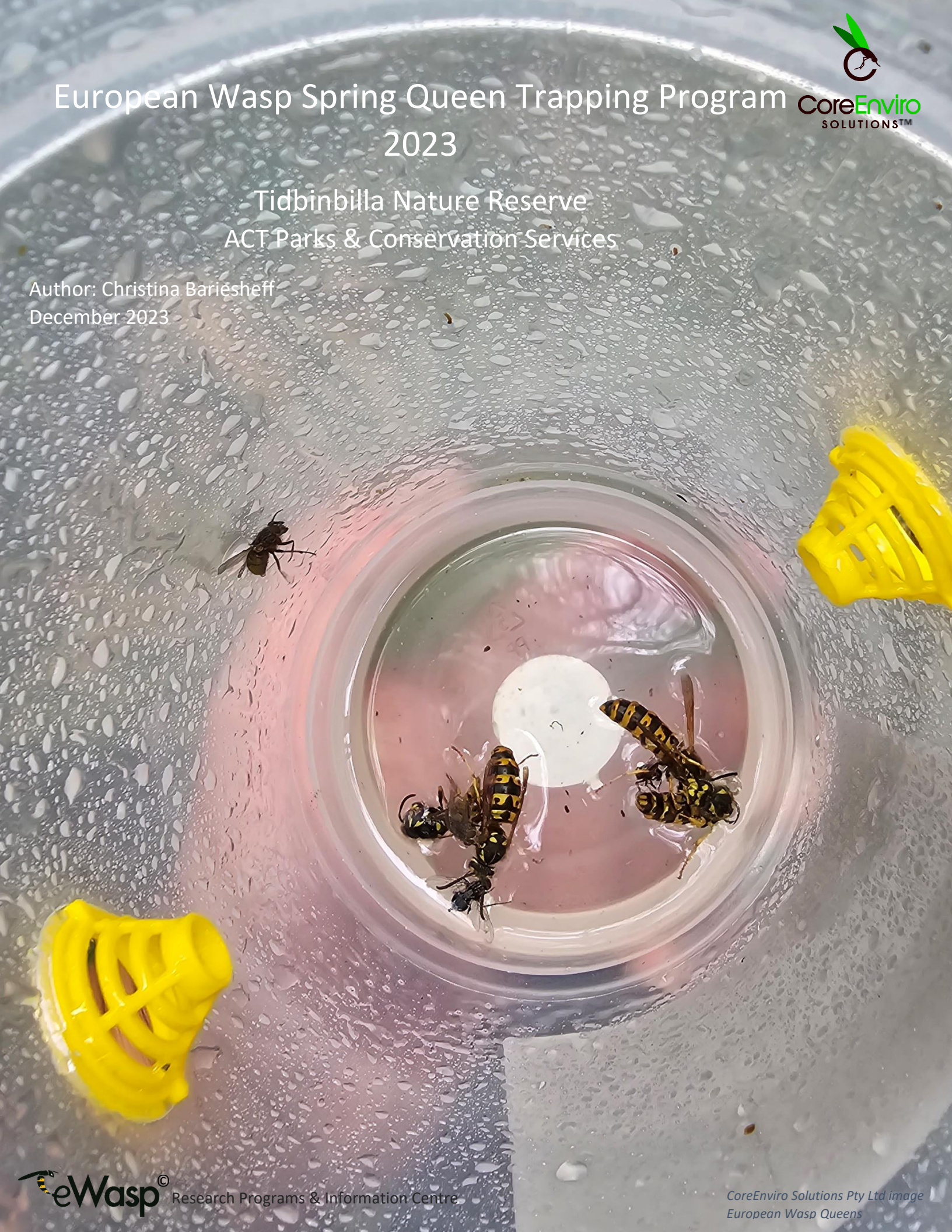
European Wasp Spring Queen Trapping Program 2023

Tidbinbilla Nature Reserve
ACT Parks & Conservation Services

Author: Christina Bariesheff
December 2023



eWasp© Research Programs & Information Centre

CoreEnviro Solutions Pty Ltd image
European Wasp Queens

TABLE OF CONTENTS

Directors Summary 3
About us 3
Innovation 3
Notes on Data 3
Weather 3
Executive Summary Table 4
Directors Comments 5
Program Results 5
Other PCS Program 2023 8
European Wasp Impact 9
Benefits of a Spring Queen Trapping Program 10
Data Overview 11
Weather 11
eWasp Data 12
Pre-program data 13
Pre-program Results 14
Trap Locations 15
Program Data 16
eWasp Reporting 21
Results by Location 22
The Sanctuary 22
The Eucalypt Forest 27
Tidbinbilla PCS Depot 30
Nature Discovery Playground 33
Recommendation 35
Weather Observations BOM 36
Vespex European Wasp Lure 38

DIRECTORS SUMMARY

CoreEnviro Solutions European Wasp (eWasp™) Spring Queen Trapping Program Report for 2021 to ACT Parks & Conservation Services. The information in this report is for the period 30 September - 6 December 2022.

About us

CoreEnviro Solutions is a Canberra-based service provider specialising in the delivery of noxious/environmental, agricultural, horticultural, aquatic pest and weed management, and pest control solutions.

Our main objective is to save our native species. We are committed to educating the public on invasive and beneficial species.

Innovation

CoreEnviro Solutions Pty Ltd is committed to minimising the establishment and spread of eWasps in Australia.

We are committed to research and implementing new and improved innovative programs in environmental pest management, this is achieved through improved nest reporting along with insect and arachnid information and identification via both the eWasp mobile app and website.

Notes on Data

Count is the number of European wasp queens trapped and removed from the trap station.
The SQ count is the count day in which the European wasp queen counts were conducted.
European wasp season runs from September through to April.
(eWasp Spring queen survival rate is approx. 30%)

Weather

El Niño typically means:

- Reduced rainfall
- Warmer temperatures
- Shift in temperature extremes
- Increased frost risk
- Reduced tropical cyclone numbers.
- Later monsoon onset
- Increased fire danger in southeast Australia
- Decreased alpine snow depths[1]

Acronyms

eWasp	European wasp
SQ	Spring Queen
TID	Tidbinbilla Nature Reserve
PCS	ACT Park & Conservation Services

[1] *What is El Niño and what might it mean for Australia? (bom.gov.au)*

Executive Summary Table

- 42 non-chemical lure trap stations were deployed at Tidbinbilla Nature Reserve.
- 53 eWasp spring queens were trapped and removed from the environment.
- Prevented an estimated 212,000 worker wasps impacting the environment (if all eWasp queens produced viable nests).
- Prevented an additional 15,900 next generation eWasp queens from establishing nests (based off 30% survival rate).
- Saved ACT Parks & Conservation Services staff 106 hours or 13 working days in time spent treating eWasp nests.
- $11,660.00 in estimated total savings on nest treatments (if all queens produced viable nests).
- Significantly reduced the use of pesticide required, 10.6kg of Permethrin dust, to control established nests in the Tidbinbilla Nature Reserve.
- Vespex is a non-chemical carbohydrate-based lure proved to have low impact on the environment and native species.

2022 saw a total of 100 spring queens, and 2023 saw a total of 53, a total decrease of 47% at Tidbinbilla Nature Reserve.

DIRECTORS COMMENTS

Welcome to the European Wasp Spring Queen Trapping Program Report for 2023. The trapping program at Tidbinbilla Nature Reserve was conducted by CoreEnviro Solutions for ACT Parks & Conservation Services.

Canberra is the bush capital of Australia. There are 39 nature reserves in and around Canberra for visiting tourists and the Canberra community to utilise and enjoy.

Tidbinbilla Nature Reserve is 54.5 square Kilometers of protected area. The area was gazetted as a nature reserve in 1971 but conservation effort occurred in 1936.

The Sanctuary is in Tidbinbilla Nature Reserve. It has a 2.1kilometre pathway, inter-connecting ponds, and a predator proof fence. It is a refuge for native animals.

The Sanctuary gives visitors the opportunity to enjoy the outdoors and view a variety of animals and birdlife in their natural environment.

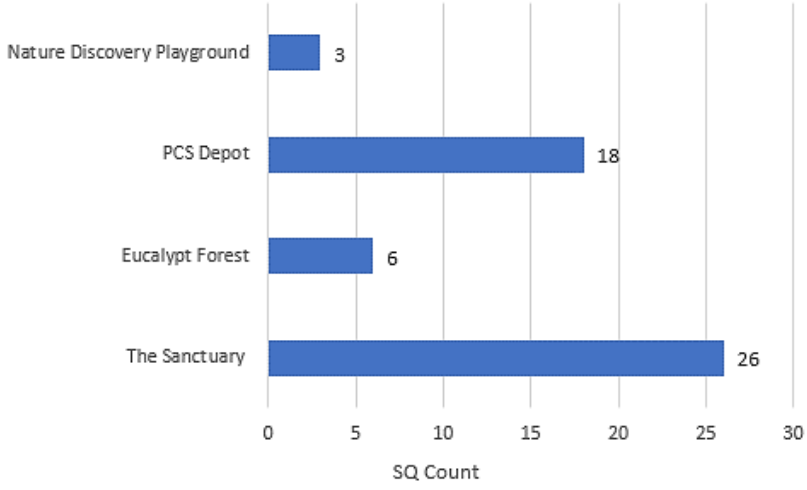
Over the past several years, the Sanctuary has been impacted by European wasp activity. European wasps are a nuisance and a risk to public safety and have a negative impact on the environment.

The 2023 spring queen trapping program deployed 42 traps at the Sanctuary, Eucalypt Forest, Mountain Creek Road, the Parks & Conservation Services (PCS) Depot, and the Nature Discovery Playground. The program used a non-chemical product called Vespex by Sundew, see here for product information.

Program Results

There was a total of 42 European wasp spring queen traps deployed at Tidbinbilla Nature Reserve. The program ran from 30 September - 6 December 2023. (Pre-program data included in the Directors Comments Program Results)

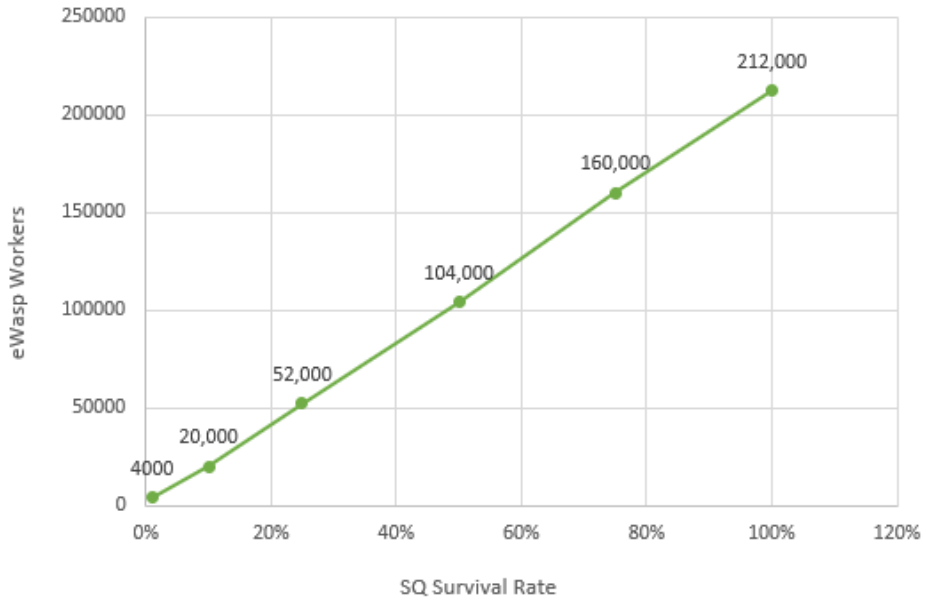
Chart 1 shows the total count by location.



The program was broken up into four (4) areas, the results for Eucalypt Forest and Mountain Creek Road are combined.

The trapping program was successful in capturing 53 European wasp queens with very little impact on the environment and native species. By removing the queens from the environment, we have eliminated the potential of 100,000's of invasive wasps impacting the environment and the public's recreational use of The Sanctuary and the Eucalypt Forest.

Chart 2 shows the worker count by queen's survival rate.



It is estimated, if all queens survived, there would be 212,000 European worker wasps, and 53,000 next generation queens impacting the Sanctuary environment and the surrounding areas. By removing the queens from the environment, this has not only prevented the establishment of nests, but the production of next generation queens.

Data Comparison

Table 1 shows the total counts by location and year. The pre-program data is included in the table below.

Location	2023	2022
The Sanctuary	26	71
Eucalypt Forest	6	16
Parks & Conservation Services Depot	18	13
Nature Discovery Playground	3	N/A
Grand Total	53	100

Chart 3 shows the total count by location and year.

