INVERTEBRATE SURVEY REPORT

ST HELENA CLOUD FOREST PROJECT

Year 4, Jan to May 2025

ST HELENA NATIONAL TRUST

THE PEAKS NATIONAL PARK
ST HELENA ISLAND, 1502

Contents

This report has been produced as part of the St. Helena Cloud Forest Project 'Restoring St Helena's Internationally Important Cloud Forest for Wildlife, Water Security and People', funded by the UK Foreign, Commonwealth and Development Office (FCDO).

Photo credit: Liza Fowler

Introduction

Annual surveys of St Helena's cloud forest invertebrates have been completed under the St Helena Cloud Forest Project since 2021. A baseline report was produced following the year 1 (2021-22) survey, and subsequent annual survey reports have provided a comparative analysis against the baseline and preceding survey years. This update report includes year 4 survey results and analysis.

The methods utilised in these surveys have been conducted using the comprehensive methodology, details of which are available in the 'Monitoring of St Helena Cloud Forest Invertebrates' document (Key & Fowler 2023).

All surveys spanned the months of January to May, although delays attributed to access restrictions aimed at limiting the spread of high-risk pathogens and inclement weather conditions resulted in variances in timing across the years. Survey timings are documented in **Appendix 1, Table 1.2**.

The year 4 (2024-25) continued this work, including the focus on priority species with 32 endemic species identified in year 1 to represent the cloud forest fauna. These species serve as indicators to assess habitat quality through their abundance and distribution, enhancing our ecological knowledge, as many endemic invertebrates remain understudied. For detailed information on the targeted priority species, refer to the year 1 report Appendix 3: Table 3.2.

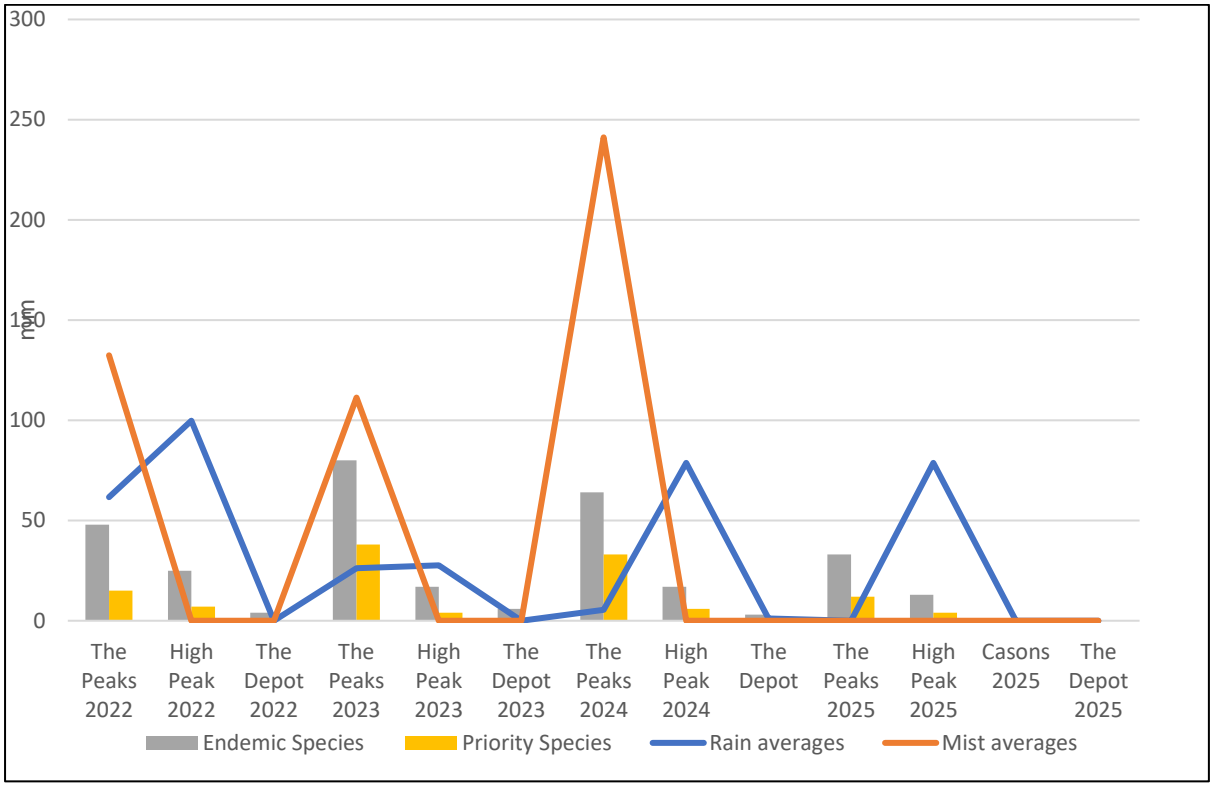
Results

This document reports on the results in year 4, compared to previous years with a particular focus on what plant species or habitat type the different endemic and priority endemic invertebrate species are utilising.

Weather

Weather equipment was installed by the project on the Central Ridge (Diana's Peak, Cason's and Stitches Ridge) to monitor how much mist and rainfall the cloud forest vegetation is intercepting compared to the non-native plants (Please see the year 1, report **Appendix 1: Map 1.6**)**.** Monitoring of the equipment is split between Connect Saint Helena Ltd and the Weather Station at Bottom Woods. Please see graphs below which shows rainfall and mist capture for all survey periods from 2022 to 2025. There appears to be a relationship between endemic and priority invertebrate species with the weather conditions particularly mist, with numbers higher when the mist levels are higher (see Graph 1) however, further investigations into the climate conditions need to be undertaken to make conclusions.

Graph 1: showing rainfall & mist (mm) at key sites between January and April 2022 and February to May 2025 during the invertebrate surveying periods with endemic & priority species present.



Identification levels achieved

In terms of identification, there were many individual invertebrates that were identified to species level, however, there were also many other invertebrates that could only be identified to Order, Family and Genus levels only, approximately 54% of invertebrates collected were not identifiable to species level out of the 2543 records collected and 1387 were unknown. Although the number of unknowns seems very high it doesn't impact the results in this report, as a good cross section of different invertebrate groups have been identified to species level plus the priority endemic invertebrate were chosen to show the value of the cloud forest habitat.

Invertebrate records

In terms of invertebrate abundance this year, 2543 records were collected slightly lower than in 2024 when the overall total was 2636, but only 8 sites were recorded compared to 9 sites and so the number of records would be lower. Therefore, year 2 (2023) still remains the highest year of abundance with 3054 invertebrates recorded from 10 sites.

Please see **Table 1** for more details on the individual invertebrate records by site.

Table 1: Showing individual invertebrate records by site, including status

Location	Sites	Endemics				Non-endemic				Unknown				2022 Total	2023 Total	2024 Total	2025 Total
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025				
Diana's Peak	14D1	19	77	27	49	9	5	50	43	143	214	161	177	**171**	**296**	**238**	**269**
	015D1	34	79	47	79	40	62	37	93	42	84	101	206	**116**	**225**	**185**	**386**
	096H1	52	64	44	154	63	85	105	86	94	163	165	186	**209**	**312**	**314**	**429**
	New 1	81	59	86	88	30	108	49	20	99	237	151	91	**210**	**404**	**286**	**200**
	New 2	43	69	55	40	47	49	52	48	58	85	119	88	**148**	**203**	**226**	**179**
	New 3	56	116	82	102	53	45	97	54	104	192	233	223	**213**	**353**	**412**	**382**
High Peak	Dell	48	44	39	122	208	139	97	53	191	647	188	260	**347**	**830**	**324**	**440**
	Ginger Patch	49	40	28	26	57	53	160	74	125	136	199	156	**231**	**229**	**387**	**258**
The Depot	Ledge	81				39				127				**247**	**0**	**0**	**0**
	Woodland	13	64	33		47	36	99		25	102	132		**85**	**202**	**264**	**0**
Totals		**476**	**612**	**441**	**660**	**593**	**582**	**746**	**471**	**1008**	**1860**	**1449**	**1387**	**1977**	**3054**	**2636**	**2543**

Invertebrate abundance records for endemics and priority invertebrates

Over the years fluctuations in abundance have occurred, with the total endemic invertebrate species and also priority species increasing and decreasing. In 2025, the total abundance for the endemic invertebrates was at its highest for the four survey years with 660 records (39 species, including 29 priority species), much higher compared to 441 (35 species, with 14 priority species) in 2024, even though one less site was surveyed. Also, higher than 2023 when 612 records of endemics (38 species, 14 priority species), and in 2022, 476 records represented by 51 species (13 priority species). There was a big fluctuation in overall endemics abundance and species, but consistency in priority species number.

