Darwin Plus Main: 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 2024

Submit to: BCF-Reports@niras.com including your project ref in the subject line

1. Darwin Plus Project Information

Project reference	DPLUS210
Project title	Harnessing AI to prevent biodiversity loss in Anguilla
Territory(ies)	Anguilla
Lead Partner	Re:wild
Project partner(s)	Anguilla National Trust (ANT), Department of Natural Resources-Environment Unit (DNR-EU), Royal Society for the Protection of Birds (RSPB), Fauna & Flora, RESOLVE.
Darwin Plus grant value	£385,544.00
Start/end dates of project	01/04/2024 to 31/03/2026
Reporting period (e.g. Apr 2023-Mar 2024) and number (e.g. Annual Report 1, 2)	Apr 2024-Mar 2025, Annual Report 1
Project Leader name	Dr Jenny Daltry
Project website/blog/social media	N/A
Report author(s) and date	Dr Jenny Daltry and Farah Mukhida, April 2025

2. Project summary

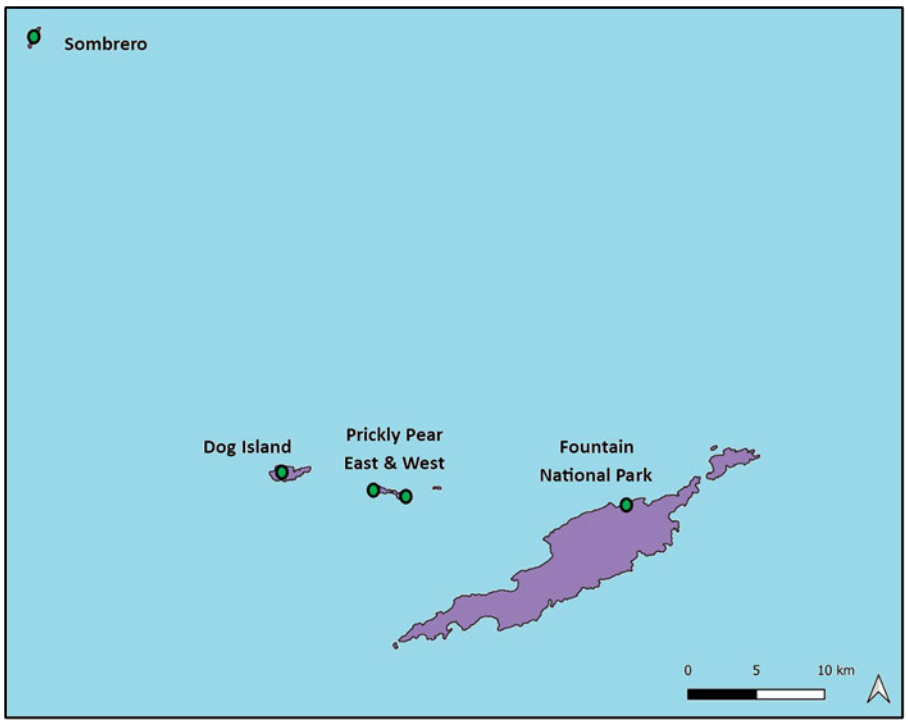
Invasive alien species (IAS) are the leading cause of species extinctions on islands worldwide, including the UK Overseas Territories. While good progress has been made in recent decades to eradicate destructive rodents, goats and other harmful IAS from hundreds of islands, IAS are proficient at spreading, and biosecurity must keep pace with the ever-rising threat of incursions. The primary aim of this project is to devise a remote surveillance tool that will enable island managers to detect incursions by animals more quickly, thereby enabling them to be removed effectively before they have time to multiply. The project is working to 1) Develop and implement biosecurity systems to prevent IAS incursions in five priority conservation sites in Anguilla; 2) Increase national capability to manage invasive species threats; and 3) Share methods and lessons learned with other biodiversity-rich islands, including the UK and UKOTs.

This project is focused on Anguilla in the Caribbean. Here, harmful rodents have been eradicated from six offshore islands to date, measurably benefitting native endangered and endemic species such as Lesser Antillean iguanas *Iguana delicatissima* and Sombrero ground lizards *Pholidoscelis corvinus* (DPLUS060, DPLUS086), along with globally important seabird populations and their ecosystems. In 2024, rats, mice and other IAS were also removed from Fountain National Park, the first mainland island in the Caribbean (DPLUS158). Given the paramount importance of keeping such sites free from harmful IAS, the Anguilla National Trust

(ANT) works tirelessly to implement biosecurity across the offshore islands and Fountain National Park.

Currently, biosecurity surveillance in Anguilla's conservation sites (and indeed many other island territories and nations) is highly labour intensive. It relies on frequent expeditions by skilled personnel to look for scats, tracks and other signs, and apply various search tools such as conventional trail cameras that require regular inspections. IAS are easily missed at the start of an invasion when their numbers are low, however. This not only endangers native wildlife but has serious cost implications. Recent experience from Dog Island, for example, showed that removing a rat at the early stage of an incursion cost Anguilla National Trust less than [redacted] and was accomplished in a matter of days; whereas if the rats had already had time to reproduce and disperse, it would cost over [redacted] and many months of effort – to conduct an island-wide eradication operation.

This project is developing and piloting affordable IAS-detection cameras to expedite discovery of incursions, thereby facilitating faster responses that will save threatened biodiversity and avoid the need for costly full-scale eradication operations. To achieve this, the project is adopting and adapting robust artificial intelligence (AI) technology originally designed for detecting tigers and rhinos to accurately detect many of the alien animals that are of greatest threat to island biodiversity, including rats, mice, mongooses, goats, monkeys and cats. Island managers will receive an alert to their smartphone within a minute of the animal being detected, enabling them to act accordingly. Anguilla was chosen for this pilot because it has biophysically diverse sites that offer different challenges for testing the hardware and software properties, and because Anguilla National Trust's skilled field staff are able to monitor and report back on how well the new technology works. Towards the end of the project, methods will be shared with all UKOTs threatened by IAS.



(Above) One of the new cameras (Jenny Daltry, Re:wild). (Left) Map of the project sites in Anguilla.

3. Project stakeholders/partners

This project is a collaborative initiative amongst Re:wild, Anguilla National Trust (ANT), Department of Natural Resources-Environment Unit (DNR-EU), Royal Society for the Protection of Birds (RSPB), Fauna & Flora and RESOLVE. A Project Steering Committee serves as the project coordinating/ oversight body. Since project launch, the PSC has met four times, with regular communication also occurring via email as logistics related to project implementation

were discussed. The core members are Dr Jenny Daltry (Re:wild), Farah Mukhida (ANT), Andy Lee (RESOLVE) and Dr Louise Soanes (RSPB).