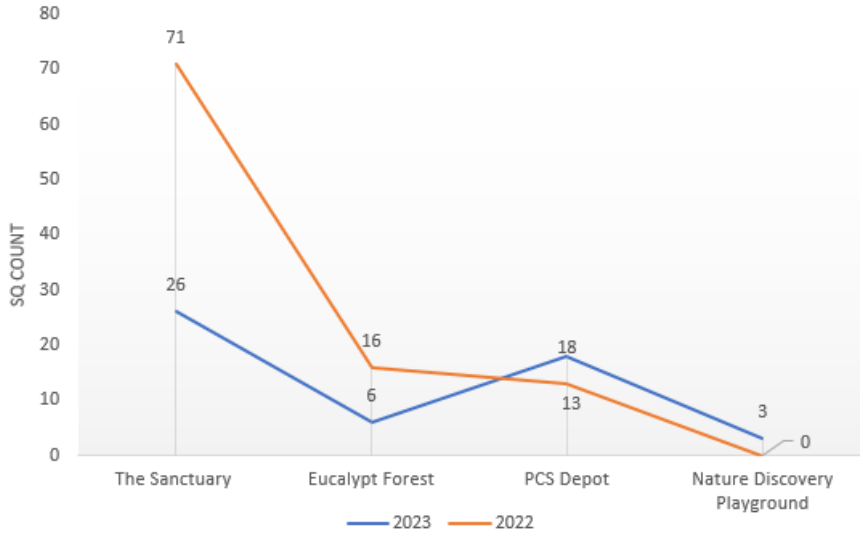


Table 2 shows the increase/decrease by location and year.

Location	2022	2023	2023 Increase/ Decrease
The Sanctuary	71	26	63% ↓
Eucalypt Forest	16	6	62% ↓
Parks & Conservation Services Depot	13	18	38% ↑
Nature Discovery Playground	N/A	3	N/A
Grand Total	100	53	47% ↓

From 2022 – 2023, 153 eWasp spring queens have been removed from the area, if all queens survived and established nests, there may have been an estimated 608,000 worker eWasps and an estimated 45,900 next generation queens impacting the environment and surrounding areas.

In 2023, two (2) of the three (3) locations saw a decrease in eWasp spring queen counts. Overall, there was a decrease of 47% in eWasp spring queen activity at Tidbinbilla Nature Reserve.

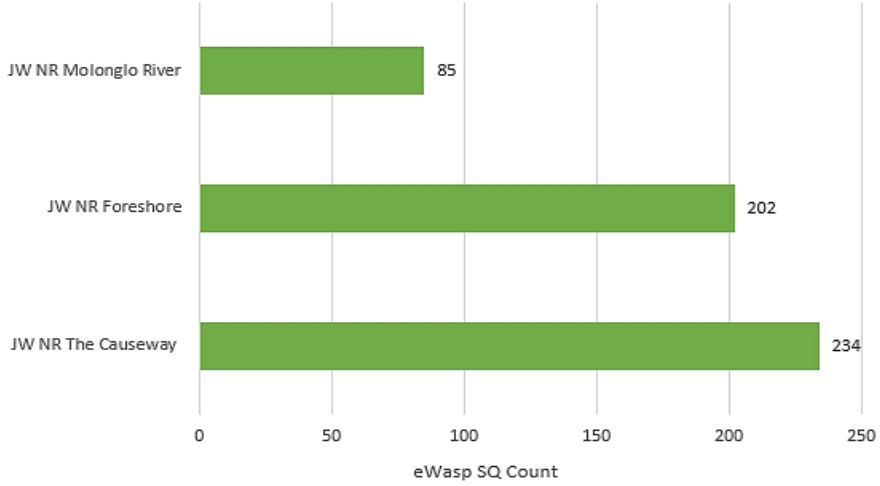
The low numbers are a good indication that eWasp activity is reducing in the Sanctuary and the Eucalypt Forest, this will be determined after the 2023 wasp season.

The PCS Depot, and further up the Tidbinbilla River to the Nature Discovery Playground, had either high or spring queen numbers, this may indicate eWasp nest activity along the Tidbinbilla River.

Although the program has been successful in capturing and removing 53 eWasp spring queens from the environment, it is impossible to capture every queen. The queen trapping program by eWasp, CoreEnviro Solutions Pty Ltd, is still in trial phase, and further research programs will need to be conducted to improve the program.

Other PCS Program 2023

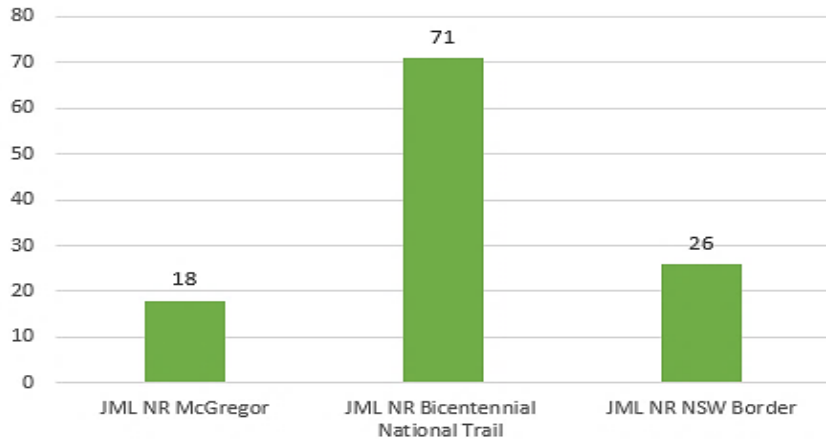
CoreEnviro Solutions Pty Ltd conducted an additional two (2) eWasp spring queen trapping programs for ACT Parks & Conservation Services, Jerrabomberra Wetlands and Jarramlee Grasslands Nature Reserve.



The program was broken up into three (3) areas, Jerrabomberra Wetlands, The Causeway, Jerrabomberra Wetlands Foreshore, and Jerrabomberra Wetland Molonglo River.

The results for Jerrabomberra Wetlands are as follows; there were 35 traps deployed, a total of 521 spring queens were trapped and removed from the environment, an increase of 140% from the 2022 program.

The program was broken up into three (3) areas, the Bicentennial National Trail had the highest share of eWasp Spring Queens with 62% or 71.



The results for Jarramlee Grasslands Nature Reserve are as follows; there were 35 traps deployed, a total of 115 spring queens trapped and removed from the environment. This is the first spring queen trapping program at Jarramlee Grasslands Nature Reserve, therefore, there is no comparison data.

European Wasp Impact

European wasps have a negative impact on our native species and environment. The European wasp has no predators, therefore putting pressure on native species by consuming large amounts of insects which are normally preyed upon by native insects, reptiles, and birds.

The above images are of eWasps foraging on a Kangaroo Carcass at Mulligans Flat Road in Forde, ACT, eWasps foraging on a prey mantis, and eWasps foraging on a Brown snake at Googong Dam, ACT.

Native scavenging animals find it difficult to feed off carcasses due to large numbers of European wasps present on the carcass. Flies have been observed being attacked by European wasps and at times their heads decapitated.

An average European wasp nest can contain an estimated 4,000 wasps during the peak of the season, between February - March, and each nest can produce and additional 1,000 queens at the end of the season; survival rate for spring queens is unknown, Dr Philip Spradbery' s research shows the queen survival rate was around 30%, but further studies would need to be conducted.

Nuisance wasps that forage in large numbers prevent the public from enjoying outdoor areas such as nature reserves, parks, and open spaces, and pose a high risk to public safety.

It is known that European wasp's impact European honey bee hives, they prey on honey bees returning to the hive, rob the hive of honey and attack the brood which weakens the hive. There is no information or evidence that supports they impact native bee hives/species.

A publication in the New Zealand Journal of Zoology, 1991, stated that the European wasp's diet consists of Diptera, fly & mosquito species, lepidopteran larvae, caterpillars – moths – butterflies, and arachnids, are also an important food, this was also documented in Europe and North America.

The wasp population at Tidbinbilla has impacted not only the Sanctuary but surrounding areas such as the Eucalypt Forest, in and around, PCS Depot and the Nature Discovery Playground. The nuisance wasps have prevented the public from enjoying outdoor amenities such as park and open spaces. Some businesses have been impacted negatively where productivity has fallen due to nuisance eWasps. In situations such as this, there is a high risk to public safety.

Benefits of a Spring Queen Trapping Program

Treating nests on average for a Ranger can take up to two hours, from set up, to treatment, to waiting for the nest activity to settle down. There is also a high risk of a stinging incident occurring.

Tracking European wasps back to a nest is extremely time consuming and does not always pay off; most Rangers don't have the time and capacity for a time-consuming task. Reported European wasp nests on public land are treated by Parkes and Conservation Services, however, there are many nests that go unreported and untreated in the reserves, these nests produce next generation queens which impact the environment.

From the 53 European wasp queens captured and removed from the environment, if all queens captured were to establish nests, 53 nests, the Parks and Conservation Services Ranger would have spent an estimated time of 106 hours or 13 working days treating nests, if a private company were to treat the nests at a cost of $220.00 per nest, the total cost would be $11,660.00.

The European wasp spring queen trapping program has also reduced the quantity of insecticide used at Tidbinbilla Nature Reserve, 10.6 kg of Permethrin dust, which greatly benefits the environment and reduces the cost of purchasing insecticides.

The Vespex lure is a non-chemical carbohydrate that lures and traps European wasp spring queens and has proven very low impact on the environment and native species.

Christina Bariesheff
Director
Reports & Communication|Pest & Weed Officer
CoreEnviro Solutions Pty Ltd

Jim Bariesheff
Director
Horticulturist |Senior Pest & Weed Officer
CoreEnviro Solutions Pty Ltd

DATA OVERVIEW

Weather

Table 3 shows the weather conditions at **Mount Ginini** for the months of October and November 2023. (data obtained from the Bureau of Meteorology)[2]

eWasp Program Weather Conditions		
Statistics	Oct-22	Nov-22
Highest daily	15 °C	18.5°C
Lowest daily	2.6 °C	- 0.6 °C
Monthly mean	8.9 °C	10.8 °C
Rainfall	260.6 mm	147 mm
Statistics	Oct-23	Nov-23
Highest daily	20.1 °C	23.6 °C
Lowest daily	2.9 °C	8.5 °C
Monthly mean	12.2 °C	15.9°C
Rainfall	88.2 mm	192.4 mm

- The weather conditions for October 2023 show an increase for the monthly mean by 37% and a decrease in rainfall by 66%.
- The weather conditions for November 2023 show an increase for the monthly mean by 47% and an increase in rainfall of 31%.

Table 4 shows the weather conditions at **Canberra Airport** for the months of October and November 2023.

eWasp Program Weather Conditions		
Statistics	Oct-22	Nov-22
Highest daily	23 °C	26.8°C
Lowest daily	12 °C	12.9 °C
Monthly mean	8.3 °C	20.7 °C
Rainfall	166.2 mm	100.2 mm
Statistics	Oct-23	Nov-23
Highest daily	29.7 °C	33.3 °C
Lowest daily	14 °C	15.8 °C
Monthly mean	21.9 °C	25.5°C
Rainfall	32.6 mm	134.2 mm

- The weather conditions for October 2023 show an increase for the monthly mean by 164% and a decrease in rainfall by 80%.
- The weather conditions for November 2023 show an increase for the monthly mean of 23% and an increase in rainfall of 34%.

[2] Australian Capital Territory - Daily Weather Observations (bom.gov.au)

eWasp Data

Table 5 shows the number of nests by location and year, reported to eWasp, CoreEnviro Solutions Pty Ltd.

Location	2022	2023	Grand Total
Tidbinbilla Nature Reserve	0	6	6
Tidbinbilla Nature Reserve The Sanctuary	23	7	30
Tidbinbilla Special Purpose Reserve	3	2	5
Grand Total	**26**	**15**	**41**

After the 2022 Spring queen trapping program, there was a decrease of 70% in nest activity in the Sanctuary in 2023.

Trap TID 41, PCS Depot, saw at total share of 30% or 13 eWasp Spring queens.

Pre-program data

The three (3) pre-program traps were deployed and monitored between 30 September – 17 October 2023.

Table 6 shows trap number, trap set up date, GPS locations and the location of the pre-program 2023.

Trap Number	Set-up Date	GPS Latitude	GPS Longitude	Location/Reserve
TID 1A	30-Sep-23	-35.458071	148.917202	Tidbinbilla Depot
TID 2A	30-Sep-23	-35.46373	148.907655	Tidbinbilla The Sanctuary
TID 3A	30-Sep-23	-35.465156	148.907317	Tidbinbilla The Sanctuary

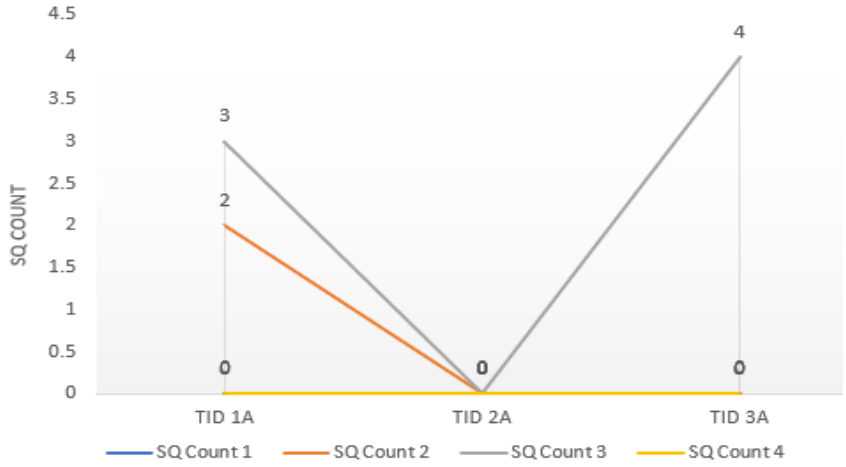
Table 7 shows the total by location and trap number pre-program.

