DPLR1\1024

Darwin Plus Local - Final Report (1)

Officer: Jessica Magnus

Section 1 - Darwin Plus Local Project Information (Essential)

Project Reference Number

DPLR1/1024

Q1. Project Title

No Response

Overseas Territory(ies)

☑ St Helena, Ascension, and Tristan de Cunha

Lead Organisation or Individual

Ascension Island Government Conservation and Fisheries Directorate (AIGCFD)

Partner Organisation(s)

Centre for Agriculture and Biosciences International (CABI), UK

Value of Darwin Plus Local Grant Award

£19,964.00

Project Start Date

03 April 2023

Project End Date

31 March 2024

Project Leader Name

Tiffany Simpson

Project Website/Twitter/Blog etc.

No Response

Report Author(s)

Chrisna Visser, Phil Lambdon, and Tiffany Simpson

Report Date

29 April 2024

Project Summary

No Response

Project Outcomes

Checked	**Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;**
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.**

Section 2 - Project Outcomes (Essential)

On a scale of 1 (high – outcome substantially exceeded) to 5 (low – outcome substantially did not meet expectation), how successful do you think your project has been?

⦿ 2 - Outcome moderately exceeded

Project outcomes and justification for rating above

DPLR/1024, with support from DPLUS134, showed that biological control is the logical next step for invasive control efforts, especially within an isolated landscape like Ascension Island.
Specific actions undertaken:
1. List 25 most damaging pest species - completed July 2023.
2. This list was screened by CABI and the most damaging species were identified using an adapted approach to Paynter et al. (2009) (Appendix 1) – completed July 2023.
3. From actions 1 and 2, we determined that suitable biocontrol agents are not readily available for many of the listed species. As part of a strategic review, we decided that in some cases it would be more beneficial to invest in surveys for new agents for more serious problems than focusing on off-the-shelf agents for less important species. Therefore, we adapted actions 4 and 5 to take this into account.
4. Shortlist of 10 targets for biocontrol identified by November 2023 including species with both promising agents and some which still require more research. CABI compiled species assessments detailing potential biocontrol options and a development pathway where no options currently exist. The list included 6 plants and 4

invertebrates (Appendix 2,3). Two of the invertebrates (Hemiberlesia lataniae, Planococcus minor) are representatives of a group of closely related invasive pests. The species assessments compiled information from global studies which will be a long-term resource for the AIGCFD as it develops an Invasive Species Management Plan.
5. More detailed concept notes have been produced for Psidium guajava (guava), Hemiberlesia lataniae (Latania scale) and Planoccoccus minor (passionvine mealybug) (Appendix 4,5). The note covering the scales provides additional guidance for the control of closely related pests. These are considered to present the most serious threats to Ascension's ecosystems and there are practical biocontrol options available. Biocontrol for guava has not been developed before, but there are guava pests that could be considered for testing. For the two invertebrate species, some previous biocontrol attempts have been made which suggest promising results.
6. The success of previously introduced biocontrol agents for Lantana camara and Opuntia sp. were surveyed between August 2023 and February 2024 (Appendix 6). 12 species from Lantana were collected; 8 of which were causing some feeding damage. The two deliberately released agents were both still present, but only Teleonemia scrupulosa (Lantana lace bug) is still widespread. We found that Orthezia insignis (Jacaranda bug) and a moth caterpillar (Chrysodeixis ipsilon) were both more important predators in some parts of the island. Cactoblastis cactorum were found to be a common pest on Opuntia elatior and scale insects (unidentified) were also widespread on Opuntia. Both plant species remain widespread on Ascension, but the herbivores are probably suppressing expansion to some extent.
7. Work done by DPLUS134 already led the way in gaining community support for the addition of biological control to Ascension, including public talks, consultations and through social media (Facebook, Twitter (X), Public Notices and publications in the Islander). The results of the Lantana and Opuntia survey will be published on the AIG website: www.ascension.gov.ac.

