

Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the "Project Reporting Information Note"
[\(https://dplus.darwininitiative.org.uk/resources/information-notes/\)](https://dplus.darwininitiative.org.uk/resources/information-notes/).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2022

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 partner	UKCEH
Project partner(s)	BIOT Administration (BIOTA) Gibraltar Botanic Gardens SWCA consultants Natural History Museum
Darwin Plus grant value	£355,190
Start/end dates of project	September 2021 – March 2024
Reporting period (e.g. Apr 2021-Mar 2022) and number (e.g. Annual Report 1, 2)	September 2021-March 2022: Annual Report 1
Project Leader name	Jodey Peyton
Project website/blog/social media	UKCEH webpage in preparation
Report author(s) and date	Jodey Peyton, Milly Fellows, Keith Bensusan, Rhian Guillem, Danielle Frohlich, Ben Price, James Millett, Tim Adriaens, Chris Malumphy, Nadine Mitschunas, Elena Tricarico and Karsten Schonrogge 30 th April 2022

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 (e.g. cane toads *Rhinella marina*, several ants) (Díaz et al. 2019). Biodiversity impacts can be particularly large on islands and hence mitigating the impacts of INNS is critical to conserving endemic and native species on islands (Russell et al. 2017).

Significant knowledge gaps of native and INNS distributions and INNS impacts in UKOTs lead to uncertainty in the prioritisation of management actions, biosecurity, and conservation planning. Working with the BIOT Administration (BIOTA), we will deliver 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 (*Figure 1*) through two field campaigns in

June 2022 and June 2023. Proposed locations of the field sites are given in the Annex 3.1a Proposed sampling locations on DG. Additional sampling will be undertaken opportunistically across the island during the trip. An example of the recording form to be used (specific to plants on DG) is given in Annex 3.1b WP1 recording form.



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In this project, we are collaborating closely with local authorities and key stakeholders (as outlined in (Annex 3.1b WP1 recording form and Annex 3.2 Project Communication Plan). We will increase awareness of biosecurity issues and, through increasing knowledge and capacity, mitigate impacts of existing, and prevent future, introductions of INNS on DG and the wider archipelago.

We will use distributional data collected during the project to generate “risk maps” (e.g. heat map of number of INNS with the potential to spread to the outer archipelago). Along with species action plans co-developed with BIOTA, the maps will help prioritising management for target native and non-native species.

The project will provide for the first time DNA-barcodes, supporting species identification for difficult invertebrate taxa from species collected from DG. This will facilitate future meta-barcoding approaches using bulk samples, gut contents and environmental DNA, allowing surveillance at greatly reduced costs.

Working with the GB Non-Native Species Secretariat, we are undertaking awareness raising and delivering training in INNS surveillance through presentations and workshops. We have co-created communication materials with project stakeholders relevant for Environment officers, military and civilian staff, biosecurity authorities in DG and at key aviation and naval entry points. A knowledge exchange and identification training workshop for environment and biosecurity staff on the most common invasive ant species will be made available across all UKOTs.

The project will be delivered through 6 WPs. *Figure 2* below outlines the links between the work packages and how they link to the ultimate impact of the project.

