

Applicant: **Visser, Chrisna**
Organisation: **Ascension Island Government**
Funding Sought: **£25,621.77**

DPLR5\1087

Implementing biocontrol to give Ascension's endemic species a fighting chance

Invasive non-native species (INNS) are the most serious threat to Ascension's terrestrial biodiversity. The scale of the problem means current control efforts are limited to reducing impacts on the most sensitive protected areas and species. Even this stretches resources and more sustainable ways of tackling INNS need to be found. This project will develop budgeted work plans for three INNS of the highest priority, identifying and assessing the suitability of biocontrol agents that could be developed against Ascension's priority invaders.

PRIMARY APPLICANT DETAILS

Title	Miss
Name	Chrisna
Surname	Visser
Organisation	Ascension Island Government
Tel (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

DPLR5\1087

Implementing biocontrol to give Ascension’s endemic species a fighting chance

Section 1 - Project Title & Contact Details

Q1. Project Title

Implementing biocontrol to give Ascension’s endemic species a fighting chance

Q2. Please select whether you are applying as an organisation or as an individual (Guidance section 3 and Guidance Glossary)

☒ Organisation

PRIMARY APPLICANT DETAILS

Title	Miss
Name	Chrisna
Surname	Visser
Organisation	Ascension Island Government
Tel (Work)	
Email (Work)	
Address	

GMS ORGANISATION

Type	Organisation
Name	Ascension Island Government
Phone (Work)	
Email (Work)	
Website (Work)	
Address	

Section 2 - Overseas Territory(ies)

Q3. Please state whether the same (or a similar) project proposal has previously been submitted (or you are planning to submit it) to the UK Government for funding. This includes through Darwin Plus Local, Defra's other Darwin Plus grant schemes or other UK Government funding mechanisms. Failure to share this information may result in the application being ineligible (see Guidance section 2.1.1).

☐ No

Q4. Overseas Territory (Guidance section 1.3):

Which UK Overseas Territory(ies) will your project be working in?

☒ St Helena, Ascension and Tristan da Cunha*

* if you have indicated a territory group with an asterisk, please give detail on which territories you are working on here:

Ascension Island

In addition to the UKOT(s) you have indicated, will your project directly benefit any other UK OT(s) or country(ies)?

☐ No

Section 3 - Project Partners

Q5. Project partners (Guidance section 3.2)

In this section, please give details of all the partners involved (including the Lead Organisation) and provide a summary of their roles.

Project Leader name: (Guidance section 3.1)	Chrisna Visser
Lead Organisation name: (if applying as an organisation; Guidance section 3.1)	Ascension Island Government Conservation and Fisheries Directorate (AIGCFD)
Lead Organisation Website (if applicable):	https://www.ascension.gov.ac/
Is the Lead Organisation based in a UKOT where the project is working? (Guidance section 3.1)	☒ Yes
List other partners involved and where are they based:	CABI, Bakeham Lane, Egham, Surrey TW20 9TY, United Kingdom
Summary of roles and responsibilities of each partner in the project:	AIGCFD: Responsibility for overall project management, financial management, delivery of the project, monitoring, and evaluation. In addition: - the economic/ecological impact assessment for the target invasives. - field collection and morphological characterisation of target plant populations on Ascension Island. - determine if Ascension's Opuntia population is genetically distinct from those in St Helena. - molecular ID of Opuntia biotypes. - monitoring the establishment of the recently released BCA, Evippe sp. #1 (DPL00084). CABI: Responsibility for biological control components of three detailed risk assessments focused on the potential introduction of the most promising agents (invertebrates and fungal plant pathogens) for the control of: - Prickly pear (Opuntia spp.) - Guava (Psidium guajava) - scale and mealybug pests attacking the endemic spurge Euphorbia organoides Work will include: - Screening of known natural enemies of the target species for suitability of release on Ascension Island based on the existing knowledge for these potential agents including success of the agents in other countries, climate and habitat suitability on Ascension and potential for non-target impacts. - Analysis of data on past biocontrol attempts and how these can be applied to the conditions on Ascension Island. - Review obtainability of potential control agents including need for culturing under quarantine conditions to eliminate the risk of accidental introduction of unwanted organisms such as parasites and parasitoids of potential control agents. - Assessing the scope of potentially required host range testing, creating test plant/invertebrate lists, and establishing the requirements for facilities on Ascension Island and/or the UK.

