

Darwin Plus: Overseas Territories Environment and Climate Fund Annual 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: 30th April 2023

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 Partner	Ascension Island Government
Project partner(s)	IUCN Mid Atlantic Island Invertebrate Specialist Group, UK Centre for Hydrology and Ecology
Darwin Plus grant value	£182,846
Start/end dates of project	01/07/2021-30/06/2024
Reporting period (e.g. Apr 2022-Mar 2023) and number (e.g. Annual Report 1, 2)	Apr 2022 – Mar 2023 Annual Report 2
Project Leader name	Dr Diane Baum
Project website/blog/social media	www.ascension.gov.ac
Report author(s) and date	Dr Adam Sharp, 11/04/2023

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 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 stakeholders/partners

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

Dr Sharp participates in regular meetings (St Helena Invertebrate Forum) with the St Helena National Trust and MAISG and there is a two-way exchange of invertebrate conservation progress on Ascension and St Helena. In particular, Dr Sharp has been taking advice on the eradication of big-headed ants on Ascension, drawing on similar work on St Helena that has recently concluded.

3. Project progress

3.1 Progress in carrying out project Activities

Activities under Output 1

1.1 Training and upskilling of Project Officer in UK and St Helena, by knowledge exchange with existing UKOT invertebrate specialists

Training and upskilling of Project Officer Dr Adam Sharp in the UK occurred in Year 1. Dr Sharp was unable to visit St Helena due to COVID-19. By Year 2 Dr Sharp had already developed sufficient knowledge for completing the project and so in order to make best use of time, Dr Sharp did not visit St Helena. Dr Sharp is, however, in regular contact with UKOT invertebrate specialists on St Helena and attends regular virtual meetings with the St Helena Invertebrate Forum for support.

1.2 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

All survey data continues to be uploaded into the Access database developed in Year 1. That database is compatible with future upload to SAERI.

1.4 Undertake invertebrate surveys on 100 sites, taking samples and recording associated environmental data.

Dr Sharp has continued to develop new sampling strategies to target sampling on specific endemic species and habitats. To date, he has surveyed over 150 sites and collected over 1,500 individual samples, comprising approximately 100,000 invertebrates. Environmental data including location, elevation, habitat category, geology, presence/absence of endemic and non-native plant species are collected at all sites.

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.

Invertebrate samples have been sorted and identified to at least family level by Dr Sharp. All pre-sorted specimens from survey efforts up until the end of 2022 have now been transported to relevant specialists (> 20 experts) for formal identification. Some taxonomic groups, including ants and beetles, have already been fully identified. Others, including mites, spiders and springtails, are in the process of being identified and there are contracts and agreements in

place to ensure completion. For a minority of taxonomic groups, complete identification would not be possible within the scope of the project, as expert individuals were lacking or low in available capacity and would not accept payment. For these groups, a subset of specimens will be identified within the project scope to build at least an initial species list for the island.

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

Samples have been stored in ethanol for DNA barcoding. For all identified specimens, a sample is kept in ethanol for future barcoding. Barcoding will begin as and when morphological identification of individual taxonomic groups is completed.

1.7 Verified species records added to Ascension Biodiversity Catalogue (ABC) and made available via SAERI

The project database continues to be updated daily. The database will be made available via SAERI on its completion in this upcoming year period.

Activities under Output 2

2.1. Red listing process is undertaken working with MAISG and appropriate IUCN taxon Specialist Groups is used for review, and submitted for publishing

Six species have been assessed and submitted via the IUCN Species Information Service portal. These include five species assessed as Critically Endangered and one as Vulnerable. Those submissions are currently in review, and should be included on the next version of the Red List (May 2023). Red Listing has taken place in collaboration with MAISG and under review by the appropriate IUCN specialist groups.

2.2 Endemic invertebrate conservation plan written based on background information and consultation with project partners

Consultation with all project stakeholders concluded that endemic invertebrate conservation on Ascension would be best delivered through area-based management and the incorporation of threat assessments and management actions for endemic invertebrates into Protected Area Management Plans. Dr Sharp has provided input into draft management plans for three existing Nature Reserves that will go out to public consultation in May 2023. That consultation will also include a proposal to establish two new Nature Reserves specifically to protect endemic invertebrates. The data collected through this project and the expertise of Dr Sharp have been crucial to developing these proposals.

