



## Darwin Plus: Overseas Territories Environment and Climate Fund

### Final Report

To be completed with reference to the “Writing a Darwin/IWT Report” Information Note: (<https://dplus.darwininitiative.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/>). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

#### Darwin Project Information

Project reference	DPLUS088
Project title	Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus
Territory(ies)	Akrotiri SBA, Cyprus
Lead organisation	Centre for Ecology & Hydrology
Partner institution (s)	Joint Services Health Unit Akrotiri Environmental Education Centre
Darwin Plus Grant value	£238,838
Start/end date of project	1 <sup>st</sup> April 2019 – 31 <sup>st</sup> March 2021
Project leader name	Helen Roy and Jodey Peyton
Project website/Twitter/blog etc.	<a href="http://www.ris-ky.info">www.ris-ky.info</a> Researching Invasive Species of K�ypros
Report author(s) and date	Jodey Peyton, Oli L. Pescott, Graham Johnstone, Kelly Martinou, Chris Taylor, Mike Bowes, Charles George, France Gerard, Pete Scarlett, Emily Trill and Helen Roy 30 <sup>th</sup> June 2021

### 1 Project Summary

The UKOT biodiversity strategy prioritises: *(i) obtaining data on the location and status of biodiversity interests and the human activities affecting biodiversity to inform the preparation of policies and management plans (including baseline survey and subsequent monitoring);* addressed through work package 1, 2 and 3 *(ii) preventing the establishment of IAS, and eradicating or controlling species ... already ... established* which are addressed through work packages 1, 2, 3 and through surveillance and improved biosecurity, work package 4 and 5) support *iv) developing tools to value ecosystem services to inform sustainable development policies and practices* addressed across all work packages. These are also priorities for the SBA Administration (SBAA) in Cyprus.

The project focuses on monitoring and understanding drivers of change in the Akrotiri wetlands, Cyprus (Figure 1). Mediterranean-climate areas are expected to experience high levels of biodiversity loss due to climate change, invasive non-native species and changes in land use (Sala et al. 2000). In order to build resilience of ecosystems in these areas, we need to document baseline conditions to underpin assessment of biodiversity and ecosystem change. Working with the Joint Services Health Unit (JSHU), SBAA and Akrotiri Environmental Education Centre (AEEC), which includes staff from the RoC Pedagogical Institute, based at the AEEC), the UK Centre for Ecology & Hydrology (UKCEH) developed the project to design outputs that would support ongoing work for these organisations and the wider community within the context of assessing biodiversity change.

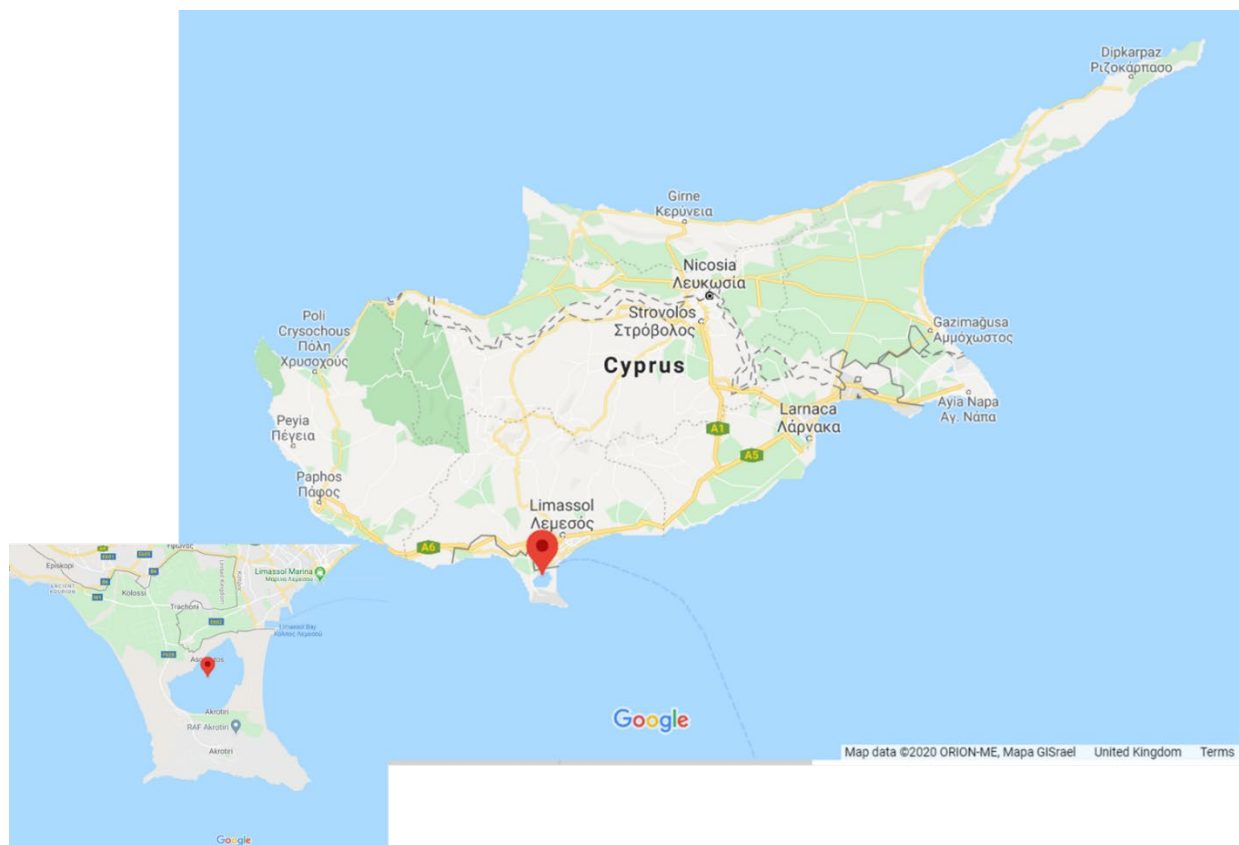


Figure 1. Location of wetlands (study site) within the Akrotiri Sovereign Base Area of Cyprus. Copyright Google, accessed 14/4/2020.

Within this project, we used remote sensing, on-the-ground measurements of water quality and existing vegetation datasets to develop baseline data for the lake, and implemented approaches to assess the interactions between pollinating insects and native and non-native plant species. We established baselines and procedures for evaluating the health of this highly-valued wetland with all tasks being underpinned by capacity-building and public engagement, ultimately providing long-term species and environmental data as an evidence-base for the SBAs and wider Cyprus. The project comprised the following four work packages:

#### WP1: Developing online wildlife recording

An online database of non-native species (NNS) (CyDAS) was created through DPLUS056. WP1 built on this to enable citizen scientists and professionals to submit records. The University of Cyprus contributed by managing and updating marine NNS information, whilst UKCEH and an early career-researcher based in Cyprus at the JSHU, through the Alien CSI EU Cost Action, made updates to the terrestrial NNS information within CyDAS. This early-career researcher went on to obtain a DPLUS Fellowship (DPLUS124). Capacity-building (WP4) ensured that JSHU staff and the Fellow, are able to continue to manage CyDAS, alongside volunteers, after project completion.

#### WP2: Hydrological and vegetation sampling

UKCEH collected baseline data for water quality in the summer of the first year (dry season) of the project and JSHU collected water samples through the summer / autumn of the second year of the project (following the methods of a water sampling video here). All the methods created through the project for sampling and surveys can be found here. We carried out sampling at marginal sites around the lake and at input locations. Methods, by being shared and undertaken with local staff, can support continued monitoring post-project. Field vegetation sampling was unable to be undertaken due to COVID-19, but novel land cover/vegetation mapping was developed and validated using data and knowledge from existing fieldwork (e.g. <https://www.ceh.ac.uk/news-and-media/blogs/more-6000-plant-records-released-mediterranean-biodiversity-hotspot>).

WP3: Remote sensing of vegetation. The primary objective was to produce a baseline habitat classification suitable for future monitoring of hydro-ecological change. We used WorldView-3 imagery from March 2018 and WorldView-2 imagery from July 2018 to account for plant phenology differences, and resampled the 2m WorldView-2 imagery to match the 1.2m resolution of WorldView-3. In July 2019, we carried out a field campaign to collect ground-reference data, required to classify the imagery and validate the classification. We supplemented these ground reference data with data collected in previous Non-Native Plant Species surveys that took place in 2015 and 2017. The imagery was classified into the following cover classes: Unclassified, Salt Lake, Eucalyptus, Mixed Woodland, Acacia, Bare, Temporary water, Sparse Veg, Garrigue, Grass, Saltmarsh, Rush Salt Meadow, Common Reed, Casuarina.

WP4: Capacity-building, biosecurity and engagement

Capacity-building through workshops, field training and guides underpinned the delivery of WPs1-3. The three strands were:

1. Monitoring priority Invasive Non-native Species (INNS) and their interactions to inform understanding of ecosystem functioning (annex 6.1).

We developed technical training (building on DPLUS056) and resources to support online recording of wildlife in Cyprus, including interactions between INNS (WP1) and native species for pollinators Cyprus (see Pollinator Monitoring Scheme of Kýpros (PoMS-Ký) here and mini- Pollinator Monitoring Scheme of Kýpros, for school children (mini-PoMS-Ký) here). In addition to creating these online resources, through working with the DPLUS Fellowship, DPLUS101, we have created a smartphone application for undertaking Flower-Insect Timed Counts to monitor insect visitors to flowers. This will be launched in Cyprus within the next month. This smartphone application has been developed collaboratively within a network of researchers focused on monitoring pollinating insects including implementation within the UK and countries in South America. We also held collaborative engagement events at the AEEC to promote monitoring of invasive non-native species and one of these was filmed for the European Services Network:

2. Development of methods for participatory engagement (annex 6.1).

The project developed educational slides and a bilingual infographic that will be used by the education staff at the AEEC. These along with a QR code-based game, that the AEEC education staff developed, demonstrate interlinkage between the wetland, surrounding habitats and wildlife (using field survey data from WP2 and WP3), highlighting the values of ecosystem functions for engaging people. We also created a bilingual wetland species identification guide for field trips and species identification within the laboratory for school students visiting the AEEC. These resources will have applicability to other environment centres in Cyprus, with a focus on wetland species, as they are written in both Greek and English.

3. Biosecurity guidance and pathway action plans for species identified from DPLUS056 Horizon Scanning exercise (annex 6.2).

