

Darwin Plus Main: Annual Report

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

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

Submission Deadline: 30th April 2024

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

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, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Montserrat, Pitcairn, 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, Cyprus
Darwin Plus grant value	£299,249.00
Start/end dates of project	1 July 2022 – 31 March 2025
Reporting period (e.g. Apr 2023-Mar 2024) and number (e.g. Annual Report 1, 2)	April 2023-March 2024 Annual Report 2
Project Leader name	Helen [REDACTED]
Project website/blog/social media	https://darwinplus.org.uk/project/DPLUS175/ https://www.ceh.ac.uk/our-science/projects/enhancing-monitoring-and-prevention-invasive-non-native-species-across-ukots
Report author(s) and date	Helen [REDACTED], Diana [REDACTED], Jakovos [REDACTED], Megan [REDACTED], Michael [REDACTED], Steph [REDACTED], David [REDACTED] and Kelly [REDACTED], April 2024

1. Project summary

There are major gaps in baseline knowledge on Invasive Non-Native Species (INNS) globally. INNS inventories will be derived for each participating UKOT through collation of information from existing sources alongside on-line recording. The information compiled will underpin conceptual 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. We are reaching out to partners across all UKOTs (The 14 territories are: Anguilla; Bermuda; British Antarctic Territory (BAT); British Indian Ocean Territory (BIOT); British Virgin Islands; Cayman Islands; Falkland Islands; Gibraltar; Montserrat; Pitcairn, Henderson, Ducie and Oeno Islands; Saint Helena, Ascension and Tristan da Cunha; South Georgia and the South Sandwich Islands; Turks and Caicos Islands; UK Sovereign Base Areas – Cyprus).

2. Project stakeholders/partners

The overarching aim of the project is to collate and information on invasive non-native species through an on-line database for all UKOTs. The outstanding support and engagement of partners and stakeholders in achieving this aim has been demonstrated through attendance at on-line meetings and in person workshops (workshop reports attached as separate files). Furthermore, the iterative process of co-developing the workshop agendas as well as the project outputs with project partners and stakeholders has led to the production of resources which are now available on-line including [identification guides](#).

As outlined in the [Annual Report](#) (2022-2023), the first stage of implementing the project involved meeting with partners on each of the UKOTs 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. The partners have played critical roles in delivery of the work plan including co-developing the programmes for the workshops, inviting key stakeholders an identifying and ranking the priority outputs during the workshops. This ensures that we have flexibility in the project so that the agenda and outputs are tailored to the specific needs of each UKOT. Workshops to date have been undertaken for Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat. Programmes are available on the [project website](#) and participant lists provided as a separate file.

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

Stakeholders, from government departments, customs and border control, farming communities, NGOs, universities and research centres, were identified by our partners on the UKOTs. Their engagement has mainly been through completion of a pre-workshop **questionnaire** (), attendance at **workshops** with some participating in on-line meetings and providing **feedback on resources** developed as outputs from the workshop (for example [identification guides](#)).

Over the last year we have produced three [newsletters](#) to circulate to all partners and stakeholders across all UKOTs with updates on the project and requests for information on non-native species to include with the on-line database. We have also written and posted four [blogs](#) following the workshops, which have been reviewed by partners on the relevant UKOTs. These resources are available on the project [website](#).

The engagement from partners and stakeholders has been outstanding and the evaluation, provided through feedback questionnaires, has been extremely encouraging (Annex 4 and workshop reports sent as separate files). Involvement of diverse stakeholders has provided unique opportunities to co-develop and pilot approaches to assess the impact of invasive non-native species and consider interactions with climate change. A [blog](#) summarising this activity has been published on the project website.

Ongoing co-development of the work plan has been a priority and particularly in relation to additional or amended functions of the on-line data system and production of resources and outputs. As an example, the partners and stakeholders recognised the need to include local common names within the on-line system. In response to the needs of each UKOT, we have included workshop sessions on St Helena, Montserrat and Anguilla to review the species lists and a session on species information sharing, especially for the customs officers, on Anguilla. Additionally, we have been considering approaches to capture spatial information particularly for UKOTs that comprise multiple islands. The partners also requested to include invasive non-native species from the [horizon scanning lists](#) within the on-line system and this has been completed.

We have had on-line meetings with many of the UKOTs and minutes are provided as a separate file. Stakeholders on Ascension Island and South Georgia and the South Sandwich Islands 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 these UKOTs and continue to ensure they are updated with progress across the project in case their situation changes.

The main strength of the project comes from the co-development of the workplan, achieved through on-line and in person meetings, with partners and stakeholders across the UKOTs. The contributions of the partners and stakeholders have been inspiring, insightful and informative. Working together it has been possible to achieve even more than was envisioned for the project particularly in relation to the co-development of methods for assessing impact.

3. Project progress

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

1.1 Baseline information available openly for at least 100 NNS for each UKOT (collated by Y3Q2)

Collation of information is ongoing but to date the following information has been collated (Table 1).

Table 1. Number of non-native species included within the on-line data system for each UKOT and number of resources, including variable numbers of non-native species, to compile (Access date: 30 April 2024)

UKOT	Number of non-native species	Number of resources including non-native species to process and compile
Anguilla	255	3
Ascension Island		4
Bermuda		1
British Antarctic Territory		23
British Indian Ocean Territory		38
British Virgin Islands		4
Cayman Islands		4
Falkland Islands	373	8
Gibraltar	250	2
Montserrat	561	2
Pitcairn	138	4
South Georgia and the South Sandwich Islands		13
St Helena	1836	1
Tristan da Cunha	325	1
Turks and Caicos		10

Data can be accessed on the development website: [Home | UK Overseas Territories database of Alien Species \(dev-ceh-ukotas-d10.pantheonsite.io\)](https://home.ukoverseas.gov.uk/uk-overseas-territories-database-of-alien-species-dev-ceh-ukotas-d10.pantheonsite.io)

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)

The development of indicators has been discussed at the workshops (so far Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat). Presentations are available on the project [website](#). In all cases, other outputs have been prioritised including species [identification guides/factsheets](#). However, simple summaries from

the information within the on-line data system will be displayed for each UKOT including number of non-native species within different taxonomic groups. Furthermore, the data system will be updated with information on new non-native species which will be useful for biosecurity staff (and others) and further training will be given to the UKOTs during the next year to enable them to oversee this process. During the workshops we have been discussing who will take the lead on maintaining the data system after the project ends. For Cyprus, we have co-developed a R Markdown script to process their local INNS database and produce a set of standard summary statistics, including assessment of change over time, or change in number of species in different habitats, which can be repeated as the new species are added to the database. We are currently writing up this work for a data paper.

1.3 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 (developed by Y3Q1)

Impact assessment has been included within the workshops (so far Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat). Presentations are available on the project [website](#). Furthermore, interactive sessions on St Helena, Anguilla and Montserrat have allowed the testing of approaches using the IUCN [Environmental Impact Classification for Alien Taxa](#). Links to relevant resources have been added to the project [website](#). A summary of the co-development of the approach has also been included as a [blog](#) on the project [website](#). Further work is required to assess all the non-native species within the lists for each UKOT and assign a category of impact that disentangles environmental, social and economic impacts. This is beyond the scope of this project but will be explored for collaborative future funding applications.

1.4 One workshop with each of the UKOTs, including in some cases clusters of UKOTs, to consider options for updating and maintaining the NNS database (collaborative organisation, scheduling and delivery by Y3Q1)

Workshops have been held with Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat. The data system has been discussed in detail during dedicated sessions as outlined in the workshop programmes available on project [website](#). Presentations on the data system (available on project [website](#)) have led to informative discussions on additional fields to include in the database and also consideration of terminology (e.g. habitat classification and establishment status) to meet the needs of the UKOTs. It has been agreed that data standards used within global databases on invasive non-native species (for example [GRIIS](#)) will be applied where possible. We have been collaborating with Shyama Pagad who leads the development of [GRIIS](#), recognising on-going work on compilation of species lists for islands globally.

