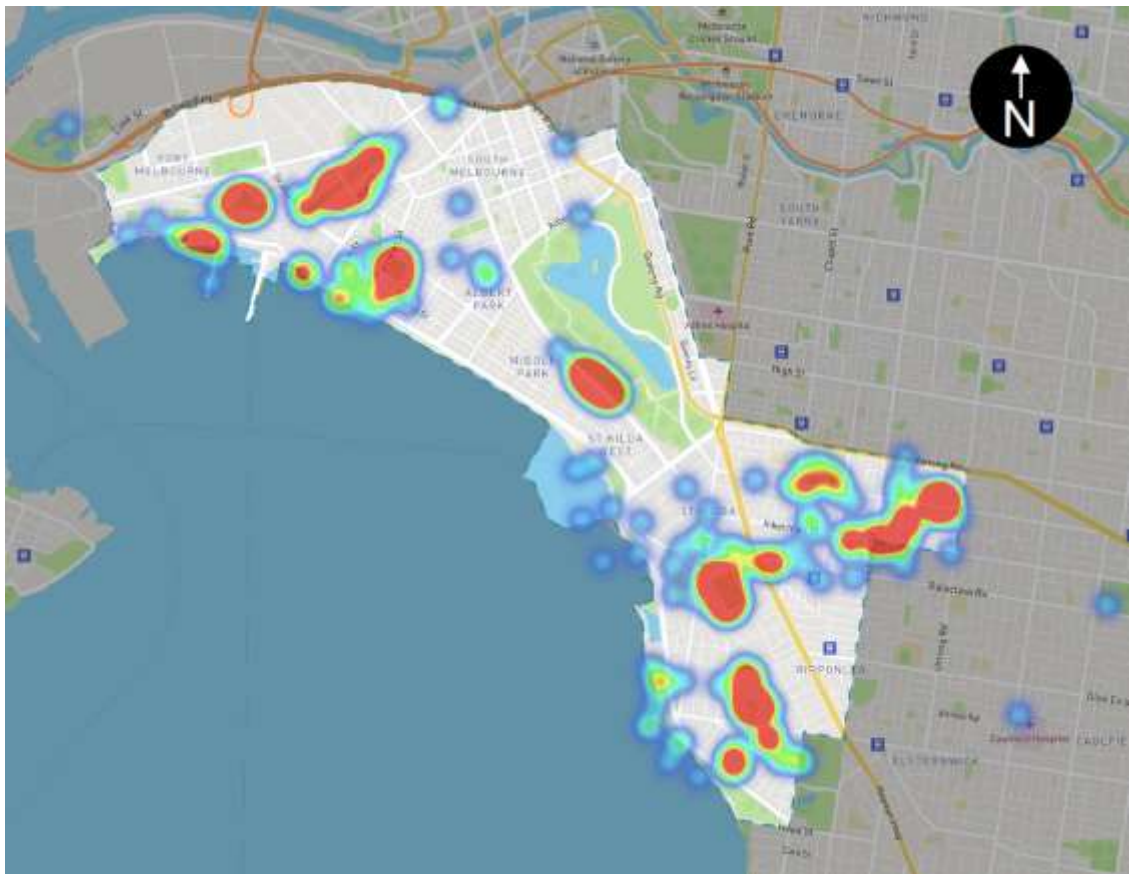


<sup>5</sup> After the official closure for data collation, the NatureSpot website remained open until 19 June 2020 to allow schools to utilise NatureSpot for remote learning and the public to contribute during COVID-19 pandemic. A total of 871 spot submissions had been made as of 28 May 2020.





Spatial distribution of Flora and Fauna Spots



Heat map representing density of spots submission

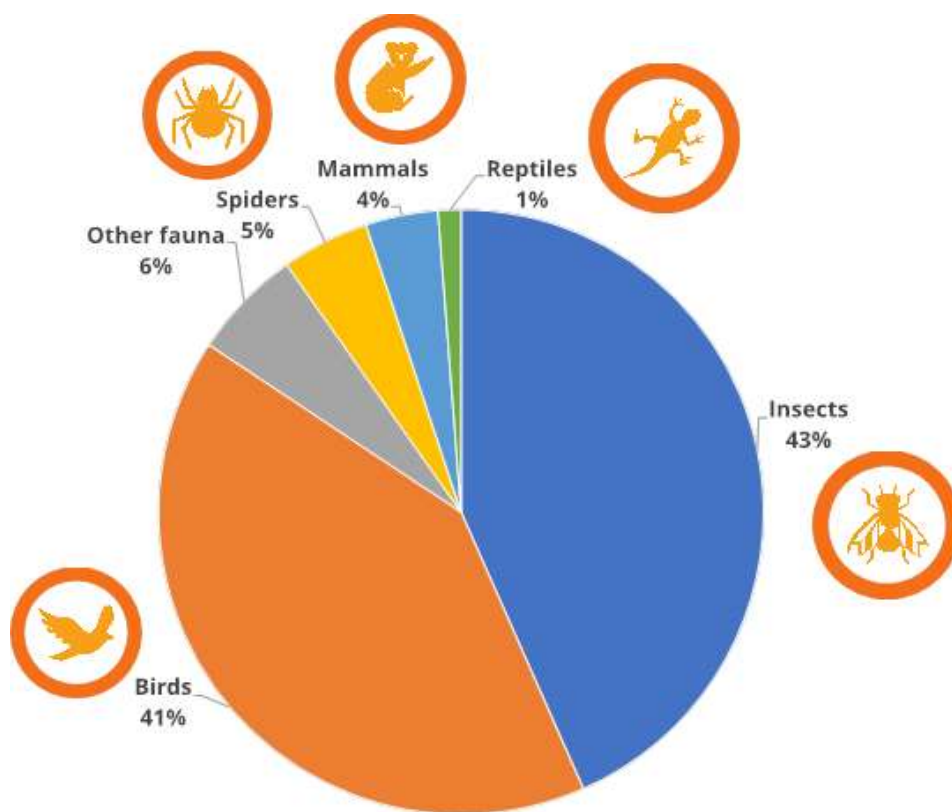
The two maps above show spots are generally clustered in the vicinity of the six parks where training surveys were conducted, indicating that local residents who attended training surveys contributed further spots in their neighbourhood. In residential neighbourhoods, more fauna spots were submitted compared to flora spots. Other areas with dense sighting included the walking path along Elster Creek, near Alma Park and St Kilda Cemetery in East St Kilda and some pocket parks such as Garden City Reserve in Port Melbourne where school surveys took place.

The lack of neighbourhood spots prior to the project conclusion in the area bounded by Kerferd Road, Queens Road, Fitzroy Street and the foreshore suggests that people who attended training surveys at Canterbury Road Urban Forest may not live in this neighbourhood. As this region contains important habitats such as Albert Park Lake and St Kilda West Beach sand spit, it is desirable to promote further surveys in this region. It should also be noted that relatively few spots were submitted from other important biodiversity zones including the foreshore reserve and the linear habitat link between Sandridge Beach and Westgate Park.