Location & Trap Number	Totals
Tidbinbilla Depot 1A	5
Tidbinbilla The Sanctuary 2A	0
Tidbinbilla The Sanctuary 3A	4
Grand Total	9

Table 8 shows the counts by trap number and count number pre-program.

Station	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
TID 1A Depot	0	2	3	0	**5**
TID 2A The Sanctuary	0	0	0	0	**0**
TID 3A The Sanctuary	0	0	4	0	**4**
Grand Total	0	2	7	0	**9**

Chart 4 shows the total count by trap number and location.



Trap TID 1A, The Sanctuary, had the highest share of eWasp spring queens with 55% or 5 during the pre-program.

Pre-program Results

The Pre-program ran from 30 September - 17 October 2023. There were three (3) traps deployed at The Sanctuary and the PCS Depot. The traps had a total of 9 spring queens trapped and removed from the environment during the pre-program period.

If all queens survived and established nests, there may have been an estimated 36,000 workers, and an estimated 2,700 next generation queens impacting the environment and surrounding areas.

Previous years data in other locations around the ACT, showed commencing the program in the month of October produced more successful programs. With an El Niño year upon us in 2023, it was difficult to gage the optimum time to deploy traps, therefore, 3 pre-program traps were initially deployed to monitor activity in the area prior to commencing a full program.

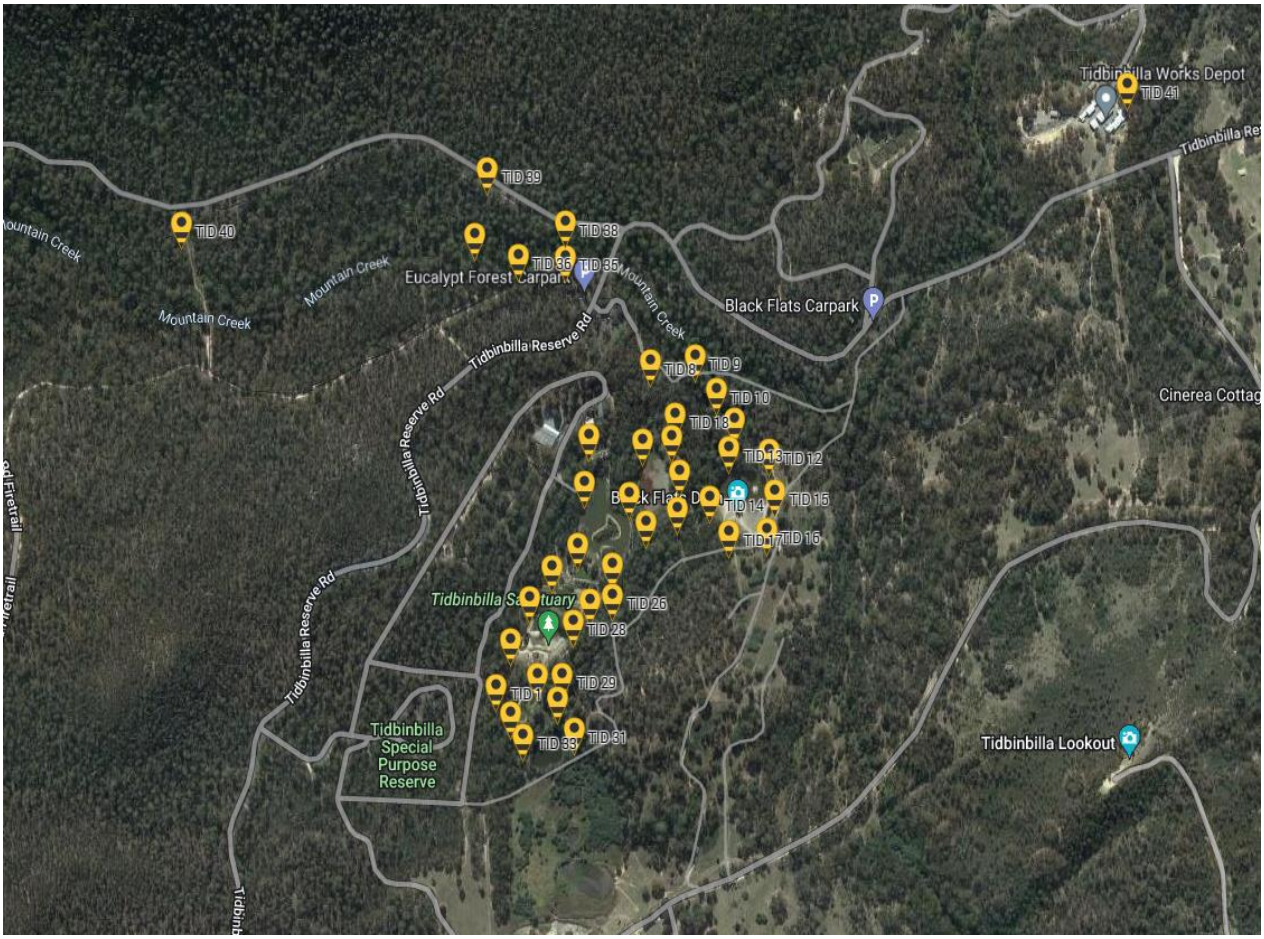
With the combination of dryer and warmer weather conditions forecast, and the data prediction, we believe 2023/2024 may be a peak eWasp season.

Trap TID 29, The Sanctuary, had a total share of 27% or 12 eWasp spring queens.

Trap Locations

The trapping program was broken up into four (4) areas. The program ran from 17 October – 6 December 2023.

- Tidbinbilla Nature Reserve, The Sanctuary Traps TID 1-34
- Tidbinbilla Nature Reserve, Eucalypt Forest Traps TID 35-40 (included is Mountain Creek Road)
- Tidbinbilla Nature Reserve, PCS Depot Trap TID 41
- Tidbinbilla Nature Reserve, Nature Discovery Park Trap TID 42



All eWasp Spring Queen Traps locations at Tidbinbilla Nature Reserve.

Program Data

Table 9 shows trap number, set up date, GPS location and location.

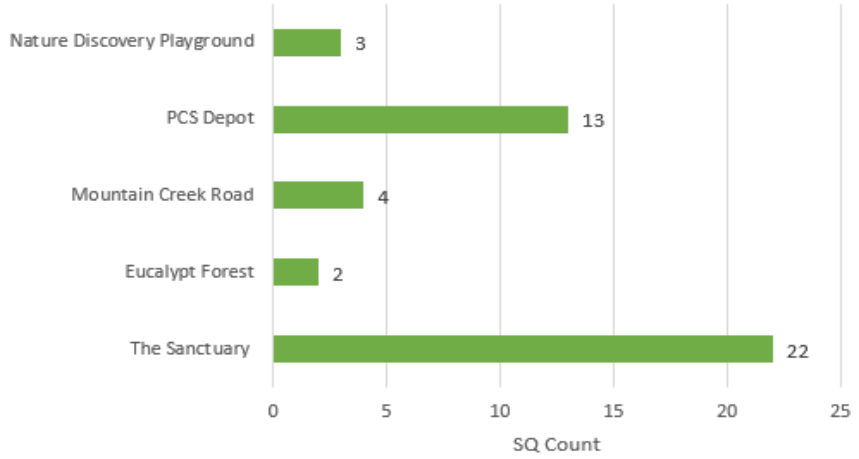
Trap Number	Set-up Date	GPS Latitude	GPS Longitude	Location/Reserve
TID 1	17/10/2023	-35.466433	148.905133	The Sanctuary Tidbinbilla
TID 2	17/10/2023	-35.465783	148.905417	The Sanctuary Tidbinbilla
TID 3	17/10/2023	-35.4652	148.905783	The Sanctuary Tidbinbilla
TID 4	17/10/2023	-35.464767	148.9062	The Sanctuary Tidbinbilla
TID 5	17/10/2023	-35.46445	148.9067	The Sanctuary Tidbinbilla
TID 6	17/10/2023	-35.463567	148.906817	The Sanctuary Tidbinbilla
TID 7	17/10/2023	-35.4629	148.906917	The Sanctuary Tidbinbilla
TID 8	17/10/2023	-35.461867	148.908083	The Sanctuary Tidbinbilla
TID 9	17/10/2023	-35.461783	148.90895	The Sanctuary Tidbinbilla
TID 10	17/10/2023	-35.462267	148.90935	The Sanctuary Tidbinbilla
TID 11	17/10/2023	-35.462683	148.9097	The Sanctuary Tidbinbilla
TID 12	17/10/2023	-35.463117	148.910367	The Sanctuary Tidbinbilla
TID 13	17/10/2023	-35.463083	148.9096	The Sanctuary Tidbinbilla
TID 14	17/10/2023	-35.463783	148.909233	The Sanctuary Tidbinbilla
TID 15	17/10/2023	-35.4637	148.910483	The Sanctuary Tidbinbilla
TID 16	17/10/2023	-35.464233	148.910317	The Sanctuary Tidbinbilla
TID 17	17/10/2023	-35.464267	148.9096	The Sanctuary Tidbinbilla
TID 18	17/10/2023	-35.462617	148.908567	The Sanctuary Tidbinbilla
TID 19	17/10/2023	-35.462983	148.907933	The Sanctuary Tidbinbilla
TID 20	17/10/2023	-35.462933	148.9085	The Sanctuary Tidbinbilla
TID 21	17/10/2023	-35.463417	148.90865	The Sanctuary Tidbinbilla
TID 22	17/10/2023	-35.463933	148.9086	The Sanctuary Tidbinbilla
TID 23	17/10/2023	-35.464133	148.908	The Sanctuary Tidbinbilla
TID 24	17/10/2023	-35.463733	148.907683	The Sanctuary Tidbinbilla
TID 25	17/10/2023	-35.464733	148.907367	The Sanctuary Tidbinbilla
TID 26	17/10/2023	-35.465167	148.907367	The Sanctuary Tidbinbilla
TID 27	17/10/2023	-35.465233	148.906933	The Sanctuary Tidbinbilla
TID 28	17/10/2023	-35.465533	148.9066	The Sanctuary Tidbinbilla
TID 29	17/10/2023	-35.466283	148.9064	The Sanctuary Tidbinbilla
TID 30	17/10/2023	-35.466617	148.906317	The Sanctuary Tidbinbilla
TID 31	17/10/2023	-35.46705	148.906633	The Sanctuary Tidbinbilla
TID 32	17/10/2023	-35.466283	148.905917	The Sanctuary Tidbinbilla
TID 33	17/10/2023	-35.467133	148.90565	The Sanctuary Tidbinbilla
TID 34	17/10/2023	-35.466817	148.9054	The Sanctuary Tidbinbilla
TID 35	17/10/2023	-35.460383	148.90645	Eucalypt Forest Tidbinbilla

Trap Number	Set-up Date	GPS Latitude	GPS Longitude	Location/Reserve
TID 36	17/10/2023	-35.460367	148.90555	Eucalypt Forest Tidbinbilla
TID 37	17/10/2023	-35.460083	148.904717	Eucalypt Forest Tidbinbilla
TID 38	17/10/2023	-35.4599	148.90645	Eucalypt Forest Tidbinbilla - Mountain Creek Road
TID 39	17/10/2023	-35.45915	148.904967	Eucalypt Forest Tidbinbilla - Mountain Creek Road
TID 40	17/10/2023	-35.459917	148.8991	Eucalypt Forest Tidbinbilla - Mountain Creek Road
TID 41	17/10/2023	-35.457967	148.917233	Tidbinbilla PCS Depot
TID 42	30/10/2023	-35.443573	148.928613	Nature Discovery Playground

Table 10 shows the total count by location.

Location	Total
The Sanctuary, Tidbinbilla Nature Reserve	22
Eucalypt Forest, Tidbinbilla Nature Reserve	2
Mountain Creek Road, Tidbinbilla Nature Reserve	4
PCS Depot, Tidbinbilla Nature Reserve	13
Nature Discovery Playground, Tidbinbilla Nature Reserve	3
Grand Total	44

Chart 5 shows the total count by location.



The Sanctuary had the highest share of eWasp spring queens with 50% or 22, followed by the PCS Deport with 30% or 13.

Table 11 shows the total count by location and trap number.

