





#### **Darwin Plus: Final Report**

To be completed with reference to the "Project Reporting Information Note": (https://darwinplus.org.uk/resources/information-notes/).

It is expected that this report will be a maximum of 20 pages in length, excluding annexes.

Submission Deadline: no later than 3 months after agreed end date.

**Submit to:** BCF-Reports@niras.com including your project ref in the subject line.

#### **Darwin Plus Project Information**

Project reference	DPLUS135		
Project title	From pseudoscorpions to crickets: securing Ascension Island's unique invertebrates		
Territory(ies)	Ascension Island		
Lead Organisation	Ascension Island Government		
Project partner(s)	IUCN Mid-Atlantic Island Invertebrate Specialist Group (MAIISG) and UK Centre for Ecology and Hydrology (CEH)		
Darwin Plus Grant value	£182,846		
Start/end date of project	01/07/2021-30/06/2024		
Project Leader name	Dr Diane to Dr Tiffany		
Project website/Twitter/blog etc.	www.ascension.gov.ac		
Report author(s) and date	Dr Adam , Invertebrate Project Officer		

#### 1 Project Summary

This project will provide the first strategically-planned survey of Ascension's endemic and native terrestrial invertebrates, filling a major knowledge gap for the island's globally-threatened biodiversity. The data generated for endemic species will be embedded\_into the National Biodiversity Strategy and Action Plan and implemented by AICFD. High-risk invasive non-native invertebrates will be identified, and training plus support materials established to allow targeted monitoring and control. Engagement resources and activities will raise the profile of Ascension's endemic invertebrates.

#### 2 Project Partnerships

The project partners MAIISG and CEH were involved from the very beginning of the project. Dr Adam Sharp, the Project Officer, spent time with them in the UK before travelling out to Ascension. This built strong personal relationships and allowed Dr Sharp to meet a network of researchers who had previously studied Ascension's invertebrates.

Over fifteen progress meetings have been held between AIG, CEH and MAIISG since the project began. These allowed partners to input into the survey sampling design and method. Dr Sharp was the only entomologist on Ascension and this expert support from the UK was essential to providing a sounding board for the development of new ideas and oversight of the project methods and outputs.

Dr Sharp participated in regular meetings (St Helena Invertebrate Forum) with the St Helena National Trust and MAIISG and there was a two-way exchange of invertebrate conservation progress on Ascension and St Helena. In particular, Dr Sharp took advice on the eradication of big-headed ants on Ascension, drawing on similar work on St Helena.

#### 3 Project Achievements

#### 3.1 Outputs

Progress towards Outputs is reported in bold. All progress is also summarised in the "DPLUS 135.pdf" document, which is an additional output not required by the original application.

- 1. Comprehensive and fully accessible database of invertebrates on Ascension, including all existing records and results of strategic sampling effort
  - 1.1. Existing invertebrate records and collections collated and verified, together with associated reference. Mapping of species distributions by Year 1 Q4 All existing records were collated and incorporated into a central Access database (too large to send, screenshots included instead). Species distributions can easily be derived from latitude/longitude data in the database. Mapping of species distributions in the first year did not make sense given the existing low spatial coverage of previous invertebrate sampling.
  - 1.2 Targeted sampling of nature reserves and threatened unprotected areas at a minimum of 100 10x10m2 sites in ten different habitat types completed by Year 2 Q4

Over 300 sites were sampled for invertebrates across nature reserves and unprotected areas, incorporating all habitats on Ascension.

1.3 Identification of sampled invertebrates to species level using network of taxonomic specialist by Year 3 Q1.

Over 100,000 invertebrate identifications have been conducted since the start of the project and due to the very large number of samples collected, are still being completed and coordinated by AIG and Dr Sharp who is now based at the University of Hong Kong. All data to date is incorporated into the central Access database. Numerous new species and taxonomic clarifications were conducted and published in scientific journals (attached).

- 1.4 Invertebrate records and occurrences compiled within the ABC and made available via SAERI, plus DNA reference database started by Year 3 Q3

  The ABC was considered an unsuitable destination for invertebrate records on discussion between project partners and stakeholders, given that it is critically non-functioning and inappropriate in structure for such large amounts of data. The data has been kept separate in its own Access database and is still being compiled because of the ambitious nature of the project (coordinated by AIG and Dr Sharp). The DNA reference library is still in development due to delays beyond our control at the Natural History Museum.
- 2. Invertebrates integrated into long-term conservation planning
  - 2.1 Conservation status of at least 10 endemic species assessed using IUCN criteria by Year 2 Q4

Fourteen endemic species have been assessed and approved and await publication on the online Red List. None of the assessments approved from > 2 years ago have been published yet, due to Red List delays beyond our control.

2.2 Species action plans prepared for at least three endemic species and incorporated in NBAP workplan by Year 3 Q3

Individual species action plans were deemed inappropriate in discussions between partners and stakeholders, given the lack of capacity of AIG to enact

invertebrate-species-specific programs. Instead, actions for 10+ endemic species have been incorporated into land management plans (attached).

