Darwin Plus: Final 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: no later than 3 months after agreed end date.

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

Darwin Plus Project Information

Project reference	Building knowledge on invasive non-native species in Diego Garcia
Project title	DPLUS151
Territory(ies)	British Indian Ocean Territory
Lead Organisation	UK Centre for Ecology & Hydrology
Project partner(s)	BIOT Administration (BIOTA) Gibraltar Botanic Gardens SWCA consultants Natural History Museum
Darwin Plus Grant value	£355,190
Start/end date of project	September 2021 – March 2024
Project Leader name	Helen [redacted]
Project website/Twitter/blog etc.	https://www.ceh.ac.uk/our-science/projects/building-knowledge-invasive-non-native-species-diego-garcia
Report author(s) and date	Helen [redacted] Jodey [redacted], Keith [redacted], Rhian [redacted] Wolfgang [redacted], Danielle [redacted], Ben [redacted], James [redacted] Tim [redacted], Chris [redacted]y, Elena [redacted] and Karsten [redacted] Megan [redacted], Steven [redacted] & BIOTA 27th June 2024

1 Project Summary

Human aided introductions of invasive non-native species (INNS), their establishment and spread are globally recognised for negative impacts on native biodiversity, human health and/or the economy. Biodiversity impacts can be particularly large on islands and hence mitigating the detrimental impacts of INNS is critical to conserving endemic and native species on islands.

Significant knowledge gaps of native and INNS distributions and impacts in UKOTs lead to uncertainty in the prioritisation of management actions, biosecurity, and conservation planning. Working with the BIOT Administration (BIOTA), we delivered amphibian, reptile, invertebrate (including ants and scale insects) and plant surveys to address some of these gaps on the UK Overseas Territory of Diego Garcia (DG) (*Figure 1*).

Figure 1. Location of the study area - Diego Garcia in the British Indian Ocean Territory (© Google Maps, created 2022).

In this project, we collaborated closely with local authorities and key stakeholders to deliver impactful research. Specifically, we increased awareness of biosecurity issues and, through increasing knowledge and capacity, mitigated impacts of existing, and prevented future, introductions of INNS on DG and the wider archipelago. This is a key component of BIOTA's and the UK Government's UKOT strategic conservation plan. Using the results from the surveys, we co-developed species action plans with BIOTA to help prioritising management for target native and non-native species.

The project was designed to be delivered through six interconnected work packages, as outlined in *Figure 2*, to support knowledge on current and future INNS on DG.

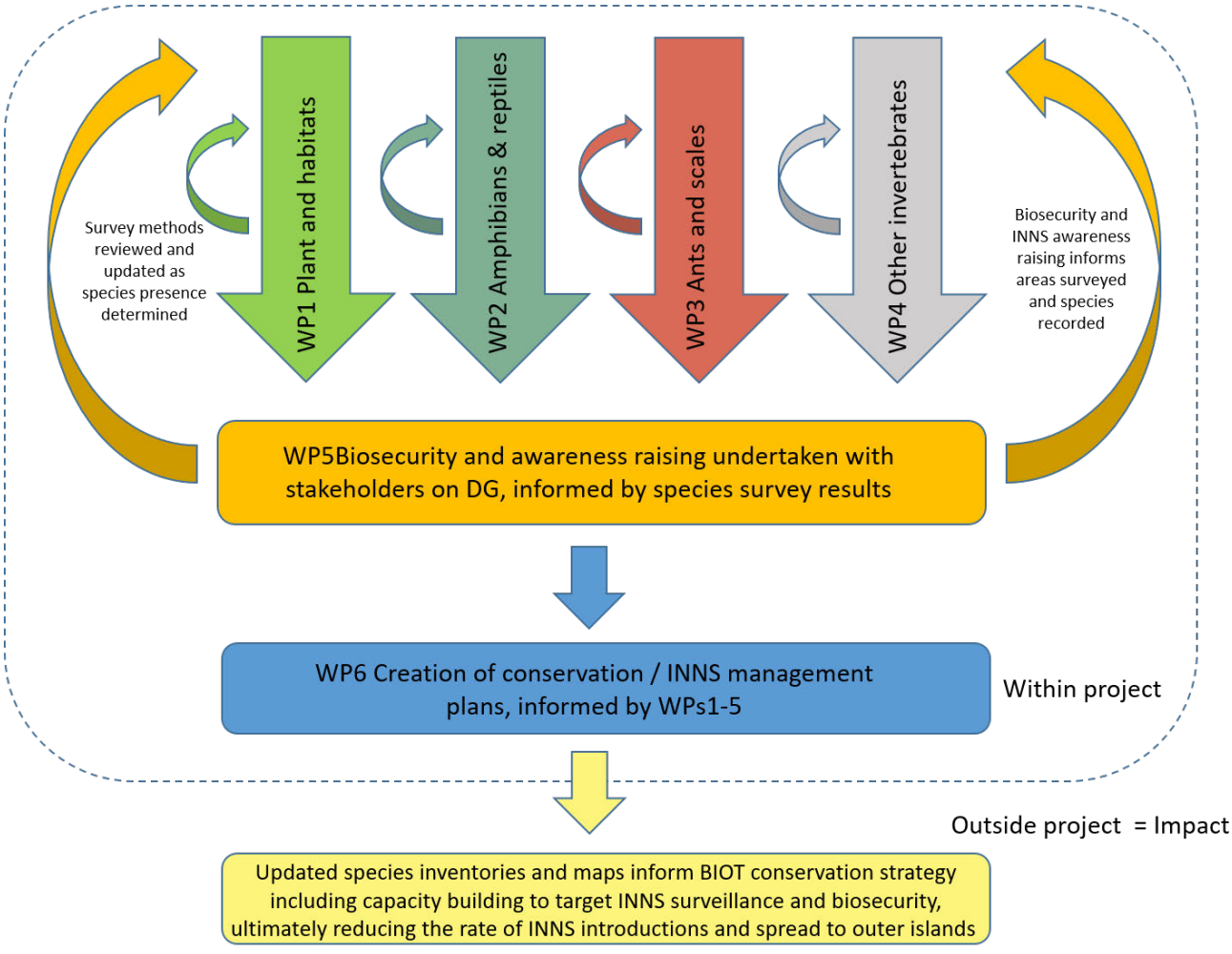

Figure 2. Schematic indicating the work packages of the project.

WP1: Plant and habitat surveys were undertaken on 31 sites (in open and closed habitat) across DG, from areas of higher urbanisation to lower urbanisation.

WP2: We intended to update and compare distributional data and population sizes of the invasive Cane toad and Oriental Garden lizard with a 2013 US-survey and produce up-to-date distribution maps for both species on DG.

WP3&4: With a particular focus for associations between ants and scale insects (WP3), we collected invertebrate data (WP4), to provide baselines that can inform the prioritisation of action against INNS (prevention, control and management). WP3&4 surveys used a variety of sampling methods to cover a wide range of life forms and microhabitats. The samples were identified by taxonomic and genetic methodologies, and the results were uploaded to BOLD and will be uploaded to GBIF to ensure project legacy.

WP5: We provided communication, training, and knowledge exchange with key stakeholders (BIOTA, UK military, US Naval Support Facility, conservation and research teams and civilians) by:

- hosting an awareness raising and identification training workshop for biosecurity staff on widespread and/or common invasive ant species and on surveillance techniques.
- developing maps indicating “areas at risk” from INNS in DG, with the potential to prioritise biosecurity surveillance and rapid response activities.
- developing outreach material, e.g., mini guides on native species, lay articles in public newsletters, and Ministry of Defence Sanctuary articles.
- disseminating information through awareness-raising materials and meetings with military staff.
- uploading datasets and outreach materials to the Chagos Information Portal, GBIF and BOLD.

WP6: Using the data from WPs1-5, we co-designed and developed management plans with BIOTA and the US Naval Support Facility.

2 Project Partnerships

Since the project started in September 2021, the team has had a quarterly team meeting via the online platform Zoom and held multiple work package meetings via Zoom and Teams. In addition, the team has met multiple times with stakeholders from the US Naval Support Facility (based in Hawaii in relation to the invertebrate sampling work they undertook in January 2022). The US Naval Support Facility have used the sampling locations we designed, and we shared sampling methodologies to increase sampling effort at each site. We met regularly with Zoological Society London (ZSL), the Chagos Conservation Trust (CCT), the UKOT Conservation Forum (see news article) and the Species Recovery Trust (SRT), especially at the beginning of the project, to review project methodologies, deliveries, and communications (see joint news article with SRT in Chagos News and a subsequent follow up article) to identify synergies between the projects such as discussions over sampling methods and kit with the SRT[1]. This proved particularly useful in terms of early specimen collection when the ZSL teams and BIOTA were on DG (see Annex 5.7 BIOTA and ZSL invertebrate collection results from BIOT). Species records were shared with ZSL, CCT, SRT and the US Naval Support Facility at the end of the project.

Throughout the fieldwork and logistics planning, we worked closely with BIOTA to review the work planning and ensure the project received its research permit. We created two training presentations on ants which were shared with BIOTA (Annex 5.4 Ant Awareness presentations and Annex 5.26) and co-created with BIOTA an evaluation form for the biosecurity training (Annex 5.2 Draft Evaluation Form for Biosecurity Training). The Environment Officer on DG during the first two years of the project started to use the form to evaluate Biosecurity training to military staff in February 2022. BIOTA and UKCEH drafted a biosecurity manual (based on the Tristan da Cunha Biosecurity Manual created by the GB Non-Native Species Secretariat) and this was shared with BIOTA and the Chief Scientific Officer for further work.

UKCEH and the GB Non-Native Species Secretariat, with BIOTA, adapted the INNS training presentation given by BIOTA for new staff on DG. This training was be supplemented with a Biosecurity leaflet (Annex 5.3b Biosecurity Leaflet for customs and immigrations officers on

[1] Example meeting agendas and actions are available on request.