I confirm that all listed partners are aware of this application and have indicated support: Checked

Attach a Cover Letter for your application (Guidance section 4.2).

 [Cover Letter DPL R5 - Implementing biocontrol to give Ascensions endemic species a fighting chance - Final](#)
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Section 4 - Project Summary & Description

Q6. Project Summary (Guidance section 3.8)

Please provide a brief summary of your project. This may be used in communication activities and/or published online, if your application is successful.

Invasive non-native species (INNS) are the most serious threat to Ascension's terrestrial biodiversity. The scale of the problem means current control efforts are limited to reducing impacts on the most sensitive protected areas and species. Even this stretches resources and more sustainable ways of tackling INNS need to be found. This project will develop budgeted work plans for three INNS of the highest priority, identifying and assessing the suitability of biocontrol agents that could be developed against Ascension's priority invaders.

Q7a. Description (Guidance section 2.1 and 6)

Please provide a description of your project, including:

- the overall objective
- the current situation and the problem the project is trying to address
- what success will look like and how you will measure it

Please be as specific as possible when describing the project, using quantified data and evidence where available. You may wish to consider: what are the specific threats to the environment that the project will attempt to address, and what should we know about these threats? What does your successful project look like? And how will you demonstrate whether and how your project has been successful?

This project combines local knowledge of AIGCFD with expertise of CABI to develop work plans (WP) to tackle three of Ascension's most damaging invasive non-native species (INNS) and monitor the establishment of a control agent, released last year through Darwin funding. Building on previous work (DPL00038), this will allow decision-makers on Ascension to evaluate adoption of prioritised biocontrol targets. The development of three budgeted WPs for key INNS of highest priority for biodiversity conservation will provide an actionable framework for a coordinated and strategic future biological control programme.

Overall objective:

Developing budgeted WPs for the classical biological control (CBC) of three high-impact invasive species on Ascension Island by identifying suitable biocontrol agents and conducting risk assessments (RA).

Current situation/problem trying to address:

INNS pose the greatest threat to Ascension's terrestrial biodiversity, making up 82% of all species and

overwhelming native and endemic populations. INNS outcompete or prey on native species, leading to population declines among endemic plants and invertebrates and threatening habitats essential for nesting green turtles and seabirds. Despite significant efforts using mechanical and chemical control, invasive plants and invertebrate pests continue to spread, endangering biodiversity across the island. Only the most sensitive protected areas can be kept free of non-native plants but these are at constant risk from growing seed banks. The feasibility study (DPL00038), "Can biocontrol halt the tsunami of non-native species on Ascension?" assessed the potential for CBC of 10 priority invasive species, of which three have been flagged as key targets with a high likelihood of success for the following phase. The next step is to conduct detailed RAs and develop budgeted WPs to advance these feasibility studies to practical implementation:

- *Psidium guajava* (guava)

Guava is one of the most problematic INNS jeopardising the survival of several endemic plants. We will review the suitability of insects for its control with a focus on: Hymenoptera of the genera *Eurytoma* and *Haplostegusepimelas*, and the Eriococcid scale *Tectococcus ovatus*. We will also assess the suitability of fungal plant pathogens, including the availability and safety of the potential use of a host specific strain of the myrtle rust *Puccinia psidii*.

- Several armoured scales (Diaspididae) and mealybugs (Pseudococcidae) attacking the endemic spurge *Euphorbia origanoides*,

posing a major risk to its long-term survival. They are highly amenable to CBC, and we will select the most promising BCAs for both groups. For Diaspididae, primarily *Hemiberlesia lataniae*, this will most likely be hymenopteran parasitoids, but we will also assess a combination of host specific predatory mites with specialist scale feeding coccinellids and their availability from commercial suppliers. For the control of Pseudococcidae, primarily *Planococcus minor*, commercially available parasitoids such as *Coccidoxenoides perminutus* and *Leptomastix dactylopii* will be assessed for their suitability to be used on Ascension.