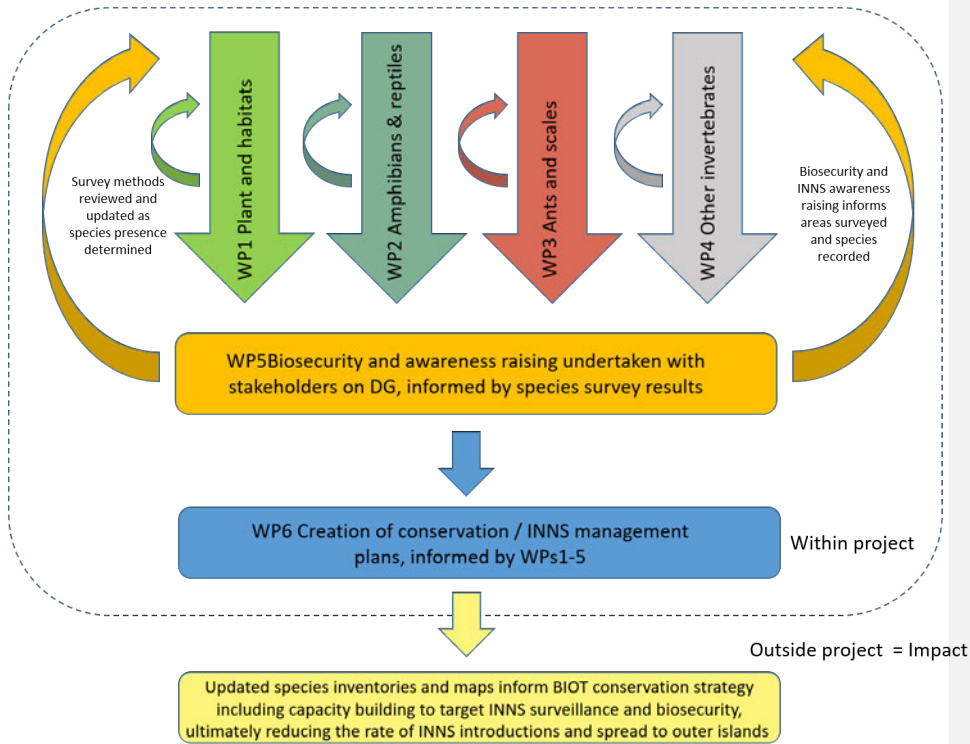


Figure 2. Schematic indicating the work packages of the project.

WP1: Plant and habitat surveys will be undertaken on eight paired sites across DG, from areas of higher urbanisation to lower urbanisation (more remote), Annex 3.1a Proposed sampling locations on DG. Alongside plant species data, we will collect habitat data, e.g. % plant cover, canopy height, number of seedlings. These sites are designated sampling sites for WP3&4. With support from Kew, we have generated plant species recording forms for DG (Annex 3.1b WP1 recording form).

WP2: We will 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 will collect invertebrate data (WP4), to provide baselines that will inform the prioritisation of action against INNS (prevention, control, management – if feasible). This data will update the work of Barnett and Emms (1999) and supplement updates to Pearce Kelly and Robertson (2018). WP3&4 surveys will use a variety of sampling methods to cover a wide range of life forms and microhabitats, e.g. sweep net sampling, bait traps, suction sampling, Malaise traps, Berlese funnels, light traps, and direct collecting after visual inspection of host plants or habitat structures.

Samples will be identified to the species level (ants-GBG and scales-FERA, other invertebrate groups depending on the availability of experts at NHM and beyond), and to the morphospecies level as a proxy for species diversity when species identification is not possible. We will

correlate species occurrence/abundance data with habitat variables and distance from introduction hubs, such as the airport and harbour, to test for dependence on human activities.

The NHM will undertake DNA-barcoding analysis using standard gene regions (cytochrome c oxidase subunit 1) on 150 identified species and submit data to the open access DNA barcode database (BOLD). The 150 species will be selected by the project team and NHM and may include species with already existing barcodes in the BOLD database from other regions (for comparison) but may also include species without existing barcodes in the database.

WP5: We will provide communication, training and knowledge exchange with key stakeholders (BIOTA, US Naval Facility, military 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. The workshop will be recorded and made available to other UKOTs, Bahrain and Singapore.
- 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 native species, e.g. Coconut crab *Birgus latro*, and INNS, e.g. Oriental garden lizard *Calotes versicolor* (Annex 3.3a Miniguides on INNS in Creole, English and Filipino); lay articles, e.g. Chagos News https://chagos-trust.org/images/uploads/documents/Chagos_News_59.pdf, UKOT Conservation Forum Newsletter <https://www.ukotcf.org.uk/forum-news-55-published/> and Ministry of Defence Sanctuary articles,
- disseminating information through awareness-raising materials and meetings with military staff and community groups (Annex 3.3b Biosecurity Leaflet for customs and immigrations officers on INNS and Annex 3.4 Draft script for Ant Awareness presentations).
- uploading datasets and outreach materials to the Chagos Information Portal, GBIF and BOLD.
- strengthening biosecurity on DG with military and civilian staff by building on previous

Figure 3 below outlines the mechanisms through which this training and communication will be undertaken with the project team and stakeholders.