The site with the highest endemic invertebrate abundance records in 2025 was Diana's Peak, 096H1 (non-native) with 154 individual records (also the site with the highest endemic abundance over all the survey years); whereas restored and native sites which had the highest records in the previous years. Interestingly, site 096H1 is a non-native site dominated with whiteweed, it appears that the woodiness of this non-native species allows it to retain high numbers of endemics, although not species richness.

Interestingly, there were 11 priority species that re-occurred throughout all survey periods 2022-2024 and 10 for 2025 (but only 8 sites surveyed and *Valenfriesia alutacea* was missing), and a few additional species were also recorded throughout this period. There were a mix of beetles, a woodlouse and leafhoppers (see **Table 2**). Additionally, two new priority beetles *Valenfriesia aenea* and *Valenfriesia bewickii* occurred in 2022, and a Golden sail spider *Argyrodes mellissi*, St Helena silver grass miner *Elachista trifasciata* and fungus beetle *Valenfriesia subfasciata* were recorded as additional priority species in 2023, with beetles *Valenfriesia aenea* and *Valenfriesia bewickii* in 2024, and weevil *Lamprochrus hedyotinus* and beetle *Longitarsus mellissi* in 2025, this highlighted the dynamic nature of the invertebrate populations within these ecosystems.

Table 2: Showing the same priority species and additional species recorded in 2022, 2023, 2024 & 2025.

	2022	2023	2024	2025
Same species present for each year	Acarodes gutta	Acarodes gutta	Acarodes gutta	Acarodes gutta
	Argaterma alticola (Juv.)	Argaterma alticola	Argaterma alticola	Argaterma alticola
	Argaterma multisignata	Argaterma multisignata	Argaterma multisignata	Argaterma multisignata
	Helenoconcha relicta	Helenoconcha relicta	Helenoconcha relicta	Helenoconcha relicta
	Homoeodera globulosa	Homoeodera globulosa	Homoeodera globulosa	Homoeodera globulosa
	Nehela vulturina	Nehela vulturina	Nehela vulturina	Nehela vulturina
	Pseudolaureola atlantica	Pseudolaureola atlantica	Pseudolaureola atlantica	Pseudolaureola atlantica
	Sanctahelenia sanctaehelenae	Sanctahelenia sanctaehelenae	Sanctahelenia sanctaehelenae	Sanctahelenia sanctaehelenae
	Valenfriesia alutacea	Valenfriesia alutacea	Valenfriesia alutacea	
	Valenfriesia rufopicta	Valenfriesia rufopicta	Valenfriesia rufopicta	Valenfriesia rufopicta
	Vernonia wollastoniana	Vernonia wollastoniana	Vernonia wollastoniana	Vernonia wollastoniana
Additional species recorded for each year	Valenfriesia aenea	Argyrodes mellissi (Juv.)	Elachista trifasciata	Elachista trifasciata
	Valenfriesia bewickii	Elachista trifasciata	Valenfriesia aenea	Lamprochrus hedyotinus
		Valenfriesia alutacea	Valenfriesia bewickii	Longitarsus mellissi
		Valenfriesia subfasciata		Valenfriesia aenea

Species records and specifically endemic and priority invertebrates

In 2025, 69 invertebrate species were recorded. This was a decrease from 2024, when 71 species were noted, but the total number of endemic species has been very similar over the four years of surveying. However, 2025 was the year with the highest number of endemic species, 39 compared to 2024's 35 endemic species (25% of the total), and 38 endemic species recorded in both 2023 (33%) and 2022 (30%). For priority endemic species, 2025 saw a decrease to 14 compared to 15 in 2024, with 14 again in 2023, and 13 in 2022. Historically, about 120 endemic invertebrate species have been noted in the cloud forest habitat, but recent surveys have captured less than a third of these. See **Table 3** for details on the other status categories.

Table 3: 2022, 2023, 2024 & 2025 Invertebrates species recorded in their status by sites

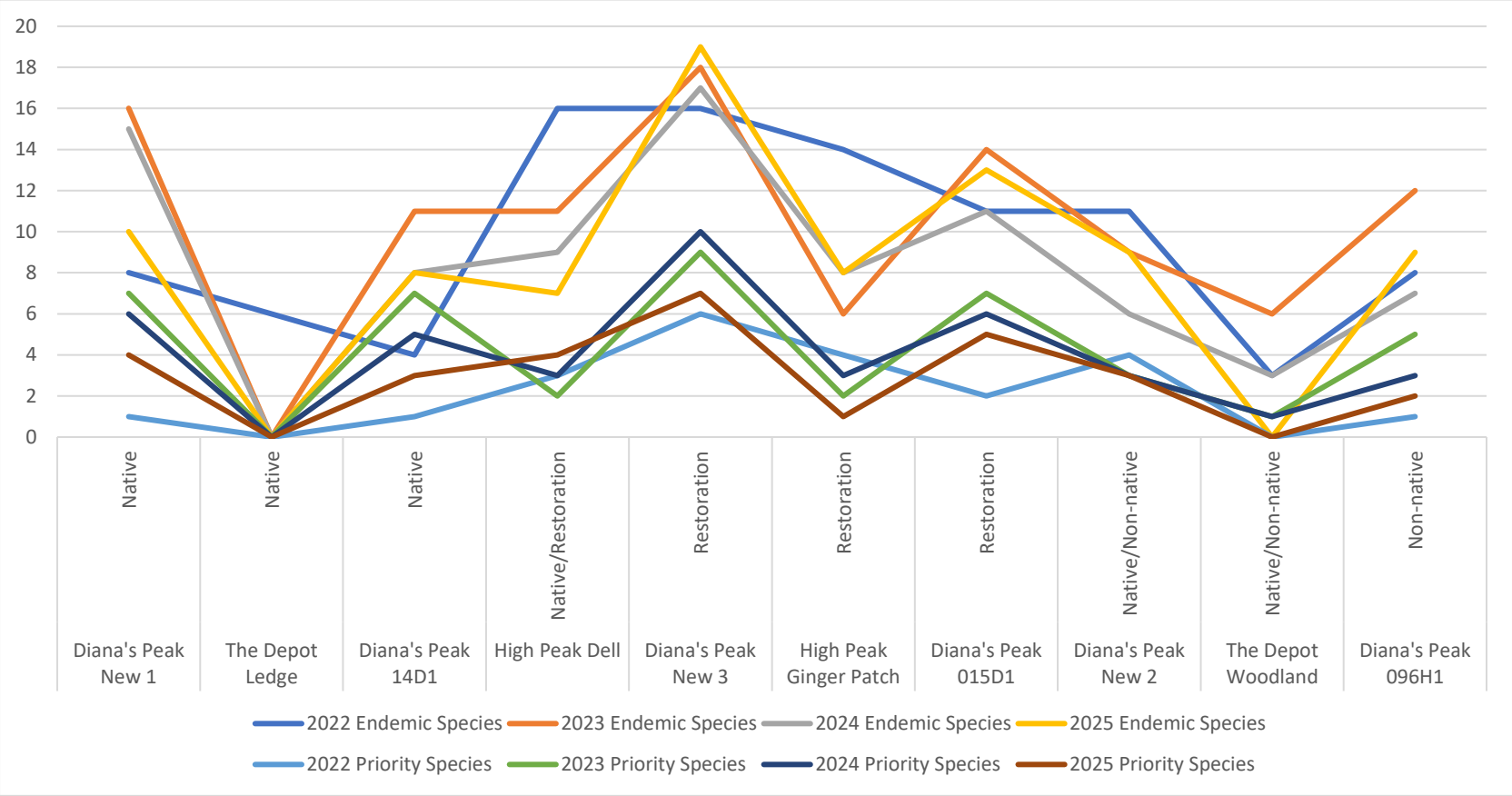
Location	Sites	Endemic				Priority endemics				% of total endemic Priority invertebrates				Non-endemic				Unknown				2022 Total	2023 Total	2024 Total	2025 Total
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025				
Diana's Peak	14D1	3	11	8	8	1	7	5	3	13	30	31	28	5	1	4	3	15	18	14	18	**24**	**37**	**26**	**29**
Diana's Peak	015D1	8	14	11	13	2	7	6	5	23	27	31	33	11	13	11	8	14	18	13	18	**35**	**52**	**35**	**40**
Diana's Peak	096H1	5	12	7	9	1	5	3	2	14	26	18	22	11	10	12	9	20	19	19	22	**37**	**46**	**38**	**41**
Diana's Peak	New 1	7	16	15	10	1	7	6	4	25	36	38	29	6	6	8	5	14	16	16	19	**28**	**45**	**39**	**34**
Diana's Peak	New 2	9	9	6	9	4	3	3	3	26	26	19	29	8	5	5	5	14	18	20	16	**35**	**35**	**31**	**31**
Diana's Peak	New 3	14	18	17	19	6	8	10	7	31	37	41	51	10	8	8	4	15	15	16	13	**45**	**49**	**41**	**37**
High Peak	Dell	12	11	9	7	2	2	3	4	24	24	19	23	18	13	19	7	19	20	20	16	**51**	**46**	**48**	**30**
High Peak	Ginger Patch	12	6	8	8	4	2	3	1	29	17	19	22	13	9	11	8	13	18	23	19	**42**	**35**	**42**	**36**
The Depot	Ledge	2	0	0	0	0	0	0	0	9	0	0	0	7				13			0	**22**	**0**	**0**	**0**
The Depot	Woodland	2	6	3	0	0	1	1	0	9	17	14	0	8	11	7		12	17	12	0	**22**	**35**	**22**	**0**
Total number of species		**38**	**38**	**35**	**39**	**13**	**14**	**15**	**14**					**39**	**30**	**31**	**21**	**40**	**38**	**39**	**37**	**75**	**68**	**70**	**69**