We worked with the SBA and JSHU to develop an initial pathway action plan and Terms of Reference (ToR) for a biosecurity working group for the SBAs in Cyprus. We also published a Code of Practice for Managing Mosquitoes in Wetlands and accompanying blog for the British Ecological Society journal website. Local communities, schools, civilian and military personnel were given training in mosquito INNS identification and biosecurity to minimise risk of establishment.

## 2 Project Stakeholders/Partners

From the outset the UKCEH project team has worked closely with the project partners from the Joint Services Health Unit (JSHU), Sovereign Base Area Administration (SBAA) and the managers and education staff at the Akrotiri Environmental Education Centre (AEEC), to develop the proposal and work towards completing the project activities. Annex 6.3 gives a summary of the stakeholders engaged through the project. This was an active document that was reviewed throughout the project duration.

In November 2019, the project team hosted a workshop at the AEEC to predict and prioritise INNS which could arrive on the island of Cyprus within the next ten years and negatively impact either human health or the economy (annex 6.4.1). Part of this meeting included sessions on Risk Assessments and Biosecurity. This workshop followed on from the successful horizon scanning study prioritising INNS that could adversely impact [biodiversity and ecosystems](#) through DPLUS056. An additional session was included within the workshop to outline the various approaches available to quantify socio-economic impacts of INNS. Forty-two experts, from twelve countries and from another UKOT (Gibraltar), in the fields of ecology and human, animal and plant health attended or contributed to the process remotely. Delegates and participants included the following: Republic of Cyprus (RoC) Government Departments: Department of Environment, Marine and Fisheries Department, Water Development Department and the Department of Agriculture. The workshop report (submitted in conjunction with the final report (annex 6.7) includes a list of attendees and their affiliations and demonstrates the wider stakeholder network with which we worked. The results of this paper were published [here](#) in a special issue of the journal *Frontiers in Ecology and Evolution*.

Collaborative working with stakeholders has been critical in developing a range of communication and training materials (annex 6.1 and the “[outreach materials](#)” section of the website). The education staff at the AEEC have informed and guided project team members from UKCEH and the JSHU in the development of educational materials for lessons on the importance of pollinators.

UKCEH were in regular contact with MedWet about the project outputs and our project is mentioned on their website [here](#) specifically referencing the pollinator work. The MedWet mission is to ensure and support the effective conservation of the functions and values of Mediterranean wetlands and the sustainable use of their resources and services and so engaging with them for our project has been useful. In March 2021 MedWet, and others, were invited as representatives to join the wetland monitoring workshop (agenda and talks found [here](#) under “Talks”).

Particular achievements as a team have been:

- The development of a wetland [identification guide](#) and orienteering map and QR code game for use by the students and visitors to the AEEC
- The development of a pollinator monitoring app, tailored to Cypriot plant and pollinator species
- Remote sensing training for SBA and JSHU staff

The major challenges for this project have arisen as a result of the COVID-19 pandemic. Planned fieldwork using UKCEH staff was unable to take place through the pandemic but the strong network we developed through DPLUS056 and this project enabled us, as a team, to adapt the scope of the project (to enable us to deliver the outputs. For example JSHU undertook water samples, following methodologies outlined in this [video](#) and we modified the methods for remote sensing data validation to compensate for the lack of ground-truthed data.

The Government of the Territory was represented by Graham Johnstone, who was the SBAA representative during the project. Graham attended online and virtual meetings, co-authored the Horizon Scanning publication from the workshop (annex 6.4.1) and co-developed the Terms of Reference for the Biosecurity Working Group. SBAA and military staff were invited to key meetings and events.

### 3 Project Achievements

#### 3.1 Outputs

**Output 1:** *Development and maintenance of up-to-date database of NNS in Cyprus (CyDAS) across taxa and environments, with innovative tools, potentially including mobile applications, for recording native and non-native species.*

The project has completed this output (evidence provided in **annex 2**). The CyDAS website has been updated by UKCEH, the University of Cyprus and an early career researcher working with the JSHU (following on from a COST Action Short Term Scientific Mission). Jakovos Demetriou, will undertake a DPLUS Fellowship (DPLUS124) using and developing CyDAS (**indicator 1.1**). A revision of CyDAS was uploaded by GRIIS (**indicator 1.2**) (Martinou et al. 2020a). UKCEH

and the developers of GRIIS were in frequent contact and UKCEH (O.L. Pescott) has supported the Global Register of Introduced and Invasive Species (GRIIS) team in their request for compiling data for the UKOTs. The project team are promote online recording through the project website for taxon monitoring, by the AEEC and JSHU and DPLUS101 (**indicator 1.4, 1.5**) for PoMS-Ký and Mini-PoMS-Ký. The project website also provides links provided to iNaturalist, an online survey platform, through the biodiversity monitoring page. This page also gives information on the brief history of biodiversity monitoring and highlights activities undertaken in Cyprus (**indicator 1.5**). Over 6,000 plant records were added to GBIF in the second year (Pescott et al. 2020a, b, Pescott et al. 2020c), enhancing the embedded GBIF maps in CyDAS plant accounts. In addition, 530 entirely new accounts, or edited / updated accounts of marine species, plants and terrestrial invertebrates were newly created on the CyDAS site; these will flow through to the relevant GRIIS checklist hosted on GBIF when it is next updated.

**Output 2:** *Hydrological and vegetation sampling to generate baseline measures of Lake Akrotiri for water quality, and vegetation data for two seasons and work with local key stakeholders to understand and discuss results*

Water samples were collected on a visit to Cyprus in July 2019 and then in September and November 2019 and through the summer/autumn of 2020 by JSHU. Samples taken were analysed at UKCEH laboratories and data on water chemistry shared with project partners via email and via a presentation on Zoom for the final project workshop in March 2021 and the results uploaded to the EIDC (**indicator 2.1**). Face to face and virtual meetings and email exchanges between project staff with RoC, JSHU and AEEC staff led to the design and ongoing development of project methods (available on project website) and literature available for reporting purposes, annex 2.1, 2.2 and 6.5 give further details (**indicators 2.2, 2.3 and 2.4**). A report on potential chemical and biological indicators for Lake Akrotiri was shared through the project website here. As noted above, vegetation sampling was not able to be undertaken due to COVID-19, but novel land cover/vegetation mapping was developed and validated that can be used going forward to support future monitoring work (**indicator 2.3**). Additionally, as part of the COVID-19 August 2020 change request, the project re-aligned funds from T&S for increased water sample analysis at UKCEH from fieldwork undertaken by JSHU.

**Output 3:** *Employ remote sensing of Lake Akrotiri lake and environs to give baseline assessment of plant communities and land cover, linking to ground-truthing data collected in DPLUS056 and Output 2. This work will also generate methods for others to interpret satellite data for ongoing analysis of saline Mediterranean wetland site quality.* The project team successfully acquired and pre-processed suitable high spatial resolution satellite imagery (WorldView) for classification. The team visited Cyprus in July 2019 to gather an initial set of reference polygons and points (ground reference data) required for the satellite image classification. A more extensive field campaign was planned to improve the preliminary classification, based on this first survey, but was cancelled due to COVID-19. In order to maintain the delivery of the output, an alternative method was used, using google maps and data gathered from previous non-native species surveys in 2015 and 2017. The team carried out a desk based image interpretation to generate further ground-reference data which involved input from a vegetation expert who was familiar with the area. We also produced a seven page document, summarising habitat mapping methods using drone technology. This document is available on the project website here. As part of the COVID-19 August 2020 change request, the project manager re-aligned funds from T&S for fieldwork to developing and delivering training on remote sensing and analysis, delivered under this output. This baseline mapping and training allows a standard for which the SBAA can assess future changes.

**Output 4:** *Generation of outreach and engagement material around species network interactions and further recording of species network data*

The project team have developed multiple capacity building, training and outreach resources throughout the project. All downloadable and printed materials can be accessed online here (also see annex 6.1, **indicators 1.5, 4.1, 4.2. and 4.3**). The AEEC staff developed an orienteering map (annex 6.1.5) and created an interactive educational game for use in the AEEC, with the aim of teaching students about the wetlands (annex 6.1.6). The project team have developed an infographic (annex 6.1.4), for use by the AEEC education staff and visitors on the importance of wetlands which will help with lessons and explaining the importance of wetlands to students



(**indicator 4.2**). Encouragement of submission of online recording of records from pollinators undertaken via posts on Facebook, through the project page, to the wider stakeholder community. 203 pollinator surveys have been completed since the start of the project in April 2019 and will be added the datasets for the project outputs for analysis by the project team going forward (**indicator 4.3**). AEEC education staff and JSHU hosted PoMS-Ký events, throughout 2020 as COVID-19 restrictions permitted. **Indicator 4.4** is complete; the Code of Practice for Managing Mosquitoes in Wetlands was accepted for publication in April 2020 and was made open access through the project funding.

**Output 5. Training and capacity building provided for OT government and military staff on biosecurity and continued biological recording of INNS**

The project start up workshop in July 2019 brought stakeholders together to discuss the project and share ideas for input and monitoring strategies (**indicator 5.1**). The project undertook a workshop on approaches to assessing socio-economic impacts of INNS and an additional session on enhancing biosecurity in November 2019 (annex 6.4.1 and **indicators 5.2 and 5.4**). The Monitoring and reporting on the health of wetlands in the Eastern Mediterranean webinar (annex 6.4.2) had a presentation on biosecurity in wetlands. The project team have developed a biodiversity recording webpage that highlights existing online tools for biodiversity monitoring in Cyprus. Although the planned biosecurity workshop for British Forces Cyprus (BFC) and SBAA personnel was ultimately unable to go ahead due to COVID-19 restrictions, the opportunity arose for the SBAA and BFC to undertake a Biosecurity risk assessment and develop a Terms of Reference for a Biosecurity Working Group that both JSHU and the SBAA are committed to building on beyond the life of the project and undertaking a workshop. Please see annex 6.2 for a summary of the biosecurity meeting plans and materials created. The project has also developed a webpage that informs people about biosecurity on the SBA (**indicator 5.5**).

### 3.2 Outcome

Outcome: Sustainable surveillance of current and potential future threats to Lake Akrotiri, supported by local organisations and stakeholders, founded on a robust and open evidence base.