Location & Trap Number	Totals
The Sanctuary Tidbinbilla	**22**
TID 1	0
TID 2	0
TID 3	0
TID 4	3
TID 5	0
TID 6	0
TID 7	0
TID 8	0
TID 9	0
TID 10	0
TID 11	0
TID 12	0
TID 13	0
TID 14	0
TID 15	0
TID 16	0
TID 17	0
TID 18	0
TID 19	0
TID 20	2
TID 21	0
TID 22	0
TID 23	0
TID 24	0
TID 25	1
TID 26	4
TID 27	0
TID 28	0
TID 29	12
TID 30	0
TID 31	0
TID 32	0
TID 33	0
TID 34	0
Eucalypt Forest Tidbinbilla	**2**
TID 35	0
TID 36	2
TID 37	0
Eucalypt Forest Mountain Creek Road	**4**
TID 38	0

Location & Trap Number	Totals
TID 39	0
TID 40	4
Tidbinbilla PCS Depot	**13**
TID 41	13
Nature Discovery Playground	**3**
TID 42	3
Grand Total	44

Trap TID 41 had had the highest number of eWasp spring queens with 30% or 13.

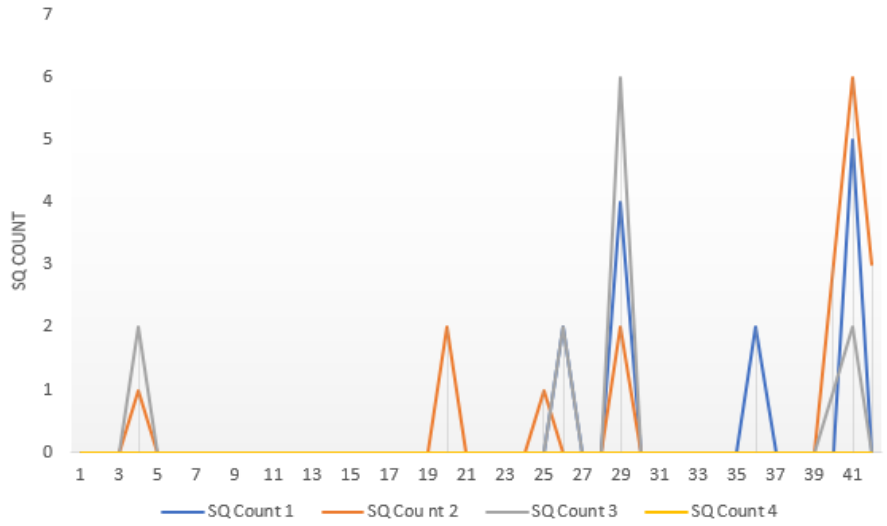
Table 12 shows the counts by trap number and count number.

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	1	2	0	3
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0
15	0	0	0	0	0
16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	2	0	0	2
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	1	0	0	1
26	2	0	2	0	**4**
27	0	0	0	0	**0**
28	0	0	0	0	**0**
29	4	2	6	0	**12**

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
30	0	0	0	0	**0**
31	0	0	0	0	**0**
32	0	0	0	0	**0**
33	0	0	0	0	**0**
34	0	0	0	0	**0**
35	0	0	0	0	**0**
36	2	0	0	0	**2**
37	0	0	0	0	**0**
38	0	0	0	0	**0**
39	0	0	0	0	**0**
40	0	3	1	0	**4**
41	5	6	2	0	**13**
42	0	3	0	0	**3**
Grand Total	13	**18**	13	0	**44**

SQ Count 2 had the highest share of eWasp spring queens with 41% or 18.

Chart 6 shows the total count from the first to the fourth count.



SQ Count 2 had the highest count of eWasp spring queens at Tidbinbilla Nature Reserve in 2023.

eWasp Reporting

The eWasp mobile app is available free at both app stores.

The eWasp Research Programs & Information Centre monitors the distribution of invasive species through data collection to create programs with the aim of protecting native and endangered species.

eWasp|CoreEnviro Solutions main objective is to save native and endangered species. We are committed to educating the public on invasive and beneficial species, and through education, we believe we have saved numerous native species.

The eWasp mobile app is an easy-to-use GPS mapping tool that allows the user to report a European wasp (eWasp) nest or sighting, honey bee hive or swarm, and coming soon Fire ant nest or sighting by dropping a location pin on public, commercial & residential land.

eWasp Mobile App - eWasp

Reporting via the eWasp app enables us to monitor the distribution of invasive species and conduct research and monitoring programs where needed.

RESULTS BY LOCATION

The Sanctuary

Background

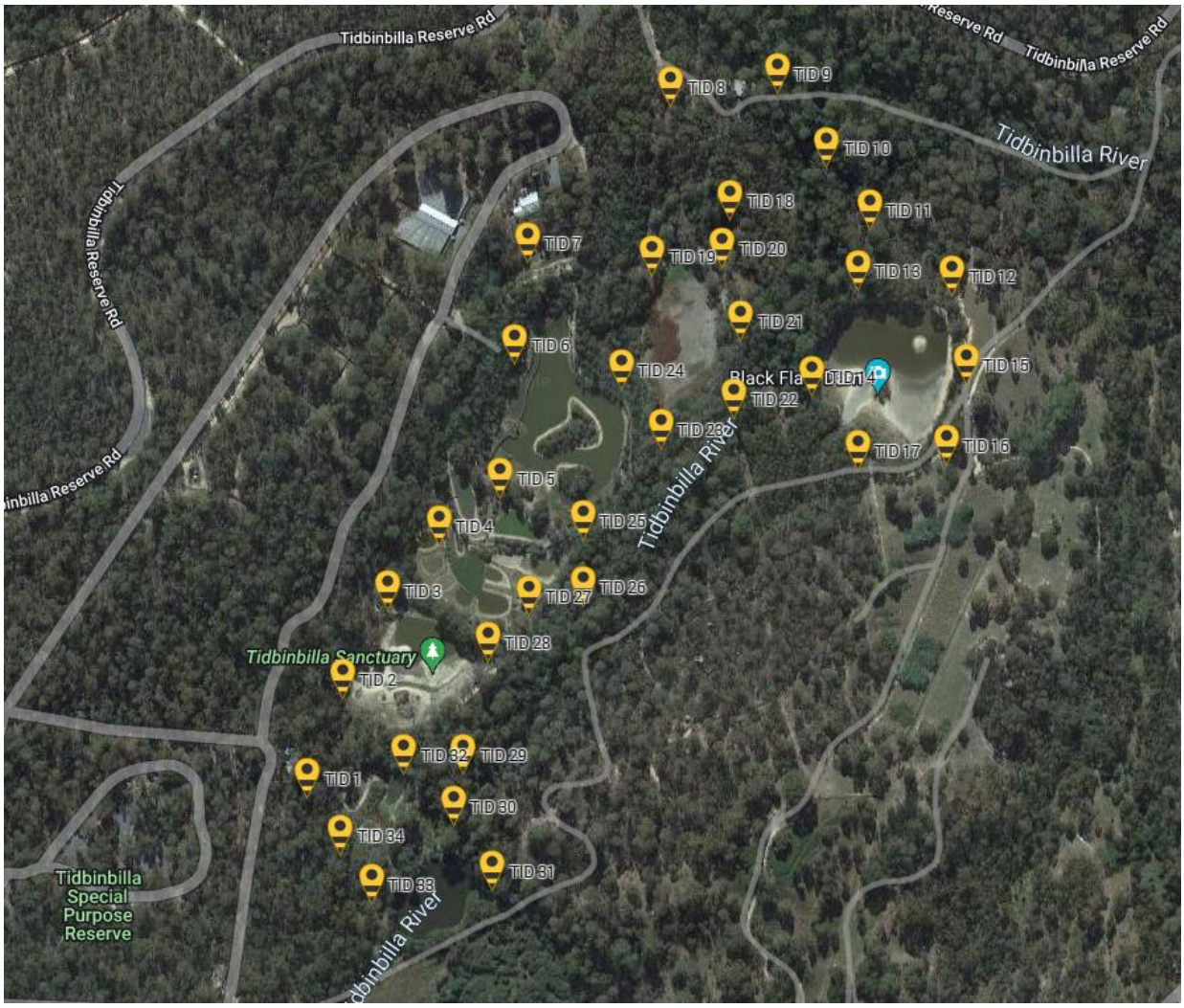
The Sanctuary is in Tidbinbilla Nature Reserve. It has a 2.1-kilometer pathway with inter-connected ponds. The Sanctuary offers an up and close experience with flora and fauna and is very popular with visiting tourists and the Canberra community.

2023 eWasp Spring Queen Trap Location

Trap Number	GPS Latitude	GPS Longitude	Location
TID 1	-35.466433	148.905133	The Sanctuary Tidbinbilla
TID 2	-35.465783	148.905417	The Sanctuary Tidbinbilla
TID 3	-35.4652	148.905783	The Sanctuary Tidbinbilla
TID 4	-35.464767	148.9062	The Sanctuary Tidbinbilla
TID 5	-35.46445	148.9067	The Sanctuary Tidbinbilla
TID 6	-35.463567	148.906817	The Sanctuary Tidbinbilla
TID 7	-35.4629	148.906917	The Sanctuary Tidbinbilla
TID 8	-35.461867	148.908083	The Sanctuary Tidbinbilla
TID 9	-35.461783	148.90895	The Sanctuary Tidbinbilla
TID 10	-35.462267	148.90935	The Sanctuary Tidbinbilla
TID 11	-35.462683	148.9097	The Sanctuary Tidbinbilla
TID 12	-35.463117	148.910367	The Sanctuary Tidbinbilla
TID 13	-35.463083	148.9096	The Sanctuary Tidbinbilla
TID 14	-35.463783	148.909233	The Sanctuary Tidbinbilla
TID 15	-35.4637	148.910483	The Sanctuary Tidbinbilla
TID 16	-35.464233	148.910317	The Sanctuary Tidbinbilla
TID 17	-35.464267	148.9096	The Sanctuary Tidbinbilla
TID 18	-35.462617	148.908567	The Sanctuary Tidbinbilla
TID 19	-35.462983	148.907933	The Sanctuary Tidbinbilla
TID 20	-35.462933	148.9085	The Sanctuary Tidbinbilla
TID 21	-35.463417	148.90865	The Sanctuary Tidbinbilla
TID 22	-35.463933	148.9086	The Sanctuary Tidbinbilla
TID 23	-35.464133	148.908	The Sanctuary Tidbinbilla
TID 24	-35.463733	148.907683	The Sanctuary Tidbinbilla
TID 25	-35.464733	148.907367	The Sanctuary Tidbinbilla
TID 26	-35.465167	148.907367	The Sanctuary Tidbinbilla
TID 27	-35.465233	148.906933	The Sanctuary Tidbinbilla
TID 28	-35.465533	148.9066	The Sanctuary Tidbinbilla
TID 29	-35.466283	148.9064	The Sanctuary Tidbinbilla
TID 30	-35.466617	148.906317	The Sanctuary Tidbinbilla

TID 31	-35.46705	148.906633	The Sanctuary Tidbinbilla
TID 32	-35.466283	148.905917	The Sanctuary Tidbinbilla
TID 33	-35.467133	148.90565	The Sanctuary Tidbinbilla
TID 34	-35.466817	148.9054	The Sanctuary Tidbinbilla

Mapped Traps



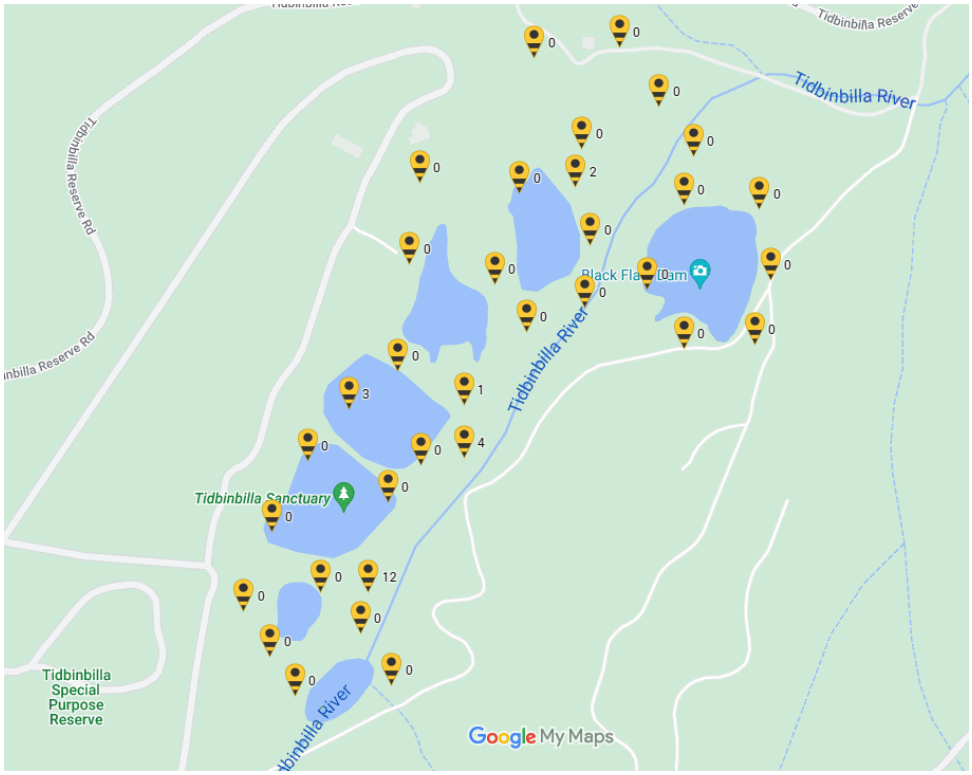
Traps TID 1 to TID 34 deployed at the Sanctuary, Tidbinbilla Nature Reserve.