The heat map depicts well-distributed community interest. The spots submitted in each suburb provide a good basis for developing further educational activities with neighbouring early learning centres, schools and residents.

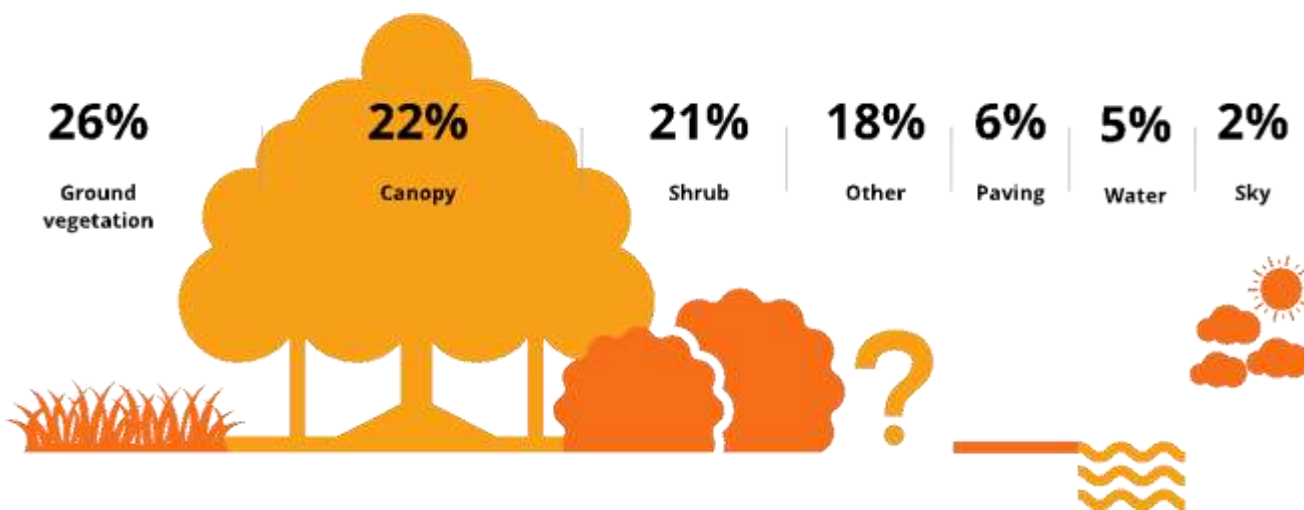
### Fauna spots

Insects (43%) were the most sighted type of fauna, followed by birds (41%) and other fauna (6%). Sightings of 'other fauna' included amphibians, molluscs, jellyfish, fish, rays and other invertebrates such as millipedes and slaters.



Fauna spots by type of fauna (n=496)

Most fauna spots were at the habitat zones where insects and birds can be most easily photographed with phone cameras: ground level (26%), canopy (22%) or shrub (21%). 'Other' habitat level included sighting that came from urban infrastructure such as powerlines, paving, fences and building structure, which are unutilised by animals to move around or for shelter.

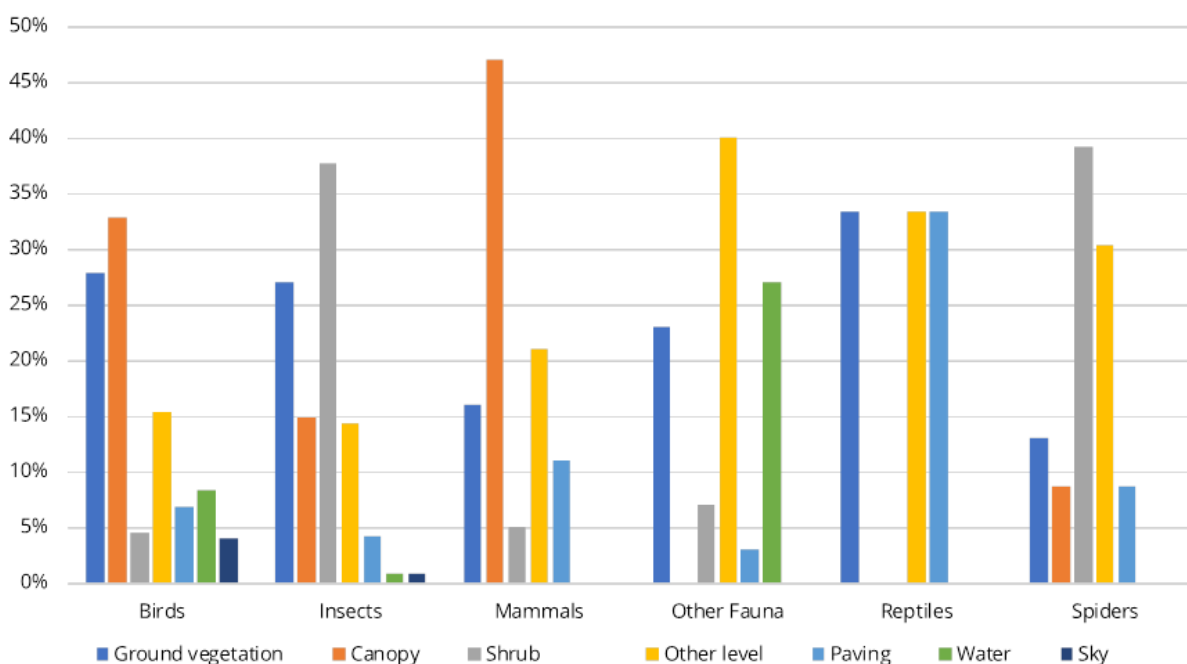


Percentage of habitat level of fauna sightings

It is notable that birds (41% of fauna spots) and insects (43% of fauna spots) are both represented in all seven habitat levels, while *mammals*, *other fauna* and *spiders* are each represented in five levels. Most sightings on 'other' habitat level were on man-made structures or bare soil or mulch, which were not listed as options for spot submissions.

The fact that very few 'sky' level spots have been submitted is more likely to be due to the difficulty in photographing fauna in flight, rather than fauna not occurring in this level. Flying mammals such as Grey-headed Flying Foxes and several species of microbats known to occur locally are unlikely to be photographed without specialist equipment.

Difficulty in photographing is likely also to apply to the relatively few spots submitted of birds in shrubs, where the birds are often hidden behind shrub foliage. The fact that spiders and insects are well represented in shrubs shows that local birds (many of which will eat insects and spiders) have good reason to visit shrubs. However, the fact that birds feeding at ground or shrub level are more vulnerable to being disturbed or preyed on by domestic animals such as cats and dogs may also be a factor in residents spotting few birds (motionless enough to photograph) at this level.