Supporting Evidence - file(s) upload

Appendix 6 - Lantana and Opuntia report_Final
29/04/2024
14:43:38
docx 4.35 MB

Appendix 5 - Biological control of mealybigs and other scales on Ascension_Final
29/04/2024
14:43:19
doc 2.86 MB

Appendix 4 -Biological control of guava_final
29/04/2024
14:43:03
docx 718.64 KB

Appendix 3 - Invertebrate - Species Assessments
29/04/2024
14:42:51
docx 4.65 MB

Appendix 2 - Plants - Species Assessments
29/04/2024
14:42:35
docx 3.88 MB

Appendix. 1 - Adapted Paynter tool - Feasibility B C
29/04/2024
14:42:20
xls 153 KB

Supporting Evidence - links to published document/online materials

What we will submit as evidence:
• Appendix 1 - Prioritisation assessment after Paynter et al. 2009
This is a database in form of an Excel file providing a ranking score for each assessed species
• Species assessments for the following invasives:
Appendix 2 - Plants
• Juniperus bermudiana

• Miconia crenata
• Piper aduncum
• Psidium guajava
• Sageretia minutiflora
• Tecoma stans
Appendix 3 - Invertebrates
• Hemiberlesia lataniae
• Periplaneta americana
• Planococcus minor
• Tetranychus urticae
• Two concept notes
Appendix 4 - Biological control of guava in Ascension Island
Appendix 5 - Biological control of mealybugs and other scale insects in Ascension Island
• Appendix 6 - Lantana and Opuntia report

Project Challenges

The Project Lead left during July 2023, but this did not affect the project's outcome. The new Director of Conservation and Fisheries, Tiffany Simpson, took overall responsibility of the project. Two staff members from AIGCFD, Chrisna Visser and Phil Lambdon, conducted the Lantana and Opuntia field surveys and assisted with administrative duties such as report writing and facilitating meetings with our external partners at CABI.

Lessons Learned

i. Through our initial preparations of the Lantana and Opuntia surveys, we noticed the shortfall in data collected since the biocontrol agents were released on Ascension in the 1970s. Without suitable background data in place the success of biocontrol releases is difficult to assess. It is particularly difficult to determine whether they were cost-effective and whether there have been any positive or negative ecological consequences. This information is necessary to evaluate future biocontrol release programs.
ii. Assessing the suitability of a biocontrol agent for a given country requires consideration of numerous factors including host specificity, cost/benefits and potential non-target effects. Not every potential agent is likely to be appropriate for each situation and for many serious invasive species there has yet to be any work done on biocontrol. Although off-the-shelf options are generally more cost-effective, sometimes new agents have to be found and assessed to fit particular local requirements. Surveys for new agents and testing of their host range can be costly, particularly in the case of small islands where, due to the small area covered, the investment versus benefit ratio can often be unfavourable. Such investments must be offset against the costs of clearance and damage caused by the invasive species.
iii. Biocontrol projects involve a long-term process that requires several stages. It is difficult to fit a full biocontrol program into a single funded project, because the field-testing phase and release phase may each require two years. Sources of longer-term funding will be necessary.

Section 3 - Project Finance (Essential)

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	[redacted]			

Consultancy Costs	[redacted]		
Overhead Costs			
Travel and Subsistence			
Operating Costs			
Capital Items			
Others			
Total	19,964.00	19,964.00	0

Please provide a short narrative summary on project finances.

There was no difference between the planned and actual expenses.

Section 4 - Contribution of Project to Darwin Plus Programme Objectives

Please select up to **one** indicator that applies within **each group/indicator list (A, B, C, D)** and report your results for that indicator in the text box underneath. If you do not have relevant results to report for any of the indicators in a particular group, you can leave them blank.

Please also submit some form of evidence (above) to demonstrate any results you list below, where possible.

Group A: Capability and Capacity - Core Darwin Plus Standard Indicators (select one)

Unchecked	**DPLUS-A01: Number of people from key national and local stakeholder groups completing structured and relevant training.**
Unchecked	**DPLUS-A02: Number of secondments or placements completed by individuals of key local and national stakeholders.**
Checked	**DPLUS-A03: Number of local/national organisations with improved capability and capacity as a result of project.**
Unchecked	**DPLUS-A04: Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.**

Unchecked	**DPLUS-A05: Number of trainers trained reporting to have delivered further training by the end of the project.**

Group A Indicator Results

We improved the AIGCFD capacity by developing information resources for potential biocontrol options.

Group B: Policies, Practices and Management- Core Darwin Plus Standard Indicators (select one)

Unchecked	**DPLUS-B01: Number of new/improved habitat management plans available and endorsed.**
Checked	**DPLUS-B02: Number of new/improved species management plans available and endorsed.**
Unchecked	**DPLUS-B03: Number of new/improved community management plans available and endorsed.**
Unchecked	**DPLUS-B04: Number of new/improved sustainable enterprises/ community benefits management plans available and endorsed.**
Unchecked	**DPLUS-B05: Number of people with increased participation in local communities / local management organisations (i.e., participation in Governance/citizen engagement).**
Unchecked	**DPLUS-B06: Number of Local Stakeholders and Local Communities (people) with strengthened (recognised/clarified) tenure and/or rights.**

Group B Indicator Results

AIGCFD with support from CABI, produced 10 species assessments which would form part of a potential species and/or habitat management plan. The concept notes already provide further steps towards the implementation of control programmes to address the most damaging invasive species in Ascension Island.