Habitat types relative to endemic and priority species/abundance relationship

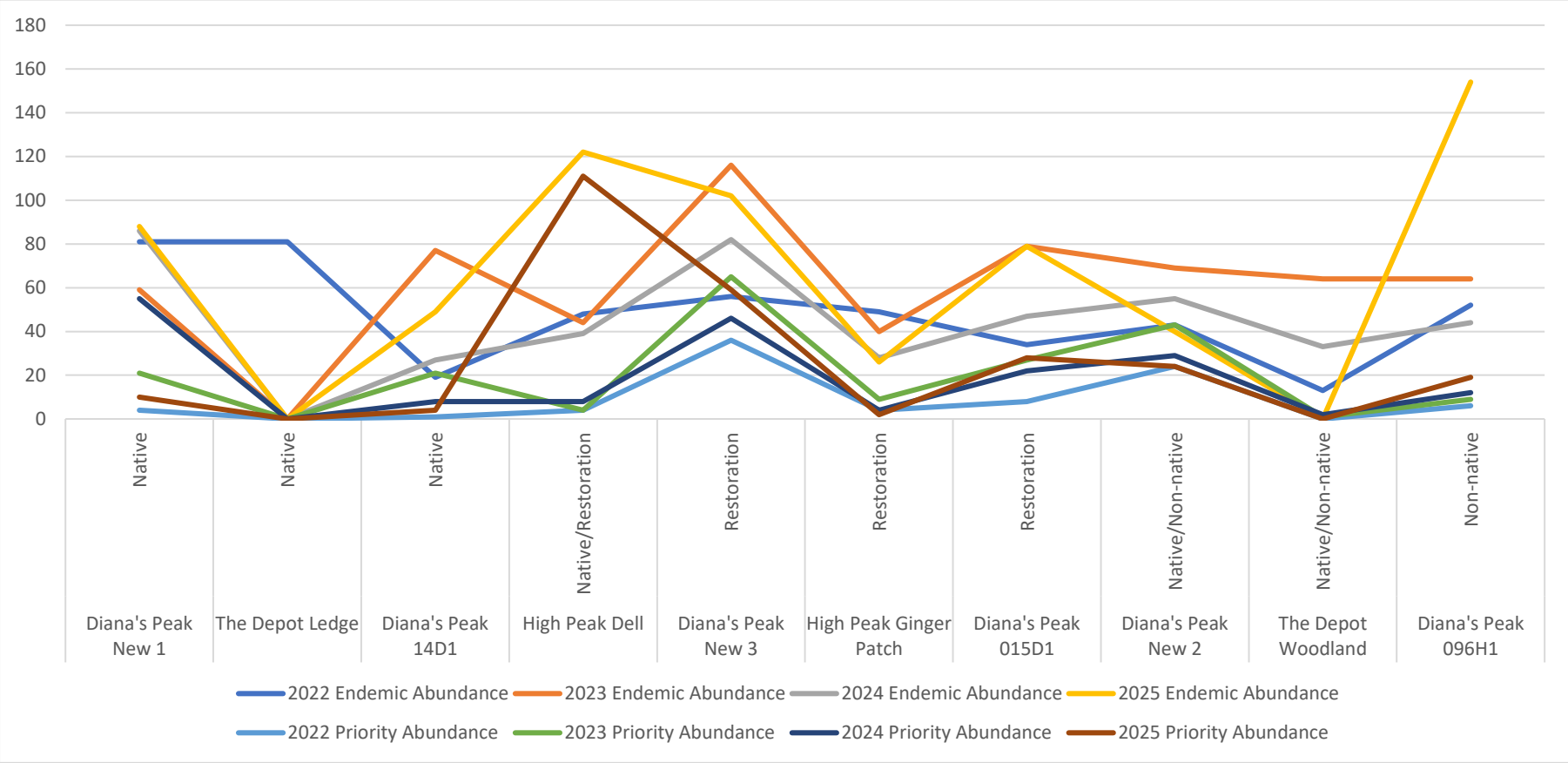
Throughout the five-year survey, the restoration sites have consistently supported a higher number of endemic invertebrates in terms of species richness and abundance compared to native and non-native habitats. Although some fluctuations were observed between 2023 and 2025, the overall trend shows that restoration sites are most effective in sustaining endemic invertebrate populations (**Graph 3**). For instance, 'Diana's Peak, New 3', a restoration site, recorded very high numbers of endemic species for all survey years (**Graph 2**). The 'Diana's Peak, New 3 restoration' site had an overall total of 29 endemic species from various orders: woodlouse, beetles, spiders, true bugs, snails, moths, centipedes, and flies.

Across all surveys, the priority endemic species represented a significant portion of the total endemic species (**Graph 2**). Priority species were found at all 9 surveyed sites (8 in 2025) throughout 2022-2025 (**Graph 2**). In all four survey years, the abundance of priority and endemic species was parallel with higher numbers of endemic species in the restoration sites (High Peak Dell, Ginger Patch, and Diana's Peak, New 3) (**Graph 3**).

Graph 2: Showing the relationship between habitat types and endemic and priority species



Graph 3: Showing the relationship between habitat types and endemic and priority abundances



Please see **Appendix 3: Table 1.3: A-D** for more details on what sites the priority endemic species were found on in relation to the habitat types.

Vegetation

The plant species identified were categorized as either endemic, native, naturalized (non-native), probably native, or forestry species (following **Lambdon, 2012**). However, some plants were only identifiable to the family level, such as grasses, and were therefore recorded as unknown. The invertebrate records corresponding to each of the plant categories for the years 2022-2025 are detailed in **Table 4**. 2025 records from plants were generally lower, particularly compared with 2024.

Table 4: Showing plant status and total invertebrates recorded on them from the 2022, 2023, 2024 & 2025 surveys

Plant Status	Invertebrate abundance records				Invertebrate species records				Invertebrate endemic abundance records				Invertebrate endemic species records			
	2022	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**
Endemic	1383	1891	4662	1677	115	61	92	57	394	436	1094	477	44	36	51	33
Naturalised/non-native	258	291	639	256	39	25	39	21	39	66	128	99	11	13	18	13
Combined status	181	717	2865	461	43	35	67	28	19	96	151	68	9	20	31	12
Unknown	116	87	242	56	30	8	20	9	16	8	36	10	6	4	8	5
Probably Native	23	19	45	30			5	3	3	2	5	4	3	1	2	1
Native	16	35	84	48			12	4	5	1	13	2	5	1	6	2
Forest species	0	11	17	14	0	5	5	2	0	2	5	0	0	2	2	0
Total	**1977**	**3051**	**8554**	**2542**	**227**	**134**	**240**	**124**	**476**	**611**	**1432**	**660**	**78**	**77**	**118**	**66**

Endemic plants

Endemic plants have demonstrated significant importance for all invertebrates, with both native and non-native plants providing a habitat, but with a recorded increase in the total abundance of invertebrates on endemic plants in previous years. In 2025 invertebrate abundance on endemic plants was much lower at 1677, compared to 2024 at 4662 records. In terms of the endemic plant species in 2025, 57 invertebrate species were recorded compared to 92 in 2024, and the highest number of invertebrate species was 115 in 2022. For further details, please refer to **Table 4**. There is quite a wide variation, but it is important to note that the total number of species can be influenced by factors such as seasonality and weather conditions.

In 2025, the St Helena tree fern was again the plant species with the highest number of endemic invertebrates and species, with 120 individual endemic invertebrate records and 17 endemic species recorded. The invertebrate records for this plant were generally lower than in previous years (**Table 5**), consistent with a general overall decrease in invertebrate records on plants in 2025.