2023 eWasp Spring Queen Count

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
TID 1	0	0	0	0	**0**
TID 2	0	0	0	0	**0**
TID 3	0	0	0	0	**0**
TID 4	0	1	2	0	**3**
TID 5	0	0	0	0	**0**
TID 6	0	0	0	0	**0**
TID 7	0	0	0	0	**0**
TID 8	0	0	0	0	**0**
TID 9	0	0	0	0	**0**
TID 10	0	0	0	0	**0**
TID 11	0	0	0	0	**0**
TID 12	0	0	0	0	**0**
TID 13	0	0	0	0	**0**
TID 14	0	0	0	0	**0**
TID 15	0	0	0	0	**0**
TID 16	0	0	0	0	**0**
TID 17	0	0	0	0	**0**
TID 18	0	0	0	0	**0**
TID 19	0	0	0	0	**0**
TID 20	0	2	0	0	**2**
TID 21	0	0	0	0	**0**
TID 22	0	0	0	0	**0**
TID 23	0	0	0	0	**0**
TID 24	0	0	0	0	**0**
TID 25	0	1	0	0	**1**
TID 26	2	0	2	0	**4**
TID 27	0	0	0	0	**0**
TID 28	0	0	0	0	**0**
TID 29	4	2	6	0	**12**
TID 30	0	0	0	0	**0**
TID 31	0	0	0	0	**0**
TID 32	0	0	0	0	**0**
TID 33	0	0	0	0	**0**
TID 34	0	0	0	0	**0**
	Total Number of eWasp Spring Queens				**22**

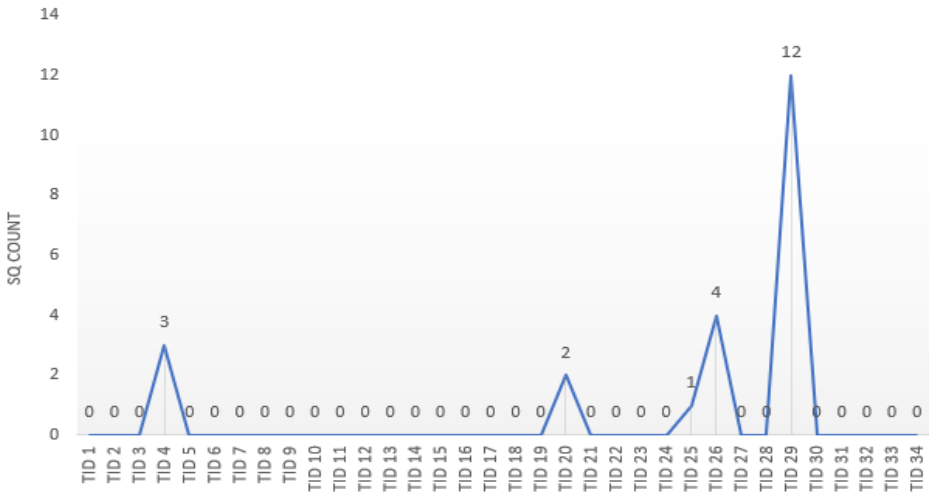
Mapped Counts

Mapped traps with eWasp spring queen counts.



Results

Chart 7 shows the total count by trap number.



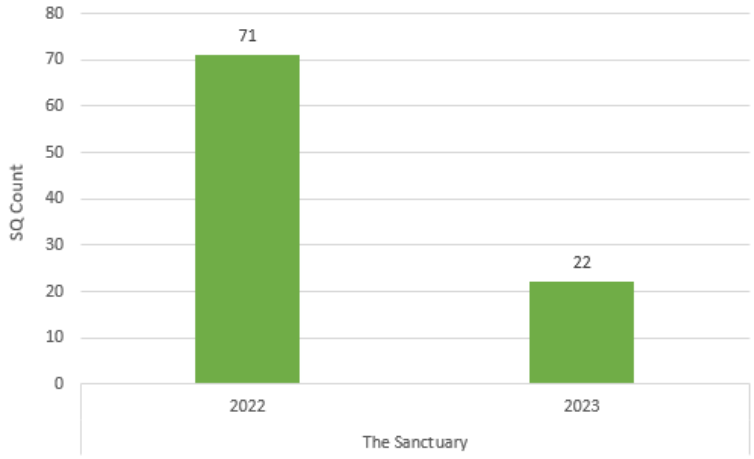
There were thirty-four (34) traps deployed at The Sanctuary, which saw a total of 22 spring queens trapped and removed from the environment during the trapping program.

Of the total 22 eWasp spring queens trapped and removed from the environment, trap TID 29 had the highest count with 55% or 12, followed by trap TID 26 with 18% or 4.

If all queens survived and established nests, there may have been an estimated 88,000 workers, and an estimated 6,600 next generation queens impacting the environment and surrounding areas.

Data Comparison

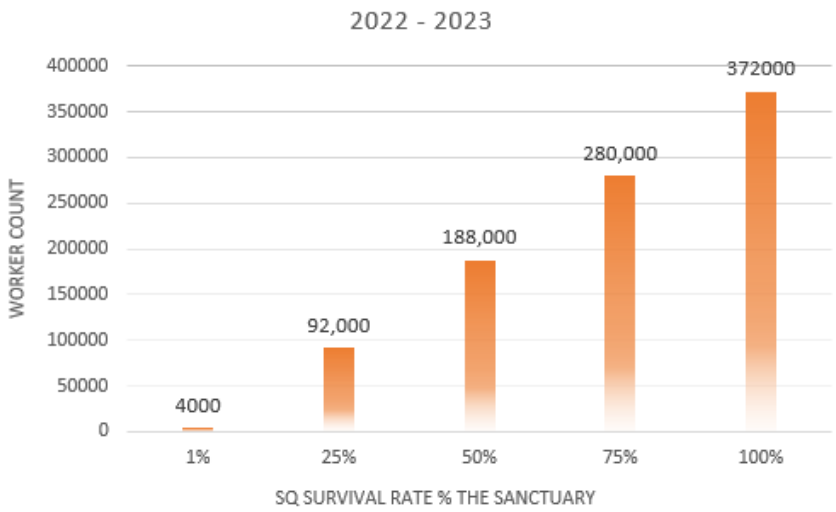
Chart 8 shows the total count by year.



Location	2022	2023	Increase/decrease
The Sanctuary	71	22	69% ↓

The 2022 spring queen trapping program had a total of 71 spring queens, and in 2023, there were a total of 22 spring queens trapped and removed from the environment, a decrease of 69%.

Chart 9 shows the count of workers by SQ survival rate.



From 2022 – 2023, 93 eWasp spring queens were removed from the area, if all queens survived and established nests, there may have been an estimated 372,000 worker wasps and an estimated 28,800 next generation queens impacting the environment and surrounding areas.

The Eucalypt Forest

The Eucalypt Forest is in Tidbinbilla Nature Reserve and is home to several koala bears. It is a popular tourist attraction for viewing the Koala bears in their natural habitat or enjoying a scenic walk around the 1.8km Peppermint Trail.

2023 eWasp Spring Queen Trap Location

Trap Number	GPS Latitude	GPS Longitude	Location
TID 35	-35.460383	148.90645	Eucalypt Forest Tidbinbilla (outer perimeter)
TID 36	-35.460367	148.90555	Eucalypt Forest Tidbinbilla (inside perimeter)
TID 37	-35.460083	148.904717	Eucalypt Forest Tidbinbilla (inside perimeter)
TID 38	-35.4599	148.90645	Eucalypt Forest Tidbinbilla Mountain Creek Road
TID 39	-35.45915	148.904967	Eucalypt Forest Tidbinbilla Mountain Creek Road
TID 40	-35.459917	148.8991	Eucalypt Forest Tidbinbilla Mountain Creek Road

Mapped Traps

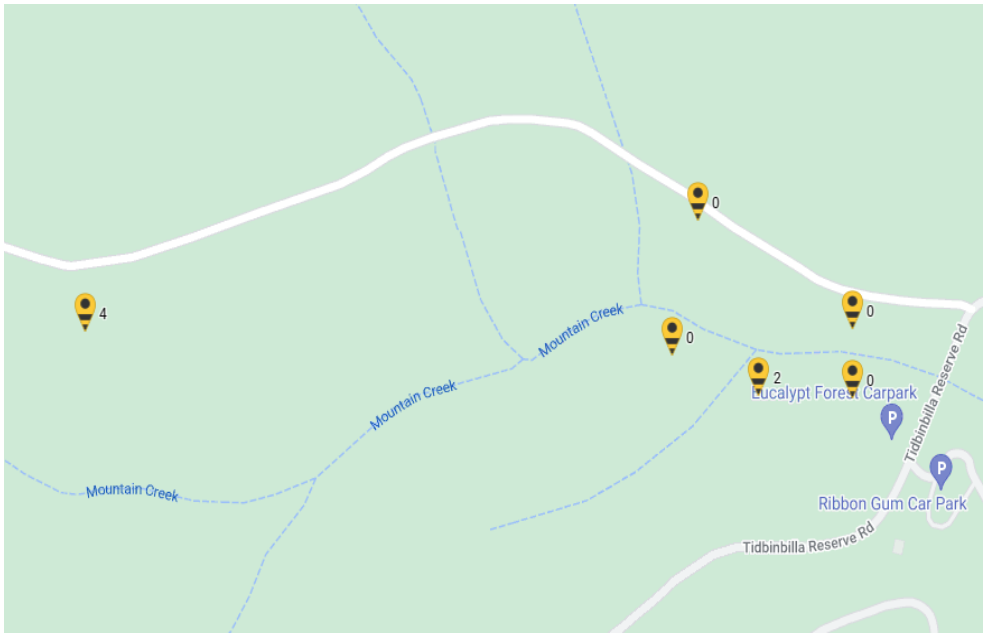
Traps TID 35 – TID 40 were deployed in the Eucalypt Forest and Mountain Creek Road, Tidbinbilla Nature Reserve.

2023 eWasp Spring Queen Count

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
TID 35	0	0	0	0	**0**
TID 36	2	0	0	0	**2**
TID 37	0	0	0	0	**0**
TID 38	0	0	0	0	**0**
TID 39	0	0	0	0	**0**
TID 40	0	3	1	0	**4**
	Total Number of eWasp Spring Queens				**6**

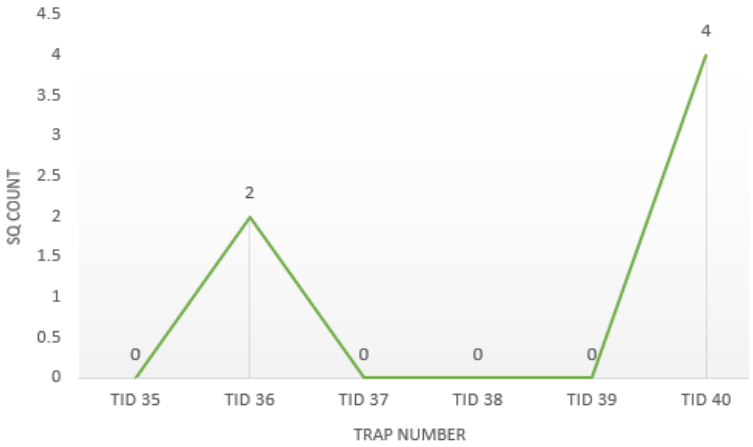
Mapped Counts

Mapped traps with eWasp spring queen counts.



Results

Chart 10 shows the total count by trap number.



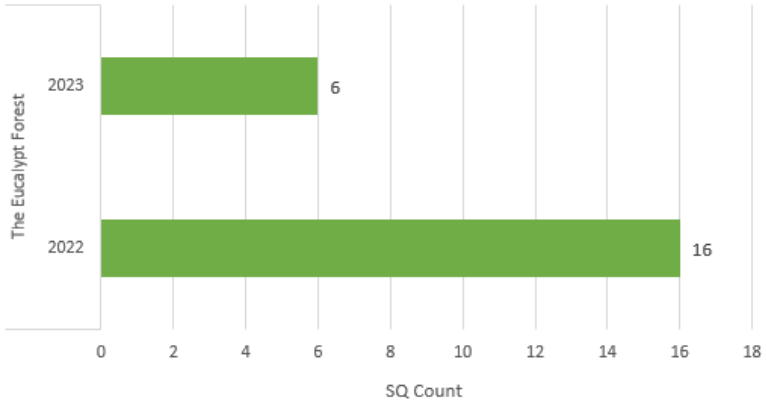
There were six (6) traps deployed at the Eucalypt Forest and Mountain Creek Road, which saw a total of 6 spring queens trapped and removed from the environment during the trapping program.

Of the total 6 eWasp spring queens trapped and removed from the environment, trap TID 40 had the highest with 67% or 4, followed by trap TID 36 with 33% or 2.

If all queens survived and established nests, there may have been an estimated 24,000 worker wasps, and an estimated 1,800 next generation queens impacting the environment and surrounding areas.