Workshop reports have been provided as separate attachments.

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

2.1 One workshop with each of the clusters of UKOTs¹ using consensus methods to prioritise approaches including citizen science opportunities where relevant (collaborative organisation, scheduling and delivery by Y2Q4)

Workshops have been held with Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat. Plans are underway for the final year of the project to hold an on-line workshop with partners on Pitcairn and in person workshops with partners and stakeholders on the Falkland Islands and jointly with all six Caribbean UKOTs. We will also share the on-line questionnaire with partners on Tristan da Cunha and arrange an on-line meeting.

Workshop reports have been provided as separate attachments and these outline the outcomes of the consensus approach to considering citizen science opportunities.

2.2 Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop (developed by Y3Q3)

For all UKOTs that we have met with so far, [iNaturalist](#) is seen as an excellent and accessible method for capturing biological records. Other Darwin Plus projects that have been running

concurrently and including members of the UK Centre for Ecology & Hydrology project team have led to the launch of [iRecord St Helena](#) and development of the [Anguilla Wildlife Recording Portal](#). On Cyprus citizen science activity has been increasing in recent years following on from Darwin Plus projects (specifically DPLUS56 and DPLUS88) and more recently with Darwin Fellows and Darwin Local Funding. As an example, pollinator monitoring has been a focus of activity on Cyprus and the citizen science initiative [POMS-Ky](#) has both increased public awareness and data available on pollinating insects including through studies on non-native plants. It has been rewarding to recognise the synergies amongst these Darwin Plus funded projects. We have also scoped ways in which new monitoring technologies (e.g., acoustics) could be employed for specific INNS, with some territories sharing their existing experiences with these emerging approaches.

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)

For most UKOTs [iNaturalist](#) will be the main application for recording non-native species. Projects can be created within iNaturalist and through [Darwin Plus 151](#) an iNaturalist Project has been created for the [British Indian Ocean Territory](#). We will work with the other UKOTs over the next year to develop similar projects for them if considered useful by the partners.

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

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)

During the workshops on St Helena, Anguilla and Montserrat, we have trailed a semi-structured approach to develop climate change scenarios relevant for INNS. This has included documentation of the current climate change risks for each UKOT, based on our partners expertise, and mapping the direct and indirect pathways through which these risks might affect the establishment, spread or impact of INNS. We used this process to scope with the workshop participants on how climate change-mediated invasions might be included within current conservation and environmental management decision-making. Further information is provided through the [blog](#) and workshop reports (attached as separate files).

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)

During our climate change session with local partners and stakeholders, we have mapped both existing data and knowledge of the partners that can inform making prediction of climate change impacts, as well as the key knowledge gaps and uncertainties. We have focused these sessions on case study species, which were selected independently by the partners of each UKOT to ensure immediate relevance of the process. At this stage, the UKOTs lack the high-resolution environmental data needed to make predictions from a statistical model but our conceptual framework has highlighted the specific sorts of knowledge that would be needed for a statistical model to be developed in the future.

3.3 One conceptual 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)

Our conceptual model aims to represent the different causal pathways through which climate change might affect invasive non-native species. We have used simple flow diagrams that were co-developed through interactive session using whiteboards/paper at the workshops, as discussed above. The workshop reports show some of the outputs after applying this conceptual model to exemplar species.

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)

The last part of our climate change session including brainstorming with partners how climate change risk assessments or concerns could be useful incorporated or reported within existing systems. The preferred options varied across the UKOTS but included developing a policy brief for government officials or inclusion in existing risk assessment templates.

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

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)

The journal article will be developed through year 3, meanwhile the activities and discussions in relation to citizen science have informed a One Earth Primer – [The Global Reach of Citizen Science for Monitoring Insects](#).

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)

Workshops have been held with Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat. During these workshops dedicated sessions have provided an overview of the on-line data system and data flow (Presentations are available on the [project website](#)). Participants have provided feedback and recommendations to ensure the usefulness of the data system to meet their needs. Details are provided in the workshop reports (separate attachments). During the final year we will organise a webinar to ensure that at least one partner per UKOT has been trained in updating the data system with information.

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)

During the final year we will organise a webinar to summarise the project outputs and discuss ways to maximise the outcomes.

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)

Over the past year the project team have worked with partners on Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla and Montserrat to co-develop information sheets and identification guides. Some of these are now available [on-line](#) but others are still in development. Furthermore, we have written four [blogs](#) (popular articles) and disseminated three project [newsletters](#).

Over the last year the project has been included in conference presentations, webinars and talks on the project:

- Documenting and predicting biological invasions globally – Blodwen Lloyd Binns lecture - Invited speaker - Glasgow University and Glasgow Natural History Society – 1st November 2023
- G7 International webinar on Invasive Alien Species – 5th October 2023 (on-line)
- Horizon scanning to predict future threats from biological invasions – EASTBIO (BBSRC DTP) thematic meeting: Horizon Scanning – 14th June 2023
- OECD Forum Post (invited) Citizen science is key in helping to tackle the threat of invasive alien species <https://www.oecd-forum.org/posts/citizen-science-is-key-in-helping-to-tackle-the-threat-of-invasive-alien-species> - 19 May 2023

During our visit to Anguilla the Anguilla National Trust organised a public lecture and invited us to give presentations: [Using data to support biodiversity conservation](#)

Additionally Helen Roy, using insights from the project, is contributing to the development of a toolkit on invasive non-native species led by the IUCN for the CBD.

3.1 Progress in carrying out project Activities

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

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 – over the last year many non-native species have been added to the online data system (Table 1) and the associated fields (Global Biodiversity Information Facility Taxon Key (~90%), Catalogue of Life ID (~70%), Scientific name (100%), authorship (~95%), Common name (~40%), Establishment status (~5%), Establishment status detail (~5%), First record (~15%), First record (range end date) (~15%), Habitat (10%), Impacts (~10%), Impact detail (50%), Pathway (10%), Pathway detail (10%), Other notes (~40%), Territories (100%), References (100%), Rank (~90%), Kingdom (~90%), Phylum (~90%), Order (~90%), Family (~90%), Genus (~90%)) have been updated for some of the species depending on availability of information.

Data can be accessed on the development website: [Home | UK Overseas Territories database of Alien Species \(dev-ceh-ukotas-d10.pantheonsite.io\)](https://home.ukoverseas.gov.uk/uk-overseas-territories-database-of-alien-species/dev-ceh-ukotas-d10.pantheonsite.io)

During the workshops we have worked with partners and stakeholders to capture local knowledge particularly for local common names in Montserrat, Anguilla and St Helena.

Over the next year we will be compiling detailed metadata to accompany this information.

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

Real-time reporting of simple summary information (e.g. number of non-native species per taxonomic group) will be included in the data system.

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)

Approaches have been co-developed with partners and stakeholders in Montserrat, Anguilla and St Helena. These approaches will be shared with the other UKOTs through the forthcoming workshops and on-line meetings. Resources are available on the [project website](#) and a summary is provided as a [blog](#).

1.4 Workshops with clusters of UKOTs to collaboratively develop processes for updating and maintaining the NNS databases

During the workshops we have worked with partners and stakeholders to discuss updating and maintaining the on-line systems. During the next year further support will be provided through in person workshops and on-line meetings. Presentations outlining the data system are available on the [project website](#).

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

2.1 Workshops with clusters of UKOTs to consider opportunities and challenges for approaches to INNS surveys including citizen science

The on-line questionnaire completed in advance of the workshops and the dedicated consensus sessions ([Workshop programmes](#) and workshop reports which have been sent as attachments) within the workshops have outlined opportunities and challenges for citizen science. Additionally, the partners and stakeholders have identified needs for raising awareness including through, as an example, a policy brief St Helena which is currently in review.