2.3 Invertebrate actions, species and broader actions, are incorporated into protected area management plans and development control guidance

Management actions to protect endemic invertebrates have been written into protected area management plans for the Green Mountain National Park and Mars Bay and Waterside Nature Reserves. Actions will be written into plans for the protected beaches within the first quarter of the upcoming year. New management plans focussed on invertebrate conservation actions will accompany designation of two new protected areas and the significant expansion of an existing Nature Reserve within the next year.

2.4 Training in invertebrate conservation is delivered to AIGCFD staff and volunteers by the Project Officer supported by international specialists

Invertebrate conservation has been communicated to wardens and managers of the respective protected areas, and explanations of conservation actions added to management plans have been communicated and approved by those AIGCFD staff members. Dr Sharp has supported Fera Science Ltd in applying for a Defra grant to bring an ant specialist to the island in August

2023 to train AIGCFD staff members in invasive ant identification and control at the border and also in the field. Dr Sharp will also deliver training on broad invertebrate monitoring protocols at points of entry to the island within the first quarter of the next year.

Activities under Output 3

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.

The profiles have been completed and are available to AIGCFD staff members, including the Biosecurity Team.

3.2 Training on surveillance and control of 19 high-risk invasive invertebrate species provided to 3 staff in the AIGCFD team

Initial notes on high-risk species surveillance and control are included in the relevant species profiles. In-depth in-person training will be conducted on surveillance techniques with AIGCFD members within the first quarter of the next year. On the condition of a successful pending grant application, specific training will be provided on invasive ant species detection and control by Fera specialist who is provisionally expected to visit Ascension in August 2023.

3.3 Surveillance methods for high risk invertebrates implemented as part of existing biosecurity monitoring

Methods are partially implemented but will be fully implemented following training of AIGCFD staff within the next quarter.

3.4 Control methods for high risk invasives incorporated into existing AIG biosecurity response protocols

Methods are partially implemented but will be fully implemented following training of AIGCFD staff within the next quarter.

3.5 Control methods for BHA applied in trial sites and complementary monitoring undertaken to understand impact of control

Trials of BHA control methods will learn heavily from equivalent trials on St Helena. They have been planned and are due to commence June-August 2023. They will be trialled at sites of known native invertebrate occupancy, and native species abundance will be measured to assess effectiveness.

Activities under Output 4

4.1 A short booklet on Ascension's endemic invertebrates is written and designed and published both as a hard copy and an online version

The booklet has not yet been designed, however all required media including publication-quality live photographs and maps of endemic pseudoscorpions, scaly crickets and flightless moths have been acquired in preparation.

4.2 Plan and deliver school events run, engaging 65 pupils with Ascension's invertebrates

21 school children were engaged in a "Bug Safari" day event in August 2022, where Dr Sharp led them on a short hike on the central Green Mountain and showed them invertebrate monitoring methods, then delivered a short presentation on Ascension's endemic invertebrates and led an insect arts-and-crafts session. Separately, Dr Sharp has visited the school and presented an invertebrate display with interactive microscope work and insect identification.

4.3 Produce a video showcasing Ascension's invertebrates and distribute via AIGCFD website

Dr Sharp has agreed a contract with professional scientific animators Animate Your Science to develop a 2-minute custom animated video highlighting the evolution of Ascension's endemic invertebrates. The video is planned to be created by the third-party before the end of May 2023. It will then be uploaded via the AIGCFD website and widely disseminated via social media.

3.2 Progress towards project Outputs

Output 1. Comprehensive and fully accessible database of invertebrates on Ascension, including all existing records and results of strategic sampling effort.

The database has been created and all records are uploaded as and when they are collected. All collection data has so far been input, as well as data on preliminary invertebrate sorting by Dr Adam Sharp. The majority of records will need updating with full species-level identifications when returned by the relevant taxonomic specialists. Most identifications (>75%) will be returned within the next year, and will therefore definitely be finalized by project close. For some particularly-difficult taxonomic groups, timelines on complete identification could not be agreed with relevant specialists. This occurred only where there was a single option for a global specialist of required ability, and those specialists were unable or unwilling to provide paid consultancy services with a fixed deadline. This situation was therefore unavoidable. Species-level identifications received late in the project or after its close will be supplied to the Director of AIGCFD for incorporation into the existing database. This output will be completed for the majority of specimens collected within the project scope, and there is a contingency plan in place for overrun.

Output 2. Invertebrates integrated into long-term conservation planning

Invertebrates have been incorporated into existing protected area management plans for long-term habitat preservation and restoration. We have progressed beyond the predicted scope of this project by instigating the creation of two new and one expanded protected area(s) for invertebrate conservation. Those areas will be accompanied by new management plans, which will secure endemic species' long-term conservation by AIGCFD staff. This output will therefore be completed by project close.