Much of the focus of the project in Year 1 was on the hardware and software development work led by RESOLVE and affiliated technicians from Nightjar, drawing on images and knowledge of the target species from Re:wild, RSPB, Fauna & Flora and ANT. On the ground, ANT has led on biosecurity surveillance and monitoring of the project sites in Anguilla and has kept the Government of Anguilla abreast of project progress through formal project updates. ANT has also engaged local stakeholders in conversations on good biosecurity practices, including groups that own or lease land adjacent to Fountain National Park, and tour operators who visit the Prickly Pear Cays, and visitors to both sites.

To help advance the development of AI software to detect invasive green iguanas (*Iguana iguana*) – a major threat to native iguanas in the Caribbean and other island biodiversity – we also engaged with staff at the Reserve Naturelle Nationale de Saint-Martin on the neighbouring island of Saint Martin. The Acting Director, Julien Chalifour, kindly escorted the Project Leader and volunteers to various sites around the island for a day to obtain images of more than 100 green iguanas, from juveniles to adults. The images are being used to train the AI software. The project has also been discussed with many other island conservation practitioners over the past year, including Caribbean groups such as the Environmental Awareness Group (Antigua) and Bahamas National Trust, as well as international entities such as Island Conservation and Wildlife Management International Ltd (WMIL). There was unanimous enthusiasm for the cameras under development as an aid for biosecurity on islands of high conservation value. WMIL staff generously helped gather more images of target animals for software training purposes as well as assisting ANT with strengthening their biosecurity protocols.

In Q1, Ms Rebecca Power, former UK Minister of Environment, visited Fountain National Park with members of the Anguilla Governor's Office to learn about both DPLUS158 and this project (DPLUS210). In Q4, Dr Helena Jeffrey-Brown, Head of Biodiversity for the Organization of Eastern Caribbean States, similarly conducted a site visit and saw a demonstration of the new cameras.

4. Project progress

4.1 Progress in carrying out project Activities

Output 1 Biosecurity systems are established and proven to help prevent incursions by at least 10 priority invasive alien species in five biodiversity conservation sites in Anguilla

1.1 Develop AI software to recognise ≥10 priority IAS including inter alia rats, mice, cats, dogs, green iguanas, mongooses and goats. *Underway.*

A series of online meetings was held by RESOLVE, Re:wild, Anguilla National Trust (ANT) and other partners to guide the software designers on the preferred features for the new technology. For example, the dozen most important invasive alien species to target, whether the cameras will relay all or only the first images of any invasive species, and whether to send routine notifications to verify that remote cameras are still functioning even if no aliens have been reported. Re:wild and ANT also compiled numerous images of many of the target species that are being used to train the software. The edge detector software on the cameras and the server will require further testing and refinement into early Year 2 but currently appear capable of identifying rats, mice, cats, dogs, goats, mongooses and monkeys, and are also proficient at detecting humans, sheep and cattle. Alerts, with compressed images, are sent to staff smartphones via Telegram as soon as targets are detected (typically arriving in less than one minute).

Considerable work was carried out by RESOLVE and its affiliated technicians on hardware and software design and production throughout Year 1. Its camera-alert system went into full scale production in India and is being deployed in multiple regions to successfully provide real-time alerts for the purposes of wildlife monitoring and preventing human-wildlife conflict –

but this Darwin Plus project is the first to apply the new camera system to detecting IAS. An integrated dashboard has been established for users to receive alerts and manage deployed camera units remotely in the field, with additional AI processing capabilities to improve classification and analysis. Considerable advances were also made to optimize the satellite protocol to improve the reliability and efficiency of transmitting alerts from the remote field. We append a recent report from RESOLVE containing more technical details (1.1).

1.2 Install and operate AI cameras and peripherals in priority conservation sites (five) and experimental control sites, which communicate with ANT staff smartphones. *Underway*

Forty-six cameras have been manufactured for this project, and the first five were shipped to Anguilla in Q3 for field trials. In Q4, the Project Leader and other team members set up the cameras in Fountain National Park and other parts of mainland Anguilla to test their ability to detect a range of animals. Compared even to conventional trail cameras, we found the cameras quite easy to set up and operate. We were even able to reprogram the cameras ourselves to some extent with guidance from the technicians (e.g. to adjust their sensitivity and resolution), but a visit by RESOLVE's technical team to install the rest of the cameras had to be postponed to Y2Q1 due to staff changes.

To further train and test the AI software on IAS that are not yet present in Anguilla but occur on neighbouring islands, one camera has been shipped to Barbados for testing by Re:wild's Caribbean Programme Officer Justin Springer. His home island of Barbados has an exceptionally high density of IAS of concern, including mongooses and monkeys. This camera will be returned to Anguilla in Year 2 (all cameras purchased under this project are being vested in ANT).

1.3 Conduct monthly inspections of the same sites (1.2) for invasive species using manual methods, including bait stations, tracking tunnels and traps. *Underway.*

Biosecurity checks have been undertaken as planned by trained ANT staff in Fountain National Park (seven times during the reporting period), Prickly Pear East and West (two checks), Dog Island (three checks), and Sombrero Island (three checks). Based on careful inspections of permanent bait stations and searches for signs, no evidence was found of any target invasive species on any of these restored sites.

1.4 Monitor changes in abundance of threatened native reptiles, plants and birds on project sites against baselines established under previous DPLUS and other projects. *Underway.*

During this reporting period, we focused biodiversity monitoring efforts on Sombrero Island and Fountain National Park. In Q1, ANT and Re:wild staff conducted a mark-resight survey on the Critically Endangered Sombrero ground lizard *Pholidoscelis corvinus*: the first population survey since invasive rodents were successfully eradicated in 2021 (DPLUS086). The results are astounding: the total population of ground lizards is now estimated at 1,660±82 individuals; almost double the 2021 estimates of 884±103 individuals, and a more than six-fold increase from only 253±59 individuals in 2019. The Sombrero ground lizard population has excellent prospects for further growth as long as the island is kept free from mice, rats and other invasive alien predators. ANT also placed a passive acoustic station on Sombrero and, for the first time, confirmed the presence of bats: specifically Jamaican fruit bats *Artibeus jamaicensis*, velvety free-tailed bats *Molossus molossus*, and Antillean fruit-eating bats *Brachyphylla cavernarum*.

Within Fountain National Park, reptile and bird surveys were conducted by ANT and Re:wild personnel in Q4 with results now being analysed and compared to 2022 baselines. In addition, ANT have been conducting quarterly flower-insect-timed surveys to monitor pollinators within the protected area since December 2022, including throughout the first year of this project (although insects are not among our original project indicators, these data may further help to evaluate the health of these ecosystems). With the recent removal of IAS from Fountain National Park, ANT

and Re:wild have begun reintroducing Endangered Anguilla Bank racers *Alsophis rijgersmaei*: In Q3 and Q4, 11 individuals were translocated to the fully enclosed park.