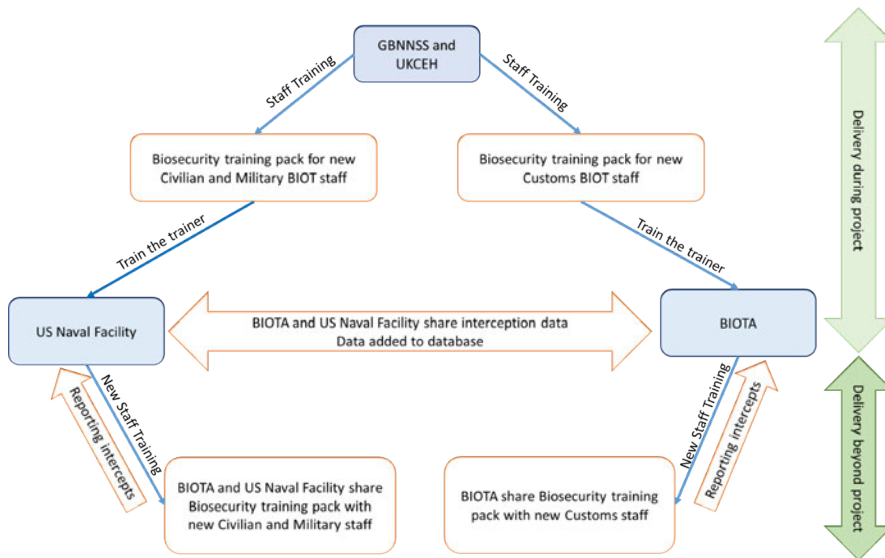


Figure 3. Proposed communication mechanisms for project Biosecurity training and INNS reporting

WP6: Using the data from WPs1-5, we will co-design and develop conservation and/or management plans with BIOTA and the US Naval Facility.

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.

It 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.* We will achieve this by creating a comprehensive baseline survey across taxonomic groups and including native, non-native and invasive species on DG. Using this baseline dataset, BIOTA, supported by our team, will develop species-specific management plans.
2. *To prevent the introduction of new INNS through effective biosecurity measures.* We will build the capacity of BIOTA and military biosecurity authorities to prioritise and prevent future invasions to DG and mitigate the impacts of existing INNS, including their spread through the archipelago. By “training trainers” of DG civilian staff, we will build capacity for biosecurity and INNS awareness beyond the lifetime of the project.
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.* Using a variety of entomological surveys, we will catalogue a range of invertebrate taxa on DG. We expect our DNA-barcoding work and entomological expertise to significantly build on previous work describing DG endemics. All outcomes will be published in lay articles and scientific journals. Verified entomological (including genetic) and botanical data will be publicly available via Open Access platforms, e.g. the Global Biodiversity Information Facility (GBIF) and the Barcode of Life Database (BOLD), which will support future research and management.

Our project supports **two [strategic priorities](#)** for the UK Government's plan for UKOTs by directly addressing and supporting the delivery of:

i. *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);*

Through comprehensive surveys across DG we will deliver a unique dataset for the understanding of biodiversity on DG, the state of INNS and their impacts.

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

Through the surveys, we will identify areas for potential further spread of INNS, to evaluate risks to the native fauna and flora from INNS. Data will be used to develop evidence-based management plans.

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: WP5 will increase biosecurity training on DG and will deliver co-designed communication materials with information on impacts of INNS.

[Aichi target 9](#) of the Convention on Biological Diversity to which the UK is a signatory (COP/10/INF/12/Rev.1): Our project will be identifying INNS present on DG to fully understand their impacts, to support BIOTA in mitigating impacts to native species. By creating species-specific management plans, we will help BIOTA prioritise management of INNS.

2. Project stakeholders/partners

Since the project started in September 2021, the team has had a formal full team meeting via the online platform Zoom, and multiple work package meetings via Zoom and Teams. In addition, the team has met with stakeholders from the US Naval Facility (based in Hawaii in relation to their invertebrate sampling work they undertook in January 2022). The US Naval Facility have used the sampling locations we designed and we shared sampling methodologies to increase sampling effort at each site. We have also met with the UKOT Conservation Forum and the Species Recovery Trust to review project methodologies, deliveries and communications to identify synergies between the projects such as discussions over sampling methods and kit with the Species Recovery Trust¹.