Percentage of habitat level sighting by fauna type





*An Elwood resident photographed this Brown Thornbill taking shelter.*



*This Nankeen Night Heron frequented the EcoCentre compost bays.*



*A juvenile Grey Butcherbird found at St Kilda Botanical Gardens in summer.*



*Orbweaver spiders can be found in many gardens of Port Phillip.*



*Many European honey bees were seen collecting pollen in spring.*



*A Spotted Amber Ladybird on borage, a non-native but beneficial food plant.*



*Tiny Saltbush Blue butterflies can be observed flying in all seasons.*



*A well-camouflaged Looper Moth in Elwood. They are more active at night.*



*This Marbled Gecko (*Christinus marmoratus*) hiding in a home garden.*





*Dingy Swallowtail perched on Coast saltbush, an edible local native plant.*



*A Yellow-Banded Dart Butterfly stops on a Golden Everlasting.*



*This Tau Emerald dragonfly blends in on a Correa alba shrub.*



*Dark red berries of Seaberry Saltbush, a coastal plant with ornamental flair.*



*This Native Frangipani was in full bloom on Grey Street in spring.*



*Correa reflexa is a local native shrub that provides nectar and shelter.*



*Sweet Bursaria attracts many pollinators and helps bush birds hide.*



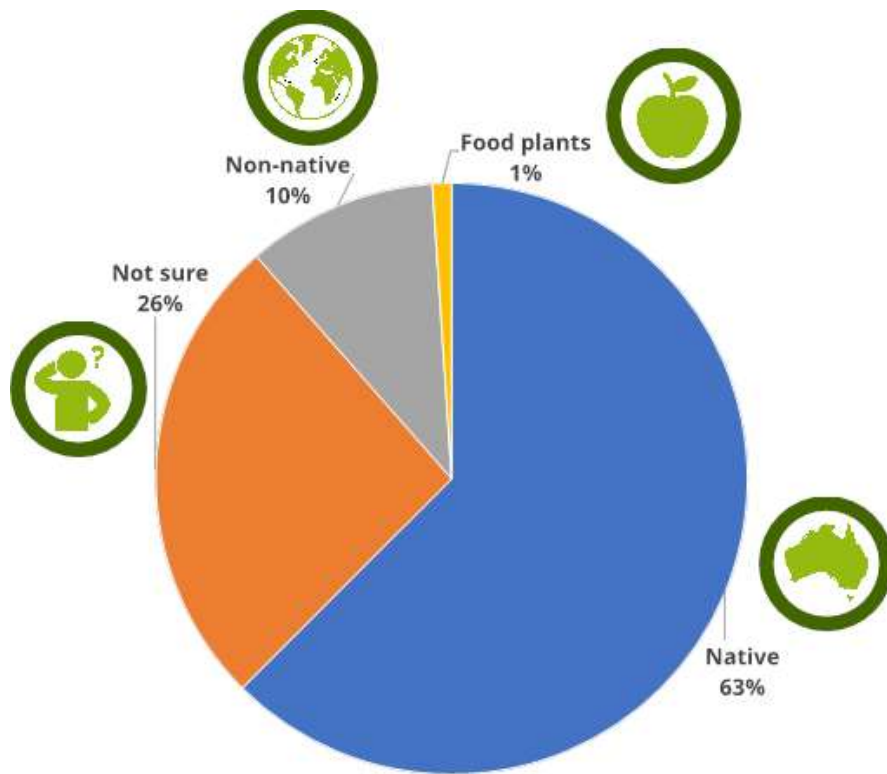
*Rounded Noon-Flowers close at night and open by noon at our foreshores.*



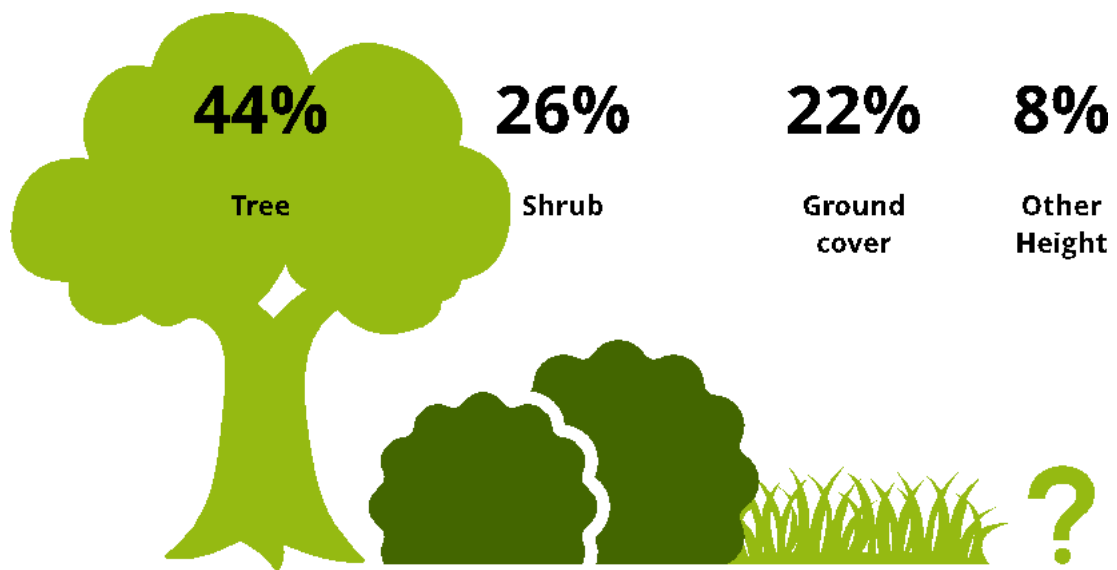
*Rainbow Lorikeets love feeding on nectar of eucalyptus flowers.*

### Flora spots

Most of the flora sightings were of native plants (63%). Some citizen scientists reported that they were not sure (26%) of the origin of the flora sighted, suggesting that it would be beneficial to improve community knowledge on plants, particularly in relation to local native plants and their ecological benefits.

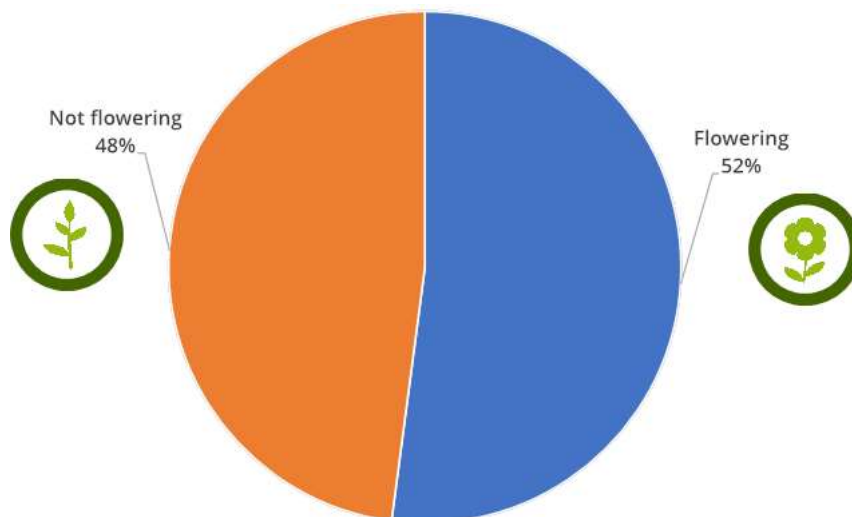


Percentage of flora spots by the type of flora (n=196)



Percentage of storey (height) of flora sightings

There were slightly more sightings of flowering plants (52%) compared to non-flowering (48%). This highlights the opportunity to map flowers across all seasons, to better understand local availability of food for nectar-feeding fauna.