- *Opuntia elatior*/spp. (prickly pear)

Surveys conducted as part of DPL00038 have shown that *Opuntia* on Ascension is only partially controlled by *Cactoblastis*, a BCA widely introduced in the 20th century. More recently, better control was achieved in South Africa and Australia using cochineal species of the genus *Dactylopius*. It is essential to match co-evolved species or biotypes of the cochineal with those of the target host to achieve high levels of control. We will carry out a molecular assessment of the biotype of *Opuntia* present on the island and St Helena and assess the suitability of specific *Dactylopius* species/lineages for its control. The WP will also include a timeline for obtaining and culturing the most appropriate *Dactylopius* species, and for its release on Ascension Island.

The project will continue monitoring the establishment of a recently released BCA (*Evippe* sp.) for Mexican thorn (*Neltuma juliflora*).

Q7b. Long-term sustainability (Guidance section 2.1 and 6)

Please describe the long-term benefits of the project and the change it will bring about. How will the outcomes of the project be sustained after the funding is finished?

This project will create three WPs with detailed cost-benefit-analyses for key INNS of the highest priority which can then be implemented on Ascension, subject to future approval and funding. These plans will provide an actionable framework for a coordinated and strategic future biological control programme that will bring about sustained and effective control. The implementation of these plans will benefit the island by reducing biodiversity loss over time as a result of the sustained control of non-native species that pose the greatest threat to Ascension's endemic terrestrial plant and invertebrate species. The project will enhance habitat quality while building capacity within AIGCFD by ensuring that the knowledge and skills required for long-term management are retained on the island. Biocontrol will reduce reliance on chemical and mechanical controls, with their associated economic and environmental impacts, and is an inherently long-term solution, with self-sustaining populations of BCAs offering control of target species in perpetuity.

(Optional) Please upload any additional and supporting materials or files (such as maps of project sites, etc) below. Maximum of 5 sides of A4, and is combined as a single PDF:

 r5-dplus-local-Budget template - Implementing biocontrol to give Ascension's endemic species a fighting chance - Final	 r5-dplus-local-supporting-documents - Implementing biocontrol to give Ascension's endemic species a fighting chance - Final
 25/11/2024	 25/11/2024
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 pdf 68.82 KB	 pdf 2.65 MB

Section 5 - Project Outcome(s)

Q8. Project Outcome(s) (Guidance section 1.2)

Successful Darwin Plus Local projects must demonstrate measurable outcomes in at least one of the themes of Darwin Plus with a clear focus on biodiversity and the natural environment, either by the end of the project or soon after through a credible plan.

Please note: Any proposals including research or monitoring are required to demonstrate a clear link to tangible outcomes for conservation of biodiversity and the natural environment. Please explain how any new research will be applied to drive environmental outcomes on the ground.

Please confirm that your project has a clear focus on biodiversity and the natural environment.

Checked	Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;
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Please tick which additional theme(s) of Darwin Plus your project contributes to (if relevant):

Unchecked	Climate change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;
Checked	Environmental quality: improving the condition and protection of the natural environment
Checked	Capability and capacity building: enhancing the capacity within OTs, including through community engagement and awareness, to support the environment in the short- and long-term.

Please justify your selection. Please use quantitative information where possible here.

This project will slow Biodiversity loss by enabling the sustainable control of non-native species that pose the greatest threat to Ascension’s endemic terrestrial plant and invertebrate species.

Non-native species are having a profound effect on habitat quality, landscape, soil conditions and even climate on Ascension. Their control will improve overall Environmental quality on Ascension.

AIGCFD currently don’t have the resources to prevent non-native species impacting biodiversity. This project will build Capability and capacity to independently implement the WPs developed which outlines essential control approaches for high priority invasive species.

