

Biodiversity Challenge Funds Projects Darwin Initiative, Illegal Wildlife Trade Challenge Fund, and Darwin Plus Half Year Report

Note: If there is any confidential information within the report that you do not wish to be shared on our website, please ensure you clearly highlight this.

Submission Deadline: 31st October 2023

Project reference	<i>DPLUS134</i>
Project title	Repelling the invader: turning the tide on Ascension's Mexican thorn
Country(ies)/territory(ies)	Ascension Island
Lead partner	Ascension Island Government
Partner(s)	CABI
Project leader	<i>Tiffany Simpson</i>
Report date and number (e.g. HYR1)	<i>HYR3</i>
Project website/blog/social media	<i>N/A</i>

Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

Although we are not looking for specific reporting against your indicators, please use this opportunity to consider the appropriateness of your M&E systems (are your indicators still relevant, can you report against any Standard Indicators, do your assumptions still hold true?). The guidance can be found on the resources page of the relevant fund website.

Output delivery

a) Output 1

1.1 Use drone imagery to map Mexican thorn distribution

The project is still collecting drone imagery for the Nature Reserves and indicator areas for Mexican thorn distribution. The Project Officer attended drone training for two days during October 2023 as the current Drone Operator is leaving Ascension in December 2023. Flights take place at an altitude of 400m which provides enough detail to distinguish between Mexican thorn (*Neltuma juliflora*) and Yellow Boy (*Tecoma stans*) trees.

JNCC completed the digital mapping of Ascension in June 2023. The use of satellite imagery will help to get an accurate map of Mexican thorn distribution.

A recommendation was made during the Annual Review to consider using orthomosaic software to improve geospatial accuracy as the reviewer wants to know if the photo stitching software currently in use is scale-accurate, thus allowing accurate measurement of areas. The project will consider this suggestion.



Satellite imagery from JNCC, dated June 2023.

1.2 Create maps showing the potential impact of *Evippe* on Ascension

A map was generated in Year 2 which predicted the spread of the moth in three-monthly intervals. It was used during the Public Consultation process.

1.3 Transport plants to the UK for biocontrol host range testing

Seeds were sent to the UK and host range testing was completed during May/June 2023.

1.4 Conduct a full risk assessment of *Evippe* as a biocontrol agent on Ascension

The Risk Assessment was completed in June 2023. A request was received through the Public Consultation period to add lettuce testing on different varieties to the host range testing plant list as this crop is produced by the AIG and Wolf Creek Hydroponics facilities on the island.

Lettuce testing of five varieties could only start during October as the moth culture in the UK lost a significant number of moths. CABI had to work on increasing moth numbers within the culture before this part of the host range testing could be completed. This delay does influence the independent review from DEFRA or FERA and the project has already received feedback from DEFRA.



Application to licence the release of a classical non-native invertebrate biological control agent (IBCA) on Ascension Island

This document is a modified version of the Department for the Environment, Food and Rural Affairs (Defra), UK, form for the application to licence the release of an invertebrate biological control agent (IBCA) in England. It was originally adapted from work undertaken by the EU-funded 'REBECA' (Regulation of Biological Control Agents) (<http://www.rebeca-net.de/>) project and by the European and Mediterranean Plant Protection Organisation (EPPO) to support the use of IBCAs.

The release of a non-native IBCA into Ascension is regulated under the Biosecurity Ordinance, 2020, and requires a licence issued by the Governor of St. Helena on the recommendation of the Ascension Island Government (AIG) Chief Biosecurity Officer.

Using this form

This form should be used for IBCAs, which refer to arthropods as well as entomopathogenic nematodes, but not micro-organisms. Applications to release non-native micro-organisms from quarantine conditions should

Table 1: Plants tested in Australia and South Africa

Family Leguminosae	<i>Acacia gaulacocarpa</i> Benth.
Subfamily Mimosoideae	<i>Acacia leiocalyx</i> (Domin) Pedley
Tribe Mimosae	<i>Acacia mangium</i> Willd.
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	<i>Acacia falcata</i> Willd.
<i>Prosopis velutina</i> Wootton	<i>Acacia fimbriata</i> G. Don
<i>Prosopis juliflora</i> (Sw.) DC.	<i>Acacia macradenia</i> Benth.
<i>Prosopis</i> spp. (<i>velutina</i> hybrid) (ex. Bloemhof [P1])	<i>Acacia pulchella</i> R.Br.
<i>Prosopis africana</i> (Guill. & Perr.) Taub.	<i>Acacia complanata</i> Benth.
<i>Prosopis farcta</i> (Banks & Sol) J.F. Macbr.	<i>Acacia simsii</i> Benth. N
<i>Prosopis cineraria</i> (L.) Druce	<i>Acacia stenophylla</i> Benth. N
<i>Elephantorrhiza burkei</i> Benth.	<i>Faidherbia albida</i> (Delile) A.Chev.
<i>Adenanthera pavonina</i> L.	<i>Senegalia galpinii</i> (Burrill Davy) Seigler & Ebinger
<i>Desmanthus virgatus</i> (L.) Willd.	<i>Senegalia caffra</i> (Thunb.) P.J.H. Hurter & Mabb.
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	<i>Senegalia mellifera</i> (M. Vahl) Seigler & Ebinger