Data Comparison

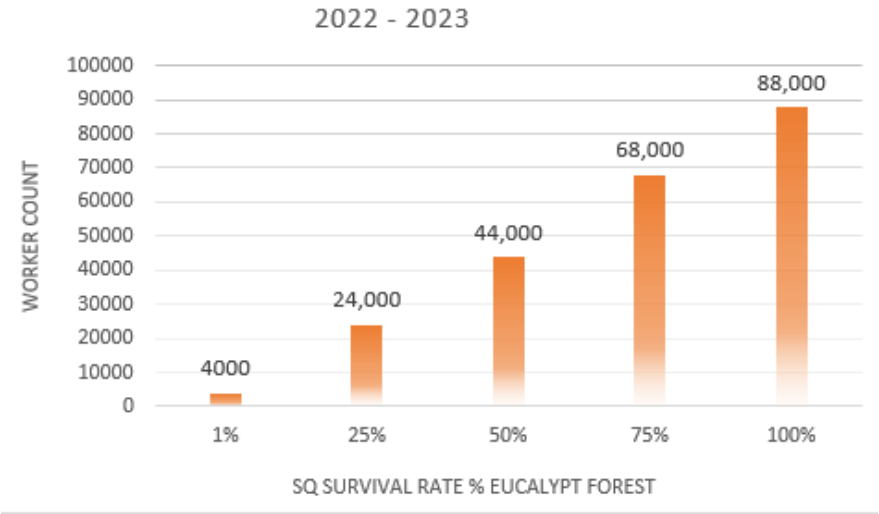
Chart 11 shows the total count by year.



Location	2022	2023	Increase/decrease
Eucalypt Forest & Mountain Creek Road	16	6	62% ↓

The 2022 spring queen trapping program had a total of 16 queens, and in 2023, there was a total of 6 queens removed from the environment, a total decrease of 62% for the Eucalypt Forest and Mountain Creek Road.

Chart 12 shows the count of workers by SQ survival rate.



From 2022 – 2023, 22 eWasp spring queens were removed from the area, if all queens survived and established nests, there may have been an estimated 88,000 worker wasps and an estimated 6,600 next generation queens impacting the environment and surrounding areas.

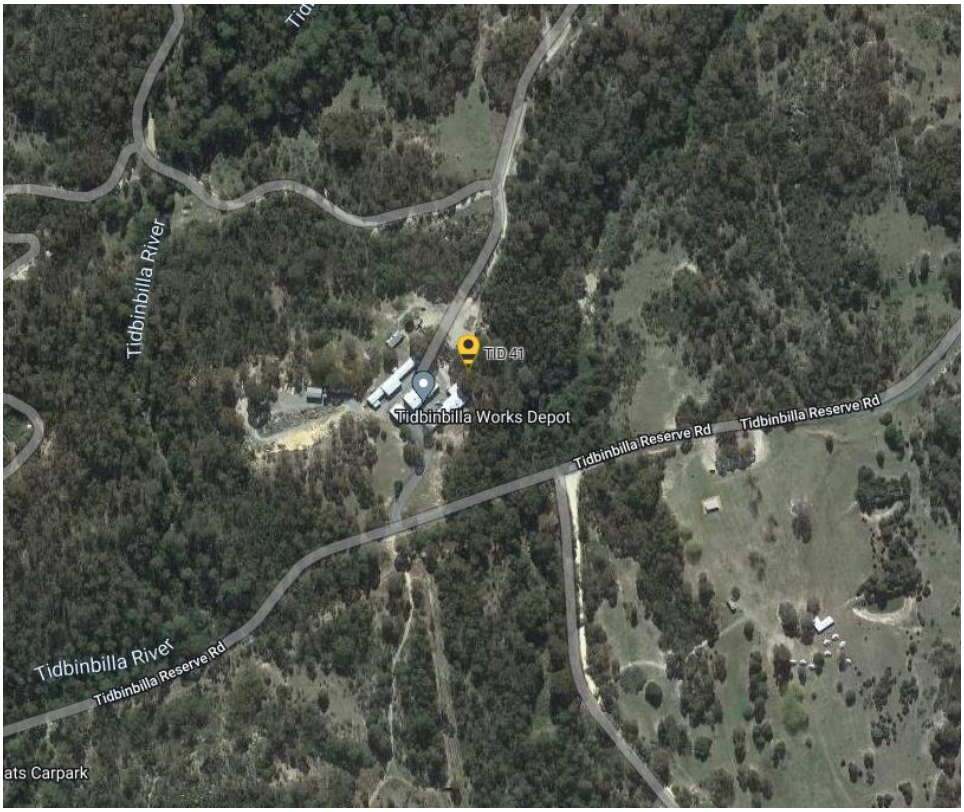
Tidbinbilla PCS Depot

The Parks and Conservation Services Depot is centrally located in Tidbinbilla. It is a base for the Rangers, and a storage facility for goods, safety, and motor equipment.

2023 eWasp Spring Queen Trap Location

Trap Number	GPS Latitude	GPS Longitude	Location
TID 41	-35.457967	148.917233	PCS Depot Tidbinbilla Nature Reserve

Mapped Traps



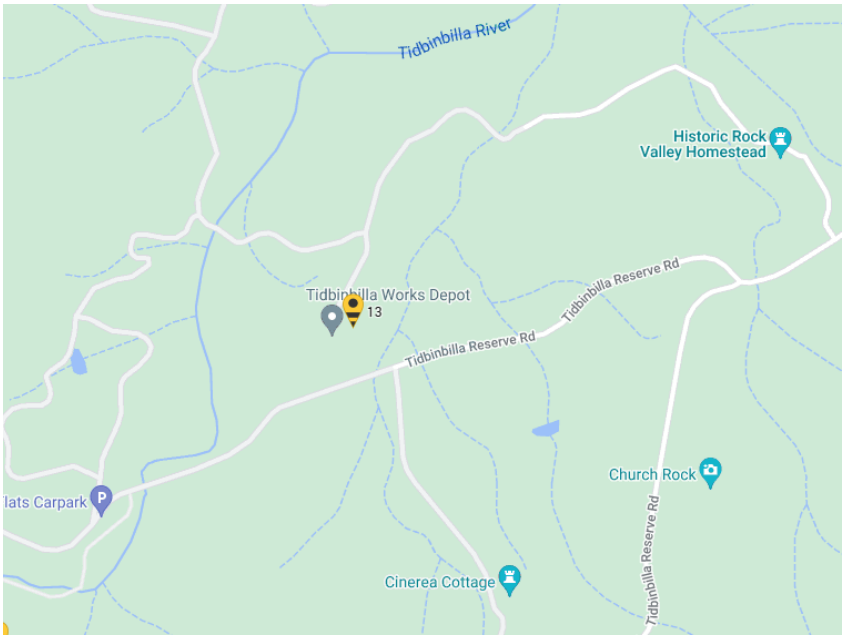
Traps TID 41 was deployed at the PCS Depot, Tidbinbilla Nature Reserve.

2023 eWasp Spring Queen Count

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
TID 41	5	6	2	0	13
	Total Number of eWasp Spring Queens				13

Mapped Counts

Mapped trap with eWasp spring queen count.



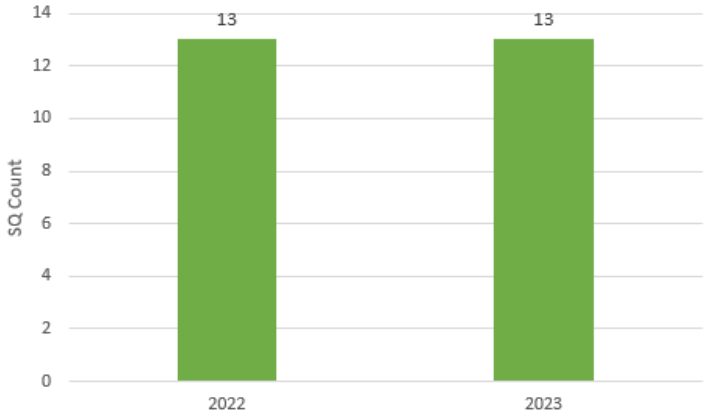
Trap TID 41 had 13 eWasp spring queens trapped and removed from the environment.

Results

There was one (1) trap deployed at the PCS Depot, which saw a total of 13 spring queens trapped and removed from the environment during the trapping program.

Data Comparison & Charts

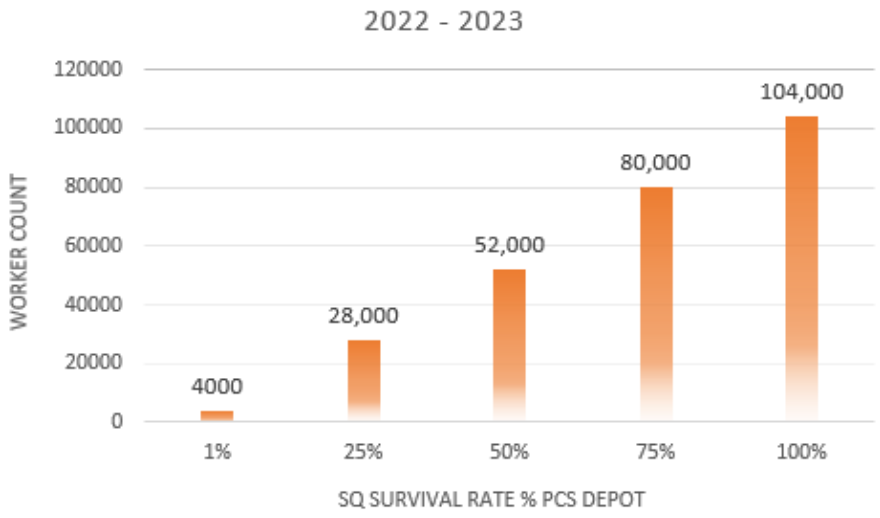
Chart 13 shows the total count by year.



Location	2022	2023	Increase/decrease
PCS Depot, Tidbinbilla Nature Reserve	13	13	0%

The 2022 spring queen trapping program had a total of 13 queens, and in 2023, there were a total of 13 queens removed from the environment, neither an increase nor decrease for the Tidbinbilla Nature Reserve PCS Depot.

Chart 14 shows the count of workers by SQ survival rate.



From 2022 – 2023, 26 eWasp spring queens were removed from the area. If all queens survived and established nests, there may have been an estimated 104,000 worker wasps, and an estimated 7,800 next generation queens impacting the environment and surrounding areas.

Trap TID 4, the Sanctuary, had a total share of 9% or 3 eWasp spring queens.

Unfortunately, on this occasion, the Huntsman looked in the wrong place for food and accommodation.

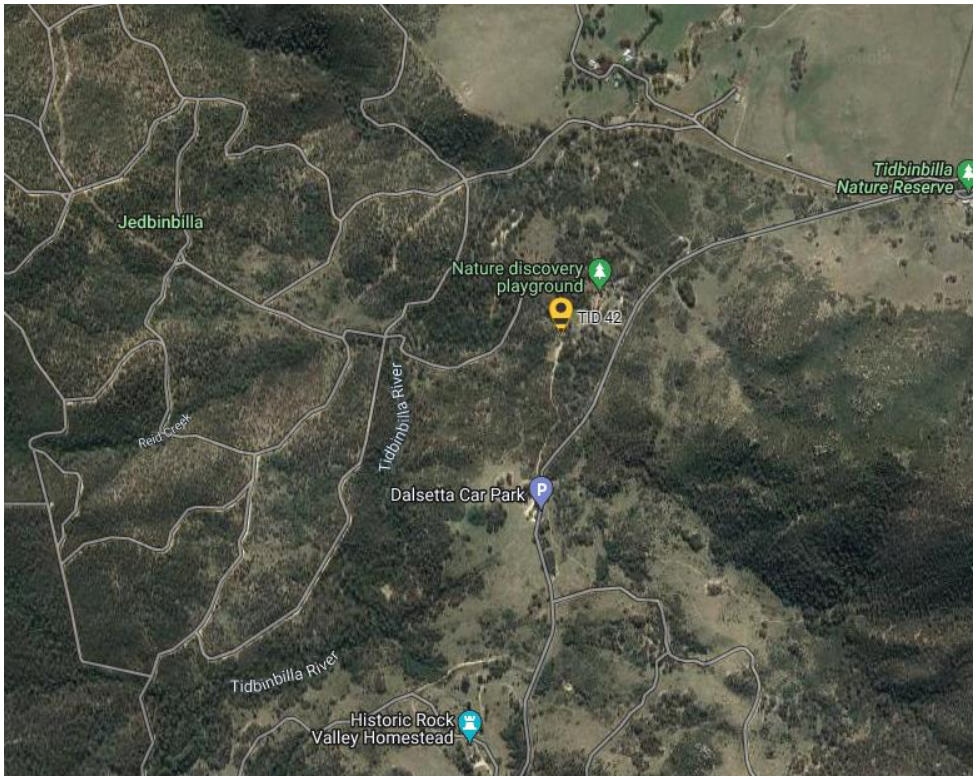
Nature Discovery Playground

The Nature Discovery Playground is in the Tidbinbilla Nature Reserve, approximately 2 Km from the PCS Depot. The location has gym equipment and BBQ/picnic areas and is heavily utilised by visiting tourists and the Canberra community.