1.5 Review and update biosecurity plans and protocols for Prickly Pear Cays, Dog, Sombrero and Fountain National Park, incorporating the new AI camera network. *Underway.*

Although this activity is not scheduled to be done until Year 2, we took the opportunity to arrange a two-week visit from invasive species specialists Peter Haverson (an independent consultant from the UK who previously worked with the Project Leader on the successful Redonda Restoration Programme in Antigua & Barbuda, Darwin Initiative #22-003) and Justin Springer (Re:wild's Caribbean Programme Officer) to assess and advise on two invasive mammals of rising concern: Feral goats on one privately owned offshore island and African vervet monkeys *Chlorocebus pygerythrus*, which have become established on the Anguilla mainland. Mr Haverson and Mr Springer met with DNR-EU and ANT and have drafted reports on their findings and recommendations, which will be incorporated into the biosecurity plans and protocols. Partly as a result of this work, we decided to include monkeys in the target species to be detected by the AI cameras. Biosecurity plans and protocols will be updated in Year 2, once the new camera network is fully operational.

Output 2 National capability to manage invasive species threats is raised, supported by the new AI technology, enhanced technical skills and stakeholder collaboration.

2.1 Conduct, and agree actions on findings of, Gender and Social Inclusion Assessment of Anguilla National Trust (ANT) *Underway.*

A qualified local consultant, Ms Hyacinth Augustine-Bradley, is conducting this work according to the Terms of Reference provided (see supporting document D). Ms Augustine-Bradley has consulted ANT on its mandate, strategic vision, objectives and major areas of work, and the general profile of the ANT's stakeholders, including community groups, volunteers and partners. She has also considered examples of outreach, communications and engagement methods currently being used by ANT to gauge whether and how these might be improved upon. Drawing on these findings, and her knowledge of Anguilla and of the principles and practices of gender equality and social inclusion, Ms Augustine-Bradley is now preparing clear and practical guidance for ANT and its staff on how to engage all local stakeholders in an inclusive and meaningful way in all its work.

2.2 Plan, undertake and evaluate training and mentoring of ANT staff and other practitioners on how to set up, operate and manage data from AI cameras. *Underway.*

The Project Leader received training from RESOLVE's technicians on how to operate the AI cameras and, after several days practice, she in turn taught the Project Co-leader and other ANT staff how to set up and operate the cameras in Q4. Further training is scheduled for Y2Q1.

2.3 Meet landowners, tourism operators and other stakeholders to explain the cameras and solicit cooperation for biosecurity on Prickly Pears, Dog, Sombrero and Fountain National Park. *Underway.*

Local partners have initiated conversations with the owners of the Prickly Pear Cays and met with the Government of Anguilla Executive Council in February 2025, providing an update on the project, including proposed biosecurity protocols for the Crown-owned Sombrero Island and Fountain National Park.

2.4 Facilitate development and signing of an MoU between RESOLVE and Anguilla National Trust to provide ongoing technical support during and after the project. *Scheduled for Y2*

Output 3 Methods and lessons learned from this project are shared and discussed with other biodiversity-rich islands, including the UK and UKOTs.

3.1 Hold in-person workshop and field trip for ≥10 practitioners from other Caribbean UKOTs to demonstrate, teach and discuss the use of AI technology in biosecurity. *Scheduled for Y2.*

3.2 Hold webinar for ≥30 practitioners from UK and UKOTs to share and discuss the AI technology and biosecurity solutions. *Scheduled for Y2.*

3.3 Produce and disseminate a best practice guide and support videos on use of AI cameras for island biosecurity. *Scheduled for Y2.*

3.4 Prepare and submit paper on project methods and findings to a peer reviewed, open access journal. *Scheduled for Y2.*

4.2 Progress towards project Outputs

Output 1. Biosecurity systems are established and proven to help prevent incursions by at least 10 priority invasive alien species in five biodiversity conservation sites in Anguilla.

With five sites across Anguilla benefitting from the removal of rodents and other target IAS, ensuring that these areas remain IAS-free is essential. Following established biosecurity best practice protocols, throughout Year 1 the ANT has been monitoring the restored sites using an array of tools, including permanent bait stations, chocolate-flavoured monitoring resin, searching for footprints and scat. Signs have been posted at ports of entry and conversations with boat operators, Prickly Pear restaurant owners, and visitors to these sites consistently share the same message: everyone has a role to play to prevent incursions of these Key Biodiversity Areas. So far, these efforts have been successful and all restored sites are still free of rodents, cats and other priority IAS.

However, such on-the-ground visual checks require staff and volunteers to be able to safely access these sites, year-round. With sea conditions typically poor from November through April, accessing offshore islands during this period is an exception rather than a guarantee. There are often long periods when the islands go unchecked. Significant progress is being made by this project to supplement and complement the visual biosecurity monitoring efforts through the development of remote surveillance cameras with AI technology to detect IAS. We are now in the final phase of development and testing (Indicator 1.1) and will soon be ready to deploy 46 cameras (Indicator 1.2) (see below for more details, and Annex 4: supporting documents A and B). Biosecurity protocols will be updated accordingly to integrate this new approach (Indicator 1.5).

The impact of this biosecurity work on native and endangered biodiversity is also being measured (Indicator 1.3), with baseline surveys completed and ongoing biodiversity monitoring being conducted. Data are collected by ANT staff and volunteers using the ANT's bespoke iRecord AXA app (developed by the UK Centre for Ecology and Hydrology under the ANT's DPL00021 project) and stored and maintained on a cloud-based server for. By the end of the project, we will be able to assess how restoration efforts – and keeping sites IAS-free – have enabled the recovery of native biodiversity using data collected.

Output 2. National capability to manage invasive species threats is raised, supported by the new AI technology, enhanced technical skills and stakeholder collaboration.

By the end of the project's first year, we achieved significant progress in enhancing local capacity. This includes training six ANT volunteers in biodiversity monitoring, one new ANT staff member and 11 local volunteers in manual biosecurity protocols (see Annex 4, supporting document C). Additionally, three ANT staff received introductory training in setting up the AI cameras (Indicator 2.1). With camera deployment and more advanced training from the AI camera technicians scheduled in early Year 2, we are well-positioned to meet our target of training 20 individuals.

Our efforts to strengthen biosecurity programmes (Indicator 2.2) extend beyond staff and volunteer training to direct engagement with tourism operators and landowners. We have shared

existing biosecurity protocols with Anguilla's three major charter boat companies and ANT is actively partnering with the Sandy Ground community on IAS control, concentrating on Road Salt Pond and neighbouring private lands (supported by DPLUS212). This collaboration has fostered a strong commitment from landowners and community members to actively participate in the biosecurity monitoring programme, with community-based training set to begin in Y2Q1.