Output 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

High-risk invertebrates have been identified via an extensive horizon-scanning exercise performed by Dr Sharp. Profiles for each species have been written and targeted biosecurity responses for each are in development for introduction in the coming quarter. Planned activities to complete Output 3 have been scheduled and will be completed before the end of the project.

The order in which outputs were addressed has been changed from the timetable. Once the project had begun, it was considered best to focus the majority of early work time on outputs 1

and 2. This was to ensure maximum sampling coverage and also to give taxonomic specialists sufficient time to complete the invertebrate identification. As a result, advanced progress has been made towards outputs 1 and 2 while output 3 (less time-constrained) is currently being addressed at this middle-stage of the project.

Output 4: Information materials and engagement activities raise awareness of Ascension's invertebrate importance and diversity both nationally and internationally

All activities for this output are well underway: sufficient media and information has been collected for publication of a short booklet, school events have and continue to be organised, and the video development has been planned with a professional science communication company. Output 4 is on schedule to be completed by project close.

3.3 Progress towards the project Outcome

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

Data and knowledge have already been significantly improved and continue to develop through data collection and species identification. Tools and resources (eg management plans) have begun to be implemented and this continues also. Understanding has progressed to the point of scientific publication (one article in review, one in submission) on species ecology and conservation. There are clear roadmaps developed for improved biodiversity conservation and both implemented (through protected area management plans) and planned methods to reduce invasive species impacts. The project is sure to achieve the Outcome by end of funding.

3.4 Monitoring of assumptions

In Year 1 of the project the focus has been on delivering actions that contribute to output1 and so consideration of assumptions is restricted to those associated with that output.

Assumption 1: *A suitable project officer can be recruited and upskilled*

Comments: Dr Sharp is highly qualified and experienced to undertake this role and has already demonstrated great skill in field sampling, species identification and public engagement.

Assumption 2: *Weather conditions allow consistent survey methods to be applied*

Comments: There have been a small number of days when heavy rain has disrupted the survey effort. However, these periods have been very short and it was possible to either survey at different locations or prioritise sample sorting during those times.

Assumption 3: *Taxonomic experts are willing to contribute to project and able to identify specimens*

Comments: Taxonomists already contributing to the project and the vast majority of specimens will be identified. For some groups, taxonomic expertise existed but it was impossible to agree a timeline and paid contract with those specialists. As the only possible option, specimens have been transferred to those experts (with no payment arranged) on the understanding that they will return provisional assessments before the end of the project scope.

4. Project support to environmental and/or climate outcomes in the UKOTs

This project is addressing 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 is recognised as a major weakness in current biodiversity protection on Ascension and this project is designed specifically to address this.

This project will allow 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 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 has already 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 will help to prioritise highest risk species and lead to of more effective species-specific control measures.

5. Gender equality and social inclusion

Please quantify the proportion of women on the Project Board ¹ .	There is no board
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 ² .	67% - two out of three project partner leaders

6. Monitoring and evaluation

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

7. Lessons learnt

There has been some refinement of survey methods which better targeted endemic species at finer spatial scales. Both broad-scale and fine-scale survey methods must be conducted to fully assess invertebrate biodiversity and both are directing management.

¹ 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.

² 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.

A decision was made this year to incorporate invertebrate conservation actions into protected area management plans rather than produce a standalone invertebrate conservation document. This reflects changes in the strategic organisation of AIGCFD resources and demonstrates how the outputs of this project have been adapted to provide greatest utility and impact.

8. Actions taken in response to previous reviews (if applicable)

The previous review requested further evidence of activities through photographs, screenshots and other means. To address this, evidence has been added to Annex 4 – Supplementary Material in support of this current report. As there are only a small number of partners involved in this project and we meet regularly, we do not usually keep meeting minutes.

9. Risk Management

No new risks have arisen.

10. Other comments on progress not covered elsewhere

We have been successful in increasing our research and management capacity by winning additional funding from Indianapolis Zoo to support conservation of endemic scaly crickets. Separately, we have won funding from Darwin Local to support vital equipment for monitoring of endemic crustaceans within Ascension's anchialine pools. Dr Sharp has also submitted two scientific journal articles (Diversity and Distributions, and Journal of Applied Ecology) examining the ecology and conservation of Ascension's invertebrates, and has contributed a written piece for a book on UKOT invertebrate biodiversity and also co-authored a magazine article on the project progress (In Practice magazine, CIEEM).