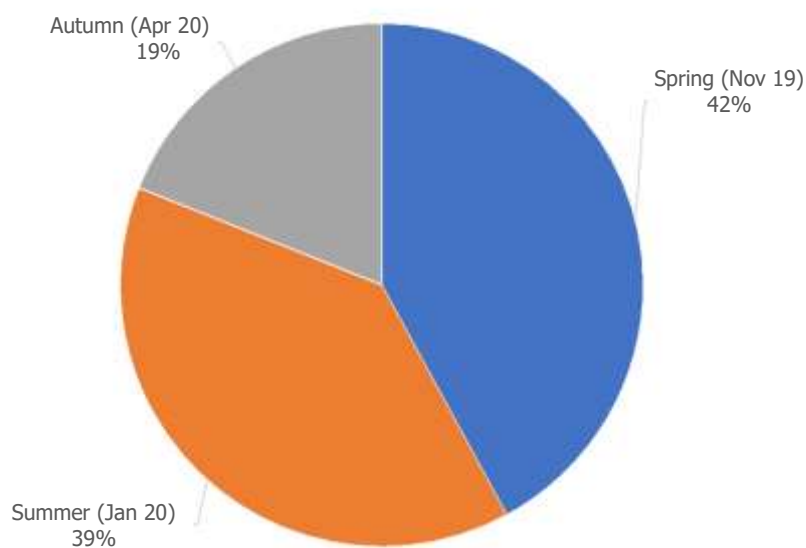


Percentage of flowering and non-flowering flora sightings

### Seasonal variations

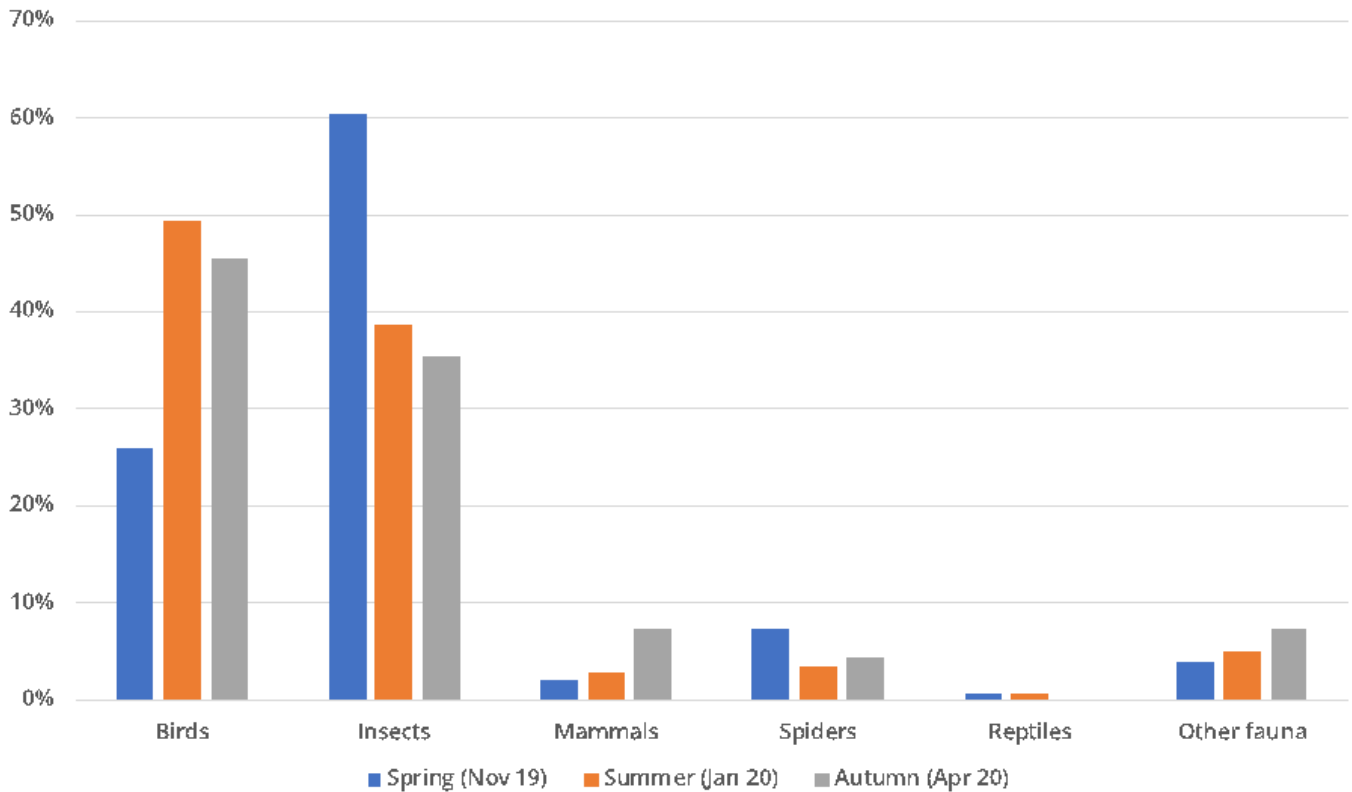
The results from the seasonal surveys conducted in spring (November 2019), summer (January 2020), and autumn (April 2020) showed some variations on the quantity of fauna sightings. Little difference was found in flora sightings, perhaps due to the nature of plants and flowering season being available throughout the year.

Significantly more fauna spots were recorded in spring (42%) and summer (39%), compared to autumn (19%). Although reporting levels were impacted by weather and pandemic factors, this also correlates the seasonal peak in insect breeding, triggered by the longer hours of daylight, and warmer and wet weather in spring. Greater availability of insects provides ideal breeding conditions for birds needing abundant protein supplies to feed their nestlings. As the weather cools with the onset of autumn, some birds, mammals and reptiles enter into a state of semi-dormancy (similar to hibernation in which their metabolism slows and growth stops). Similarly, many butterfly species shut down in response to extreme summer conditions. This means that even in ideal conditions, observations are likely to be fewer in summer and autumn due to the animal cycles.



Percentage of seasonal sightings of fauna (n=359)

The chart shown below demonstrates how the high proportion of insects recorded in spring triggers an increase in bird numbers in summer. The increase in birds is likely to be largely due to juvenile birds joining their parents to explore local habitats and learn where to find food. As insect numbers begin to drop in summer, so too do numbers of birds and spiders. The autumn increase in *mammals* and *other fauna* is less easy to explain, but may be due to the fact that young foxes and brushtail possums disperse from their families around the end of summer and can travel widely to find a suitable territory.