2.2 Collaborative development of relevant surveys informed through the workshop (informed through 2.1)

2.3 Implement on-line recording (e.g. using iNaturalist or indicia) for general INNS surveillance

For most UKOTs [iNaturalist](#) will be the main application for recording non-native species. Projects can be created within iNaturalist and through [Darwin Plus 151](#) an iNaturalist Project has been created for the [British Indian Ocean Territory](#). We will work with the other UKOTs over the next year to develop similar projects for them if considered useful by the partners.

On Anguilla the following apps have been adapted to support monitoring projects following discussions on opportunities through the workshop:

butterflies.app.flumens.io/demo.html (Butterfly Monitoring)

fit.app.flumens.io/demo.html (Flower-Insect Timed Counts)

The butterfly app has been adapted for Montserrat and both have the potential for use by other UKOTs.

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

3.1 Expert-elicitation workshop with clusters 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)

We collected INNS monitoring priorities and key pathways of spread through the on-line questionnaires. We then ranked the collective list, based on expertise of the participants, to reach a consensus on the priorities for each UKOT. The results of this ranking exercises is shown in the figures within the workshop reports (sent as separate files).

3.2 Consult with the stakeholders and modelling experts to identify data needs to inform climate conceptual models

The climate change session during the workshops began with identifying the key climatic components that are of most concern to each UKOT. The importance of these climatic components for the direct and indirect pathways affecting invasive species were then mapped. These climate components represent the data needs to improve any future statistical models, beyond the scope of our project. These components are discussed in the workshop reports for each UKOT sent as separate files.

3.3 Develop, synthesise and interpret outcomes from conceptual models to inform predictions and mitigation of the risk from biological invasions following extreme weather events

Based on our conceptual model, and the expertise of the workshop participants, predictions for climate change impacts were made for four case study species for St Helena, Anguilla and Montserrat. These predictions are found in the tables within the climate change section of each workshop report sent as separate files.

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

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

As stated above, the journal article will be developed through year 3, meanwhile the activities and discussions in relation to citizen science have informed a One Earth Primer – [The Global Reach of Citizen Science for Monitoring Insects](#).

Over the last year the project has been included in conference presentations, webinars and talks on the project:

- Documenting and predicting biological invasions globally – Blodwen Lloyd Binns lecture - Invited speaker - Glasgow University and Glasgow Natural History Society – 1st November 2023

- G7 International webinar on Invasive Alien Species – 5th October 2023 (on-line)
- Horizon scanning to predict future threats from biological invasions – EASTBIO (BBSRC DTP) thematic meeting: Horizon Scanning – 14th June 2023
- OECD Forum Post (invited) Citizen science is key in helping to tackle the threat of invasive alien species <https://www.oecd-forum.org/posts/citizen-science-is-key-in-helping-to-tackle-the-threat-of-invasive-alien-species> - 19 May 2023

4.2 *Demonstration and training workshops on maintaining on-line databases and data flow with clusters1 of UKOTs*

As stated above, during the workshops we have worked with partners and stakeholders to discuss updating and maintaining the on-line systems. During the next year further support will be provided through in person workshops and on-line meetings. Presentations outlining the data system are available on the [project website](#).

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*

To be organised in the final year.

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.*

We have written four [blogs](#) (popular articles) and disseminated three project [newsletters](#).

During our visit to Anguilla the Anguilla National Trust organised a public lecture and invited us to give presentations: [Using data to support biodiversity conservation](#)

Participants HM Government of Gibraltar issued a [Press Release](#) (No: 470/2023) following the workshop on Enhancing monitoring and prevention of invasive non-native species held in Gibraltar.

The St Helena Independent highlighted the project in the Autumn 2023 edition.

Activities through the project have been promoted through Twitter and LinkedIn using UK Centre for Ecology & Hydrology accounts and amplified through the project team, partners and stakeholder accounts.

There was considerable media activity following the publication of the [IPBES assessment report on invasive alien species and their control](#). Some of the articles included examples from the UKOTs including an article in the [New York Times](#).

3.2 **Progress towards project Outputs**

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

Ongoing – over the last year many non-native species have been added to the online data system (Table 1) and the associated fields have been updated for some of the species depending on availability of information.

Indicators:

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.*

Content is available online including information on many non-native species for the UKOTs and links to the [Global Biodiversity Information Facility](#) maps.

1.2 *Outline approach to deriving a biodiversity indicator for INNS*

Presentations are available on the project website outlining different approaches. Through the workshops we have prioritised outputs using expert-elicitation and consensus approaches and

this information is summarised in the workshop reports (attached separately). For most of the UKOTs that we have worked with on this so far, the priority is to raise awareness and use simple summary statistics including number of non-native species within different taxonomic groups.

1.3 Training and documentation on impact classification available on-line

[Presentations](#) and [resources](#) are available on the project website. Additionally, a [blog](#) summarises the co-development of the approach. We will continue to add to these resources over the next year.

1.4 Training and on-line resources available on maintaining the database

[Presentations](#) are available on the project website and we will continue to add to these resources over the next year including recording the training webinar.

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

Ongoing – during the final year we will summarise the outcomes of the workshops, including information within the questionnaire (see [REDACTED]) as a scoping report. Meanwhile, as stated [iNaturalist](#) is seen as an excellent and accessible method for capturing biological records and will be the relevant initiative for most of the UKOTs.

Indicators:

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

Workshop reports have been sent as attachments for Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat noting that the reports for some of the more recent workshops are still in draft.

Participants were invited to provide formal feedback after each workshop and examples are provided in Annex 4 and the workshop reports. The feedback was incredibly positive and highlighted the effectiveness of co-developing the workshop programmes to ensure that they were tailored to the needs of the partners and stakeholders on each UKOT.

2.2 Monitoring, including citizen science initiatives where appropriate, developed alongside accompanying dissemination materials and guidance documents. Monitoring and evaluation through on-line feedback form and also an invitation to contact the project leader with suggestions

As stated above, for most UKOTs [iNaturalist](#) will be the main application for recording non-native species. Projects can be created within iNaturalist and through [Darwin Plus 151](#) an iNaturalist Project has been created for the [British Indian Ocean Territory](#). We will work with the other UKOTs over the next year to develop similar projects for them if considered useful by the partners.

[Resources](#) for raising awareness have been developed or underway including ID guides, fact sheets and a policy brief.

As above, participants were invited to provide formal feedback after each workshop and examples are provided in Annex 4 and the workshop reports.

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

See 2.2 above stating that for most UKOTs [iNaturalist](#) will be the main application for recording non-native species.

All UKOTs have been invited to contact the UK Centre for Ecology & Hydrology project team at any time to exchange knowledge and comments. The on-line webinar with all UKOTs planned for the final year will be recorded and formal feedback will be gathered.

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

Indicators:

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)

See 2.1 above stating that workshop reports have been sent as attachments for Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat.

As above (see 2.2), participants were invited to provide formal feedback after each workshop and examples are provided in Annex 4 and the workshop reports.

3.2 Conceptual framework developed to inform predictive spread modelling and documented within a short report for each UKOT

The conceptual framework was developed during the [workshops on St Helena, Anguilla and Montserrat](#). The framework aims to map the possible causal pathways through which climate change might affect the establishment, spread, impact and success of management of invasive species.

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

The above-mentioned framework was tested for at least four case study species on St Helena, Anguilla and Montserrat. The case study species were jointly decided by the workshop participants.

3.4 Mitigation approaches based on predictive modelling documented with action plans

During the workshops, we scoped with participants different options for assessing and communicating climate change risks to possible target audiences including government officials (policy briefs), internal management (climate change risk assessments including invasive non-native species) and the public (infographics). The workshop reports provide the details of priority outputs. These will be developed during the final year.

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

As stated above, the journal article will be developed through year 3, meanwhile the activities and discussions in relation to citizen science have informed a One Earth Primer – [The Global Reach of Citizen Science for Monitoring Insects](#).