New tourism developments adjacent to Fountain National Park were recently approved by the Government of Anguilla and the ANT flagged potential biosecurity concerns for the mainland island during the planning application review process. With the breaking of ground soon to occur, ANT, with assistance from WMIL, are currently drafting site-specific biosecurity actions.

Output 3. Methods and lessons learned from this project are shared and discussed with other biodiversity-rich islands, including the UK and UKOTs.

This component is scheduled to begin in earnest in Year 2.

4.3 Progress towards the project Outcome

The Project Outcome is “Critically threatened terrestrial ecosystems and species in Anguilla are safeguarded from target invasive alien animals through more effective biosecurity systems that can be readily transferred to other islands”. Based on the agreed indicators, this project is well on track to achieve this. Based on biosecurity monitoring, at least four, if not five, priority conservation sites are currently free from invasive alien iguanas, rodents and cats (re: Indicator 0.1): The four confirmed sites are Sombrero Island (38 ha), Prickly Pear East (32 ha) and Prickly Pear West (31 ha) and Dog Island (207 ha), totalling 308 ha. Fountain National Park (5 ha) is also free from cats and rodents, and no green iguanas have been detected in the past year, which suggests that this site too is pest-free.

While comparative biodiversity surveys are scheduled for Year 2 (re: Indicator 0.2 and Standard Indicator DPLUS-D04), we are pleased to confirm the Critically Endangered Sombrero ground lizard population is growing rapidly, having recorded a total population of 1,660±82 individuals in Year 1 – almost double the 2021 estimate of 884±103 individuals. Furthermore, we have begun reintroducing Endangered Anguilla Bank racers to Fountain National Park. To date, 11 individuals have been translocated within the fenced perimeter, establishing a new, secure population in the park.

With regard to Indicator 0.3, this project was developed as the direct result of strong local interest being expressed for more robust biosecurity measures to protect restored spaces in Anguilla. While the project is being led and coordinated by Re:wild, the biosecurity systems established are wanted and will be maintained by the ANT and where relevant, the Department of Natural Resources. Over the last 12 years, ANT has been tirelessly conducting manual biosecurity checks on Anguilla’s offshore islands and has committed to integrating the new cameras into their operations (which we hope will ultimately reduce the need for such frequent site visits).

We are therefore optimistic of achieving the Outcome and consider the indicators to be sensible and feasible (including Indicator 0.4, which is scheduled in Year 2).

4.4 Monitoring of assumptions

The following assumptions are listed at Outcome and Output levels on the project logframe:

Assumption 1. Invasive alien species are the primary drivers of biodiversity loss on islands.

Comments: This assumption is sound. A 2023 report from the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) confirmed that IAS are a significant driver of global extinctions, contributing to 60% of recorded animal and plant extinctions. On islands, IUCN has repeatedly asserted IAS to be the greatest driver of biodiversity loss, accounting for at least 86%

of species extinctions. Anguilla is no exception, with IAS identified among the greatest threats following multi-stakeholder discussions on Anguilla's National Biodiversity Strategy and Action Plan.

Assumption 2. Tools and approaches that work across diverse parts of Anguilla are transferable to other UKOTs

Comments: This assumption also appears sound. Even though every island is biogeographically and socioeconomically unique, they share many similar threats and constraints that can benefit from similar approaches. Many similar conservation approaches are already shared by Anguilla and other UKOTs, even other islands around the UK. For example, bait stations that are used in Anguilla to control rats are now in use on Agnes and Gugh (Isles of Scilly), and conservationists in the Cayman Islands are striving to adopt IAS-resistant fencing to create a mainland island like Anguilla's Fountain National Park. This project is developing a tool to detect a range of IAS species that concern UKOTs worldwide, and that can furthermore be used affordably even in very remote areas without mobile phone coverage.

Assumption 3. AI algorithms can accurately distinguish iguanas from other lizards.

Comments: This assumption is yet to be proved, as work is currently underway to develop the software for detecting iguanas (*Iguana* spp.). We believe there are sufficient, consistent differences to enable iguanas to be distinguished from other island lizards such as ground lizards (*Pholidoscelis* spp.) and anoles (*Anolis* spp.). Possibly a greater concern is that the project cameras rely partly on heat sensors to detect animals and might therefore work better with mammals than reptiles. However, published studies have found iguanas (including the invasive green iguana, *Iguana iguana*) are detectable using heat sensing drones and conventional trail cameras.

Assumption 4. Island landowners and other stakeholders continue to be willing to cooperate on biosecurity initiatives.

Comments: This assumption appears sufficiently sound for this project. With 97% of Anguilla's land under private ownership, the ANT have a long history of working with private landowners to restore and manage sites of high biodiversity value. In recent years, many landowners have granted permission to remove IAS and undertake biosecurity monitoring, enabling this much-needed work to advance. At the same time, ANT draws on their membership and volunteers – almost all of whom are local residents – to assist with biosecurity and biodiversity monitoring both on the mainland and the offshore cays.

Assumption 5. Trained expertise remains in-territory.

Comments: We are confident this assumption will be upheld. This project already involves, and has trained, 12 ANT staff and volunteers in biosecurity monitoring plus an additional 12 local residents in biodiversity monitoring and species reintroductions. We expect this number to increase further as we continue to implement our biodiversity and biosecurity monitoring programmes in Year 2. While we cannot guarantee every trainee will remain in-country, we are confident that most of them will. Furthermore, trained ANT staff will pass these skills on to any new recruits. This project is therefore certain to have a lasting effect on local capacity and understanding.

Assumption 6. Biosecurity strategy accurately predicts the future human and other resources available to implement it.

Comments: We are confident this assumption will be upheld. The biosecurity strategy will be a living evidence-based document and we expect it will be updated as needs change and technology evolves. While it is hard to predict what resources will be available in the future, the project is working with AI technology to help improve and automate biosecurity surveillance, thereby reducing the demands on staff time or funding.

Assumption 7. Natural resource managers on other islands recognise the need for biosecurity solutions.

Comments: The validity of this assumption will be assessed during the second year of the project but recent conversations with colleagues across the Caribbean UKOTs and independent countries have expressed interest in this technology-forward project. A cross-country exchange is currently being planned for early Year 2 where Anguilla's biosecurity work will be showcased to conservationists from at least five other Caribbean nations.