11. Sustainability and legacy

The project has a high profile in the Territory because it is embedded within the Ascension Island Government Conservation and Fisheries Directorate. Everyone working in the conservation sector on Ascension is aware of the project and knows Dr Sharp. The presence of an invertebrate expert on the island has already resulted in improvements to the Biodiversity Strategy and Action Plan and greater oversight of biosecurity surveillance monitoring linked to a major infrastructure project on the island.

The planned legacy and exit strategy for the project is still valid and has been much-strengthened due to the successful Darwin Plus bid for a full invertebrate sequence library and metabarcoding capacity to be established on Ascension.

12. Darwin Plus identity

There has been publicity to introduce the project including articles in the Ascension press, Species Recovery Trust Winter newsletter, UKOTCF newsletter, social media posts and In

Practice magazine by CIEEM. There have now also been two scientific journal articles submitted. All acknowledged the support provided by the Darwin Plus Programme.

There is a high level of awareness of Darwin Plus on Ascension. It is recognised as one of the main funders of biodiversity protection on the island and elected councillors and the island Administrator ask for regular updates on bid submissions and project progress.

13. 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 <i>[If yes, please provide their name and email]</i>
Has the focal point attended any formal training in the last 12 months?	Yes/No <i>[If yes, please provide date and details of training]</i>
What proportion (and number) of project staff have received formal training on Safeguarding?	Past:40% [2] Planned: 0% [0]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	
No challenges.	
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.	
No. Safeguarding is not relevant to this project.	

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)

Project spend (indicative) in this financial year	2022/23 D+ Grant (£)	2022/23 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
TOTAL	83259	80351.05	-3%	

Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)

	Matched funding secured to date	Total matched funding expected by end of project
Matched funding leveraged by the partners to deliver the project.		
Total additional finance mobilised by new activities building on evidence, best practices and project (£)		

15. OPTIONAL: Outstanding achievements or progress of your project so far (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)
Image	Erechthias_grayi_low.jpg	<p>This is the first-ever live photograph of the Ascension – endemic fungus moth <i>Erechthias grayi</i>. The species is just 2 mm and persists almost entirely on remnant habitat patches less than 30 m wide.</p> <p>Ascension Island</p> <p>Dr Adam Sharp</p>	@AIGConservation	Yes
Image	Discophallus_low.jpg	<p>The Discophallus genus of scaly crickets is found nowhere else but Ascension Island, where they have lost around half of their natural habitat to invasive species. They are incredibly illusive, and this is the first-ever live photograph of one.</p> <p>Ascension Island</p> <p>Dr Adam Sharp</p>	@AIGConservation	Yes
Image	Pseudoscorpion_low.jpg	<p>Ascension's resident pseudoscorpions have evolved to become "giant"; they are adapted to fulfill the ecological roles of larger animals that are naturally absent from such</p>	@AIGConservatio	Yes

		<p>an isolated island. The pseudoscorpions have recently been discovered on Ascension after it was previously thought they were wholly confined to a nearby inaccessible islet.</p> <p>Ascension Island</p> <p>Dr Adam Sharp</p>		
				Yes / No
				Yes / No

Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023 – if applicable

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p>Impact</p> <p>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.</p>		<p>(Report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits)</p>	
<p>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</p>	<p>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</p> <p>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</p>	<p>(Report against the indicators on progress towards achieving the project Outcome)</p> <p>0.1 Conservation example 1: Records of endemic <i>Discophallus</i> crickets are being used to define boundaries of novel coastal protected areas. Conservation example 2: Records of endemic fungus moth <i>Erechthias grayi</i> to inform invasive guava management via Green Mountain nature reserve management plans. Conservation example 3: Records of endemic spider <i>Catonetria caeca</i> being used to instigate protection and management of its sole known locality, Bat Cave. Biosecurity example 1: Known non-native ant species increased from nine to 17, and thus tighter border controls will be instigated with increased surveillance effort.</p> <p>0.2 Management plans have been contributed to for most protected areas, for others the required activities are already known but</p>	<p>(Highlight key actions planned for next period)</p> <p>0.1 Prior learning to be incorporated into biosecurity protocols and organized within an understandable framework for future AIGCFD biosecurity staff.</p> <p>0.2 Continue with plans for cricket protected areas. Continue incorporating species-specific management requirements into management plans, eg invasive guava control for the endemic <i>Erechthias grayi</i> moth in the Green Mountain nature reserve.</p> <p>0.3 AIGCFD staff members will be upskilled as management plans actions are finalized and implemented.</p> <p>0.4 Ensure that proposed plans are carried out. Write-up results and assess effectiveness.</p> <p>0.5 Develop and release animated film with Animate Your Science. Combine media and knowledge</p>