Other plant species, particularly the endemic tree species, also recorded lowers numbers of endemic invertebrate records, although these figures do generally fluctuate throughout the years. Notably, in 2025 in terms of invertebrate records in order of highest to lowest were: St Helena Tree Fern 120, Dogwood 284, Brown scale fern 199, Black cabbage tree 170, Redwood 80, Diana's peak grass 42, Whitewood 30, Lays back fern 13, Lobelia 5, High Peak grass 0, Hybrid Jellico 0, Black scale fern 0, Plastic fern 0, and She cabbage tree 0. (**Table 5**).

Table 5: Showing single endemic plant species

Plant Common Name		Invertebrate records				Endemic Invertebrate records				Number of endemic species			
		2022	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**
Single plant species	Black cabbage tree	121	72	268	170	48	20	94	59	11	7	18	8
	Black scale fern	112	287	223		27	85	145	54	12	10	18	10
	Brown scale fern	112	171	457	199	27	27	95	70	5	8	16	12
	Diana's Peak grass	27	84	188	42	9	17	36	16	5	6	13	5
	High Peak grass	16	44	138		6	32	48		2	4	5	
	Hybrid Jellico	2		2		2		1		1		1	
	Lays back fern		5	14	13		1	5			1	3	
	Lobelia	2		1	5				4	1			1
	Plastic fern		1	2									
	She cabbage tree	20	1	27		9	1	15		3	1	3	
	St Helena dogwood	57	234	326	284	27	3	39	127	7	2	8	11
	St Helena redwood	121	45	213	80	15	15	41	2	7	6	10	1
	St Helena tree fern	400	580	1333	498	109	162	353	120	17	21	28	17
	Whitewood	114	74	245	30	50	25	91	13	15	6	14	5

What priority invertebrate species are using only one endemic plant species

Out of 32 priority invertebrate species, only 17 were found on a specific endemic plant 2025. The most common species on one plant was the beetle *Valenfriesia aenea* on the St Helena dogwood. Other priority species occupied various plants for example Vulturine leafhopper *Nehela vulturina* was found on Black cabbage tree, St Helena dogwood, St Helena redwood, St Helena tree fern, Whitewood, Brown scale fern and Diana's Peak grass This data helps fill ecological knowledge gaps, though some species like the Golden sail spider are known to inhabit multiple plant types.

Non-native plant species and invertebrates, endemic or non-endemic species

Whiteweed continues to be the non-native plant species that supports the highest abundance of endemic invertebrate fauna (**Table 7**), however, overall, the records on non-native plants were much reduced in 2025. These records extend to various endemic invertebrates, consistent with those identified between 2022 and 2025. These tend to be the more common endemics and include spiders (St Helena Prowling Spider *Tecution planum* and Worthy long-jawed orb weaver *Leucauge igna*), beetles (*Homoeodera globulosa* and Melliss's tumbling flower beetle *Glipostenoda mellissiana, Valenfriesia aenea* & *Valenfriesia alutacea*,), flies (Yellowest doli-fly *Campsicnemus flavissimus* and *Limnophora helenae*), true bugs (Brown-headed plant bug *Orthops mutabilis*, Claret-spotted plant-bug *Neisopsallus vinaceus, Ilburnia dianae* and Rainbow damsel bug *Vernonia wollastoniana*), a moth (Divided tineid *Opogona divisa*), a grasshopper (St Helenian spurred grasshopper *Tinaria calcarata*), and a snail (Blushing snail *Succinea sanctahelenae*). Notably, in 2025, there was an observed abundance of 81 invertebrate species records on non-native plants, which is much higher than previous years but with only 13 endemic species (**Table 10**).

Table 7: Showing number of all invertebrates and endemic invertebrate records and abundances on single non-native plant species.

	Invertebrates				**Invertebrate species**				**Endemic Invertebrates**				**Endemic Species**			
	2022	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**	**2022**	**2023**	**2024**	**2025**
African olive	17				1				2			2	2			
Arum lily		1	1	1		1	1	1		1	1			1	1	1
Bilberry tree	3	14		5		3		1	1	1			1	1		
Blackberry		7	4	4		1	2	1		3	2			1	1	
Cow grass	3	1	11	10	2	1	2	3	2	1	1	6	1	1	1	2
Kikuyu grass	115	1	6	4	3	1	1		3	1	1	6	2	1	1	
New Zealand flax	69	14	8	43	6	4	1	2	23	10	2	4	1	2	1	1
Running sedge	2				2											
Soft rush	1				1				1				1			
Trailing fuchsia	12		1	1	1			1				1				1
Whiteweed	36	110	52	139	6	17	8	14	7	38	15	62	3	10	1	8
Total	**258**	**148**	**83**	**207**	**22**	**28**	**15**	**23**	**39**	**55**	**22**	**81**	**11**	**17**	**6**	**13**

Invertebrate habitat assessment

During the survey in 2024 an invertebrate habitat assessment of all the sites were undertaken and this was repeated in 2025. This specially designed assessment allows the recording of invertebrate specific habitat attributes within the cloud forest, relative to endemic invertebrate species needs (flora, threats, structure, deadwood etc.), in order to assess the relative quality of the sites for invertebrates. The details of this methodology can be found in the updated Monitoring of St Helena's Cloud Forest Invertebrates document, Fowler 2023. The top sites for species richness (both endemic and priority species) are restoration sites on Diana's Peak New 3 and D1501, however the restoration sites on High Peak the Dell and Ginger Patch are a lot less successful with much lower richness. When considering the habitat assessment data there are no clear patterns between these sites for many assessment criteria. However, there are some worrying indications that tree regeneration in some of the higher quality Diana Peak sites is very low, therefore although these sites are of good quality currently for endemic invertebrates this might not be sustained, as the canopy and host trees won't be replaced. This will particularly affect endemic invertebrate species that might be a specialist of a certain plant or requires mature canopy trees for moisture, resources or microclimate. However, the restoration sites on Diana's and High Peak all have good levels of canopy species and this appears to be a key factor in the quality of a site. Also, when compared to the Depot woodland which has a low species richness overall, the habitat assessment last year showed that it had no flowering canopy species and no tree ferns present which in this case shows that the quality of the habitat is valuable for the endemic invertebrates. Some sites warrant further investigation. For instance, the Dell at High Peak shows very low numbers of endemic invertebrate species, despite the presence of several flowering canopy trees and no other notable limiting factors identified in the habitat assessment. However, High Peak is a small, isolated fragment of forest, and so this may be restricting its capacity to support populations of endemic invertebrates.

Discussion

The cloud forest represents a distinctive and varied remnants habitat, spanning a 16-hectare area along the high central ridge. The largest expanse of cloud forest is found at Diana's Peak, followed by High Peak, with the Depot hosting the smallest and most fragmented section. Approximately 120 endemic invertebrate species have been recorded exclusively from the cloud forest habitat, while over 400 endemic invertebrate species have been documented on St Helena. Out of the 120 endemic invertebrate species from the cloud forest, thirty-two were identified as representative priority species. These species belong to various orders, including Hemiptera, Coleoptera, Crustaceans, Lepidoptera, Mollusca, and Araneae.

Total species and individual records for 2025

The total number of overall invertebrate records (abundance of invertebrates) in 2025 was slightly lower when compared to 2024 with over 2500 records and numbers of endemic records plus number of endemic species were both higher (see Graph 2 and 3). This fluctuation in the overall invertebrate abundance and also species richness is likely be due to the invertebrates being surveyed at different times within the surveying period, life cycles, or even due to climatic differences as stated in the previous reports.

Habitat type comparisons: Native, non-native and restoration

This year the restoration sites still continue to demonstrate high levels of endemic invertebrate species richness and abundance particularly those found on Diana's Peak. However, this year a non-native site Diana's Peak 096H1 displayed unusually high levels of endemic invertebrate abundance but still had lower levels of endemic species richness, with the Blushing sail *Succinea sanctahelenae* had the highest abundance on Whiteweed on this site. Although it was notable that the restoration site, Diana's Peak New 3, which is also a corridor site has consistently proven effective in supporting endemic invertebrates. On this site species such as the Spiky Yellow Woodlouse *Pseudolaureola atlantica* are successfully recolonising and maintaining stable population levels. The non-native site 096H1 could be considered for restoration and a possible area for a corridor as it is demonstrating high levels of endemic species abundance.