Throughout the fieldwork and logistics planning, we have been working closely with BIOTA to review the work planning. The BIOT Expedition permit involved detailed information on the fieldwork planning that BIOTA have approved. We worked with BIOTA to create an evaluation form for the biosecurity training (Annex 3.4 Draft script for Ant Awareness presentations and Annex 3.5 Draft Evaluation Form for Biosecurity Training). The Environment Officer on DG has started to use the form to evaluate Biosecurity training to military staff in February 2022. We have also sent BIOTA a draft biosecurity manual (based on the Tristan da Cunha Biosecurity Manual created by the GB Non-Native Species Secretariat) for review.

UKCEH and the GB Non-Native Species Secretariat contributed adapting the INNS training presentation given by BIOTA to new staff on DG. This training will be supplemented with a Biosecurity leaflet (Annex 3.3b Biosecurity Leaflet for customs and immigrations officers on 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

¹ Meeting agendas and actions are available on request.

Customs Teams (Annex 3.6 Draft Interception Database for BIOT). This database will be reviewed when on DG in June 2022 during a project meeting.

As part of the invasive non-native species conservation work we are undertaking on the project, we are also undertaking an ethics review to approve the use of management techniques on the invasive cane toad on DG. The management is planned as part of the amphibian and reptile surveys carried out on DG in June 2022. Training will be given to Pest Control teams on DG to enable them to continue this management work.

The project leader has started quarterly catch up meetings with Zoological Society London and Chagos Conservation Trust staff to update on project activities, review synergies and plan logistics of trips through our three Darwin Plus projects. This has proved particularly useful in terms of early specimen collection when the ZSL teams and BIOTA have been out on DG (see Annex 3.7 BIOTA and ZSL invertebrate collection results from BIOT).

The WP1 plant team have met with some of the UKOTs team at Kew and had regular email exchange to both review the work previously undertaken on DG (Bárrios and Wilkinson 2018) 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 3.1b WP1 recording form).

Additional stakeholder engagement has been undertaken via iNaturalist training with two US Naval 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 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, will also seek to generate records for this site.

The Communication Plan is a live document and outlines the main stakeholders on and off DG and how we propose engagement throughout the project.

3. Project progress

Changes to LogFrame:

The following changes have been made to the accepted project LogFrame after the start of the project and were approved through Change Request 2:

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. ()

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 Progress in carrying out project Activities

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

Activity 1.1a Survey planning and consultation throughout with BIOTA and BIOT Environmental Teams in selecting the location of at least 10 sampling sites.

This activity is complete with 16 sites (8 pairs) having been identified across DG (Annex 3.1a Proposed sampling locations on DG). Activity 1.3 At least two supplementary invertebrate sampling undertaken 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 has been

started with BIOTA and ZSL collecting samples from DG (Annex 3.7 BIOTA and ZSL invertebrate collection results from BIOT). Information recorded from the samples from 1.3 has been entered onto the central database held on the project Teams site.

The remaining activities will be progressed in the second year of the project, following the June 2022 field trip as outlined in the indicators (Annex 2).

- 1.1b Undertake invertebrate and plant surveys at these sites across DG, during two visits.
- 1.2 Undertake 20 amphibian and reptile surveys (following existing protocols), during two visits.
- 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.

Activity 2.2 Ant awareness raising and identification video created by GBG.

This activity is partially complete, with a draft script created (Annex 3.4 Draft script for Ant Awareness presentations). Activity 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 is complete with PDFs being available on the Chagos Conservation Trust website <https://chagosinformationportal.org/portal/publications> (website down at time of report) and as physical copies shipped to the Environment Officer on DG in January 2022 (Annex 3.3a Miniguides on INNS in Creole, English and Filipino). Activity 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 has been started, with species identified to date having been shared with BIOTA, ZSL and the US Naval Facility.

The remaining activities will be progressed in the second year of the project, following the June 2022 field trip as outlined in the indicators (Annex 2):

- 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.
- 2.4 Meeting held with BIOTA and BIOT Environmental Teams at the end of fieldwork trips to summarise findings.

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

Activity 3.1 Draft communication plan and updated Pathway Action Plan including analysis of existing biosecurity measures on DG with US Naval Facility (and Bahrain and Singapore if possible) with military and civilian personnel.

This is an ongoing activity. The Communication Plan has been drafted (Annex 3.2 Project Communication Plan), outlining key stakeholders and messages for the project and how they will be delivered. This is a live document and will be reviewed regularly throughout the project. The Pathway Action Plan will be reviewed as part of the biosecurity work when on DG in June 2022. Twenty-one military staff have been trained by BIOTA in DG using materials updated through the project.