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>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.</p> <p>0.4 Improved biosecurity response with a 10% decline in Big-headed ant in a priority invertebrate sites by Year 3 Q3.</p> <p>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</p>	<p>must be updated in documents. Proposed new protected areas for endemic <i>Discophallus scaly</i> crickets conservation are >4 km² and will alone easily meet the 75ha requirement for species habitat management.</p> <p>0.3 No progress to report.</p> <p>0.4 Sites for trials have been identified and those trials are planned for June-August 2023 with support from Fera Science.</p> <p>0.5 Multiple social media posts have been released via the AIGCFD social media platforms, and Dr Adam Sharp has run a school event and will participate in a second event. An animated film highlighting endemic ecology will be released in June of 2023.</p>	<p>in booklet to disseminate to general public.</p>
<p>Output 1. Comprehensive and fully accessible database of invertebrates on Ascension, including all existing records and results of strategic sampling effort</p>	<p>1.1. Existing invertebrate records and collections collated and verified, together with associated reference. Mapping of species distributions by Year 1 Q4</p> <p>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</p> <p>1.3 Identification of sampled</p>	<p>1.1 Mapping of species distributions is completed for certain endemic taxa and certain habitats, eg known cave habitats. Maps for widespread non-native species are ongoing and will be completed when taxonomic identifications are received from relevant specialists.</p> <p>1.2 Extensive sampling occurred both within and outside protected areas totalling over 150 sites and over 1,500 individual samples.</p> <p>1.3 Species identification is ongoing. Some groups have already been identified, but the majority will require longer identifying because of unavoidable taxonomic difficulty and lack of capacity in the only suitable specialists. At least the majority (> 75%) of species-level identifications will be completed this year.</p> <p>1.4 Biodiversity catalogue is created and being populated, and is compatible with SAERI. DNA reference material is being collected in preparation for</p>	

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>invertebrates to species level using network of taxonomic specialist by Year 3 Q1.</p> <p>1.4 Invertebrate records and occurrences compiled within the ABC and made available via SAERI, plus DNA reference database started by Year 3 Q3</p>	barcoding.	
Activity 1.1 Training and upskilling of Project Officer in UK and St Helena, by knowledge exchanging with existing UKOT invertebrate specialists		Project Officer already upskilled.	None
Activity 1.2 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		Database is built and used daily.	Will be uploaded to SAERI on project close.
Activity 1.3 Historic invertebrate data records and associated references are collated and integrated into the Ascension Biodiversity Catalogue		Already completed.	None.
Activity 1.4 Undertake invertebrate surveys on 100 sites, taking samples and recording associated environmental data		Surveys of over 150 sites completed and environmental data of sites recorded.	Continue surveying small patches of remaining native habitat.
Activity 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.		Majority of samples processed by Project Officer and sent to network of external specialists at a range of institutions.	Maintain contact with specialists and receive specimens and identifications when they are finished.
Activity 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		DNA material in the process of being collected in preparation of barcoding.	Barcode material on-island through separate DPLUS project.
Activity 1.7 Verified species records added to Ascension Biodiversity Catalogue (ABC) and made available via SAERI		Ongoing as identifications confirmed.	Continue verifying records.

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p>Output 2. Invertebrates integrated into long-term conservation planning</p>	<p>2.1 Conservation status of at least 10 endemic species assessed using IUCN criteria by Year 2 Q4</p> <p>2.2 Species action plans prepared for at least three endemic species and incorporated in NBAP workplan by Year 3 Q3</p> <p>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</p> <p>2.4 Three conservation staff with increased skills and knowledge on invertebrate habitat management and ecology by Year 3 Q1</p>	<p>2.1 Six Red List assessments submitted. Data for more than four assessments is available for writing further ones. At least four more will be completed.</p> <p>2.2 Over three endemic species already written into management plans for existing protected areas. Further will be written into workplans as management plans for other protected areas are completed.</p> <p>2.3 Management needs including maintenance of landscape hydrology and substrate compositions already considered in information being written into protected area management plans.</p> <p>2.4 No progress to report. Staff will be upskilled as management plans are finalized within the first quarter of the next year.</p>	
<p>Activity 2.1. Red listing process is undertaken working with MAISG and appropriate IUCN taxon Specialist Groups is used for review, and submitted for publishing</p>		<p>Six assessments submitted this year for publication in next version of Red List</p>	<p>Do at least four more Red List assessments.</p>
<p>Activity 2.2 Endemic invertebrate conservation plan written based on background information and consultation with project partners</p>		<p>No progress to report.</p>	<p>It has been agreed among all project stakeholders that it will be most effective for conservation on Ascension to write all conservation plans into management plans for protected areas, so as to best direct limited resources and combine benefits with other taxonomic groups. As a result, all endemic invertebrate</p>