Of course, all the sites are very different as proven by the native/non-native sites at the Depot which had very low abundance and species records in the previous reports. Unfortunately, the Depot wasn't surveyed this year but in other years the numbers of endemic and priority species have been low. However, the other native/non-native sites of Diana's Peak New 2 are still well established with records of some priority endemic species. At the Depot several factors could be contributing to low numbers of priority/endemic species, for example endemic flora might have declined to a point where the habitat or specific plant species can no longer support the same range and abundance of invertebrate species, also this is a very small forest fragment and so edge effects will be prominent. As a result, invertebrates with more specialised or specific structural niche needs, food(s) or microclimate(s) will have been lost. When compared to other sites The Depot woodland has no endemic canopy tree species, such as cabbage trees nor Whitewood, St Helena dogwood or St Helena tree ferns on it, also very little endemic scrub and herbs such as Lobelia and Jellico species – this area needs restoration. It is also noticeable that High Peak restoration sites do less well compared to Diana Peak restoration sites, this again could be due to the fact that High Peak is a much smaller fragment when compared to Diana's Peak and so is in urgent need of more restoration effort.

Endemic vegetation and invertebrate associations

Priority Species

The ecological requirements of the priority invertebrate species are continuing to be better understood, especially for which species of plants they are using. This provides a greater understanding of conservation needs for each species, for example, increasing the propagation and planting of certain endemic plant species in certain locations will increase their numbers and distribution.

In the terms of records from endemic plants, the abundance and species richness on plants was surprisingly low this year. The St Helena tree fern and tree species Whitewood, St Helena dogwood and the Black cabbage tree continue to support the highest number of endemic invertebrate species, including many of the priority species. In addition to these plant species, other endemic plants e.g. the Diana's Peak grass are showing that they are also supporting very high numbers of endemic and priority invertebrate species. Overall, the endemic plant species are of the highest value to the endemic invertebrates in this ecosystem; therefore, the propagation of all endemic plant species, even

those that seem to be of little importance should always be integrated into nursery work, even on a small scale. Plant specific sampling indicates that the canopy plant species as well as ferns seem to be playing a vital role in the cloud forest ecosystem for certain invertebrate assemblages and their survival (see data in (**Table 5**).

The priority species were again confirmed to be good proxies for the endemic species and monitoring using these species should continue into the future as they are helping to show the benefits of using this method. Of the 32 priority species, 18 of these were recorded from all of the surveyed sites for all years – the priority list should be streamlined to include only these species. Please see Table 7 for a summary of each of the 18 priority species and the plant(s) they were found on. The table below illustrates both priority invertebrate species and their associated plants, starting to show the relationship between them, this information can be used in the future as a reference for habitat management. (See data in (**Table 7**).

Table 7: Show a summary of the 17 priority species and the plant(s) they were found on

Taxon group	Invertebrate name	Invertebrate and plant information
Araneae	**Golden sail spider** ***Argyrodes mellissi***	So far only juveniles of this iconic and charismatic spider have been found on a number of different fern species in the cloud forest habitat. These ferns include both endemic and native species, the endemic St Helena tree fern, Brown scale fern and native Sticky fern. This is not uncommon for this spider species to occupy other plants including non-native, for example they are known to occupy banana plants (**Key, Fowler & Pryce 2021**) and are also found outside of the cloud forest extent. An ecology study has been implemented through this project, and a report will follow on completion of the study in June 2025.
Hemiptera	**Vulturine leafhopper** ***Nehela vulturina***	This species was found on a variety of endemic plant species, which include 4 tree species: Black cabbage tree, St Helena dogwood, Whitewood and St Helena redwood and ferns St Helena tree fern & Brown scale fern and the Diana's Peak grass. The Vulturine leafhopper is known to be fairly common on many plants, especially the endemic Jellico. The nymph is partly subterranean and is suspected to have an association with Black cabbage tree (**Key, Fowler & Pryce 2021**). However, the nymphs were also recorded from many other endemic species: the Black cabbage tree, St Helena tree fern, Brown scale fern and Diana's Peak grass during these surveys.

	Coarse stained-glass leafhopper ***Argaterma alticola***	The adults were found on the endemic St Helena tree fern, Brown scale fern and Diana's Peak grass and non-native species of Cow grass, Blackberry & New Zealand flax as well as the native Sticky fern, and the juveniles were found on other endemic plant species, including Black cabbage tree, St Helena tree fern, Diana's Peak grass and the native Sticky fern & invasive New Zealand flax. As juveniles have undeveloped wings, it is possible that they are using other plant species to move about as they only have the ability to hop short distances. There is another species in the same genus that is common on endemic St Helena tree fern (**Key, Fowler & Pryce 2021**) *Argaterma multisignata*, see below for its summary.
	Fine stained-glass leafhopper ***Argaterma multisignata***	The adults of this species were found on St Helena tree fern (**Key, Fowler & Pryce 2021**) Brown scale fern, Lays back fern, and the non-native Cow grass, New Zealand flax and Whiteweed, plus Buck's-horn and Sticky fern which are native plant species. Juveniles were recorded from the St Helena tree fern as well as, Cow grass & Field sedge (both naturalised). *Argaterma multisignata* seems to be using more diverse plant species than previously thought, and like other *Argaterma* the juveniles are only able to hop short distances.
	St Helenian golden leafhopper ***Sanctahelenia sanctaehelenae***	The adults of this species are known to inhabit the St Helena tree fern (**Key, Fowler & Pryce 2021**). However, the adults were also recorded on other endemic plant species, the Black cabbage tree and Brown scale fern, the naturalised plant species Blackberry and Plume fern which is probably native. The adult of this species can fly, so it's not unusual for them to be on other plant species when disturbed. The nymphs, however, were recorded on the St Helena tree fern, and also St Helena redwood and St Helena dogwood.

	Rainbow damsel bug ***Vernonia wollastoniana***:	Adults were found on a variety of endemic plant species, the St Helena tree fern, Black and Brown scale fern & Lays back fern, and Diana's Peak grass and the non-native Whiteweed and Plume fern (probably native) and naturalised Cow grass & Wild bilberry. The nymphs were also found on the St Helena tree fern, Black and Brown scale fern and non-native Whiteweed and Cow grass and native Buck's-horn & Sticky fern and Plume fern which is Probably native.
	Hemiptera notes: The Vulturine leafhopper *Nehela vulturina*, Coarse stained-glass leafhopper *Argaterma alticola*, Fine stained-glass leafhopper *Argaterma multisignata*, Fine stained-glass leafhopper *Argaterma multisignata* and St Helenian golden leafhopper *Sanctahelenia sanctaehelenae* are all from the leafhopper family, and it appears that they are utilising many other plants than previously recorded. However, as a plant feeder species, this doesn't mean that they haven't got a specific host plant. As adults, they have more advanced mobility than the nymphs, therefore, the adult flight is greater that enables them to move greater distances in search of their preferred food plant(s). However, further ecology studies are needed to find out whether they are host specific or not. The Rainbow damsel bug *Vernonia wollastoniana* is not a plant feeder, but a predatory bug and was found on many plants, which wouldn't be unusual if they need to seek prey.	
Coleoptera	**Fungus beetle** ***Acarodes gutta***	This fungus beetle is usually found on dead cabbage tree leaves (**Key, Fowler & Pryce 2021**) however, they were found on many other endemic plant species, including the Black cabbage tree, St Helena redwood, Black and Brown scale fern & St Helena tree fern, St Helena dogwood, Whitewood and Diana's Peak grass. They were also found on the non-native plant species Cow grass and Field sedge, the native Sticky fern and Feather-Moss (unknown)
	Fungus beetle ***Homoeodera globulosa***	This fungus beetle has been previously recorded on St Helena tree fern (**Key, Fowler & Pryce 2021**), but they were found on a wider range of plant species, which includes the endemic Black cabbage tree, Whitewood, Brown scale fern & St Helena tree fern, Lays back fern, Diana's and High Peak grasses and the non-native plant Whiteweed, Cow grass, Kikuyu grass and Field sedge, plus native species of Buck's-horn and Sticky fern. There were also a sedge and grasses that couldn't be identified which have an unknown status.