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

This project aims to safeguard Anguilla's native and endangered species through more effective biosecurity monitoring systems. This project directly supports Anguilla's ability to achieve positive long-term outcomes for native biodiversity including by delivering on commitments made by the Government of Anguilla under national strategies and plans as well as contributing to international agendas and conventions. So far this year, this project has contributed to:

i. *Meeting the goals of the Convention on Biological Diversity (CBD)* and the *Kunming-Montreal Global Biodiversity Framework (GBF)* through ongoing biosecurity efforts to ensure newly restored Key Biodiversity Areas remain IAS-free (CBD Article 8(h), GBF Target 6), building capacity through targeted training of ANT staff and volunteers to effectively implement existing biosecurity protocols (Article 12[a]), and adapting innovative technology (cameras outfitted with AI-driven technology) to identify priority IAS for Anguilla in order to strengthen and enhance existing biosecurity systems (CBD Articles 12[c] and 16[a]; GBF Target 6);

ii. *Implementing the National Biodiversity Strategy and Action Plan* by maintaining restored habitats as IAS-free through effective biosecurity monitoring programmes and being prepared to rapidly respond to IAS incursions, should the need arise (Strategies 39 and 40); and

iii. *Implementing the Anguilla Invasive Species Strategy* by preventing re-incursions through applied biosecurity protocols and being in a position to respond early and rapidly to incursions if necessary (Strategies 1 and 2).

6. Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board[1].	75% (Farah Mukhida, Dr Jenny Daltry, Dr Louise Soanes and Andy Lee form the Project Steering Committee)
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% (Anguilla National Trust: Farah Mukhida; RESOLVE: Kalkidan Smith; Department of Natural Resources-Environment Unit: Rhon Connor; RSPB: Jake Zarins; Fauna & Flora-Caribbean: Arica Hill; Re:wild-Caribbean: Jenny Daltry)

[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.

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups, and the project will not contribute to or create further inequalities.	X
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Although the direct practical impacts and benefits of this project are focused on keeping restored, uninhabited areas remain free of IAS, and do not substantially affect any communities directly, our capacity building and awareness initiatives are important, and we are committed to being as inclusive as possible. In Year 1, we trained 7 cisgender women and 5 cisgender men in biosecurity monitoring, 2 cisgender women and 1 cisgender man in AI camera technology (introductory level), 4 cisgender women and 2 cisgender men in biodiversity (Sombrero ground lizard) monitoring, and 1 cisgender woman and 2 cisgender men in native biodiversity (Anguilla Bank racer) relocation/reintroductions.

Re:wild has also secured the services of a GESI specialist from Anguilla, Dr Hyacinth Augustine-Bradley, who is undertaking a comprehensive assessment of the ANT and how the agency communicates with and involves stakeholders in their work, in an effort to improve access to information and opportunity, while ensuring equity and promoting inclusiveness. Results of this assessment will guide ANT's outreach and communications not only for this project but for all their work. The consultant's ToR is appended (D).

Day-to-day management of the project is handled collaboratively by Re:wild's Caribbean Alliance Director, ANT Executive Director, and ANT Administrative Manager (all cisgender women). The project implementation team is mixed gender, comprising four cisgender women and six cisgender men, supported by volunteers. Our Project Steering Committee (PSC) is composed of 3 cisgender women (75%) and 1 cisgender man (25%). We note the UK's Supreme Court has recently ruled that a woman is defined by biological sex under the country's equality law. This does not affect the statistics we have provided.

7. Monitoring and evaluation

Monitoring is proceeding as described in our proposal and is a collaborative effort involving all partners through the Project Steering Committee (PSC), coordinated by the Project Leader (Dr Jenny Daltry, Re:wild) and Project Co-leader (Farah Mukhida). The PSC assesses project progress against our project logframe and workplan, with the PSC meeting virtually at least once a quarter with regular follow-up by email. Our outputs and activities have so far focused on implementing established biosecurity protocols and developing AI software to enable priority IAS

to be detected and identified by the new cameras and server in Year 2. Based on in-field testing, we are pleased with progress made and are confident that the camera systems will become a major aid to biosecurity as soon as they are fully deployed in Year 2.

To monitor the impact of this project on biodiversity recovery, the ANT has established and standardised biodiversity monitoring protocols for selected species to compare pre- and post-conservation interventions and this work will be peer-reviewed before sharing more widely. While biosecurity has a powerful role in island biodiversity conservation, however, we recognise that this is just one of a long series of projects that has been working to restore and conserve terrestrial biodiversity. This makes it difficult to pinpoint out the specific impacts of this project. The observed recovery of the Sombrero ground lizard, for example, is thanks to several projects that involve the same personnel, including this one (DPLIUS210) and DPLUS086.

8. Lessons learnt

Although the use of cameras with AI technology is not new, having been used to monitor endangered wildlife and illegal poaching in Africa and Asia in particular, this project is the first to adapt it to detecting a variety of IAS. A notable challenge has been training the system to recognize a wide range of animals that differ from existing datasets. To add more species in the future to Anguilla's target list, or that of other countries, we recommend gathering as many images of the species as possible to train the cameras – including photos taken from unconventional angles and in poor lighting. It has been an education to us that even terrible pictures of IAS are valuable for this purpose!

For reptiles, we understand that the AI system might struggle to reliably differentiate between the native Critically Endangered Lesser Antillean iguanas *Iguana delicatissima* (currently known to occur on Prickly Pear East) and invasive common green iguanas *I. iguana* (which are widespread across the main island of Anguilla). It is even less likely to be able to identify hybrids, which bear characteristics of both species. For Anguilla, however, *all* iguana records are of interest and value to conservation managers. ANT staff propose to carefully scrutinise all iguana images that are sent to their phones/devices and then compile and categorise them as either native or invasive/ hybrid based on their morphology. For Prickly Pear East, ANT proposes to use Lesser Antillean iguana images to support population and distribution assessments (re: Output Indicator 1.4). We now realise that although our cameras are being developed primarily for IAS surveillance, there is no reason why the camera systems should not cover a mix of IAS and native species of particular interest.

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

Not applicable for this Year 1 report.

10. Risk Management

We are pleased that the project has not had any major issues in Year 1, and we have been able to avoid or mitigate risks.

We have added an additional risk to the Delivery Chain Risk Map, specifically that of personnel changes in the Tier 4. This is because we recognise that if the skilled engineers with who are leading the AI development were to drop out for any reason before the new system is fully up and running, there could be delays while other technicians pick up and complete their work.

The updated version of our risk register is appended.

11. Sustainability and legacy

Throughout the project's first year, we presented the use of AI-trained cameras for enhanced biosecurity monitoring to a diverse group of stakeholders, including government officials, natural resource managers, colleagues from across the Caribbean, and Anguillan residents and visitors. This technology has generated significant interest and curiosity, sparking engaging discussions about AI's potential in supporting vital biodiversity conservation efforts.