*0.1 Government, NGO, tourist and other local stakeholders demonstrate and report greater engagement in the environmental surveillance of Lake Akrotiri [by Mar 2021]*

A list of project stakeholders was created through the project (annex 6.3). AEEC education staff are running co-designed and tailored to a young audience [Mini-PoMS-Ký](#) surveys as part of their education programme, with the aim of data being uploaded via the project [online](#) platform. DPLUS101 Fellow, with JSHU and the AEEC education staff are undertaking [PoMS-Ký](#) FIT count surveys, with results being uploaded via the project [online](#) platform. These surveys undertaken by AEEC and JSHU staff, along with schoolchildren are the three stakeholder groups outlined in the means of verification (**indicators 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 2.3, 3.3 (partial), 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3, 5.4, 5.5**).

*0.2 Previously unavailable parameters for baseline assessment of quality of the wetland of Akrotiri become available [by Mar 2021]*

All water chemistry data to date has been shared with the SBAA, JSHU and the RoC Water Development Department in Cyprus. UKCEH Chemists have analysed data and written up in a report (annex 6.5) the findings on water chemistry and nutrient status for the lake. All the field samples have been collected, the results are uploaded to the EIDC, fully open access and available for anyone to view. The literature review on Good Ecological Status for wetlands, written through the project, is available [here](#) (**indicators 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 (partial), 4.3, 4.4, 5.2, 5.3, 5.4, 5.5**).

*0.3 AEEC and JSHU staff, and additional local stakeholders attend current and future threats workshop, exchanging knowledge and learning from regional and global wetland experts, ensuring continued engagement and focus on wetland surveillance [by Mar 2021]*

The project organised the Monitoring and reporting on the health of wetlands in the Eastern Mediterranean online webinar in February 2021 (annex 6.4.2). The agenda and talks (scroll down to the event on 17<sup>th</sup> and 18<sup>th</sup> February) can be found here. The format was outlined such that it both addressed current and future threats to wetlands. We had 47 people register for the first

day, with 35 attending and 57 people register the second day, with 36 people attending. Feedback from the event can be found in annex 6.4.2 (**indicator 2.2**).

*0.4 The AEEC forms a pivotal location for meetings and workshops. The knowledge exchange and expertise of the staff is a constant benefit to the running of the project.*

From the project start in April 2019 and at the project inception meeting in July 2019, we have been liaising with key stakeholders from the military, SBAA and RoC to develop the methods for monitoring (details of monitoring available through [website](#)). The project team developed a wetlands [page](#) and an online [infographic](#) and a wetland aquatic community indicator guide for the salt lake with support from the FSC (annex 6.1.1). In terms of pollinator monitoring, the education staff at the AEEC co-designed the resources for the mini-PoMS-Ký survey with JSHU, DPLUS101 and UKCEH. The project team have also developed a training video for the surveys in both English and Greek. These videos are designed for both the PoMS-Ký and Mini-PoMS-Ký surveys and are available, with the other project outputs, through the project [website](#). The website PoMS-Ký and mini-PoMS-Ký pages have the facility to add records made [online](#) and these records, blurred to a 1km resolution, are displayed on the website [here](#). In addition, the project has created a smartphone application, which links to the UK Pollinator Monitoring Survey app (and an app being developed in South America) for recording PoMS-Ký surveys in Cyprus (**indicators 4.1, 4.2, 4.3, 4.4**).

### **Contribution towards Long-term strategic outcome(s)**

The strategic priorities for the UK Government's support for biodiversity conservation in the UK Overseas Territories have been a focus throughout the design and implementation of the project. Specifically three of the five priorities outlined in the United Kingdom Overseas Territories Biodiversity Strategy (Defra 2009) have been addressed during the project:

- i. obtaining data on the location and status of biodiversity interests and the human activities affecting biodiversity to inform the preparation of policies and management plans (including baseline survey and subsequent monitoring) (**indicators 0.2, 1.1, 2.1, 2.2, 4.3, 4.4, 5.2, 5.3**)
- ii. preventing the establishment of invasive alien species, and eradicating or controlling species that have already become established (**indicators 0.2, 1.1, 2.1, 2.2, 4.3, 4.4, 5.1, 5.2, 5.3, 5.4, 5.5**)
- iv. developing tools to value ecosystem services to inform sustainable development policies and practices (**indicators 0.1, 1.5, 2.4, 4.1 4.2, 4.3, 4.4**)

### **3.3 Monitoring of assumptions**

- 0.1 *Interest from relevant stakeholders and time available to commit to surveillance:* Working with stakeholders is an essential and rewarding aspect of the project but ensuring time and commitment for ongoing surveys and meetings was an ongoing risk throughout the project, especially when COVID-19 resulted in pressures on staff time. The project team held regular meetings in order to keep in contact and understand opportunities and mitigate any potential challenges. This assumption was valid throughout the project.
- 0.2 *Data are collected according to scientific standards, and are therefore worthy of publication and fit for purpose:* The project staff were well established researchers in their fields and the methods they used pertinent to the collection of data for the outputs and outcome. This assumption was valid throughout the project.
- 0.3 *Interest from relevant stakeholders and time available to commit to workshops and produce verification outputs:* as with assumption 0.1, this aspect plays a key role in the delivery of the project and as such, regular meetings and communications across all stakeholder groups was undertaken as needed for the delivery of different outputs. This assumption was valid throughout the project.
- 0.4 *AEEC project team have capacity to expand their work in this area, particularly around the developing of new resources for schools and visitors. Also assumes that all stakeholders produce enough evidence and data of interest to engage and interest staff, public and other stakeholders alike:* the AEEC team (which includes staff from the RoC Pedagogical Institute, based at the AEEC) are exceptionally dedicated and enthusiastic in increasing their portfolio of resources and education materials. The education staff have designed an educational

game for the AEEC and are discussing ways to incorporate biosecurity into their lessons. The project start up meeting was well attended from across the stakeholder groups invited, as was the horizon scanning workshop which was held in November. Restrictions with COVID-19, meant all staff on the project needed to review activities but the educational staff at the AEEC progressed the teaching materials, despite the pandemic. Ongoing commitment and interest was essential and as such, the assumption was valid.

- 1.1 *Sufficient new information available to update the inventory*: this assumption was valid throughout the project. To date, CyDAS has continued to be maintained through the project team and through a small project undertaken by the University of Cyprus and also through a JSHU hosted COST Action Alien CSI Short Term Scientific Mission (Jakovos Demetriou). Jakovos Demetriou, through DPLUS124, will continue to work on the CyDAS database.
  - 1.2 *Our website manager is able to continue to interface with global datasets and standards (e.g. Catalogue of Life)*: No issues arose over the project but a valid assumption.
  - 1.3 *Predicted effort sufficient to complete survey. Survey strategy approved by stakeholders*: This assumption was valid. The project team worked throughout the second year to ensure that data was processed at the rate needed to deliver the outputs and outcome by 31<sup>st</sup> March 2021. The attendance of stakeholders at the kick off meeting and approval of methods means that this part of the assumption was not relevant for the second year as it was already accepted.
  - 1.4 *Involvement of local experts sufficient to oversee curation and verification*: through the existing expertise of the project stakeholders, plus the training provided through the project, local expertise was sufficient to oversee the curation of iNaturalist and PoMS-Ký records. This assumption was valid given the huge diversity of taxa with the SBA.
  - 1.5 *Stakeholders view webpages and find them useful*: this is a very important assumption and was valid. Project partners made the wider stakeholder group aware of additions to the website through email and Facebook and sought feedback on items to be added or removed.
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- 2.1 *All samples able to be collected within timeframe and resource limits*: this assumption was valid, as it underpinned delivery of the fieldwork components of the project. Project partners in Cyprus collected and stored the water samples and posted them back to UK via DHL. The team maintained regular communication on water sampling, to ensure that project delivery was complete on 31<sup>st</sup> March 2021.
  - 2.2 *Key stakeholders are willing and able to attend the workshop and to contribute to outputs*: the attendance of the key stakeholders from the RoC and project team demonstrated interest in the project. The project held a workshop in the second year on wetland monitoring where RoC and project partners presented on their work. This assumption was valid.
  - 2.3 *Data are collected according to scientific standards and within resource limits, and are therefore useful and publishable*: this assumption, as with assumption 1.3 and 2.1 was valid, as it underpinned delivery of the fieldwork components of the project. The team maintained regular communication on water sampling, to ensure that project delivery was complete on 31<sup>st</sup> March 2021. Data, whether shared through the EIDC or through GBIF, were associated with metadata describing scientific collection procedures and processes.
  - 2.4 *Methods are carefully documented throughout the project and can be clearly summarised and made available*: monitoring methods available through project website [here](#). As methods were developed, they were made available, and as such, this assumption was valid.
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- 3.1 *Data collected allow useful separation of plant communities, meaning that outputs are meaningful and useful*: this assumption is still valid. The botanist within the team is working closely with the remote sensing team to deliver this aspect of the work.
  - 3.2 *Data on EIDC is of interest to users*: This assumption was valid as the data was of interest to the SBAA and JSHU for planning going forward.
  - 3.3 *Data are collected according to scientific standards, and are therefore worthy of publication*: this assumption, as with assumption 1.3 and 2.1 and 2.3 around delivery of data was valid, as it underpinned the delivery of the fieldwork and desk-based components of the project.
  - 3.4 *Stakeholders from other UKOTs engage with the methods and find them useful*: The project team has shared the project scope within the UKOT Conservation Forum 2019 Autumn [newsletter](#) and shared the outputs of the project through the quarterly meetings of the UKOTCF European Territories Working Group. An overview of the project was also given at



the 2021 UKOT Conservation Forum Conference. This assumption was valid throughout the project.