There have been many outputs co-produced over the last year and these are available on the [project website](#).

Indicators:

4.1 Draft article accompanied by blog and downloadable poster for dissemination to diverse groups of stakeholders and beneficiaries

There have been many outputs co-produced over the last year, including postcards, posters, factsheets and blogs, and these are available on the [project website](#).

In the final year the project team will work collaboratively with partners and stakeholders to develop additional materials.

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.

See 2.1 above stating that workshop reports have been sent as attachments for Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla, British Indian Ocean Territory and Montserrat.

Presentations are available on the [project website](#).

4.3 Download statistics available in Y1, 2 and 3

There have been 235 views to the project website to date.

3.3 Progress towards the project Outcome

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

0.1 Conceptual models presented in an accessible format to inform evidence-based biosecurity for at least one INNS per UKOT

Baseline condition: There is considerable local knowledge and information available for the UKOTs in many different formats and stored in different ways but there is a lack of a central repository.

Progress to date: The project brings together information and local knowledge on non-native species within an accessible on-line data system. Resources to raise awareness and increase public engagement have been co-developed. [iNaturalist](#) is seen as a useful approach for surveillance and monitoring. Conceptual models of the interactions between invasive non-native species and climate change are also being co-developed. Evidence is available within the workshop reports (included as attachments) and through the [project website](#). Impact and outcomes have already been reported through the formal feedback but enhancing biosecurity, for example through changes in behaviour as a consequence of increased awareness of the threat of invasive non-native species, is likely to be realised over longer timescales than the project duration.

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

Baseline condition: The UKOTs implement a range of approaches to biosecurity and the capacity to enhance border biosecurity varies from one UKOT to another. Expertise and knowledge is shared across UKOTs but there are opportunities to enhance this recognising the diversity of stakeholders and organisations involved in biosecurity.

Progress to date: Baseline information consolidated through the on-line data system will allow for reporting of new incursions and ultimately trends over time in arrival and spread. Sharing of information through identification guides, factsheets, webinars and workshops will increase awareness and networking amongst stakeholders. Stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops. There have been opportunities for knowledge exchange including, as an example, in Anguilla an information session was held as part of the workshop recognising the needs outlined by customs officials for information on species identification. Networking opportunities through the workshop have been highlighted through the formal feedback as informative and going forward the partners and stakeholders have recognised the need to extend the reach of engagement to raise awareness of the threats of invasive non-native species with additional stakeholder. As an example, the participants on St Helena recognised the need for a policy brief which is currently being drafted (draft included as a separate attachment).

0.3 Provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns leading to increased capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity

Baseline condition: Resources about some invasive non-native species are available on the UKOTs but there are opportunities to tailor materials for specific audiences.

Progress to date: As stated above, stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops. There have been opportunities for knowledge exchange including, as an example, in Anguilla an information session was held as part of the

workshop recognising the needs outlined by customs officials for information on species identification.

The co-development of resources, including postcards and identification guides, is providing additional information on invasive non-native species. Prioritisation of the type of resource, information to include and the target audiences has been achieved through the questionnaires and within the workshops (see workshop reports sent as attachments).

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

Baseline condition: The data systems were not available at the start of the project and partners had varying levels of expertise in managing databases.

Progress to date: The on-line data system has been introduced to all UKOTs through initial meetings. The workshops held to date have enabled further refinement of the data systems including the data standards adopted. During the final year of the project we will work with partners to agree an approach going forward to ensure capacity for maintaining the data systems including supporting surveys, primarily through iNaturalist, and summary information.

3.4 Monitoring of assumptions

Assumption 0.1. 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 conceptual models

There is considerable evidence that this assumption holds true including the recent IPBES report on invasive alien species and their control which recognises the evidence of the importance of stakeholder engagement in achieving successful management ([see Stakeholder Engagement Factsheet](#)).

Assumption 0.2. Biosecurity measures will reduce the arrival and spread of priority INNS

Again there is considerable evidence that this assumption holds true including the recent IPBES report on invasive alien species and their control which recognises the evidence of the importance of biosecurity measures in achieving successful management (see [Biological Invasions on Islands Factsheet](#)).

Assumption 0.3. Information on environmental impacts including effects of INNS on delivery of ecosystem services will increase understanding of ecosystem function and resilience

There is a need for further evidence of environmental impacts particularly in the context of islands to support understanding of ecosystem function. Again there is considerable evidence that this assumption holds true including the recent IPBES report on invasive alien species and their control which recognises the evidence of the importance of biosecurity measures in achieving successful management.

Assumption 0.4 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

The project team working collaboratively with partners and stakeholders have demonstrated the necessary skills including the breadth of co-developed resources (available on the [project website](#)) and positive formal feedback from the workshops.

Assumption 1.1: Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted.

Virtual approaches are available and have been used to enable participants that could not meet in person to engage with the project. However, to date workshops have not had to be cancelled.

Assumption 1.2: Wide range of project stakeholders will ensure sufficient information is available and open access

Stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops and contributed to the co-development of the workshop programmes and outputs.

Assumption 1.3: 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

As stated, stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops and contributed to the co-development of the workshop programmes and outputs. During year 3 we will invite formal feedback on the communication approaches.

Assumption 1.4: Training accessible by a range of stakeholders ensuring consideration of diversity to maximise inclusion

The workshop programmes have been co-developed including the timing and type of sessions to maximise participation.

Assumption 1.5: Information on NNS will be available to quantify impacts of INNS on natural capital and ecosystem services.

Although there is a lack of published information, working with the partners and stakeholders to include local knowledge has been useful and led to the categorisation of the magnitude and mechanism of impact for some invasive non-native species.

Assumption 2.1: Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted

See Assumption 1.1

Assumption 2.2: 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

Co-development and co-design has been critical to the project. During year 3 the project team will use formal feedback to evaluate the uptake of surveys.

Assumption 2.3: Ensure engagement and relevance to all stakeholders recognising diversity

The workshop programmes have been co-developed including the timing and type of sessions to maximise participation. There has been excellent participation at all the workshops (list of participants included as a separate file) and positive formal feedback.

Assumption 3.1: Workshops are not cancelled due to COVID-19 restrictions and virtual approaches are available if in-person meetings are restricted

See Assumption 1.1

Assumption 4.1: Workshops are not cancelled due to COVID-19 restrictions but virtual approaches are available if in-person meetings are restricted

See Assumption 1.1

Assumption 4.2: Co-development of workshops with project team and stakeholders will ensure relevance and maximise attendance and engagement

Co-development of workshops with project team and UKOT stakeholders has ensured appropriate timing and location to maximise diversity and inclusion by ensuring availability of experts to participate in the workshop and has led to new partnerships and networks for both the project team and participants.

Assumption 4.3: 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

As stated above, stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops and contributed to the co-development of the workshop programmes and outputs.

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

Invasive non-native species are one of the five main causes of biodiversity loss globally (IPBES, 2023). DPLUS175 is committed to raising awareness of the threat of invasive non-native species and providing evidence to support action including reporting on progress towards global, regional and local targets and goals.

