GOLDEN SAIL SPIDER ECOLOGY STUDY REPORT

ST HELENA CLOUD FOREST PROJECT

Year 4, February 2024 to February 2025

ST HELENA NATIONAL TRUST

THE PEAKS NATIONAL PARK
ST HELENA ISLAND. 1502

Contents

UK Government

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Photo credit: Liza Fowler & Daryl Joshua

Introduction

The flagship endemic and globally IUCN red listed as Endangered, Golden Sail Spider *Argyrodes mellissi* (O. Pickard-Cambridge, 1870) was first recorded in 1865, followed by formally described in 1870. Since then, it has been found on a number of different occasions throughout history and recorded with localities, methods used to find them and some indication of what plant species they were found on, but no detailed data on its ecology. This endemic species lives mainly amongst tree ferns on the High Central Ridge but has also been found amongst bananas in a shady 'Gut' at lower altitude. It lives on the underside of large leaves or fern fronds and the females produce egg-sacs on a long stalk (Key, Fowler & Pryce, 2021).

In year 1 (2021) of the St Helena Cloud Forest Project, this species was selected as one of 32 priority endemic species to represent the entire cloud forest endemic invertebrate fauna to be used to assess the health of the habitat etc (Please see 'Invertebrate Survey Baseline Report, Jan-May 2022' for more details).

In year 2 (2022) of the Cloud Forest Project the spider fauna was studied to confirm identification and other aspects of targeted cloud forest spider species, which included *A. mellissi.* A preliminary report was produced with ecology notes on *A. mellissi*. (Sherwood, 2022) (**Annex 1: 1.3**), which was the template for this year-long comprehensive ecology study of *A. mellissi*.

There were two phases implemented in Year 3, 2023, the first was to scope known and new areas for the Golden Sail Spider see table 1 below showing scoping sites and results, and the second phase used 3 monitoring site(s) to carry out ecology studies to address our knowledge gaps. During the scoping phase of the project, sites (Diana's Peak, Monchers Gut, Mount Actaeon, Taylors Hut, Pleasant Valley, Oak Bank (Bridge and Valley) and Rose Cottage) were surveyed to locate any evidence of *A. mellissi* present to determine the monitoring sites. There were only a few individuals of the different lifecycles of *A. mellissi* recorded, however, this highlights a need for further studies in different areas to understand its ecology and distribution (**Appendix 1, Map 1.2**) (**Table 1**).

Table 1: Table showing all site that was surveyed for *A. mellissi*, including the three chosen monitoring sites

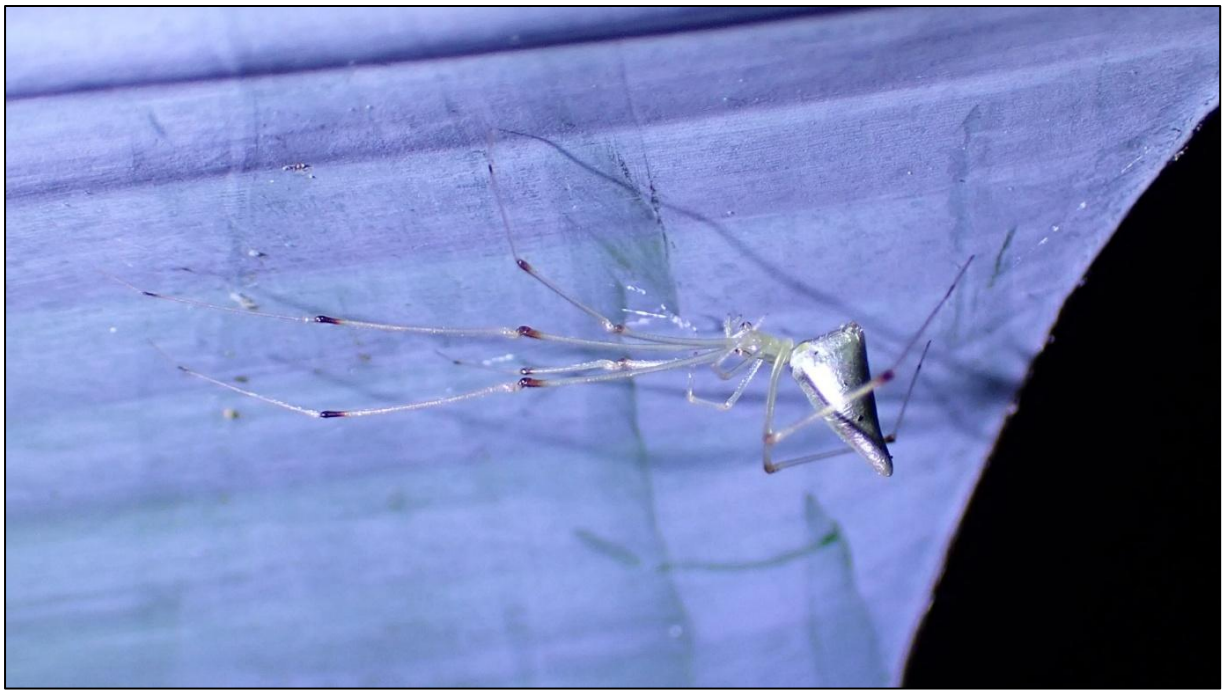
	Adult	Male	Female	Juvenile	Egg sac new	Egg sac old	Egg sac general	Total
Diana's Peak	3		1	1			1	6
Monchers Gut	1							1
Mount Actaeon	4							4
Oak Bank - Bridge	14	4	3	31	10	1	6	69
Oak Bank - Valley	301	27	16	747	65	90	128	1374
Pleasant Valley				1				1
Rose Cottage	22	8	6	42	3		4	85
Taylors Hut	1							1
Total	346	39	26	822	78	91	139	**1541**

From the results of the scoping three sites were identified for monitoring, one was a known site and a new site at Oak Bank (the Bridge and Valley), St Paul's and a new site at a privately-owned location: Rose Cottage in Sandy Bay. Permissions and collaborative work to establish the monitoring sites were obtained from the respective landowners Michael Thorpe and Johnathon Hollins.

This document reports on the initial findings of Golden Sail Spider ecology and gives a basis for further future studies.

Figure 1: Showing the lifecycle of the *Argyrodes mellissi*

A. Female *A. mellissi*



B. Male *A. mellissi*

C. Egg sac's of *A. mellissi*: hanging from Black scale fern *Diplazium filamentosum*

D. Spiderlings of *A. mellissi*: A few hours old found under a leaf of Yellow Ginger Lily *Hedychium flavescens*

E. Spiderlings: By a pencil for scale

Methods

Three sites were surveyed, two on the same property of Oak Bank (the Bridge and the Valley, respectively), and one site at another location, namely Rose Cottage. A summary of each site with the corresponding methodology is given below.

Two of the surveyed sites were located in Oak Bank—each was situated in a valley and with permanent streams, decreasing in water levels slightly during the warmer or drought periods but with differing attributes.

At the original site at Oak Bank 'the Bridge', *A. mellissi* occupies the vegetation surrounding a stream that runs through the site, a water catchment (water storage) was constructed in 2016 by the utilities company Connect St Helena Ltd. In order for the construction to go ahead, the vegetation in the surrounding area was cleared, and subsequently, the population of *A. mellissi* depleted. This reduction was noticed by the landowner, a naturalist who occasionally visits this site to monitor the spiders himself (M. Thorpe pers. comm. to authors).

The new site at Oak Bank, 'the Valley' was the only site that was undisturbed (M. Thorpe pers. comm. to authors) and so this site was selected for monthly monitoring to obtain comprehensive ecology results. This undisturbed forest area has a substantial canopy cover that expands the entire valley, giving unique environmental conditions with extensive foliage structure, the preferred vegetation for the adult *A. mellissi*.