- 4.1 *Implementation of the teaching pack aligns with guidance and training*: this assumption was valid throughout the project. The project team has worked closely to develop materials suitable for students at the AEEC. For legacy of the work undertaken, it is extremely important that any work undertaken is useful for the delivery of core AEEC and RoC Pedagogical Institute aims.
  - 4.2 *Stakeholders view or download the material*: this is a very important assumption that was valid throughout the project. UKCEH made the wider stakeholder group aware of additions to the website through email and Facebook and sought feedback throughout the project on items to be added or removed.
  - 4.3 *Predicted effort sufficient to complete survey. Survey strategy approved by stakeholder*: the survey methodology and associated guidance was co-designed within the project team and as such approved once created. This co-design will increase attractiveness of survey for uptake. This assumption was valid.
  - 4.4 *CoP will be acceptable for publication*: this assumption was valid, as the publication has been accepted and published Open Access through the project.
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- 5.1 *Stakeholders interested in attending. Scoping confirms access and practicality. Scoping inform the risk assessments*: as with assumption 1.3, this interest was important to ensure that the project established with strong links within the team and wider stakeholder group and success of the achievements generated through the project already. The assumption continued to be valid throughout the project. The SBAA and BFC are in the process of reviewing risks around INNS and developing a Biosecurity Working Group which will take activities forward.
  - 5.2 *Stakeholders interested in attending. Trainers are adequately briefed. Relevant risk assessments conducted*: as with other assumptions outlined above, stakeholder interest was essential throughout the project. The assumption was valid as SBAA, BFC (including JSHU) continued to undertake activities towards output 5, despite not being able to host the workshop during the project. See assumption 5.1 for update on the risk assessment element.
  - 5.3 *Stakeholders interested in attending training sessions; relevant expertise available to provide Workshops*: as with other assumptions outlined above, stakeholder interest was essential throughout the project. The project team worked closely (through emails and online meetings) to ensure online materials were developed and that expertise was utilised despite being unable to host meetings in person. The assumption was valid
  - 5.4 *Stakeholders interested in attending. Stakeholders support prioritisation decisions. Year 1 surveys yield sufficient data to prioritise Year 2 efforts*: with the completion of the well attended horizon scanning and impacts workshop (annex 6.7), with a strong theme around biosecurity and risk assessments this assumption was valid. The outputs from the horizon scanning were used for drafting the biosecurity workshop plans and questionnaire (see annex 6.2).
  - 5.5 *Stakeholders engage with the biosecurity guidance and adequate resources are provided to ensure effective communication*: this assumption was valid. SBAA and BFC staff developed a workshop outline (annex 6.2.1), but due to COVID-19 restrictions were unable to host the workshop. This workshop is planned for later in 2021 (date TBC).

Please see annex 6.8 for the risk register created for the project.

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

The UKOT biodiversity strategy prioritises: (i) *obtaining data on the location and status of biodiversity interests and the human activities affecting biodiversity to inform the preparation of policies and management plans (including baseline survey and subsequent monitoring)*; addressed through outputs 1, 2 and 3 (ii) *preventing the establishment of IAS, and eradicating or controlling species ... already ... established* addressed through work packages 1, 2, 3 and through surveillance and improved biosecurity training, outputs 4 and 5) and iv) *developing tools to value ecosystem services to inform sustainable development policies and practices* addressed across all outputs

This project has built on a previous Darwin project (DPLUS056) and has enabled significant improvements to SBAA knowledge and understanding of the territory specific risks posed by INNS. This project brought internal and external stakeholders together in collaboration with the core project partners to develop the evidence base needed to improve the SBAA & British Forces Cyprus (BFC) approach to Biosecurity (see annex 6.2). The resulting species lists from the 2017 and 2019 Horizon Scans, along with analysis of pathways and existing controls/procedures, has enabled the development of a SBAA/BFC Biosecurity risk assessment. This assessment follows SBAA policy approach and will be presented to the executive board for evaluation on a territory scale. The process the project followed highlighted the need for and enabled the creation of an SBAA/BFC Biosecurity working group, with associated Terms of Reference (annex 6.2.3) to support further actions required following evaluation of risk assessment and suggested actions going forward. This group aims to support development of a territory wide co-ordinated approach to Biosecurity going forward.

The open and collaborative approach of the project has given multiple opportunities, through workshops and online meetings and webinars for communications and knowledge sharing between the SBAA, the military and academics. The resulting biosecurity working group will be a further opportunity to meaningfully engage with island wide procedures for INNS.

The unforeseen changes in the project, due to Covid, also led to an opportunity to remotely train and upskill three project partners in the use of remote sensing. The training introduced project staff to practicalities of using remote sensing and its capabilities, including; basic principles and analysis, specialist IT, available tools and how to access open source data. The SBAA has used remote sensing work to map wild fires on designated sites in 2019-21, and now, following the training, are in a position to understand the potential application of these tools for the SBAA to use going forward. These technologies could influence how the SBAA approach and develop monitoring and reporting in future; such as designated site extent and potentially condition assessments (which are Overseas Targets as outlined in the 25 Year Environment Plan), coastal change and mapping significant events, such as wildfires.

INNS are recognised to be one of the biggest threats to biodiversity worldwide, therefore the support and resources made available to improve management of biosecurity will deliver protected site condition and extent targets, such as those set for the OTs in the UK 25 year environmental plan. Managing the threat of INNS will reduce a key pressure on designated sites in the SBAs, both SBAA and BFC have statutory duties for protection and management of their features and protected species under SBAA legislation and MOD policy. Avoiding the resource implications of invasion by high risk species will not only be the most economical measure for the territory, but it also avoids impacts on biodiversity and human health.

### **Remote sensing**

Basis for understanding use of remote sensing in SBAA/BFC for applications relating to environmental change and reporting; land cover change, mapping of vegetation, INNS, habitat extent, protected site extent and multiple other applications.

The SBAA are signatories of Bonn, Bern and Ramsar treaties. The necessity to manage of INNS is clear within the conventions as a recognised measure to protect ecosystems, designated features and species. The lists derived from the horizon scanning workshops and subsequent work on understanding base line activity for biosecurity on the SBAs through the project will support protecting protected habitats and species in the SBAs from INNS. Improvements in biosecurity, by targeting high risk species, will reduce threat of lower risk species also entering and establishing. The high-level recognition of the risk associated with INNS and establishment of a biosecurity working group for SBAA & BFC will further strengthen the future management and continued delivery against these agreements. Reducing pressure from INNS, will help support ecosystem resilience to climate change going forward. The infographic here gives an overview of the pressure on the Akrotiri wetland.

The impact of the work on biosecurity has raised this risk to senior staff in both the SBAA/BFC; resulting actions and decision making will likely be delivered through the working group set up with support from this project. The work carried out with delivery partners has already increased awareness within departments (SBAA customs, J4 (logistics), SBAA Head Quarters) delivering controls/measures (movements/SBAA customs) – initial gap analysis identified potential benefits of training of staff in INNS). SBAA/BFC will be included in next review of MOD Joint Service

Policy (JSP) 800 (movements of equip/material), which will be based on work undertaken or initiated as part of this project.

The project gathered data and established monitoring regimes for future sampling for water sampling and remote sensing, as well as collation of biological records from the SBA. This targeted data collection strengthens the evidence available for authorities and will support decision making in future, this is especially relevant to delivering and achieving sustainable development within the SBAA, especially around Akrotiri Salt Lake Ramsar site, where development pressure is most concentrated.

## **5 OPTIONAL: Gender equality**

Our core project team had an even spread of female and male members (7:7). All our work aimed for inclusivity and participation, for example with the horizon scanning workshop expert-elicitation following the principles outlined in (Roy et al. 2020). Although special action was not taken to consider gender, we are confident that we support all colleagues and a wider stakeholder group evenly. We also included information on gender in response to AR1 (see 7.2).

## **6 Sustainability and Legacy**

The progress achieved regarding biosecurity in the SBAs, including the development of the risk assessment and establishment of the SBAA/BFC biosecurity working group will be enduring aspects of this project. This has only been achievable with the resource brought in to undertake horizon scanning exercise and supported by the development of the CyDAS NNS database.

The project has enabled closer working relationships between academics and departments in SBAA, BFC and Republic of Cyprus, this again is strengthened by making data and resources publicly accessible.

The project has led to three Darwin fellowship programmes with JSHU to further investigate impacts of INNS on pollinators (DPLUS101), to implement butterfly monitoring (DPLUS123) and to update NNS databases (DPLUS124).

Support and resource to ensure the sentinel system firmly established to monitor INNS as an integral and core part of JSHU schedule of works going forward, through the continued mosquito trapping work. JSHU have increased expertise of the AEEC educational staff and JHSU for field and lab monitoring and biological recording through co-designing protocols and purchase of equipment to help with recording and monitoring.

The Darwin Project has supported the requirement for defence wide need for vector surveillance as such a business case is under consideration to expand the work of JSHU to become the Centre Defence Entomology (CDE) to support UK military activity globally both on operations and in the firm base. The CDE will be the centre of excellence providing specialist training and a scientific support capability to field practitioners.

Water quality sampling, although disrupted by COVID-19, has presented findings that require further investigation by the SBAA and partners in the Republic of Cyprus. Significantly, the project has provided important water chemistry data (see report annex 6.5) on the hydrology and ecology of one of the most important wetlands in the region; an area which is under high pressure from development.

The project has raised capacity with the SBAA contacts and sharing information around biosecurity and INNS management through workshops and continued meetings. UKCEH Joined UKOTs Conservation Forum. The SBAA have re-joined the group which will enable sharing of resources and expertise across the European (and wider UKOTCF network).

### **Remote sensing**

Remote sensing training provided a useful insight for SBAA staff into available technologies and established basis for decision making for use of RS within SBAA in future. Alterations to the project unexpectedly gave the opportunity for the SBAA to better understand the potential uses for this technology to deliver aspects of statutory duties, such as monitoring and reporting on protected sites and condition.

Additional legacy for the project, comes with the successful Fellowships: DPR8F\1009, DPLUS123 and DPLUS124. All these projects build on work undertaken in both DPLUS056 and DPLUS088 and ensure the continued growth of research on the SBAs and development of capacity through the fellows. Two will specifically focus on invasive non-native species but all three have biodiversity monitoring as the central theme. The interactions amongst the fellows and with stakeholders across the SBAs, including the AEEC education staff, visitors, volunteers alongside the SBAA staff, will provide an opportunity for ongoing implementation and review of approaches developed through DPLUS056 and DPLUS088.

## 7 Lessons learned

### 7.1 Monitoring and evaluation

In order to monitor and evaluate our project progress, UKCEH, with JSHU and the SBAA held regular formal team meetings (via Zoom) and through the large amount of email correspondence across the team, ensured that any potential challenges are picked up before they escalate into major problems. Achievements throughout the project were assessed against stated measured indicators and associated means of verification in the logframe.

During its first year, project progress and outputs were as planned with the exception of some of the fieldwork which was cancelled due to the COVID-19 pandemic. We modified the project approaches to enable progress to be made despite the COVID-19 restrictions (e.g. online training in remote sensing, JSHU taking water samples – see Section 9 for the list of activities).