RA sent to DEFRA / FERA (left); plants included in host range testing (right)

Questions were raised in the previous Annual Review regarding habitat modification and risks to endemic fauna. The Risk Assessment developed for the introduction of the biocontrol agent, the *Evippe* sp. #1 moth, found that other acacia species may flourish once Mexican thorn is removed and may gradually replace this species. This may in particular be true for *Leucaena leucocephala* and to a lesser degree for other invasive plants such as Yellow Boy and Tree tobacco (*Nicotiana glauca*). The degree of such replacements is difficult to predict but overall, we expect a more beneficial outcome both environmentally and economically even if there is a significant replacement of *N. juliflora* with other woody invasive plants.

Many of the potential candidates, which could replace *N. juliflora* are known to be invasive to a lesser degree, which can also be managed (removed) in an easier and more cost-effective way. Some of these invasives will also be less severe in their negative impacts such as providing a habitat for rats or even might exert some benefits as providing habitat and/or shelter for some of the native or endemic invertebrates and contributing to dust suppression and erosion control.

The main benefit of releasing the biocontrol agent will be to stop the encroachment of Mexican thorn towards sensitive areas for biodiversity. Any *Neltuma* cover would be damaging to the globally important nesting populations of green turtle (*Chelonia mydas*), seabirds (sooty terns (*Onychoprion fuscatus*) and frigate birds (*Fregata aquila*)), and the endemic invertebrates found on Ascension. This is a result of direct impacts caused by the loss of bare ground and loose sand required by these species as well as indirect impacts caused by the presence of non-native predators such as black rats, invasive ants, and spiders within *Neltuma* stands.

1.5 Seek independent evaluation of the risk assessment process from DEFRA. Address any concerns DEFRA has and provide final recommendations on the use of *Evippe* on Ascension.

The Risk Assessment was sent to DEFRA / FERA for independent review in July 2023. Feedback was received on 03 October 2023 with no major concerns raised. CABI and the Project Officer considered the recommendations made to the document and made the changes as required.

b) Output 2

2.1 Desk-based review of potential chemical and mechanical methods

This output was completed during Year 2.

2.2 Deliver training courses on Ascension for employees from AIGCFD and other organisations and volunteer

Volunteers assisted with Mexican thorn clearance on three separate occasions. New employees were taught how to treat Mexican thorn with different control methods and how to apply herbicide safely. Further training will be made available to AIG and other organisations with the implementation of the Integrated Mexican thorn Control Plan.



Volunteers and AIGCFD staff helping with Mexican thorn clearance.

2.3 Design and conduct trials of recommended treatment methods

Different control methods were trialled at different sites across the island. The best practice methods were identified in this process and incorporated into the Integrated Control Plan and Monitoring and Evaluation Plan.

c) Output 3

3.1 Organise four public meetings

A public consultation on the potential release of the *Evippe* moth was held between the 10th and 31st of May 2023. Three meetings took place with the public, AIG staff, and elected Councillors during this time. In total, 17 responses were received from people living on Ascension and 13 from international respondents via social media.

Mexican Thorn Control Project

Consultation on the possible introduction of the *Evippe* moth to control Mexican thorn on Ascension Island

Prepared and presented by: Ascension Island Government Conservation and Fisheries Directorate



Mexican Thorn Project – *Evippe* moth consultation meeting note

Date: 01 June 2023

Attendance:

Alan Nichols, Kyla Benjamin, Laura Shearer, Kerry Benjamin, Simon Minshull, Chrisna Visser, Diane Baum, Tiffany Simpson

General:

Comments raised at this meeting will be included in the formal Government Response document and will be included as part of the public consultation AIG has conducted on the potential release of the *Evippe* moth as a biocontrol agent for Mexican thorn. The Government Response document produced following the consultation will include comments captured from informal discussions, social media, public meetings, and emails during the consultation period.