Percentage of seasonal sightings by fauna types

## Species identification

A total of 114 fauna and 75 flora species were identified from spots submitted by citizen scientists. Of the 692 spots, only entries with verifiable photos (74%) were analysed for species identification (some spots did not provide a photo or had unclear images). It was not mandatory to enter the species name in the spots survey, therefore species verification was conducted by EcoCentre staff and volunteers, as well as through iNaturalist<sup>6</sup> community verification. In addition, some reliable sightings provided by known local naturalists were added to the list despite the lack of photos (see Appendix 2 and 3 for lists of species).

Fauna	
birds	32
insects	52
spiders	9
mammals	5
reptiles	3
other fauna	13
<b>Total fauna species</b>	<b>114</b>

Number of fauna species identified

Flora	
native	55
non-native	20
<b>Total flora species</b>	<b>75</b>

Number of flora species identified

<sup>6</sup> <https://www.inaturalist.org/>



## Birds

It was not surprising that common birds such as the Australian Magpie (*Gymnorhina tibicen*), Rainbow Lorikeet (*Trichoglossus haematodus*), and Magpie-Lark (*Grallina cyanoleuca*) were the most sighted and recognised by citizen scientists in Port Phillip. Other interesting, yet not unusual, sightings included Barn Owl (*Tyto alba*), Brown Thornbill (*Acanthiza pusilla*), Eastern Spinebills (*Acanthorhynchus tenuirostris*), Nankeen Night Heron (*Nycticorax caledonicus*), and Yellow-Tailed Black Cockatoo (*Calyptorhynchus funereus*). Whilst these species are not as widely known by the community, it is valuable that the City's landscape provides habitat and food to attract such distinctive species.

## Insect and Spiders

Sighting of insects and spiders were often submitted without the name of species, which is reasonable given the vast quantity of species, including many that are not yet named. For example, there are around 2,000 native bee species, 8,000 native wasp species, and 7,000 native flies currently known<sup>7</sup>. In consideration of the vast diversity of these groups, specialist taxonomy skills and very clear photos are required to achieve identification and validation. Despite the challenges, 52 species of insects and 9 species of spiders were identified, some of which had not been recorded in the City of Port Phillip<sup>8</sup>. As there have been few formal studies on insects and spiders in the municipality, citizen science provides a unique opportunity to record and catalogue a snapshot of the diversity of small fauna. Additional skills in photography, entomology or arachnology would be required for a comprehensive survey.

## Mammals

Five species of mammals were recorded in NatureSpot with the Domestic Dog (*Canis familiaris*) and Ringtail Possum (*Pseudocheirus peregrinus*) having the most sightings (three each). Sightings of nocturnal mammals such as the Gould's Wattled Bat (*Chalinolobus gouldi*) and Grey-headed Flying Fox (*Pteropus poliocephalus*) were also submitted without photographs.

## Reptiles

Sightings of a Common Garden Skink (*Lampropholis guichenoti*), Southern Marbled Gecko (*Christinus marmoratus*) and Eastern Tiger Snake (*Notechis scutatus*) were recorded in residential areas of Port Phillip as well as the St Kilda East Cemetery. The Tiger Snake, safely collected from Elwood Primary School grounds, likely was flushed from Melbourne's upper catchments into the Elwood Canal via heavy rains a few days prior.

## Other Fauna

Marine species commonly found on the foreshore were sighted such as the Blue Blubber Jellyfish (*Catostylus mosaicus*), and the Moon Snail (*Conuber sp.*) as well as their jelly-like egg mass. Other invertebrates commonly seen in garden habitat were also often reported, including snails, slugs, millipedes and slaters.

## Flora

Most flora sightings were of native species, compared to non-native. Many *Eucalyptus* and *Acacia* were sighted along with common local native shrubs such as Coast Saltbush (*Atriplex cinerea*) and Sweet Bursaria (*Bursaria spinosa*). Attractive tall flowering street trees were also often reported including the Irish Strawberry Tree (*Arbutus unedo*), Illawarra Flame Tree (*Brachychiton Acerifolius*), Red-Flowering Gum (*Corymbia ficifolia*), and Norfolk Island Hibiscus (*Lagunaria patersonia*). Verification of plants was also a challenge as photos were often taken from a distance or did not provide a sufficient view of distinctive parts such as bark, leaves or seeds for identification.

<sup>7</sup> Common pollinator and beneficial insects of Victoria. Port Phillip CMA Victorian Government.

<sup>8</sup> 17 insect and 4 spider species had not been observed on Atlas of Living Australia or Local Friends group surveys.

## Ecological insights

The six parks surveyed were selected across the City of Port Phillip to optimise community participation in surveys, and on the basis that they represent a range of different habitat features that will provide insights into future planning for biodiversity within the municipality. Habitat features of the parks can be considered within three groups.

### 1. Parks managed essentially for recreational open space amenity as opposed to nature conservation.

Te-Arai Reserve and Elwood School Park are included within this category. It is anticipated that species recorded in these sites, if provided with suitable habitat, will be capable of being attracted to neighbouring private gardens and school grounds.

### 2. Parks with potential to be improved and/or extended as habitat corridors.

Canterbury Road Urban Forest and Port Melbourne Light Rail Trail relate to this category due to their linear nature. These two reserves recorded highest number of insect and bird species, reflecting the diversity of habitat layers they provide.

### 3. Larger parks with established trees and some mid-storey shrubs and ground-layer plantings.

St Kilda Botanical Gardens and Gasworks Arts Park are popular visitor destinations with surrounding residential areas. Quite conceivably, any fauna recorded in these parks could be encouraged to visit and benefit from appropriate plantings in nearby private properties.

Fauna category	Canterbury Road Urban Forest	Gasworks Arts Park	Port Melbourne Rail Trail	Elwood School Park	St Kilda Botanical Gardens	Te-Arai Reserve	Grand Total
Birds	14	8	12	9	25	12	<b>80</b>
Insects	36	19	32	15	2	14	<b>118</b>
Mammals					1	4	<b>5</b>
Reptiles					1		<b>1</b>
Spiders	5	2	1	2	1	1	<b>12</b>
Other fauna	1	4	3	4		1	<b>13</b>
<b>Grand Total</b>	<b>56</b>	<b>33</b>	<b>48</b>	<b>30</b>	<b>30</b>	<b>32</b>	<b>229</b>

Numbers of fauna spots at survey parks

Along with Gasworks Arts Park, Te-Arai Reserve and Elwood School Park recorded the least number of bird species. Park uses such as dog exercising may be contributing factors for this result. However, as Elwood School Park is adjacent to Elwood Canal (which has potential as a linear habitat) this area is worthy of development, particularly for nocturnal fauna, including owls and microbats.

Canterbury Road Urban Forest and Port Melbourne Light Rail Trail recorded highest number of insect and bird species, reflecting the diversity of habitat layers represented in these parks. Along with St Kilda Botanical Gardens, these reserves provide a good basis for further habitat improvement and as a focus for educational programs.

No foreshore reserves were selected for regular seasonal survey as habitats represented along the foreshore are unlikely to be suitably replicated in private properties. However, the coastal zone warrants mention in this report as a major contributor to biodiversity and community identity in the City of Port Phillip.