2023 eWasp Spring Queen Trap Location

Trap Number	Latitude	Longitude	Location
TID 42	-35.443573	148.928613	Nature Discovery Playground

Mapped Traps

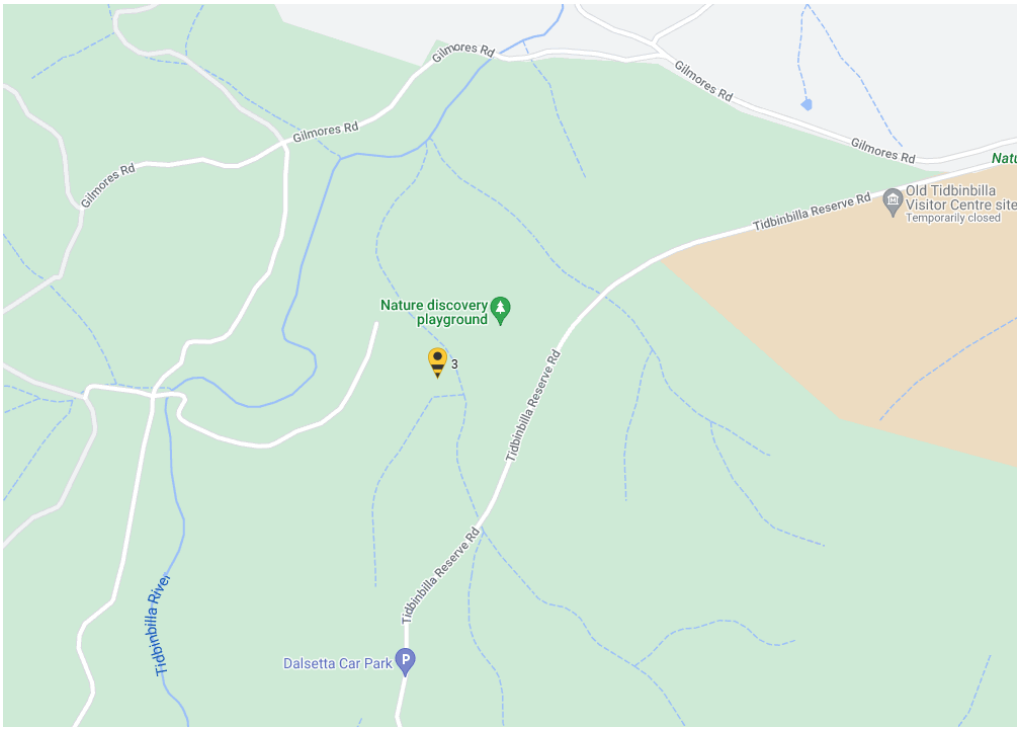


Traps TID 42 was deployed at the Nature Discovery Playground, Tidbinbilla Nature Reserve.

2023 eWasp Spring Queen Count

Trap Number	SQ Count 1	SQ Count 2	SQ Count 3	SQ Count 4	Totals
TID 42	0	3	0	0	3
	Total Number of eWasp Spring Queens				3

Mapped Counts



Trap TID 42 saw 3 eWasp spring queens trapped and removed from the environment.

Results

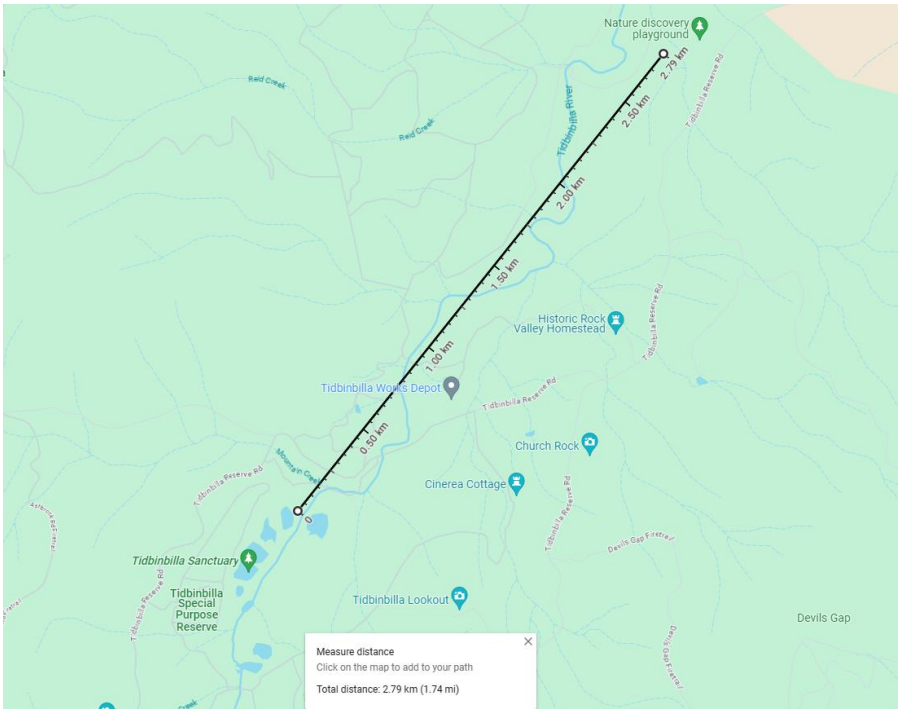
There was one (1) trap deployed at the Nature Discovery Playground, which saw a total of 3 spring queens trapped and removed from the environment during the trapping program.

If all queens survived and established nests, there may have been an estimated 12,000 worker wasps, and an estimated 900 next generation queens impacting the environment and surrounding areas.

RECOMMENDATION

From late January to March 2024, the eWasp population and activity should be high and noticeable, therefore, an inspection to identify, and treat, all nests in the Sanctuary and the broader Tidbinbilla Nature Reserve are recommended. This will prevent spring queens from emerging in the spring of 2024 and establishing nests.

The Nature Discovery Playground to the PCS Depot is approx. 2km, from the PCS Depot to the Sanctuary is approx. 1km, all in proximity and nests could be anywhere along the river in this area.



A follow up eWasp spring queen trapping program in 2024 is recommended for Tidbinbilla Nature Reserve. The data collected indicates spring queens prefer to travel along rivers and creeks. The data shows activity at the PCS Depot in both years 2022 and 2023, and activity at the Nature Discovery Playground, both locations are in proximity to the Tidbinbilla River, therefore, we believe conducting spring queen program along the Tidbinbilla River would be beneficial in reducing eWasp numbers/nests in the Sanctuary and surrounding areas in 2024.

it is recommended that 3-4 spring queen traps be deployed to monitor queen activity, prior to deploying all traps.

During the 2023 program, 1 worker wasp was trapped and removed in trap TID 27, the Sanctuary, this indicates there may be a nest in proximity to the location of the trap.

If eWasp activity is high in January to early February, and nests cannot be located, a baiting program may be required.

Report all nest and significant sightings to the eWasp team, this enables us to monitor the distribution of eWasps at Tidbinbilla Nature Reserve.

WEATHER OBSERVATIONS BOM

October 2023 Daily Weather Observations, Canberra, ACT

Canberra, Australian Capital Territory
October 2023 Daily Weather Observations
Observations from Canberra Airport.

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Su	3.5	29.7	0			W	76	14:21	17.7	48		W	7	1013.6	29.1	15		WNW	44	1009.1
2	Mo	7.0	27.5	0			N	26	13:42	13.9	73	8	ENE	15	1022.4	25.6	42		N	13	1018.3
3	Tu	11.8	26.7	0			N	69	08:34	24.1	37	1	NNW	41	1015.9	25.3	27		NW	35	1014.1
4	We	14.3	19.9	0			N	74	11:42	16.4	71	8	N	4	1011.0	16.4	79	8	N	37	1005.2
5	Th	6.8	14.0	20.4			NW	56	01:29	7.8	86	7	NW	30	1013.7	10.7	59	8	WNW	28	1017.2
6	Fr	5.3	18.7	0.2			ENE	39	17:03	10.5	75	3	NNW	15	1024.9	16.9	47	8	S	7	1024.2
7	Sa	0.1	18.1	0			E	37	18:49	8.4	56		S	17	1031.9	17.0	33		NNW	9	1028.5
8	Su	3.2	19.5	0			N	35	15:11	10.8	69		SW	7	1032.4	18.8	42		NNW	17	1027.9
9	Mo	0.6	23.2	0			NW	48	15:19	9.6	85		NE	2	1026.5	22.1	31		N	20	1022.1
10	Tu	5.0	21.7	0			E	39	18:19	13.6	77	8	NNW	6	1023.5	20.6	36		N	13	1020.3
11	We	5.6	23.5	0			NW	39	15:05	12.6	84	8	SSE	6	1024.6	22.1	35		NNW	24	1021.5
12	Th	1.6	26.7	0			NNW	76	12:31	11.5	71			Calm	1017.9	25.7	31	3	NW	43	1008.9
13	Fr	4.8	17.1	5.0			NW	57	12:17	10.5	65		NW	20	1017.4	16.1	51		WNW	35	1016.4
14	Sa	8.7	19.5	0			W	57	12:53	13.2	72	5	NNW	28	1017.7	19.2	46	6	NW	31	1014.9
15	Su	0.1	18.1	0			NW	41	12:43	10.6	73		WNW	7	1018.3	16.4	55	8	NW	24	1015.1
16	Mo	8.5	15.5	0			NW	52	09:00	12.3	66	8	NW	24	1011.2	11.9	54	6	NW	9	1012.8
17	Tu	-0.3	18.2	7.0			SSW	39	12:47	8.5	75	4	S	20	1027.5	16.9	39	1	SSW	22	1027.5
18	We	4.9	22.0	0			NNE	28	15:11	12.0	59	1	SSE	11	1030.6	20.7	45		NNE	11	1026.9
19	Th	5.6	24.6	0			NW	26	14:08	12.0	69	1	SSW	7	1026.3	23.3	31		NW	11	1019.9
20	Fr	4.3	26.4	0			N	35	17:16	14.2	77		W	6	1019.8	25.6	33		WNW	17	1015.8
21	Sa	6.2	29.1	0			NNW	52	15:16	17.9	61		S	6	1016.8	28.1	28	8	NNW	31	1011.5
22	Su	10.5	19.2	0			NW	54	12:58	13.5	40		NNW	26	1011.2	17.1	41	8	NW	35	1011.2
23	Mo	9.5	22.4	0			NNW	50	14:26	13.3	53		WNW	22	1014.6	21.9	36		NNW	33	1012.1
24	Tu	3.0	25.5	0			NW	50	15:08	14.4	62		NNW	7	1014.9	24.6	19		NW	31	1010.9
25	We	10.7	19.8	0			NNW	54	11:16	16.1	39		NNW	26	1012.6	18.3	20		WNW	28	1012.7
26	Th	-1.1	18.3	0			SSW	48	15:13	8.8	45		S	24	1023.4	17.3	26		S	28	1021.4
27	Fr	0.5	18.3	0			ESE	35	11:24	10.8	47	1	SSE	17	1031.4	15.6	32	4	SE	19	1029.1
28	Sa	2.7	20.6	0			NNW	35	14:48	10.5	67	8	S	9	1029.9	18.4	31		N	13	1024.8
29	Su	0.6	25.5	0			WNW	50	11:58	12.7	55		ENE	6	1021.7	23.6	22		W	19	1016.3
30	Mo	4.9	26.1	0			NW	69	09:59	17.7	33		WSW	9	1011.7	23.2	23	8	NW	35	1008.9
31	Tu	8.2	22.0	0			WNW	48	08:30	14.0	44		W	31	1012.6	20.9	15		WSW	20	1013.6
Statistics for October 2023																					
Mean		5.1	21.9							12.9	62	5		14	1020.3	20.3	36	6		23	1017.4
Lowest		-1.1	14.0							7.8	33	1		Calm	1011.0	10.7	15	1	S	7	1005.2
Highest		14.3	29.7	20.4			#	76		24.1	86	8	NNW	41	1032.4	29.1	79	8	WNW	44	1029.1
Total				32.6																	

Observations were drawn from Canberra Airport {station 070351}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2801.202310 Prepared at 13:00 UTC on 14 Nov 2023
Copyright © 2023 Bureau of Meteorology
Users of this product are deemed to have read the information and accepted the conditions described in the notes at
http://www.bom.gov.au/climate/dwo/IDCJDW0000.pdf

November 2023 Daily Weather Observations, Canberra, ACT

Canberra, Australian Capital Territory
November 2023 Daily Weather Observations
Observations from Canberra Airport.