- 2.3 Invertebrates management needs, particularly those providing ecosystem services, incorporated into existing endemic species action plans, Protected Area management plans and development control guidance by Y3 Q3 Invertebrate needs (monitoring and actions for endemic species, monitoring and potential suppression for non-native species) have been written into protected area management plans and biosecurity protocols (attached). Ecological research identified specific threats against endemic species and resulted in scientific publication (manuscripts/articles attached).
- 2.4 Three conservation staff with increased skills and knowledge on invertebrate habitat management and ecology by Year 3 Q1
  All AlG Conservation & Fisheries Directorate staff were trained in monitoring and ecology of endemic invertebrates in July 2023, with training success indicated by before and after quizzes in which 100% of participating individuals showed improved knowledge. All staff were separately trained in monitoring of endemic crickets and suppression of non-native crickets.
- 3. Targeted biosecurity response for potential and existing 'high risk' invertebrate invasives that would impact Ascension's protected species by introducing a species-specific control assessment and surveillance measures
  - 3.1 19 high-risk 'potential' and three 'existing' invertebrate invasive species identified and reference materials for long-term surveillance/control produced by Y2Q2 A thorough horizon-scanning exercise was conducted to identify high-risk invertebrates and species profiles outlining potential detection and species ecology were compiled for each (attached).
  - 3.2 Three (out of 16) AIGCFD staff trained in invertebrate biosecurity monitoring techniques for 19 potential and three existing high-risk species by Year 2 Q2 Biosecurity staff were trained in non-native ant identification by a specialist from Fera Science in the UK, which was facilitated by the Project Officer and funded by DEFRA (photos attached). They were trained in non-native species detection at points of entry by the Project Officer.
  - 3.3 Best practice response protocols available to manage 19 high priority species if detected by Year 2 Q2

Best practice protocols were assessed on-island and written into existing protocols for managing high priority species if detected (attached).

- 3.4 Control method tested for Big-headed ants produce reduction of 10% in population size in high priority areas. Recommended methods, monitoring and results, including next steps, written into a report by end of Q3 Year 3

  Big-headed ant protocols and trial results were written into reports (attached). Results were combined with equivalent from Saint Helena (DPLUS104) in a scientific publication which is under review with Journal of Applied Ecology (manuscript attached). Suppression of ants depended strongly on vegetation cover, but were overall effective.
- **4.** Information materials and engagement activities raise awareness of Ascension's invertebrate importance and diversity both nationally and internationally
  - 4.1 Guide to endemic invertebrates produced as an online document with 100 downloads and 100 hard copy booklets distributed on Ascension by Y4 Q1. Guide to endemic invertebrates was produced as a booklet and returned to AIG for printing (attached). A separate summary of all known information on

the endemic invertebrates was also included as an additional output to aid future AIG staff working on invertebrates (attached).

- 4.2 Invertebrate events conducted with Ascension's school to introduce 65 pupils (100%) to endemic invertebrates and field survey skills by Year 3 Q2. Invertebrate "safari" and arts and crafts session was conducted with Ascension school children in Summer 2022 (photos attached). This included an introduction presentation to five enigmatic endemic species. Two school visits were also conducted showcasing Ascension's invertebrate life and engaging school children.
- 4.3 Global awareness of Ascension's unique invertebrate fauna raised internationally and nationally, through 2000 views of project video by Year 4 Q1. The Project Officer worked with private company Animate Your Science to create a two-minute animated video highlighting ecology and threats to four Ascension-endemic invertebrate species, which has been viewed over 2,000 times on social media (video too large to attach, screenshots attached). The video is currently used in presentations on island during public events.

#### 3.2 Outcome

#### Progress towards Outcome is reported in bold.

Data, knowledge, tools and resources facilitating the integration of invertebrates into conservation and biosecurity planning systems; fostering understanding, resulting in improved biodiversity conservation and reduced invasive invertebrate species impacts

- 0.1 Conservation and biosecurity activities on Ascension are consistently informed by a comprehensive invertebrate baseline database accessible to all of Ascension's conservation professionals, with 5 examples (3 conservation and 2 biosecurity) that records have been used to inform activities and decision making by Year 3 Q3 Central database contains all information and is accessible to all conservation professionals. Five examples of use, first three conservation and final two biosecurity:
  - Endemic scaly cricket distribution data used to design new protected area, South Coast Nature Reserve, which has been approved by local council (see manuscript for analysis: Present-day lava habitats of Ascension-endemic scaly crickets are largely refugial from invasive species)
  - Invertebrate sampling of caves used to prioritise Bat Cave as a site of high species endemism and recommend it as an additional protected area (see Bat Cave Nature Reserve management plan).
  - Tiny remnant sites of high value to endemic species identified and considered in management plans (see manuscript for brief summary of importance: Tiny Habitats of Tiny Species: The Importance of Micro-Refugia for Threatened Island-Endemic Arthropods)
  - Species records of non-native ants used to understand how the island is invaded from settlements (see published article: Colonization and coexistence of non-native ants on a model Atlantic island) – led to improved biosecurity training for AIG staff.
  - Records of non-native cricket presence were used to identify resource competition with native crickets (see manuscript: Present-day lava habitats of Ascension-endemic scaly crickets are largely refugial from invasive species), and additional experimental work identified bait that attracted non-native but not native crickets to lethal traps (see published article: Invasive vegetation encroachment modulates dual threats faced by island-endemic scaly crickets). Those traps are not

# deployed to suppress non-native crickets and recover native populations (see cricket suppression protocols, attached).

0.2 Threatened endemic invertebrates and broader invertebrate actions are fully incorporated into Ascension's conservation work through the direct delivery of invertebrate actions via species action plans, the NBAP and Nature Reserve management plans covering 1900ha; with 75ha of species-specific habitat managed for invertebrates in priority sites on island by Year3 Q3 Invertebrate actions are incorporated into all Nature Reserve management plans, covering 28% of the island. Area of species-specific habitat managed is difficult to estimate, but since the entire south coast is now managed for endemic *Discophallus ascension* the value is far greater than 75ha.