Mexican thorn presentation used during public consultation (left) and meeting note from the Councillors' meeting (right)

3.2 Create articles and social media

Due to the high level of public interest, multiple articles and social media posts were shared. A public consultation on the potential release of the *Evippe* moth was held between the 10th and 31st of May 2023. This included articles in the local press, social media posts, and meetings with the public, AIG staff, and elected Councillors.

The Government Response to Consultation document was published on the AIG website and Islander newsletter and circulated via public notice. Once completed, the full Risk Assessment will also be published. If the release is approved, then public notices and press articles will be distributed explaining the process and what people can expect to see in the short and long term.



Consultation on the Use of a New Biocontrol Agent to Tackle Mexican thorn

The AIG Conservation Team is running a public consultation to get the public's views on the introduction of a new biological control agent, a moth called *Evippe*, to slow the spread of Mexican thorn on Ascension.

Mexican thorn is a highly invasive plant that is particularly well adapted to grow in arid to semi-arid environments like those found on Ascension. It has extensive lateral root systems to capture surface water after rain and deep tap roots (up to 30m), allowing it to survive prolonged drought by accessing the water table. It is



Mexican Thorn Biocontrol Consultation

AIG Response to Consultation

Between 10 and 31 May 2023, AIG held a public consultation on the proposed use of the *Evippe* moth as a biological control agent to slow the spread of Mexican thorn on Ascension.

AIG is grateful to all the people on Ascension who attended the meetings and provided their views either verbally or in writing. A summary of the responses received and how they have been addressed by AIG can now be downloaded from the AIG website - [Government Response to Consultation: Consultation on the potential introduction of the *Evippe* moth to control Mexican thorn on Ascension Island – Ascension Island Government](#), or via this QR code.



Additional testing will now be carried out based on responses to the consultation. Following the publication of the full risk assessment, the Chief Biosecurity Officer will make a recommendation to the Governor on whether to release the moth.

Social media posts and public notices distributed during the public consultation process.

d) Output 4

4.1 Produce Integrated Mexican thorn Control Plan

The Integrated Control Strategy was planned to be completed during Year 3, Q2. With slight delays due to the biocontrol component of the project, the Plan is currently in draft form and will be sent to AIGCFD staff and the Mexican thorn Consultant in South Africa for review within Q3.

4.2 Produce Monitoring and Evaluation Plan

The M&E Plan was planned to be completed during Year 3, Q2. With slight delays due to the biocontrol component of the project, the Plan is currently underway and will be sent to AIGCFD staff and the Mexican thorn Consultant in South Africa for review within Q3.

1.5 Site map and discussion

1.5.1 Manageable Units of Ascension Island

The island can be divided into seven (7) manageable units. This will assist in effectively controlling all invasive alien plants (IAPs) present within these distinct boundaries. Each Manageable Unit has a certain purpose and will have its own set of objectives and goals to achieve within a pre-determined timeframe. All IAPs present per unit are listed in order of priority for clearance in Table 2.

Table 1: Manageable Units for Ascension Island

Manageable Units	Description	Who is responsible?	Details
AI001	Nature Reserves and Green Mountain National Park (including buffer zones)	AIGCFD	<p>Manageable Unit AI001 consists of the Nature Reserves (Long Beach, South West Bay (also known as Pan Am), North East, Mars Bay, Waterside, Letterbox, and Boatswain Bird Island Sanctuary) as well as Green Mountain National Park. The newly declared Nature Reserves, Hummock Point, and Bat Cave also form part of this list.</p> <p>AIGCFD is responsible for the maintenance and control of highly invasive species such as Mexican thorn within these areas. Mexican thorn poses a threat to these habitats as it competes with endemic plants</p>

Timeline for clearance efforts of the Beach Nature Reserves

Actions	SMART Indicators	Priority	2023				2024				2025				2026				2027			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Non-native shrub removal	Use appropriate control methods.	High																				
	Focus on beach habitat and buffer zones.																					
Clearance of annual weeds from beach habitat	Maintenance checks at 6-month intervals.	High																				
	Remove weeds on beaches at 6-month intervals.																					
Monitoring	Community engagement - Annual Beach Clean-up (Q3)																					
	Annual Beach Clean-up (Q3)																					
MONITORING																						
Actions	SMART Indicators	Frequency	2023				2024				2025				2026				2027			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Monitoring	Drone imagery of Nature Reserves	Annually																				
	Drone imagery of Nature Reserves																					

Sections taken both from the Integrated Control Plan (left) and the M&E Plan (right)

e) Output 5

5.1 If biocontrol is recommended, construct *Evippe* culturing facilities on Ascension.

The Project started with the procurement of materials and equipment, but some items only arrived in September 2023 and not in the previous quarter as planned. Therefore, construction of the facility started in October 2023. The Project identified the ideal location to cultivate the moths in a secure location and an outdoor holding facility was built next to the existing structure at One Boat. The facility has access to water and electricity which will assist with keeping the area clean and sterilised.