Habitats represented in foreshore areas include terrestrial coastal vegetation, seagrass meadows, intertidal sandy sediments, pier pylons, and rock seawalls; all of which accommodate a range of fauna species. Some of these species are breeding residents while others are seasonal migrants. The extent of biodiversity occurring on the foreshore could not be fully captured by ad hoc opportunistic records and requires a well-designed systematic approach to data collection.

However, one-off opportunistic records can be useful topics for local media campaigns on climate change. Two examples include the occurrence of tropical species recorded locally, well out of their normal range. These species

were a bluebottle jellyfish (*Physalia physalis*) photographed on Port Melbourne beach in November 2019, and a Japanese Devilray (*Mobula mobular*) in April 2020, which first sighted about 300m offshore from a Port Melbourne balcony, then found washed up dead at Brighton Beach two days later.

### Survey limitations

The data gathered in the project should be considered as indicative only, as opposed to a comprehensive representation of local biodiversity, for the following reasons:

- The limited number of surveys conducted and the relatively short time spent on each site;
- Difficulty in photographing subjects that are in a distance and/or moving;
- Long-term datasets are required to include all seasons over multiple years;
- The focus of surveys conducted was primarily on training attendees on the spot submission method as opposed to conducting a rigorous systematic site survey;
- Shrub and tree foliage can obscure small bush birds from view;
- The number of Australian insect species is in the tens of thousands, thus specialist expertise, along with good quality photos, are necessary for accurate identification.

Despite all of the above limitations, the data gathered in the project provides a sound basis to inform future strategies for community engagement on local biodiversity.



Bluebottle jellyfish spotted in Port Melbourne beach,  
an unusual sight locally



## Recommendations

The fact that all six parks surveyed recorded a higher numbers of insects than birds presents an opportunity for onsite educational displays and/or guided presentations to further community engagement and awareness of the role of insects in underpinning local biodiversity.

**Recommendation 1: Identify two to three 'icon' fauna species for each survey site and create 'how to' guides for community members to continue data collection on each site.**

For example, the EcoCentre has observed Tawny Frogmouth (*Podargus strigoides*) nesting each year in various trees in St Kilda Botanical Gardens; Ringtail possums (*Pseudocheirus peregrinus*) are often seen in East St Kilda and a Ringtail nest, or drey, was found in an acacia at Te-Arai Reserve; aquatic species such as eels are highly visible seasonal visitors to Elwood Canal.

**Recommendation 2: Plan, promote and conduct local workshops for enhancing habitat in private gardens, including building and installing nest-boxes and insect hotels.**

Enhancing habitat at schools and home gardens will not only improve habitat corridors in the City, but can also become an ongoing educational resource. Apart from St Kilda Botanical Gardens, other survey parks lacked nest boxes, thus installation of nest boxes can provide potential habitat enhancement for microbats and birds such as eastern rosellas. Insect hotels can be easily installed in small spaces and can help invite pollinators to private gardens.

**Recommendation 3: Connect community members with existing local 'Friends' groups to establish ongoing data collection programs.**

Established Friends groups have a wealth of local expertise that can help increase biodiversity literacy amongst the community. Supporting such groups with equipment for ongoing monitoring of comprehensive flora and fauna species would be beneficial, along with recruitment of new members for future succession planning. Friends groups operating at local, grassroots level can also strengthen community connectedness and wellbeing.

## Appendix 1: Overview of survey parks

Survey Park	Tree canopy	Shrub	Groundcover	Leaf Litter	Mulch	Water
Port Melbourne Rail Trail	√		√	√	√	
St Kilda Botanical Gardens	√	√	√	√		√
Canterbury Road Urban Forest	√	√	√	√	√	
Gasworks Arts Park	√	√		√	√	
Te-Arai Reserve	√	√			√	
Elwood School Park	√	√	√	√	√	√

### Habitat layers of each park

Port Melbourne Rail Trail	Young native plants along railway line. Some mature trees, <i>Grevillia robusta</i> in full flower attracting Rainbow Lorikeets, Red Wattlebirds and Noisy Miners. Two European Honey Bee hives in exotic tree hollows. Distinctly different habitat structures on south and north side of line primarily due to greater number of established local native trees on north side.
St Kilda Botanical Gardens	Established urban forest of <i>Eucalyptus</i> and <i>Acacia</i> . Pond attracts waterbirds, dragonflies, and frogs which are not seen in other parks. Galahs and Cockatoos often found on palm trees. Tawny Frogmouth nesting on Elm.
Canterbury Road Urban Forest	A variety of established native trees, shrubs and ground storey tussocks. Small swamp with reeds. Diverse insects found. <i>Goodenia ovata</i> flowering. A linear reserve with heavy traffic on either side.
Gasworks Arts Park	Established native plants including trees and shrubs in mulched ground, with some areas of tussock grasses. Signature exotic trees include <i>Washingtonia filifera</i> palms. Popular dog exercise park.
Te-Arai Reserve	A few tall native trees ( <i>Corymbia maculata</i> , <i>Corymbia citriodora</i> , <i>Syzygium smithii</i> ), shrubs ( <i>westringia</i> , <i>atriplex cinerea</i> ) and tussock, mixed with exotic hedge and fruit trees (citrus, olive, stone fruit). Ringtail possum drey found on <i>Acacia</i> . Leafy garden in residential neighbourhood.
Elwood School Park	<i>Rhagodia candolleana</i> and <i>Tetragonia implexicoma</i> dominating ground layer. <i>Goodenia ovata</i> flowering. Various wasps and flies at shrub layer. Reserve is adjacent to Elwood Canal where Grey Teal and Chestnut Teal rest on a concrete ledge on the opposite side, isolated from dogs, bikes and pedestrian traffic.

### Description of flora and fauna

## Appendix 2: List of fauna species

### Birds

Australasian Wood Duck	<i>Chenonetta jubata</i>
Australian Magpie	<i>Gymnorhina tibicen</i>
Barn Owl	<i>Tyto alba</i>
Brown Thornbill	<i>Acanthiza pusilla</i>
Chestnut Teal	<i>Anas castanea</i>
Common Blackbird	<i>Turdus merula</i>
Crested Pigeon	<i>Ocyphaps lophotes</i>
Crested Tern	<i>Thalasseus bergii</i>
Eastern Spinebills	<i>Acanthorhynchus tenuirostris</i>
Feral Pigeon	<i>Columbia livia</i>
Galah	<i>Cacatua roseicapilla</i>
Grey Butcherbird	<i>Cracticus torquatus</i>
Grey Teal	<i>Anas graciis</i>
Indian (Common) Myna	<i>Acridotheres tristis</i>
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>
Little Raven	<i>Corvus mellori</i>
Little Wattlebird	<i>Anthochaera chrysoptera</i>
Magpie-Lark	<i>Grallina cyanoleuca</i>
Nankeen Night-Heron	<i>Nycticorax caledonicus</i>
Noisy Miner	<i>Manorina melanocephala</i>
Pacific Black Duck	<i>Anas superciliosa</i>
Pacific Gull	<i>Larus pacificus</i>
Pied Currawong	<i>Strepera graculina</i>
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>
Red Wattlebird	<i>Anthochaera carunculata</i>
Silver Gull	<i>Larus novaehollandiae</i>
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>
Sulphur-crested Cockatoo	<i>Catua galerita</i>
Superb Fairywren	<i>Malurus cyaneus</i>
Tawny Frogmouth	<i>Podargus strigoides</i>
Yellow-Tailed Black-Cockatoo	<i>Calyptorhynchus funereus</i>