The third site at Rose Cottage represents a distinctive ecological site, characterised by several factors that separate it from the other two sites (Oak Bank Valley & Bridge). It is the sole site without any running stream; it is a very moist area despite having no running water. Rose Cottage, however, unlike the other 2 sites where the spiders occur in dense vegetation, this site use to have dense vegetation for approx. 50 years (J. Hollins pers. comm. to authors), but extensive clearance of this property

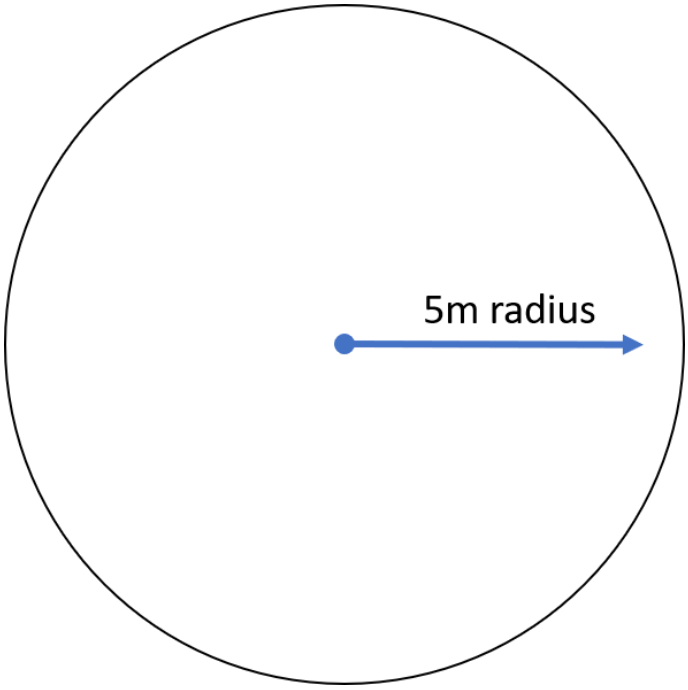
started in 2020, this has reduced the density of the vegetation leaving only sparse tall trees, with dense vegetation only at the borders of the property. As the two disturbed sites have less opportunity for ecological recording Rose Cottage & Oak Bank (the Bridge), so these were selected for implementation of surveys on a quarterly basis, to see whether disturbance has an effect on the *A. mellissi* population.

Two different methods were established for the quarterly and monthly monitoring sites (**Appendix 2 Table 2.1: Survey schedule**). At the quarterly sites (Oak Bank 'the Bridge' and Rose Cottage), a 5-metre radius was set up (**Fig 2: A**) within the habitat and records were taken from this 10m diameter area. At the monthly site, the vegetation was too thick to do the radius method, therefore, the Valley was surveyed using two 5 metre sub-transects (**Fig 2: B**). Both methods of the radius and transects were selected to cover the different vegetation types and to allow for easy access to them and to minimise damage to the habitats but were standardised by using roughly the same area and using the same timed observations.

All of the monitoring sites were GPS marked, and timed (10 mins) observations and hand searches were conducted either on the radius for the quarterly monitoring or along each of the transects for the quarterly monitoring (**Figure 2: A** & **B**) to find the adults, juveniles and egg sacs, and results were recorded. Recording started from one end of the transect/diameter to the other, if only one person was present, or if 2 people are present they started from either end of the transects and met in the middle.

Night surveys were also carried out in each of the monitoring (Oak Bank, Bridge and Rose Cottage) sites, they occurred at roughly the same times as the daytime surveys and used the same methods but started from 7pm. Torches were used to locate the spider as torchlight reflects off the spiders' bodies during the night (M. Thorpe pers. comm. to authors) which made them easier to spot (**Fig 3**).

Fig 2: **A**: Showing the radius method

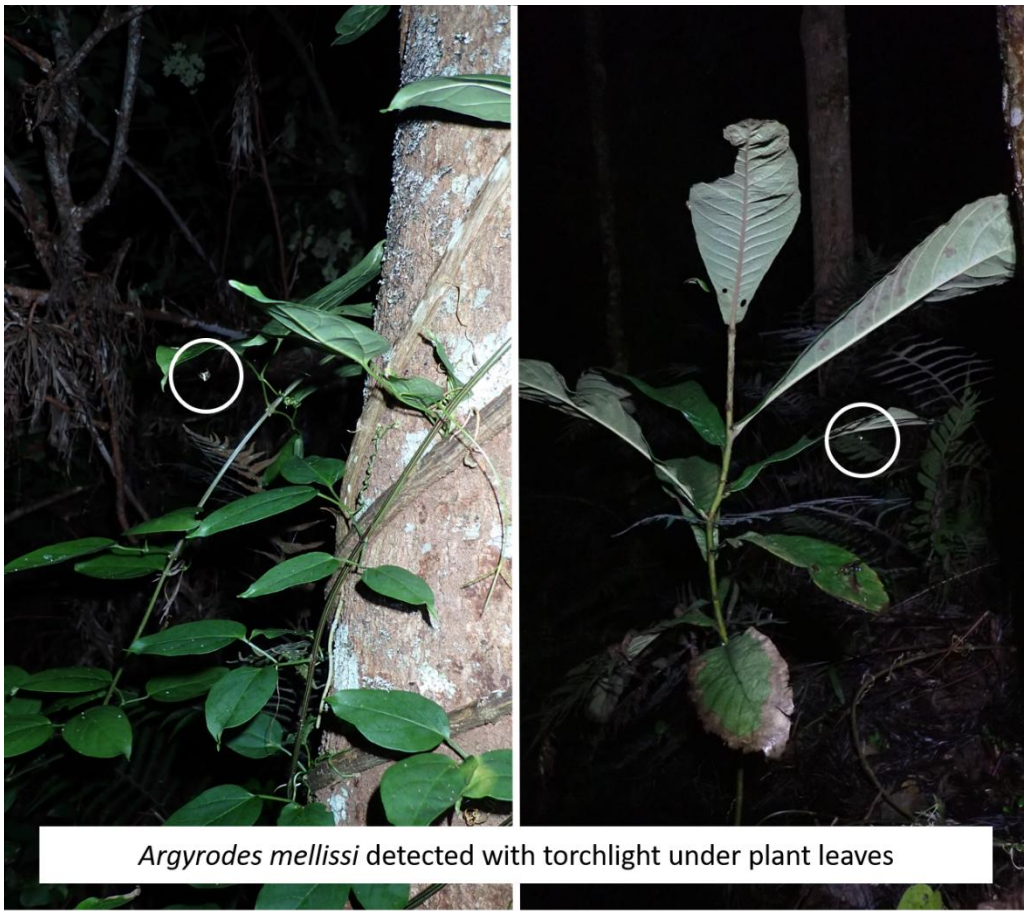


B: Showing the transects method

If one person is present

If two people are present

Fig 3: Showing the torchlight reflecting on the spider body



Weather

On each of the quarterly and monthly sites a data logger was place within each monitoring site on arrival in the day and collected at the end of the night. The data loggers were Elitech RC-51H and were recording both temperature and humidity. There were some challenges with the data loggers and so just a description of weather variation is given. The weather results showed that humidity increases sharply at the same time as temperature drops between 12pm and 12am, but this pattern is only seen up to December 2, 2025. Similar trends appear on May 14, 2024, and August 14, 2024, but these might be errors. Sometimes, especially on August 14, 2024, and January 15, 2025, the conditions become more consistent overnight, showing less variation. However, on at least five other days, there are large differences between humidity and temperature later in the day, opposite to earlier patterns. On June 16, 2024, October 16, 2024, May 22, 2024, and November 26, 2024, the data shows sharp, alternating patterns, but it's unclear why or what effect they had. A few days show almost flat lines for both variables, which could mean the weather sensors weren't working properly. This data needs to be combined with occurrence data in a future analysis before conclusions can be made on how humidity and temperature variables may affect these spiders.