Activity 3.2 Design and distribute questionnaires as part of M&E. Findings used to create set of practical actions for US Naval Facility and biosecurity staff (e.g. customs) which can be undertaken on DG at potential points of introduction / points of exit for outer islands.

This activity is started with Evaluation forms for Biosecurity training prepared as part of BIOTA biosecurity training and induction (Annex 3.5 Draft Evaluation Form for Biosecurity Training).

The remaining activities will be progressed in the second year of the project, following the June 2022 field trip as outlined in the indicators (Annex 2):

Activity 3.3 Review and update Pathway Action Plans and compile with biosecurity material guidance

Activity 3.4 Work with US Naval 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 and 3.2 surveys).

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

The activities for Output 4 will be progressed in the second and third years of the project, following the field trips and data collection, as outlined in the indicators (Annex 2):

Activity 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). Cane toads have however been identified as species for management and we are undertaking an ethics review in order to achieve this.

Activity 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.

Activity 4.3 Management and / or conservation action plans finalised.

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

Activity 5.1 Project brief created and added to BIOTA website.

This activity is partially complete with the project brief having been created and shared with the BIOTA. It is planned that this will be added to the website to compliment the report following the expedition.

Activity 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).

This activity is partially complete with 2 articles on the project already published (Chagos News https://chagos-trust.org/images/uploads/documents/Chagos_News_59.pdf, UKOT Conservation Forum Newsletter <https://www.ukotcf.org.uk/forum-news-55-published/> - shared with 314 subscribers), with more articles planned for 2023 in the Darwin Newsletter and Sanctuary Magazine, should they be selected for publication.

The remaining activities will be progressed in the second and third years of the project, following the data collection and species identifications, as outlined in the indicators (Annex 2):

Activity 5.3 Presentation of scientific results at international conferences (oral or poster).

Activity 5.4 Journal article on INNS on DG submitted to open access journal.

3.2 Progress towards project Outputs

The Project Monitoring and Evaluation Table has been added to Annex 2 for ease of reference for given Means of Verification.

Outputs	Measurable Indicators	Update
Output 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.	<p>Baseline invertebrate (Barnett and Emms 1999, Pearce Kelly and Robertson 2018) and plant data for BIOT (e.g. Bárrios and Wilkinson 2018) is available, but for the terrestrial species systematic sampling (until 2022) has not been a regular feature of the monitoring. Following the field trip June 2022 and on the successful collection of samples, we will generate species records that will be stored in a central database on the project Teams site. These records will supplement the data already collected by BIOTA and ZSL (Indicators 1.1, 1.3, 1.5, 2.5, MoV1.1-1.5).</p> <p>An iNaturalist site was set up by Kew in 2018 and at the time of reporting, there were 109 observations of 72 species from 18 observers https://www.inaturalist.org/observations?project_id=27878. The project will aim to supplement these records during the June 2022 field trip.</p> <p>It is considered that the indicators and accompanying means of verification are at present suitable verify project delivery.</p>
	1.2 Database holds data from repeat amphibian and reptile surveys (following 2013 military baseline survey) by Y2Q1 and Y3Q1.	
	1.3 Database holds data from samples collected by BIOTA and shipped to UK by Y3Q1.	
	1.4 Database holds data from at least 50 ant samples by Y3Q1.	
	1.5 Database holds data from UKCEH/EAA processing of all (plant and non-ant invertebrate) by Y3Q1.	
	1.6 Database holds DNA bar-coding data on 150 invertebrate samples by Y3Q2.	
	1.7 Species distribution maps available by Y3Q2.	
	1.8 "Heat maps" with potential INNS risk areas available by Y3Q2.	
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 At least 2 BIOTA staff trained in species specific survey methods Y2Q1 and repeated in Y3Q1.	<p>Training on biosecurity and species surveys has been undertaken on DG, but with limited supporting materials to aid the training. We have created a draft for the ant awareness raising presentation (Indicator 2.2), (Annex 3.4 Draft script for Ant Awareness presentations). Working with BIOTA, we have created a PDF and card miniguide to INNS for military and civilian staff on</p>
	2.2 Invasive ant awareness and identification video available by Y2Q1.	
	2.3 FSC "miniguide" created by Y2Q1.	
	2.4 At least two survey feedback meetings held with BIOTA and US Naval Facility documented by Y3Q1.	