INNS). As part of the biosecurity work undertaken by staff based on DG, we adapted an Interception Database created by the GB Non-Native Species Secretariat for use on DG by Customs Teams (Annex 5.6 Draft Interception Database for BIOT). This database was reviewed when on DG in June 2022 during a project meeting and approved.

The WP1 plant team worked closely with the UKOTs team at Kew throughout the project and had regular email exchange to both review the work previously undertaken on DG (5) and to see where the project can further build on recommendations outlined in their report. Kew have also been instrumental in supporting the compilation of species lists for WP1 reporting forms DG (Annex 5.1b WP1 recording form). This collaboration is resulting in a publication, an updated checklist of the plants of the Chagos Islands (due for submission for publication December 2024). The UKOTs team at Kew created an iNaturalist site https://www.inaturalist.org/projects/the-terrestrial-biodiversity-of-the-british-indian-ocean-territory-chagos-archipelago for BIOT in 2018 as part of their work on island and our project, as well as systematic sampling, generated further records for this site.

Additional stakeholder engagement was undertaken via iNaturalist training with two US Naval Support Facility staff based on DG and in Japan in March 2022 to support biological recording on DG and other Bases (to increase knowledge gaps on species). The project created a Communication Plan (Annex 5.22) which was a live document outlining the main stakeholders on and off DG and engagement and was reviewed by the project lead throughout the project.

As part of the planned project outputs, we held two workshops with stakeholders to disseminate the project outputs/outcomes and engage with the wider community. We held an online workshop on ants of the UKOTs in November 2023 (Annex 5.16 Ant Workshop Agenda) designed to share experiences with mitigating the impacts of invasive ants in the UKOTs. This brought together a wide range of stakeholders, including St Helena National Trust, Ascension Island Government, Hawaii Ant Lab, APHA, National Parks Trust of the Virgin Islands, Chagos Conservation Trust, US Naval Support Facility, Turks and Caicos Islands Government, Belgian Institute of Natural Sciences, UK Overseas Territories Conservation Forum, Montserrat National Trust, FERA, Saint Helena Government, Government of Montserrat, and Falkland Islands Government, as well as project leaders from other Darwin projects (e.g., Darwin Fellows, DPLUS124, DPLUS200 etc). To ensure legacy, an invasive ant mailing group has been established, with all stakeholders who attended the meeting joining. The second hybrid workshop in March 2024 (Annex 5.17 DPLUS151-DPLUS175 Workshop Agenda and Annex 5.17 DPLUS151-DPLUS175 Workshop photo) was designed to highlight the outputs/outcomes of the DPLUS151 project, alongside providing progress on DPLUS175. The stakeholders involved were more DG-focussed, and included BIOTA Environmental Officers, Chagos Conservation Trust, US Naval Support Facility, Chief Scientific Advisor to the Government of the British Indian Ocean Territory, and UK Overseas Territories Conservation Forum. Further, the project team presented at the UK Overseas Territories Conservation Forum workshop in March 2023, including an additional special workshop for cane toads. These workshops were attended by a wide audience interested in INNS across the UKOTs, as well as a support from numerous Darwin Plus projects, including DPLUS107, DPLUS114, DPLUS135, DPLUS155, DPLUS175 and others. Finally, we shared information with other UK Overseas Territories and the UKOTCF through an informative webinar for exchange on the management of cane toads as a priority species for management. This workshop was part of the UKOTCF webinar on invasive non-native species.

3 Project Achievements

3.1 Outputs

This project set out to achieve five main outputs on 1) documenting and mapping INNS, 2) training and educating BIOTA staff, 3) improving the knowledge of military personnel and civilians on Diego Garcia, 4) produce action plans, and 5) share the project outputs with a wide audience. Each of these outputs have been completed in full or mitigated against with the approval of Darwin via a Change Request, as documented below.

Output 1. Native and non-native species inventory and distribution maps produced for amphibians, reptiles, invertebrates, and plants WP1-4.

Physical and online records collected from 31 sampling locations (greater than the 10 suggested in **Indicator 1.1**), as well as opportunistic sampling in DG. The database (Annex 5.27 and 5.28) contains information on over 8,100 specimens. Over 4,450 of these specimens are ants, the

majority of which are identified to species level. These records supplement the data already collected by BIOTA and ZSL. (**Indicators 1.1, 1.3, 1.4, 1.5, 2.5, MoV1.1-1.5**). A preliminary analysis indicates that information on more than 50 invertebrate species have been added as new to DG, compared to the existing data. Some species known for the Archipelago were found on DG for the first time, including the endemic Chagos ground cricket *Scottiola chagosensis*. Within centipedes, a species new to science was found and formally described (*Australobius chagosensis* sp. nov.) (Annex 5.27).

The Open Access iNaturalist site set up by Kew in 2018, at the time of reporting, held more than 4148 observations of 832 species from 49 observers https://www.inaturalist.org/observations?project_id=27878. This project added almost 700 records from the specimens collected from the June 2022 field trip and subsequent records were added from other staff and researchers from promotion of the project by BIOTA and UKCEH.

Data from more than 1,300 invertebrate specimens found during the 2022 surveys were analysed and uploaded on the Open Access database BOLD (https://www.boldsystems.org/ - search for "BIOT" in the public data and see Annex 5.24 for a screenshot of the returned results). Of the identified samples, the vast majority where from the ant (*Formicidae*) family across a wide range of taxa and species, including *Tetramorium lanuginosum* which is recognised as a widespread tramp species dispersed through human commerce and is particularly common on small tropical islands, and other invasive ants such as *Tapinoma melanocephalum* **(Indicator 1.6, MoV 1.6)**.

Species distribution maps from opportunistic surveys can found on iNaturalist Project site **(Indicator 1.7, MoV 1.7).**

Due to the challenges with accessing DG in 2023, further opportunistic plant and invertebrate surveys were unable to be undertaken. The amphibian and reptile surveys were also unable to be undertaken – LTS-NIRAS were informed of this change. Further information on amphibians can be found in relation to WP6 **(Indicator 1.2)**.

"Heat maps" with potential INNS risk areas are available in GitHub (megwill09/Diego_Garcia_project_07631 (github.com)) on request (please email megwil@ceh.ac.uk to request access) **(Indicator 1.8, MoV 1.8),** were completed. Excerpts (e.g., the README document and a sample heat map of the 19 ant species found on Diego Garcia) are available in Annex 5.19. We have provided the R code to produce the maps along with all the necessary inputs and resulting outputs (both static and dynamic maps – the latter allows the user to zoom into the map for increased resolution).

Output 2. Species survey training delivered to at least two BIOTA staff and research outputs shared with at least ten multidiscipline staff on DG. WP3,4 and 5.

Training on biosecurity and species surveys has been undertaken on Diego Garcia, with supporting materials created through the project to aid the training. The draft Biosecurity Manual to support the induction of new Environmental Officers was shared for further work (see above). This manual consists of materials for training customs staff and other personnel on Diego Garcia, such as the Biosecurity Leaflet for customs and immigrations officers on INNS (Annex 5.3) and miniguide (Annex 5.4). In addition, we have created an ant awareness raising presentation (**Indicator 2.2**). Working with BIOTA, we have created a PDF and card miniguide to INNS for military and civilian staff on DG to be aware of (Annex 5.4)) (**Indicator 2.3,** shared on the Chagos Information Portal: **(MoV2.3)**), created a biosecurity leaflet for Customs and Immigration officers (Annex 5.3) (**Indicator 2.3**).

We have shared species lists from sampling surveys (**Activity 1.3**), with BIOTA, ZSL and the US Naval Support Facility (see Annex 5.27). These records were held on a central Teams site (see also **Indicators 1.1, 1.3, 1.5, 2.5, MoV1.1-1.5**). A second field campaign led by UKCEH was not possible in 2023 but records have continued to be added to the iNaturalist site from another expedition supported logistically, by UKCEH and from other projects and recorders. Data and management plans were shared with the 2 BIOTA Environment Officers during the joint workshop with DPLUS175. The invertebrate data is in the process of being added to GBIF and BOLD, which will be added within the next 6 months, and the plant data is being written up as a check list for the Chagos Archipelago.

Output 3. At least 50 military and civilian staff on DG have improved knowledge of Biosecurity protocols and surveillance WP5.

Using the Communication Plan (**Indicator 3.1**), in Year 1, we identified individuals to received training in Biosecurity). Thirty-four staff on Diego Garcia have received biosecurity training using guidance and presentations updated throughout the project (**Indicator 3.2**).

In addition, approximately 60 staff from the US Naval Support Facility (50 male and 10 female, reflecting staff ratios on DG) were given online training (see Annex 5.23 for induction training material), which is now delivered via pre-recorded presentations for increased legacy (**Indicator 3.2**).

As indicated in reporting updates for Output 2, biosecurity training was given and supplemented and built on by providing "Train the Trainer" by pre-recorded material held by GBNNSS (**Indicator, MoV 3.3 and 3.4**).

Pathway Action Plans were reviewed during the transit delay in Bahrain in June 2022 and considered still applicable with no further revision needed. In addition, Ant Pathway analysis (Annex 5.9) was created and updated during the June 2022 trip **(Indicator 3.1 and Indicator and MoV 3.3).**

MoV 3.1 and **3.2** were not suitable as promoting through a Communication Plan as the plan and survey report contains potentially sensitive information and as such, were kept as internal documents available upon request to suitable parties.

Output 4. Species action plans created for at least two species, based upon stakeholder consultation. WP6

Following the first year of fieldwork eight plant species were identified for management and or eradication, and one species of ant. Comprehensive management plans were written (Annex 5.25) and reviewed internally for two identified species: feral donkey and cane toad **(Indicators 4.1-4.3, MoV 4.1, 4.2)**. These documents are for BIOTA use and not necessary for publication on the BIOTA website and as such **MoV 4.3.** is not suitable). The management plans for cane toad and feral donkey were outlined and discussed with stakeholders at a project workshop (Annex 5.17 DPLUS151-DPLUS175 Workshop Agenda). These qualitative conservation action plans, which are based on the best available data, do not represent full feasibility assessments but present potential management options for these species' populations on DG taking into account the specific context (e.g., welfare, acceptability of different measures and invasion history). They discuss pros and cons as well as feasibility of different management techniques.