0.3 Invertebrate conservation capacity increased and being applied on Ascension Island with three staff (out of 11) demonstrating implementation of invertebrate conservation plans, surveys and management by Year 3 Q4. All staff have been trained in invertebrate conservation, surveying and management. The Green Mountain National Park wardens (two staff members) enact maintenance of tiny habitat patches for endemic moth *Erechthias grayi*. The Coastal Reserves Manager and Assistant (two staff members) enact suppression of non-native crickets on the coast. The Biosecurity team (two staff) monitor non-native invertebrates at point of entry and are trained in rapid-response control.

0.4 Improved biosecurity response with a 10% decline in Big-headed ant in a priority invertebrate sites by Year 3 Q3.

Big-headed ant has been temporarily suppressed by 100% at two sites of native habitat.

0.5 25% (~200) of people living on Ascension have an increased awareness of Ascension's endemic invertebrates and their importance by Year 3 Q4 Unknown – no attitude survey was conducted at the beginning of the project. However, in addition to the planned outputs there have been additional outputs (a magazine article, scientific publications, an animated film etc) communicating project results and invertebrate knowledge to a range of audiences, which near-guarantees that over 200 people have been increased awareness of Ascension's endemic invertebrates.

#### 3.3 Monitoring of assumptions

All assumptions were monitored throughout. The only assumption mitigated against was *AIGCFD* staff turnover meaning skills are lost. This was mitigated by the writing of protocols which were learned by a new member of staff who took up a related role. All protocols are available to all Conservation staff members and volunteers so that knowledge is retained despite high staff turnover.

#### 4 Contribution to Darwin Plus Programme Objectives

#### 4.1 Project support to environmental and/or climate outcomes in the UKOTs

This project addressed one of the highest priorities identified in the recent Ascension Island Biodiversity Strategy and Action Plan. The lack of comprehensive knowledge of the island's terrestrial invertebrate fauna and their inclusion in the protected area network was recognised as a major weakness in current biodiversity protection on Ascension and this project specifically addressed this.

This project allows the Ascension Island Government (AIG) to meet its obligations under Articles 7, 8 and 13 of the Convention on Biological Diversity by filling a major gap in knowledge about endemic invertebrate species on the island and providing the necessary information used to identify appropriate management tools to protect them.

AIG introduced a Biosecurity Strategy in 2020. A key aim of the strategy is to use the most effective and sustainable means of controlling non-native species already present on the island. This project collected new records of non-native species that pose a potential threat to Ascension's native biodiversity and identified how widespread damaging big-headed ant species are on the island. This work allowed prioritisation of highest risk species and led to more effective species-specific control measures.

Data collected during this project was combined with data from St Helena in scientific publications (attached) to understand exactly how invasive species colonize and survive on UKOT islands, and test how one major invasive species (the big-headed ant) can be suppressed in different habitat types. This information is in the public domain and can inform ant management on other UKOTs.

#### 4.2 Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board <sup>1</sup> .	1 = 100%, all non-local
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women <sup>2</sup> .	1 of 2 = 50%, all non-local

<sup>&</sup>lt;sup>1</sup> A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

<sup>&</sup>lt;sup>2</sup> Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	X
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

This project was successful in engaging, benefiting, and providing paid work for many women conservationists, for example the Project Leaders, one of two Project Partners (MAIISG cochair), and the contract arachnologist who contributed significantly to invertebrate taxonomic work.

However, the project did not significantly benefit "local" people in paid capacities – Saints from St Helena. The Author (Dr Sharp, no longer AIG) believes that the extremely low local salaries in conservation roles on Ascension are a significant barrier to participation by local people in conservation work. For comparison, entry-level roles with private companies and military contractors on Ascension are similarly or better paid compared with the Project Officer position of this project but do not require any prior experience, offer far better accommodation and benefits, and usually offer clear career progression. These circumstances exclude local people from working in conservation on Ascension and, probably, other UKOTs.

#### 5 Monitoring and evaluation

An M&E framework tied to the indicators and verification methods set out in the project log frame and timetable was established. The AIG project lead was responsible for overall management of the M&E process with input from project partners through quarterly meetings to assess progress. Quarterly meetings were conducted with project partners and more regular meetings within AIGCFD and with MAIISG. Project progress was assessed at these meetings and no major concerns were flagged as we were satisfied with progress.

#### 6 Lessons learnt

There was initial refinement of survey methods which better targeted endemic species at finer spatial scales. Both broad-scale and fine-scale survey methods were conducted to fully assess invertebrate biodiversity and both are now directing management.

Land-based rather than species-based per se methods were decided to be most appropriate to invertebrate conservation on Ascension, and thus all actions are written into area management plans.

Knowledge retention on Ascension is extremely limited because staff turnover is so high. This is due to the short-term nature of DPLUS projects and the limitations of UKOTs in retaining international staff beyond the duration of the projects. This highlights the importance of keeping good records and capturing methods in detailed protocols to ensure continuity. It is also Darwin Plus Main Final Report Template 2024

important to engage the local community during the course of DPLUS projects to encourage individuals to develop careers as conservationists on Ascension.