The project contributes to monitoring progress towards Target 6 of the Global Biodiversity Framework (*Manage pathways for the introduction of invasive alien species, preventing, or reducing their rate of introduction and establishment by at least 50 per cent, and control or eradicate invasive alien species to eliminate or reduce their impacts, focusing on priority species and priority sites*). Additionally, the project supports UN2030 Sustainable Development Goal Target 15.8 (*by 2020 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and control or eradicate the priority species*) and a number of other Sustainable Development Goals especially those addressing the conservation of marine biodiversity (Goal 14) and terrestrial biodiversity (Goal 15, including but not restricted to Target 15.8), food security (Goal 2), sustainable economic growth (Goal 8) and sustainable cities (Goal 11), as well as climate change (Goal 13) and health and wellbeing (Goal 3). Indeed there are many relevant actions and agreements that will benefit from both the information collated through DPLUS175 and the development of tools and capacity including within the [GB Invasive Non-native Species Strategy](#) and response to the [IUCN Honolulu Challenge](#) (global initiative to reduce the impacts of invasive alien species) by the UK Government. Furthermore, DPLUS175 will provide information and training that supports the UKOTs in meeting obligations under the Convention on Biological Diversity. Co-development of the work programme and outputs of DPLUS175 supports delivery of the UKOTs dedicated policies and associated actions. As examples, in Anguilla, Biodiversity and Heritage Conservation Act (provide for the recovery of wildlife species that are extirpated, endangered or threatened as a results of human activity), Native Plant and Animal Habitat Conservation (Biodiversity) Policy (take the necessary measures to control intentional or accidental introduction or escape into or from the environment of alien or modified organisms that are likely to impact adversely on other organisms or on the environment). The Sovereign Base Areas in Cyprus are obliged to develop their own strategy regarding invasive alien species following the European regulation that applies to the Republic of Cyprus. DPLUS175 has increased capacity to further enhance and update the Cyprus Database of Alien Species to underpin this obligation. The Climate Change Response Work Programme (CCRWP) of the Antarctic Treaty Consultative Meeting's (ATCM's) Committee for Environmental Protection (CEP) has identified the need for ongoing surveillance programmes to identify the status of non-native species in light of climate change. BAT has highlighted that the 'Mini guide to Antarctica invasive species' co-developed by DPLUS175 will raise awareness of the risk that marine and terrestrial non-native species present to Antarctica and encourage/enable basic surveillance by tourism operators and national Antarctic programme personnel. Furthermore, the dramatic increase in visitors to the British Antarctic Territory increases the risk of non-native species introductions, but at the same time provides an opportunity for increased surveillance at popular visitors sites. The 'Mini guide to Antarctica invasive species' will be given to British Antarctic Survey personnel travelling to BAT to increase their awareness of the issue. It will also be distributed to other Antarctic Treaty Parties at the Antarctic Treaty Consultative Meeting in Kochi, India, in May 2024. Discussions with the International Association of Antarctica Tour Operators (IAATO) are underway to identify opportunities to distribute the mini guide to the >100,000 tourist that visit BAT each year. There are further UKOT specific examples to achieve strategic long-term outcomes for the natural environment, some of these are outlined in the blogs. The focus on invasive non-native species and climate change within this project is highly relevant to the overarching objective of Darwin Plus.

5. Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board ¹ .	The project leader is a woman and two of the UKCEH project team members are women and two are men.
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	Project partner at the JSHU (Cyprus) is a woman. Gender balance at workshops has been balanced.

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

Equality, Diversity and Inclusion has been embedded from the project inception and through delivery. The project team recognise the importance of engaging with a diversity of experts with respect to age, gender, cultural background, education and specialism to ensure a range of perspectives, including incorporation of local knowledge, are included within the process of expert-elicitation which is used extensively in this project. Helen Roy published a paper ["Guiding principles for utilizing social influence within expert-elicitation to inform conservation decision-making"](#) inspired by working with communities on the UK Overseas Territories and recognising the importance of participants interacting with an informed understanding of the others in the group.

There has been gender balance amongst the participants of the workshop and many of the speakers have been women. Furthermore, the blogs and news items have been led by women or early-career researchers (in some cases both). In all cases experts on the UK Overseas Territories have been invited to contribute and co-author.

The timing of the workshops was agreed with the experts on the UK Overseas Territories to ensure that the scheduled hours maximised the potential for all to participate. Participants that were unable to attend some sessions were briefed on any content to ensure that they could participate fully in ongoing sessions.

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

The online questionnaire circulated in advance of the workshops was difficult to complete for some participants because of, as an example, poor internet access. Therefore, the project team allowed time for participants to complete the questionnaires and add their perspectives during the start of the workshop.

A variety of approaches was used through the workshops including short talks, breakout groups and plenary discussion sessions (available on the [project website](#)). Sufficient time was given for discussions to allow everyone to share ideas but additionally participants were invited to use “post-it” notes to communicate anonymously.

There was flexibility in the workshop timetable to allow additional sessions to be included for building capacity in information needs identified by the participants. As an example, in Anguilla a two-hour session was organised for peer-to-peer knowledge exchange on invasive non-native species with participants presenting information on species for which they were experts to others in the group. This was requested by participants attending from customs. It was an engaging and inspiring session that received excellent feedback from all. Indeed, we then invited participants at other workshops to do the same.

The feedback (evaluation questionnaires) received from the participants at the workshops was excellent with many encouraging comments provided (Annex 4 and within the workshop reports attached as separate files).

6. Monitoring and evaluation

The project leader, Helen Roy, is overseeing the monitoring and evaluation, in collaboration with the project team and partners. The monitoring and evaluation plan has not changed.

The project team is monitoring project progress at the formal project meetings (every two to three months and documents the main discussion points and actions within minutes (sent as a separate file).

Participants have been invited to provide formal feedback after each workshop (Annex 4 provides selections which relate to suggested actions and the feedback is sent as separate files).

Further feedback has been received from the British Antarctic Territory and Cyprus SBA:

- *Discussions with the International Association of **Antarctica** Tour Operators (IAATO) are underway to identify opportunities to distribute the mini guide to the >100,000 tourist that visit **BAT** each year.*
- *The mini-guide will raise awareness of the risk that marine and terrestrial non-native species present to **Antarctica** and encourage/enable basic surveillance by tourism operators and national **Antarctic** programme personnel.*
- *Working together with scientists from UKCEH and at the same time having the opportunity to interact with stakeholders and colleagues who run conservation, public health and invasive alien species initiatives at the UKOTs has been an amazing learning experience. So far, the project has helped us further enhance our (**[Sovereign Base Areas in Cyprus]**) capacity and understanding regarding invasive alien species and at the same time learn from the experience in managing invasive alien species at other UKOTs (an example the successful rat eradication programme running at the Prickly pear Anguilla).*
- *The **Sovereign Base Areas in Cyprus** are obliged to develop their own strategy regarding invasive alien species following the European regulation that applies to the Republic of Cyprus. DPLUS175 has increased our capacity to further enhance and update our Cyprus Database of Alien Species but also become involved in the creation of databases in other UK overseas territories and evolve as professionals.*

The indicators are the main way of demonstrating the contributions of the Outputs and Activities of the project to the Outcome. These indicators are documented throughout the report.

Risk register has been reviewed but there have been no changes (Annex 5).

7. Lessons learnt

The second year of the project has been exceptionally productive. The engagement of partners and stakeholders, particularly through the workshops but also through on-line discussions and e-mail exchanges, has ensured the success of the year. The excellent engagement and participation from all collaborating partners and stakeholders have inspired and enabled the effective delivery of the workplan.

Organising workshops on the UKOTs is logistically challenging but support from partners has been critical to ensuring the efficient and effective delivery.

Collaborating with partners and project leaders on other relevant Darwin Plus projects has been extremely fruitful and in the final year we will hold a joint workshop for all Caribbean UKOTS in collaboration with project [Darwin Plus 125](#).

Reconciling the budgets rapidly following each workshop and then revising the subsequent plans to maximise the opportunities, including those suggested through the formal feedback, has been critical to the co-development of the project workplans. As example, inclusion of approaches to assess socio-economic impacts.

Change Requests are likely to be submitted following each workshop to enable us to maximise the opportunities to deliver the co-developed workplan, for example where the workshop budget is underspent we will endeavour to organise an additional workshop or activities in support of the project (pending approval of change requests).

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

There were 13 comments to consider and 11 to address:

1. Please provide a wider range of evidence. It would be easier if significant documents were supplied separately, rather than pasting into the AR. Some examples: agendas; presentations; screenshots of database contents; link to or screenshot of the website being developed for the database; intermediate work outputs as available (frameworks, models, action plans, data summaries). Do **not** put additional effort into generating evidence but be imaginative in the range of materials already available. (Next Annual Report)

Evidence has been provided throughout this annual report and as much as possible has been made available through the project website.