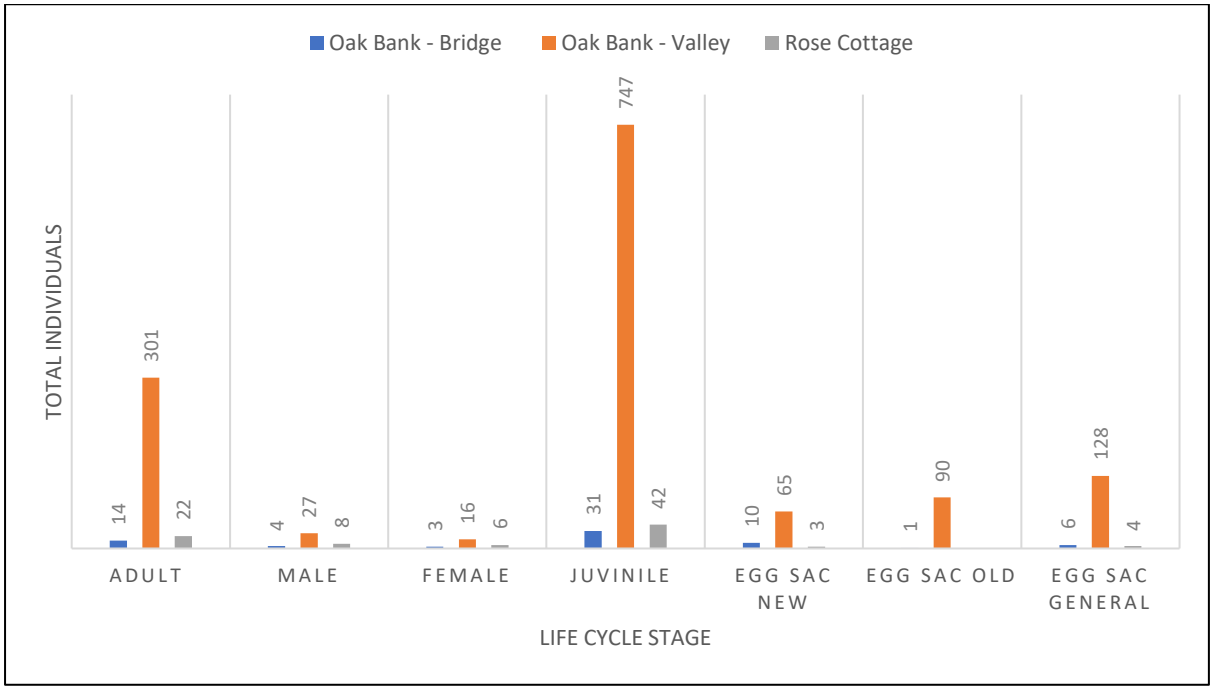
Results

Surveys were conducted over a year from February 2024 to February 2025 in 3 locations with monthly monitoring at Oak Bank (Valley) and quarterly monitoring at Rose Cottage and Oak Bank Bridge.

Overall, a total of 411 *Argyrodes mellissi* adults were observed, this comprised of 346 individuals with undetermined sex, however of the 65 individuals that could be sexed 39 were males and 26 were females. Furthermore, a total of 822 juveniles were recorded, unfortunately juveniles can't be sexed. The number of juveniles recorded was higher than the total number of both adults and egg sac records.

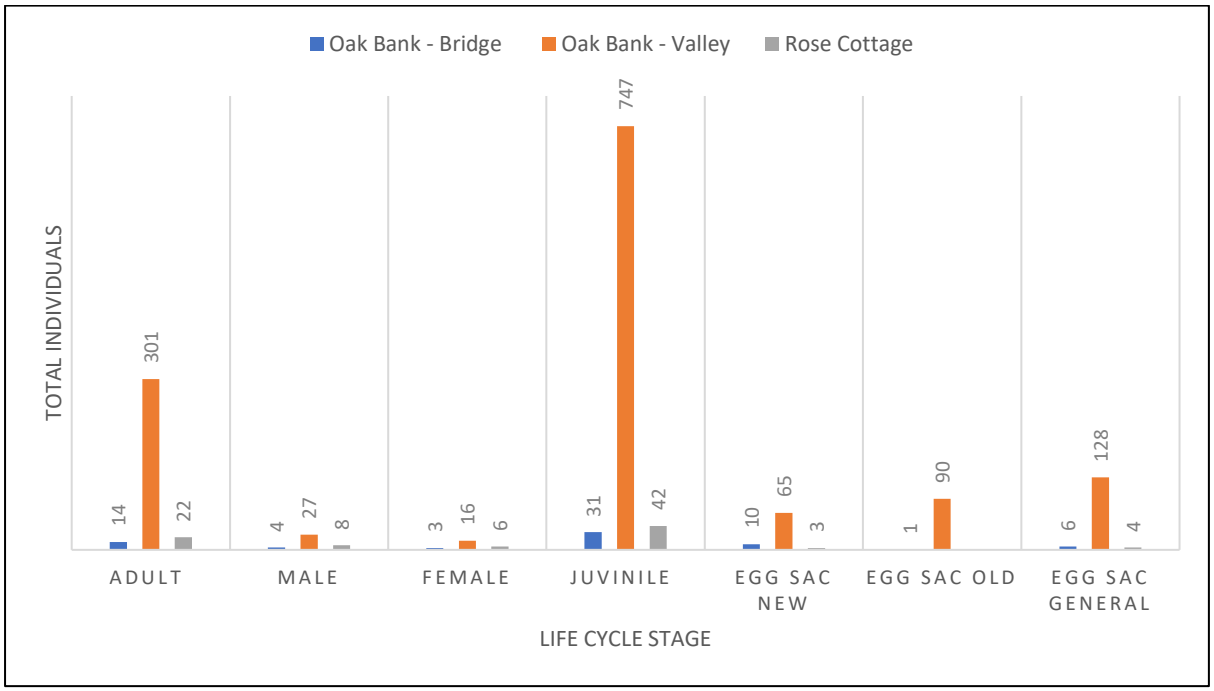
The egg sacs were placed into further categories of 'new' which meant the egg sac displayed no emergence hole, 'old' which displayed an emergence hole and 'general' for those which couldn't be examined for emergence holes. A total of 308 egg sacs were recorded, which included 78 with no emergence holes (new), 91 with an emergence hole (old), and 139 that remain undetermined (general) (**Graph 1**).

Graph 1: Showing the total records for the different lifecycle stages of *A. mellissi*



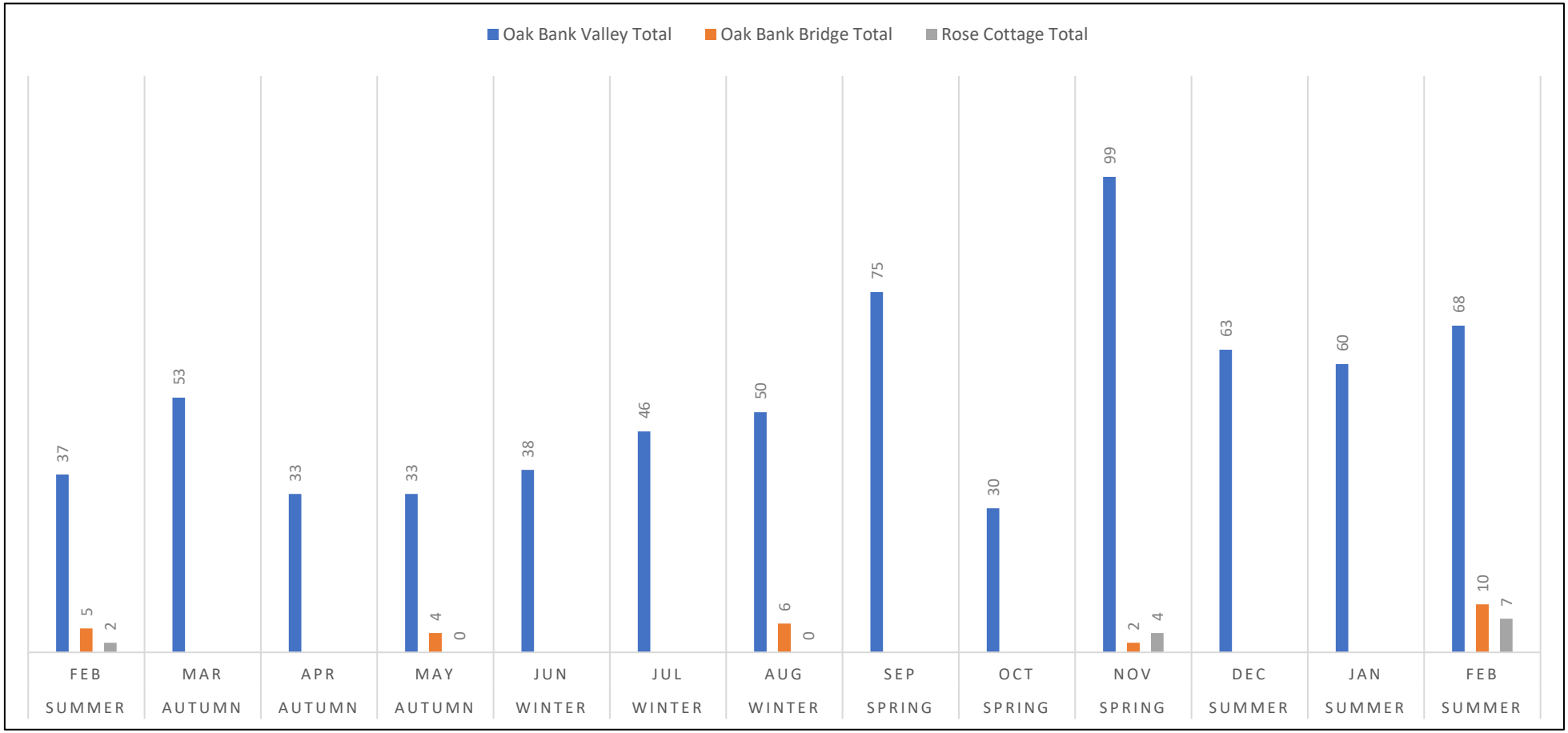
The undisturbed site of Oak Bank Valley displayed the highest *A. mellissi* overall record total (all life cycle stages) of 1374 which had a very high numbers of adults and juveniles, and the two disturbed sites of Rose Cottage (85) and Oak Bank Bridge (69) had much lower total records (**Graph 2**). Oak Bank Valley was surveyed 3 times more than the other two sites, however the total recorded for this site was substantially higher than those sites, 16 times higher for Rose Cottage and 19 times higher for Oak Bank Bridge.