We undertook 6 monthly internal UKCEH M&E meetings, where we reviewed progress on activities and fed back to the wider team progress and outstanding action via emails and online meetings. With respect to M&E from workshops, please see annex 6.4 for feedback from the two workshops. The average score per day over the three days was 9/10 for the Horizon Scanning and INNS impacts [workshop](#). Over 85% of participants that gave feedback said they were very significantly or significantly more confident applying their knowledge and skills, that their skills had very significantly or significantly increased and that their confidence in applying skills following the workshop had increased very significantly or significantly.

Below is a quote from our SBAA partner on the INNS impacts workshop

*“The horizon scanning workshop has provided the Sovereign Base Area Authority with an important and significant basis for our work on alien invasive species and biosecurity. The workshop also provided an opportunity for staff to engage and network with academics, partners and colleagues from within the EU, but also within Cyprus.”*

### 7.2 Actions taken in response to annual report reviews

Please see responses to the HY2 report reviewer comments below (annex 6.9):

#### 1. Summary of work undertaken by partners

SBA and JSHU staff attended project meetings and along with JSHU, part of BFC, led the work developing the ToR and Biosecurity risk assessment processes within the SBA (annex 6.2). Education staff from the RoC Pedagogical Institute based at the AEEC and Darwin Fellow (DPLUS101), along with JSHU led the development of the educational materials and outreach (annex 6.1)

#### 2. Incorporating project activities into partner work plans

SBA staff will use the remote sensing and water chemistry data to review monitoring methods on the SBA going forward. Mosquito surveillance is now a core output for JSHU who will continue to monitor sites around Lake Akrotiri as well as at ports of entry for mosquitoes. The support of the work for Biosecurity will establish the issue or risk of INNS within the policy context of other risks to the territory, resulting actions and outcomes will be supported by partnership working group set up under this project.

#### 3. Work plan: We sent across a work plan as requested by the reviewer.

#### 4. Update on details of M&E: We continued to undertake internal UKCEH M&E through the project and followed up with the wider project team on progress and actions.



## 5. Baseline of the amount and quality of monitoring prior to project

Prior to this project the majority of structured recording or mapping of native and/or INNS in the SBAs related to *Acacia saligna*. Some projects, such as ReLionMed, record and collate data from the SBAA as part of wider geographical study areas. No formal territory specific list of high risk 'species of concern' existed for the SBAA, other than generic species lists, e.g. those set out in EU legislation.

Collection of data and evidence of bird use of the Akrotiri peninsular is ongoing, and a number of agencies and NGOs undertake certain species and seasonal surveillance and monitoring activities. Vegetation and habitat data for Akrotiri has mainly been established through projects to designate and protect the sites, there is little ongoing formal or structured monitoring underway. Individual projects or contracts have enabled various surveys to take place that have included aspects of flora, fauna and environmental conditions.

Monitoring of water bodies and water quality takes place as part of ongoing commitments by Republic of Cyprus government departments, this relates to surface and ground water monitoring as part of Water Framework directive requirements.

6. We updated information on management responsibilities of the lake: The Akrotiri salt lake is the responsibility of the Sovereign Base area Administration, aspects of reporting and monitoring are undertaken by both SBAA and the Republic of Cyprus. Mosquito monitoring and management is the responsibility of the Joint Services Health Unit.

7. We sent across information on workshop gender and profession disaggregated statistics:

Horizon scanning (INNS impact) workshop:

	Day 1	Day 2	Day 3
Female	16	16	15
Male	24	19	18
Volunteer expert	31 – 1 SBA, 11 Cyprus, 19 Other country	28 – 1 SBA, 10 Cyprus, 17 Other country	27 – 1 SBA, 8 Cyprus, 18 Other country
Student	2 – Cyprus	1 – Cyprus	1 – Cyprus
Project partner	7 – 5 SBA, 2 Other country	6 – 4 SBA, 2 Other country	5 – 3 SBA, 2 Other country

## 8 Darwin Identity

All our communications showed that the Darwin Initiative funded this work. The Darwin Initiative logo is on our website [www.ris-ky.info](http://www.ris-ky.info) and on all the promotional material including the project postcards, workshop programmes, leaflets and flyers. The Darwin Initiative logo is added on all the presentations we have given for the workshops and through talks given outside of the project. We regularly refer to our Darwin Initiative project when presenting other work.

The project had a designated Facebook page had over 270 members but this has been archived by the project partner and the page will be re-launched when DPLUS124 starts. The project also has a Twitter account (@RiskYAliens). The [News](#) and [Blog](#) pages of the project website are updated as items are created and all new project related activity shared on Facebook.

The following media, meetings, papers, [methodologies](#), articles and reports have been published from the successful award of this project:

### Media

Filming of education video by the European Service Network on the methods of PoMS-Ky. Please see the links below for the resources for the European Commission.

### Meetings

Engagement activities through the AEEC on monitoring pollinating insects including an event through Insect Week on 26 June 2021 <https://www.facebook.com/events/3999695443460550/>

Meetings with community leaders and other stakeholders in Autumn 2020 and through 2021, regarding mosquito management in Limassol, Cyprus and with university students about protecting yourself from mosquitoes.

JSHU and UKCEH staff attended an Assessing Butterflies in Europe ([ABLE](#)) workshop held in Nicosia in September 2019 where their expertise was shared with a wider range of ecologists across Cyprus. Tweets were sent from this workshop.

JSHU and AEEC hosted an [event on moth recording and awareness raising](#) in summer 2019, with expertise and staff time and equipment from the DPLUS088 team. The Darwin logo featured on the presentations given.

JSHU partners have presented all the work undertaken previously on citizen-science and invasive alien species during talks at COST Actions 17122 and 17108 annual conferences and meetings. The pollinator monitoring scheme was presented during a COST Actions 17122 Management Committee meeting where more than 100 scientists from 27 European countries were participating on the 24/10/2019 by MSc candidate Ioanna Angelidou. Ioanna Angelidou also presented the Darwin initiative and the Pollinator monitoring scheme of Kýpros during her MSc thesis defence on the 14/11/2019. The Darwin Initiative logo has been widely promoted by JSHU during citizen scientist initiatives.

UKCEH represented the project at a workshop on invasive species in North Macedonia in September 2019, hosted by the East and South European Network for Invasive Alien Species [ESENIAS](#) where a lot of interest was shown for the work being undertaken.

#### *Publications*

Pescott, O. L., J. Peyton, and J. O. Mountford. 2020a. UKSBA Cyprus - Habitat Samples, 2019. Version 1.1. Biological Records Centre. Sampling event dataset. GBIF.<https://doi.org/10.15468/c8p4qe>.

Pescott, O. L., J. Peyton, and J. O. Mountford. 2020b. UKSBA Cyprus Plant Records 2018. Version 1.2. Biological Records Centre. Occurrence dataset. GBIF.<https://doi.org/10.15468/xp6bam>.

Pescott, O. L., J. Peyton, M. Onete, and J. O. Mountford. 2020c. UKSBA Cyprus - Quadrats 2015-2017. Biological Records Centre. Sampling event dataset GBIF.<https://doi.org/10.15468/r4wyck>.

Peyton et al. (2020) Horizon Scanning to Predict and Prioritize Invasive Alien Species With the Potential to Threaten Human Health and Economies on Cyprus. *Frontiers in Ecology and Evolution* 8.

(Martinou et al. 2020c) A call to arms: Setting the framework for a code of practice for mosquito management in European wetlands. *Journal of Applied Ecology* n/a.

#### *Newsletters and Blogs*

Peyton, J. (2021) Invasive-non-native species: increasing understanding of their arrival and impact. Published in Darwin Newsletter.

Angelidou, I. (2021) Understanding how invasive non-native species affect biodiversity across the Sovereign Base Areas, Cyprus. Published in Darwin Newsletter. Published as part of Fellowship but linked to DPLUS088.

Pescott, O.L. (2021) [More than 6000 plant records released for Mediterranean biodiversity hotspot](#). Published blog on UKCEH website

Peyton, et al. (2019) [Assessment of current and future Invasive Alien Species in Cyprus SBAs and other UKOTs](#) published in the UKOTs Conservation Forum Newsletter.

Peyton et al. (2019) [Assessment of invasive non-native species in Cyprus – the RIS-Ký project](#) published in Sanctuary Magazine.

#### *Presentations*

Martinou, A.F. and Peyton, J (2021): INNS on Cyprus and the Code of Practice for mosquito management in wetlands. 9<sup>th</sup> March 2021 as part the [Staying Connected for Conservation in a Changed World: UKOTCF online conference 2021](#).

Roy, H.E. (2021) Global Challenges. BES Student Futures and Research Conference. 4th March 2021. **Invited Speaker**

Roy, H.E. (2021) Ontario Invasive Species Forum. 1st March 2021. **Invited Speaker**

Martinou, A.F. (2021): Code of Practice for mosquito management in wetlands. 17<sup>th</sup> February 2021 as part of [Monitoring and reporting on the health of wetlands in the eastern Mediterranean workshop](#)

Peyton, J. (2021): Introduction to Darwin Project. 17<sup>th</sup> February 2021 as part of [Monitoring and reporting on the health of wetlands in the eastern Mediterranean workshop](#)

Gerard, F. (2021): Earth observations of wetlands. 18<sup>th</sup> February 2021 as part of [Monitoring and reporting on the health of wetlands in the eastern Mediterranean workshop](#)

Pescott, O.L. (2020). Invasive alien plants: Where are we, and what's on the horizon? 12 March 2020. University of Oxford. **Invited Speaker**

Roy, H.E. (2019) Engaging People in Recording Wildlife. Annual Research Meeting, Department of Botany and Zoology, Stellenbosch University, South Africa. 22-22 November 2019. **Invited Speaker**

Roy, H.E. (2019) Citizen science and alien species. Invasion Frameworks, Centre for Invasion Biology, Stellenbosch University, South Africa. 11-13 November 2019. **Invited Speaker**

Roy, H.E. (2019) Engaging people in recording wildlife. Southwood Lecture, University of Oxford. 28 October 2019. **Invited Speaker**

Roy, H.E. (2019) Unravelling the ecology of invasive non-native species. The Linnean Society of London. 9 October 2019. **Invited Speaker**

Roy, H.E. (2019) Global perspectives on the ecology of invasive alien species: people, policy and nature. Detection and control of forest alien species in a dynamic world. 25-28 September 2019. **Invited Speaker**

Roy, H.E. (2019) Global perspectives on the ecology of invasive alien species: people, policy and nature. Detection and control of forest alien species in a dynamic world. 25-28 September 2019. **Invited Speaker**

Roy, H.E. et al (2019) Predicting and preventing the arrival of invasive non-native species on islands globally. Island Biology, La Reunion, 8-13 July 2019. **Invited Speaker**

## 9 Impact of COVID-19 on project delivery

The main challenge experienced by the project was the loss of the ability to undertake fieldwork for the remote-sensing ground-truthing, vegetation and water sampling. Mobilising datasets and the use of other remote sensing imagery were used as an alternative, as were shifts in the responsibilities of project partners (see list below). Smaller issues around being unable to host in-person workshops were overcome through using virtual workshop tools such as Zoom, Teams and GoToWebinar. LTS approved (via the August 2020 Change Request) the transfer of funds from T&S to UKCEH staff time to create increased capability to deliver training and training materials, as well as undertaking increased lab work associated with increased water sampling and remote sensing validation work.

