

## Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the "Project Reporting Information Note"  
(<https://darwinplus.org.uk/resources/information-notes>)

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

**Submission Deadline: 30<sup>th</sup> April 2023**

**Submit to: [BCF-Reports@niras.com](mailto:BCF-Reports@niras.com) including your project ref in the subject line**

### Darwin Plus Project Information

Project reference	DPLUS175
Project title	Enhancing monitoring and prevention of invasive non-native species across UKOTs
Territory(ies)	Anguilla, Bermuda, British Antarctic Territory, British Indian Ocean Territory, Cayman Islands, Falkland Islands, Gibraltar, South Georgia and South Sandwich Islands, Sovereign Base Areas of Akrotiri and Dhekelia (on Cyprus), St Helena, Ascension and Tristan da Cunha, Turks and Caicos Islands
Lead Partner	UK Centre for Ecology & Hydrology
Project partner(s)	Joint Services Health Unit (JSHU)
Darwin Plus grant value	£299,249.00
Start/end dates of project	1 July 2022 – 31 March 2025
Reporting period (e.g. Apr 2022-Mar 2023) and number (e.g. Annual Report 1, 2)	July 2022 – March 2023 Annual Report 1
Project Leader name	Helen Roy
Project website/blog/social media	<a href="https://darwinplus.org.uk/project/DPLUS175/">https://darwinplus.org.uk/project/DPLUS175/</a>
Report author(s) and date	Helen Roy and Project Team, April 2023

### 1. Project summary

There are major gaps in baseline knowledge on Invasive Non-Native Species (INNS) globally. INNS inventories will be derived for each UKOT through collation of information from existing sources alongside on-line recording. The information compiled will underpin modelling frameworks, incorporating climate extremes, to predict arrival and spread of INNS and ultimately supporting improved biodiversity indicators and action. The inventories, consolidated through the Non-Native Species Secretariat, will inform conservation, education, research, and disaster recovery plans in response to climate change.

### 2. Project stakeholders/partners

The project involves all UKOTs and there has been considerable engagement during development of the proposal and ongoing support. The first stage of implementing the project involved meeting with collaborators on each of the UKOTs (summary of meetings and attendees provided in Annex 4) to discuss details of the work plan and to ensure that the

specific activities could be as relevant as possible to each UKOT within the overarching scope of the project.

Dr Angeliki (Kelly) Martinou (JSHU, Cyprus SBA) is part of the project team and has been involved in the planning and delivery of the work undertaken so far. Jakovos Demetriou (current Darwin Fellow, Cyprus SBA) has also joined the project team to present the outputs of CyDAS, an online database of non-native species (developed through previous Darwin Plus projects specifically DPLUS56 and DPLUS88).

There have been three in person meetings held so far: St Helena (November 2022), Cyprus SBAs (March 2023) and Montserrat (April 2023). The meetings on St Helena and Cyprus were instigated as opportunities to meet alongside meetings pre-arranged for other projects. Other in person meetings are planned including: Anguilla (May 2023) and Gibraltar (June 2023). In the proposal one workshop for all the Caribbean UKOTs was planned but we have decided to also meet separately in person with Anguilla and Montserrat recognising the opportunity to co-develop and trial approaches to prioritise monitoring activities. This has been achieved within the planned budget.

The workshops on St Helena provided an opportunity to demonstrate the on-line database and begin the process of prioritising monitoring for non-native species. The project team were on St Helena to undertake work for another project (funded through the Non-Native Species Secretariat) assessing the potential spread of non-native species on the island and using structured approaches to assess feasibility of eradication but took the opportunity to begin work to meet the objectives of the DPLUS175.

On Cyprus and Montserrat the meetings provided an opportunity to discuss the project activities in detail. The insights gained through the meetings will assist in refining the project activities while remaining in scope of the overarching output and work package plans.

The engagement from collaborators has been inspiring and appreciated immensely by the project team. On St Helena, Julie Balchin (Biosecurity Officer, St Helena Government) played a leading role in organising the workshops in November 2022 and ensured engagement with a range of partners beyond those originally included in the application. On Montserrat we were able to meet with experts from relevant government departments and the Montserrat National Trust. The guidance provided by the on island experts will be invaluable in delivering the planned activities over the next two years.

Ongoing co-development of the work plan has been prioritised and during the initial online meetings with the UKOTs we have explored ways in which we can ensure the relevance of the activities. This will continue with a questionnaire that we have developed (which is currently undergoing ethical approval) to gather information on the UKOTs needs and aspirations for monitoring invasive non-native species.

We have had on-line meetings with all UKOTs other than Ascension Island who have noted that they will have no capacity to work within the project because of competing priorities and available resources. We will continue to develop a checklist and on-line information for Ascension Island and ensure they are updated with progress across the project. If the situation changes for people on Ascension Island then we can include further activities later in the project.

The main strength of the project comes from the co-development of the workplan, achieved through on-line and in person meetings, with experts within the UKOTs. Their contributions have been inspiring and we are looking forward to continuing working with them in the coming years.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

##### **Outputs**

## **1. On-line open Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system**

### *Baseline information available openly*

Compilation of information on NNS for all the UKOTs is ongoing. A website, linking to an online database, has been developed and fields within the database have been populated. The following is an update on specific progress:

- Information current and up-to-date for St Helena and Tristan da Cunha:
  - St Helena: information on 1836 NNS available
  - Tristan da Cunha: information on 325 NNS available  
(Noting as previously mentioned that this work co-aligned with other work undertaken by the project team)
- Compilation of information for all other UKOTs ongoing but including so far:
  - Anguilla: information on 257 NNS and all available resources for Anguilla accessed and ready for import pending links to global catalogue
  - Montserrat: information on 251 NNS added to template file further resource processing in progress
  - Additional 103 resources added to reference list across all UKOTs bringing the total list of references with NNS information to 158 (all information on NNS extracted from 18 of these with partial progress made for the remaining 140 references)
  - Further references and data sources are being added as they become available from the UKOTs
- Ongoing development of the website including co-development of database structure with UKOTs (i.e. addition of database fields guided by consultation with the UKOTs)

### *Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT*

The co-development of outputs from the NNS databases is ongoing but initial discussions have begun to introduce the potential opportunities. During the forthcoming meeting in Anguilla we will engage through expert-elicitation approaches to prioritise outputs considered valuable by the UKOT experts and assess potential data gaps and monitoring needs to deliver these.

### *Documented approaches to quantifying impacts, including on natural capital and ecosystem services*

Discussions with the UKOTs have begun on delivering this activity and it is considered a priority for inclusion within the databases. Guidance from the recently adopted IUCN approach to categorising impacts, Environmental Impact Classification for Alien Taxa (EICAT), has been used by the project team within other projects involving the UKOTs (see as an example Dawson et al. 2022). At the recent meeting in Montserrat, on island experts highlighted the importance of this activity to inform decision-making and prioritisation of management.

### *One workshop with each of the UKOTs, including in some cases clusters of UKOTs, to consider options for updating and maintaining the NNS database*

Workshop planning is underway with dates agreed for Anguilla (15-19 May 2023), Gibraltar (27-29 June 2023) and Cyprus (October 2023 – dates to be confirmed). The workshop in Anguilla during May 2023 will provide an opportunity to review and refine the approaches for this activity. Furthermore, a half day in person meeting in Montserrat in April 2023 provided an invaluable opportunity to discuss the database structure.

Planning for a workshop in the summer or autumn of 2023, for both BAT and SGSSI, is underway, but the date is yet to be agreed. For all other UKOTs discussions are ongoing to agree dates through 2024.

## **2. INNS monitoring and surveillance scoping report and outline design of relevant initiative**

### *One workshop with each of the clusters of UKOTs using consensus methods to prioritise approaches including citizen science opportunities where relevant*

As above, workshop planning is underway with dates agreed for Anguilla (15-19 May 2023), Gibraltar (27-29 June 2023) and Cyprus (October 2023 – dates to be confirmed). The workshop in Anguilla during May 2023 will provide an opportunity to review and refine the approaches for this activity.