#### 7 Actions taken in response to Annual Report reviews

All partners have discussed previous annual report reviews. Previous reviews have been largely satisfied with progress and requested additional evidence of actions via supporting files. We attach many files (Google Drive) in response to this guidance.

#### 8 Sustainability and Legacy

Project outputs which are finalized into written management plans are likely to endure as they have become part of the regular work of existing staff members. As much personal knowledge as possible has been written down in the DPLUS135 report document by the Project Officer in aim of helping any future conservationists working on Ascension. There will be very limited personal knowledge remaining on Ascension outside of what is written down but relationships have been maintained between AIG and the project officer and project partners to ensure ongoing support from specialists. All of the purchased resources remain on Ascension.

The planned legacy and exit strategy for the project is still valid and has been muchstrengthened due to the Darwin project for a full invertebrate sequence library and metabarcoding capacity to be established on Ascension. In addition, a broader UKOT invertebrate conservation project (DPLUS216) has stemmed from the knowledge gained in this project, which should benefit other Territories (Anguilla, Bermuda and the Falklands).

All project documentation and publication is open access and freely available.

There has been no current policy changes, but new protected areas will eventually be written into existing policy.

#### 9 Darwin Plus Identity

Darwin Plus has been acknowledged as the main funding source on all publications opportunistically arriving from this project.

There is an overall understanding of Darwin Plus in the host country, as the term "Darwin project" is often used in public communications and one vehicle has Darwin Plus branding.

#### 10 Risk Management

The Project Officer (author) left Ascension early, in August 2023, and has continued to support and complete the project remotely. Identifications of the huge number of invertebrate samples are 90% complete but ongoing, but this did not hinder progress in formulating outputs. Those final identifications will continue to update datasets.

## 11 Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	No
Has the focal point attended any formal training in the last 12 months?	
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 50% 2 of 4
	Planned: 0%
Has there been any lessons learnt or challenges on Safeguarding in the Please ensure no sensitive data is included within responses.  No	o paot 12 monato.
Please describe any community sensitisation that has taken place over project; include topics covered and number of participants.	the lifetime of the
None	
Have there been any concerns around Health, Safety and Security of y lifetime of the project? If yes, please outline how this was resolved.	our staff over the
No	

#### 12 Finance and administration

### 12.1 Project expenditure

Project spend (indicative since last Annual Report	2023/24 Grant (£)	2023/24 Total actual Darwin Plus Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				Project Officer costs were lower than expected
Consultancy costs				
Overhead Costs				Overhead costs were less than anticipated
Travel and subsistence				
Operating Costs				Freight costs were less that anticipated
Capital items				
Others				
TOTAL	52,881	47,768		

Staff employed (Name and position)	Cost (£)
Project Officer – Adam Sharp (April-Aug 2023)	
Project Partner – Vicky Wilkins MAIISG	
Project Partner – Alan Gray UKCEH	
TOTAL	12921

Consultancy – description and breakdown of costs	Other items – cost (£)
Invertebrate identification consultants	
Dr Adam Sharp	
TOTAL	30644

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)

TOTAL		

#### 12.2 Additional funds or in-kind contributions secured

Matched funding leveraged by the partners to deliver the project	Total (£)
AIG in kind support	
UKCEH in kind support	
TOTAL	

Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices	Total (£)
and the project	
DPLUS216 Supporting Atlantic territories invertebrate conservation stemmed from this project	
TOTAL	
IUIAL	

#### 12.3 Value for Money

The project was excellent value for money in terms of research and knowledge, given that for Ascension has been elevated from one of the globally least-studied oceanic islands to most-studied for invertebrate biodiversity. The project has resulted in discovery of multiple species new to science, multiple potential new nature reserves, and a broader understanding of the island ecology as a whole.

#### 13 Other comments on progress not covered elsewhere

# 14 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
				Yes / No
				Yes / No
				Yes / No
				Yes / No
				Yes / No

# Annex 1 Report of progress and achievements against logframe for the life of the project

Project summary	Progress and achievements
Impact To protect and secure the recovery of Ascension Island's unique native and endemic invertebrate fauna through island-wide conservation measures, including enhanced knowledge, capacity and invertebrate biosecurity controls and surveillance.	Conservation measures are island-wide, ranging from coastline (endemic crickets and new species of pseudoscorpion) to central Green Mountain (endemic fungus moths). Knowledge has been enhanced in 1) species presence, 2) species taxonomy including new species, and 3) species ecology and threats. Capacity is improved through training and protocol writing, and all biosecurity and surveillance methods have been overhauled and updated.
Outcome Data, knowledge, tools and resources facilitating the integration of invertebrates into conservation and biosecurity planning systems; fostering understanding, resulting in improved biodiversity conservation and reduced invasive invertebrate species impacts	
0.1 Conservation and biosecurity activities on Ascension are consistently informed by a comprehensive invertebrate baseline database accessible to all of Ascension's conservation professionals, with 5 examples (3 conservation and 2 biosecurity) that records have been used to inform activities and decision making by Year 3 Q3	Five clear examples reported.
0.2 Threatened endemic invertebrates and broader invertebrate actions are fully incorporated into Ascension's conservation work through the direct delivery of invertebrate actions via species action plans, the NBAP and Nature Reserve management plans covering 1900ha; with 75ha of species-specific habitat managed for invertebrates in priority sites on island by Year3 Q3	Invertebrate species actions are written into all management plans and well over 75ha of coastline is managed for endemic crickets.
0.3 Invertebrate conservation capacity increased and being applied on Ascension Island with three staff (out of 11) demonstrating implementation of invertebrate conservation plans, surveys and management by Year 3 Q4.	All staff trained in invertebrate conservation and management, and six roles (four individuals between them enacting six roles; Coastal Reserves Manager, National Park Warden, National Park Assistant Warden, Terrestrial Conservation Officer, Conservation Assistant, Biosecurity Officer) regularly enacting actions.
0.4 Improved biosecurity response with a 10% decline in Big-headed ant in a priority invertebrate sites by Year 3 Q3.	Big-headed ant can be suppressed temporarily by up to 100%.