Our project diverted to resources previously assigned for T&S to:

1. Increased water sampling undertaken by JSHU and increased analyses by UKCEH.
2. Increased engagement tools including collaborative development of a wetlands Field Studies Council chart (Annex 6.1.1).
3. Training of SBA and JSHU staff in remote sensing techniques (three staff members) – a series of seven training sessions are being delivered virtually by UKCEH enabling SBA

and JSHU staff to independently assess satellite and remote sensing imagery for the presence of INNS.

4. Increased use of existing imagery for the ground-truthing of remote sensing data.

## 10 Finance and administration

### 10.1 Project expenditure

Project spent (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others				
<b>TOTAL</b>				

Staff employed (Name and position)	Cost (£)
Jodey Peyton - Project manager / botanist	
Charles George - Remote Sensing Scientist	
Helen Roy - Project Leader and community ecologist	
Mike Bowes - Hydrochemist	
France Gerard - Remote Sensing Scientist	
Emily Trill - Hydrologist	
Peter Scarlett - Freshwater botanist	
Oliver Pescott - Botanist	
Marc Botham - Entomologist	
Linda Armstrong - Analytical Chemist	
<b>TOTAL</b>	

Consultancy – description and breakdown of costs	Other items – cost (£)
Maintaining and updating CyDAS	
Developing PoMS-Ky app	
Developing online recording and data flow processes	
<b>TOTAL</b>	



<b>Capital items – description</b>	<b>Capital items – cost (£)</b>
<b>TOTAL</b>	

<b>Other items – description</b>	<b>Other items – cost (£)</b>
Infographic posters Open Access charges Postage costs for water samples H&S training for water surveys Camera Orienteering map Field Studies Council Field Service Guides NHBS Field Kit	
<b>TOTAL</b>	

## 10.2 Additional funds or in-kind contributions secured

<b>Source of funding for project lifetime</b>	<b>Total (£)</b>
JSHU	
AEEC	
UKCEH	
<b>TOTAL</b>	

<b>Source of funding for additional work after project lifetime</b>	<b>Total (£)</b>
DPLUS123	
DPLUS124	
<b>TOTAL</b>	

### **10.3 Value for Money**

Working with volunteers and within existing structures (e.g. the AEEC) enabled the rapid and efficient dissemination and sharing of information. Project partners work as part of European and wider international teams and are well placed to call upon expertise from across existing networks, both in the region and wider UKOTs and European network. International recognition of the project has also been achieved through two large European networks for scientists' cooperation CA 17122 and CA17508 on Alien Species and Aedes Invasive mosquitoes respectively.

In terms of platforms for dissemination and web platforms, the project has utilised, where possible, existing web portals such as GBIF, iNaturalist, the EIDC and the Catalogue of Life), and also create new mechanisms for reporting data through the online [PoMS-Ký](#) and [Mini-PoMS-Ký](#) pages.

The project team, throughout the two years, shared outputs of the project widely (through social media) and the JSHU partner has also signposted resources created through the project on their website as well as through multiple media platforms e.g. Twitter or Facebook and blogs and news items on the project website. The evidence-based practice of the Darwin Project has enabled JSHU to reflect and realign its outputs to a more targeted approach with the associated labour and material cost saving.

In order to ensure replicability of methods across different potential user groups, when processing data, open source software (e.g. R) were used where possible.

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

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

## Annex 1 Project’s full current logframe as presented in the application form (unless changes have been agreed)

Please insert your project’s logframe (if your project has a logframe), including indicators, means of verification and assumptions. N.B. if your application’s logframe is presented in a different format in your application, please transpose into the below template. Please feel free to contact [Darwin-Projects@ltsi.co.uk](mailto:Darwin-Projects@ltsi.co.uk) if you have any questions regarding this.

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p><b>Outcome: Sustainable surveillance of current and potential future threats to Lake Akrotiri, supported by local organisations and stakeholders, founded on a robust and open evidence base.</b></p>	<p>0.1 Government, NGO, tourist and other local stakeholders demonstrate and report greater engagement in the environmental surveillance of Lake Akrotiri [by Mar 2021]</p> <p>0.2 Previously unavailable parameters for baseline assessment of quality of the wetland of Akrotiri become available [by Mar 2021]</p> <p>0.3 AEEC and JSHU staff, and additional local stakeholders attend current and future threats workshop, exchanging knowledge and learning from regional and global wetland experts, ensuring continued engagement and focus on wetland surveillance [by Mar 2021]</p> <p>0.4 AEEC provide the platform for discussions, workshops, and act as a hub for ongoing surveillance of the Akrotiri wetlands [by Mar 2021]</p>	<p>0.1 Database of key stakeholders developed with links to partners provided on the project website with stakeholders listed. At least three stakeholder groups engaged with active surveillance, through structured surveys coordinated by the RIS-Ký team, and with plans for promotion to the wider community by their organisations being listed on promotional material</p> <p>0.2 Open access datasets published by EIDC and outline of indicator of wetland quality published and promoted to stakeholders and disseminated to all stakeholders during the end of project workshop. Specific questions on feedback form to review engagement by stakeholders.</p> <p>0.3 Feedback from workshop questionnaires compiled and reviewed alongside collaboratively written workshop report approved by all participants. Results of M&amp;E published on RIS-Ký website. Participants invited to reflect on previous knowledge and change as a consequence of the workshop. Additionally, participants will be asked to provide examples of the subsequent use of the knowledge</p>	<p>0.5 Interest from relevant stakeholders and time available to commit to surveillance</p> <p>0.2 Data are collected according to scientific standards, and are therefore worthy of publication and fit for purpose.</p> <p>0.3 Interest from relevant stakeholders and time available to commit to workshops and produce verification outputs</p> <p>0.4 AEEC project team have capacity to expand their work in this area, particularly around the developing of new resources for schools and visitors. Also assumes that all stakeholders produce enough evidence and data of interest to engage and interest staff, public and other stakeholders alike.</p>

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
		<p>0.4 AEEC, SBA and RoC staff have increased capacity for and understanding of wetland of wetland surveillance, verified through formal (with minutes) and informal meetings throughout the two-year project and through end-of-project questionnaires to staff at project wash-up meeting. This project will actively seek to build upon existing links between key stakeholder groups to share information across wetland management in Cyprus. We will co-design the monitoring and thus ensure that the knowledge base is increased for all stakeholders. Additional means of verification throughout the project will include collaborative development of new information sources (leaflets, worksheets, presentations etc.) delivered to school groups and other visitors coupled with recruitment of new volunteer recorders and academic engagement around wetland surveillance at the site. Additionally published articles (&gt;2) and the submission of volunteer-collected data will also provide means of verification.</p>	
<p><b>Output 1:</b> Development and maintenance of up-to-date database of INNS in Cyprus (CyDAS) across taxa and environments, with innovative tools, potentially including mobile applications, for recording native and non-native species</p>	<p>1.1 Information (such as habitat information, date of introduction, impacts etc.) on INNS in Cyprus (e.g. taxonomy, pathways etc.) continues to expand through the continued support and development of CyDAS (www.ris-ky.info/cydas) [by Mar 2021]</p> <p>1.2 New and updated checklists of INNS maintained and published through RIS-Ký and GRIIS websites [by Mar 2021]</p>	<p>1.1 Annual summary of data provided on RIS-Ký website alongside local press release to increase awareness of non-native species and biosecurity to local communities. Data will also be shared at least annually through GRIIS and GBIF. Examples of use of the data will be collated annually.</p> <p>1.2 Checklist updated at least annually. Increase in use of the checklist in Cyprus by various stakeholders through RIS-Ký website and links to partner websites by</p>	<p>1.1 Sufficient new information available to update the inventory</p> <p>1.2 Our website manager is able to continue to interface with global datasets and standards (e.g. Catalogue of Life)</p> <p>1.3 Predicted effort sufficient to complete survey. Survey strategy approved by stakeholders</p> <p>1.4 Involvement of local experts sufficient to oversee curation and verification</p>



Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
	<p>1.3 INNS distributions are increasingly well-characterised at a fine scale (at least 1 x 1 km) over the two year duration of project [by Mar 2021]</p> <p>1.4 At least 5 local stakeholders understand the value of biological records, and desire involvement in their use and curation post-project [by Mar 2021]</p> <p>1.5 RIS-Ký project website undergoes a step-change with the inclusion of additional online recording pages for other relevant initiatives such as monitoring mosquitoes and pollinating insects [by June 2019]</p>	<p>clear and continued promotion of this capability through social media and workshops</p> <p>1.3 At least 500 new INNS records within CyDAS; new data flows to GBIF and is subsequently displayed on the embedded GBIF maps within CyDAS.</p> <p>1.4 Commitment from stakeholders to promote and contribute to biological recording verified by evidence of new records and recorders. We will achieve this through formal (with minutes) and informal meetings. Citations of GBIF datasets will demonstrate use by scientific community. Number of users submitted INNS distribution data to CyDAS or related platforms increases over project lifetime</p> <p>1.5 Website incorporates ability to record occurrences of INNS and other project-relevant groups. This facility will be promoted through social media. Number of recorders using the recording pages will be reported and analysis will focus on most effective methods of promotion leading to increased activity.</p>	<p>1.5 Stakeholders view webpages and find them useful</p>
<p>Output 2: Hydrological and vegetation sampling to generate baseline measures of Lake Akrotiri for water quality, and vegetation data for two seasons and work with local key stakeholders to understand and discuss results</p>	<p>2.1 Wetland quality can now be characterised by newly available water chemistry data [by June 2020]</p> <p>2.2 Key stakeholders at stakeholder meeting with SBA, local Government, NGO etc., leading to better appreciation and understanding of the status, and key</p>	<p>2.1 Water quality data published as open datasets and promoted through RIS-Ký website outputs</p> <p>2.2 Meeting report, and communication plan co-developed with participants (25 people from at least six organisations) to ensure relevant dissemination and so increased understanding across different user-groups.</p>	<p>2.1 All samples able to be collected within timeframe and resource limits</p> <p>2.2 Key stakeholders are willing and able to attend the workshop and to contribute to outputs</p>