Planning for a workshop in the summer or autumn of 2023, for both BAT and SGSSI, is underway, but the date is yet to be agreed. For all other UKOTs discussions are ongoing to agree dates through 2024.

*Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop*

Ongoing and dependent on discussions at the workshops. During the mini workshop in Montserrat (April 2023) we provided an overview of potential approaches and particularly novel tools and technologies that may have applicability.

*At least 3 to 10 users (depending on UKOT) registered within 3 months of launch of on-line recording for records of INNS*

Dependent on activities above.

### **3. Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events**

*Delivery of expert-elicitation workshop for each UKOT to prioritise introductions of INNS new to the territories but also within and between island spread*

INNS considered to be a priority for this activity will be documented through the workshops. UKCEH will be welcoming Darwin Fellow Selene Gough (St Helena) for a visit through the summer of 2023 and this will provide an opportunity for capacity building but also the possibility of collaboratively piloting detailed approaches for this activity.

*Collaboratively developed conceptual framework including identification of data needs, informed by the workshops but also pre and post workshop data-mining, to inform climate and spread modelling*

Ongoing and linked to the workshops described above. This activity will also link to the prioritisation of monitoring to address data needs for delivery of priority outputs, for example indicators, agreed by the UKOT experts.

*One models to assess the likelihood of new spread and impact of priority INNS on the UKOTs after as well as in the absence of extreme weather events*

Ongoing and linked to the activities described above.

*Action plan including synthesis of outcomes to inform predictions and mitigation of the risk from biological invasions following extreme weather events*

Ongoing and linked to the activities described above.

### **4. On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials**

*Journal article providing descriptive summary of INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access*

Under development in line with the compilation of information on INNS. This activity will provide an opportunity to document the structure of the databases and associated metadata. Darwin Fellow Jakovos Demetriou has made considerable and inspiring progress in documenting information from the Cyprus Database of Alien Species (CyDAS) including:

*Demetriou, J., Radea, C., Peyton, J.M., Groom, Q., Roques, A., Rabitsch, W., Seraphides, N., Arianoutsou, M., Roy, H.E. and Martinou, A.F., 2023. The Alien to Cyprus Entomofauna (ACE) database: a review of the current status of alien insects (Arthropoda, Insecta) including an updated species checklist, discussion on impacts and recommendations for informing management. NeoBiota, 83, 11-42.*

*Demonstration and training workshops (one per UKOT with two to 15 participants per UKOT) on maintaining on-line databases and data flow*

The main activities in relation to demonstrating the databases will be towards the end of the project but the workshops described above will provide an opportunity to begin the process. Indeed introductory demonstrations have been undertaken for St Helena and Montserrat. Furthermore, Jakovos Demetriou will be provided a recorded webinar to share with the UKOTs on CyDAS.

*Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials*

End of project activity.

*Three popular articles and three information sheets providing information on biosecurity approaches across UKOTs available for download through the project website*

End of project activity but discussions underway on the details of the specific outputs. As an example, Montserrat UKOT experts expressed the value of producing factsheets for priority INNS.

### **3.2 Progress towards project Outputs**

#### **1. On-line open Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system**

*Baseline information available openly*

As stated above compilation of information on NNS for all the UKOTs is ongoing. A website, linking to an online database, has been developed and fields within the database have been populated as described above. The project is anticipated to deliver all planned outputs.

*Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT*

As stated above the co-development of outputs from the NNS databases is ongoing but initial discussions have begun to introduce the potential opportunities. The project is anticipated to deliver all planned outputs.

*Documented approaches to quantifying impacts, including on natural capital and ecosystem services*

As stated above discussions with the UKOTs have begun on delivering this activity and it is considered a priority for inclusion within the databases. The project is anticipated to deliver all planned outputs.

*One workshop with each of the UKOTs, including in some cases clusters of UKOTs, to consider options for updating and maintaining the NNS database*

As stated above workshop planning is underway with dates agreed for Anguilla (15-19 May 2023), Gibraltar (27-29 June 2023) and Cyprus (October 2023 – dates to be confirmed). The workshop in Anguilla during May 2023 will provide an opportunity to review and refine the approaches for this activity. Furthermore, a half day in person meeting in Montserrat in April 2023 provided an invaluable opportunity to discuss the database structure.

Planning for a workshop in the summer or autumn of 2023, for both BAT and SGSSI, is underway, but the date is yet to be agreed. For all other UKOTs discussions are ongoing to agree dates through 2024.

The project is anticipated to deliver all planned outputs.

#### **2. INNS monitoring and surveillance scoping report and outline design of relevant initiative**

*One workshop with each of the clusters of UKOTs using consensus methods to prioritise approaches including citizen science opportunities where relevant*

As stated above, workshop planning is underway with dates agreed for Anguilla (15-19 May 2023), Gibraltar (27-29 June 2023) and Cyprus (October 2023 – dates to be confirmed). The workshop in Anguilla during May 2023 will provide an opportunity to review and refine the approaches for this activity.

Planning for a workshop in the summer or autumn of 2023, for both BAT and SGSSI, is underway, but the date is yet to be agreed. For all other UKOTs discussions are ongoing to agree dates through 2024.

The project is anticipated to deliver all planned outputs.

*Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop*

As stated above, ongoing and dependent on discussions at the workshops. During the mini workshop in Montserrat (April 2023) we provided an overview of potential approaches and particularly novel tools and technologies that may have applicability.

*At least 3 to 10 users (depending on UKOT) registered within 3 months of launch of on-line recording for records of INNS*

Dependent on activities above but the project is anticipated to deliver all planned outputs.

### **3. Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events**

*Delivery of expert-elicitation workshop for each UKOT to prioritise introductions of INNS new to the territories but also within and between island spread*

INNS considered to be a priority for this activity will be documented through the workshops. The project is anticipated to deliver all planned outputs although the tools may be documented as approaches rather than delivery of models because of lack of data to inform models.

*Collaboratively developed conceptual framework including identification of data needs, informed by the workshops but also pre and post workshop data-mining, to inform climate and spread modelling*

Ongoing and linked to the workshops described above. The project is anticipated to deliver all planned outputs.

*One model to assess the likelihood of new spread and impact of priority INNS on the UKOTs after as well as in the absence of extreme weather events*

INNS considered to be a priority for this activity will be documented through the workshops. The project is anticipated to deliver all planned outputs although the modelling approach may be described rather than delivery of models because of lack of data to inform models. However, as a minimum semi-quantitative approaches or frameworks for delivering models will be developed.

*Action plan including synthesis of outcomes to inform predictions and mitigation of the risk from biological invasions following extreme weather events*

Ongoing and linked to the activities described above.

### **4. On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials**

*Journal article providing descriptive summary of INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access*

As described above, developing in line with the compilation of information on INNS. This activity will provide an opportunity to document the structure of the databases and associated metadata. Darwin Fellow Jakovos Demetriou has made considerable and inspiring progress in documenting information from the Cyprus Database of Alien Species (CyDAS) including:

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*updated species checklist, discussion on impacts and recommendations for informing management. NeoBiota, 83, 11-42.*

The project is anticipated to deliver all planned outputs.

*Demonstration and training workshops (one per UKOT with two to 15 participants per UKOT) on maintaining on-line databases and data flow*

As stated above, the main activities in relation to demonstrating the databases will be towards the end of the project but the workshops described above will provide an opportunity to begin the process. Indeed, introductory demonstrations have been undertaken for St Helena and Montserrat. Furthermore, Jakovos Demetriou will be provided a recorded webinar to share with the UKOTs on CyDAS.

The project is anticipated to deliver all planned outputs.

*Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials*

End of project activity. The project is anticipated to deliver all planned outputs.