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
			conservation plans will be incorporated into other documents for a unified approach. Nonetheless, all learning for species which have not been incorporated into protected area management plans, with their respective informed reasons, will be outlined in an invertebrate conservation report which will ensure transfer of knowledge to future invertebrate conservationists on Ascension.
Activity 2.3 Invertebrate actions, species and broader actions, are incorporated into protected area management plans and development control guidance		Already incorporated into management plans for Green Mountain National Park and Mars and Waterside Nature Reserves.	Actions will be incorporated into remaining protected area management plans. List of island protected species will also be updated with endemic invertebrate species.
Activity 2.4 Training in invertebrate conservation is delivered to AIGCFD staff and volunteers by the Project Officer supported by international specialists		No progress to report.	AIGCFD staff members will be upskilled on habitat management as specific actions are incorporated into management plans, and invasive ant control after trials of methods are completed in August 2023.
Output 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	<p>3.1 19 high-risk 'potential' and three 'existing' for invertebrate invasive species identified and reference materials for long-term surveillance/control produced by Y2Q2</p> <p>3.2 Three (out of 16) AIGCFD staff trained in invertebrate biosecurity monitoring techniques for 19</p>	<p>3.1 High-risk and existing species identified. Documents produced on high-risk species. Three existing species have reference material preserved at AIGCFD building.</p> <p>3.2 Staff already part skilled in biosecurity monitoring techniques, will be given further training in the next quarter, and will be fully upskilled on potential new invasive ant species on proposed visit from Fera ant specialist in August 2023. Monitoring techniques for high-risk species are being written into protected area management plans and when implemented that training will be disseminated to staff.</p>	

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>potential and three existing high-risk species by Year 2 Q2</p> <p>3.3 Best practice response protocols available to manage 19 high priority species if detected by Year 2 Q2</p> <p>3.4 Control method tested for Big-headed ants together with complimentary monitoring and results, including next steps, written into a report by end of Q3 Year 3</p>	<p>3.3 No progress to report. These protocols are in development and will be trialled with AIGCFD in the next quarter. This output has been delayed slightly as it was concluded that it was better to prioritise information collection on the endemic invertebrate species early in the project to allow maximum time for species identification by specialists. It will be fully prioritized in Year 3 as specialists work on the endemic invertebrate specimens.</p> <p>3.4 Trials of big-headed ant control planned for June-August 2023, and will learn heavily from similar trials already concluded on St Helena at the beginning of this year.</p>	
<p>Activity 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</p>		<p>Completed.</p>	<p>None.</p>
<p>Activity 3.2 Training on surveillance and control of 19 high-risk invasive invertebrate species provided to 3 staff in the AIGCFD team</p>		<p>Staff already part skilled in biosecurity monitoring techniques, and broad controls are already in place.</p>	<p>Staff will be given further training in the next quarter, and will be fully upskilled on potential new invasive ant species on proposed visit from Fera ant specialist in August 2023. Monitoring techniques for high-risk species are being written into protected area management plans and when implemented that training will be disseminated to staff.</p>
<p>Activity 3.3 Surveillance methods for high risk invertebrates implemented as part of existing biosecurity monitoring</p>		<p>No progress to be reported.</p>	<p>Surveillance methods for high risk invertebrates implemented within first quarter of next year alongside</p>