0.5 25% (~200) of people living on Ascension have an increased awareness of Ascension's endemic invertebrates and their importance by Year 3 Q4	Increased awareness not measured, but outreach materials have been developed and disseminated to a range of audiences			
Output 1 Comprehensive and fully accessible database of invertebrates on A effort	Ascension, including all existing records and results of strategic sampling			
1.1. Existing invertebrate records and collections collated and verified, together with associated reference. Mapping of species distributions by Year 1 Q4	Completed.			
1.2 Targeted sampling of nature reserves and threatened unprotected areas at a minimum of 100 10x10m² sites in ten different habitat types completed by Year 2 Q4	Over 300 sites.			
1.3 Identification of sampled invertebrates to species level using network of taxonomic specialist by Year 3 Q1.	Over 100,000 specimens identified.			
1.4 Invertebrate records and occurrences compiled within the ABC and made available via SAERI, plus DNA reference database started by Year 3 Q3	Individual database created.			
Output 2. Invertebrates integrated into long-term conservation planning				
2.1 Conservation status of at least 10 endemic species assessed using IUCN criteria by Year 2 Q4	Fourteen endemic species assessed.			
2.2 Species action plans prepared for at least three endemic species and incorporated in NBAP workplan by Year 3 Q3	More than 10 endemic species incorporated into management plans.			
2.3 Invertebrates management needs, particularly those providing ecosystem services, incorporated into existing endemic species action plans, Protected Area management plans and development control guidance by Y3 Q3	More than 10 endemic species incorporated into management plans.			
2.4 Three conservation staff with increased skills and knowledge on invertebrate habitat management and ecology by Year 3 Q1	All AlG staff with increased skills and knowledge.			
Output 3. Targeted biosecurity response for potential and existing 'high risk' introducing a species-specific control assessment and surveillance measure				

Species profiles all written and accessible.
Staff trained.
Protocols updated.
Methods trialled and summarized in 1) report document and 2) scientific publication with data from St Helena.
of Ascension's invertebrate importance and diversity both nationally and
Booklet compiled and with AIG.
Multiple events conducted with school children.
Animated video created and viewed over 2,000 times online.

# Annex 2 Project's full current logframe as presented in the application form (unless changes have been agreed)

<b>Project Summary</b>	Measurable Indicators	Means of Verification	Important Assumptions				
Impact:	Impact:						
To protect and secure the recovery of Ascension Island's unique native and endemic invertebrate fauna through island-wide conservation measures,							
including enhanced knowledge, capacity and invertebrate biosecurity controls and surveillance.							
Outcome: Data, knowledge, tools and resources facilitating the integration of invertebrates into	0.1 Conservation and biosecurity activities on Ascension are consistently informed by a comprehensive invertebrate baseline	0.1 An invertebrate database available on AIGCFD network and shared with SAERI and an island species list can be extracted, plus 5 example case studies of use.	Ability to source existing datasets and clean them for integration.  Mitigation: some previous work already undertaken culminating in the RSPB-led stock take in 2014. This will be a starting point for work and				
conservation and biosecurity planning systems; fostering	database accessible to all of Ascension's conservation		supported by international expert contacts.				
understanding, resulting in improved biodiversity conservation and reduced invasive invertebrate species impacts	professionals, with 5 examples (3 conservation and 2 biosecurity) that records have been used to inform activities and decision making by Year	0.2 Annual reports and work plans for NBAP demonstrating inclusion of appropriate measures. Delivery of invertebrate actions and species-specific action in protected areas evidenced by AIGCFD annual reporting	Resources available to implement future invertebrate conservation work.  Mitigation: many activities will be integrated into existing work plans so very minimal resources needed.				
	3 Q3 0.2 Threatened endemic invertebrates and broader invertebrate actions are fully	0.3 Evidence of staff implementing new skills, with individual survey results as well as photos of habitat management activities	Trained staff's ability to translate knowledge into conservation surveying and action				
	incorporated into Ascension's conservation work through the direct	0.4 Species specific control plans in place. Evidence of control plan implementation and population monitoring results (ant activity assessments) demonstrating declines.	Mitigation: training will be tailored to include practical, as well as theoretical elements				
	delivery of invertebrate actions via species action plans, the NBAP and Nature Reserve	0.5 Results of attitude surveys conducted before and after project with a subset of 40 people.	Funding for biosecurity role maintained  Mitigation: biosecurity remains a top priority for UK and AIG.				