*Three popular articles and three information sheets providing information on biosecurity approaches across UKOTs available for download through the project website*

End of project activity but discussions underway on the details of the specific outputs. As an example, Montserrat UKOT experts expressed the value of producing factsheets for priority INNS. The project is anticipated to deliver all planned outputs.

### **3.3 Progress towards the project Outcome**

Outcome: Ecosystem function and resilience is maintained through implementation of evidence-based biosecurity measures, underpinned by predictive models to reduce arrival and spread of INNS particularly in the context of climate change.

Indicators:

*0.1 Predictive models, combining environmental suitability and spread models with consideration of extreme weather events, developed and outputs presented in an accessible format to inform evidence-based biosecurity and concurrent 20-50% reduction in spread for at least one INNS per UKOT with models initially piloted with case studies collaboratively developed with the Caribbean UKOTs*

Considerable progress has been made through year 1 of the project in understanding the data available to underpin this activity. It is likely that the predictive models (indicator 0.1) will be developed in conjunction with the climate modelling and the approach taken will be dependent on availability of data. Activities prioritising monitoring will provide potential approaches to address data gaps.

*0.2 Reduction in arrival (enhancing border biosecurity) and spread (early-warning and rapid response to incursions post-border) of INNS by at least 20% annually*

Approaches to assess this indicator will be developed through the workshops and specifically considering reporting from the databases on new incursions over time.

*0.3 Biosecurity for priority INNS or pathways enhanced, through on-line provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns - accompanied by evaluation through provision of on-line feedback forms by Y3Q1 – leading to increased capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity*

Compilation of information is underway (see above) and initial discussions with the UKOT experts have highlighted the value of the baseline information to underpin this indicator.

0.4 *At least two conservation or government officers on each of the named UKOTs demonstrate increased capacity to maintain the on-line databases, interpret the model outputs and support surveys including citizen science initiatives where appropriate by Y3Q2*

Training will be ongoing through the workshops but with final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials

### **3.4 Monitoring of assumptions**

#### *Outcome level assumptions*

Assumption 1: Inclusive engagement of diverse group (recognising the importance of gender balance) of stakeholders with breadth of expertise will maximise availability and relevance of information on INNS to inform predictive models

Comments: The meetings on-line with participants on the UKOTs (Annex 4) have involved people from diverse stakeholder groups including NGOs and government departments with expertise spanning the terrestrial, freshwater and marine environments and a range of relevant disciplines including biodiversity, agriculture and human health. The gender balance has been relatively even although with a slight skew to women in the in person meetings on St Helena and Montserrat.

Assumption 2: Biosecurity measures will reduce the arrival and spread of priority INNS Information on environmental impacts including effects of INNS on delivery of ecosystem services will increase understanding of ecosystem function and resilience

Comments: Many participants from the UKOTs have commented on the value of a previous collaborative study led by Helen Roy – horizon scanning for invasive non-native species (Dawson et al., 2022). Although it is too early to state the value of the current study in meeting this assumption we are ensuring that the scope of the activities underpin this assumption.

Assumption 3: The project team includes the necessary skills to deliver data compilation, modelling and action plans and will ensure access to inclusive resources and capacity to underpin the outcome and outputs

Comments: While there have been changes to the UKCEH staff involved in the project, we have maintained the necessary skills and indeed enhanced the knowledge exchange through inclusion of Darwin Fellow Jakovos Demetriou within the team.

#### *Output level assumptions*

Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted

Comment: Workshop planning is on-going but so far there have been no disruptions due to COVID-19 however we are prepared for on-line delivery for some UKOTs which would be difficult to arrange an in person workshop.

Wide range of project stakeholders will ensure sufficient information is available and open access

Comment: On-line meetings with project stakeholders across the UKOTs have successfully provided reference to sources of relevant information on INNS for compilation.

Collaboratively developed metrics will ensure engagement and relevance from all stakeholders ensuring diversity through best practices in engagement to achieve equality and equity and implementing best practice in inclusive communication approaches



Comment: There has been excellent engagement in both the on-line and in person workshops so far. We will use feedback forms at the prioritisation workshops (beginning with Anguilla in May 2023) to document evidence for this assumption.

Training accessible by a range of stakeholders ensuring consideration of diversity to maximise inclusion

Comment: There has been excellent engagement in both the on-line and in person workshops so far. We will use feedback forms at the prioritisation workshops (beginning with Anguilla in May 2023) to document evidence for this assumption.

Information on NNS will be available to quantify impacts of INNS on natural capital and ecosystem services.

Comment: Through Output 1 the project team already compiled and increased the accessibility of relevant information to underpin this assumption. Ongoing work on developing a protocol to rapidly quantify impact will also address this assumption.

Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted.

Comment: Workshop planning is on-going but so far there have been no disruptions due to COVID-19 however we are prepared for on-line delivery for some UKOTs which would be difficult to arrange an in person workshop.

Co-design of monitoring initiatives and testing with project team and stakeholders will ensure sufficient participation and motivation for uptake of surveys including citizen science where appropriate.

Comment: Agenda for the meeting on Anguilla has been developed collaboratively and we are anticipating 20 participants from Anguilla to attend.

Ensure engagement and relevance to all stakeholders recognising diversity.

Comment: Collaborative development of activities with UKOT stakeholders is working well.

Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted.

Comment: Workshop planning is on-going but so far there have been no disruptions due to COVID-19 however we are prepared for on-line delivery for some UKOTs which would be difficult to arrange an in person workshop.

Co-development of workshops with project team and UKOT stakeholders will ensure appropriate timing and location to maximise diversity and inclusion by ensuring availability of experts to participate in the workshop including new partnerships and networks.

Comment: Agenda for the meeting on Anguilla has been developed collaboratively and we are anticipating 20 participants from Anguilla to attend.

Workshops are not cancelled due to COVID-19 restrictions but virtual approaches are available if in-person meetings are restricted.

Comment: Workshop planning is on-going but so far there have been no disruptions due to COVID-19 however we are prepared for on-line delivery for some UKOTs which would be difficult to arrange an in person workshop.

Co-development of workshops with project team and stakeholders will ensure relevance and maximise attendance and engagement.

Comment: Agenda for the meeting on Anguilla has been developed collaboratively and we are anticipating 20 participants from Anguilla to attend.

Popular articles will be specific to the target audiences agreed collaboratively with the UKOT stakeholders to ensure accessibility and implementing best practice in inclusive communication.

Comment: No evidence so far but we will seek feedback on communication approaches as they are developed.

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

The project impact states: On-line INNS databases, coupled with surveys, including citizen science where appropriate, for monitoring, surveillance, and predictive modelling enhances biosecurity on all UKOTs and increases public engagement, ecosystem function and resilience. During year 1 the focus has been on engaging with partners on the UKOTs (Annex 4) and refining the details of delivery against the various activities. Enhancing flow of information on INNS will underpin this impact and the project team has made excellent progress in locating and digitising species information.

The Great Britain Invasive Non-Native Species Strategy: 2023 to 2030 <https://www.nonnativespecies.org/about/gb-strategy/the-great-britain-invasive-non-native-species-strategy/> provides an overview of progress and on-going needs for the UKOTs (acknowledging ongoing development of policy and biosecurity initiatives within the UKOTs) and specifically in the context of biosecurity and importance of information on NNS to underpin monitoring and surveillance.

The planned workshops will provide an opportunity to refine activities, ensuring the broad scope of the project, to align with the obligations of the UKOTs under various agreements.

#### 5. Gender equality and social inclusion

Please quantify the proportion of women on the Project Board <sup>1</sup> .	Project team is female: Helen Roy  The overall UKCEH project team comprises four females and one male experts with additional male experts contributing through Darwin Fellowships and IT consultants.
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 <sup>2</sup> .	Angeliki Martinou is (female) project lead from JSHU, Cyprus.  We will report on gender balance at workshops and meetings going forward.