Graph 2: Showing the lifecycle stages at each site



Interestingly, from February 2024 (mid-summer) the population (total of all life cycle stages) of *A. mellissi* increased to March (late summer), then decreased in April (early autumn) and from May the population steadily increased to September (early spring). The population declined rapidly in October (mid spring), however, suddenly increase in November (late spring) and decreased again in December (early summer) where the population was steady up until February 2025 (mid-summer). This indicates that the highest activity for *A. mellissi* seems to be in the spring and summer but with a dip mid spring (**Graph 3**). This pattern was clearest at Oak Bank Valley where the records were highest and were also recorded monthly.

Graph 3: Showing *A. mellissi* population by month at Oak Bank Valley and quarterly at Oak Bank Bridge and Rose Cottage



Differences between surveying in the daytime & night-time

Another significant result is that the night surveys in all sites showed that *A. mellissi* were easier to spot then in the day as the touch light reflected off their bodies (**Table 2**)**.** They are also much more active at night, which indicates that this species is nocturnal.

Table 2: Showing day and night survey totals for all sites

	Adult	Male	Female	Juvenile	Egg sac New	Egg sac Old	Egg sac General	Total
Day	107	25	15	364	38	46	78	673
Night	239	14	11	458	40	45	61	868
Total	**346**	**39**	**26**	**822**	**78**	**91**	**139**	**1541**

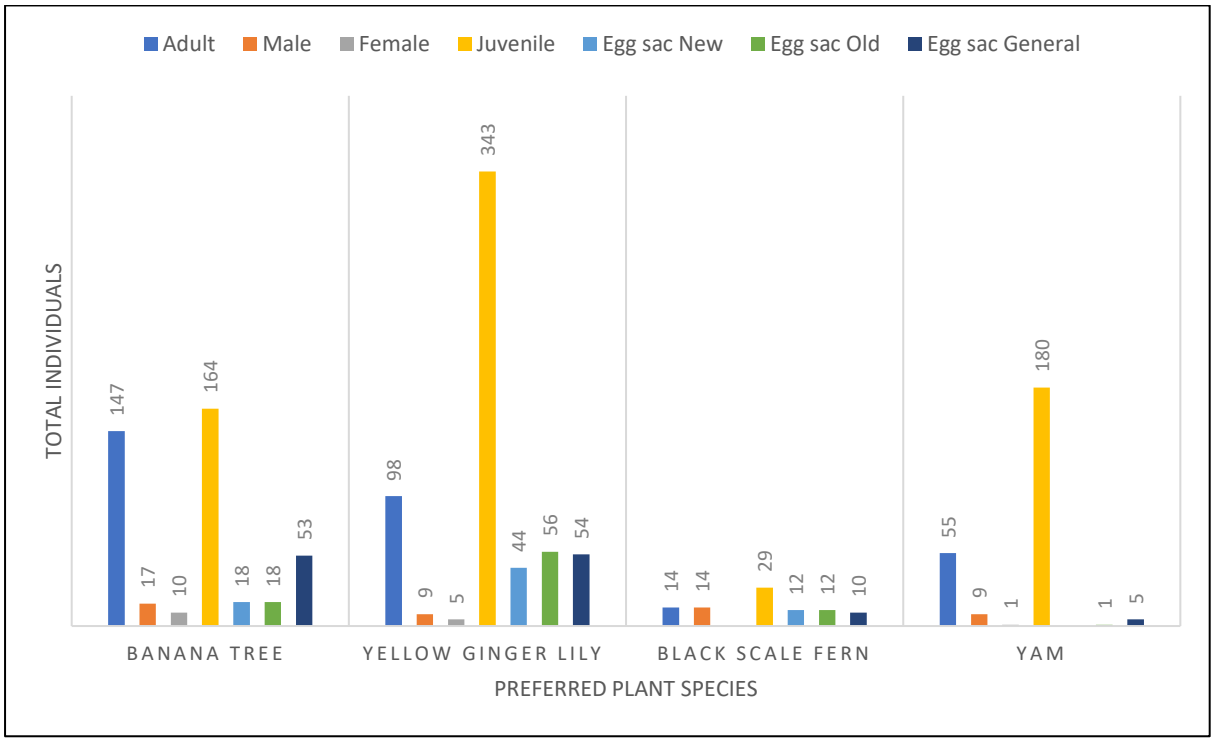
Vegetation types *A. mellissi* were found on

Previously, *A. mellissi* were only observed amongst tree ferns and bananas (Key, Fowler & Pryce, 2021). However, this yearlong survey has revealed that *A. mellissi* also occurs on many other plant species, including both native and non-native plant species (please see **Appendix 2: Table 2.1**) for a fill list of plant species *A. mellissi* was found on). Note that no tree ferns were found in the monitoring sites and so weren't recorded from.

The highest abundance of *A. mellissi* occurred on four plant species in particular, the non-native Banana tree *Musa acuminate*, Yellow Ginger Lily *Hedychium flavescens* and Yam *Colocasia esculenta,* and in terms of natives the endemic Black Scale Fern *Diplazium filamentosum*. It is clear from these results that this species generally has a preference for non-native plants low elevation.

Adults of *A. mellissi* appears to prefer the banana plants, which can grow to a height of 2.5 meters (but can grow higher) and high numbers were recorded from bananas, it was followed by the Yellow ginger Lily, which can grow to 2.5 meters and yams which can grow to 1.3-2 meters (Lambdon, 2022) (**Graph 4**). Interestingly, each of these plant species are at present at different vegetation layers (canopy, shrub and ground level) of the habitat.

Graph 4: Showing the preferred plant species and records from different stages of the life cycle



Comparing the quarterly assessed sites (more disturbed sites)

In the quarterly sites, Oak Bank Bridge and Rose Cottage which have been both disturbed by the removal of vegetation, the population of *A. mellissi* showed similar results for both sites, with an overall total of 69 (Oak Bank Bridge) and 85 (Rose Cottage). It can be seen that despite the disturbance these sites still have a noticeable adult population and they are still producing egg sacs, allowing the continuation of future generations (juveniles) (**Table 1**). In these sites numbers dropped just after the summer month of 2024 and stayed low until they raised again in the summer of 2025, particularly at Rose Cottage (**Graph 3**). This suggests that the populations of *A. mellissi* can be quite resilient to adverse environmental impacts and are able to naturally re-establish within formally disturbed habitats.

Ecology observations collected during monitoring

Individuals are often found in close proximity to each other averaging a distance of <20cm (Sherwood, 2022). *A. mellissi* was found at ground level extending to canopy level for all of its life stages. A high number of sightings were found around running water.

Females of this species produce silky egg sacs situated on a stalk (**Fig: 1 C**) like structure, observations made on the egg sacs of *A. mellissi* indicate that the development period is estimated to be 38 to 41 days before hatching. Furthermore, this species demonstrates strong maternal instincts. Female *A. mellissi* are frequently observed guarding and repairing their egg sacs in response to environmental disturbances. Additionally, they have been seen guarding eggs sacs, departing to hunt during the day and then returning to them in the evenings. Observations made on the egg sacs of *A. mellissi* indicate

that the development period is estimated to be 38 to 41 days prior to hatching. These observations were made by Joe Hollins at Rose Cottage.