management plans covering 1900ha; with 75ha of species-specific habitat managed for invertebrates in priority sites on island by Year3 Q3  0.3 Invertebrate conservation capacity increased and being applied on Ascension Island with three staff (out of 11) demonstrating implementation of invertebrate conservation plans, surveys and management by Year 3 Q4.  0.4 Improved biosecurity response with a 10% decline in Big-headed ant in a priority invertebrate sites by Year 3 Q3.	The Ascension community show interest and engage with the project.  Mitigation: resources will be directed towards public engagement and successful delivery methods already developed by AIGCFD and SHNT will be used.
0.5 25% (~200) of people living on Ascension have an increased awareness of Ascension's endemic	

	invertebrates and their importance by Year 3 Q4		
Outputs: 1. Comprehensive and fully accessible database of invertebrates on Ascension, including all existing records and results of strategic sampling effort	1.1. Existing invertebrate records and collections collated and verified, together with associated reference. Mapping of species distributions by Year 1 Q4  1.2 Targeted sampling of nature reserves and threatened unprotected areas at a minimum of 100 10x10m² sites in ten different habitat types completed by Year 2 Q4  1.3 Identification of sampled invertebrates to species level using network of taxonomic specialist by Year 3 Q1.  1.4 Invertebrate records and occurrences compiled within the ABC and made available via SAERI, plus DNA reference database started by Year 3 Q3	1.1 A baseline dataset established through collation of records and incorporated into the Ascension Biodiversity Catalogue (ABC).   1.2 Survey notes, invertebrate samples and site reports, plus evidence of integration of data into database  1.3 Expert verified species records integrated into ABC with the evidence that specific species information for the island e.g. endemics can be extracted  1.4 Example records from the ABC and SAERI databases invertebrate and DNA reference database records	Suitable project officer can be recruited and upskilled Mitigation: project partners will advertise vacancy and assist with training.  Weather conditions allow consistent survey methods to be applied Mitigation: contingency timings built into project design  Taxonomic experts are willing to contribute to project and able to identify specimens Mitigation: network of experts already identified through NHM and supported by MAIISG international expert network.

Output 2: Invertebrates integrated into long- term conservation planning

- 2.1 Conservation status of at least 10 endemic species assessed using IUCN criteria by Year 2 Q4
- 2.2 Species action plans prepared for at least three endemic species and incorporated in NBAP workplan by Year 3 Q3
- 2.3 Invertebrates management needs, particularly those providing ecosystem services, incorporated into existing endemic species action plans, Protected Area management plans and development control guidance by Y3 Q3
- 2.4 Three conservation staff with increased skills and knowledge on invertebrate habitat management and ecology by Year 3 Q1

- 2.1 Red listing for all endemic invertebrates completed and available on the IUCN website, and link through to project website
- 2.2 Finalised copies of species action plans incorporated into NBAP. Record of actions completed in NBAP workplan reporting that cover 3 endemic species.
- 2.3 Copies of updated management plan. Evidence of actions completed in NBAP workplan reporting.
- 2.4 Before and after skills surveys of trainees

Adequate data can be collected and collated to facilitate red listing **Mitigation:** MAIISG is used to working with data poor species for red listing and will support the process.

AIGCFD have sufficient capacity to deliver conservation plans.

Mitigation: AIGCFD will prioritise conservation of endemic species.

AIGCFD have sufficient capacity to deliver conservation plans.

Mitigation: New actions will refocus existing work and require relatively little additional capacity.

AIGCFD staff turnover meaning skills are lost Mitigation: complementary training materials integrated into staff induction allow new members of staff to be retrained by existing staff members

- 3.1 19 high-risk 'potential' and three 'existing' invertebrate invasive species identified and reference materials for long-term surveillance/control produced by Y2Q2
- 3.2 Three (out of 16)
  AIGCFD staff trained in invertebrate biosecurity monitoring techniques for 19 potential and three existing high-risk species by Year 2 Q2
- 3.3 Best practice response protocols available to manage 19 high priority species if detected by Year 2 Q2
- 3.4 Control method tested for Big-headed ants produce reduction of 10% in population size in high priority areas. Recommended methods, monitoring and results, including next steps, written into a report by end of Q3 Year 3

- 3.1 List and profiles of 19 'high-risk' invasive invertebrates available to AIGCFD staff and more widely via the biosecurity pages of the AIG website.
- 3.2 Record of training and, before and after skills assessment
- 3.3 Best practice response protocols integrated into biosecurity strategy and available through the AIG website. Biosecurity incident reporting demonstrates implementation
- 3.4 Control report that reviews control methods, provides monitoring, results and next steps is sent to local stakeholders

Adequate data and experts available to list the species and assess impacts.

**Mitigation:** wide range of experts are being engaged in advance to support the process.

Legacy of training maintained on island

**Mitigation**: Standardised protocols and knowledge handover processes put in place.

Effective response measures exist for priority species.

**Mitigation**: international expertise through MAIISG will help to identify appropriate measures

Control methods for Big-headed ant has no impacts on native fauna and flora

Mitigation: monitoring will assess potential impacts and allow for adaptation/changes before control methods are applied and methods used on other island have had exceptionally low non-target impacts

Output 4: Information materials and engagement activities raise awareness of Ascension's invertebrate importance and diversity both nationally and internationally	4.1 Guide to endemic invertebrates produced as an online document with 100 downloads and 100 hard copy booklets distributed on Ascension by Y4 Q1.  4.2 Invertebrate events conducted with Ascension's school to introduce 65 pupils (100%) to endemic invertebrates and field survey skills by Year 3 Q2.  4.3 Global awareness of Ascension's unique invertebrate fauna raised internationally and nationally, through 2000 views of project video by Year 4 Q1.	4.1 Copy of guide, distribution list and download statistics  4.2 Photographs of events, attendance list and copies of pupil worksheets demonstrating improved understanding  4.3 Links to video and record of views form social media analytic tools.	Charismatic endemic invertebrates identified and sufficient data available to provide content for guide.  Mitigation: Known endemics already provide a good foundation and project designed to collect information such as distribution, habitat association and basic ecology.  School is willing to collaborate on field visits and associated classroom work.  Mitigation: good existing links between AIGCFD and school. Field visits will be worked into lesson planning.  Content of appropriate quality can be filmed and expertise available to edit it.  Mitigation: AIGCFD has experience in producing short films documenting its work. Existing links with film makers.
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#### **Activities**