The project team recognise the importance of diversity of experts with respect to age, gender, cultural background, education and specialism in providing a range of perspectives, including incorporation of indigenous and local knowledge, and experience necessary for robust elicitation. We have been ensuring that people have enough time to prepare for meetings and have circulated outline agendas in advance of meetings and inviting additional items to include. We will be seeking feedback from project participants during the workshops and reviewing the responses within the context of social inclusion.

<sup>1</sup> 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.

<sup>2</sup> 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.

## **6. Monitoring and evaluation**

The project leader (Helen Roy) is overseeing the monitoring and evaluation, in collaboration with the project team (project staff and partners). Information will be summarised through a project infographic that summarises the means of verification to share with stakeholders and particularly participants from the UKOTs. The monitoring and evaluation plan has not changed.

The project team is monitoring project progress at the formal project meetings (every two - three months including an agenda and minutes with actions) reviewing the indicators and outputs using SOFT (Success, Opportunities, Failures, Threats) reporting.

The indicators will be the main way of demonstrating the contributions of the Outputs and Activities of the project to the Outcome. These indicators are documented throughout this report and we will develop a project infographic that summarises the means of verification.

Risk register is included in Annex 7.

## **7. Lessons learnt**

The project team has made good progress against the planned activities and has been pleased by the ongoing engagement of UKOT experts within the territories. The project involves working with partners on all UKOTs (noting that Ascension Island are not involved directly but NNS information will be compiled for this UKOT) and there have been many on-line meetings (Annex 4). These have been incredibly important and useful in refining the specific details of the activities, but it is important to allow adequate time within project timetables to enable this engagement. Additionally, the baseline data available maybe insufficient to deliver robust quantitative models and so we are collaboratively refining the outputs for the activities under work package 2.

Ongoing collaborative, codevelopment of the activities to meet the overarching outcome of the project have been and will remain critical to successful delivery. We are extremely appreciative of the time given by partners on all UKOTs.

The Darwin Fellowship scheme (Darwin Fellows on Cyprus SBAs and St Helena) have extended the reach and delivery of some activities within the project.

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

This is the first annual report. We have updated the Log Framework following the comments received when the project was funded. Specifically, the following points were raised by the Darwin Plus Advisory Group:

- a lot of the evidence for the work is based on Cyprus SBAs work. It may have been useful to pilot this work in a couple of areas such as a Caribbean and a South Atlantic territory to test out its wider applicability;

We will be taking this approach for the modelling but have been fortunate for the data compilation tasks to complete this work already for St Helena and Tristan da Cunha (as mentioned in the proposal).

- working with stakeholders from several UKOTs should be considered as an additional opportunity for the project exit strategy;

This is a useful consideration and we will definitely be working to share ideas and expertise of the stakeholders (where applicable and appropriate) across the UKOTs through the project.

- given the central role of the GB Non-Native Species Secretariat (GBNNS), it is not clear why they are not a formal partner in the project;

The GBNNS are very pleased to be involved with the project and will be integrated in all the activities.

- while it is important to be on the ground to deliver this work, is there scope for any additional mitigation (further to those in the application) against the risks of travel delays or cancellations?

On-line meetings provide an opportunity to work together even in the event of disruptions to travel. We have been working virtually with Cyprus SBAs, St Helena and Tristan da Cunha over the last year and, although looking forward to the opportunity of on the ground working, we will maximise the benefits of the on-line tools.

## **9. Risk Management**

Updated risk register provided in Annex 7.

## **10. Other comments on progress not covered elsewhere**

There has been progress across all project activities and the engagement of UKOT experts has been inspiring and insightful (Annex 4). We have submitted change requests due to changes in staffing but also financial change requests. The latter has been necessitated because of the planning for in person workshops taking time and to ensure that the agreed dates allow maximum participation.

## **11. Sustainability and legacy**

During all the on-line and in person meetings with the UKOTs the value of the project has been recognised by participants with acknowledgement of the need for baseline information on NNS to underpin decision-making. Attendance at the meetings is evidence of the interest in the project (Annex 4).

The ongoing development of resources which will be delivered through the Non-Native Species Secretariat website will provide a legacy for the project. Furthermore, training will be provided to all UKOTs on updating the online NNS databases going forward.

The planned sustainable benefits are still valid and sustained legacy will be achieved through planned training and capacity building.

## **12. Darwin Plus identity**

During the first year of the project, we have held many meetings with the UKOTs (Annex 4). Additionally, Helen Roy (project leader) has given many conference presentations, webinars and lectures to undergraduates and postgraduates (Darwin Plus logo is included in all presentations). For example:

Roy, H.E. (2023) Enhancing monitoring and prevention of invasive non-native species across UKOTs. Darwin Fellowship conference “Biodiversity Studies at the Akrotiri Peninsula and Beyond”, 30 March 2023

Roy, H.E. (2023) Documenting biological invasions on the UK Overseas Territories: informing prevention and management. Terrestrial Restoration and Invasive Non-native Species in UK Overseas Territories and Crown Dependencies – UK Overseas Territories Conservation Forum, 7th March 2023

Roy, H.E. (2022) Documenting and predicting biological invasions globally. Aberystwyth University, 13 February 2023

Roy, H.E. (2023) Engaging People in Recording Wildlife - Lecture Series Women & Environmental Sciences. Cyprus Open University, 24 January 2023.

<https://www.youtube.com/watch?v=MALYFE4xSNA>

Roy, H.E. (2022) Documenting and predicting biological invasions globally. York University – Open Lecture, 30 November 2022

Roy, H.E. (2022) Documenting and predicting biological invasions globally. Neobiota, Estonia, September 2022.

Roy, H.E. (2022) Documenting and predicting biological invasions to inform prevention globally. Intecol, Geneva, August 2022.

Roy, H.E. (2022) Horizon scanning for anticipation of invasive threats. International Congress of Entomology, Helsinki, July 2022.

On 28 March 2023 UKCEH hosted a meeting with FCDO and Helen Roy presented the project as part of the Biodiversity programme.

Helen Roy has used her Twitter account (@UKLadybirds) to highlight activities and has tagged @DefraNature and #DarwinPlus. By tagging @UK\_CEH (lead organisation) we have enabled amplification of social media.

Helen Roy gave an interview to the Guardian Science Weekly podcast during COP15 and highlighted the project: <https://www.theguardian.com/science/audio/2022/dec/13/will-cop15-tackle-the-growing-problem-of-invasive-species-podcast>

### 13. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes Helen Doyle (HD) Quentin Tucker (QT)
Has the focal point attended any formal training in the last 12 months?	No
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 0% Planned: Training planning underway
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses. N/A	
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify. None but the following documents are available on request: CEH/HR/091: UKCEH SAFEGUARDING POLICY FEB 2023: HD UKCEH EXTERNAL COMPLAINT PROCEDURE 2020: QT CEH/HR/090: UKCEH WHISTLEBLOWING POLICY DEC 22: HD CEH/HR/011: UKCEH CODE OF CONDUCT JUNE 2019: Goldie Prince CEH/HR/025: UKCEH DISCIPLINARY PROCEDURE APRIL 2022: HD	

#### 14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)



Project spend (indicative) in this financial year	2022/23 D+ Grant (£)	2022/23 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
<b>TOTAL</b>				

Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)

	Matched funding secured to date	Total matched funding expected by end of project
Matched funding leveraged by the partners to deliver the project.		
Total additional finance mobilised by new activities building on evidence, best practices and project (£)		

**15. OPTIONAL: Outstanding achievements or progress of your project so far (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).