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	We	3.9	22.9	0			ENE	41	17:19	13.3	57	2	SSW	7	1020.7	20.6	26		E	19	1017.5
2	Th	4.0	24.1	0			NE	39	18:05	13.4	61	7	SSW	7	1021.7	22.2	33		ENE	9	1016.8
3	Fr	10.3	25.0	0			E	43	16:07	14.9	64	6	NE	17	1019.1	23.2	33	2	NE	11	1014.6
4	Sa	11.6	15.8	0.6			ESE	41	19:09	14.7	75	8	ESE	15	1021.2	14.6	70	8	E	20	1021.2
5	Su	11.2	19.3	0			ENE	39	13:54	14.2	70	7	ESE	17	1026.5	16.6	59	8	ENE	28	1024.9
6	Mo	9.0	25.4	0			E	41	18:42	14.4	65	7	N	11	1025.4	23.5	32		S	9	1020.0
7	Tu	7.8	27.4	0.2			NNW	43	11:20	16.0	60		NW	6	1021.7	27.0	31	7	WNW	19	1016.7
8	We	9.4	27.1	0			N	46	14:58	18.0	68	7	N	4	1018.5	24.8	36	8	NNW	24	1014.5
9	Th	10.4	21.7	0			W	39	09:19	18.4	65	8	SE	11	1016.5	16.7	86	8	NNW	11	1015.0
10	Fr	8.1	28.9	6.8			NNW	35	15:24	17.5	72		NNW	7	1017.7	26.0	34	2	NW	17	1014.6
11	Sa	9.3	33.3	0			NW	50	11:48	20.1	70		N	7	1018.2	32.8	28	3	NW	30	1013.9
12	Su	14.0	31.7	0.6			NW	54	14:44	22.9	61	2	N	17	1015.5	30.6	10		WNW	31	1012.5
13	Mo	10.2	27.3	0			ENE	37	18:03	15.7	65	8	WSW	11	1018.1	25.0	28		NNW	9	1014.1
14	Tu	6.3	24.1	0			NNW	31	13:53	15.3	73	7	NW	4	1014.4	21.8	31	7	NNW	24	1012.7
15	We	10.6	27.0	0.2			NW	44	13:32	16.9	72	8	ENE	9	1013.1	26.1	36		NW	17	1009.3
16	Th	7.4	26.1	0			NNW	43	14:21	16.3	74	7	NNW	6	1010.1	24.8	28	8	WNW	26	1007.8
17	Fr	10.5	24.0	0			E	44	19:02	13.8	48		S	26	1017.4	21.9	25		WSW	15	1015.8
18	Sa	6.0	27.9	0			NW	35	15:07	15.7	64		W	7	1020.4	26.4	25		NE	11	1016.2
19	Su	8.1	31.4	0			NW	46	12:12	19.6	60		SSE	2	1019.3	29.0	20	1	NW	24	1016.1
20	Mo	16.0	28.5	0			S	59	15:46	21.7	56	8	NNW	17	1019.5	26.3	37	8	NNW	22	1016.1
21	Tu	10.5	26.4	22.6			ESE	39	17:59	17.0	75	7	SSW	6	1020.7	26.4	42	8	WSW	13	1017.0
22	We	11.0	27.7	0.2			ENE	39	16:09	18.0	62	7	SSE	15	1022.2	27.6	39	6	SE	15	1018.6
23	Th	10.9	24.2	0			ESE	50	13:33	19.7	59	5	SSE	19	1023.7	21.6	60	6	ESE	24	1022.7
24	Fr	13.8	22.0	0			E	33	12:28	18.3	70	8	SE	13	1022.3	20.7	64	8	E	17	1018.5
25	Sa	16.6	27.1	32.2			WSW	46	16:26	17.5	99	7	N	9	1014.4	25.1	51	3	N	20	1009.5
26	Su	12.8	26.4	2.0			WNW	54	11:51	19.4	71	1	NNW	19	1010.7	25.0	35	1	W	24	1009.2
27	Mo	12.8	27.6	0			E	48	18:09	19.9	65	3	E	7	1013.1	26.4	31	6	WNW	15	1010.7
28	Tu	16.1	22.1	0			NE	37	12:48	19.1	73	8	E	13	1014.7	17.2	96	8	ENE	13	1012.6
29	We	13.8	19.8	44.8			NW	28	12:08	15.5	99	8	SSW	9	1005.3	16.2	99	4	SSE	9	1003.1
30	Th	13.7	22.7	24.0			S	37	10:03	17.7	66	8	W	17	1002.0	20.8	58	8	SW	13	1001.5
Statistics for November 2023																					
Mean		10.5	25.5							17.2	67	6		11	1017.5	23.6	42	5		17	1014.5
Lowest		3.9	15.8							13.3	48	1	SSE	2	1002.0	14.6	10	1	#	9	1001.5
Highest		16.6	33.3	44.8			S	59		22.9	99	8	S	26	1026.5	32.8	99	8	WNW	31	1024.9
Total				134.2																	

Observations were drawn from Canberra Airport {station 070351}
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2801.202311 Prepared at 13:00 UTC on 7 Dec 2023
Copyright © 2023 Bureau of Meteorology
Users of this product are deemed to have read the information and accepted the conditions described in the notes at
http://www.bom.gov.au/climate/dwo/IDCJDW0000.pdf

December 2023 Daily Weather Observations, Canberra, ACT

Canberra, Australian Capital Territory
December 2023 Daily Weather Observations
Observations from Canberra Airport.

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Fr	14.1	24.0	9.2			SSW	33	12:13	17.1	81	8	S	17	1007.0	20.9	59	8	S	13	1004.4
2	Sa	12.4	25.4	11.8			WNW	52	14:30	16.9	84	8	E	9	1008.5	23.7	48	5	NNW	11	1005.9
3	Su	7.6	23.3	0.2			W	48	14:31	16.7	68		WSW	4	1013.5	21.5	48	8	WSW	11	1012.0
4	Mo	8.9	26.8	6.0			NW	30	14:55	14.8	81	8	WNW	4	1018.7	25.4	34		NW	11	1015.0
5	Tu	10.1	32.4	0			WNW	48	14:08	20.6	64		NW	4	1017.0	31.6	25		WNW	33	1013.4
6	We	11.8	32.4	0			W	48	14:39	23.9	48		SSE	7	1016.2	31.9	23		WNW	31	1014.1
7	Th	11.2	31.1	0			SW	52	14:26	17.0	91	8	E	7	1017.3	28.9	27	8	SW	30	1017.0
8	Fr	15.4	33.0	0			NW	83	19:00	22.9	56	8	ENE	2	1018.3	30.5	38	5	SW	11	1013.2
9	Sa	16.2	34.8	3.8			N	59	16:01	21.5	93	7	SSW	7	1012.7	33.9	33		W	13	1010.4
10	Su	17.6	26.7	0.2			ENE	30	09:03	20.2	73	8	ENE	9	1019.5	25.4	60	1	E	11	1016.3
11	Mo	16.8	30.8	0			ESE	41	17:10	22.7	70		SE	2	1017.3	30.4	44		SE	13	1016.3
12	Tu	18.8	30.0	0			E	37	18:30	23.6	66	4	E	15	1019.8	28.9	45	3	NNE	15	1015.7
13	We	16.5	32.5	0			N	59	19:06	21.9	72	8	E	7	1015.2	31.2	33		NNW	24	1010.1
14	Th	17.2	28.4	0			NW	61	13:41	22.6	72	6	NW	33	1006.7	27.7	36	2	WNW	31	1004.5
15	Fr	9.2	28.6	0			W	48	14:34	20.3	63		NW	7	1009.9	27.0	34	3	WNW	30	1006.5
16	Sa	7.1	25.7	0			W	67	09:19	21.3	32		W	30	1005.5	24.4	27	2	WNW	28	1005.7
17	Su	10.9	27.7	0			ENE	39	17:46	18.4	69	1	SW	9	1014.1	26.5	28		N	13	1011.0
18	Mo	13.4	29.6	0			NNW	39	12:43	20.2	68	4	WNW	9	1014.5	28.8	33		NNW	20	1010.9
19	Tu	16.3	34.0	0			N	87	14:12	23.8	67		S	7	1010.7	27.2	41	8	NNE	35	1006.2
20	We	12.9		14.8						12.9	97	8	SSE	13	1014.9						
Statistics for the first 20 days of December 2023																					
Mean		13.2	29.3							20.0	70	6		10	1013.9	27.7	37	4		20	1011.0
Lowest		7.1	23.3							12.9	32	1	#	2	1005.5	20.9	23	1	#	11	1004.4
Highest		18.8	34.8	14.8			N	87		23.9	97	8	NW	33	1019.8	33.9	60	8	NNE	35	1017.0
Total				46.0																	

Observations were drawn from Canberra Airport (station 070351)
Some cloud observations are from automated equipment; these are somewhat different to those made by a human observer and may not appear every day.

IDCJDW2801.202312 Prepared at 00:36 UTC on 20 Dec 2023
Copyright © 2023 Bureau of Meteorology
Users of this product are deemed to have read the information and accepted the conditions described in the notes at
http://www.bom.gov.au/climate/dwo/IDCJDW0000.pdf

Weather statistics provided by the Bureau of Meteorology, Australian Government.

VESPEX EUROPEAN WASP LURE

TRAPPING

VESPEX®

european wasp lure

A versatile tool in European Wasp management.

TECHNICAL BULLETIN

ECO FRIENDLY NON TOXIC

NUMBER 26

WHAT IS VESPEX EUROPEAN WASP LURE?

VESPEX European Wasp Lure is a specially formulated, nontoxic liquid lure which is attractive to European Wasps (*Vespula germanica*) throughout all stages of their lifecycle, including newly emerging queens in Spring.

HOW TO USE

VESPEX European Wasp Lure has been developed to use in two versatile ways; for use in bottle/bag/dome traps, and remote baiting of European wasp nests.

VESPEX DOMINATOR BOTTLE TRAP

VESPEX European Wasp Lure is ideal for use in suitable bottle, bag or dome traps. During development of the liquid lure, testing was conducted in the field using a variety of bottle, dome and bag traps commercially available. Efficiency of tested traps was vastly variable between designs.

As a result Sundew Solutions sought to bring to the market a trap that had the attributes of the successful design elements of others, while incorporating innovative features that took advantage of the habits of European wasps and their foraging behaviours. The result was the **VESPEX Dominator™ Bottle Trap**.

TRAPPING WITH VESPEX EUROPEAN WASP LURE

Using **VESPEX Lure** with the **Dominator Bottle Traps** is a versatile tool when targeting European wasps. Used together they are valuable for:

- Monitoring population distribution spread
- Measuring pest pressure
- Spring trapping of queens to reduce nesting
- Weakening of colony worker numbers
- Environmentally friendly trapping option
- Chemical free option for sensitive areas

WHERE TO SET TRAPS

Correct positioning of traps is essential to the success of consistently trapping European wasps in significant numbers.

The best positioning for traps is in open direct sunlight areas where wasp activity is high.

Do not position traps amongst foliage just because you observe wasps feeding in these locations.

If European wasps are observed in a location and the traps are not trapping wasps within 3 days of deployment, it is recommended to relocate the trap/s in an alternative open space and repeat the process until capture occurs.

HOW LONG DOES IT LAST?

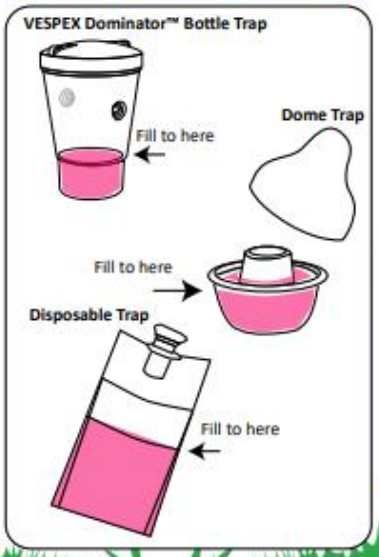
VESPEX European Wasp Lure must be replaced every 14 days or when levels drop due to evaporation. Inspect the trap regularly and remove dead insects.

If the trap is full and there is no free liquid, remove the contents and rinse with clean water before refilling with **VESPEX European Wasp Lure**.

NOT ATTRACTIVE TO BEES

When used as directed, **VESPEX European Wasp Lure** is not attractive to bees. The product contains volatiles which mask the lure and make it unattractive. It is critical that the directions for use are followed.

Better Performance. Better Value.



PRODUCT SPECIFICATIONS

Name: VESPEX European Wasp Lure

Formulation type: Liquid lure

Schedule: Nonpoisonous - unscheduled

Pack sizes: - 250 mL foil pouch, and
- 5 L Jerry pack

Market segments: For use in bottle, bag or suitable insect traps to lure wasps into the station where they are unable to escape and drown in the liquid lure.

® Vespex is a registered trade mark of Sundew Solutions Pty Ltd.
™ Dominator is a trade mark of Sundew Solutions Pty Ltd.

sundew PROFESSIONAL SOLUTIONS

A family owned 100% Australian business.

Company Contacts

Christina Bariesheff

Director
Reports & Communication|Pest & Weed Officer
CoreEnviro Solutions Pty Ltd
Mobile: 0405 623 225

Jim Bariesheff

Director
Horticulturist |Senior Pest & Weed Officer
CoreEnviro Solutions Pty Ltd
Mobile: 0417 6037 83

CoreEnviro SOLUTIONS

CoreEnviro Solutions Pty Ltd

Landline: 02 62590633
email: info@cesact.com.au
website: www.coreenvirosolutions.com

eWasp

Research Programs & Information Centre

eWasp Hotline: 0409 970 033
email: info@ewasp.com.au
website: www.ewasp.com.au