Group C: Evidence and Best Practices - Core Darwin Plus Standard Indicators (select one)

Checked	**DPLUS-C01: Number of best practice guides and knowledge products published and endorsed.**
Unchecked	**DPLUS-C02: Number of new conservation or species stock assessments published.**
Unchecked	**DPLUS-C03: New assessments of habitat conservation action needs published.**
Unchecked	**DPLUS-C04: New assessments of community use of biodiversity resources published.**

Unchecked	**DPLUS-C05: Number of projects contributing data, insights, and case studies to national Multilateral Environmental Agreements (MEAs) related reporting processes and calls for evidence.**

Group C Indicator Results

AIGCFD with support from CABI, produced 10 species assessments which would form part of a potential best practice management guide. Two of these species is discussed in more detail in the form of a concept note.

Group D: Sustainable Benefits to People, Biodiversity and Climate - Core Darwin Plus Standard Indicators (select one)

Unchecked	**DPLUS-D01 Hectares of habitat under sustainable management practices.**
Unchecked	**DPLUS-D02: Number of people whose disaster/climate resilience has been improved.**
Unchecked	**DPLUS-D03: Number of policies with biodiversity provisions that have been enacted or amended.**

Group D Indicator Results

N/A

Section 5 - Project Partnerships, Wider Impacts and Contributions

Project Partnerships

CABI were responsible for the researching and compiling the species assessments and concept notes. AIGCFD were responsible for project management, field surveys and contributed towards local knowledge elements of the assessments.
The AIG were the local partner in the project and therefore were consulted on all aspects.
As the roles were clearly defined the liaison between the partners worked very efficiently.
Results from the research were shared with the local community through the reports, local articles and social media.

Wider Impacts and Decision Making

Through the work done by the DPLUS134 and DPL0038, we are hopeful that the capacity and understanding of biocontrol have been greatly improved. We are enabled to consider rolling out further biocontrol projects in the future and the two concept notes provide clear guidelines for next steps to be taken.

Sustainability and Legacy

There are potential benefits, but these depend on future proposal, funding and local support. Although project staff will return to other work in the short term the groundwork to apply for funding, which can make further control of invasive species on Ascension Island more environmentally friendly and sustainable has been laid and the team is ready to engage in future biological control activities.

Section 6 - Communications & Publicity

Exceptional Outcomes and Achievements

N/A

Photo, video or graphic to be used for publicity and communications.

Please upload at least one relevant and engaging image, video or graphic that you consent to be used alongside the above text in Defra, JNCC or NIRAS communications material.

DPLR1_0038-BCA Cactoblastis cactorum on Opuntia cactus_Ascension Island_C.Visser
29/04/2024
17:03:48
jpg 1.72 MB

Photo, video, and/or graphic captions and credits.

The biological control agent Cactoblastis cactorum visible on cladodes of Opuntia sp. cactus plant in Ascension Island. © C. Visser

I agree for the Biodiversity Challenge Funds Secretariat, Administrator, and/or JNCC to publish the content of this section.

⦿ Yes, I agree for the BCFs Secretariat and/or JNCC to publish the content of this section.

Please list any accounts that you would like tagged in online posts here. This can include project pages, partners' pages or individuals' accounts for any of the following platforms: LinkedIn, Facebook, Twitter, or Instagram.

AIG Conservation Facebook Page - https://www.facebook.com/AscensionIslandConservation/
AIG Twitter Page - @AIGConservation (Twitter)

Section 7 - Darwin Plus Contacts

Please tick here to confirm that you have read and acknowledge the BCF's Privacy Notice on how contact details will be used and stored and that you have sought agreement from anyone that you are sharing personal details with us on their behalf.

⦿ I confirm I have read the Privacy Notice and have consent to share the following contact details

Project Contact Details

Project Contact Name	Dr Tiffany Simpson
Role within Darwin Plus Project	Project Leader
Email	[redacted]

Phone	[redacted]
Do you need further sections to provide additional contact details?	⦿ No