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)
				Yes / No
				Yes / No
				Yes / No
				Yes / No
				Yes / No

The engagement of the UKOT project partners in collaboratively developing the detailed work programme to align with the activities within the project proposal has been inspiring. It has been rewarding to hear of the needs for enhanced flow of information on non-native species and exciting to have the opportunity to digitise and compile the information. In the next year the project team and UKOT partners will work together to consider the reporting needs of each UKOT and will take the opportunity to share outputs from the workshops across all UKOTs. The Darwin Fellows on Cyprus under the guidance of Kelly Martinou have contributed so much to our understanding of INNS and it has been wonderful to see developments to the Cyprus Database of Alien Species building on previous Darwin Plus funded studies. The Biodiversity conference <https://martinoulab.weebly.com/events.html> organised by Darwin Fellows on Cyprus was an excellent demonstration of the success of the ongoing work and provided an opportunity for Helen Roy to provide an overview of the project with a wide group of stakeholders.

## Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023 – if applicable

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p><b>Impact</b></p> <p>On-line INNS databases, coupled with surveys, including citizen science where appropriate, for monitoring, surveillance, and predictive modelling enhances biosecurity on all UKOTs and increases public engagement, ecosystem function and resilience</p>		<p>Collation of information within on-line databases underway. Questionnaire developed to prioritise monitoring and reporting (Annex 5). Workshop agenda developed for delivery at first full workshop in Anguilla May 2023 (Annex 6)</p>	
<p><b>Outcome</b> Ecosystem function and resilience is maintained through implementation of evidence-based biosecurity measures, underpinned by predictive models to reduce arrival and spread of INNS particularly in the context of climate change</p>	<p>0.1 Predictive models, combining environmental suitability and spread models with consideration of extreme weather events, developed and outputs presented in an accessible format to inform evidence-based biosecurity and concurrent 20-50% reduction in spread for at least one INNS per UKOT with models initially piloted with case studies collaboratively developed with the Caribbean UKOTs</p> <p>0.2 Reduction in arrival (enhancing border biosecurity) and spread (early-warning and rapid response to incursions post-border) of INNS by at least 20% annually</p> <p>0.3 Biosecurity for priority INNS or pathways enhanced, through on-line provision of information on INNS (including impacts on biodiversity, ecosystems and</p>	<p>Ongoing</p>	<p>Deliver workshops with UKOTs (Annex 5 and 6)</p> <p>Summarise information within Workshop Reports</p> <p>Develop monitoring plan in relation to monitoring activities considered a priority from the workshop participants</p> <p>Develop approaches to reporting including potentially models where data is available but also summary statistics and plans for improving data availability to underpin monitoring going forward</p> <p>Provide technical training on updating the on-line database during the workshops</p>



Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>ecosystem function and services) to inform strategy and awareness raising campaigns - accompanied by evaluation through provision of on-line feedback forms by Y3Q1 – leading to increased capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity</p> <p>0.4 At least two conservation or government officers on each of the named UKOTs demonstrate increased capacity to maintain the on-line databases, interpret the model outputs and support surveys including citizen science initiatives where appropriate by Y3Q2</p>		
<p><b>Output 1. 1. On-line <u>open</u> Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system</b></p>	<p>1.1 Baseline information available openly for at least 100 NNS for each UKOT (collated by Y3Q2)</p> <p>1.2 Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics for evaluating biosecurity efficiency (developed by Y3Q3)</p> <p>1.3 Documented approaches to quantifying impacts, including on natural capital and ecosystem services outlined within a guidance document with implementation for</p>	<p>Ongoing – evidence provided in 3.1, 3.2 and 3.3</p>	

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>the priority INNS identified by the UKOTs (developed by Y3Q1)</p> <p>1.4 One workshop with each of the UKOTs, including in some cases clusters<sup>3</sup> of UKOTs, to consider options for updating and maintaining the NNS database (collaborative organisation, scheduling and delivery by Y3Q1)</p>		
Activity 1.1 Compilation and harmonisation of available baseline information on non-native species in collaboration with the stakeholders on each UKOT and through review of relevant databases e.g. GBIF		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Continue liaising with UKOT partners to obtain information on resources and for ongoing review of information collated.
Activity 1.2 Collaboratively develop an approach for a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics (e.g. temporal trends in number of INNS) for evaluating biosecurity efficiency		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Deliver workshops as described and questionnaire-based survey
Activity 1.3 Implement approaches to quantifying impacts using current evaluation frameworks such as the IUCN Environmental Impact Classification of Alien Taxa (EICAT) including on natural capital and ecosystem services (information added to NNS database through 1.1)		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Develop approach to use EICAT for delivering evidence of impacts for up to 10 INNS per UKOT and document repeatable approach

<sup>3</sup> Six workshops, in some cases including clusters of UKOTs, are planned: 1. Caribbean UKOTs (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos Islands; geographically, Bermuda is not Caribbean, but will be included in the Caribbean cluster due to relative proximity to Caribbean UKOTs and North America); 2. British Indian Ocean Territory (BIOT); 3. South Atlantic UKOTs (Falkland Islands, South Georgia and the South Sandwich Islands); 4. Mid-Atlantic UKOTs (Saint Helena and Tristan da Cunha); 5. Gibraltar; 6. British Antarctic Territory (BAT). All workshops would be in person (covid permitting – but managed on-line if needed) noting that the BIOT and BAT workshops would be held in London and Cambridge respectively with all others involving travel by the project team to the UKOTs or one of the UKOTs within the cluster. An additional final on-line webinar will also be delivered and open for all UKOTs.

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
Activity 1.4 Workshops with clusters <sup>1</sup> of UKOTs to collaboratively develop processes for updating and maintaining the NNS databases		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Continue consultation with UKOT partners to maximise the operability of the databases for their needs.
<b>Output 2. INNS monitoring and surveillance scoping report and outline design of relevant initiative</b>	<p>2.1 One workshop with each of the clusters of UKOTs<sup>1</sup> using consensus methods to prioritise approaches including citizen science opportunities where relevant (collaborative organisation, scheduling and delivery by Y2Q4)</p> <p>2.2 Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop (developed by Y3Q3)</p> <p>2.3 At least 3 to 10 users (depending on UKOT) registered within 3 months of launch of on-line recording for records of INNS (species included informed by the UKOT stakeholders) - collaborative development from the outset of the project and implemented through Y2 but reviewed (feedback from users) on a quarterly basis to consider needs for modifications throughout the duration of the project (developed by Y3Q3)</p>	Ongoing – evidence provided in 3.1, 3.2 and 3.3	
Activity 2.1. Workshops with clusters <sup>1</sup> of UKOTs to consider opportunities and challenges for approaches to INNS surveys including citizen science		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Deliver workshops as described and questionnaire-based survey

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
Activity 2.2 Collaborative development of relevant surveys informed through the workshop (informed through 2.1)		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Outline approaches to citizen science and consider resourcing
Activity 2.3 Implement on-line recording (e.g. using iNaturalist or indicia) for general INNS surveillance		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Discuss implementation of on-line recording
<b>Output 3. Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events</b>	<p>3.1 Delivery of expert-elicitation workshop for each UKOT to prioritise introductions of INNS new to the territories but also within and between island spread (concurrent with 2.1 above; collaborative organisation, scheduling and delivery by Y2Q4)</p> <p>3.2 Collaboratively developed conceptual framework including identification of data needs, informed by the workshops but also pre and post workshop data-mining, to inform climate and spread modelling (one summary report documenting the conceptual framework per UKOT completed by Y3Q1)</p> <p>3.3 One model to assess the likelihood of new spread and impact of priority INNS on the UKOTs after as well as in the absence of extreme weather events (completed by Y3Q3)</p> <p>3.4 Action plan including synthesis of outcomes to inform predictions</p>	Ongoing – evidence provided in 3.1, 3.2 and 3.3	