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
	<p>threats to, the Akrotiri wetlands [by September 2020]</p> <p>2.3 Understanding of native and non-native wetland plant communities around lake placed on a firm basis, with links to hydrology [by June 2020]</p> <p>2.4 Standardised wetland monitoring methods suitable for the Akrotiri environment become available and are shared with key stakeholder groups and other UKOTs to facilitate replication of methods elsewhere [by Dec 2020]</p>	<p>Agreement by participants to adopt and promote the communication plan.</p> <p>2.3 Detailed scientific reports available through website and literature, supported by open access datasets. Download statistics will be reviewed.</p> <p>2.4 Methods available through website and literature. Agreement by at least two stakeholder groups that the methods will be promoted at relevant sites. Feedback from stakeholders will be reviewed as short case study report.</p>	<p>2.4 Data are collected according to scientific standards and within resource limits, and are therefore useful and publishable</p> <p>2.4 Methods are carefully documented throughout the project and can be clearly summarised and made available</p>
<p><b>Output 3:</b> Employ remote sensing of Lake Akrotiri lake and environs to give baseline assessment of plant communities and land cover, linking to ground-truthing data collected in DPLUS056 and Output 2. This work will also generate methods for others to interpret satellite data for ongoing analysis of saline Mediterranean wetland site quality</p>	<p>3.1 Digital plant community and land cover map of Lake Akrotiri become available, underpinned by baseline vegetation monitoring data [by June 2020]</p> <p>3.2 Datasets on Lake Akrotiri water levels become available [by Mar 2021]</p> <p>3.3 Datasets on Lake Akrotiri vegetation available [by Mar 2021] Data used by local stakeholders. [by Mar 2021]</p> <p>3.4 Methods of analysing remotely sensed data shared with at least one other UKOT [by Mar 2021]</p>	<p>3.1 Data and products (e.g. GIS outputs in different formats) become available through website and/or open access data portals. Report on engagement of stakeholders with the maps by explanatory talk at AEEC and report on potential use following collaborative community-led discussion. Information also shared through social media.</p> <p>3.2 DOIs of datasets available via EIDC. Data promoted to and used by local stakeholders with short report outlining examples of use and statements from stakeholders on value of the information.</p> <p>3.3 DOI of datasets available via EIDC. Local stakeholder reports with examples of use Data promoted to and used by local stakeholders with short report outlining examples of use and statements from stakeholders on value of the information.</p> <p>3.4 Dissemination and communication plan developed documenting planned use by</p>	<p>3.1 Data collected allow useful separation of plant communities, meaning that outputs are meaningful and useful</p> <p>3.2 Data on EIDC is of interest to users</p> <p>3.3 Data are collected according to scientific standards, and are therefore worthy of publication</p> <p>3.4 Stakeholders from other UKOTs engage with the methods and find them useful</p>

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
		<p>stakeholders and best practice document both available for download from RIS-Ký website. Direct engagement with one other UKOT including report on feedback of value and applicability of method.</p>	
<p><b>Output 4:</b> Generation of outreach and engagement material around species network interactions and further recording of species network data</p>	<p>4.1 New teaching and education topics available to, and incorporated into, AEEC education programme, including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology [by Sep 2020]</p> <p>4.2 Engagement material to show complexities of wetland habitat and interlinkages between hydrology, ecology and society newly utilised by AEEC in teaching and outreach [by Sep 2020]</p> <p>4.3 Citizen Science (and associated QA) surveys looking at interactions between native pollinators and plant INNS become available [by Mar 2021]</p> <p>4.4 Code of Practice for Mosquito Management including rapid response for INNS newly available and used by site managers and policy makers at Akrotiri [by Sep 2020]</p>	<p>4.1 Increase in monitoring activity by visiting students and teachers coupled with increased awareness about the biodiversity, water quality and hydrology. This will be actioned by co-creating a teaching plan with the AEEC teaching staff. Students will be invited to produce posters to share with other visiting groups and to highlight increased understanding. AEEC staff will assist in production of podcast / video for dissemination on RIS-Ký. Teaching pack available through RIS-Ký website and feedback gathered from participating students</p> <p>4.2 Interactive web-based tool becomes available. AEEC teaching staff assist in production and script to ensure appropriate level of communication also highlighting increased capacity (documented in tool guidelines and acknowledgements). Number of downloads reported.</p> <p>Interactive web-based tool becomes available. AEEC teaching staff assist in production and script to ensure appropriate level of communication also highlighting increased capacity (documented in tool guidelines and acknowledgements). Number of downloads reported.</p>	<p>4.1 Implementation of the teaching pack aligns with guidance and training</p> <p>4.2 Stakeholder view or download the material</p> <p>4.3 Predicted effort sufficient to complete survey. Survey strategy approved by stakeholder</p> <p>4.4 CoP will be acceptable for publication.</p>

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
		<p>4.3 Promotion materials developed by AEEC teaching staff with students in the form of key messages on postcards displayed on a designated board at the AEEC. The number of postcards disseminated will provide measure of uptake of interest in understanding across the themes of biodiversity, water quality and hydrology. Observations from 20 new sites, visited by AEEC staff, students and Citizen Scientists recorded on-line and visible from the RIS-Ký website</p> <p>4.4 Dissemination plan developed collaboratively with AEEC and JSHU for communication to local communities. Local communities invited to evening event to discuss local measures of management. Plans for uptake by local communities documented. Overall increase in sustainable management approaches. CoP will be published in in Open Access Journal</p>	
<p><b>Output 5.</b> Training and capacity building provided for OT government and military staff on biosecurity and continued biological recording of INNS</p>	<p>5.1 Project start-up meeting and scoping survey finalise precise scope of subsequent workshops and surveys, leading to practical and sustainable changes in project planning [April 2019]</p> <p>5.2 Engagement workshop and training event occurs leading to increased knowledge about Akrotiri, its biodiversity, and biological recording as a means of monitoring change [by September 2019].</p> <p>5.3 Local capacity for recording increases, through events such as Bioblitzs and volunteer engagement days at JSHU and the AEEC, webinars on</p>	<p>5.1 Report on start-up meeting on website and circulated to all stakeholders and promoted through social media</p> <p>5.2 Workshop report and feedback forms to document and evaluate understanding of stakeholders about the project aims. At least 25 people engaged through attendance to workshop and active discussions around the key themes of the project.</p> <p>5.3 Information on numbers of participants at workshops, download statistics and links through stakeholder websites documented and reviewed to increase uptake and dissemination over the project. Details of</p>	<p>5.1 Stakeholders interested in attending. Scoping confirms access and practicality. Scoping inform the risk assessments</p> <p>5.2 Stakeholders interested in attending. Trainers are adequately briefed. Relevant risk assessments conducted</p> <p>5.3 Stakeholders interested in attending training sessions; relevant expertise available to provide Workshops</p> <p>5.4 Stakeholders interested in attending. Stakeholders support prioritisation decisions. Year 1 surveys yield sufficient data to prioritise Year 2 efforts</p>



Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
	<p>INNS, information leaflets etc. [until Mar 2021].</p> <p>5.4 Year 2 training and engagement workshops building on survey and biosecurity issues highlighted in Year 1 leading to increased knowledge and understanding of the themes by staff [May 2020].</p> <p>5.5 Biosecurity guidance becomes available, linked to DPLUS056 and informed by priority species identified through UK OTs horizon scanning currently led by CEH. This guidance will be applicable for terrestrial habitats and will be applicable to all UKOTs</p>	<p>events on project websites and social media announcements and through posters at JSHU and AEEC</p> <p>5.4 Training workshops take place engaging at least 25 people; summary of feedback used to inform follow-up material (including reference documents, posters, pathway action plans etc) circulated to all participants and available through RIS-Ký website but also as hard copies at AEEC. Participants invited to score value, relevance and extent of knowledge acquisition through feedback questionnaire.</p> <p>5.5 Biosecurity guidance will be distributed within stakeholder network and on project website as downloadable posters and short guidance documents will be the key outputs. Available both in English and Greek. Examples of uptake of biosecurity actions will be documented through short case study statements</p>	<p>5.5 Stakeholders engage with the biosecurity guidance and adequate resources are provided to ensure effective communication</p>
<b>6. Publications</b>	Publications [from April 2021]	Published material in peer-reviewed journals	
<p>Activities:</p> <p>Each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each new activity should start on a new line.</p> <p>Output 1 Development and maintenance of up-to-date database of INNS in Cyprus (CyDAS) across taxa and environments, with innovative tools, including mobile application, for recording native and non-native species</p> <p>1.1 Support information on INNS in Cyprus (e.g. taxonomy, pathways etc.) updated bi-annually through the continued support and development of CyDAS</p> <p>1.2 Checklists of INNS maintained and published through RIS-Ky and GRIIS websites</p> <p>1.3 At least 500 new record of INNS added over the two year duration of project</p> <p>1.4 Engagement of at least 5 local stakeholders in curation of records and records curated by local or regional experts</p> <p>1.5 Development of RIS-Ky project website with inclusion of additional online recording pages for other relevant initiatives such as monitoring mosquitoes and pollinating insects</p>			