- 1.1 Training and upskilling of Project Officer in UK and St Helena, by knowledge exchanging with existing UKOT invertebrate specialists1.2 An invertebrate record database template is built with appropriate fields and format, that will allow comprehensive recording as well as integration into wider data systems
- 1.3 Historic invertebrate data records and associated references are collated and integrated into the Ascension Biodiversity Catalogue

- 1.4 Undertake invertebrate surveys on 100 sites, taking samples and recording associated environmental data
- 1.5 Survey samples are processed and identified using initial sorting to groups and family by Project Officer and groups labelled, and sent to external specialists in St Helena National Trust, Natural Museum.
- 1.6 Voucher specimens linked to DNA samples of each species stored on Ascension and sent to BIOSCAN project to establish DNA reference collection for Ascension
- 1.7 Verified species records added to Ascension Biodiversity Catalogue (ABC) and made available via SAERI
- 2.1. Red listing process is undertaken working with MAIISG and appropriate IUCN taxon Specialist Groups is used for review, and submitted for publishing
- 2.2 Endemic invertebrate conservation plan written based on background information and consultation with project partners
- 2.3 Invertebrate actions, species and broader actions, are incorporated into protected area management plans and development control guidance
- 2.4 Training in invertebrate conservation is delivered to AIGCFD staff and volunteers by the Project Officer supported by international specialists
- 3.1 Profiles of 19 invertebrate species including best-practice surveillance and control methods will be researched and written using existing invasive species databases and partner input
- 3.2 Training on surveillance and control of 19 high-risk invasive invertebrate species provided to 3 staff in the AIGCFD team
- 3.3 Surveillance methods for high risk invertebrates implemented as part of existing biosecurity monitoring
- 3.4 Control methods for high risk invasives incorporated into existing AIG biosecurity response protocols
- 3.5 Control methods for BHA applied in trial sites and complementary monitoring undertaken to understand impact of control
- 4.1 Create short booklet on Ascension's endemic invertebrates is written and designed and published both as a hard copy and an online version
- 4.2 Plan and deliver school events run, engaging 65 pupils with Ascension's invertebrates
- 4.3 Produce a video showcasing Ascension's invertebrates and distribute via AIGCFD website

**Annex 3 Standard Indicators** 

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggreg ation	Year 1 Total	Year 2 Total	Year 3 Total	Total planned during the project
DPLUS-A01	Number of people from key national and local stakeholders completing structured and relevant training	Number of people who attended training on invertebrate monitoring techniques and conservation requirements	People	Women Men		0	11	3
DPLUS-B01	Number of new/improved habitat management plans available and endorsed	Number of new/improved protected area management plans published on the AIG website	Number	None		0	6	3
DPLUS-C01	Number of best practice guides and knowledge products published and endorsed	Number of best practice guides on the control of invasive non- native invertebrates produced for AIGCFD staff	Number	None		19	19	19
DPLUS-C02	Number of new conservation or species stock assessments published	Number of red list assessments or peer-	Number	None		0	14	10

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggreg ation	Year 1 Total	Year 2 Total	Year 3 Total	Total planned during the project
		reviewed publications on the status of endemic invertebrates						
DPLUS-D01	Hectares of habitat under sustainable management practices	Number of hectares of habitat within protected areas managed for the benefit of endemic invertebrates	Hectares	None		0	>500	500

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from  (e.g. weblink or publisher if not available online)
Colonization and coexistence of non-native ants on a model Atlantic island	Journal – Diversity and Distributions	Sharp & Tawatao 2023	Male	UK		http://dx.doi.org/10.11 11/ddi.13756

Title	Туре	Detail	Gender of Lead	Nationality of Lead	Publishers	Available from
	(e.g. journals, manual, CDs)	(authors, year)	Author	Author	(name, city)	(e.g. weblink or publisher if not available online)
Invasive vegetation encroachment modulates dual threats faced by island-endemic scaly crickets	Journal – Biological Invasions	Chin, Wilkins & Sharp 2024	Male	Malaysian		http://dx.doi.org/10.10 07/s10530-024- 03355-w
Increasing Baseline Knowledge of Invertebrates to Inform Effective Conservation and Management in UK Overseas Territories	Magazine – CIEEM InPractice	Soanes, Mukhida & Sharp	Female	UK		https://www.thomson ec.com/wp- content/uploads/2023 /06/InPractice120_Ju n2023.pdf
First record of the cob-web spider Platnickina adamsoni (Berland, 1934) from Ascension Island (Araneae: Theridiidae)	Journal – Serket	Sherwood & Sharp 2023	Female	UK		https://www.research gate.net/publication/3 74389061_First_reco rd_of_the_cob- web_spider_Platnicki na_adamsoni_Berlan d_1934_from_Ascen sion_Island_Araneae _Theridiidae
First records of Clubiona hitchinsi Saaristo, 2002 on Ascension Island (Araneae, Clubionidae)	Journal – Check List	Sherwood, Marusik & Sharp 2023	Female	UK		http://dx.doi.org/10.15 560/19.6.833
A survey of Gnaphosidae (Arachnida, Araneae) from Ascension Island with	Journal – African Invertebrates	Sherwood, Marusik, Sharp & Ashmole 2023	Female	UK		http://dx.doi.org/10.38 97/afrinvertebr.64.11 3946