Output 5. Research outputs shared with wider scientific and INNS practitioner audience

A project brief (**Indicator 5.1**) was created in Year 1 but was not shared on the BIOTA website alongside the June 2022 Expedition survey report as the website was being updated.

Indicator 5.2 is complete with four articles on the project published: three in Chagos News https://chagos-trust.org/images/uploads/documents/Chagos_News_59.pdf, https://chagos-trust.org/news/the-latest-issue-of-chagos-news-is-out-now and one for UKOT Conservation Forum Newsletter https://www.ukotcf.org.uk/forum-news-55-published/ - shared with 314 subscribers.

Results of the work were shared during the UKOTCF Invasive Species Conference on the 7th March 2023 (https://www.ukotcf.org.uk/other-territory-support/seminars-training/webinar-invasive-species/), which was attended by approximately 60 participants with interests in INNS in the UKOTs (Annex 5.20 UKOTCF Webinar). This included linking with other Darwin Plus projects, including DPLUS107, DPLUS114, DPLUS135, DPLUS155, DPLUS175 and others (**Indicator 5.2 and MoV 5.2**). See also Section 2.

As part of the planned project impact (**Indicator 5.3 and MoV 5.3**), we held two workshops with stakeholders to disseminate the project outputs/outcomes and engage with the wider community. We held an online workshop on ants of the UKOTs in November 2023 (Annex 5.16 Ant Workshop Agenda) designed to share experiences with mitigating the impacts of invasive ants in the UKOTs. This was attended by approximately 50 people, with 6 presentations of results from this project. The second hybrid workshop in March 2024 (Annex 5.17 DPLUS151-DPLUS175 Workshop Agenda and Annex 5.17 DPLUS151-DPLUS175 Workshop photo) was designed to highlight the outputs/outcomes of the DPLUS151 project, alongside providing progress on DPLUS175. The stakeholders involved were more DG-focussed and was attended by nearly 30 people, with 7 presentations of results from this project. Further, the project team presented at the UK Overseas Territories Conservation Forum workshop in March 2023, including an additional special workshop for cane toads (Annex 5.20). These workshops were attended by

approximately 30 people, with three presentations of results from this project. This significantly exceeded the single presentation listed in **Indicator 5.3**.

Five manuscripts are currently in preparation, with a submission date by mid-2025. The papers include “Scale insects of the Chagos Archipelago”, “Aphids, psyllids and whiteflies of the Chagos Archipelago”, “The flora of the Chagos Archipelago: a conservation checklist of native and introduced plant species”, “The ants (Hymenoptera: Formicidae) of Diego Garcia" and “Ant Pathway Analysis: Invasions to Diego Garcia” **(Indicator 5.4, MoV 5.4)**. A sixth paper on “New Chilopoda from the Chagos Archipelago” was submitted for publication in Y3Q3. Thus, we have exceeded the expectations set out in **Indicator 5.4** by five additional papers.

Problems. The project encountered two significant challenges.

Firstly, the Covid-19 pandemic caused serious worldwide restrictions placed on international travel. This was carefully managed by the team, as evidenced in the Assumptions listed below. Specifically, a UKCEH internal risk register (Annex 5.14) was created at the start of the project, which was reviewed frequently. The team closely monitored possible travel restrictions as part of the monthly risk register review when fieldwork was being planned. The team identified that additional Covid-19 documentation would be required for travel. This included regular testing for Covid-19 when in Bahrain, waiting for onward travel to DG. This detailed planning meant that the Outputs were not significantly affected by Covid-19.

Secondly, the team expected to make two planned field trips to Diego Garcia, however, the second did not go ahead. The first trip initially proved challenging due to the team severely delayed in transit (Bahrain) due to military flights onto DG being unexpectedly cancelled. Despite this, the team eventually completed all activities that were expected and generated a vast amount of novel data (as evidenced throughout this document). When planning the second field trip during the regular project meetings, the team took stock of the data already collected and weighed this up against logistical difficulties previously experienced by the field team. The project team agreed that only a subset of the field team would be required for the second field trip planned in 2023 to concentrate on the amphibian and reptile surveys. However, during the planning phase, it became clear that substantial logistical obstacles remained (e.g., permits on Singapore route being declined, logistical issues with the Bahrain route, and challenges organising medevac insurance for non-UKCEH staff etc), resulting in the team being unable to travel for the second field trip. Therefore, the project team proposed to hold additional stakeholder meetings to maximise the impact and outputs of the project, which was approved in Change Request 11 in September 2023. The hybrid stakeholder meeting was held on 11th March 2024 (Annex 5.17 and 5.18).

3.2 Outcome

The overarching intended outcome of the project was to update species inventories and map the results to help inform BIOT conservation strategy. This included capacity building for INNS surveillance and biosecurity, with the aim of ultimately reducing the rate of INNS introductions and spread to the outer islands. The project successfully achieved this outcome.

As mentioned above, almost 700 iNaturalist records were made openly available from the second year of the project. The iNaturalist project site now has over 4,000 records of over 800 species (added by 49 users). In addition, the UKCEH database holds data on more than 8,100 specimens collected from Diego Garcia through opportunistic and standardised sampling (Annex 5.1 gives a map of the sites) from the UKCEH and ZSL-BIOTA trips. Records of species are also present on iNaturalist, demonstrating the distribution of species around the island (**Indicator 0.1a and MoV 0.1a and 0.1b**) (**Activity 1.3**).

Data from the June 2022 trip (**Activity 1.3**) was made available to BIOTA, ZSL and the US Naval Support Facility (**Indicator 0.1a**).

Plant and ant survey protocols were shared with US Naval Support Facility staff and BIOTA Environment Officer during the June 2022 trip (**Indicator 0.2**).

Thirty-four staff on DG received biosecurity training using guidance and presentations updated throughout the project since September 2021. iNaturalist training given to US Naval Support Facility staff to support opportunistic recording from DG (Output 2) and training was given to 60 US Naval Support staff online (see Section 3.1) (**Indicator 0.3**). Training material has been co-developed with BIOTA for future training tailored for:

1. The monthly US Naval Support Facility indoctrination briefing

2. Detailed training for BIOT customs immigration and environmental health
3. Training for BIOT Senior personnel which focuses more on the financial and operational needs for basic biosecurity.

Evaluation forms were created as part of Output 2 and Output 3 (Annex 5.2) (**Indicator 2.1**, **Indicator 3.2**).

Two species identified for management or suitability on Diego Garcia and Management plans drafted (Annex 5.25) (**Indicator 0.4**). **MoV 0.4** was partially suitable; the documents were created and shared with BIOTA but adding to the website was not warranted.

Four popular articles were published (**Indicator 0.5**, **Indicator 0.5**). Across three distinct conferences/workshops, there have been 18 presentations on the results of the project (5 at UKOTCF workshop (Annex 5.20); 6 at Ants of the UKOT workshop (Annex 5.16); and 7 at the DPLUS151 and DPLUS175 Workshop (Annex 5.17) (**Indicator 0.5, MoV 0.5)**. Therefore, the project delivered greater than the number of presentations as described in **Indicator 0.5**.

The project team have shared biosecurity best-practice methods, as evidenced above, through webinars and training opportunities. Some of the resources and materials from these activities are open and available on-line. Outputs, including as an example information on monitoring ants and awareness raising, from the project have been shared through DPLUS175 and also through Darwin Fellowships (Cyprus SBA). The resources developed through DPLUS151 will be disseminated further through the DPLUS175 project website to ensure an ongoing legacy in support of positive impact on biodiversity through best-practice in monitoring particularly for invasive non-native species. The biosecurity resources developed through DPLUS151 have value for all UKOTs and will be further shared through ongoing projects including, as an example, the recently approved Darwin Strategic led by the RSPB. Further articles and peer-reviewed publications are being developed by the DPLUS151 project team and these will be promoted through news items on relevant websites and newsletters including the Darwin Plus newsletter.

3.3 Monitoring of assumptions

A UKCEH internal risk register (Annex 5.14) was created at the start of the project. This risk register was reviewed frequently and updated as needed. Additional risks raised to the project were the spread of Covid-19 between countries as travel to DG was undertaken and also the risks of fieldwork not being possible.

The following list is the assumptions outlined in the approved LogFrame (Annex 2):

Assumption 0.1, 1.1, 2.1 and 3.1: *Major field activities are not cancelled due to Covid-19 restrictions.*

This assumption held true for the fieldwork for Covid-19. Monitoring possible travel restrictions was part of the monthly risk register review when fieldwork was being planned.

Assumption 0.2: *Species surveys accurately identify both native and INNS present on DG.*

This assumption held true. Invertebrate species identifications from tropical regions can be challenging. We reduced the risk of not being able to identify species by working with an international team of experts and bringing in the barcoding element with the NHM. Very few samples were unidentifiable due to damage, being in juvenile life stage or having incomplete body parts. Approximately 1,880 samples (89%) of invertebrate specimens were identified to the family level, and approx. 1,150 samples (54%) to the species level.

Assumption 0.3: *Information on native and INNS occurrence and distribution usefully informs Environmental Teams on DG and enables them to address potential threats of INNS.*

This assumption held true, as having updated abundance and distributional data will support delivery of conservation and management plans, however we were unable to collect empirical data due to vertebrate surveys not being undertaken.

Assumption 0.4, 1.2 and 2.2: *Organisations in / on pathways BIOT have capacity to engage with work.*

This assumption held true. The BIOTA and US Naval Support Teams on DG are relatively small and so our training and other engagement work needed to be concise and focussed to ensure delivery.