Section 6 - Workplan

Q9. Workplan (Guidance section 2.2)

Please provide anticipated dates for the start and end of your planned project here. Please use the **Darwin Plus Local Project Workplan** (available at: <https://darwinplus.org.uk/how-to-apply/local-applications/>) to provide a list of the individual activities you have planned for this project, a brief description of what each activity entails, and the months in which the activities will be carried out. If the project involves only one activity (e.g. a purchase), please still provide project start and end dates (noting estimated times for procurement). **Please note that your project must start after 1 April 2025 and be completed by 31 March 2026.**

Start date:	End date:	Duration (e.g. 3 months):
01 April 2025	31 March 2026	1 Year

Please upload the completed Darwin Plus Local Project Workplan with your proposed project activities here

 [r5-dplus-local-implementation-timetable-Implementing biocontrol to give Ascension's endemic species a fighting chance - Final](#)

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Section 7 - Costs

Q10. Costs (Guidance section 2.2 and please read the Finance Guidance)

Please provide a breakdown of costs to be funded through Darwin Plus Local (in GBP).

Are you seeking any matched funding for this project? (Please note that this is optional and there is no requirement to seek matched funding for Darwin Plus Local projects).

☒ Yes

How much matched funding are you seeking and where from?

AIGCFD are providing a total in-kind contribution of £ 12,850.00 made up of:

Staff costs: £ 11,650.00
Overheads: £ 1,000.00
Field work travel: £ 200.00

Budget line	Explanation	Cost in GBP
Staff costs:	None	

Consultancy costs:	CABI staff cost	
Overhead costs:	Overheads on CABI Staff time	
Travel & subsistence costs:	Flights to carry samples between Ascension Island and the UK; training opportunities at CABI. T&S for 3 people	
Operating costs:	Printing and office consumables	
Capital equipment:	Biocontrol storage shed (£ [REDACTED])	
	Shelving units (£ [REDACTED])	
	Emergence boxes (£ [REDACTED])	
	Eppendorf Safe-Lock micro test tubes 2.0ml (£ [REDACTED])	
	BRAND Seal-R-film Laboratory Film Length 38m Width 100mm (£ [REDACTED])	
Other Costs	Weeds Biological Control Short Course at Rhodes University (SA)	
Total:		

This section provides more information on the budget to help evaluators understand how you will use the funds you are requesting. You do not need to list all costs, but please list and detail costs of more than £1,000 per item below, under the appropriate budget line.

Details of staff costs over £1,000 (if relevant)

AIG staff costs are provided in-kind

Details of overhead costs over £1,000 (if relevant):

CABI overhead cost charged at 40% of Staff costs.

Details of travel and subsistence costs over £1,000 (if relevant):

Visits from CABI UK to Ascension. Carry samples from Ascension Island to the UK for molecular assessment.
Project Officer visit from Ascension to CABI UK for training opportunities.

Details of operating costs over £1,000 (if relevant):

Printing and office consumables

Details of capital equipment costs over £1,000 (if relevant):

Biocontrol storage shed (£ [REDACTED])
Shelving units (£ [REDACTED])
Emergence boxes (£ [REDACTED])
Eppendorf Safe-Lock micro test tubes 2.0ml (£ [REDACTED])
BRAND Seal-R-film Laboratory Film Length 38m Width 100mm (£ [REDACTED])
SLS Select 3mL Plastic Transfer Pipette Non-Sterile (£ [REDACTED])

These items will make shipment of plant material, scales, and mealybugs possible for molecular assessment in the UK. Consumables can be stored in the Biocontrol storage shed and shelving units.

Details of consultancy costs over £1,000 (if relevant):

CABI staff costs cover 24 days @ [REDACTED] per day for a senior scientist, and 24 days @ [REDACTED] for a mid-career scientist.

Details of other costs over £1,000 (if relevant)

Weeds Biological Control Short Course at Rhodes University (SA).