	<p>2.5 Full species inventory available by Y3Q4.</p>	<p>DG to be aware of (Annex 3.3a Miniguides on INNS in Creole, English and Filipino) (Indicator 2.3, shared on the Chagos Information Portal: (MoV2.3)), created a biosecurity leaflet for Customs and Immigration officers (Annex 3.3b Biosecurity Leaflet for customs and immigrations officers on INNS) (Indicator 2.3).</p> <p>We have shared new species lists from opportunistic sampling from other teams on DG (Activity 1.3), with BIOTA, ZSL and the US Naval Facility and added these records to the central Teams site (Indicators 1.1, 1.3, 1.5, 2.5, MoV1.1-1.5).</p> <p>At this stage in the project we do not have further updates, but consider that the progress towards delivering Output 2 is on course for the project completion and that the means of verification are suitable.</p>
<p>Output 3 At least 50 military and civilian staff on DG have improved knowledge of Biosecurity protocols and surveillance WP5.</p>	<p>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 Y1Q1.</p> <p>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).</p> <p>3.3 Pathway Action Plans available to support biosecurity recommendations for BIOTA, US Naval Facility and military by Y2Q1.</p>	<p>Using the Communication Plan (Annex 3.2 Project Communication Plan (Indicator 3.1), we have identified individuals to receive training in Biosecurity). Twenty-one staff on DG have been trained using guidance and presentations updated throughout the project since September 2021 (Indicator 3.2).</p> <p>As indicated in reporting updates for Output 2, biosecurity training has been given, but we are supplementing and building on this training and providing "Train the Trainer" and further</p>

	<p>3.4 “Train the trainer” event for Biosecurity and INNS awareness delivered to at least 5 US Naval Facility members by GBNNSS and wider project team completed and reported by Y2Q1.</p>	<p>biosecurity training in June 2022 (Indicators 3.3 and 3.4).</p> <p>Pathway Action Plans will be reviewed and updated during the June 2022 trip (Indicator 3.1 and 3.3).</p> <p>MoV 3.1 and 3.2 are not suitable as promoting through a Communication Plan as the Communication plan and survey report contains potentially sensitive information and as such, we will keep these as an internal documents.</p> <p>At this stage in the project we do not have further updates, but consider that the progress towards delivering Output 3 is on course for the project completion and that the remaining Means of Verification are suitable</p>
<p>Output 4. Species action plans created for at least two species, based upon stakeholder consultation. WP6</p>	<p>4.1 The identification of at least 2 species of interest/concern for management or conservation action plans by Y3Q1</p>	<p>Data collation for this Output has started (Activity 1.3) and the decision to manage cane toads on DG. This Output will be further developed in year 2 and year 3 of the project.</p> <p>At this stage all the indicators and MoV are considered relevant.</p>
	<p>4.2 Draft management plans for at least 2 species of interest / concern available by Y3Q2.</p>	
	<p>4.3 Peer reviewed Management plans available by Y3Q3.</p>	
<p>Output 5. Research outputs shared with wider scientific and INNS practitioner audience</p>	<p>5.1 Project brief downloaded from BIOTA website at least 20 times by Y3Q4.</p>	<p>A project brief (Indicator 5.1) has been created (Annex 3.8 Project Brief) and will be shared on the BIOTA website alongside the June 2022 Expedition survey report.</p> <p>Two articles have been co-written with Chagos Conservation Trust, ZSL (Chagos News https://chagos-trust.org/images/uploads/documents/Chagos_News_59.pdf) and the Species Recovery Trust and published via the UKOT Conservation Forum Newsletter (https://www.ukotcf.org.uk/forum-news-55-published/), to share the parallels and synergies between the four projects (Indicator 5.2 and MoV 5.2).</p> <p>This Output will be further developed in year 2 and year 3 of the project. At this stage all the indicators and MoV are considered relevant.</p>
	<p>5.2 At least 4 lay articles published by Y3Q4.</p>	
	<p>5.3 Publication of scientific results at international conference proceeding (oral or poster) by Y3Q4.</p>	
	<p>5.4 One Journal article on INNS on DG submitted to Open Access journal by Y3Q3.</p>	