Assumption 1.3: *Identifying to species to family-level will not prevent development of protocols, where species-level identification is not possible.*

This assumption held true. Invertebrate species identifications from tropical regions can be challenging. We have reduced the risk of not being able to identify species by working with an international team of experts. 1,880 samples (89%) of specimens identified to family. We utilised a range of survey protocols to allow for sampling across a range of taxa.

Assumption 2.3: *Partnering organisations have capacity to share / disseminate project information.*

This assumption held true. The BIOTA and US Naval Support Facility Teams are relatively small and so our training and other engagement work needed to be concise and focussed to ensure delivery.

Assumption 2.4: *Validated data is of sufficient quality to be shared on Open Access Platform.*

This assumption held true. Approximately 1,150 invertebrate species records will be added to GBIF and approx. 1300 invertebrate records will be added to the BOLD database. More than 400 plant species will be added to GBIF via the plant checklist.

Assumption 3.2: *Organisations in BIOT and in third countries (on pathways) have capacity to engage with work.*

This assumption held true. The BIOTA and US Naval Support Teams (e.g., in Hawaii) are relatively small and so our training and other engagement work needed to be concise and focussed to ensure delivery.

Assumption 4.1: *Data is available from complementary cross-organisational surveys, to inform decision making for conservation or management priorities.*

This assumption held true. Data was not collected for the species management plans due to the team not being able to travel in the final year of the project, however, the management plans include this data gap and next steps needed. Invertebrate (Annex 5.27) and plant records (Annex 5.28) informed management recommendations following the 2022 survey.

Assumption 4.2: *Species of interest / concern are identified where clear management actions can be identified and incorporated into plans.*

This assumption holds true. Species of interest/concern were identified, and draft management plans developed action needs to be possible. For example, marine INNS are extremely difficult to manage. Comprehensive species lists and distributional information supported the decision making.

Assumption 5.1: *Findings are of interest to wider scientific community and INNS practitioners.*

This assumption held true. New species to science, new records for the Chagos Archipelago and DG are of interest to the wider scientific community and useful for practitioners, e.g., in the context of conservation of endemic species. Similarly, methods that can be used by other UKOTs will hopefully stimulate interest to a wider community. This was also demonstrated through the participation in the three workshops (invasive ants, cane toads and final project workshop).

4 Contribution to Darwin Plus Programme Objectives

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

Our project targets the Darwin priority "*To tackle invasive non-native species*" by delivering a comprehensive dataset of INNS which will support INNS management on DG.

The delivery of updated locational and abundance data on species of conservation importance (INNS, endemics etc) will help deliver BIOTA's conservation priorities of management and prevention of new INNS arriving:

1. *To manage and where possible eradicate INNS through active programmes of control.*
2. *To prevent the introduction of new INNS through effective biosecurity measures.*
3. *To encourage and support high quality scientific work, both in support of our management and strategic objectives and to enhance our knowledge of the natural environment*.

Our project supported **two** **strategic priorities** for the UK Government's plan for UKOTs by directly addressing and supporting the delivery of:

1. ***obtaining data on the location and status of biodiversity interests*** *and the human activities affecting biodiversity to inform the preparation of policies and management plans (including baseline survey and subsequent monitoring);*

2. ***preventing the establishment of invasive alien species****, and eradicating or controlling species that have already become established.*

The project also contributes to the following targets and recommendations:

1. 2019 Environmental Audit Committee inquiry into Invasive Species supports the implementation of actions preventing introduction of INNS
2. Previously Aichi target 9 of the Convention on Biological Diversity to which the UK is a signatory (COP/10/INF/12/Rev.1) and currently "Kunming-Montreal GBF Target 6.

4.2 Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board[2].	50% (7 females; 7 males)
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[3].	56% (5 females; 4 males)

[2] 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.

[3] 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.	
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	X

Our project team (UKCEH, SWCA, GBG, GBNNSS, BIOTA, Uni. Florence, EAA, INBO and NHM), has equal numbers of men (7) and women (7) in the project team. The first and second project leads are both female. We have made the miniguide materials available in multiple languages to ensure messaging across different stakeholder groups available. When planning the 2 focussed workshops that we held during the project (**Indicator 5.3**), the project team aimed to ensure that gender equality was paramount when inviting speakers and attendees, with approximate equal ratios (Annex 5.16 and 5.18). Furthermore, these workshops were held in a hybrid format so that individuals that have difficulty in travelling could attend. The timings of the workshops were designed to avoid UK school holidays as to not disadvantage working parents/guardians. For those attending in-person, measures were put in place to ensure that individuals could travel in comfort (e.g., organising taxis to and from public transport), and the venue (UKCEH Wallingford) was selected partially due to its accessible meeting facilities. These points were discussed at the project team planning meetings. As a result, the workshops were designed to be inclusive as possible so that a wide audience could participate and thus increase project impact. Similarly, steps were considered when planning the fieldtrip.

5 Monitoring and evaluation

Monitoring progress and the evaluation of outputs was mainly achieved during quarterly meetings with all partners (led by UKCEH). Minutes of all project meetings are provided in Annex 5.21, as requested by the previous annual report review. All partners are given the opportunity to input to documents like the current report. On specific tasks or outputs (science or logistics) working groups of relevant team members have come together and report outputs/actions back at the larger meeting. UKCEH acts as the administrative hub and maintains a TEAMs site as communication hub, but also as the central repository for the survey database and training and communication material.

The invertebrate project team members identified species within their core expertise (ants and scales). The additional material was shared with the NHM for species identification. Over 1,300 invertebrate specimens were barcoded, including e.g., larvae and instars that are otherwise not morphologically identifiable.

As described elsewhere, there was a major change in the planned fieldwork trips to DG, reducing the number of trips from two to one. This was picked up early in the monitoring in routine scheduled meetings where all partners are in attendance. Since a large volume of data was collected in the first fieldtrip trip, alternative plans were proposed so that project design was still met, which was approved via Change Request 11.

Following workshops, which highlighted outputs from the project (e.g., Annex 5.17), questionnaires were sent out to external partners to evaluate the workshop and outputs (evidence available upon reasonable request, as to not break GDPR). All feedback received was positive.

6 Lessons learnt

- Close working relationships with key organisations on BIOT (BIOTA and US Naval Support Facility) were extremely positive and enabled action across different aspects of the project.
- The regular team meetings and email communication have worked extremely well in maintaining relationships and in designing and delivering project tasks to completion. The quarterly updates with ZSL and the CCT have also been extremely helpful, and we would recommend others working in the BIOT to adopt a similar process of collaboration and cooperation in early stages of proposal writing.
- In the first year, ordering materials from Singapore was complicated but we received excellent support and help from the military staff both in Singapore and DG, as well as from ZSL. For others undertaking the same process we would recommend leaving a long lead in time for both procurement and logistics.
- The travel disruption in June 2022 and in 2023 meant that some activities planned for (the amphibian and reptile surveys and the train-the trainer work) were not able to be undertaken or had to be postponed. Flexibility in travel schedules and budget can allow accommodating changes in travel plans to DG. Having alternative scenarios ready, particular where travel issues arise early in the project should allow protecting the project outcomes.
- The planned fieldwork in 2023 had to be cancelled due to logistical constraints and our previous experience of travel to DG. The change request system works well, and we were able to suggest and get approval to change this aspect of the project.

7 Actions taken in response to Annual Report reviews

The previous annual report (AR2) stated that the project is progressing well and to schedule, with high quality outputs produced. The main suggested feedback concerned the focus of the report and how the indicators are reported (e.g., providing gender disaggregated information and using more SMART indicators). The reviewer also asked us to consider whether we should make the indicators more SMART themselves. For example, they point out Indicator 1.1 (Database holds data from invertebrate sampling and plant surveys from 10+ locations by Y2Q1 and Y3Q1) and suggest stating the number of data points in the indicator. It is extremely challenging to do this *a priori* for this project. By nature, this project has catalogued new INNS on DG, and it was unknown how many species (i.e., data points) would be found before the surveys. Therefore, it was not possible to do this. However, to address this as best we can, we have reported in more detail on the pertinent metrics where applicable.

The reviews from the annual reports were discussed in detail with all partners and collaborators, as evidenced by the project meeting agendas and minutes (Annex 5.21).

8 Sustainability and Legacy

This project had planned and achieved significant collaborations with a number of stakeholders that are concerned with INNS on DG, including BIOTA, CCT, ZSL, Kew, and the US Naval Support Facility. This project sought to engage with these key stakeholders through sharing and co-designing materials, participating in interactive workshops, sharing and commenting on outputs, etc. The project has left behind a significant legacy of open access data, including on the BOLD database which is a global resource, two soon to be added datasets on GBIF and additional data and promotion of the iNaturalist project, which will ensure that data on INNS is open available for the foreseeable future. Beyond what was originally planned, the project team have set up, and are maintaining, a new UKOT invasive ant mailing group. This was borne out of the Ants of the UKOTs workshop, organised by this project (Annex 5.16).

All project staff remain in post, bar one who moved to a new institute. All training materials and leaflets were shared with BIOTA and CCT for further training and dissemination. An inventory of

fieldwork kit (which remained on Diego Garcia) was also shared with BIOTA. Additional fieldwork kit used during the surveys was also retained by Gibraltar Botanic Garden.

9 Darwin Plus Identity

The Darwin logo was added to the Biosecurity Training Evaluation form (Annex 5.2), the biosecurity leaflet (Annex 5.3) and the miniguides (Annex 5.4) and was added to all presentations undertaken through the project, e.g., the UKOTCF presentation held on the 7th March 2023 (Annex 5.10). The logo was also included during lectures to students given by the project team. On 28 March 2023 UKCEH hosted a meeting with FCDO and Helen Roy presented the project as part of the Biodiversity programme during that visit. The Darwin logo was displayed in promotion material for workshops (e.g., Annex 5.16b) organised by the projects and in the talks themselves (e.g., Annex 5.18).