When hunting *A. mellisi* creates a small web consisting of a few thin strands to catch prey, then hangs in an upside-down position for hunting. The diet for this species usually consists of Diptera species and other species of spiders for example *Anyphops stauntoni* (Sherwood, 2022). This behaviour can be seen at night as this species is a nocturnal hunter, juveniles can be seen inhabiting neighbouring spiders webs and it is assumed that they are kleptoparasitic (a form of feeding where one animal steals food resources from another) for feeding, however, further studies are needed to confirm this behaviour.

Discussion

A. mellissi was observed at three distinct locations outside the cloud forest, each site had unique environmental conditions and two of the sites were particularly disturbed. It has been noted in the past that *A. mellissi* exhibits a preference for damp and cool microclimates, being found at sites that are characterised by high moisture levels. Survey results have shown that night time surveys using torchlight are more effective than daytime surveys (when adults are less active) and could be used for survey work in the future.

Sites and disturbance

Oak Bank Valley was an undisturbed site with thick vegetation, this type of environment seemed to be ideal for the species allowing the population to exist in high numbers and breed throughout the year. There was evidenced of egg sacs and juveniles throughout the site, this evidence of a healthy breeding population is contributing to the remarkable high numbers present in this area.

At Oak bank the Bridge and Rose Cottage however, the population was much lower and is slowly recovering as *A. mellissi* from the disturbance caused by the water catchment work at the Bridge and vegetation clearance at Rose Cottage. It would be interesting to monitor these areas long-term and see whether numbers increase as the vegetation recovers.

Vegetation use

Previously, *A. mellissi* were recorded on the High Centre Ridge amongst tree ferns (Key, Fowler & Pryce 2021) and amongst banana plants outside of the cloud forest habitat. This yearlong monitoring showed that his species does occupy many other plant species, both native and non-native (**see Appendix 2: Table 2.1** for a fill plant list) and at all vegetation levels (canopy to ground) of the habitat. Most noticeable *A. mellissi* have a preference for certain plant species, this included the endemic Black Scale Fern *Diplazium filamentosum* but this was the least preferred plant, this may have been due to limited number of plants on the sites. Whereas the three non-native plant species of Yellow Ginger Lily *Hedychium flavescens*, Yam *Colocasia esculenta* and also Banana tree *Musa acuminata,* which were in excess at all of the three sites, had a very high number of *A. mellissi* records. This could mean that other populations may occur in other valley areas where these plant species are present. The structural integrity of these plants is assumed to provides protection to this species from adverse environmental factors, including strong winds. It was noticeable at Rose Cottage that *A. mellissi* did not occur on the cliff side of the site where the wind is strongest, and all of the other sites where it

was found were fairly sheltered. It was also noted that areas with excessive sunlight and so further outside of canopy cover had less to no spiders.

However, the Rose cottage site still features a unique microhabitat situated at an elevation of 612 meters, found directly beneath the cloud forest of the Peaks National Park. This high-altitude position gives increased favourable environmental conditions, and it also has similar plant species (e.g. Banana, Yellow Ginger Lily) to both the lower altitude Oak Bank sites (Valley & Bridge).

Behavioural observations

In the past year of monitoring we have uncovered substantial new evidence that enhances our understanding of the ecology of *A. mellissi*. Observations have been made on the nocturnal feeding habits of adults, this includes predation on other spiders as well as unknown Diptera species. Hunting behaviour can be more often seen at night, as spiders are more active than in the day, when they can be found clinging closely to leaves in a resting state and if disturbed they tend to play dead falling to the ground. In the night *A. mellissi* creates a small web consisting of a few thin strands for hunting and then hang in an upside-down position to catch prey (**Appendix 3: Photographs 3.2 A** & **B**). Additionally, juveniles exhibit kleptoparasitic behaviour in the webs of other spiders to sustain themselves however, further studies are needed to confirm this behaviour.

The pronounced maternal traits displayed by female *A. mellissi* are interesting. They are frequently observed guarding and repairing their egg sacs in response to environmental disturbances (**Appendix 3: Photographs 3.2 B)**. Females of this species produce silky egg sacs situated on a stalk (**Fig. 1 C**), likely to give additional protection (**Appendix 3: Photographs 3.2 A**). Additionally, they have been seen departing from the egg sacs and returning to them in the evenings.

Although *A. mellissi* is observed all year round, our monitoring captured that they are most active in the spring and summer but experience a decline in October, mid spring, but only for a short time as the end of spring and November saw the highest count (**Graph 3**).

Conclusion

During the past year of monitoring, we have uncovered substantial evidence that enhances our understanding of A. *mellissi* ecology, observations have been made that indicate that the species is predominantly nocturnal and hunt at night – and can be more effectively surveyed at night using torchlight. The feeding habits of adults, includes predation on other spiders, as well as Diptera species. Additionally, juveniles are assumed to exhibit kleptoparasitic behaviour in the webs of other spiders to sustain themselves. The species was also found to be most active all year round but they are most active in the spring and summer (September to March). The pronounced maternal traits displayed by females are also of interest e.g. egg sac repair and protection. Furthermore, we have documented a shift from native cloud forest vegetation, such as the Black Scale Fern *Diplazium filamentosum* to thriving on non-native vegetation, with a strong preference for Yellow Ginger Lily *Hedychium flavescens* and Banana *Musa acuminata*.

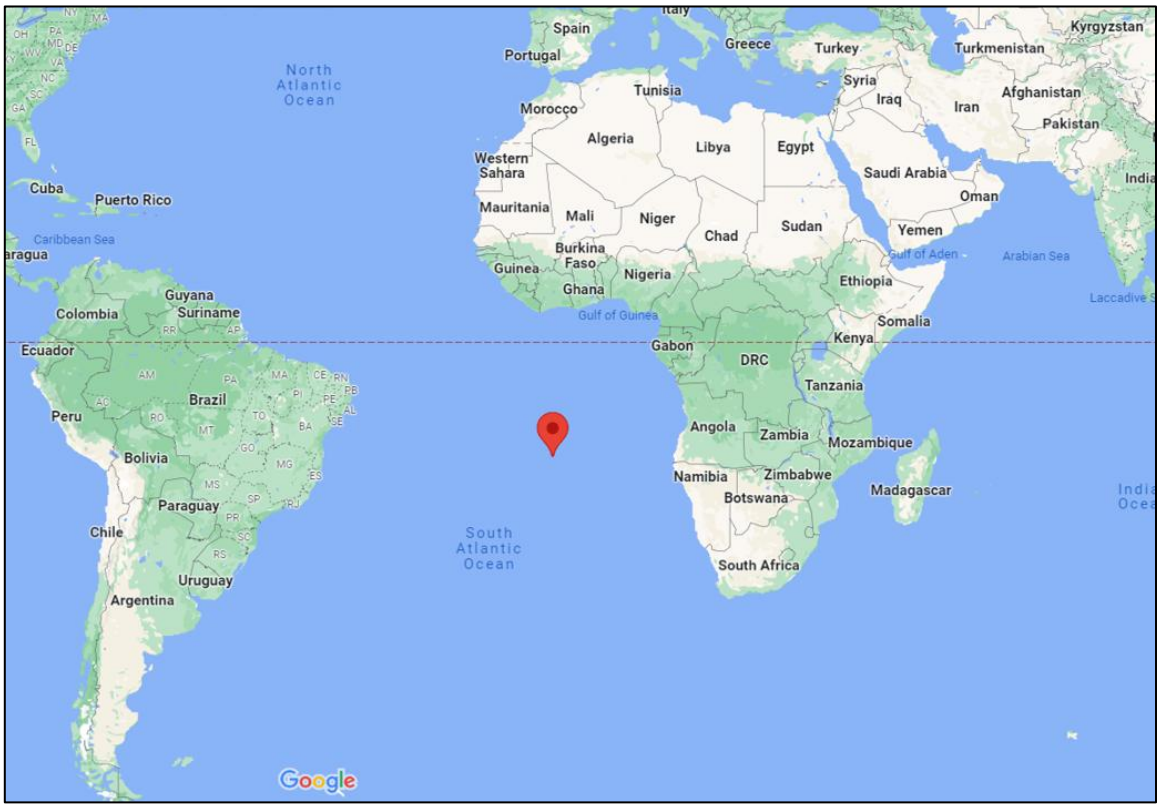
Recommendations

It is recommended that this species of spider continue to be monitored both at the current sites, but also with new monitoring efforts in the Peaks National Park as this is an understudied area for the species and it is important to understand its behaviour and ecology in this very different habitat. Our