	Fungus beetle ***Valenfriesia aenea***	This fungus beetle was previously found on the deadwood of Cabbage trees (**Key, Fowler & Pryce 2021**); the species of Cabbage trees that they were recorded from were Black and She cabbage trees, St Helena dogwood and also Whitewood and Brown scale fern in these surveys. They were also found on the non-native Whiteweed and Feather-Moss (unknown).
	Fungus beetle ***Valenfriesia alutacea***	This fungus beetle usually occurs on St Helena tree fern (**Key, Fowler & Pryce 2021**); however, they were recorded from a wider range of other species, including the endemics Black cabbage tree Whitewood, Black and Brown scale ferns & St Helena tree fern, Lays back fern, and Diana's Peak grass and the native species of Sticky fern. Non-native (naturalised) plant species include Whiteweed, Blackberry, Cow grass and an unidentified Feather-Moss.
	Fungus beetle ***Valenfriesia bewickii***	This fungus beetle appears to be restricted to Tree fern and/or Black scale fern (**Key, Fowler & Pryce 2021**), however, specimens were found on a combination of Plastic fern and Black scale fern and also Black scale fern and Whiteweed. So more specific 1 plant by 1 plant surveys are needed to confirm if this species is restricted to certain plant species.
	Fungus beetle ***Valenfriesia rufopicta***	This fungus beetle occurs on Tree ferns (**Key, Fowler & Pryce 2021**). However, during these surveys they were not found on Tree fern, but on endemic Black scale fern with other plant species growing in between the Black scale fern & Whiteweed (naturalised), & Plume fern (probably native) and non-native .
	Fungus beetle ***Valenfriesia subfasciata***	This fungus beetle appears to be restricted to Tree fern and/or Black scale fern (**Key, Fowler & Pryce 2021**). This species was only found on the St Helena tree fern in this survey so far. Fungus beetles are generally very small crawling flightless species and perhaps it is not unusual for them to be using many other plant species to go from one place to the next.

Lepidoptera	**St Helena silver grass miner** ***Elachista trifasciata***	This moth was rediscovered in 2017 after it was believed to have been extinct. However, nothing was known about its ecology, until the link between the sedge *Carex dianae* and the moth *E. trifasciata* was discovered in 2018 (**Fowler & Karisch, 2021**). This moth species was found on the Diana's Peak grass *C. dianae* through these surveys, so far. However, a further ecology study was conducted in 2023 with a yearlong monitoring survey and a report on the finding was produced. Please see the *Elachista trifasciata* monitoring report for further details.

More details on each of the 32 priority species is in another document, please see **ANNEXE 1: Document 1.1 Monitoring of St Helena's Cloud Forest Invertebrates document.**

Non-native vegetation associations

The non-native (naturalised) plant species continued to have high numbers of invertebrates recorded on them, but very small numbers of endemic species compared to the endemic plant species, and it is not unusual to find some endemic invertebrates on the non-native plant species as noted in previous survey reports.

Whiteweed continues to be the non-native plant that supported the highest endemic invertebrate numbers, with site 096H1 having high levels of endemic invertebrate abundance but not species richness. It is likely that its woodiness is creating specific niches or conditions for the endemic invertebrates, allowing them to survive with adequate food and shelter. A range of taxa from beetles, true bugs and spiders were recorded. This plant species could also be considered as a gap filler, but only until habitat restoration or corridors can be created, then removed slowly in order to give the invertebrates time to occupy the new areas of habitat created, or killed off and left standing where there is a lack of standing dead wood for the invertebrates that occupy this niche.

Weather difference between the survey years and impacts on results

There seem to be a relationship between the increase in the invertebrate species with the weather conditions particularly mist, however, further investigations into the climate conditions need to be undertaken to make conclusions, see Graph 1. However, moisture is a key factor for both endemic plants and invertebrates, as many invertebrates such as the Spiky Yellow Woodlouse *Pseudolaureola atlantica* need moisture to survive and climate change could potentially alter the behaviour or lifecycle of some invertebrates. This is maybe why some invertebrates are not as widespread as their associated plants, as the right environmental conditions need to be also present.

Conclusion

When examining the data across all the survey years the highest numbers of endemic species overall were found on the restoration sites on Diana's Peak. Very low numbers were recorded from the native site of Diana's Peak 14D1 this time, and the restoration sites for High Peak for this year and other years

generally score lower for invertebrate abundance and richness. The Depot wasn't surveyed at all for 2025.

As concluded in previous reports, original native cloud forest fragments still have adequate conditions to sustain some endemic invertebrates, particularly on Diana's Peak. However, there are some original fragments that appear to have much lower numbers of endemic invertebrate species, even in comparison to the restoration sites surveyed. This may be because the abundance of endemic tree species which have a large canopy area have declined, these would have provided shade, retained moisture and protected the undergrowth from the elements – and so endemic species reliant on these conditions have been lost from these sites. The habitat assessment is also supporting this knowledge.

Some endemics are common across the Peaks National Park, for example the Blushing snail across different habitat types (restoration, native and non-native). The Diana's Peak Planthopper *Ilburnia dianae* is another, but it wasn't found at the Depot in previous years and of course the survey didn't take place at that site in 2025. These species have broad ecological requirements and so can utilise multiple habitat types.

The structural layer of the cloud forest habitat from ground to canopy level is needed for all types of endemic invertebrates. Particularly tree species such as Whitewood and Black cabbage are important, and also the St Helena tree fern which showed the highest counts of invertebrates. The ground level plant species Black and Brown scale ferns are just as important. Some of the non-native plant species, most noticeably the Whiteweed is supporting endemic invertebrate species, and should be considered to keep during initial restoration and clearance work as it is a woody species and will be favoured by the saproxylic species.

The current method of collecting invertebrates off one plant species at a time should be continued, as it is contributing to more comprehensive data and providing information on invertebrate ecology and interactions, which will in turn help with conservation efforts. Please see the **Appendix 1: Table 1.3 A-D** on a summary of each of the priority species and the plants that they were found on to provide guidance for targeted species management.

The positive impact of new corridors has also been proven as many invertebrates, especially many of the priority species, were found there. Overall, the cloud forest is a unique and dynamic ecosystem.

Recommendations

As the endemic tree species seem to be the most important habitat component for the endemic invertebrates, and deliver an important niche functions (e.g., retaining water and providing shade) within the cloud forest, it is recommended that propagation and planting of these key endemic tree species e.g., Whitewood, St Helena redwood, She cabbage tree, St Helena dogwood and tree ferns should continue.

Dense corridor-focused planting is also recommended, particularly to expand and connect relict stands, and this should be done in areas of the high central ridge (Diana's Peak, High Peak and the Depot), as data shows the vulnerability and degradation of fragments, for example High Peak and the Depot where there is a urgent need to prioritise restoration to prevent further endemic invertebrate

species loss. Particularly, where there are little to no tree species to allow the canopy layer to develop to enhance the habitat, along with planting any other plant species that are missing. Very dense planting would ensure canopy cover around relict stands are utilised effectively, reducing the high risk of loss of rare insects that need the canopy cover and its associated shade and moisture. Creation of artificial shade, or retention of some non-native species e.g. Whiteweed, could be considered where endemic invertebrate species are at high risk of extinction.

In terms of sustaining important deadwood species, woody, non-native plant species such as Whiteweed should be kept, ring barked or killed using an approved method to create standing dead wood for the saproxylic endemic invertebrate specialists (e.g., Coleoptera). As there is very little standing deadwood in the cloud forest and it is essential to support the range of different invertebrate species that depend upon it. It would be worth doing an inventory of deadwood (the habitat assessment partly provides this) and looking for areas with deadwood gaps where deadwood could be increased or supplemented. This is subject to biosecurity considerations.

Forest connectivity planting could be targeted based on particular endemic invertebrates, for example if they have any plant association and also whether a species can fly. For example, we now know that the Fine stained-glass leafhopper *Argaterma multisignata* seems to have an association with the St Helena tree fern as they were recorded on this plant species for 4 years in a row and the Ammonite snail *Helenoconcha relicta* and beetle *Valenfriesia rufopicta* are likely associated with the St Helena tree fern, but there is only 3 years of data to support this. Plant species that continue to show any association with any endemic invertebrate could be planted to dominate a corridor in order to support these invertebrate species, which have poor dispersal abilities. The Diana's Peak grass could be planted sparsely in corridors for the St Helena silver grass miner moth *Elachista trifasciata* another invertebrate with a host plant, as it can fly. These habitats and invertebrate species should then be monitored to see how fast colonisation occurs within the first year of planting, and this information can then be used as a baseline for other new areas of restoration. There should also be more focus on ecological studies of some of the priority species, in order to investigate their requirements to help better understand how they can be conserved.

When clearing invasive plant species, particularly species that records high level of endemic species on them such as the New Zealand Flax, Kikuyu grass and Whiteweed, endemic invertebrates should be allowed to either move off the invasive plants naturally by leaving the plants on/near sites or they should be shaken well (being mindful of seed spreading) before completely removing them out of the cloud forest habitat.

As there have been new pathogens identified within the cloud forest, which are potentially impacting tree species, monitoring of impacted trees should commence as soon as possible to see whether there is a sudden increase in saproxylic species and identify if flying insect species might be contributing to the spread of the diseases.

There was a limited amount of information available for some of the priority invertebrates as most of them are understudied, for example, *Nyhimbricus wollastoni* and *Homoeodera edithia* and they haven't been observed or recorded in a long time either on their own or on the vegetation they were previously recorded from, and it is possible that some invertebrates selected as representative no

longer exist. Therefore, there should be a review of the priority species and the list streamlined to those species most likely to be found.