10 Risk Management

The project developed a risk register in the first 6 months of the project (Annex 5.14 Project Risk Register) through which overall project risk was reviewed regularly. Travel risk was identified in the Risk Register. In addition to overall project risk, we created a risk assessment for fieldwork when on Diego Garcia (Annex 5.15 Project Fieldwork Risk Assessment). A risk of travel was identified for the planned fieldtrip in 2023 and was subsequently cancelled, with the approval of Darwin Plus via the change request system.

11 Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes, Lucy [redacted]
Has the focal point attended any formal training in the last 12 months?	No – she is new to the post and will receive training in the near future.
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 0% [0] Planned: 0% [0]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses. None	
Please describe any community sensitisation that has taken place over the lifetime of the project; include topics covered and number of participants. None	
Have there been any concerns around Health, Safety and Security of your staff over the lifetime of the project? If yes, please outline how this was resolved. None	

12 Finance and administration

12.1 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]			As planned
Consultancy costs				As planned
Overhead Costs				[redacted] was budgeted in overheads for the audit but has increased to [redacted]. See row below.
Travel and subsistence				Planned overseas participants in a workshop were unable to attend in-person but were able to join online (Annex 5.17).
Operating Costs				Facilities chemical storage surcharge
Other costs				[redacted] budgeted and unspent on open access publications due to manuscripts not yet submitted and new open access agreements now in place with publishers
End of project audit fee				[redacted] was budgeted in overheads for an audit but has increased to [redacted] See row above.
TOTAL	141,010.60	132,199.10	**-6**	

Staff employed (Name and position)	Cost (£)
Helen Roy, Group Leader, Project Leader	[redacted]
Steven White, Theoretical Ecologist, Project Manager and Modeller	
Karsten Schonrogge, Community Ecologist	
Megan Williams, Quantitative Ecologist	
Natural History Museum Staff Costs, Ben Price, Senior Curator	
TOTAL	**56,558.91**

Consultancy – description and breakdown of costs	Other items – cost (£)
Umweltbundesamt, staff costs (Wolfgang Rabitsch) University of Florence, staff costs (Elena Tricarico) EVINBO, staff costs (Tim Adriaens) Animal & Plant Health Agency, staff costs - GBNNSS (James Millett)	[redacted]
TOTAL	**47,000.00**

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)
Travel and subsistence for in-person workshop held at UKCEH Wallingford UKCEH facilities chemical storage surcharge Audit NHM consumables (DNA barcoding)	[redacted]
TOTAL	**9,643.63**

12.2 Additional funds or in-kind contributions secured

Matched funding leveraged by the partners to deliver the project	Total (£)
UKCEH contributed approximately £54,000, by undertaking the project with reduced overheads of 40%.	[redacted]
BIOTA have provided in-kind project support in the form of £18,400 in staff time over the project duration.	
GBG have provided in-kind contributions to the value of £38,000.	
The Natural History Museum (NHM) has provided £9,340 in-kind contributions by charging reduced overheads.	
SWCA Environmental Consultants have provided in-kind contributions, via a subsidised charge rate and in-kind time, to the value of £10,000.	
Research Institute for Nature and Forest (INBO) have provided in-kind contributions, via a subsidised charge rate, to the value of £17,500.	
University of Florence has provided in-kind contributions, via a subsidised charge rate, to the value of £17,500.	
GBNNSS has provided £7,500 in-kind time contributions.	
Jodey Peyton has given £8,000 in in kind time to the project as a UKCEH Research Fellow.	
TOTAL	**180,240**

Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project	Total (£)
TOTAL	

12.3 Value for Money

This project has offered outstanding value for money. All partners provided in-kind contributions totalling >£180K. All partners used existing equipment where possible, including existing DNA barcoding machines at the NHM. Our data is housed in free to use open access repositories, such as iNaturalist, BOLD and GBIF (within the next 6 months). Videoconferencing facilities were used whenever possible to reduce travel costs and carbon emissions. DG is only reachable via one route open to researchers, via Bahrain on US Airforce Aircraft. Whilst our team experienced a significant delay in Bahrain, with associated costs, the team put the time to excellent use by conducting additional surveys that aided in the pathways analysis (Annex 5.9). Travelling to DG remains a challenge, both logistically and financially.

13 Other comments on progress not covered elsewhere

There are a few items that will need redacting in the report. These are clearly marked via comments.

14 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

2022 saw a comprehensive survey as part of the project targeting invertebrate and plant species. Standardised sampling protocols were carried out at 31 sites with open and closed canopies in different biomes using direct surveys and different traps. In addition, opportunistic surveys were carried out throughout the island. The surveys recorded almost 230 plant species, 50 of which were new to DG. Notable invasive plants were bluestem grass, *Andropogon tenuispatheus*, a fire-promoting grass, and southern sandbur, *Cenchrus echinatus*, which has seed capsules that attach themselves and can irritate and injure seabirds. A third species, river tamarind, *Leucaena leucocephala*, can alter soil chemistry and outcompete more desirable species. Where the current range of plant species are limited on the island they were recommended for eradication.

Suction sampling, sweep netting, litter sieving, malaise- and light trapping and hand-collecting was used to sample more than 8100 specimens. Preliminary identification records 80 genera in more than 40 families. The collected material includes a centipede, which is new to science and new records on DG for the endemic grasshopper *Scottiola chagosensis*. Of particular interest are 25 species of ants, most of which are thought to be alien and some have major ecological impacts elsewhere in their range (e.g., *Solenopsis geminata*, *Trichomyrmex destructor*, *Technomyrmex albipes*). Seventeen new ant species were found for the island during the 2022 trip. However, two notorious invaders, however, the yellow crazy ant, *Anoplolepis gracilipes* and the little fire ant, *Wasmannia auropunctata* were absent. Other insect orders are likely to include invasives, such as whiteflies and scales that can be pests and act as vectors for plant disease.

As part of the project, we interacted with a range of stakeholders to create and disseminate material to heighten the awareness of invasives, but also provide management advice from monitoring to control and eradication. Beyond the island-based bodies BIOTA environmental officers, Customs, and US Naval Support Facility personnel, we also organised workshops with a wide range of stakeholders, including CCT, ZSL, SRT and a number of other stakeholders with interests in INNS in other UKOTs. This included a final project workshop held in March 2024, in collaboration with DPLUS175, where over 15 people (plus the project team) participated in a day long hybrid meeting, hearing about the final outputs from the project and discussing their impact and legacy.

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Photo	Image 01_Keith Bensusan leaf litter sampling	Keith Bensusan leaf litter sampling credit Jodey Peyton	@alamedagardens @UKCEH	Yes

Photo	Image 02_Wolfgang Rabitsch setting up malaise trap	Wolfgang Rabitsch setting up malaise trap credit Jodey Peyton	@UKCEH	Yes
Photo	Image 03_ Anochetus graeffei,	Anochetus graeffei, worker head credit Albert Gonzalez, Gibraltar Botanic Garden	@alamedagardens @UKCEH	Yes
Photo	Image 04_ Pheidole parva	Pheidole parva, major worker credit Albert Gonzalez, Gibraltar Botanic Garden	@alamedagardens @UKCEH	Yes

Annex 1 Report of progress and achievements against logframe for the life of the project

Project summary	Progress and achievements
Impact Increased resilience of BIOT's threatened biodiversity and shared biosecurity best-practice methods enables and inspires other remote islands to incorporate invasive non-native species into action and conservation planning	The project team have shared biosecurity best-practice methods through webinars (e.g., Ant Workshop Annex 5.16 and Cane Toad webinar Annex 5.20) and training opportunities (e.g., online training and through materials such as the biosecurity leaflet Annex 5.3). Some of the materials from these activities are open and available on-line. Outputs, including as an example information on monitoring ants and awareness raising, from the project have been shared through DPLUS175 and also through Darwin Fellowships (Cyprus SBA). The resources developed through DPLUS151 will be disseminated further through the DPLUS175 project website to ensure an ongoing legacy in support of positive impact on biodiversity through best-practice in monitoring particularly for invasive non-native species. The biosecurity resources developed through DPLUS151 have value for all UKOTs and will be further shared through ongoing projects including, as an example, the recently approved Darwin Strategic led by the RSPB. Further articles and peer-reviewed publications are being developed by the DPLUS151 project team and these will continue to be promoted through news items on relevant websites and newsletters including the Darwin Plus newsletter.
Outcome Updated species inventories and maps inform BIOT conservation strategy including capacity building for INNS surveillance and biosecurity, ultimately reducing the rate of INNS introductions and spread to outer islands.	New species surveys were conducted on DG and more than 8,100 invertebrate specimens and more than 400 plant species were recorded (see Annex 5.27 and 5.28) and made available to partner and the wider project stakeholders. These have been made published online (or will be within 6 months) via the iNaturalist, GBIF and BOLD databases. Approximately 1150 invertebrate species records at genus/species level will be added to GBIF and 1300 invertebrate records are added to the BOLD database. More than 400 plant species will be added to GBIF via the plant checklist. Thirty-four staff on DG and sixty US Naval Support Facility staff have received training on INNS biosecurity. Risk maps have been produced (iNaturalist Project site and Annex 5.19).
Outcome indicator 0.1 0.1a Data available from species surveys carried out on at least 10 fixed points across DG, identifying presence / absence and abundance of both native and non-native and INNS species by Y3Q2. 0.1b Data available to key biosecurity staff on distribution of at least 20 INNS (or potential INNS) on DG linked to possible points of entry, habitats and to risks of spread from DG to outer islands by Y3Q2.	After the first survey, 700 iNaturalist records were openly available from the second year of the project. In addition, the UKCEH database holds data on more than 8,100 specimens collected from Diego Garcia through opportunistic and standardised sampling (Annex 5.1 gives a map of the sites) from the UKCEH and ZSL-BIOTA trips (see Annex 5.27 and 5.28). These specimens were identified by experts at the Gibraltar Botanic Garden, the Natural History Museum and Fera. Records of species are also present on iNaturalist, demonstrating the distribution