2. Section 3.1 (Activities) reports against Output indicators instead of activities. Section 3.2 (Outputs) then covered the same ground. Please use the Activity index numbers to report progress in section 3.1. For section 3.2, please report against Output indicators and also use their index numbers. (Next Annual Report)

We have endeavoured to report succinctly against the elements of the logframe.

3. Please include agendas / minutes from quarterly project meetings. (Next Annual Report)

Agendas and minutes have been included as a separate file (noting the internal project meetings are mainly lists of agreed actions which has been useful for the project team) and workshop programmes are available on the project website.

4. If the models planned under Output 3 will not be delivered, consider a CR. (Discuss with BCF)

CR submitted and revised logframe outlining conceptual framework for models.

5. The AR states that the risk register has been updated, but does not describe what was changed. In future please indicate any changes. (Next Annual Report)

Risk register has been reviewed and there have been no updates.

6. The list of meetings include the names of attendees, but it would have been useful to include their job title/position/role. Are there minutes available from these meetings? It would be useful to see what actions were agreed or conclusions drawn. (Next Annual Report)

Minutes and lists of participants shared as separate files.

7. It might be useful to develop a routine of adding notes about progress to the logframe during quarterly progress review meetings. When it comes time to produce the AR, the report can then simply summarise the detail already in the logframe. (Next Annual Report)

Thank you for this a useful suggestion.

8. Most of the SMART indicators are almost identical to the activities, which indicates confusion between the two. It might be worth breaking down many of the activities into multiple items. Typically, projects will have considerably more activities than indicators, which also facilitates monitoring and reporting. (Next Annual Report)

The project leader, Helen Roy, met with an expert on indicators from the Darwin team and has revised the logframe accordingly (change request submitted and awaiting outcome). However, the activity list has not been altered but all elements of the activities have been included. The workplan is on schedule meeting the indicators and delivering the activities.

9. The Outcome indicators include measurable reductions in the spread of INNS. This relies on partners implementing action plans for intervention programmes. That is not part of the project plan, therefore it should be included as an assumption. (Next Annual Report)

The logframe still refers to activities that the outputs from the project plan will underpin including supporting effective biosecurity. This was discussed with the Darwin team expert during our meeting on the indicators. The impact statement and the outcome statement were swapped. The outcome is now: 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.

10. Indicator 0.3 is too complex, multi-faceted and includes implementation methods and MoV. It is confusing and hard to interpret. Consider simplifying it to something like: Capacity to implement biosecurity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) enhanced by Y3Q1. (Next Annual Report)

The indicator has been split into components and simplified as suggested:

0.3 Provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns leading to increased capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity

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

11. The Outcome statement is in fact an Impact statement and should be re-written to avoid failing to meet planned Outcomes. See section 4.3 for more discussion.

The impact statement and outcome statements have been swapped following discussions with the Darwin team expert who I met.

9. Risk Management

- Have any new risks arisen in the last 12 months that were not previously accounted for?
All risks have been regularly reviewed and no new risks have emerged in the last 12 months that were not on the current register.
- Has the project made any significant adaptations to the project design this year to address risk?

The project has not made any significant adaptations to the project design this year to address risk. The initial lesson' learned from the early part of the project has enabled the register to remain unchanged.

The Risk Register is available in Annex 5.

10. Sustainability and legacy

Engagement by project partners and stakeholders on the UKOTs is evidence of the increasing interest and capacity resulting from the project. The feedback (see workshop reports sent as separate files) provided by the participants at the workshops held so far highlights the perceived increase in capacity as a consequence of the project.

The project has generated considerable interest from other organisations and institutions. As examples, synergies with other Darwin Plus projects (e.g. DPLUS125, DPLUS151) have been recognised and joint activities planned (e.g. joint workshop with partners and stakeholders in BIOT – see workshop report sent as separate file).

As outlined in Section 4, the distribution of the miniguide to other Antarctic Treaty Parties at the Antarctic Treaty Consultative Meeting in Kochi, India, in May 2024 and potentially through the International Association of Antarctica Tour Operators (IAATO) will enhance the legacy of the project.

The resources developed through the project will be available through the GB Non-Native Species Secretariat website post project.

During the final year we will have discussions with the UKOT project partners to agree approaches to maximise the impact of the project outputs ensuring the outcomes are realised.

11. Darwin Plus identity

The Darwin Plus funding for DPLUS175 has been recognised as supporting a distinct project with a clear identity within the UKOTs. The project partners and stakeholders that have engaged with the project have an excellent understanding and appreciation of Darwin Plus. The project team has Darwin Plus project logo has been used on all [presentations](#) given at the [workshops](#) and [resources](#) (see as an example the miniguides). Additionally, the project team has promoted the project through conference presentations (see Section 3 for details) and the Darwin Plus logo has been included on relevant slides and within acknowledgements. Darwin Plus will be acknowledged in all publications as has been the case for the recent One Earth paper "[The global reach of citizen science for monitoring insects](#)" and for the article in the Environmental Scientist "[Biological invasions: Species on the move](#)".

The project team have been linking social media (Twitter, LinkedIn and [blogs](#)) posts to the Biodiversity Challenge Funds and Darwin Plus including tagging @Defra_nature. @UK_CEH, @UKLadybirds and LinkedIn of Helen Roy have been the most frequently used accounts.

The project has been mentioned through various media opportunities relating to biological invasions including those following the launch of the IPBES assessment report on invasive alien species and their control which led to mention of the work on St Helena in the New York

Times. As is often the case with such media opportunities, e.g. newspaper, TV and radio interviews, branding for funders is often limited but we have had some project specific media activity such as through the [press release](#) following the workshop on Gibraltar.

12. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	No – although project leader would be the focal point if required.
Has the focal point attended any formal training in the last 12 months?	No – although UKCEH provides formal and mandatory training on a number of topics that encompass elements of safeguarding including “Mental Health for Managers” and “EDI”
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 0% [and number] Planned: 0% [and number]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses. None.	
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify. None.	
Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants. None.	
Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved. None. The workshops and associated activities have received ethical approval.	

13. Project expenditure

Please expand and complete Table 1. If all receipts have not yet been received, please provide indicative figures and clearly mark them as Draft. The Actual claim form will be taken as the final accounting for funds.

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

Project spend (indicative) in this financial year	2023/24 D+ Grant (£)	2024/25 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				Environmental Ad Hoc Consultancy Advice (£5k) Digital, App, Website Design & Coding ()
TOTAL	136,637.80	126,934.68	-7.1%	

Highlight any agreed changes to the budget and **fully** explain any variation in expenditure where this is +/- 10% of the budget. Have these changes been discussed with and approved by Darwin Plus?

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

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)			
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

14. Other comments on progress not covered elsewhere

Some issues with the project indicators were raised through the review of the last annual report. Meeting with James Kinghorn (NIRAS Consultant) to discuss revisions to the logframe and particularly the indicators was useful.

I would like further advice on the standard indicators. I think that there are too many and also because of the development of the workplan some are now not completely relevant.

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 to edit and use the following for various promotional purposes (please leave this line in to indicate your agreement to use any material you provide here).

