DPLR3\1042

Darwin Plus Local - Final Report (1)

Officer: Linzi Ogden

Section 1 - Darwin Plus Local Project Information (Essential)

Project Reference Number

DPL00073

Project Title

No Response

Overseas Territory(ies)

☑ Anguilla

Lead Organisation or Individual

Anguilla National Trust

Partner Organisation(s)

N/A

Value of Darwin Plus Local Grant Award

£38,473.00

Project Start Date

01 April 2024

Project End Date

31 March 2025

Project Leader Name

Farah Mukhida

Project Website/Twitter/Blog etc.

No Response

Report Author(s)

Farah Mukhida

Report Date

08 May 2025

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;**
Unchecked	**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?

⦿ 3 - Outcome met expectation

Project outcomes and justification for rating above

This project undertook the first systematic assessment of Dog Island's plant life to understand, assess, and document its flora. Following a successful rodent eradication in 2012, which facilitated the recovery of terrestrial birds, seabirds, and lizards (suggested by photographic evidence), this survey aimed to validate these findings with quantitative plant data. The results establish a crucial baseline, highlighting the severe impact of invasive goats and the urgent need for landowner collaboration to address this threat.

Comprehensive plant surveys, conducted over 15 full-day sessions with expert naturalists from St. Barthélemy and Anguilla, covered all accessible areas of Dog Island. These surveys identified 74 plant species, 65 of which are native to Anguilla, including Endangered lignum vitae Guaiacum officanale trees (EN), and regionally- and nationally-important Melocactus intortus. While the number of native species is significant compared to invasive plants, overall plant diversity across Dog Island’s 209 hectares is surprisingly low, especially when contrasted with Fountain National Park, home to over 170 species on just 5 hectares. The primary driver of this low diversity are the free-roaming goats, which have heavily grazed vegetation, leaving only prickly and toxic species,

including cockspur Castela erecta, jumping prickly pear cactus Opuntia triacantha, and manchineel trees Hippomane mancinella. Vegetation recovery that was documented post-rat eradication has been undermined, with buttonwood Conocarpus erectus, seagrape Cocoloba uvifera, popehead cactus Melocactus intortus exhibiting signs of overgrazing and with fields of the latter having been completely decimated. A goat eradication feasibility assessment, completed by IAS specialist Pete Haverson indicates that goat eradication is possible, with landowner consent.

Complementing on-the-ground surveys, we deployed a drone to create an aerial image of the island which we then used to map current vegetation zones including: beach/dune, disturbed grassland, impenetrable low-lying scrub, cacti field, fragmented dry forest, manchineel forest.

Comparing Dog Island's flora diversity, abundance, and distribution to Important Plant Area (IPA) criteria, we (not surprisingly) found that Dog Island does not qualify in its current state, but that it could if vegetation is allowed to recover through the removal of goats. We also assessed potential IPA status for the Prickly Pear cays and Fountain National Park and found that both could qualify based on the presence of lignum vitae trees (>5% of the national population) on the Prickly Pears and Fountain National Park being one of Anguilla's five best sites for the Critically Endangered Anguilla bush Rondeletia anguillensis.

One of the aims of this project was to make scientific information more accessible to scientists, researchers, and the general public and an important output of this project has been the creation of a digital herbarium and a supporting (and connected) plant identification app, beginning with a collection of the plants found on Dog Island. For the digital herbarium to be complete, images of leaves, flowers, and seeds are important though not always available when we are in the field. This is therefore a work in progress.

Supporting Evidence - file(s) upload

DPL00072 - Supporting Evidence - Link
06/05/2025
23:52:35
docx 17.4 KB

Supporting Evidence - links to published document/online materials

Please see uploaded document, including link to supporting Evidence.

Project Challenges

We experienced two anticipated challenges.