This AI technology has the potential to revolutionize our biosecurity approach, maximizing the value of our resources and efforts. Although a mixed-method monitoring strategy is vital, AI-trained cameras offer unique advantages, particularly in enabling faster emergency responses to IAS incursions. The 2018 rat incursion on Dog Island serves as a clear example of the importance of rapid detection. A dive operator's timely report of a single rat – the first since 2012 – triggered a swift and successful eradication effort costing less than £5,000. This was significantly less than the £300,000 it would have cost ANT to conduct a full-scale eradication had rats become established. While preventing invasions remains a priority for ANT and DNR, these cameras will be instrumental in bolstering Anguilla's rapid response capabilities across all restored sites, ensuring long-term protection beyond the project's duration; the intended post-project benefits remain highly relevant.

12. Darwin Plus identity

While this project has not been widely promoted yet (because the AI cameras have been under development and testing through Year 1 and it felt premature to make a media splash), Darwin Plus is already familiar to many Anguillians, and especially those in government, having supported a wide range of initiatives in Anguilla over the years. Darwin Plus (and the Biodiversity Challenge Funds) have been recognised on all outreach materials produced by ANT, with logos on and verbal acknowledgement during all presentations. This project was among several featured in ANT's Annual General Meeting and ANT's presentation to the Executive Council of the Government of Anguilla (PowerPoints available on request).

With reference to the increase in the Sombrero ground lizard population detected through monitoring under Activity 1.4 (re Indicator 1.4), Re:wild, ANT and Fauna & Flora put out a joint media release in Q3 that was shared by local media (including Anguilla Focus and The widely picked up by journalists around the world (e.g. *Mongabay, Popular Science, IFL Science, Smithsonian Magazine*) and excited a great response on social media (Annex 4, supporting documents G-J, and https://www.fauna-flora.org/news/near-extinct-caribbean-reptile-makes-epic-comeback/). The media release did not refer to the cameras under development but credited Darwin Plus for support and reiterated the importance of keeping islands free from IAS. A more in-depth article on the Sombrero ground lizard was subsequently developed with *BBC Wildlife* (to be published in Y2Q1).

13. Safeguarding

[redacted]

14. Project expenditure

Table 1: Project expenditure <u>during the reporting period</u> (1 April 2023 – 31 March 2024)

Project spend (indicative) in this financial year	2023/24 D+ Grant (£)	2024/25 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs	[redacted]			
Dr Jenny Daltry, Re:wild				
Sunni Fass, Re:wild				

Farah Mukhida, Anguilla National Trust	[redacted]			
Clarissa Lloyd, ANT				
Devon Carter, ANT				
Jonas Hochart, ANT				
Nicole Simonelli, Re:wild				
Justin Springer, Re:wild				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
SSD Drives x 5				
GPS Units x 2				
IslandGuard AI cameras				
Satellite modems and other peripherals				
Brush cutters X 3				
Others (Please specify)				
Consumables				
Equipment shipping				
Biosecurity signage				
Field supply kits for installing cameras x 3				
TOTAL	**228,423.81**	**228,423.81**		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the	[redacted]		Contributions from Re:wild, Anguilla

partners to deliver the project (£)			National Trust, Resolve, CVEDIA/Nightjar and RSPB
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

15. Other comments on progress not covered elsewhere

SENSITIVE – PLEASE REDACT: It came to our attention at the beginning of March that one of the senior software engineers who led key parts of the hardware and software design would leave Nightjar at the end of Year 1. (This is the reason why the trip planned in March for the technicians to install all 46 cameras was postponed). Although the engineer expressed his strong hope to continue working with this project as a freelance consultant (or even as an unpaid volunteer), RESOLVE are employing more engineers and are confident that, together with their technology partners Nightjar and CVEDIA, they can comfortably handle all of the development and testing work as planned and on time. We are currently reviewing RESOLVE's workplan and budget under this project for Year 2 as their new engineers are being onboarded. If we find we need to make an adjustment, we will be sure submit a Change Request.

16. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes.

We would prefer to defer our response to Year 2, when the innovative new cameras will be fully operational.

17. Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
Impact Lasting protection of globally important island biodiversity from harmful invasive animals through using effective, adaptable and affordable biosecurity systems tested and perfected in Anguilla.		[redacted]
Outcome Critically threatened terrestrial ecosystems and species in Anguilla are safeguarded from target invasive alien animals through more effective biosecurity systems that can be readily transferred to other islands.		
Outcome indicator 0.1 Five priority conservation sites (at least 310 ha) are free from invasive alien iguanas, rodents and cats, by the end of this project [DPLUS-D01].	Based on regular biosecurity surveys, at least four sites are currently free from invasive alien iguanas, rodents and cats, totalling 308 hectares (Sombrero Island, Prickly Pear East, Prickly Pear West, and Dog Island). We believe Fountain National Park is also free of target IAS, but additional monitoring will be needed to ascertain this.	Continue biosecurity monitoring using the AI cameras and complementary methods to determine status of all five target sites (including Fountain National Park).
Outcome indicator 0.2 Populations of vulnerable native reptiles, plants and birds in the project sites are stable or growing compared to pre-project baselines (by Q4Y2) [DPLUS-D04].	*(Relevant Indicators 0.2 Biodiversity monitoring data and reports on species on the national protected species list).* Baselines for key species in all sites were established pre-project. Reptile and terrestrial bird surveys were repeated at the end of Year 1 in Fountain National Park (results are currently being analysed). On Sombrero Island, endemic ground lizard surveys showed a significant increase from c.100 individuals in 2018 to over 1,600 in 2024.	Conduct biodiversity surveys at all of the project sites by the end of the project to evaluate any trends in populations of the key species of reptiles, birds and plants.
Outcome indicator 0.3 Anguilla National Trust and Department of Natural Resources (Government of Anguilla) embrace new technology and demonstrate capacity and intent to continue operating biosecurity systems, during and beyond the life of this project.	*(Relevant Indicators 0.3 Training reports; equipment inventory; biosecurity plans and operational standards; management agency work plans; MoU with tech development companies).* 12 ANT staff and volunteers were trained in, and applied, visual biosecurity monitoring protocols, and 3	Train ANT and DNR staff in the deployment, use, and monitoring of AI camera systems.