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
			training of AIGCFD staff.
Activity 3.4 Control methods for high risk invasives incorporated into existing AIG biosecurity response protocols		No progress to be reported.	Control methods for high risk invertebrates implemented within first quarter of next year alongside training of AIGCFD staff.
Activity 3.5 Control methods for BHA applied in trial sites and complementary monitoring undertaken to understand impact of control		Received trial reports and knowledge from St Helena. Ascension trials will be in August 2023. Management areas have already been identified.	Undertake trials and deploy methods in management areas.
Output 4. Information materials and engagement activities raise awareness of Ascension's invertebrate importance and diversity both nationally and internationally	<p>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.</p> <p>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.</p> <p>4.3 Global awareness of Ascension's unique invertebrate fauna raised internationally and nationally, through 2000 views of project video by Year 4 Q1.</p>	<p>4.1 Document not yet produced but all media and knowledge already collated.</p> <p>4.2 Two school events conducted and another planned.</p> <p>4.3 Project animation agreed with third-party company. Animation to be completed by end of May 2023.</p>	<p>4.1 Create guide and disseminate.</p> <p>4.2 Conduct another school event in August 2023.</p> <p>4.3 Work with animators to ensure delivery and accuracy of production.</p>
Activity 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		All media and knowledge collated.	Create booklet.
Activity 4.2 Plan and deliver school events run, engaging 65 pupils with		Two events run.	Deliver another school event in August 2023.

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
Ascension's invertebrates			
Activity 4.3 Produce a video showcasing Ascension's invertebrates and distribute via AIGCFD website		Video is in production.	Disseminate video on completion.

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

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p>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. (Max 30 words)</p>			
<p>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 (Max 30 words) 29</p>	<p>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</p> <p>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</p>	<p>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.</p> <p>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</p> <p>0.3 Evidence of staff implementing new skills, with individual survey</p>	<p>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 supported by international expert contacts.</p> <p>Resources available to implement future invertebrate conservation work. Mitigation: many activities will be integrated into existing work plans so very minimal resources needed.</p> <p>Trained staff’s ability to translate knowledge into conservation</p>

	<p>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.</p> <p>0.4 Improved biosecurity response with a 10% decline in Big-headed ant in a priority invertebrate sites by Year 3 Q3.</p> <p>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</p>	<p>results as well as photos of habitat management activities</p> <p>0.4 Species specific control plans in place. Evidence of control plan implementation and population monitoring results (ant activity assessments) demonstrating declines.</p> <p>0.5 Results of attitude surveys conducted before and after project with a subset of 40 people.</p>	<p>surveying and action Mitigation: training will be tailored to include practical, as well as theoretical elements</p> <p>Funding for biosecurity role maintained Mitigation: biosecurity remains a top priority for UK and AIG.</p> <p>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.</p>
<p>Outputs:</p> <p>1. Comprehensive and fully accessible database of invertebrates on Ascension, including all existing records and results of strategic sampling effort</p>	<p>1.1. Existing invertebrate records and collections collated and verified, together with associated reference. Mapping of species distributions by Year 1 Q4</p> <p>1.2 Targeted sampling of nature reserves and threatened unprotected areas at a minimum of 100 10x10m²</p>	<p>1.1 A baseline dataset established through collation of records and incorporated into the Ascension Biodiversity Catalogue (ABC). '</p> <p>1.2 Survey notes, invertebrate samples and site reports, plus evidence of integration of data into database</p>	<p>Suitable project officer can be recruited and upskilled Mitigation: project partners will advertise vacancy and assist with training.</p> <p>Weather conditions allow consistent survey methods to be applied Mitigation: contingency timings built into project design</p>

	<p>sites in ten different habitat types completed by Year 2 Q4</p> <p>1.3 Identification of sampled invertebrates to species level using network of taxonomic specialist by Year 3 Q1.</p> <p>1.4 Invertebrate records and occurrences compiled within the ABC and made available via SAERI, plus DNA reference database started by Year 3 Q3</p>	<p>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</p> <p>1.4 Example records from the ABC and SAERI databases invertebrate and DNA reference database records</p>	<p>Taxonomic experts are willing to contribute to project and able to identify specimens</p> <p>Mitigation: network of experts already identified through NHM and supported by MAISG international expert network.</p>
<p>Output 2: Invertebrates integrated into long-term conservation planning</p>	<p>2.1 Conservation status of at least 10 endemic species assessed using IUCN criteria by Year 2 Q4</p> <p>2.2 Species action plans prepared for at least three endemic species and incorporated in NBAP workplan by Year 3 Q3</p>	<p>2.1 Red listing for all endemic invertebrates completed and available on the IUCN website, and link through to project website</p> <p>2.2 Finalised copies of species action plans incorporated into NBAP. Record of actions completed in NBAP workplan reporting that cover 3 endemic species.</p>	<p>Adequate data can be collected and collated to facilitate red listing</p> <p>Mitigation: MAISG is used to working with data poor species for red listing and will support the process.</p> <p>AIGCFD have sufficient capacity to deliver conservation plans.</p> <p>Mitigation: AIGCFD will prioritise conservation of endemic species.</p>