	of species around the island (**Indicator 0.1a and MoV 0.1a and 0.1b**) (**Activity 1.3**). Data from the June 2022 trip (**Activity 1.3**) was made available to BIOTA, ZSL and the US Naval Support Facility (**Indicator 0.1a**).
Outcome indicator 0.2 Surveillance protocols for priority INNS are available and incorporated into BIOTA work plans/ procedures that will be implemented beyond the life of this project by Y3Q2.	Plant and ant survey protocols were shared with US Naval Support Facility staff and BIOTA Environment Officer during the June 2022 trip (**Indicator 0.2**).
Outcome indicator 0.3 At least 50 staff on DG (BIOTA, US Naval Support Facility, military, civilian) demonstrate improved understanding of invasive species management and surveillance Y3Q1.	Thirty-four staff on DG received biosecurity training using guidance and presentations updated throughout the project since September 2021. Online Biosecurity training given to 60 US Naval Support Facility staff. iNaturalist training given to US Naval Support Facility staff to support opportunistic recording from DG (Output 2). (**Indicator 0.3**). Evaluation forms created as part of Output 2 and Output 3 (Annex 5.2) (**Indicator 2.1**, **Indicator 3.2**).
Outcome indicator 0.4 Species actions plans for at least 2 species of interest agreed with BIOTA and US Naval Support Facility by Y3Q3.	Management plans created for two species on DG (Annex 5.25) (**Indicator 0.4**) and shared with BIOTA (**MoV 0.4**).
Outcome indicator 0.5 Four popular articles, one scientific paper and 1 conference proceeding include project findings by Y3Q4.	Four popular articles were published (**Indicator 0.5**, **Indicator 5.2**). One conference presentation on the results of the project to date (7th March 2023) **Indicator 5.3**.
Output 1 Native and non-native species inventory and distribution maps produced for amphibians, reptiles, invertebrates and plants WP1-4.	
Output indicator 1.1 Database holds data from invertebrate sampling and plant surveys from 10+ locations by Y2Q1 and Y3Q1.	Project team compiled list of 16 sites (8 pairs Annex 5.1a Proposed sampling locations on DG) and submitted with June 2022 Expedition Permit to BIOTA in January 2022. Sites approved. 31 sites were surveyed in total which exceed this expectation. Opportunistic sampling was also undertaken outside of the survey sites, both by the project team and ZSL. The first visit was successfully completed in June 2022. The second visit did not go ahead due to logistical issues, which were fully documented and accepted in Change Request 11 in September 2023. Physical and online records collected from 31 sampling locations, as well as opportunistic sampling in Diego Garcia. The database contains information on over

	8,100 specimens. Over 4,300 of these specimens were ants, the majority of which are identified to species. These records supplement the data already collected by BIOTA and ZSL. (**Indicators 1.1, 1.3, 1.4, 1.5, 2.5, MoV1.1-1.5**).
Output indicator 1.2 Database holds data from repeat amphibian and reptile surveys (following 2013 military baseline survey) by Y2Q1 and Y3Q1.	The first visit was successfully completed in June 2022. The second visit did not go ahead due to logistical issues, which were fully documented and accepted in Change Request 11 in September 2023. As the herptile team did not get onto Diego Garcia (see Activity 1.1b), these repeated surveys were not performed. Discussion with BIOTA environmental officer supported increased opportunistic reporting of cane toads and lizards through the iNaturalist project. This provides an updated distribution for the commoner species (garden lizard and cane toad). To foster knowledge exchange on the distribution and management of cane toads, a webinar was organized in March 2023 in conjunction with the UK Overseas Territories Conservation Forum (UKOTCF). Here, residents from all UK Overseas Territories were invited to learn about the impact of cane toads on local ecosystems and the latest strategies and techniques for controlling their spread. The event was recorded and link shared through the UKOT Conservation Forum.
Output indicator 1.3 Database holds data from samples collected by BIOTA and shipped to UK by Y3Q1.	Samples were collected by BIOTA and ZSL in January 2022 and identified by Fera (see Annex 5.7 BIOTA and ZSL invertebrate collection results from BIOT). Regular communications across teams supported data collation.
Output indicator 1.4 Database holds data from at least 50 ant samples by Y3Q1.	Samples were collected in June 2022 and brought back to GBG for identification. We recorded 25 species of ants (Hymenoptera: Formicidae), most of which are assumed to be alien. Seventeen of these are new records for the Chagos. The tropical fire ant *Solenopsis geminata*, which had previously been recorded, is wide-spread and well-established throughout the island. One of the previously unrecorded species, the destructive trailing ant *Trichomyrmex destructor*, was found within Downtown DG and the villages. It appears to be restricted to urban areas for the moment. It's spread will need to be monitored but we have suggested that it could effectively be targeted for removal.
Output indicator 1.5 Database holds data from UKCEH/EAA processing of all (plant and non-ant invertebrate) by Y3Q1.	All samples sorted and identified where possible (see Annex 5.27).

Output indicator 1.6 Database holds DNA bar-coding data on 150 invertebrate samples.	Data from over 1,300 invertebrate species found during the 2022 surveys present on Open Access database BOLD. **(Indicator 1.6, MoV 1.6)**
Output indicator 1.7 Species distribution maps available by Y3Q2.	Species distribution maps from opportunistic surveys found on iNaturalist Project site **(Indicator 1.7, MoV 1.7).**
Output indicator 1.8 "Heat maps" with potential INNS risk areas available by Y3Q2..	"Heat maps" with potential INNS risk areas are available online (megwill09/Diego_Garcia_project_07631 (github.com)) on request (please email megwil@ceh.ac.uk to request access) and see Annex 5.19. **(Indicator 1.8, MoV 1.8)**
Output 2. Species survey training delivered to at least two BIOTA staff and research outputs shared with at least ten multidiscipline staff on DG. WP3, 4 and 5.	
Output indicator 2.1 At least 2 BIOTA staff trained in species-specific survey methods Y2Q1 and repeated in Y3Q1.	Training on biosecurity and species surveys has been undertaken on DG and online utilising the materials produced through the project. We created a draft Biosecurity Manual to support the induction of new Environmental Officers. This manual consists of materials for training customs staff and other personnel on Diego Garcia, such as the Biosecurity Leaflet for customs and immigrations officers on INNS (Annex 5.3) and miniguide (Annex 5.4). Species identification training on plants and invertebrates was given to the BIOTA Environmental Officer and the US Navy Support Facility staff PWD member based on the island with responsibility for environmental monitoring. The US Navy Support Facility PWD staff member undertakes ant baiting at key points of potential introductions (port, airport and downtown) to support the Early Warning Rapid Response (EWRR) on Diego Garcia for target ant species, such as the little fire ant (*Wasmannia auropunctata*). Although not part of the LogFrame, we took the opportunity to share training in use of iNaturalist (further tips for use) with US Navy Support Facility Staff in March 2022.
Output indicator 2.2 Invasive ant awareness and identification video available by Y2Q1.	We have created an ant awareness raising presentation (**Indicator 2.2**). This activity is complete, the videos were shared with the BIOTA Environment Officer (Annex 5.7). In addition to the videos, photos and short clips and descriptions of ants from Diego Garcia, as well as ants from other UKOTs have been added to the Ants of the UKOTs Facebook page.
Output indicator 2.3 FSC "miniguide" created by Y2Q1.	Working with BIOTA, we have created a PDF and card miniguide to INNS for military and civilian staff on DG to be aware of (Annex 5.4)) (**Indicator 2.3,** shared on the Chagos Information Portal: **(MoV2.3)**), created a biosecurity leaflet for

	Customs and Immigration officers (Annex 5.3) (**Indicator 2.3**). FSC miniguide to INNS of concern from the Horizon Scanning work of Roy et al. (2019) created (Annex 5.4). In addition to these miniguides, 20 iNaturalist guides have been created to support field identification of species going forward e.g., Annex 5.8. These can be found on iNaturalist, alongside guides created by Kew.
Output indicator 2.4 At least two survey feedback meetings held with BIOTA and US Naval Support Facility documented by Y3Q1.	Meetings held in July 2023 (Annex 5.21) and March 2024 (Annex 5.17) with BIOTA and BIOT environmental teams to summarise findings of the survey.
Output indicator 2.5 Full species inventory available by Y3Q4.	We have shared species lists from sampling surveys (**Activity 1.3**) (Annex 5.27 and 5.28), with BIOTA, ZSL and the US Naval Support Facility and added these records to the central Teams site (see also **Indicators 1.1, 1.3, 1.5, 2.5, MoV1.1-1.5**). A second field campaign led by UKCEH was not possible in 2023 but records have continued to be added to the iNaturalist site from another expedition supported logistically, by UKCEH and from other projects and recorders. Data and management plans were shared with the two BIOTA Environment Officers during the joint workshop with DPLUS175. The invertebrate data is in the process of being added to GBIF (to be completed within 6 months) and the plant data is being written up as a plant checklist for the Chagos Archipelago.
Output 3. At least 50 military and civilian staff on DG have improved knowledge of Biosecurity protocols and surveillance WP5.	
Output indicator 3.1 A Communication Plan identifying how outputs will be disseminated and embedded into the main responsible institutions on BIOT and in third countries (on pathways) by Y1Q4.	Using the Communication Plan (**Indicator 3.1**), in year 1, we identified individuals to received training in Biosecurity). Key groups for targeted training materials were identified and priority was given to a general induction for all new personnel, senior personnel and customs / environment staff. **MoV 3.1** and **3.2** were not suitable as promoting through a Communication Plan as the Communication plan and survey report contains potentially sensitive information and as such, were kept as internal documents.
Output indicator 3.2 Biosecurity surveys taken by at least 50 trained staff demonstrate improvement in skills compared to baseline survey (Baseline to be established Y2Q1 with repeat survey carried out Y3Q1).	34 staff on Diego Garcia staff have received biosecurity training using guidance and presentations updated throughout the project. Approximately 60 US Naval Facility staff also received training (**Indicator 3.2**). As indicated in reporting updates for Output 2, biosecurity training has been given. This was supplemented in the final year by providing “Train the Trainer” and further biosecurity training (**Indicator, MoV 3.3 and 3.4**).
Output indicator 3.3	Pathway Action Plans were reviewed during the stay in Bahrain in June 2022 and considered still applicable and not needed to be updated. In addition, Ant Pathway