If your project budget was prepared in another currency and converted to GBP, please provide the exchange rate, its source, and the date it was accessed:

Other currency:	Exchange rate:	Source of this exchange rate:	Date exchange rate accessed:
No Response	No Response	No Response	No Response

Darwin Plus Local has been created to build capacity and contribute to local economies in-territory (Guidance section 2.1.1 and section 1.8.4 of the Finance Guidance).

In-territory spend is defined in Darwin Plus Local as including funding spent on:

- Equipment purchased in-territory;
- Equipment that cannot be acquired in-territory and is therefore purchased abroad, but will remain and be used in-territory beyond the life of the proposed Darwin Plus Local project;
- Training or skills that cannot be acquired in-territory and are therefore purchased abroad, but will be used in-territory beyond the life of the proposed Darwin Plus Local project;
- Time for consultants or staff based in-territory.

In-territory spend does not include:

- Time for consultants or staff who are based abroad, even if they travel to the OT to undertake the work;
- Shipping and import costs for equipment purchased abroad;
- Travel and subsistence costs where they incur spend outside the OT.

What % of the total will be spent in-territory? 20

If less than 80% of the total project spend is to be spent in-territory, please explain why.

The purpose of this project is for AIGCFD to benefit from expertise not available on Ascension. This project cannot be delivered through spend on the island but all of the knowledge and capacity created will be retained within AIGCFD. The bulk of the reviews and molecular assessments have to take place off-island in suitable facilities.

Section 8 - Local and National Priorities

Q11. Local and national priorities

Please explain how this project aligns with local and national priorities? You may wish to consider the project in the context of national environmental laws, objectives, strategies, territory specific agreements, action plans or policies.

Non-native species are identified as a major threat to biodiversity in the Ascension Biodiversity Strategy and Action Plan (BSAP), which states a strategic objective to reduce the impact of non-native species on the island.

Development of new and innovative control methods to reduce the impact of non-natives is listed as a core action in the Ascension Biosecurity Strategy, and the development of biocontrol agents identified as a high priority action in the Ascension Endemic Plant Restoration Plan that is currently in preparation.

This project will address Ascension's and the UK Government's commitments under Article 8 of the Convention on Biological Diversity, to control alien species that threaten ecosystems, habitats, or species.

Will the project...

Take place on Government owned land or water?

☒ Yes

Involve biocontrol, invasive alien species control or eradication?

☒ Yes

Require permit(s) from Government departments for completion of activities?

☒ Yes

If you have answered yes to any of the questions above, please attach evidence that you have Government support for this project i.e. a Letter of Support. Applications which indicate that they do not take place on Government land or water, but which propose work that appears to the reviewers would be difficult/impossible to carry out without working on government land or waters may be ineligible if no Letter of Support is provided.

 [AIG Letter of Support DPL R5 - Implementing biocontrol to give Ascension's endemic species a fighting chance Final](#)

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Section 9 - Project Risks

Q12. Project Risks

Please demonstrate your consideration of any risks involved in this project and how you intend to manage them. Please note the importance of health and safety and environmental risk assessment in the design of your project. If there is any possibility that your project may have negative impacts on the environment or human health, it is important that you provide a comprehensive analysis of potential environmental and human health risks, and the prevention measures you will take to ensure the work does not cause harm.

Depending on your project, you may wish to consider:

- Biosecurity risks – particularly for projects involving external equipment.
- Safeguarding risks – particularly for projects involving vulnerable groups such as children, older people or people with disabilities.
For example, you should consider the ratio of vulnerable people or children to adults, ensuring there are appropriate background checks of all staff, and informing vulnerable groups and children of their right to safety and protection.

Risk	Mitigation
No existing biocontrol agents are found to exist for high priority invasives.	Many of the most damaging non-native species on Ascension are common pests throughout the world leading to international efforts to seek biocontrol options. The 2012 assessment indicates some potential agents do exist.
Public support cannot be secured for the release of biocontrol agents.	Full risk assessments will be carried out for at least two species to ensure the public consultation is well-informed and the risks of inaction are conveyed.
Future releases of biocontrol agents fail to establish or have unintended negative impacts on biodiversity.	Experience from other releases will be used to make recommendations that maximise the likelihood of successful establishment. Risk Assessments will anticipate any non-target impacts or negative consequences of releasing the biocontrol agent(s).