3.3 Progress towards the project Outcome

Outcome	Measurable Indicators	Update
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.	This report covers the first year of the project where to-date, no systematic sampling has been undertaken by the project team. The project work to date has focussed on preparing for this June 2022 trip (see Output 1 for information on previous sampling from BIOT).
	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.	A central database has been created for storage of data (Indicator 0.1a and MoV 0.1a and 0.1b) from samples collected through opportunistic methods by BIOTA and ZSL in January 2022 (Activity 1.3).
	0.2 Surveillance protocols for priority IAS are available and incorporated in to BIOTA work plans/ procedures that will be implemented beyond the life of this project by Y3Q2.	Data from opportunistic methods by BIOTA and ZSL in January 2022 (Activity 1.3) has been made available to BIOTA, ZSL and the US Naval Facility (Indicator 0.1a).
	0.3 At least 50 staff on DG (BIOTA, US Naval Facility, military, civilian) demonstrate improved understanding of invasive species management and surveillance Y3Q1.	Twenty-one staff on DG have been trained using guidance and presentations updated throughout the project since September 2021 (Indicator 0.3).
	0.4 Species actions plans for at least 2 species of interest agreed with BIOTA and US Naval Facility by Y3Q3.	The project Activities and Outputs will be further developed in year 2 and year 3 of following biosecurity training, fieldwork and sample identifications.
0.5 Four popular articles, one scientific paper and 1 conference proceeding include project findings by Y3Q4.	Given the progress made in the first year of the project, at this stage we are confident that we will be able to complete the project and that all the Outcome indicators and MoV are relevant	

3.4 Monitoring of assumptions

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

Assumption 0.1: *Major field activities are not cancelled due to COVID-19 restrictions.* **This assumption holds true as COVID-19 is an ongoing situation. Monitoring possible travel restrictions is part of the monthly risk register review.**

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

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 holds true, as having updated abundance and distributional data will support delivery of conservation and management plans.

Assumption 0.4: *Organisations in / on pathways BIOT have capacity to engage with work.* This assumption holds true. The BIOTA and US Naval Teams are relatively small and so our training and other engagement work will need to be concise and focussed to ensure delivery.

Assumption 1.1, 2.1 and 3.1: *Major field activities are not cancelled due to COVID-19 restrictions.* This assumption holds true as COVID-19 is an ongoing situation. Monitoring possible travel restrictions is part of the monthly risk register review.

Assumption 1.2 and 2.2: *Organisations in BIOT have capacity to engage with work.* This assumption holds true. The BIOTA and US Naval Teams are relatively small and so our training and other engagement work will need 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 holds 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. We are developing 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 holds true. The BIOTA and US Naval Teams are relatively small and so our training and other engagement work will need 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 holds 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.

Assumption 3.2: *Organisations in BIOT and in third countries (on pathways) have capacity to engage with work.* This assumption holds true. The customs and military biosecurity teams are relatively small and so our training and other engagement work will need 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 holds true. Data collected will need to be shared in a central location. We have developed a central database to hold this data (Indicator 1.2) to allow for data processing across different organisations.

Assumption 4.2: *Species of interest / concern are identified where clear management actions can be identified and incorporated in to plans* This assumption holds true. Species of interest/concern need to be both identified and conservation/management action needs

to be possible. For example marine INNS are extremely difficult to manage. Comprehensive species lists and distributional information will support decision making.

Assumption 5.1: Findings are of interest to wider scientific community and INNS practitioners. This assumption holds true. Updated species inventories may not be considered of interest in their own right. New species records and novel (to island) survey/management techniques should increase the interest of the work. Similarly, methods that can be used by other UKOTs will hopefully also be of interest to a wider community.

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

This is the first year of the project and we have not yet undertaken fieldwork through which we will address:

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.

It 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 supports **two strategic priorities** for the UK Government’s plan for UKOTs by directly addressing and supporting the delivery of:

i. 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);

ii. 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. [Aichi target 9](#) of the Convention on Biological Diversity to which the UK is a signatory (COP/10/INF/12/Rev.1).

5. OPTIONAL: Consideration of gender equality issues

Our project has approximately equal numbers of men and women in the project.

We have made the miniguide materials available in multiple languages to ensure messaging across different groups.