	ANT staff received introductory training to set up and use of AI camera systems.	
Outcome indicator 0.4 At least three UKOTs confirm interest in adopting and adapting the AI-supported biosecurity system for their own use (by Q4Y2).	*(Relevant Indicators 0.4 Written proposals and letters from UKOT natural resources management leaders).* Scheduled for Year 2.	Hold regional UKOT workshop to introduce and measure level of interest in adopting AI camera technology.
Output 1 Biosecurity systems are established and proven to help prevent incursions by at least 10 priority invasive alien species in five biodiversity conservation sites in Anguilla.		
Output indicator 1.1 Software tailored to enable Artificial Intelligence (AI) cameras to identify *inter alia* rats, mice, cats, dogs, goats, pigs, monkeys and iguanas by Q2Y1.	*(Relevant indicators: 1.1 Software specifications; Sim cards recognise at least 10 priority invasive species)* The edge detector software on the cameras and the server require further testing and refinement but currently appear capable of identifying rats, mice, cats, dogs, goats, mongooses and monkeys, among others. Alerts, with compressed images, are sent to staff smartphones as soon as targets are detected.	*(Relevant activities: 1.1 Develop AI software to recognise ≥10 priority IAS including inter alia rats, mice, cats, dogs, green iguanas, mongooses and goats)*. Further testing and development of software, including capability to identify iguanas
Output indicator 1.2 AI camera network, comprising at least 40 cameras and peripherals, server and phone apps, deployed in five priority conservation sites plus experimental control sites by Q4Y1.	*(Relevant indicators: 1. 2 AI camera network map; photographs; camera health check database)* Scheduled for Year 2.	*(Relevant activities: 1.2 Install AI cameras and peripherals in priority conservation sites (five) and experimental control sites, which communicate with ANT staff smart phones* Install AI cameras and peripherals on Sombrero Island, Dog Island, Prickly Pear East and West, Fountain National Park and at least one control site.
Output indicator 1.3 Reliability of AI cameras to detect target invasive species is evaluated against monthly manual checks using conventional survey methods (by Q4Y2).	*(Relevant indicators: 1.3 Monitoring databases; images from bait stations, tracking tunnels, traps and other tools)* Schedule for Year 2.	*(Relevant activities. 1.3 Conduct monthly inspections of the same sites for invasive species using manual methods, including bait stations, tracking tunnels and traps* Conduct manual biosecurity inspections of restored sites.
Output indicator 1.4 Status of threatened native reptiles, plants and birds on project sites is monitored against baselines established under previous DPLUS projects.	*(Relevant indicators: 1.4 Biodiversity monitoring databases)* Scheduled for Year 2.	*(Relevant activities include: 1.4 Monitor changes in abundance of threatened native reptiles, plants and birds on project sites*

		against baselines established under previous DPLUS and other projects). Conduct biodiversity surveys at all restored sites by end of project and compare results to baselines previously established.
Output indicator 1.5 Biosecurity plans and protocols, including emergency incursion responses, and associated operational standards for the project pilot sites reviewed and updated by Q2Y2 [DPLUS-B02].	*(Relevant indicators: 1.5 Revised and updated biosecurity plans and operational standards for offshore islands (Sombrero, Prickly Pear East, Prickly Pear West, Dog) and Fountain National Park. Supplies inventory)* ANT staff and volunteers are familiar with existing biosecurity plans and protocols, and have been applying them to monitor for potential IAS incursions.	*(Relevant activities include 1.5 Review and update biosecurity plans and protocols for Prickly Pear Cays, Dog, Sombrero and Fountain National Park, incorporating the new AI camera network).* Review and update existing biosecurity plans and operational standards for field personnel to incorporate new AI camera network.
Output 2. National capability to manage invasive species threats is raised, supported by the new AI technology, enhanced technical skills and stakeholder collaboration.		
Output indicator 2.1. At least 20 Anguilla nationals are proficient in implementing the biosecurity system, including use and maintenance of AI cameras and rapid response protocols, by Q2Y2 [DPLUS-A01].	*(Relevant indicators: 2.1 Training sign-in sheets; Individual competences assessment (project start and end))* 12 ANT staff and volunteers were trained in manual biosecurity checks and are actively applying knowledge and skills, and 3 staff were trained on how to set up the AI cameras for areas with mobile phone coverage.	Continue to train volunteers in biosecurity monitoring protocols, including set up and management of the new AI camera system.
Output indicator 2.2. At least 10 landowners and tourism operators actively engaged in biosecurity monitoring by Q2Y2.	*(Relevant indicators: 2.2 Biosecurity database; iNaturalist biosecurity page)* 5 tourism operators (3 charter boat operators, 2 dive operators) are actively assisting with biosecurity by ensuring that their vessels are not harbouring IAS. Landowners adjacent to Road Salt Pond have expressed interest and commitment in assisting with long-term IAS control within the Sandy Ground community (supported by DPLUS212).	Train Sandy Ground community members in biosecurity protocols. Continue to engage landowners and tourism operators in biosecurity monitoring programmes.

Output indicator 2.3 Anguillan natural resource managers formalize partnership with tech companies for ongoing use and development of AI solutions, by Q2Y2.	*(Relevant indicators: 2.3 MoU between tech company(ies) and Anguillan organisations)* Scheduled for Year 2.	Initiate discussions and formalise partnerships between local natural resource managers/agencies and tech companies.
Output 3. Methods and lessons learned from this project are shared and discussed with other biodiversity-rich islands, including the UK and UKOTs.		
3.1 Representatives (at least 40% female) from at least 10 natural resources management organizations participate in one site visit (at least 10 persons) and one recorded project webinar (at least 20 persons) by Q4Y2 [DPLUS-C13].	*(Relevant indicators: 3.1 List of individuals attending in-person workshop and field trip; Webinar participant lists; Written feedback from participants).* Scheduled for Year 2.	Facilitate cross-UKOT in-person workshop. Hold project webinar, open to regional/international natural resources managers.
3.2 Best practice guide and support videos published online and disseminated on use of AI cameras for island biosecurity by Q4Y2 [DPLUS-C01].	*(Relevant indicators: 3.2 Guide and videos; Viewing/ download statistics)* Scheduled for Year 2, although a step-by-step instruction manual on how to set up AI cameras has been produced by RESOLVE/Nightjar for this project.	Develop best practice guide (written manual, support videos) for AI camera deployment and use.
3.3 Peer review paper accepted for publication by Q4Y2 [DPLUS-C17].	*(Relevant indicators: 3.3 Manuscript and editor's acceptance)* Scheduled for Year 2.	Draft manuscript outlining and discussing project results/findings/value of AI cameras to support biosecurity monitoring, habitat restoration, and native biodiversity recovery.

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

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
Impact: Lasting protection of globally important island biodiversity from harmful invasive animals through using effective, adaptable and affordable biosecurity systems tested and perfected in Anguilla.			
Outcome: (Max 30 words) Critically threatened terrestrial ecosystems and species in Anguilla	0.1 Five priority conservation sites (at least 310 ha) are free from invasive alien iguanas, rodents and cats, by the end of this project **[DPLUS-D01]**.	0.1 Biosecurity monitoring reports and databases for offshore islands (Sombrero, Prickly Pear East, Prickly Pear West, Dog) and Fountain National Park.	Invasive alien species are the primary drivers of biodiversity loss on islands.