### Sightings without photos

Australian Gannet	<i>Morus serrator</i>
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>
Long-billed Corella	<i>Cacatua tenuirostris</i>
Silvereye	<i>Zosterops lateralis</i>
White-Faced Heron	<i>Egretta novaehollandiae</i>
White-plumed Honeyeater	<i>Ptilotula penicillata</i>

### Insects

Apple Looper	<i>Phrissogonus laticostata</i>
Argentine Ant	<i>Linepithema humile</i>
Blue Flower Wasp	<i>Austroscolia soror</i>
Cabbage White	<i>Pieris rapae</i>
Carpenter And Sugar Ants	Genus <i>Camponotus</i>
Cicada	Family: <i>Cicadidae</i>
Clouded Footman (Larvea)	<i>Anestia ombrophanes</i>
Common Grass Blue	<i>Zizina labradus</i>
Dingy Swallowtail	<i>Papilio anactus</i>
Earwig	Order: <i>Dermaptera</i>
Eriococcus Caterpillar	<i>Stathmopoda melanochra</i>
European Honey Bee	<i>Apis mellifera</i>
Faggot Case Moth	<i>Clania ignobilis</i>
False Garden Mantis	<i>Pseudomantis albofimbriata</i>

Fiddler Beetle	<i>Eupoecila australasiae</i>
Fruit Fly	<i>Austrotephritis pelia</i>
Green Lacewing	<i>Mallada signatus</i>
Green Planthopper	<i>Siphanta sp.</i>
Horehound Bug	<i>Agonoscelis rutila</i>
Hover Fly	Family: <i>Syrphidae</i>
Inchman Ant	<i>Myrmecia forficata</i>
Katydid Nymph	<i>Caedicia sp.</i>
Lady Beetles (Unknown)	Family <i>Coccinellidae</i>
Large Spotted Ladybird	<i>Harmonia conformis</i>
Lesser Wanderer	<i>Danaus petilia</i>
Mantids	Family: <i>Mantidae</i>
March Fly	<i>Bibio sp.</i>
Moth (Delexocha Ochrocausta)	<i>Delexocha ochrocausta</i>
Moth (Thema Psammoxantha)	<i>Thema psammoxantha</i>
Native Budworm	<i>Helicoverpa punctigera</i>
Native Cockroach	<i>Ellipsoidion australe</i>
Plant Bug	Family: <i>Miridae</i>
Red-Headed Pasture Chafer	<i>Adoryphorus coulonii</i>
Red-Lined Looper	<i>Crypsiphona oculitaria</i>
Robber Flies	Family: <i>Asilidae</i>
Rove Beetle	<i>Staphylinidae</i>
Saltbush Blue	<i>Theclinesstes serpentata</i>
Saunder's Case Moth	<i>Metura elongatus</i>
Sheep Blowfly	<i>Lucilia cuprina</i>
Skipper Butterfly	Family: <i>Hesperiidae</i>
Slender Orange Bush Fly	<i>Dychaetomyia norrisi</i>
Soldier Fly	Family: <i>Stratiomyidae</i>
Spotted Amber Ladybird Beetle	<i>Hippodamia variegata</i>
Tasmanian Lacewing	<i>Micromus tasmaniae</i>
Tau Emerald	<i>Hemicordulia tau</i>
Termites	<i>Termitoidae</i>
Transverse Ladybird	<i>Coccinella transversalis</i>
Treehopper Nymphs	<i>Fulgoromorpha</i>
Weevil	<i>Belidae</i>
White Butterfly Parasite Wasp	<i>Cotesia glomerata</i>
Yellow Admiral Butterfly	<i>Vanessa itea</i>
Yellow-Banded Dart	<i>Ocybadistes walkeri</i>
Yellow-Headed Leafhopper	<i>Brunotartessus fulvus</i>

### Mammals

Brushtail Possum	<i>Trichosurus vulpecula</i>
Domestic Cat	<i>Felis catus</i>
Domestic Dog	<i>Canis familiaris</i>
Red Fox	<i>Vulpes vulpes</i>
Ringtail Possum	<i>Pseudocheirus peregrinus</i>
<a href="#">Sightings without photos</a>	
Gould's wattled bat	<i>Chalinolobus gouldi</i>
European rabbit	<i>Oryctolagus cuniculus</i>
Grey-headed Flying Fox	<i>Pteropus policephalus</i>



## Appendix 2: List of fauna species - continued

### Spiders

Bronze Hopper	<i>Helpis minitabunda</i>
Jumping spider	<i>Opisthoncus sp.</i>
Leaf-curling spider	<i>Phonognatha graeffei</i>
Long-bodied Cellar Spider	<i>Pholcus phalangioides</i>
Longlegged Sac Spider	<i>Cheiracanthium mordax</i>
Splendid Tick Spider	<i>Euryopis splendens</i>
Trapezoid Crab Spider	<i>Sidymella trapezia</i>
Victorian Huntsman Spider	<i>Isopedella victorialis</i>
White Porch Spider	<i>Cryptachaea gigantipes</i>

### Reptiles

Common Garden Skink	<i>Lampropholis guichenoti</i>
Eastern Tiger Snakes	<i>Notechis scutatus scutatus</i>
Southern Marbled Gecko	<i>Christinus marmoratus</i>

### Other Fauna

Australian Snapper	<i>Chrysophrys auratus</i>
Blue Blubber Jellyfish	<i>Catostylus mosaicus</i>
Bluebottle	<i>Physalia utriculus</i>
Common Eastern Froglet	<i>Crinia signifera</i>
Common Stingaree	<i>Trygonoptera testacea</i>
Conical Moon Snail	<i>Conuber conicum</i>
Decorator crab	<i>Naxia spinosa</i>
Garden Snail	<i>Cornu aspersum</i>
Moon Snail (egg mass)	<i>Conuber sp.</i>
Rodent	Order: <i>Rodentia</i>
Slater	Suborder: <i>Oniscidea</i>
Slug	Order <i>Stylommatophora</i>
Southern Fiddler Ray	<i>Trygonorrhina dumerilii</i>
<a href="#">Sightings without photos</a>	
Peron's Tree Frog	<i>Litoria peronii</i>