Title		Nationality of Lead	Publishers	Available from		
	(e.g. journals, manual, CDs)	(authors, year)	Author	Author	(name, city)	(e.g. weblink or publisher if not available online)
description of a new species of Australoechemus Schmidt & Piepho, 1994						
Prodidomus Hentz, 1847 and Zimiris Simon, 1882 on Ascension Island (Araneae: Prodidomidae)	Journal – Natura Somogyiensis	Sherwood, Grognet, Marusik & Sharp 2023	Female	UK		http://dx.doi.org/10.24 394/NatSom.2023.41 .85
A Caribbean in the South Atlantic: first records of Hentzia antillana Bryant 1940, with notes on other previously reported jumping spider species (Araneae: Salticidae), from Ascension Island	Journal – Peckhamia	Sherwood & Sharp 2023	Female	UK		https://www.research gate.net/publication/3 76516474_A_Caribb ean_in_the_South_At lantic_first_records_o f_Hentzia_antillana_ Bryant_1940_with_no tes_on_other_previou sly_reported_jumping _spider_species_Ara neae_Salticidae_from _Ascension_Island
The first occurrence records of Kukulcania hibernalis (Hentz, 1842) from Ascension Island and Saint Barthélemy (Araneae: Filistatidae)	Journal – Opuscula Zoologica	Sherwood, Questel & Sharp 2023	Female	UK		http://dx.doi.org/10.18 348/opzool.2023.9.20 5

Title	Туре	Detail	Gender of Lead	Nationality of Lead	Publishers	Available from
	(e.g. journals, manual, CDs)	(authors, year)	Author	Author	(name, city)	(e.g. weblink or publisher if not available online)
Familiar face, new destination: first records of the invasive spider Creugas gulosus Thorell, 1878 on Ascension Island (Araneae: Corinnidae)	Journal - Revista Ibérica de Aracnología	Sherwood & Sharp 2023	Female	UK		https://www.research gate.net/publication/3 76982441_Familiar_f ace_new_destination _first_records_of_the _invasive_spider_Cre ugas_gulosus_Thorel I_1878_on_Ascensio n_Island_Araneae_C orinnidae
Scorpions (Arachnida Scorpiones) of the United Kingdom Overseas Territories: current knowledge and future directions	Journal – Biodiversity Journal	Sherwood, De Armas, Sharp, Fowler, Wilkins 2024	Female	UK		http://dx.doi.org/10.31 396/Biodiv.Jour.2024. 15.1.41.52
On the identity of Opopaea euphorbicola Strand, 1909 and first records of three other non- native goblin spiders from Ascension Island (Araneae: Oonopidae)	Journal – Zootaxa	Sherwood, Dunlop & Sharp 2024	Female	UK		http://dx.doi.org/10.11 646/zootaxa.5437.1.9
David and Goliath: on the pseudoscorpions of Ascension Island, including the world's largest, Garypus titanius Beier, 1961, and a new, minute, Neocheiridium Beier,	Journal – Natura Somogyiensis	Sherwood, Grignet, Harvey, Sharp, Wilkins, Ashmole & Ashmole 2024	Female	UK		http://dx.doi.org/10.24 394/NatSom.2024.42 .131

Title	<b>Type</b> (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from  (e.g. weblink or publisher if not available online)
1932 (Arachnida: Pseudoscorpiones)						
A new species of Thallumetus Simon, 1893, the first dictynid from Ascension Island (Araneae: Dictynidae)	Journal – Arachnology	Sherwood, Marusik, Peñaherrera-R., Calderón-C. & Sharp 2024	Female	UK		https://www.research gate.net/publication/3 81853156_A_new_sp ecies_of_Thallumetu s_Simon_1893_the_fi rst_dictynid_from_As cension_Island_Aran eae_Dictynidae
First record and new species of the hitherto American endemic genus Hibana Brescovit, 1991 from Ascension Island (Araneae: Anyphaenidae)	Journal – Arachnology	Sherwood, Marusik, Sharp & Wilkins 2024	Female	UK		https://www.research gate.net/publication/3 81853302_First_reco rd_and_new_species _of_the_hitherto_Am erican_endemic_gen us_Hibana_Brescovit _1991_from_Ascensi on_Island_Araneae_ Anyphaenidae

# Annex 5 Supplementary material (optional but encouraged as evidence of project achievement)

Supporting files available from Google Drive at <a href="https://drive.google.com/drive/folders/14YZFMEXmkeW-5v23BCilLLdw856g9mE2?usp=drive\_link">https://drive.google.com/drive/folders/14YZFMEXmkeW-5v23BCilLLdw856g9mE2?usp=drive\_link</a>

#### **Checklist for submission**

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	Y
Is the report less than 10MB? If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	Y
Is your report more than 10MB? If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line. All supporting material should be submitted in a way that can be accessed and downloaded as one complete package.	N
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 14)?	Y
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Υ
Do not include claim forms or other communications with this report.	