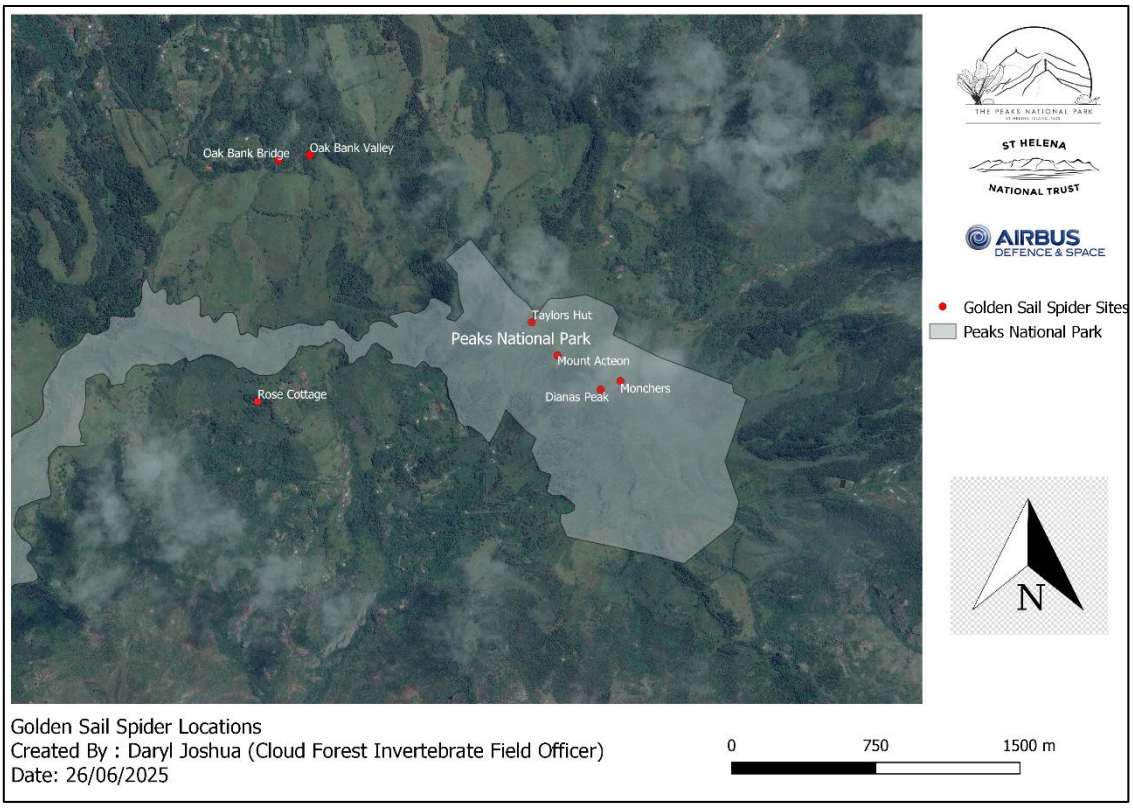
results have shown that monitoring could be focused on night surveys in the spring and summer for general population estimates. At lower elevations there is a need to maintain thick stands of Banana, Yellow Ginger Lilly, Yams and Black scale fern, particularly in high moist areas for this species. If an area where the spider occurs is to be destroyed, then a translocation to a suitable but unoccupied site could be assessed and considered. Currently, Oak Bank Valley supports a very significant population of A. *mellissi* and should be recognised as an important site for the species.

Appendix 1: Maps

Map 1.1: Show the location of St Helena in the Atlantic Ocean

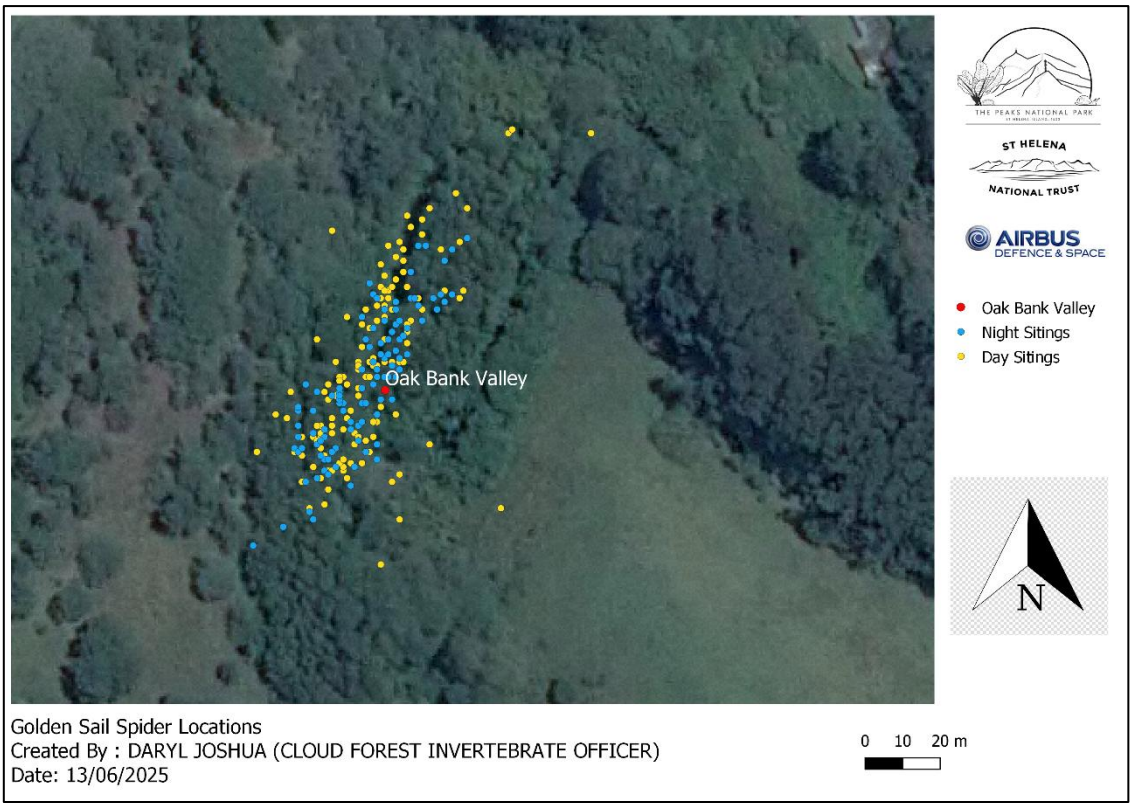


Map 1.2: Showing the scoping and monitoring sites

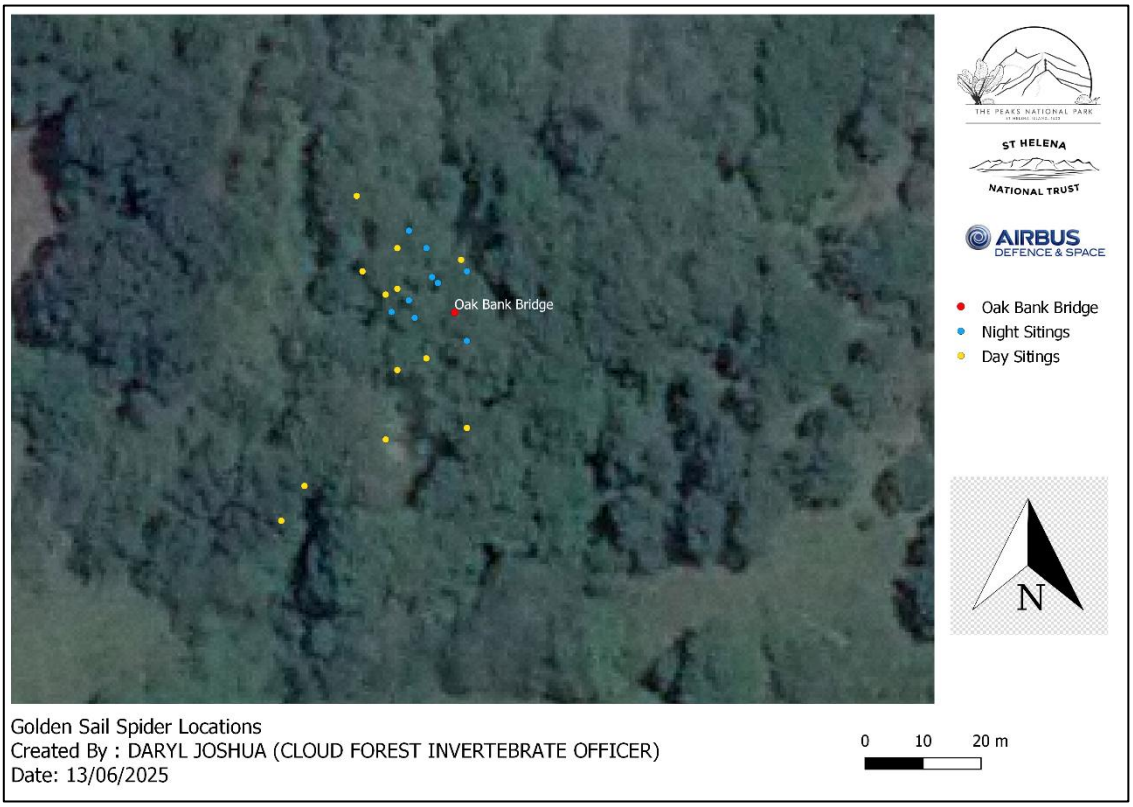


Map 1.3: Showing distribution of *A. mellissi* for Oak Bank Valley & Bridge and Rose Cottage