Pathway Action Plans available to support biosecurity recommendations for BIOTA, US Naval Support Facility and military by Y2Q1.	analysis (Annex 5.9) was created and updated during the June 2022 trip **(Indicator 3.1 and MoV 3.3).**
Output indicator 3.4 "Train the trainer" event for Biosecurity and INNS awareness delivered to at least 5 US Naval Support Facility members by GBNNSS and wider project team completed and reported by Y2Q1.	Approximately 60 staff (50 male and 10 female, reflecting staff ratios on DG) where given online training (see Annex 5.23 for induction training material), which is now delivered via pre-recorded presentations for increased legacy. Information cards on biosecurity were also produced in English, Spanish and Creole (**Indicator 3.2**).
Output 4. Species action plans created for at least two species, based upon stakeholder consultation. WP6.	
Output indicator 4.1 The identification of at least 2 species of interest/concern for management or conservation action plans by Y3Q1	Following the first year of fieldwork eight plant species were identified for management and or eradication, and one species of ant. Management plans were written and reviewed internally for two identified species **(Indicators 4.1-4.3, MoV 4.1, 4.2)**. Both cane toads (*Rhinella marina*) and feral donkeys (*Equus asinus*) are well established species on DG with documented negative impacts worldwide. They represent potential candidates for eradication or control.
Output indicator 4.2 Draft management plans for at least 2 species of interest / concern available by Y3Q2.	Draft management plans (Annex 5.25) for cane toad and feral donkey were outlined and discussed with stakeholders at a project workshop (Annex 5.17 DPLUS151-DPLUS175 Workshop Agenda). These qualitative conservation action plans, which are based on the best available data, do not represent full feasibility assessments but present potential management options for these species' populations on Diego Garcia, taking into account the specific context (e.g., acceptability of different measures) and invasion history. They discuss pros and cons as well as feasibility of different management techniques. The conservation action plans used survey data from the cane toad and donkey survey activities.
Output indicator 4.3 Peer reviewed Management plans available by Y3Q3.	Draft management plans for cane toad and feral donkey were finalised (Annex 5.25) after discussion with stakeholders at a project workshop (see Annex 5.17 for meeting agenda). These documents are for BIOTA use and are not necessary for publication on the BIOTA website and as such **MoV 4.3.** is not suitable.
Output 5. Research outputs shared with scientific and INNS practitioner audience.	
Output indicator 5.1 Project brief downloaded from BIOTA website at least 20 times by Y3Q4.	A project brief (**Indicator 5.1**) was created in year one and shared with BIOTA for addition to their website. This will be added to the new website when available.

Output indicator 5.2 At least 4 lay articles published by Y3Q4.	**Indicator 5.2** is complete with four articles on the project published: three in Chagos News https://chagos-trust.org/images/uploads/documents/Chagos_News_59.pdf https://chagos-trust.org/news/the-latest-issue-of-chagos-news-is-out-now and one for UKOT Conservation Forum Newsletter https://www.ukotcf.org.uk/forum-news-55-published/ - shared with 314 subscribers). Results of the work to date were shared during the UKOTCF Invasive Species Conference on the 7th March 2023 (https://www.ukotcf.org.uk/other-territory-support/seminars-training/webinar-invasive-species/ - Annex 5.20 UKOTCF Webinar). (**Indicator 5.2 and MoV 5.2**).
Output indicator 5.3 Publication of scientific results at international conference proceeding (oral or poster) by Y3Q4.	**Indicator 5.3 and MoV 5.3** exceed with 18 presentations given over 3 international workshops on INNS. We held an online workshop on ants of the UKOTs in November 2023 (Annex 5.16). Attended by approximately 50 people, with 6 presentations of results from this project. We held a hybrid workshop in March 2024 (Annex 5.17 and Annex 5.17). Attended by nearly 30 people, with 7 presentations of results from this project. Both workshops had approximately a 50:50 gender ratio. Further, the project team presented at the UK Overseas Territories Conservation Forum workshop in March 2023, including an additional special workshop for cane toads (Annex 5.20). These workshops were attended by approximately 30 people, with 5 presentations of results from this project.
Output indicator 5.4 One Journal article on INNS on DG submitted to Open Access journal by Y3Q3.	Four manuscripts are in preparation, with a submission date of mid-2025. One paper on “New Chilopoda from the Chagos Archipelago” was submitted in Y3Q3 to an open access journal.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Increased resilience of BIOT's threatened biodiversity and shared biosecurity best-practice methods enables and inspires other remote islands to incorporate invasive non-native species into action and conservation planning			
Outcome: Updated species inventories and maps inform BIOT conservation strategy including capacity building for INNS surveillance and biosecurity, ultimately reducing the rate of INNS introductions and spread to outer islands.	0.1a Data available from species surveys carried out on at least 10 fixed points across DG, identifying presence / absence and abundance of both native and non-native and INNS species by Y3Q2.	0.1a Project Teams site holds amphibian, reptile, invertebrate and plant species survey methods and data for work undertaken on DG available	Major field activities are not cancelled due to COVID-19 restrictions. Species surveys accurately identify both native and INNS present on DG. Information on native and INNS occurrence and distribution usefully informs Environmental Teams on DG and enables them to address potential threats of INNS. Organisation in / on pathways BIOT have capacity to engage with work.
	0.1b Data available to key biosecurity staff on distribution of at least 20 INNS (or potential INNS) on DG linked to possible points of entry, habitats and to risks of spread from DG to outer islands by Y3Q2.	0.1b Project Teams site holds spatial information on key species.	
	0.2 Surveillance protocols for priority INNS are available and incorporated into BIOTA work plans/ procedures that will be implemented beyond the life of this project by Y3Q2.	0.2 BIOTA work plans (staff work plans, organisational work plans and budgets)	
	0.3 At least 50 staff on DG (BIOTA, US Naval Support Facility, military, civilian) demonstrate improved understanding of invasive species management and surveillance Y3Q1.	0.3 A report on training including information from a baseline survey on background knowledge of INNS and post training assessment of knowledge.	
	0.4 Species actions plans for at least 2 species of interest agreed with BIOTA and US Naval Support Facility by Y3Q3.	0.4 Species action plans on BIOTA website.	

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	0.5 Four popular articles, one scientific paper and 1 conference proceeding include project findings by Y3Q4.	0.5 Four popular articles, one scientific paper and 1 conference proceeding documented in annual reports.	
Outputs: **1**. Native and non-native species inventory and distribution maps produced for amphibians, reptiles, invertebrates and plants WP1-4.	1.1 Database holds data from invertebrate sampling and plant surveys from 10+ locations by Y2Q1 and Y3Q1.	1.1 Copy of central database and summary of data available on project Teams site.	Major field activities are not cancelled due to COVID-19 restrictions. Organisations in BIOT have capacity to engage with work. Identifying to species to family-level will not prevent development of protocols, where species-level identification is not possible.
	1.2 Database holds data from repeat amphibian and reptile surveys (following 2013 military baseline survey) by Y2Q1 and Y3Q1.	1.2 Copy of central database and summary of data available on project Teams site	
	1.3 Database holds data from samples collected by BIOTA and shipped to UK by Y3Q1.	1.3 Copy of central database and summary of data available on project Teams site.	
	1.4 Database holds data from at least 50 ant samples by Y3Q1.	1.4 Copy of central database and summary of data available on project Teams site.	
	1.5 Database holds data from UKCEH/EAA processing of all (plant and non-ant invertebrate) by Y3Q1.	1.5 Copy of central database and summary of data available on project Teams site.	
	1.6 Database holds DNA bar-coding data on 150 invertebrate samples samples by Y3Q2.	1.6 DNA barcoding data on into BOLD database	
	1.7 Species distribution maps available by Y3Q2.	1.7 Project Teams site, final report and management / action plans.	
	1.8 “Heat maps” with potential INNS risk areas available by Y3Q2.	1.8 Project Teams site, final report and management action plans.	

Project summary	Measurable Indicators	Means of verification	Important Assumptions
2. Species survey training delivered to at least two BIOTA staff and research outputs shared with at least ten multidiscipline staff on DG. WP3,4 and 5.	2.1 At least 2 BIOTA staff trained in species-specific survey methods Y2Q1 and repeated in Y3Q1.	2.1 Staff training log	Major field activities are not cancelled due to COVID-19 restrictions. Organisations in BIOT have capacity to engage with work. Partnering organisations have capacity to share / disseminate project information. Validated data is of sufficient quality to be shared on Open Access Platform.
	2.2 Invasive ant awareness and identification video available by Y2Q1.	2.2 Video in training syllabus (training log); Chagos information portal and on UKOTCF website.	
	2.3 FSC “miniguide” created by Y2Q1.	2.3 FSC miniguide video in training syllabus (training log) Chagos information portal and on shared UKOTCF website.	
	2.4 At least two survey feedback meetings held with BIOTA and US Naval Support Facility documented by Y3Q1.	2.4 Teams site and HYR and AR.	
	2.5 Full species inventory available by Y3Q4.	2.5 Project Teams site and Open Access platform e.g. GBIF and signposted through the Chagos Information Portal.	
3. At least 50 military and civilian staff on DG have improved knowledge of Biosecurity protocols and surveillance WP5.	3.1 A Communication Plan identifying how outputs will be disseminated and embedded into the main responsible institutions on BIOT and in third countries (on pathways) by Y1Q4.	3.1 Communication Plan posted on project teams website.	Major field activities are not cancelled due to COVID-19 restrictions. Organisations in BIOT and in third countries (on pathways) have capacity to engage with work.
	3.2 Biosecurity surveys taken by at least 50 trained staff demonstrate improvement in skills compared to baseline survey (Baseline to be established Y2Q1 with repeat survey carried out Y3Q1).	3.2 Survey report posted on project teams website.	
	3.3 Pathway Action Plans available to support biosecurity recommendations for BIOTA, US Naval Support Facility and military by Y2Q1.	3.3 Project Teams site; biosecurity action plan part of training syllabus (3.4).	