6. Monitoring and evaluation

There was a project kick off meeting in October 2022 with the team in attendance where we reviewed tasks and overall aims of the project and outlined next steps. The project team has regular email contact since finding out the project was successful. The team has scheduled quarterly team meetings from April 2022 to project close in March 2024.

The project will use SOFT reporting forms for the work package leads from April 2022 for the work package leads to support their reporting (Annex 3.9 Example SOFT reporting form (WP1))

7. Lessons learnt

The regular team meetings and email communication has worked extremely well in maintaining relationships and ensuring project tasks are completed this year. The additional quarterly updates with ZSL and the Chagos Conservation Trust have also proved extremely helpful and we would recommend others who work together on the same territory also adopt a similar process (if they are not already).

It has been a complicated process to order materials from Singapore but we have received excellent support and help from the military staff both in Singapore and DG, as well as ZSL, to get items shipped to DG. For others undertaking the same process we would recommend leaving an extremely long lead in time for such procurement.

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

This is the first year of the project and as such we have not received any feedback from previous reports.

9. Other comments on progress not covered elsewhere

[REDACTED]

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10. Sustainability and legacy

The project articles shared by Chagos News and the UKOT Conservation Forum have disseminated the project plans and proposed outputs to a variety of stakeholders, including those across territory (**Activity 5.2**).

The project leader has met (online) with both the Outgoing and Incoming Brit Rep on DG to update on the project and review actions and communications for the project. The project leader meets with NGOs working on BIOT each quarter to update on project progress.

We have delivered training to US Naval Facility staff on iNaturalist and will be using the training opportunities in June 2022 to build on this initial engagement.

At this stage in the project, the proposed exit strategy is still considered valid.

11. Darwin identity

The Darwin logo has been added to both the miniguides and the biosecurity leaflet (Annex 3.3a Miniguides on INNS in Creole, English and Filipino and Annex 3.3b Biosecurity Leaflet for customs and immigration officers on INNS) and will be added to all presentations undertaken

through the project. The Darwin Logo was also added to the Biosecurity Training Evaluation form (Annex 3.5 Draft Evaluation Form for Biosecurity Training).

[REDACTED]

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12. Impact of COVID-19 on project delivery

We moved [REDACTED] staff costs [REDACTED] overhead ([REDACTED])) from 2021/2022 financial year to staff costs and overheads for 2022/2023. This was due to the field work being moved from April 2022 to June 2022 (COVID-19 dependent). As the field work was pushed back by 2 months, the planning will also need to be moved back by 2 months, thus moving the request back. Fieldwork has been moved back to both allow for the COVID-19 situation to become clearer and to ensure that the cargo ship has arrived on DG with the kit that we wish to purchase in Singapore. This change was approved through Change Request 3.

13. Safeguarding

Please tick this box if any safeguarding violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

The following documents are available on request:

CEH/HR/041: UKCEH SAFEGUARDING PROCEDURE OCT 2019: HK

UKCEH EXTERNAL COMPLAINT PROCEDURE 2020 v2: QT

CEH/HR/047: UKCEH WHISTLEBLOWING PROCEDURE OCT 2019:

CEH/HR/011: UKCEH CODE OF CONDUCT JUNE 2019: GP

CEH/HR/025: UKCEH DISCIPLINARY PROCEDURE APRIL 2022: HD

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Current Year's Costs	2021/22 Grant (£) (Original value)	2021/22 Grant (£) (after agreed change requests CR3,4 &5)	2021/22 Total actual Darwin Costs (£)	Variance %	Comments (please explain any variance)
Staff costs (from Section 5)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	There was a slight overspend on staff time but this was less than [REDACTED]
Consultancy Costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Overhead Costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	The slight overspend on staff time caused a slight

					increase in overhead but this was less than
Travel and subsistence					
Operating Costs					There was a slight underspend on operating costs as packing kit was not as expensive as initially predicted
Capital items (from Section 6)					
Others (from Section 7)					There was a slight overspend on field kit to ensure we had items needed
Audit costs					

15. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

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

This is the first year of the project and although we have had many successes in terms of creation of collections of samples and identification of an invertebrate family new to DG, outreach materials, team relationship building and project delivery, we do not consider them noteworthy for publicity.

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?	Yes
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	No
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	Yes
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.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	