Limitations

So far there have been delays each year with the invertebrate surveys. In 2022, the delays were with the processes and procedures from the Research Application and refining invertebrate collection methodology, so the surveys were completed in May 2022. Also, there was a delay in the arrival of some key equipment on to the island, which meant that pragmatic approaches had to be utilised in the field in order to get the best results from the survey in 2022.

In 2023, restrictions were implemented to reduce the spread of high-risk pathogens that were identified within the Peaks National Park, so surveys were also completed as late as May. In 2024, similar delays as in 2022 occurred and the surveys were completed in April.

In 2025 it presented similar delays as the previous years and the surveys were completed in May. For all years the weather conditions were also unfavourable when licences were granted which also caused some delay (**Appendix 1, Table 1.2: Survey schedule**).

In year 3 and 4, access restrictions to safeguard endemic tree species led to only 9 of the 10 sites being surveyed, with the Depot Ledge site deemed too sensitive and fragmented for repeat surveys and in year 4 due to severe weather conditions and the Depot Woodland site could also not be surveyed.

Appendix 1: Tables

Table 1.1: Showing the priority species on sites for all years

Order	Scientific name	Diana's Peak Site 14D1	Diana's Peak Site 015D1	Diana's Peak Site 096H1	Diana's Peak Site New 1	Diana's Peak Site New 2	Diana's Peak Site New 3	High Peak Site Dell	High Peak Site Ginger Patch	The Depot Site Woodland	The Depot Site Ledge	Total
Coleoptera	Acarodes gutta	3	1		4		30	9				**47**
Coleoptera	Homoeodera globulosa	8	26	1	2		7	3	2	3		**52**
Coleoptera	Lamprochrus hedyotinus							3				**3**
Coleoptera	Longitarsus mellissi		1									**1**
Coleoptera	Valenfriesia aenea						3	103	4			**110**
Coleoptera	Valenfriesia alutacea	6	9	4	44		25		2			**90**
Coleoptera	Valenfriesia bewickii					3						**3**
Coleoptera	Valenfriesia rufopicta					11			8			**19**
Coleoptera	Valenfriesia subfasciata	1										**1**
Crustaceans	Pseudolaureola atlantica	1					104					**105**
Lepidoptera	Elachista trifasciata				1		11					**12**
Hemiptera	Sanctahelenia sanctaehelenae	3	15	3	10		4		3			**38**
Hemiptera	Argaterma alticola	7	15	19	11		5					**57**
Hemiptera	Argaterma multisignata		14	17	4		2					**37**
Hemiptera	Nehela vulturina	4			8		5	9				**26**
Hemiptera	Sanctahelenia sanctaehelenae	3	15	3	10		4		3			**38**
Hemiptera	Vernonia wollastoniana	1	4	2	6	5	5					**23**
Mollusca	Helenoconcha relicta					101						**101**
											Total	**763**

Table 1.2: Showing the surveying schedule for 2022 to 2024

	Jan				Feb				Mar				Apr				May			
Date	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
1																				
2																				
3															Woodland					
4												015D1								
5														Woodland						
6											096H1									
7					New 1	New 1	New 1									New1				
8										096H1						New 3				Ginger Patch
9																				
10					014D1											New2				
11																				
12																				
13							014D1				New 2									
14									096H1							096H1				
15																				
16						015D1				New 2										
17					New 3												Ledge			
18																				
19																				
20						014D1	New 3				Dell									
21						New 3				Dell										
22																				
23									New 2	Ginger										
24			015D1																	
25																				
26													Woodland							
27	015D1										Ginger Patch									
28									Dell							14D1				Dell
29									Ginger Patch											
30																				
31																				

Table 1.3 A-D: Showing the priority endemic species by site and habitat status

Table A: Araneae, Isopoda, Lepidoptera and Pulmonata

		Spider				woodlouse				Moth				Snail			
Site names	**Status of the site**	Golden sail spider *Argyrodes mellissi*				Spiky yellow woodlouse *Pseudolaureola atlantica*				St Helena silver grass miner *Elachista trifasciata*				Ammonite snail *Helenoconcha relicta*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native										x						
The Depot Ledge	Native																
Diana's Peak 14D1	Native							x									
High Peak Dell	Native/Restoration																
Diana's Peak New 3	Restoration		x			x	x	x	x		x	x	x				
High Peak Ginger Patch	Restoration																
Diana's Peak 015D1	Restoration																
Diana's Peak New 2	Native/Non-native													x	x	x	x
The Depot Woodland	Native/Non-native																
Diana's Peak 096H1	Non-native																

Table B: Coleoptera part 1

Taxa		Beetles																							
Site names	Status of the site	Pope's chafer Mellissius popei				Jellico flea beetle Longitarsus mellissi				*Acarodes gutta*				*Homoeodera edithia*				*Homoeodera elateroides*				*Homoeodera globulosa*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native											x											x		
The Depot Ledge	Native																								
Diana's Peak 14D1	Native									x			x										x	x	
High Peak Dell	Native/Restoration									x	x	x												x	
Diana's Peak New 3	Restoration											x	x									x	x		
High Peak Ginger Patch	Restoration																						x		
Diana's Peak 015D1	Restoration								x		x												x	x	
Diana's Peak New 2	Native/Non-native																								
The Depot Woodland	Native/Non-native																						x	x	
Diana's Peak 096H1	Non-native																						x		

Table C: Coleoptera part 2

Taxa		Beetles																							
Site names	Status of the site	*Homoeodera major*				*Homoeodera paivae*				*Homoeodera pygmaea*				*Valenfriesia aenea*				*Valenfriesia alutacea*				*Valenfriesia bewickii*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native																		x	x					
The Depot Ledge	Native																								
Diana's Peak 14D1	Native																		x	x					
High Peak Dell	Native/Restoration																x								
Diana's Peak New 3	Restoration															x		x		x					
High Peak Ginger Patch	Restoration													x		x	x	x		x					
Diana's Peak 015D1	Restoration																			x					
Diana's Peak New 2	Native/Non-native																					x		x	
The Depot Woodland	Native/Non-native																								
Diana's Peak 096H1	Non-native																			x					

Table C: Coleoptera part 3

Taxa		Beetles																							
Site names	Status of the site	*Valenfriesia congener*				*Valenfriesia grayii*				*Valenfriesia rotundata*				*Valenfriesia rufopicta*				*Valenfriesia subfasciata*				*Lamprochrus cossonoides cossonoides/commidendri/*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native																								
The Depot Ledge	Native																								
Diana's Peak 14D1	Native																		x						
High Peak Dell	Native/Restoration																								x
Diana's Peak New 3	Restoration																								
High Peak Ginger Patch	Restoration													x	x										
Diana's Peak 015D1	Restoration																								
Diana's Peak New 2	Native/Non-native													x	x	x	x								
The Depot Woodland	Native/Non-native																								
Diana's Peak 096H1	Non-native																								

Table C: Coleoptera part 3

Taxa		Beetles																							
Site names	Status of the site	*Valenfriesia congener*				*Valenfriesia grayii*				*Valenfriesia rotundata*				*Valenfriesia rufopicta*				*Valenfriesia subfasciata*				*Lamprochrus cossonoides cossonoides/commi dendri/*			
		2022	2023	2024	2025	2022	2022	2023	2024	2025	2022	2022	2023	2024	2025	2022	2022	2023	2024	2025	2022	2022	2023	2024	2025
Diana's Peak New 1	Native																								
The Depot Ledge	Native																								
Diana's Peak 14D1	Native																		x						
High Peak Dell	Native/Restoration																								x
Diana's Peak New 3	Restoration																								
High Peak Ginger Patch	Restoration													x	x										
Diana's Peak 015D1	Restoration																								
Diana's Peak New 2	Native/Non-native													x	x	x	x								
The Depot Woodland	Native/Non-native																								
Diana's Peak 096H1	Non-native																								

Table D: True Bugs part 1

Taxa		True Bugs																			
Site names	Status of the site	Vulturine leafhopper *Nehela vulturina*				*Stonasla consors*				Coarse stained-glass leafhopper *Argaterma alticola*				Fine stained-glass leafhopper *Argaterma multisignata*				*Nyhimbricus wollastoni*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native	x		x							x	x	x		x	x	x				
The Depot Ledge	Native																				
Diana's Peak 14D1	Native		x	x							x	x	x								
High Peak Dell	Native/Restoration	x	x	x	x																
Diana's Peak New 3	Restoration	x		x	x					x		x	x		x	x					
High Peak Ginger Patch	Restoration																				
Diana's Peak 015D1	Restoration									x	x	x	x		x	x					
Diana's Peak New 2	Native/Non-native																				
The Depot Woodland	Native/Non-native																				
Diana's Peak 096H1	Non-native											x	x	x	x		x				