Collaboration with other Darwin Plus funded projects has provided many insights and opportunities. The Darwin Fellowships and the Darwin Local Projects on the Cyprus SBAs have enabled knowledge exchange between project partners but also to other stakeholders. The ongoing work on CyDAS (developed through DPLUS56 and DPLUS88) is demonstrating a legacy of DPLUS56 and DPLUS88. There have been many publications and outputs using CyDAS and these have been informing the workplan through DPLUS175. As leaders of the ongoing work on invasive non-native species Kelly Martinou and Jakovos Demetriou have taken opportunities to share their expertise with other UKOTs through the workshops and on-line meetings. This has been immensely appreciated by everyone. Additionally, Kelly Martinou stated *“I consider myself very fortunate to be a partner of the DPLUS 175 project: Enhancing monitoring and prevention of invasive non-native species across UKOTs. Working together with scientists from UKCEH and at the same time having the opportunity to interact with stakeholders and colleagues who run conservation, public health and invasive alien species at the UKOTs has been an amazing learning experience. So far, the project has helped us further enhance our capacity and understanding regarding invasive alien species and at the same time learn from the experience in managing invasive alien species at other UKOTs (an example the successful rat eradication programme running at the Prickly pear Anguilla).”*

Image, Video or Graphic Information:

File Type (Image / Video / Graphic)	File Name or File Location	Caption including description, country and credit	Social media accounts and websites to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
				Yes / No
				Yes / No
				Yes / No
				Yes / No
				Yes / No

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

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p>Impact</p> <p>Ecosystem function and resilience is maintained through implementation of evidence-based biosecurity measures, underpinned by models to reduce arrival and spread of INNS particularly in the context of climate change</p>	<p>Resources, including compilation of information through the on-line system, are underdevelopment to underpin biosecurity.</p> <p>Approaches to categorise impact and consider the effects of climate change on biological invasions have been co-developed with project partners and stakeholders.</p>	
<p>Outcome</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</p>		
<p>Outcome indicator 0.1</p> <p>Conceptual models presented in an accessible format to inform evidence-based biosecurity for at least one INNS per UKOT</p>	<p>Conceptual models of the interactions between invasive non-native species and climate change are being co-developed and underway for St Helena, Anguilla and Montserrat. Evidence is available within the workshop reports (included as attachments) and through the project website.</p>	<p>Document and draft the approach as a peer-reviewed publication</p> <p>Document in workshop reports or publish in formats agreed by the UKOTs e.g. Policy Brief</p>
<p>Outcome indicator 0.2</p> <p>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>Baseline information consolidated through the on-line data system is allowing for reporting of new incursions and ultimately trends over time in arrival and spread.</p> <p>Sharing of information through identification guides, factsheets, webinars and workshops is increasing awareness and networking amongst stakeholders. Stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops.</p>	<p>Continue to develop resources prioritised by the project partners and stakeholders to maximise engagement with other stakeholders and ultimately data flow.</p>

<p>Outcome indicator 0.3</p> <p>Provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns leading to increased capacity of at least two major stakeholder groups (i.e. port workers, schools or tourist organisations) to implement biosecurity</p>	<p>Stakeholders from diverse organisations, from government departments, customs and border control, farming communities, NGOs, universities and research centres, have attended the workshops. There have been opportunities for knowledge exchange including, as an example, in Anguilla an information session was held as part of the workshop recognising the needs outlined by customs officials for information on species identification.</p> <p>The co-development of resources, including postcards and identification guides, is providing additional information on invasive non-native species. Prioritisation of the type of resource, information to include and the target audiences has been achieved through the questionnaires and within the workshops.</p>	<p>Continue compilation of information on non-native species</p> <p>Develop ID guides for the farming community and public on Montserrat</p> <p>Develop resources following UKOT workshops in the final year</p>
<p>Outcome indicator 0.4</p> <p>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>The on-line data system has been introduced to all UKOTs through initial meetings. The workshops held to date have enabled further refinement of the data systems including the data standards adopted.</p>	<p>Work with project partners to agree an approach going forward to ensure capacity for maintaining the data systems including supporting surveys, primarily through iNaturalist, and provision of summary information for reporting.</p>
<p>Output 1</p> <p>On-line <u>open</u> Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system</p>		
<p>Output indicator 1.1</p> <p>Baseline information available openly for at least 100 NNS for each UKOT (collated by Y3Q2)</p>	<p>Ongoing but see Table 1. For the UKOTs for which information has been collated so far there are more than 100 non-native species included.</p>	<p>Ongoing compilation of information into the on-line data system.</p>
<p>Output indicator 1.2</p> <p>Collaborative development of an approach to derive a relevant biodiversity indicator for INNS on each UKOT</p>	<p>During the 7 workshops held so far project partners and stakeholders have prioritised delivery of summary information in various formats with simple indicators through summary statistics likely to be sufficient.</p>	<p>Continue discussions with all UKOTs on most effective approaches for summarising</p>

underpinned by key metrics for evaluating biosecurity efficiency (developed by Y3Q3)		information on invasive non-native species
Output indicator 1.3 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 (developed by Y3Q1)	Approach co-developed through workshops with St Helena, Anguilla and Montserrat EICAT and SEICAT presentations available on the project website	Delivery of approach to all UKOTs through workshops Document approach through summary guidance
Output indicator 1.4 One workshop with each of the UKOTs, including in some cases clusters ³ of UKOTs, to consider options for updating and maintaining the NNS database (collaborative organisation, scheduling and delivery by Y3Q1)	Seven in person workshops held to date with programmes and presentations available on-line	Remaining workshops to be held including on-line where necessary Cross-Caribbean UKOT workshop being planned in collaboration with DPLUS125
Output 2 INNS monitoring and surveillance scoping report and outline design of relevant initiative		
Output indicator 2.1 One workshop with each of the clusters of UKOTs ¹ using consensus methods to prioritise approaches including citizen science opportunities where relevant (collaborative organisation, scheduling and delivery by Y2Q4)	Seven in person workshops held to date with programmes and presentations available on-line Questionnaire was circulated in advance of the workshop and expert-elicitation and consensus approaches were used to refine the priorities	Remaining workshops to be held including on-line where necessary Cross-Caribbean UKOT workshop being planned in collaboration with DPLUS125

³ 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.

		Questionnaire to be circulated to all remaining UKOTs
Output indicator 2.2 Collaborative development of at least one relevant monitoring initiative, including citizen science where relevant, informed through the workshop (developed by Y3Q3)	iNaturalist is seen as an excellent and accessible method for capturing biological records and will be the relevant initiative for most of the UKOTs. However, other recording apps have been shared (e.g. for pollinators and butterflies on Anguilla and Montserrat)	
Output indicator 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)	Multiple users engaged but review required to provide exact numbers	Review of activity on iNaturalist for each UKOT in the next 6 months Review of activity on pollinator and butterfly apps
Output 3		
Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events		
Output indicator 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)	Seven in person workshops held to date with programmes and presentations available on-line Questionnaire was circulated in advance of the workshop and provides information on priority invasive non-native species	Remaining workshops to be held including on-line where necessary Cross-Caribbean UKOT workshop being planned in collaboration with DPLUS125 Questionnaire to be circulated to all remaining UKOTs
Output indicator 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	The conceptual framework was developed during the workshops on St Helena, Anguilla and Montserrat . The framework aims to map the possible causal pathways through which climate change might affect the	Introduce framework to remaining UKOTs through workshops to be held

and spread modelling (one summary report documenting the conceptual framework per UKOT completed by Y3Q1)	establishment, spread, impact and success of management of invasive species Summaries available in the workshop reports	including on-line where necessary
Output indicator 3.3 One conceptual 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)	The above-mentioned framework was tested for at least four case study species on St Helena, Anguilla and Montserrat. The case study species were jointly decided by the workshop participants.	Implement the framework for remaining UKOTs through workshops to be held including on-line where necessary
Output indicator 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)	During the workshops, we scoped with participants different options for assessing and communicating climate change risks to possible target audiences including government officials (policy briefs), internal management (climate change risk assessments including invasive non-native species) and the public (infographics).	Develop agreed outputs from the 7 workshops Prioritise outputs with remaining UKOTs
Output 4 On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials		
Output indicator 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)	Journal article will be developed through year 3, meanwhile the activities and discussions in relation to citizen science have informed a One Earth Primer – The Global Reach of Citizen Science for Monitoring Insects	Write journal article including metadata on the information system
Output indicator 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)	Workshops have included an introduction to the information system. Presentations are available on the project website .	
Output indicator 4.3	Year 3 output	Deliver on-line webinar