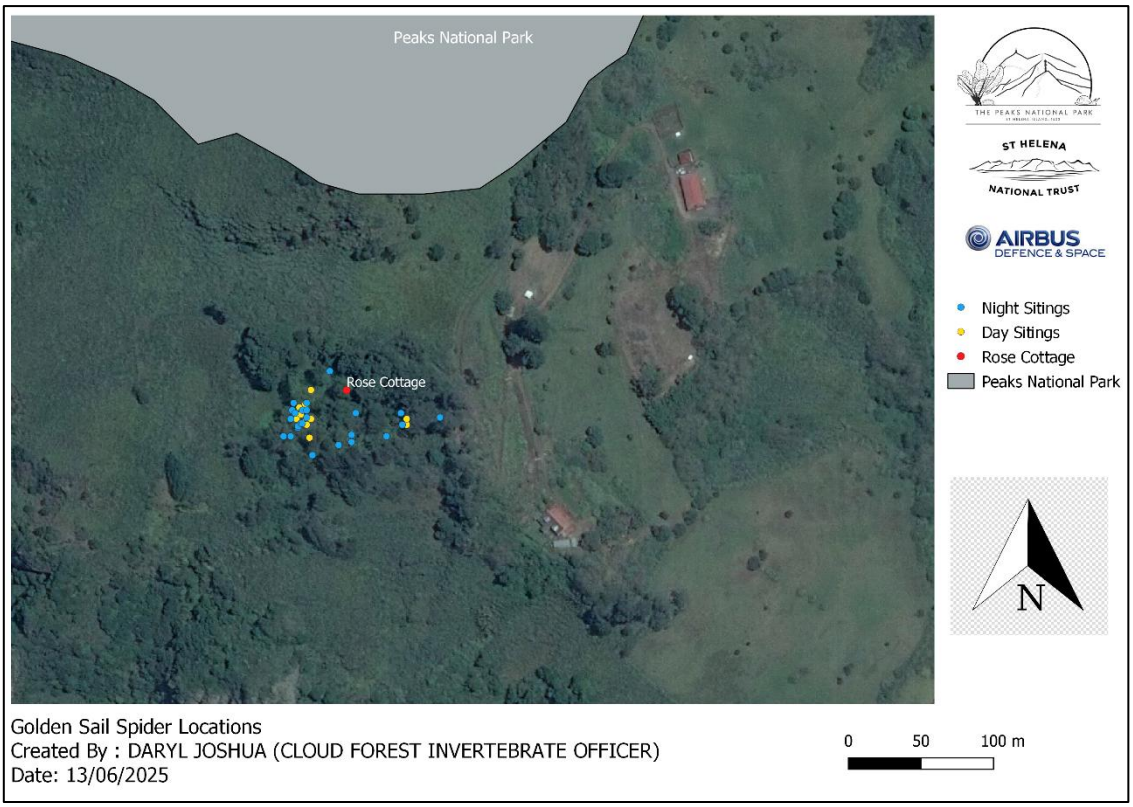
Oak Bank Valley



Oak Bank Bridge



Rose Cottage



Appendix 2: Tables

Table 2.1: A list of all plant species *A. mellissi* was found on in the monitoring sites

	Common Plant Name	Latin Name	Status	Adult	Male	Female	Juvenile	Egg sac New	Egg sac Old	Egg sac General	Total
Oak Bank Valley	Bamboo	Unknown	Unknown	1			1				**2**
	Bamboo palm	Unknown	Unknown	2			1				**3**
	Banana tree	Musa acuminata	Wild planted	53	9	3	75		1	25	**166**
	Black scale fern	Diplazium filamentosum	Endemic	7			7	4	5	9	**32**
	Blueweed/Tallow wine	Ageratum conyzoides	Invasive/native				1				**1**
	Cape yew	Afrocarpus falcata	Naturalised	5			6			1	**12**
	Fern	Unknown	Unknown				11				**11**
	Ladies petticoats	Brugmansia suaveolens	Naturalised	1			2				**3**
	Loquat	Eriobotrya japonica	Adventive	3			6				**9**
	Palm tree	Species unknown	Unknown	1			2				**3**
	Plume fern	Christtella parasitica	Probably native	3			28		2	3	**36**
	Silky oak	Grevillea robusta	Naturalised				2				**2**
	Thorn tree	Erythrina caffra	Naturalised	1							**1**
	Vine	Unknown	Unknown	2		3	2	4	2		**13**
	Whiteweed	Austroeupatorium inulifolium	Naturalised	2			1				**3**
	Wild bilberry	Solanum mauritianum	Naturalised		1		23				**24**
	Wild raspberry	Rubus rosifolius	Naturalised				1				**1**
	Yam	Colocasia esculenta	Wild planted	39	9	1	116		1	4	**170**
	Yellow ginger lily	Hedychium flavescens	Naturalised	28	3	2	105	5	7	22	**172**
Oak Bank Bridge	Banana tree	Musa acuminata	Wild planted	3			8			3	**14**
	Cape yew	Afrocarpus falcata	Naturalised				2				**2**
	Yellow ginger lily	Hedychium flavescens	Naturalised	6	2	3	12	2		1	**26**
Rose Cottage	Banana tree	Musa acuminata	Wild planted	11	4	6	16	2		3	**42**
	Coffee	Coffea arabica	Naturalised				3				**3**
	Rice paper plant	Tetrapanax papyrifer	Naturalised	1			8				**9**
	Wild bilberry	Solanum mauritianum	Naturalised	1			2				**3**
	Yellow ginger lily	Hedychium flavescens	Naturalised	4	4		5	1		1	**15**

Table 2.2: Survey schedule

	2024												2025	
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Date														
1 - 10														
11				Oak Bank - Valley					Oak Bank - Valley			Oak Bank - Valley		Oak Bank - Valley + Bridge 1/4ly
12						Oak Bank - Valley								Rose Cottage 1/4ly
13								Rose Cottage 1/4ly						
14		Oak Bank - Valley + Bridge	Oak Bank - Valley		Oak Bank - Valley + Bridge			Oak Bank - Valley + Bridge 1/4ly						
15													Oak Bank - Valley	
16							Oak Bank - Valley			Oak Bank - Valley				
17														
18														
19														
20														
21														
22		Rose Cottage 1/4ly			Rose Cottage 1/4ly									
23														
24														
25														
26											Oak Bank - Valley + Bridge 1/4ly			
27														
28														
29											Rose Cottage 1/4ly			
30														
31														

Table 2.3: Golden sail spider monitoring form – Monthly & Quarterly

Look at all vegetation between the 10 meters transect or radius and monitor within 10 minutes.