The building identified to use a part of the culture facility (left), access to water and electricity to keep the facility clean (middle); and the site where the outdoor facility is built (right).

5.2 Import *Evippe* from South Africa and culture on Ascension with support from CABI.

This output was meant to start in September 2023, but the project has experienced some delays. A significant number of the moths at the CABI UK facility have died out, so some aspects of the project have not been completed yet. A number of approximately 500 – 1000 moths need to be sent out to Ascension for the cultivation of the moths. CABI is currently trying to breed and increase the culture size. Alternative plans are in place to collect another culture from South Africa if CABI fails to breed more moths. Including lettuce in the host range testing has also delayed the completion of the Risk Assessment, resulting in delays in seeking approval from the Governor for the import of *Evippe*.

5.3 Release *Evippe* on Ascension with support from CABI.

This output could not be achieved in September 2023 as planned as a significant number of the *Evippe* moths died out at the CABI culturing facility in the UK. Alternative plans are in place to collect another culture from South Africa if needed. The Project is hopeful to complete this output by the end of Year 3, Q4.

5.4 Monitor the presence of *Evippe* in the wild and its impact on Mexican thorn following protocols established in the M&E Strategy.

This output could not be achieved in September 2023 as planned as a significant number of the *Evippe* moths died out at the CABI culturing facility in the UK. Alternative plans are in place to

collect another culture from South Africa if needed. The Project is hopeful to complete this output by the end of Year 3, Q4.

In the meantime, the project will collect drone imagery of release sites to aid long-term monitoring to see changes over time before and after the release of the biocontrol agent. The project is also finalising the M&E Strategy while waiting for the necessary outputs 5.1 to 5.3 to be completed.

5.5 AIGCFD and other Ascension organisations carry out Mexican thorn control using new methods.

This output is only scheduled to start Year 3, Q3.

5.6 Organise and deliver volunteer control activities using new treatment methods.

This output is only scheduled to start Year 3, Q3.

2. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

The project was struggling with the procurement of materials and equipment for the *Evippe* culture facility so it could not be built in the previous quarter as originally planned. Items were purchased in May 2023, but some items could not be delivered as it was out of stock at the suppliers. Alternative PRs and POs were submitted and these items only arrived on Ascension in September 2023.

The project is also experiencing problems with the cultivation of the *Evippe* moth at the CABI UK facility. Alternative plans are in place to import another culture from South Africa if CABI fails to increase the moth numbers within the current culture. The lettuce testing could only start in October 2023 and Output 5, 5.1 – 5.4 could not be delivered due to this issue.

If these problems persist, it will entail that other AIGCFD staff members will have to assist CABI with the import, release, and monitoring of the *Evippe* moth culture on Ascension as the current Project Officer's contract is only extended until the end of March 2024 and most of these tasks will run beyond the project's implementation period.

3. Have any of these issues been discussed with NIRAS and if so, have changes been made to the original agreement?

Discussed with NIRAS: No

Formal Change Request submitted: No

Received confirmation of change acceptance No

Change request reference if known: N/A

4a. Please confirm your actual spend in this financial year to date (i.e. from 1 April 2023 – 30 September 2023)

Actual spend: £ [REDACTED]

4b. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this financial year (ending 31 March 2024)?

Yes No Estimated underspend: £

4c. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a re-budget Change Request as soon as possible. There is no guarantee that Defra will agree a re-budget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

NB: if you expect an underspend, do not claim anything more than you expect to spend this financial year.

5. Are there any other issues you wish to raise relating to the project or to BCF management, monitoring, or financial procedures?

If you are a new project and you received feedback comments that requested a response, or if your Annual Report Review asked you to provide a response with your next half year report, please attach your response to this document.

All new projects (excluding Darwin Plus Fellowships and IWT Challenge Fund Evidence projects) should submit their Risk Register with this report if they have not already done so.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with NIRAS through a Change Request. **Please DO NOT send these in the same email.****

Please send your **completed report by email** to BCF-Reports@niras.com. The report should be between 2-3 pages maximum. **Please state your project reference number, followed by the specific fund in the header of your email message e.g. Subject: 29-001 Darwin Initiative Half Year Report**