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	and mitigation of the risk from biological invasions following extreme weather events (completed by Y3Q3)		
Activity 3.1 Expert-elicitation workshop with clusters <sup>1</sup> of UKOT to agree INNS representing greatest threat to the territories through arrival and spread within and between islands (where the UKOT comprises multiple islands)		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Deliver workshops as described and questionnaire-based survey
Activity 3.2 Consult with the stakeholders and modelling experts to identify data needs to inform climate and spread modelling		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Further on-line survey to ascertain data availability and data gaps specifically for delivering the model
Activity 3.3 Develop, synthesise and interpret outcomes from models to inform predictions and mitigation of the risk from biological invasions following extreme weather events		Ongoing – evidence provided in 3.1, 3.2 and 3.3	Develop models noting that some maybe conceptual rather than final outputs with focus being on Caribbean UKOTs for pilot
<b>Output 4. On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials</b>	<p>4.1 Journal article providing descriptive summary of INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access ( completed by Y3Q1)</p> <p>4.2 Demonstration and training workshops (one per UKOT with two to 15 participants per UKOT) on maintaining on-line databases and data flow (concurrent with 2.1 above; collaborative organisation, scheduling and delivery by Y3Q2)</p> <p>4.3 Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising</p>	Ongoing – evidence provided in 3.1, 3.2 and 3.3	

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
	<p>development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials (completed by Y3Q3)</p> <p>4.4 Three popular articles and three information sheets providing information on biosecurity approaches across UKOTs available for download through the project website (completed by Y3Q3)</p>		
<p>Activity 4.1 Draft and publish journal article providing descriptive summary of INNS and predictions of future threats from INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access</p>		<p>Ongoing – evidence provided in 3.1, 3.2 and 3.3</p>	<p>In the next 12 months work with Jakovos Demetriou and Kelly Martinou to write data paper on CyDAS that includes definitions of all data fields in the on-line database</p> <p>Develop work plan for using the INNS information to model future threats</p>
<p>Activity 4.2 Demonstration and training workshops on maintaining on-line databases and data flow with clusters<sup>1</sup> of UKOTs</p>		<p>Ongoing – evidence provided in 3.1, 3.2 and 3.3</p>	<p>Deliver first training workshop in Anguilla in May 2023</p> <p>Work with Darwin Fellow Selene Gough to build capacity on on-line data systems through the summer 2023</p>

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
Activity 4.3 Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials		Not yet started – evidence provided in 3.1, 3.2 and 3.3	Planning will begin at the end of year 2 but with discussions at workshops through year 2
Activity 4.4 Collaboratively write three popular articles and information sheets with information on biosecurity approaches available for download through the project website including Darwin Newsletter articles and promote through press releases and social media		Ongoing – evidence provided in 3.1, 3.2 and 3.3 and 12	Develop materials noting that Montserrat UKOT partners expressed need for factsheets  Blog article planned for Invasive Species Week linking to workshop in Anguilla (May 2023)

## 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
<p><b>Impact:</b> On-line INNS databases, coupled with surveys, including citizen science where appropriate, for monitoring, surveillance, and predictive modelling enhances biosecurity on all UKOTs and increases public engagement, ecosystem function and resilience</p>			
<p><b>Outcome:</b> Ecosystem function and resilience is maintained through implementation of evidence-based biosecurity measures, underpinned by predictive models to reduce arrival and spread of INNS particularly in the context of climate change</p>	<p>0.1 Predictive models, combining environmental suitability and spread models with consideration of extreme weather events, developed and outputs presented in an accessible format to inform evidence-based biosecurity and concurrent 20-50% reduction in spread for at least one INNS per UKOT with models initially piloted with case studies collaboratively developed with the Caribbean UKOTs</p> <p>0.2 Reduction in arrival (enhancing border biosecurity) and spread (early-warning and rapid response to incursions post-border) of INNS by at least 20% annually</p> <p>0.3 Biosecurity for priority INNS or pathways enhanced, through on-line provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns - accompanied by evaluation through provision of on-line feedback forms by Y3Q1 – leading to increased</p>	<p>0.1 Evidence-based biosecurity reports including summary of predictive models. The reports will be designed collaboratively through consultation with project stakeholders both during on-line meetings and through the workshops with wider group of beneficiaries. The information will benefit the UKOTs in providing a baseline for monitoring the UKOTs agreed objectives for INNS but also for monitoring progress towards global biodiversity targets.</p> <p>0.2 Species distribution maps and collaboratively developed metrics on the pressure from INNS available on-line and following best practice in inclusive communication</p> <p>0.3 Development of comprehensive and accessible databases to collate information on past and ongoing biological invasions to provide the information on which to base communication campaigns, biosecurity plans and inform policy decision-making</p>	<p>Inclusive engagement of diverse group (recognising the importance of gender balance) of stakeholders with breadth of expertise will maximise availability and relevance of information on INNS to inform predictive models</p> <p>Biosecurity measures will reduce the arrival and spread of priority INNS</p> <p>Information on environmental impacts including effects of INNS on delivery of ecosystem services will increase understanding of ecosystem function and resilience</p> <p>The project team includes the necessary skills to deliver data compilation, modelling and action plans and will ensure access to inclusive resources and capacity to underpin the outcome and outputs</p>



	<p>capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity</p> <p>0.4 At least two conservation or government officers on each of the named UKOTs demonstrate increased capacity to maintain the on-line databases, interpret the model outputs and support surveys including citizen science initiatives where appropriate by Y3Q2</p>	<p>0.4 Workshop reports and on-going monitoring through on-line feedback forms to assess capacity of stakeholders to maintain the database</p>	
<p><b>Outputs:</b>  <b>1. On-line open Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system</b></p> <p>Delivered through WP1</p> <p>WP1 Task leader: Oli Pescott and Helen Roy</p> <p>UKOT collaborators: All will be consulted through development and approaches to ensure legacy.</p>	<p>1.1 Baseline information available openly for at least 100 NNS for each UKOT (collated by Y3Q2)</p> <p>1.2 Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics for evaluating biosecurity efficiency (developed by Y3Q3)</p> <p>1.3 Documented approaches to quantifying impacts, including on natural capital and ecosystem services outlined within a guidance document with implementation for</p>	<p>1.1 NNS databases, NNS distribution maps. Contents will be downloadable directly from the website (either the Non-Native Species Secretariat website or the UKOTs biodiversity portal where relevant.</p> <p>1.2 Outline approach to deriving a biodiversity indicator for INNS</p> <p>1.3 Training and documentation on impact classification available on-line</p>	<p>Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted.</p> <p>Wide range of project stakeholders will ensure sufficient information is available and open access</p> <p>Collaboratively developed metrics will ensure engagement and relevance from all stakeholders ensuring diversity through best practices in engagement to achieve equality and equity<sup>5</sup> and</p>

<sup>5</sup> We will ensure best practice in engaging with a diverse group of experts with respect to age, gender, cultural background, education and specialism in providing a range of perspectives, including incorporation of indigenous and local knowledge. We will ensure gender balance across the project team and participating stakeholders implementing approaches to maximise inclusion. We will ensure that people have enough time to prepare for tasks and we will invite questions and encourage discussions using a variety of approaches (e-mail, on-line meetings and face-to-face when possible) to establish an environment in which individuals feel confident to exchange information and express ideas in the format they are most comfortable with using. We will also seek feedback from a diverse group of project participants and review the responses within the context of social inclusion.