Day Survey	**Location:**	**Site:**
Date:	**Surveyors:**	
Weather: **Time:**	**Sola reading:** **Time:**	**Data logger start time:**

Plant species found on	**Adult**	**Juvenile**	**New Egg sac**	**Old Egg sac**	**Unknown Egg sac**	**Behaviour**

Night Survey	**Location:**	**Site:**
Date:	**Surveyors:**	
Weather: **Time:**	**Sola reading:** **Time:**	**Data logger start time:**

Plant species found on	**Adult**	**Juvenile**	**New Egg sac**	**Old Egg sac**	**Unknown Egg sac**	**Behaviour**

Appendix 3: Site photographs

3.1: Sites Photographs

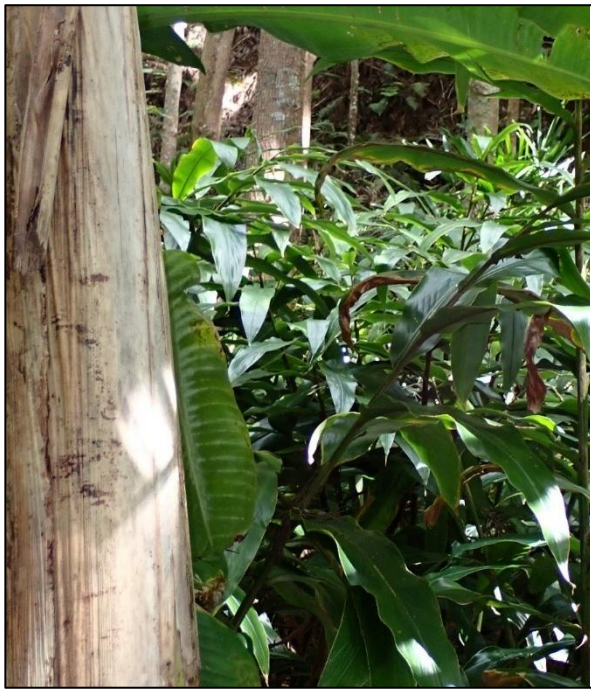
A. Oak Bank Valley (Transect 1 Upper Valley)

South 2024

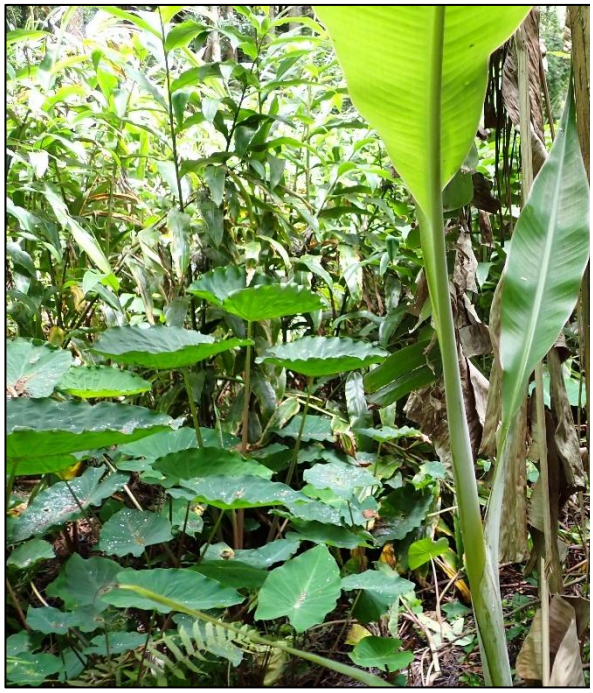
South 2025

West 2024

West 2025



North 2024



North 2025

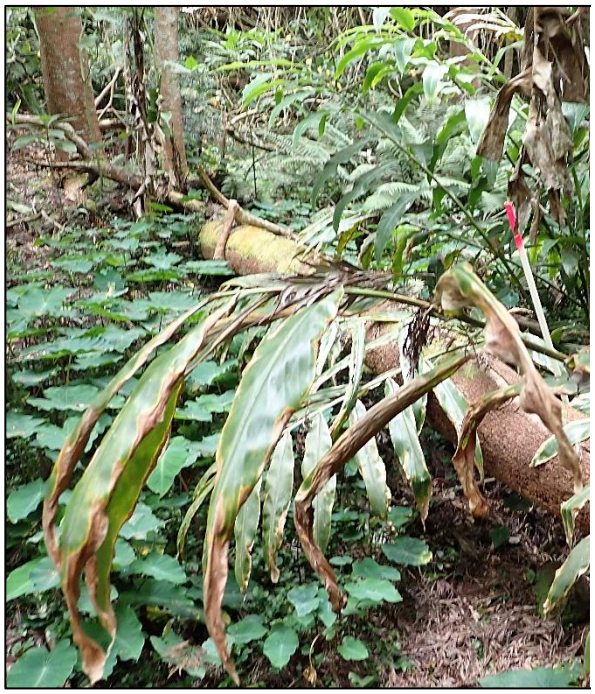
East 2024

East 2025

B. Oak Bank Valley (Transect 2)

South 2024

South 2025



West 2024

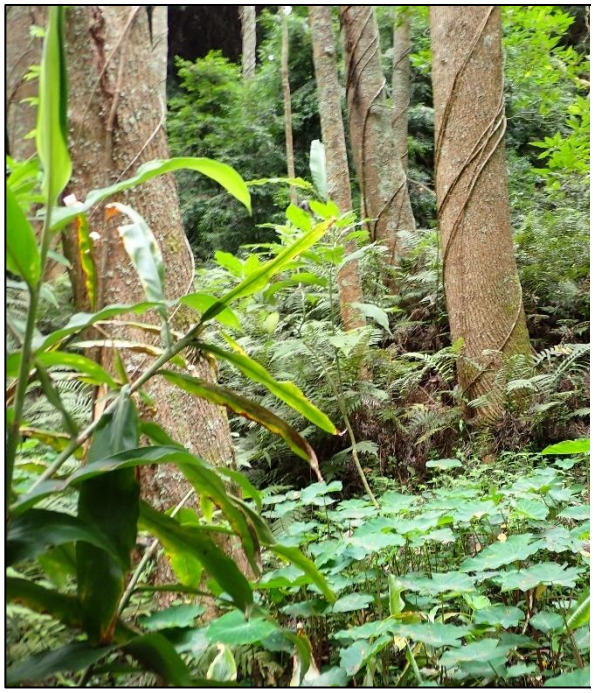
West 2025

North 2024

North 2025

East 2024

East 2025



C. Oak Bank Bridge

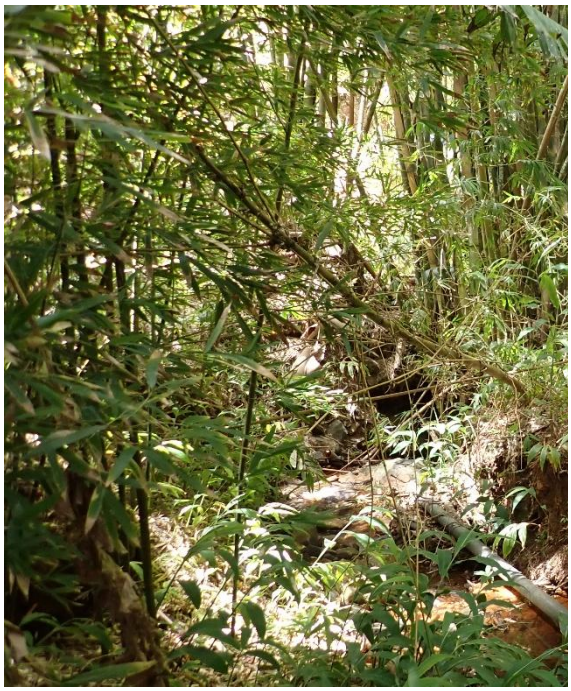
South 2024

South 2025

West 2024

West 2025

North 2024



North 2025

East 2024

East 2025

D. Rose Cottage

South 2024

South 2025

West 2024

West 2025

North 2024

North 2025

East 2024

East 2025

3.2: Photographs

A. Adult spider tending to its egg sac

B. Male spider on the underside of a Yam on its web

Appendix 4: Acknowledgments

This Cloud Forest Project '*Restoring St Helena's Internationally Important Cloud Forest for Wildlife, Water Security & People*' was funded by the UK Foreign, Commonwealth & Development Office (FCDO), and managed by the Royal Society for the Protection of Bird (RSPB), working in collaboration with local, and international partners. The local partners are the St Helena Government's (SHG) Environmental Management Division (EMD), Sustainable Development and Education departments and the St Helena Research Institute (SHRI), Connect St Helena and the Bottom Woods Met Office. The international partners are Arctium, the UK Centre for Ecology and Hydrology (CEH), the Royal Botanic Gardens Kew and Dr Quentin Cronk from the University of British Columbia (UBC).

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Annexes

Annex 1: Documents references

Document 1.1 'Monitoring of St Helena Cloud Forest Invertebrates'

Document 1.2 'Invertebrate Survey Baseline Report, Jan-May 2022

Document 1.3 Sherwood, D. 2022. *Preliminary results from Argyrodes mellissi surveys Oak Bank, Saint Helena, November 2022*. Report prepared for FCDO, Species Recovery Trust, St Helena National Trust, RSPB, and SHG.