Although Anguilla was not impacted by storms and hurricanes, fieldwork was hampered by poor sea conditions which prevented safe landing on Dog Island. Disembarking on Dog Island requires the boat reversing close to shore, with passengers jumping from the stern of the boat onto the sandy beach. Due to strong sea surges and deep drop-off close to shore, this is not always safe. We do expect these sea conditions between mid-October to end of April, and we tried to conduct as much fieldwork as could during the summer months. With other work obligations and vessel maintenance required, we needed to push final surveys into the last quarter of the project especially to complete drone mapping, taking advantage of calmer seas whenever possible. We were able to complete all plant surveys but we do require one more drone deployment day to complete the mapping exercise.

Due to the depauperate floral assemblage largely (if not entirely) caused by overgrazing of invasive free-roaming goats, Dog Island does not qualify as an Important Plant Area. At the same time, however, there is a clear

pathway to enable recovery: the removal of goats. The ANT will engage the landowner in discussions regarding concerns about and potential support for a goat removal programme, informed by the results of the feasibility assessment conducted last year.

Lessons Learned

This project provided an important opportunity to assess ecosystem recovery post-conservation interventions – even more than a decade after action. Through this work, we found that invasive goats are severely impacting and curtailing recovery of the region's most important seabird nesting island. Impact of goats is even more pronounced during the dry season and periods of drought when scare food drives extreme behaviour.

We realise that if we are able to pursue a goat removal programme, we should develop a complementary re-wilding plan, anticipating a potentially poor seed bank due to a decade of overgrazing and low seedling establishment.
We note that vegetation and IPA assessments facilitate critical evaluation of a site's true ecological condition. As seen on Dog Island, a seemingly favourable ratio of native to invasive species does not necessarily indicate a healthy or fully recovered ecosystem.

This project has highlighted the necessity for further comprehensive plant surveys across all our restored sites. While comparative point photography aids in understanding landscape changes, it lacks the detail needed for assessing plant diversity and full ecosystem recovery. Crucially, these surveys should occur after significant rainfall, when new, otherwise overlooked plants may emerge. Given Anguilla's infrequent heavy rains, even outside the dry season, our fieldwork schedules must remain flexible to capitalize on these opportunities.

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				
Overhead Costs				
Travel and Subsistence				
Operating Costs				

Capital Items	[redacted]		
Others			
Total	38,474.00	38,473.76	0

Please provide a short narrative summary on project finances.

There were no major variances in project expenditure.

Co-financing was secured for the project, including ANT staff time, accommodation for and vehicle use by the ATE team, and partial overhead costs.

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

DPLUS-A03 – 1 national organisation with improved capability and capacity as a result of project.

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.**
Unchecked	**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

N/A

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

Unchecked	**DPLUS-C01: Number of best practice guides and knowledge products published and endorsed.**
Checked	**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

DPLUS-C02 – 1 new species stock assessment (vegetation plant list for Dog Island)

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

This ANT-led project benefited from regional expertise from St. Barthélemy's ATE, local naturalist Oliver Hodge, and Anguillian tech company Evoluut.ai.

ATE and Mr. Hodge provided crucial field support for plant surveys and digital herbarium sample collection. Our ongoing collaboration with ATE, stemming from a 2016 iguana project, leverages our islands' proximity and shared biodiversity, allowing us to tap into their leading flora and fauna expertise.

Mr. Hodge, a renowned local naturalist, offered unparalleled knowledge of Anguilla's plants, their cultural significance, and traditional medicinal uses. He collaborated with ANT staff to assess the socio-economic and cultural value of nearly all native plants, including those on Dog Island.

With our goal of making scientific information accessible to everyone, we have partnered with Evoluut.ai to create a user friendly, easy-to navigate digital herbarium and complementary app. While specimen collection continues post-project, the website and the app are a work in progress, but they are taking shape and will be excellent resources for scientists, researchers, and general public interested in Anguilla's plant life.

Finally, we presented findings and lessons learned from our Dog Island plant and IPA assessments to a national audience, including one of Anguilla's newly elected District Representatives and members of Cabinet.