## Appendix 3: List of flora species

<i>Atriplex cinerea</i>	Coast Saltbush	<i>Eucalyptus viminalis</i>	Coast Manna-Gum
<i>Acacia dealbata</i>	Silver Wattle	<i>Ficus macrophylla</i>	Moreton Bay Fig
<i>Acacia implexa</i>	Lightwood	<i>Geranium sp.</i>	Geranium
<i>Acacia iteaphylla</i>	Flinders Range Wattle	<i>Goodenia ovata</i>	Hop Goodenia
<i>Acacia paradoxa</i>	Hedge Wattle	<i>Grevillea robusta</i>	Silky Oak
<i>Aeonium arboreum</i>	Tree Aeonium	<i>Hymenosporum flavum</i>	Native Frangipani
<i>Aeonium arborium</i>	Black Rose	<i>Indigofera australis</i>	Austral Indigo
<i>Allocasuarina verticillata</i>	Drooping She-Oak	<i>Lagunaria patersonia</i>	Norfolk Island Hibiscus
<i>Aloe sp.</i>	Aloe	<i>Lavandula sp.</i>	Lavender
<i>Araucaria heterophylla</i>	Norfolk Island Pine	<i>Melaleuca ericifolia</i>	Swamp Paperbark
<i>Arbutus unedo</i>	Irish Strawberry Tree	<i>Melaleuca lanceolata</i>	<i>Moonah</i>
<i>Austrostipa stipoides</i>	Prickly Spear-Grass	<i>Melaleuca nesophila</i>	Showy Honey-Myrtle
<i>Banksia integrifolia</i>	Coastal Banksia	<i>Olearia ramulosa</i>	Twiggy Daisy-Bush
<i>Brachychiton Acerifolius</i>	Illawarra Flame Tree	<i>Olearia sp.</i>	Bush-Daisy
<i>Bursaria spinosa</i>	Sweet Bursaria	<i>Paraserianthes lophantha</i>	Cape Wattle
<i>Cakile maritima</i>	European Sea Rocket	<i>Pelargonium australe</i>	Austral Stork's-Bill
<i>Callistemon sp.</i>	Bottlebrush	<i>Phoenix canariensis</i>	Canary Island Palm
<i>Carpobrotus rossi</i>	Pig Face	<i>Phragmites sp.</i>	Common Reed
<i>Chenopodium nutans</i>	Climbing Saltbush	<i>Platanus sp.</i>	Plane Tree
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	<i>Plectranthus sp.</i>	Spur Flowers
<i>Chrysocephalum apiculatum</i>	Common Everlastings	<i>Plectranthus caninus</i>	Dogbane
<i>Citrus japonica</i>	Kumquat	<i>Plectranthus sp.</i>	Plectranthus
<i>Citrus sp.</i>	Lemon Tree	<i>Poa labillardierei</i>	Common Tussuck Grass
<i>Clematis microphylla</i>	Small-Leaved Clematis	<i>Populus alba</i>	Silver Popular
<i>Correa alba</i>	White Correa	<i>Quercus sp.</i>	Oak
<i>Correa reflexa</i>	Common Correa	<i>Rhagodia candolleana</i>	Seaberry Saltbush
<i>Corymbia citriodora</i>	Lemon-Scented Gum	<i>Solanum laciniatum</i>	Kangaroo-Apple
<i>Corymbia ficifolia</i>	Red-Flowering Gum	<i>Sonchus oleraceus</i>	Common Sow Thistle
<i>Crassula ovata</i>	Jade Plant	<i>Spinifex hirsutus</i>	Hairy Spinifex
<i>Dianella revoluta</i>	Blueberry Lilly	<i>Syzygium smithii</i>	Common Lilly Pilly
<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-Flower	<i>tetragonia implexicoma</i>	Bower Spinach
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	<i>Tetragonia tetragonoides</i>	Warrigal Greens
<i>Eucalyptus cladocalyx</i>	Sugar Gum	<i>Themeda triandra</i>	Kangaroo Grass
<i>Eucalyptus goniocalyx</i>	Long-Leaved Box	<i>Ulva sp.</i>	Sea Lettuces
<i>Eucalyptus leucoxydon</i>	Yellow Gum	<i>Washingtonia filifera</i>	Weedy Washingtonias
<i>Eucalyptus sp.</i>	Ironbark	<i>Westringia fruticosa</i>	Coast Rosemary
<i>Eucalyptus spathulata</i>	Swamp Mallet	<i>Xerochrysum viscosum</i>	Shiny Everlastings
		<i>Yucca sp.</i>	Yucca

## Appendix 4: NatureSpot Video clips

### Introducing local plants and animals

NatureSpot: Backyard birds are dinosaurs | <https://bit.ly/2BsEnoj>

Meet local pollinators in your yard | <https://bit.ly/3ev0eKN>

Local plants of Port Phillip: Coast banksias | <https://bit.ly/3hMaqjO>

Animals of Port Phillip: Grey headed flying foxes | <https://bit.ly/37HKBwT>

Animals of Port Phillip Foreshores: Molluscs, crabs and more | <https://bit.ly/3dbGbiU>

Nature of Port Phillip: Anemones | <https://bit.ly/3fHdsnL>

Relationship goals: Praying Mantis | <https://bit.ly/3dcCJVva>

Local plants of Port Phillip: Lomandra harvest and propagation | <https://bit.ly/30VOBIJ>

### NatureSpot Tutorials

Tutorial: Logging Your Spots | <https://bit.ly/2YXZFma>

Tutorial: Macro zooms for insect spots | <https://bit.ly/2AQw8CA>

NatureSpot: what you can see walking around the block | <https://bit.ly/3hNzuXF>



## Appendix 5: NatureSpot remote learning lesson plan circulated to Port Phillip schools

### NatureSpot - Backyard, balcony or neighbourhood nature survey for students

Timeline: open until 19 June 2020

#### Steps:

1. Go outside and look for a plant, insect, bird, reptile or spider
2. Take a close up photo of your plant or animal (using a phone or iPad is easiest)
3. Go to <https://portphillipnaturespot.crowdspot.com.au/>
4. Click "Get Started" or "Add a Spot" button.
5. Drag the map to position the marker at your location.
6. For the first question "What is the name of this spot?" just put "backyard" "balcony" or "street" - *never put your home address!*
7. Complete the form that pops up and press submit

Look at the map and compare with other students what plants and animals they see in their neighbourhood. What kind of different habitats are there?

#### Watch these tutorial videos

- [NatureSpot from your home, backyard & balcony](#) (3 min)
- [How to take macro zoom photos](#) (30 sec)
- [How to record your spots](#) (2 min)

#### Suggested further learnings

1. Research your plant or animal. What are their habitat, food and lifecycle?

- Birds in backyard poster ([pdf](#))
- Common pollinator and beneficial insects in Victoria ([pdf](#)),
- Indigenous plants, bees beetles and bugs, birds and fungi <https://westgatebiodiversity.org.au/>
- learn about habits for insects ([teaching guide](#))

2. Write a story or poem about your plant or animal

3. Draw a picture of your plant or animal

4. Paint using leaves, sticks and seed pods

Please contact Reiko ([reiko@ecocentre.com](mailto:reiko@ecocentre.com)) if you are taking part in NatureSpot, have any questions or technical issues. We hope this is a helpful resource and enriches your student's learning experience.