<p>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>Output indicator 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>Over the past year the project team have worked with partners on Cyprus, Gibraltar, British Antarctic Territory, St Helena, Anguilla and Montserrat to co-develop information sheets and identification guides. Some of these are now available on-line but others are still in development. Furthermore, we have written four blogs (popular articles), two journal articles and disseminated three project newsletters.</p>	<p>Continue development of the information sheets and ID guides</p>

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>Impact: 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>Outcome: 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</p>	<p>0.1 Conceptual models presented in an accessible format to inform evidence-based biosecurity for at least one INNS per UKOT</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 Provision of information on INNS (including impacts on biodiversity, ecosystems and ecosystem function and services) to inform strategy and awareness raising campaigns 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>0.1 Evidence-based biosecurity reports including summary of conceptual 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 conceptual 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>

		0.4 Workshop reports and on-going monitoring through on-line feedback forms to assess capacity of stakeholders to maintain the database	
<p>Outputs: 1. On-line open Non-Native Species (NNS) databases developed for all UKOTs with CyDAS as a prototype system</p> <p>Delivered through WP1</p> <p>WP1 Task leader: David Roy, Megan Williams and Steph Rorke</p> <p>UKOT collaborators: All will be consulted through development and approaches to ensure legacy. Training will be delivered on maintaining the databases (WP4) with collaborators will review options for ongoing updates</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 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</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>1.4 Training and on-line resources available on maintaining the database</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 equity⁵ and implementing best practice in inclusive communication approaches</p> <p>Training accessible by a range of stakeholders ensuring consideration of diversity to maximise inclusion</p>

⁵ 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.

	clusters ⁴ of UKOTs, to consider options for updating and maintaining the NNS database (collaborative organisation, scheduling and delivery by Y3Q1)		Information on NNS will be available to quantify impacts of INNS on natural capital and ecosystem services.
<p>2. INNS monitoring and surveillance scoping report and outline design of relevant initiative</p> <p>Delivered through WP2</p> <p>WP2 Task leader: Helen Roy and Angeliki Martinou</p> <p>UKOT collaborators: Monitoring including citizen science initiatives will be co-created with the UKOT stakeholders</p>	<p>2.1 One workshop with each of the clusters of UKOTs¹ 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</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. 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</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> <p>Ensure engagement and relevance to all stakeholders recognising diversity</p>

⁴ 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.

	but reviewed (feedback from users) on a quarterly basis to consider needs for modifications throughout the duration of the project (developed by Y3Q3)	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>3. Predictive modelling tools and outputs available to inform biosecurity specifically arrival and spread of INNS including during extreme weather events</p> <p>Delivered through WP3</p> <p>WP3 Task leaders: Helen Roy and Diana Bowler</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>3.3 One conceptual 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</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>3.4 Mitigation approaches based on predictive modelling documented with action plans</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>

	biological invasions following extreme weather events (completed by Y3Q3)		
<p>4. On-line resources and published research outputs produced and shared with UKOT communities through collaboratively and inclusively developed dissemination materials</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 information on biosecurity approaches across UKOTs available for download through the project website (completed by Y3Q3)</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>

Activities

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 clusters¹ (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.

Inclusive communication best practice will be implemented throughout the development of all resources.

- 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
- 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
- 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)
- 1.4 Workshops with clusters¹ of UKOTs to collaboratively develop processes for updating and maintaining the NNS databases

- 2.1 Workshops with clusters¹ of UKOTs to consider opportunities and challenges for approaches to INNS surveys including citizen science
- 2.2 Collaborative development of relevant surveys informed through the workshop (informed through 2.1)
- 2.3 Implement on-line recording (e.g. using iNaturalist or indicia) for general INNS surveillance

- 3.1 Expert-elicitation workshop with clusters¹ 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)
- 3.2 Consult with the stakeholders and modelling experts to identify data needs to inform climate conceptual models
- 3.3 Develop, synthesise and interpret outcomes from conceptual models to inform predictions and mitigation of the risk from biological invasions following extreme weather events

- 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 clusters¹ 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	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
E.g. DPLUS-A01	E.g. Number of people in eligible countries who have completed structured and relevant training	People	Men	20			20	60
E.g. DPLUS-A01	E.g. Number of people in eligible countries who have completed structured and relevant training	People	Women	30			30	60
E.g. DPLUS-B01	E.g. Number of new or improved habitat management plans available and endorsed	Number	New	1			1	2
E.g. DPLUS-B01	E.g. Number of new or improved habitat management plans available and endorsed	Number	Improved	1			1	3

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	1069		3738	>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		0	13
DPLUS175-A03	Documented approaches to quantifying impacts, including on natural capital and ecosystem services outlined within a guidance document with	Guidance document to quantifying impacts, including on natural capital and ecosystem services, with implementation for the	Number	None	0	1			1

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
	implementation for the priority INNS identified by the UKOTs	priority INNS identified by the UKOTs							
DPLUS175-A04	One workshop with each of the UKOTs, including in some cases clusters ⁶ of UKOTs, to consider options for updating and maintaining the NNS database	NNS on-line database training workshops for each UKOT	People	Gender	0 (noting on-line introductory meetings documented in Annex 4)	7			9 in person 2 on-line
DPLUS175-B01	One workshop with each of the clusters of UKOTs ¹ 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)	5			11

⁶ 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.

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-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	7 (+3)		10	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 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	Number of users (depending on UKOT) registered within 3 months of launch of on-line recording for records of INNS	People	None (although gender may be possible)	0			0	>40
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		0	7		7	9 in person 2 on-line

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-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		0	3 UKOTs but multiple INNS included		3	13
DPLUS175-C03	One conceptual 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	Number of models co-developed with UKOT project partners	Number		0	1 delivered on 3 UKOTs		1	1
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		0	0 but drafts under development within workshop programmes		0	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		0	0		0	>1

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-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		0	7 demonstration workshops UKOTs with multiple attendees (see participants lists)		7	>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		0	0		0	>26
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		0	4 (blogs) 1 popular article		5	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		0	ID sheets under development		0	3

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
The global reach of citizen science for monitoring insects	Journal	Helen E. Roy Angeliki F. Martinou Michael J.O. Pocock Victoria Werenkraut David B. Roy 2024	Female	UK	One Earth	https://www.cell.com/one-earth/fulltext/S2590-3322(24)00138-6
Biological invasions: species on the move	Journal	Helen E. Roy	Female	UK	Environmental Scientist	https://www.ceh.ac.uk/our-science/projects/ukot-blogs
Collaboration to enhance information flow on non-native species across the UK Overseas Territories	Blog	Helen E. Roy 2023	Female	UK		https://www.ceh.ac.uk/news-and-media/blogs/collaboratively-exploring-approaches-enhance-information-flow-non-native
https://www.ceh.ac.uk/news-and-media/blogs/identifying-and-managing-invasive-non-native-species-concern-gibraltar	Blog	Megan Williams Emily Williams Jakovos Demetriou 2023	Female	UK		https://www.ceh.ac.uk/news-and-media/blogs/identifying-and-managing-invasive-non-native-species-concern-gibraltar
Reducing the threat of invasive non-native species on St Helena	Blog	Megan Williams Keith Bensusan Rhian Guillem Clive Crisp Darren Fa Amy Swift	Female	UK		https://www.ceh.ac.uk/news-and-media/blogs/reducing-threat-invasive-non-native-species-st-helena

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
		2024				
ID Guides for BAT and Gibraltar	Postcards	Megan Williams Kevin Hughes Jasmine Lee	Female	UK		https://www.ceh.ac.uk/our-science/projects/inns-ukots-resources

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 BCF-Reports@niras.com putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	No
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
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	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?	
Do not include claim forms or other communications with this report.	