<p>Training will be delivered on maintaining the databases (WP4) with collaborators will review options for ongoing updates</p>	<p>the priority INNS identified by the UKOTs (developed by Y3Q1)</p> <p>1.4 One workshop with each of the UKOTs, including in some cases clusters<sup>4</sup> of UKOTs, to consider options for updating and maintaining the NNS database (collaborative organisation, scheduling and delivery by Y3Q1)</p>	<p>1.4 Training and on-line resources available on maintaining the database</p>	<p>implementing best practice in inclusive communication approaches</p> <p>Training accessible by a range of stakeholders ensuring consideration of diversity to maximise inclusion</p> <p>Information on NNS will be available to quantify impacts of INNS on natural capital and ecosystem services.</p>
<p><b>2. INNS monitoring and surveillance scoping report and outline design of relevant initiative</b></p> <p>Delivered through WP2</p> <p>WP2 Task leader: Helen Roy and Angeliki Martinou</p> <p>UKOT collaborators: Monitoring including citizen science initiatives</p>	<p>2.1 One workshop with each of the clusters of UKOTs<sup>1</sup> using consensus methods to prioritise approaches including citizen science opportunities where relevant (collaborative organisation, scheduling and delivery by Y2Q4)</p> <p>2.2 Collaborative development of at least one relevant monitoring initiative, including citizen science</p>	<p>2.1 Workshop reports outlining opportunities and barrier to monitoring including citizen science on each UKOT including formal feedback through an on-line form distributed to all participants for monitoring and evaluation</p> <p>2.2 Monitoring, including citizen science initiatives where appropriate, developed alongside accompanying dissemination materials and guidance documents.</p>	<p>Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted</p> <p>Co-design of monitoring initiatives and testing with project team and stakeholders will ensure sufficient participation and motivation for uptake of surveys including citizen science where appropriate</p>

<sup>4</sup> Six workshops, in some cases including clusters of UKOTs, are planned: 1. Caribbean UKOTs (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos Islands; geographically, Bermuda is not Caribbean, but will be included in the Caribbean cluster due to relative proximity to Caribbean UKOTs and North America); 2. British Indian Ocean Territory (BIOT); 3. South Atlantic UKOTs (Falkland Islands, South Georgia and the South Sandwich Islands); 4. Mid-Atlantic UKOTs (Saint Helena and Tristan da Cunha); 5. Gibraltar; 6. British Antarctic Territory (BAT). All workshops would be in person (covid permitting – but managed on-line if needed) noting that the BIOT and BAT workshops would be held in London and Cambridge respectively with all others involving travel by the project team to the UKOTs or one of the UKOTs within the cluster. An additional final on-line webinar will also be delivered and open for all UKOTs.

<p>will be co-created with the UKOT stakeholders</p>	<p>where relevant, informed through the workshop (developed by Y3Q3)</p> <p>2.3 At least 3 to 10 users (depending on UKOT) registered within 3 months of launch of on-line recording for records of INNS (species included informed by the UKOT stakeholders) - collaborative development from the outset of the project and implemented through Y2 but reviewed (feedback from users) on a quarterly basis to consider needs for modifications throughout the duration of the project (developed by Y3Q3)</p>	<p>Monitoring and evaluation through on-line feedback form and also an invitation to contact the project leader with suggestions</p> <p>2.3 On-line recording application e.g. iNaturalist or Indicia-based system implemented for submission of species selected by the UKOT stakeholders for recording INNS. Monitoring and evaluation through on-line feedback form and also on-line forum to achieve knowledge exchange but also feedback and trouble-shooting</p>	<p>Ensure engagement and relevance to all stakeholders recognising diversity</p>
<p><b>3. Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events</b></p> <p>Delivered through WP3</p> <p>WP3 Task leaders: Cornelia Klein, Helen Roy and Jodey Peyton</p> <p>UKOT collaborators: Expert-elicitation workshops will involve all UKOT stakeholders to prioritise INNS and inform the development of the models)</p>	<p>3.1 Delivery of expert-elicitation workshop for each UKOT to prioritise introductions of INNS new to the territories but also within and between island spread (concurrent with 2.1 above; collaborative organisation, scheduling and delivery by Y2Q4)</p> <p>3.2 Collaboratively developed conceptual framework including identification of data needs, informed by the workshops but also pre and post workshop data-mining, to inform climate and spread modelling (one summary report documenting the conceptual framework per UKOT completed by Y3Q1)</p>	<p>3.1 Workshop report (noting the prioritisation has already been achieved for Anguilla and TCI (and is currently on-going for Tristan da Cunha and St Helena) through previous collaborative research by the proposed project team but not within the context of extreme weather events)</p> <p>3.2 Conceptual framework developed to inform predictive spread modelling and documented within a short report for each UKOT</p> <p>3.3 Models for at least one INNS per UKOT with models initially piloted with case studies collaboratively developed on priority INNS agreed with the Caribbean UKOTs</p>	<p>Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted</p> <p>Co-development of workshops with project team and UKOT stakeholders will ensure appropriate timing and location to maximise diversity and inclusion by ensuring availability of experts to participate in the workshop including new partnerships and networks</p>

	<p>3.3 One model to assess the likelihood of new spread and impact of priority INNS on the UKOTs after as well as in the absence of extreme weather events (completed by Y3Q3)</p> <p>3.4 Action plan including synthesis of outcomes to inform predictions and mitigation of the risk from biological invasions following extreme weather events ( completed by Y3Q3)</p>	<p>3.4 Mitigation approaches based on predictive modelling documented with action plans</p>	
<p><b>4. On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials</b></p> <p>Delivered through across WPs but with focus in WP4</p> <p>Task leaders: Helen Roy and Angeliki Martinou</p> <p>UKOT collaborators: inform and co-develop training and resources. Monitoring and evaluation to inform training</p>	<p>4.1 Journal article providing descriptive summary of INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access ( completed by Y3Q1)</p> <p>4.2 Demonstration and training workshops (one per UKOT with two to 15 participants per UKOT) on maintaining on-line databases and data flow (concurrent with 2.1 above; collaborative organisation, scheduling and delivery by Y3Q2)</p> <p>4.3 Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials ( completed by Y3Q3)</p> <p>4.4 Three popular articles and three information sheets providing</p>	<p>4.1 Draft article accompanied by blog and downloadable poster for dissemination to diverse groups of stakeholders and beneficiaries</p> <p>4.2 Workshop report including attendance figures and feedback from monitoring and evaluation. All presentations available on-line through the project website alongside training materials and resources.</p> <p>4.3 Download statistics available in Y1, 2 and 3</p>	<p>Workshops are not cancelled due to COVID-19 restrictions but virtual approaches are available if in-person meetings are restricted</p> <p>Co-development of workshops with project team and stakeholders will ensure relevance and maximise attendance and engagement</p> <p>Popular articles will be specific to the target audiences agreed collaboratively with the UKOT stakeholders to ensure accessibility and implementing best practice in inclusive communication</p>

	information on biosecurity approaches across UKOTs available for download through the project website ( completed by Y3Q3)		
<p><b>Activities</b></p> <p><b>Note to ensure value for money the workshops scheduled on each UKOT will be within six clusters (Caribbean UKOTs, BIOT, South Atlantic UKOTs, Mid Atlantic UKOTs, Gibraltar and BAT) to minimise travel costs and enable networking. We will plan to have one in person workshop with representatives from each UKOT within the clusters<sup>1</sup> (covid permitting) noting that the BIOT and BAT workshops would be held in London and Cambridge respectively with all others involving travel by the project team to the UKOTs or one of the UKOTs within the cluster. The Cyprus SBAs will be represented by Dr. Angeliki Martinou, project partner at the JSHU, attending all workshops. The workshops will be organised such that activities 1.4, 2.1, 3.1, 4.2 will be scheduled within the same visit. There will be an additional final webinar which will be virtual to bring together all UKOTs within the project. This final webinar with representatives from all UKOTs will enable priority training and development needs identified through the workshops with clusters of UKOTs to be addressed alongside dissemination of on-line training materials.</b></p> <p><b>Inclusive communication best practice will be implemented throughout the development of all resources.</b></p> <p>1.1 Compilation and harmonisation of available baseline information on non-native species in collaboration with the stakeholders on each UKOT and through review of relevant databases e.g. GBIF</p> <p>1.2 Collaboratively develop an approach for a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics (e.g. temporal trends in number of INNS) for evaluating biosecurity efficiency</p> <p>1.3 Implement approaches to quantifying impacts using current evaluation frameworks such as the IUCN Environmental Impact Classification of Alien Taxa (EICAT) including on natural capital and ecosystem services (information added to NNS database through 1.1)</p> <p>1.4 Workshops with clusters<sup>1</sup> of UKOTs to collaboratively develop processes for updating and maintaining the NNS databases</p> <p>2.1 Workshops with clusters<sup>1</sup> of UKOTs to consider opportunities and challenges for approaches to INNS surveys including citizen science</p> <p>2.2 Collaborative development of relevant surveys informed through the workshop (informed through 2.1)</p> <p>2.3 Implement on-line recording (e.g. using iNaturalist or indicia) for general INNS surveillance</p> <p>3.1 Expert-elicitation workshop with clusters<sup>1</sup> of UKOT to agree INNS representing greatest threat to the territories through arrival and spread within and between islands (where the UKOT comprises multiple islands)</p> <p>3.2 Consult with the stakeholders and modelling experts to identify data needs to inform climate and spread modelling</p> <p>3.3 Develop, synthesise and interpret outcomes from models to inform predictions and mitigation of the risk from biological invasions following extreme weather events</p>			