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
are safeguarded from target invasive alien animals through more effective biosecurity systems that can be readily transferred to other islands.	0.2 Populations of vulnerable native reptiles, plants and birds in the project sites are stable or growing compared to pre-project baselines (by Q4Y2) **[DPLUS-D04].** 0.3 Anguilla National Trust and Department of Natural Resources (Government of Anguilla) embrace new technology and demonstrate capacity and intent to continue operating biosecurity systems, during and beyond the life of this project. 0.4 At least three UKOTs confirm interest in adopting and adapting the AI-supported biosecurity system for their own use (by Q4Y2).	0.2 Biodiversity monitoring data and reports on species on the national protected species list). 0.3 Training reports; equipment inventory; biosecurity plans and operational standards; management agency work plans; MoU with tech development companies. 0.4 Written proposals and letters from UKOT natural resources management leaders.	Tools and approaches that work across diverse parts of Anguilla are transferable to other UKOTs.
1. Biosecurity systems are established and proven to help prevent incursions by at least 10 priority invasive alien species in five biodiversity conservation sites in Anguilla.	1.1 Software tailored to enable Artificial Intelligence (AI) cameras to identify *inter alia* rats, mice, cats, dogs, goats, pigs, monkeys and iguanas by Q2Y1. 1.2 AI camera network, comprising at least 40 cameras and peripherals, server and phone apps, deployed in five priority conservation sites plus experimental control sites by Q4Y1. 1.3 Reliability of AI cameras to detect target invasive species is evaluated against monthly manual checks using conventional survey methods (by Q4Y2). 1.4 Status of threatened native reptiles, plants and birds on project sites is monitored against baselines established under previous DPLUS projects. 1.5 Biosecurity plans and protocols, including emergency incursion responses, and associated operational standards for	1.1 Software specifications; Sim cards recognise at least 10 priority invasive species. 1.2 AI camera network map; photographs; camera health check database. 1.3 Monitoring databases; images from bait stations, tracking tunnels, traps and other tools. 1.4 Biodiversity monitoring databases 1.5 Revised and updated biosecurity plans and operational standards for offshore islands (Sombrero, Prickly	AI algorithms can accurately distinguish iguanas from other lizards. Island landowners and other stakeholders continue to be willing to cooperate on biosecurity initiatives.

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
	the project pilot sites reviewed and updated by Q2Y2 **[DPLUS-B02]**.	Pear East, Prickly Pear West, Dog) and Fountain National Park. Supplies inventory.	
2. National capability to manage invasive species threats is raised, supported by the new AI technology, enhanced technical skills and stakeholder collaboration.	2.1 At least 20 Anguilla nationals are proficient in implementing the biosecurity system, including use and maintenance of AI cameras and rapid response protocols, by Q2Y2 **[DPLUS-A01]**. 2.2 At least 10 landowners and tourism operators actively engaged in biosecurity monitoring by Q2Y2. 2.3 Anguillan natural resource managers formalize partnership with tech companies for ongoing use and development of AI solutions, by Q2Y2.	2.1 Training sign-in sheets; Individual competences assessment (project start and end). 2.2 Biosecurity database; iNaturalist biosecurity page 2.3 MoU between tech company(ies) and Anguillan organisations	Trained expertise remains in-territory. Landowners and tour operators continue to be willing to cooperate on biosecurity initiatives for restored islands. Biosecurity strategy accurately predicts the future human and other resources available to implement it.
3. Methods and lessons learned from this project are shared and discussed with other biodiversity-rich islands, including the UK and UKOTs.	3.1 Representatives (at least 40% female) from at least 10 natural resources management organizations participate in one site visit (at least 10 persons) and one recorded project webinar (at least 20 persons) by Q4Y2 **[DPLUS-C13]**. 3.2 Best practice guide and support videos published online and disseminated on use of AI cameras for island biosecurity by Q4Y2 **[DPLUS-C01]**. 3.3 Peer review paper accepted for publication by Q4Y2 **[DPLUS-C17]**.	3.1 List of individuals attending in-person workshop and field trip; Webinar participant lists; Written feedback from participants. 3.2 Guide and videos; Viewing/ download statistics. 3.3 Manuscript and editor's acceptance.	Natural resource managers on other islands recognise need for biosecurity solutions.
Activities 1.1 Develop AI software to recognise ≥10 priority IAS including inter alia rats, mice, cats, dogs, green iguanas, mongooses and goats. 1.2 Install AI cameras and peripherals in priority conservation sites (five) and experimental control sites, which communicate with ANT staff smart phones. 1.3 Conduct monthly inspections of the same sites (1.2) for invasive species using manual methods, including bait stations, tracking tunnels and traps.			

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
1.4 Monitor changes in abundance of threatened native reptiles, plants and birds on project sites against baselines established under previous DPLUS and other projects.			
1.5 Review and update biosecurity plans and protocols for Prickly Pear Cays, Dog, Sombrero and Fountain National Park, incorporating the new AI camera network.			
2.1 Conduct, and agree actions on findings of, Gender and Social Inclusion Assessment of Anguilla National Trust (ANT)			
2.2 Plan, undertake and evaluate training and mentoring of ANT staff and other practitioners on how to set up, operate and manage data from AI cameras.			
2.3 Meet landowners, tourism operators and other stakeholders to explain the cameras and solicit cooperation for biosecurity on Prickly Pears, Dog, Sombrero and Fountain National Park.			
2.4 Facilitate development and signing of an MoU between RESOLVE and Anguilla National Trust to provide ongoing technical support during and after the project.			
3.1 Hold in-person workshop and field trip for ≥10 practitioners from other Caribbean UKOTs to demonstrate, teach and discuss the use of AI technology in biosecurity.			
3.2 Hold webinar for ≥30 practitioners from UK and UKOTs to share and discuss the AI technology and biosecurity solutions.			
3.3 Produce and disseminate a best practice guide and support videos on use of AI cameras for island biosecurity.			
3.4 Prepare and submit paper on project methods and findings to a peer reviewed, open access journal.			

19. Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Total to date	Total planned during the project
DPLUS-A01	Number of people who have increased capacity to undertake biosecurity monitoring	People	Gender	12		12	20
DPLUS-B02	Number of biosecurity plans and protocols incorporating the AI camera technology	Number	Improved	0		0	2
DPLUS-C01	Number of best practice guides and support videos on use of AI cameras for island biosecurity	Number	New	0		0	1
DPLUS-C13	Number of organisations involved in biosecurity learning opportunities	Number	Region	0		0	10
DPLUS-C17	Number of peer reviewed papers	Number	New	0		0	1
DPLUS-D01	Number of priority conservation sites free from target invasive alien species	Number	Improved	4/5		4/5	5
DPLUS-D04	Populations of vulnerable native reptiles, plants and birds in the project sites are stable or growing compared to pre-project baselines	Number	Improved	2		2	6

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, 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)

21. 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?	X
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	X
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.	
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.	X
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	
Have you involved your partners in preparation of the report and named the main contributors	X
Have you completed the Project Expenditure table fully?	X
Do not include claim forms or other communications with this report.	