Project summary	Measurable Indicators	Means of verification	Important Assumptions
	3.4 “Train the trainer” event for Biosecurity and INNS awareness delivered to at least 5 US Naval Support Facility members by GBNNSS and wider project team completed and reported by Y2Q1.	3.4 Project Teams site; Staff training log created	
4. Species action plans created for at least two species, based upon stakeholder consultation. WP6	4.1 The identification of at least 2 species of interest/concern for management or conservation action plans by Y3Q1	4.1 Documentation shared on project Teams site.	Data is available from complementary cross-organisational surveys, to inform decision making for conservation or management priorities. Species of interest / concern are identified where clear management actions can be identified and incorporated in to plans
	4.2 Draft management plans for at least 2 species of interest / concern available by Y3Q2.	4.2 Draft document on Teams site	
	4.3 Peer reviewed Management plans available by Y3Q3.	4.3 Finalised Documents on BIOTA website.	
5. Research outputs shared with wider scientific and INNS practitioner audience	5.1 Project brief downloaded from BIOTA website at least 20 times by Y3Q4.	5.1 Download metrics (Google analytics) are recorded and summary statistics reported through HYR and ARs	Findings are of interest to wider scientific community and INNS practitioners.
	5.2 At least 4 lay articles published by Y3Q4.	5.2 Articles published and summary information reported through HYR and ARs.	
	5.3 Publication of scientific results at international conference proceeding (oral or poster) by Y3Q4.	5.3 Conference proceedings and reported through HYR and AR.	
	5.4 One Journal article on INNS on DG submitted to Open Access journal by Y3Q3.	5.4 Journal confirmation email; draft article.	
Activities **Output 1 Native and non-native species inventory and distribution maps produced for amphibians, reptiles, invertebrates and plants WP1-4.** 1.1a Survey planning and consultation throughout with BIOTA and BIOT Environmental Teams in selecting location of at least 10 sampling sites 1.1b Undertake invertebrate and plant surveys at these sites across DG, during two visits.			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
1.2 Undertake 20 amphibian and reptile surveys (following existing protocols), during two visits.			
1.3 At least two supplementary invertebrate sampling undertake by BIOTA in between main fieldwork trips (see Output 2). Maintain regular (bi-monthly updates with BIOT staff to review surveys) as well as at quarterly updates.			
1.4 GBG identify ant material from visits and through subsequent surveys from BIOTA (see 1, 3), increasing their reference collection and serving as knowledge centre on non-native ants for the other UKOTs.			
1.5 UKCEH process and identify invertebrate material to morphospecies.			
1.6a The project team undertakes species level identification.			
1.6b NHM undertakes the DNA barcoding on at least 150 invertebrate samples.			
1.7 Species distribution maps are generated from survey data (see 1.1 to 1.3) with GIS software.			
1.8 "Heat maps" of any INNS records of potential concern are produced using data from 1.7.			
Output 2 Species survey training delivered to at least two BIOTA staff and research outputs shared with at least ten multidiscipline staff on DG. WP3, 4 and 5.			
2.1 BIOTA trained in range of invertebrate surveying methods as part of delivery of Output 1. The team will design and distribute feedback questionnaires as part of M&E.			
2.2 Ant awareness raising and identification video created by GBG.			
2.3 Develop (Field Studies Council) beginner ID guide (Fig. 2 Additional materials) for key species of interest for military and civilian personnel on DG in several languages.			
2.4 Meeting held with BIOTA and BIOT Environmental Teams at the end of fieldwork trips to summarise findings.			
2.5 Full detailed species inventory shared with BIOTA and BIOT Environmental Teams and made available via Open Access Platform e.g. GBIF at end of project.			
Output 3 At least 50 military and civilian staff on DG have improved knowledge of Biosecurity protocols and surveillance WP5.			
3.1 Draft communication plan and updated Pathway Action Plan including analysis of existing biosecurity measures on DG with US Naval Support Facility (and Bahrain and Singapore if possible) with military and civilian personnel.			
3.2 Design and distribute questionnaires as part of M&E. Findings used to create set of practical actions for US Naval Support Facility and biosecurity staff (e.g. customs) which can be undertaken on DG at potential points of introduction / points of exit for outer islands.			
3.3 Review and update Pathway Action Plans and compile with biosecurity material guidance			
3.4 Work with US Naval Support Facility to design and deliver INNS awareness raising and biosecurity training for civilian staff on DG (train the trainers), based on data from 3.1-3.3; design and distribute questionnaires as part of M&E. Measure changes in understanding of INNS awareness and biosecurity with staff through questionnaires (based on 3.1 an 3.2 surveys)			
Output 4 Species action plans created for at least two species, based upon stakeholder consultation. WP6			

Project summary	Measurable Indicators	Means of verification	Important Assumptions
4.1 Year 1 and 2 fieldwork data (Output 1) used as a starting point to identify key species of interest / concern for management or conservation priorities during Year 2 field work wash up meeting (part of Output 2.4). 4.2 Data and materials / outcomes of meetings from Output 1, 2 and 3 used to draft species management or conservation actions plans for species of interest / concern on DG. Work led by BIOTA with input from wider team. 4.3 Management and / or conservation action plans finalised. **Output 5 Research outputs shared with scientific and INNS practitioner audience.** 5.1 Project brief created and added to BIOTA website. 5.2 Popular articles on project written for relevant organisations for sharing updates on project outputs (e.g. UKOTCF newsletter, Darwin Newsletter and MoD Sanctuary magazine). 5.3 Presentation of scientific results at international conferences (oral or poster). 5.4 Journal article on INNS on DG submitted to open access journal.			

Annex 3 Standard Indicators

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total achieved	Total planned
DPLUS-A01	Number of staff from US and UK military and civilian personnel who attended training on Biosecurity	People	Men Biosecurity	21	13	60	94	40
DPLUS-A05	Number of trainers trained reporting to have delivered further training by the end of the project.	Number	Men Women Biosecurity		1	2	3	2
DPLUS-A07	Number of government institutions/departments with enhanced awareness and understanding of invasive non-native species and conservation	Number	Government institutions	1	1	1	1	1
DPLUS-B04	Number of new/improved species management plans available and endorsed	Number	Language (English)			2	2	2
DPLUS-B05	Number of people with increased participation in citizen science *adapted as records made include citizen science records from iNaturalist*	People	Biological recording		6		6	4
DPLUS-C02	Number of species records documented	Number	Species		7,796	>8,100	>8,100	500
DPLUS-C17	Number of unique papers published in peer reviewed journals	Number	Annual downloads Journal				5	1
DPLUS-D01	Islands protected from INNS with increased awareness and pathway action plans	Number	Island name			1	1 but the improvements in biosecurity will support all the islands in the archipelago (>60)	>60

Table 2 Publications

Title	Type (e.g. journals, manual, 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)
Dermaptera of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16747
Phthiraptera and Psocodea of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16749
Decapoda of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16750
Isopoda of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16755
Gastropoda of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16756
Hemiptera of the British Indian Ocean Territory	Online guide	Mitschunas, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16748
Araneae of the British Indian Ocean Territory	Online guide	Peyton and Tricarico, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16401
Blattodea of the British Indian Ocean Territory	Online guide	Peyton and Tricarico, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16403
Bryophytes of the British Indian Ocean Territory	Online guide	Mitschunas and Peyton, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16734

Title	Type (e.g. journals, manual, 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)
Fungi of the British Indian Ocean Territory	Online guide	Mitschunas and Peyton, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16732
Lichen of the British Indian Ocean Territory	Online guide	Mitschunas and Peyton, 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16662
Non-native plant species of the British Indian Ocean Territory	Online guide	Peyton, Frohlich, Barrios, Bensusan 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/15968
Birds of the British Indian Ocean Territory	Online guide	Mitschunas and Carr 2023	Female	German	iNaturalist	https://www.inaturalist.org/guides/16757
Odonata of the British Indian Ocean Territory	Online guide	Peyton, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16400
Hymenoptera of the British Indian Ocean Territory	Online guide	Guillem, Bensusan and Peyton, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16404
Coleoptera of the British Indian Ocean Territory	Online guide	Peyton, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16399
Diptera of the British Indian Ocean Territory	Online guide	Peyton, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16402
Lepidoptera of the British Indian Ocean Territory	Online guide	Peyton, 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16398

Title	Type (e.g. journals, manual, 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)
Orthoptera of the British Indian Ocean Territory	Online guide	Peyton 2023	Female	British	iNaturalist	https://www.inaturalist.org/guides/16397
Amphibians and reptiles of the British Indian Ocean Territory	Online guide	Adriaens, Tricarico and Peyton, 2023	Female	Belgium	iNaturalist	https://www.inaturalist.org/guides/15976
Miniguide to invasive species	PDF	Peyton et al 2023	Female	English	Field Studies Council	
Customs biosecurity leaflet	PDF	Peyton et al 2023	Female	English	Internal use only	

Annex 5.26b. Invasive Ants presentation Screenshot (see separate document)

Annex 5.27. Processed Invertebrate Samples (see separate document)

Annex 5.28. Plant species and site descriptions (see separate document)

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?	Y
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Y
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. All supporting material should be submitted in a way that can be accessed and downloaded as one complete package.	N
If you are submitting photos for publicity purposes, **do these meet the outlined requirements (see section 14)?**	Y
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.	Y
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	