- 4.1 Draft and publish journal article providing descriptive summary of INNS and predictions of future threats from INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access
- 4.2 Demonstration and training workshops on maintaining on-line databases and data flow with clusters<sup>1</sup> of UKOTs
- 4.3 Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials
- 4.4 Collaboratively write three popular articles and information sheets with information on biosecurity approaches available for download through the project website including Darwin Newsletter articles and promote through press releases and social media.

**Annex 3: Standard Indicators**

**Table 1 Project Standard Indicators**

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DPLUS175-A01	Baseline information available openly for at least 100 NNS for each UKOT	Number of INNS included within databases for the UKOT	Number	None	2669			2669	>1400
DPLUS175-A02	Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics for evaluating biosecurity efficiency	Documented approach to collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT underpinned by key metrics for evaluating biosecurity efficiency	Number	None	0			0	13
DPLUS175-A03	Documented approaches to quantifying impacts, including on natural capital and ecosystem services outlined within a guidance document with implementation for the priority INNS identified by the UKOTs	Guidance document to quantifying impacts, including on natural capital and ecosystem services, with implementation for the priority INNS identified by the UKOTs	Number	None	0				1 + 130
DPLUS175-A04	One workshop with each of the UKOTs, including in some cases clusters <sup>6</sup> of	NNS on-line database training workshops for each UKOT	People	Gender	0 (noting on-line introductory				

<sup>6</sup> Six workshops, in some cases including clusters of UKOTs, are planned: 1. Caribbean UKOTs (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos Islands; geographically, Bermuda is not Caribbean, but will be included in the Caribbean cluster due to relative proximity to Caribbean UKOTs and North America); 2. British Indian Ocean Territory (BIOT); 3. South Atlantic UKOTs (Falkland Islands, South Georgia and the South



DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	UKOTs, to consider options for updating and maintaining the NNS database				meetings documented in Annex 4)				
DPLUS175-B01	One workshop with each of the clusters of UKOTs <sup>1</sup> using consensus methods to prioritise approaches including citizen science opportunities where relevant	Number workshop reports approved by UKOT project partners	Number	None	0 (although note Annex 4 includes summary of on-line meetings)				13
DPLUS175-B02	Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop	Number of citizen science initiatives for INNS co-developed	Number	None	0				13
DPLUS175-B03	At least 3 to 10 users (depending on UKOT) registered within 3 months of launch of on-line recording for records of	Number of users (depending on UKOT) registered within 3 months of launch of on-line	People	None (although gender may be possible)	0				>40

Sandwich Islands); 4. Mid-Atlantic UKOTs (Saint Helena and Tristan da Cunha); 5. Gibraltar; 6. British Antarctic Territory (BAT). All workshops would be in person (covid permitting – but managed on-line if needed) noting that the BIOT and BAT workshops would be held in London and Cambridge respectively with all others involving travel by the project team to the UKOTs or one of the UKOTs within the cluster. An additional final on-line webinar will also be delivered and open for all UKOTs.

<b>DPLUS Indicator number</b>	<b>Name of indicator using original wording</b>	<b>Name of Indicator after adjusting wording to align with DPLUS Standard Indicators</b>	<b>Units</b>	<b>Disaggregation</b>	<b>Year 1 Total</b>	<b>Year 2 Total</b>	<b>Year 3 Total</b>	<b>Total to date</b>	<b>Total planned during the project</b>
	INNS (species included informed by the UKOT stakeholders) - collaborative development from the outset of the project and implemented through Y2 but reviewed (feedback from users) on a quarterly basis to consider needs for modifications throughout the duration of the project	recording for records of INNS							
DPLUS175-C01	Delivery of expert-elicitation workshop for each UKOT to prioritise introductions of INNS new to the territories but also within and between island spread	Number of workshop reports approved by UKOT project partners	Number						13
DPLUS175-C02	Collaboratively developed conceptual framework including identification of data needs, informed by the workshops but also pre and post workshop data-mining, to inform climate and spread modelling	Number of conceptual models co-developed with UKOT project partners	Number						13
DPLUS175-C03	One model to assess the likelihood of new spread and impact of priority INNS on the UKOTs after as well	Number of models co-developed with UKOT project partners (Noting this maybe better delivered as a conceptual framework but	Number						1

<b>DPLUS Indicator number</b>	<b>Name of indicator using original wording</b>	<b>Name of Indicator after adjusting wording to align with DPLUS Standard Indicators</b>	<b>Units</b>	<b>Disaggregation</b>	<b>Year 1 Total</b>	<b>Year 2 Total</b>	<b>Year 3 Total</b>	<b>Total to date</b>	<b>Total planned during the project</b>
	as in the absence of extreme weather events	we will be discussing this with partners on the UKOTs							
DPLUS175-C04	Action plan including synthesis of outcomes to inform predictions and mitigation of the risk from biological invasions following extreme weather events	Number of action plans including synthesis of outcomes to inform predictions and mitigation of the risk from biological invasions following extreme weather events	Number						13
DPLUS175-D01	Journal article providing descriptive summary of INNS on UKOTS by Y2 submitted to Journal of Applied Ecology as open access	At least one journal article providing descriptive summary of INNS on UKOTS and including metadata descriptions	Number						>1
DPLUS175-D02	Demonstration and training workshops (one per UKOT with two to 15 participants per UKOT) on maintaining on-line databases and data flow	At least two people on each UKOT trained to use the on-line data systems	People						>26
DPLUS175-D03	Final virtual webinar with all UKOTs to deliver priority training on INNS data flow recognising development needs identified through the workshops on each UKOT alongside dissemination of on-line training materials	At least 26 people attend the final webinar	People						>26

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DPLUS175-D04a	Three popular articles providing information on biosecurity approaches across UKOTs available for download through the project website	Three popular articles providing information on biosecurity approaches across UKOTs available for download through the project website	Number						3
DPLUS175-D04b	Three information sheets providing information on biosecurity approaches across UKOTs available for download through the project website	Three information sheets providing information on biosecurity approaches across UKOTs available for download through the project website	Number						3

In addition to reporting any information on publications under relevant standard indicators, in Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Mark with an asterisk (\*) all publications and other material that you have included with this report.

**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)
The Alien to Cyprus Entomofauna (ACE) database: a review of the current status of alien insects (Arthropoda, Insecta) including an updated species checklist, discussion on	Journal	Demetriou, J., Radea, C., Peyton, J.M., Groom, Q., Roques, A., Rabitsch, W., Seraphides, N., Arianoutsou, M., Roy, H.E. and Martinou, A.F., 2023	Male	Cypriot	Neobiota, Pensoft	doi: 10.3897/neobiota.83.96823

<b>Title</b>	<b>Type</b> (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	<b>Gender of Lead Author</b>	<b>Nationality of Lead Author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. weblink or publisher if not available online)
impacts and recommendations for informing management						

## 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 <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
<b>Do you have hard copies of material you need to submit with the report?</b> 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.	
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	