	<p>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</p> <p>2.4 Three conservation staff with increased skills and knowledge on invertebrate habitat management and ecology by Year 3 Q1</p>	<p>2.4 Copies of updated management plan. Evidence of actions completed in NBAP workplan reporting.</p> <p>2.4 Before and after skills surveys of trainees</p>	<p>AIGCFD have sufficient capacity to deliver conservation plans. Mitigation: New actions will refocus existing work and require relatively little additional capacity.</p> <p>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</p>
<p>Output 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</p>	<p>3.1 19 high-risk 'potential' and three 'existing' for invertebrate invasive species identified and reference materials for long-term surveillance/control produced by Y2Q2</p> <p>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</p> <p>3.3 Best practice response protocols available to manage 19 high priority</p>	<p>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.</p> <p>3.2 Record of training and, before and after skills assessment</p> <p>3.3 Best practice response protocols integrated into biosecurity strategy and available through the AIG website. Biosecurity incident reporting demonstrates</p>	<p>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.</p> <p>Legacy of training maintained on island Mitigation: Standardised protocols and knowledge handover processes put in place.</p> <p>Effective response measures exist for priority species. Mitigation: international expertise</p>

	<p>species if detected by Year 2 Q2</p> <p>3.4 Control method tested for Big-headed ants together with complimentary monitoring and results, including next steps, written into a report by end of Q3 Year 3</p>	<p>implementation</p> <p>3.4 Control report that reviews control methods, provides monitoring, results and next steps is sent to local stakeholders</p>	<p>through MAISG will help to identify appropriate measures</p> <p>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</p>
<p>Output 4: Information materials and engagement activities raise awareness of Ascension's invertebrate importance and diversity both nationally and internationally</p>	<p>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.</p> <p>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.</p>	<p>4.1 Copy of guide, distribution list and download statistics</p> <p>4.2 Photographs of events, attendance list and copies of pupil worksheets demonstrating improved understanding</p>	<p>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.</p> <p>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.</p>

	<p>4.3 Global awareness of Ascension's unique invertebrate fauna raised internationally and nationally, through 2000 views of project video by Year 4 Q1.</p>	<p>4.3 Links to video and record of views form social media analytic tools.</p>	<p>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.</p>
<p>Activities (each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.2 Training and upskilling of Project Officer in UK and St Helena, by knowledge exchanging with existing UKOT invertebrate specialists</p> <p>1.2 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</p> <p>1.3 Historic invertebrate data records and associated references are collated and integrated into the Ascension Biodiversity Catalogue</p> <p>1.4 Undertake invertebrate surveys on 100 sites, taking samples and recording associated environmental data</p> <p>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.</p> <p>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</p> <p>1.7 Verified species records added to Ascension Biodiversity Catalogue (ABC) and made available via SAERI</p> <p>2.1. Red listing process is undertaken working with MAISG and appropriate IUCN taxon Specialist Groups is used for review, and submitted for publishing</p> <p>2.2 Endemic invertebrate conservation plan written based on background information and consultation with project partners</p> <p>2.3 Invertebrate actions, species and broader actions, are incorporated into protected area management plans and development control guidance</p> <p>2.4 Training in invertebrate conservation is delivered to AIGCFD staff and volunteers by the Project Officer supported by international specialists</p> <p>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</p> <p>3.2 Training on surveillance and control of 19 high-risk invasive invertebrate species provided to 3 staff in the AIGCFD team</p> <p>3.3 Surveillance methods for high risk invertebrates implemented as part of existing biosecurity monitoring</p> <p>3.4 Control methods for high risk invasives incorporated into existing AIG biosecurity response protocols</p> <p>3.5 Control methods for BHA applied in trial sites and complementary monitoring undertaken to understand impact of control</p> <p>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</p> <p>4.2 Plan and deliver school events run, engaging 65 pupils with Ascension's invertebrates</p> <p>4.3 Produce a video showcasing Ascension's invertebrates and distribute via AIGCFD website</p>			



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	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	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		0	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		0	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-reviewed publications on the status of endemic invertebrates	Number	None		0		0	10
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		0	500

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

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 correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Y
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Y
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	N
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	N
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	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?	Y
Do not include claim forms or other communications with this report.	