Do you require more fields?

☒ No

Section 10 - Terms & Conditions

Q13. Terms and conditions (Guidance section 3.10)

By applying for Darwin Plus Local you are adhering in full to the grant Terms and Conditions in full (available at: <https://darwinplus.org.uk/how-to-apply/local-applications/> and as referenced in the Guidance at section 3.10). For information, the Terms and Conditions include requirements for all applicants to (amongst other requirements as per the full Terms and Conditions):

- Uphold a zero tolerance for inaction approach to tackling sexual exploitation, abuse, and harassment.
- Where appropriate, make all reasonable and adequate efforts to address gender inequality and other power imbalances.
- Notify all cases of fraud and theft (whether proven or suspected) relating to the project to the Grant Administrator as soon as they identified.

Please indicate you have read, and understood, and will adhere to the Terms and Conditions.

Checked

Supporting documents list (please have these ready to attach with application)

- Cover Letter of no more than two A4 pages. (Guidance section: 4.2 has information on what this cover letter should include).
- If the project takes place on public land or water, is addressing invasive alien species or includes activities requiring a permit, a Letter of support from OT Government.
- Project Workplan in the template provided for Darwin Plus Local (available at: <https://darwinplus.org.uk/how-to-apply/local-applications/>).
- Map and additional information (optional) maximum five additional pages.

If your application is successful

If your project application is successful, the Fund Administrator (NIRAS) will ask you to provide some financial evidence for due diligence checks before you receive your project grant. (Please see section 3.3 of the Darwin Plus

Local Finance Guidance). Please be ready to provide this evidence promptly.

- **Financial evidence for organisations:** Year-end financial statements, the latest management accounts or audited accounts (if you have these).
- **Financial evidence for individuals:** Proof of identity such as a passport, ID card or driving licence and solvency (such as bank statements) and a police check.

Section 11 - Certification

Certification

I certify that, to the best of my knowledge and belief, the statements made in this application are true and the information provided is correct.

Checked

I have the authority to submit an application on behalf of my organisation.

Checked

Name:	CHRISNA VISSER
Position in the organisation: (if applicable)	INVASIVE SPECIES SPECIALIST
Signature (please upload e-signature)	 Chrisna Visser signature  25/11/2024  14:54:26  jpg 76.03 KB
Date:	25 November 2024

Section 12 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance documents, including the “Darwin Plus Local Guidance” and the “Darwin Plus Local Finance Guidance”.	Checked
If my proposed project takes place on public lands or water or is addressing alien invasive species, I have uploaded a Letter of Support from Government.	Checked
I have uploaded a cover letter that details the information requested in the guidance (Guidance section 4.2 has information on what this cover letter should include).	Checked
I have read, and can meet, the current Terms and Conditions for this fund (found at: https://darwinplus.org.uk/apply/local-applications/) for this fund.	Checked
I have provided actual start and end dates for my project that fit this Round.	Checked

I have provided my summary budget based on UK government financial years i.e. 1 April – 31 March and in GBP in the application form.	Checked
I have uploaded my project workplan using the specific template provided (available at: https://darwinplus.org.uk/apply/local-applications/).	Checked
I have uploaded all supplementary documents if I have any.	Checked
(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.	Checked
The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have checked the Darwin Plus website immediately prior to submission to ensure there are no late updates.	Checked
I have read and understood the Privacy Notice on the Darwin Plus website.	Checked

We would like to keep in touch!

Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under Darwin Plus. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share project news. You are free to unsubscribe at any time.

Checked

Data protection and use of personal data

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This Privacy Notice must be provided to all individuals whose personal data is supplied in the application form. Some information may be used when publicising Darwin Plus including project details (usually title, lead partner, project leader, location, and total grant value).