Wider Impacts and Decision Making

When we were first examining the potential identification of Anguilla's restored areas, including Dog Island, as IPAs, we recognised that this designation could help inform land use planning and management, help inform measurable targets for plant conservation, help guide future sustainable management practices recognising that many potential IPAs are private lands, while serving as a powerful communication tool to raise public and political awareness about the importance of plant conservation while providing opportunities for greater stakeholder engagement in conservation efforts. While Dog Island may not qualify as an IPA given its current condition, conservation management strategies have already been identified to improve its ecosystem health and plant diversity. With data in hand and images to support that data, along with a feasibility study that outlines how goats - the current most significant threat to the island's biodiversity - can be effectively and efficiently removed to enable recovery, we are in a position to discuss how we can collaboratively move forward for the benefit of the island as well as themselves as landowners.

Sustainability and Legacy

This project has established a new baseline of Dog Island's plant diversity while providing clear recommendations on how to support recovery. Through this project, we have also identified other potential IPA and have initiated discussions with the Royal Botanic Gardens Kew (Kew) about how to move this preliminary work forward towards concrete (Tropical)IPA identification. Recognising that both lignum vitae and the Anguilla bush are TIPA triggering species for Anguilla, we recently pledged our commitment to protect and conserve these species by signing the IUCN's Reverse the Red Pledge, opening opportunities for technical assistance and potential funding. As we review our ANT Strategic Plan this summer, we will be integrating additional plant-related work into our species and habitat programme area, including full plant assessments of the Prickly Pear cays, continued re-wilding interventions on Sombrero Island, and continuing research on the Anguilla bush, with one of our goals being establishing Anguilla's first (Tropical) Important Plant Area network, in collaboration with Kew.

Section 6 - Communications & Publicity

Exceptional Outcomes and Achievements

Although this project did not ultimately identify Dog Island as an Important Plant Area, the rigorous assessment process yielded significant and noteworthy findings. Among these were the island's remarkably high proportion of native plant species compared to invasive non-native species, juxtaposed with an exceedingly low overall plant diversity for its size. Furthermore, the assessment starkly revealed the profound and detrimental impact of feral, free-roaming goats on the island's habitat. While the negative influence of these goats on plant communities was understood anecdotally, this project provided the first quantitative assessment of the disturbance level, establishing a crucial ecological baseline. This baseline data is particularly vital for informing any future efforts to manage the island's goat population.

A key component of establishing this baseline also involved the comprehensive collection and photographic documentation of plant species encountered on the island. This effort culminated in the creation of Anguilla's first online digital herbarium, accompanied by a user-friendly supporting app (both works in progress). This bespoke platform is designed to empower scientists, researchers, and the general public with a valuable tool for the identification of Anguilla's plant species. Through this work, we are not only enhancing the accessibility of research and science but also fostering deeper connections between nature and culture by ensuring the digital

herbarium encompasses both taxonomic information as well as the rich cultural values associated with the island's plant life.

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.

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

DPLR3_00073 - Dog Island habitat mapping - Anguilla - Darren Love:
ANT staff mapping Dog Island's habitats: from sand dunes to the island's impenetrable lowing scrub.

DPLR3_00073 - Presenting project results - Anguilla - Farah Mukhida:
ANT staff member Jonas Hochart presenting results of the Dog Island vegetation assessments.

DPLR3_00073 - Cacti field impacts by goats - Anguilla - Karl Questel:
Recovery on Dog Island, once spurred by rat removal, is now hampered by goats. Their quest for freshwater in cacti has resulted in a vast clearing of Melocactus.

DPLR3_00073 - Dog Island vegetation - Jonas Hochart:
Dog Island's vegetation is primarily low-lying shrub. The transition zone between impenetrable scrub and disturbed grasslands is speckled with cockspur, prickly pear cacti, and jumping prickly pear cacti.

DPLR3_00073 - Wild rosemary herbarium sample - Anguilla - Jonas Hochart:
Creating Anguilla's digital herbarium: a wild rosemary (Strumpfia maritima) specimen.

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.

Anguilla National Trust (Facebook, Instagram: @axatrust)

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	Farah Mukhida
Role within Darwin Plus Project	Project Lead
Email	[redacted]
Phone	
Do you need further sections to provide additional contact details?	⦿ No