Table D: True Bugs part 2

Taxa		True Bugs																			
Site names	Status of the site	St Helenian golden leafhopper *Sanctahelenia sanctaehelenae*				Edith's leafhopper *'Chlorita' edithae*				Ghost hopper *Typhlocybinae sp.1*				St Helenian scale-winged stilt bug *Plyapomus longus*				Rainbow damsel bug *Vernonia wollastoniana*			
		2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
Diana's Peak New 1	Native		x		x														x	x	x
The Depot Ledge	Native																				
Diana's Peak 14D1	Native		x		x														x		
High Peak Dell	Native/Restoration																				
Diana's Peak New 3	Restoration	x	x	x	x														x	x	x
High Peak Ginger Patch	Restoration	x		x																	
Diana's Peak 015D1	Restoration	x	x	x	x														x	x	x
Diana's Peak New 2	Native/Non-native																	x	x		x
The Depot Woodland	Native/Non-native																				
Diana's Peak 096H1	Non-native		x	x															x		

Appendix 2: Site photographs

2.1: Site photographs A-J

A. Diana's Peak, Site 14D1

Up hill 2022

Up hill 2025 - 273°

Right side 2022

Right side 2025 - 6°

Down hill 2022

Down hill 2025- 112°

Left side 2022

Left side 2025 - 198°

B. Diana's Peak, Site 015D1

Up hill 2022

Up hill 2025 - 248°

Right side 2022

Right side 2025 - 342°

Down hill 2022

Down hill 2025 - 75°

Left side 2022

Left side 2025 - 173°

C. Diana's Peak, Site 096H1

Note: *No site photographs were taken in 2022*

Up hill 2023

Up hill 2025

Right side 2023- SW 215°

Right side 2025- SW 215°

Down hill 2023

Down hill 2025

Left side 2023 - NE 35°

Left side 2024 - NE 35°

D. Diana's Peak, Site New 1

Up hill 2022

Up hill 2025 - 263°

Right side 2022

Right side 2025 - 2°

Down hill 2022

Down hill 2025 - 95°

Left side 2022

Left side 2025 - 193°

E. Diana's Peak, Site New 2

Up hill 2022

Up hill 2025 - NW 22°

Right side 2022

Right side 2025 - SE 120°

Down hill 2022

Down hill 2025 - SW 232°

Left side 2022

Left side 2025 - NW 320 °

F. Diana's Peak, Site New 3

Up hill 2022

Up hill 2025 - 263°

Right side 2022

Right side 2025 - 2°

Down hill 2022

Down hill 2025 - 95°

Left side 2022

Left side 2025 - 193°

G. High Peak, Site Dell

Up hill 2022

Up hill 2025 - NW 325°

Right side 2022

Right side 2025 - NE 35°

Down hill 2022

Down hill 2025 - SE 129°

Left side 2022

Left side 2025 - SW 207°

H. High Peak, Site Ginger Patch

Up hill 2022

Up hill 2025 - SE 120°

Right side 2022

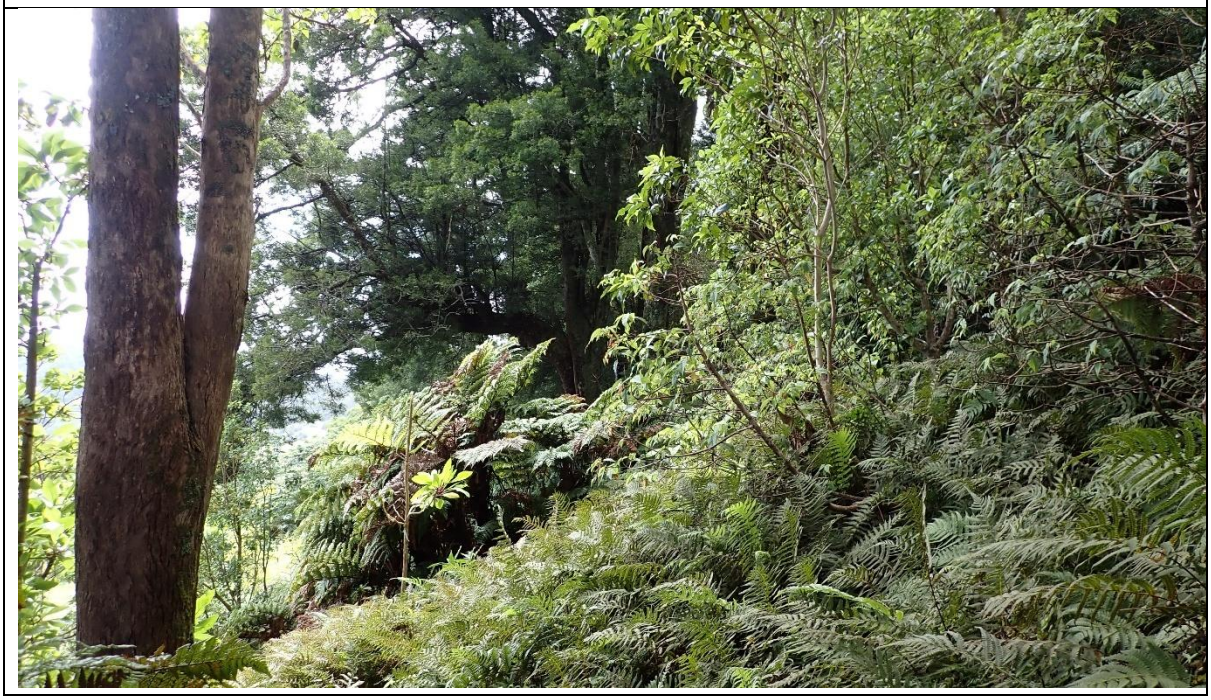
Right side 2025 - SW 230°

Down hill 2022

Down hill 2025 - NW 325°

Left side 2022

Left side 2025 - NE 30°



I. The Depot, Ledge

Note: *No site photographs were taken in 2023 to 2025 due to no survey conducted there*

Up hill 2022

Down hill 2022

J. The Depot, Woodland

Note: *No site photographs were taken in 2025 due to no survey conducted there*

Up hill 2022

Up hill 2024 - NW 339°

Right side 2022

Right side 2024 - NE 59°

Down hill 2022

Down hill 2024 - SE 147°

Left side 2022

Left side 2024 - SW 242°

Appendix 3: 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 Birds (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).

I would particularly like to thank Stuard Jennings St Helena Cloud Forest Project Manager & **Kirsten Ellis**, previous St Helena Cloud Forest Project Manager (2022-2024), **Shayla Ellick** St Helena Cloud Forest Project Coordinator.

Director **Helena Bennett,** and **Jacob Cupit** Head of Conservation (2024-2025), **Martina Peters**, Head of Conservation (2022-2024) of the St Helena National Trust (SHNT) for supporting the invertebrate work and ensuring that the work was tracked according to the outcomes of the project, feedback with updates and giving valuable feedback to other areas of work, **Natasha Stevens**, Cloud Forest Invertebrate Control Project Manager, **Christy Jo Scipio-O' Dean**, Cloud Forest Invasive Invertebrate Field Officer (2022 – 2024) and , **Daryl Joshua**, Cloud Forest Invertebrate Field Officer and **Shaun Osborn**, Cloud Forest Invertebrate Field Officer Assistant.

Roger and Rosy Key, external consultants, which have supported the writing and feedback of the invertebrate documents, field work and also keeping track of many other aspects of invertebrate work e.g., DNA.

The St Helena Government staff, **Isabel Peters** Chief Environmental Officer (EMD) for granting the license to the St Helena National Trust, and **Rebecca Cairns-Wicks**, Coordinator (SHRI) for supporting and advising on the Research Application so that invertebrate work could commence on this project, as well granting export permits where necessary etc.

Vanessa Thomas-Williams, Nursery Officer (EMD) and **Myra Young,** Forestry Officer, Environment, Natural Resources and Planning Portfolio for allowing the 'Peaks staff' to accompany me in the field and receive training on invertebrates. The staff includes **Perry Leo**, **Mike Johnson, Ross Henry, Bert Leo, Brendon Leo, Denzil George, William Crowie, Wayne Leo, Derek Youde, Robert George, Darrell Leo, Stefan Leo and Georgie Thomas.**

Murray Henry Meteorological Scientific Observations Officer and **Robert George** Water Recourse Monitoring Technician (2022-2025), for providing all of the weather data, and volunteers who helped with invertebrate work.

Annexes

Annex 1: Documents references

Document 1.1 'Monitoring of St Helena Cloud Forest Invertebrates 2022'

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

Document 1.3 '*Elachista trifasciata* Monitoring Report, Jun 2023'