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p>Output 2 Hydrological and vegetation sampling to generate baseline measures of Lake Akrotiri for water quality, soil moisture and vegetation data for the dry and wet season and work with local key stakeholders to understand and discuss results</p>			
<p>2.1 Soil moisture and water chemistry data available sufficient for characterising wetland quality  2.2 Results of survey discussed with Key Stakeholders at stakeholder meeting with SBA, local Government, NGO etc.  2.3 Detailed assessment of native and non-native wetland plant communities around lake, with links to hydrology  2.4 Water monitoring methods shared with key stakeholder groups and other UKOTs to facilitate replication of methods elsewhere</p>			
<p>Output 3 Remote sensing of Lake Akrotiri lake and environs employed to give baseline assessment of plant communities and land cover, linking to ground truthing data collected in DPLUS056 and Output 2.</p>			
<p>Generation of methods for others to interpret satellite data for ongoing analysis of saline Mediterranean wetland site quality  3.1 Digital plant community and land cover maps generated of Lake Akrotiri underpinned by baseline vegetation monitoring data  3.2 Production of published open access dataset on extent (current and future) of Lake Akrotiri water levels  3.3 Production of published open access dataset on current and future vegetation changes around Lake Akrotiri  3.4 Generation of standardised methods of analysing remote sensing data that can be used on other UKOTs, such as British Indian Ocean Territory, where changing water levels will be a critical aspect to the ongoing activities on island</p>			
<p>Output 4 Generation of outreach and engagement material around plant, animal and habitat interactions and further recording of species interaction data (by continuation of Citizen Science activities such as PoMS-Ky from DPLUS056 etc.)</p>			
<p>4.1 Teaching pack developed in collaboration with AEEC including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology  4.2 Creation of interactive web-based tool for use in engagement material to show complexities of wetland habitat and interlinkages between hydrology, ecology and society  4.3 Structured Citizen Science (and associated QA) surveys looking at interactions between native pollinators and plant INNS  4.4 Publication of Code of Practice for Mosquito Management including rapid response for INNS</p>			
<p>Output 5 Training and capacity building provided for UKOT government and military staff on biosecurity and continued biological recording of INNS</p>			
<p>5.1 Project start-up meeting and scoping survey finalise precise scope of subsequent workshops and surveys [April 2019]  5.2 Engagement workshop and training event occurs [Q2 2019].  5.3 Capacity building, through events at JSHU and the AEEC, webinars, information leaflets etc. [until Mar 2021].  5.4 Year 2 training and engagement workshops building on survey and biosecurity issues highlighted in Year 1 [May 2020].  5.5 Publication of Biosecurity guidance, linked to DPLUS056 and informed by priority species identified through UK OTs horizon scanning currently led by CEH, for terrestrial habitats that will be applicable to all UKOTs</p>			
<p>Output 6 Publications</p>			
<p>6.1 Publications [from April 2021]</p>			

## Annex 2 Report of progress and achievements against final project logframe for the life of the project (if your project has a logframe)

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
<p><b>Impact:</b></p> <p>We will develop robust ecological and hydrological methods alongside other tools and resources to monitor the internationally important Akrotiri wetland and inform biosecurity guidance, with relevance for other UKOTs</p>		<p>Water chemistry data and reports on wetland health (annex 6.5) and habitat mapping with remote sensing imagery (annex 6.6) written and shared with stakeholders for final project meeting. <a href="#">Methods</a> for water chemistry sampling and habitat mapping using drones openly available on project website, supporting continuity of monitoring. Development of web-tools to enable bulk upload of verified data to GBIF, supporting evidence-based future monitoring activities. A Biosecurity <a href="#">webpage</a> created for guidance for visitors to Akrotiri and SBAs and structure for working group on best practice around Biosecurity developed to ensure Akrotiri is supported from IAS. Educational materials co-created with staff at AEEC and JSHU ensure key messages around wetland health are communicated through lessons and outreach events. The project also re-established links between the SBAA and the UKOT Conservation Forum European Territories Working Group. It is expected these links will support strategic working between European Territories and beyond.</p>
<p><b>Outcome Sustainable surveillance of current and potential future threats to Lake Akrotiri, supported by local organisations and stakeholders, founded on a robust and open evidence base.</b></p>	<p>0.1 Government, NGO, tourist and other local stakeholders demonstrate and report greater engagement in the environmental surveillance of Lake Akrotiri [by Mar 2021]</p> <p>0.2 Previously unavailable parameters for baseline assessment of quality of the wetland of Akrotiri become available [by Mar 2021]</p> <p>0.3 AEEC and JSHU staff, and additional local stakeholders attend current and future threats workshop, exchanging knowledge and learning from regional and global wetland experts, ensuring continued engagement and focus on wetland surveillance [by Mar 2021]</p> <p>0.4 AEEC provide the platform for discussions, workshops, and act as a</p>	<p>0.1 AEEC staff are running mini-PoMS-Ký surveys as part of their education programme, JSHU are undertaking regular pollinator monitoring FIT count surveys, with results being uploaded via the project <a href="#">online</a> platforms. The project has developed an Application for capturing PoMS-Ký survey data. SBA environment staff and JSHU staff received training in remote sensing methods.</p> <p>0.2 Water chemistry data shared with the SBAA, JSHU and the Water Development Department in Cyprus and are available through the NERC Environmental Information Data Centre (EIDC). Methods for surveys and mapping with drones were shared with partners and the online link (<a href="#">here</a>) shared with the UKOT Conservation Forum during a quarterly meeting of the European Territories Working Group.</p> <p>0.3 The project held an online workshop: Monitoring and reporting on the health of wetlands in the eastern Mediterranean in February 2021. The agenda can be found <a href="#">here</a> with links to the talks and presentations <a href="#">here</a>.</p> <p>0.4 The AEEC formed a pivotal location for meetings and workshops throughout the project, with the key stakeholders working together to discuss and design methods</p>

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
	hub for ongoing surveillance of the Akrotiri wetlands [by Mar 2021]	around monitoring. The AEEC was open at various points throughout the last year and hosted PoMS-Ký surveys and training events when it was.
<p><b>Output 1.</b> Development and maintenance of up-to-date database of INNS in Cyprus (CyDAS) across taxa and environments, with innovative tools, potentially including mobile applications, for recording native and non-native species</p>	<p>1.1 Information (such as habitat information, date of introduction, impacts etc.) on INNS in Cyprus (e.g. taxonomy, pathways etc.) continues to expand through the continued support and development of CyDAS (<a href="http://www.RIS-Ký.info/cydas">www.RIS-Ký.info/cydas</a>) [by Mar 2021]</p> <p>1.2 New and updated checklists of INNS maintained and published through RIS-Ký and GRIIS websites [by Mar 2021]</p> <p>1.3 INNS distributions are increasingly well-characterised at a fine scale (at least 1 x 1 km) over the two year duration of project [by Mar 2021]</p> <p>1.4 At least 5 local stakeholders understand the value of biological records, and desire involvement in their use and curation post-project [by Mar 2021]</p> <p>1.5 RIS-Ký project website undergoes a step-change with the inclusion of additional online recording pages for other relevant initiatives such as monitoring mosquitoes and pollinating insects [by June 2019]</p>	<p>The project has met this output (evidence provided in section 3.2) working with the team and wider stakeholder network, through public events to promote online recording (<b>activity 1.4</b>) and mapping of species data (<b>activity 1.2 and 1.3</b>). Plant data from previous botanical surveys was uploaded to GBIF (<b>activity 1.3</b>) (see Pescott et al. 2020a, b, Pescott et al. 2020c). In addition to this data mobilisation, we have also either added or edited (new photos or species account details etc.) around 530 CyDAS accounts during this project to date (<b>activity 1.1</b>). As a result of these updates. We have also supplied a new set of data to the Global Register of Introduced and Invasive Species (GRIIS) Cyprus (updated 14/09/2020) team at the IUCN, and provided the data for a new GRIIS dataset specifically for the Cyprus SBAs (currently found here, but not yet updated with our contributions (<b>activity 1.2</b>)). Online recording is available through the project website for taxon monitoring (<b>activity 1.5</b>) (PoMS-Ký and Mini-PoMS-Ký and links provided to iNaturalist, an established online platform, through a biodiversity monitoring page. This page also gives information on the background of biodiversity monitoring in Cyprus (<b>activity 1.5</b>). A mobile application for PoMS-Ký has also been developed and is undergoing final QA checks before being launched later this year (2021). DPLUS124 will continue the work started on the CyDAS database.</p>
Activity 1.1 CyDAS continues to be updated (with information such as habitat information, date of introduction, impacts etc.) on INNS in Cyprus (e.g. taxonomy, pathways etc.) ( <a href="http://www.RIS-Ký.info/cydas">www.RIS-Ký.info/cydas</a> )		Completed – 530 species records added or updated. DPLUS Fellow 124 to carry on maintaining it.

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
Activity 1.2. New and updated checklists of INNS maintained and published through RIS-Ký and GRIIS websites		Completed - Updated list published through GRIIS (Martinou et al. 2020a).
Activity 1.3. INNS distributions are well-characterised at a fine scale (at least 1 x 1 km) over the two year duration of project. At least 500 new record of INNS added over the two year duration of project		Completed - plant data from previous surveys are published to GBIF.
Activity 1.4. Engagement of at least 5 local stakeholders in curation of records and records curated by local or regional experts		Completed - Informal meetings and talks on biological recording with five JSHU and AEEC staff plus stakeholders throughout the two years and development of platform for online recording and capacity building through provision of tablets and laptops for further recording on SBAs. In addition Stakeholder events held for PoMS-Ký and Mini-PoMS-Ký recording with school children and public.
Activity 1.5. Development of RIS-Ky project website with inclusion of additional online recording pages for other relevant initiatives such as monitoring mosquitoes and pollinating insects		Completed - Website now able to facilitate online recording and hosts a page informing website visitors how to get involved in biological recording in Cyprus.
<p><b>Output 2.</b> Hydrological and vegetation sampling to generate baseline measures of Lake Akrotiri for water quality, and vegetation data for two seasons and work with local key stakeholders to understand and discuss results</p>	<p>2.1 Wetland quality can now be characterised by newly available water chemistry data [by June 2020]</p> <p>2.2 Key stakeholders at stakeholder meeting with SBA, local Government, NGO etc., leading to better appreciation and understanding of the status, and key threats to, the Akrotiri wetlands [by September 2020]</p> <p>2.3 Understanding of native and non-native wetland plant communities around lake placed on a firm basis, with links to hydrology [by June 2020]</p> <p>2.4 Standardised wetland monitoring methods suitable for the Akrotiri environment become available and are shared with key stakeholder groups and other UKOTs to facilitate replication of methods elsewhere [by Dec 2020]</p>	<p>A change request was submitted to LTS Darwin in August 2020 when it became clear that travel was not possible and UKCEH could not undertake the planned water sampling and vegetation survey, requesting to move funds from T&amp;S to UKCEH staff time to deliver training and increase the sample processing within UKCEH.</p> <p>Data on water chemistry uploaded to EIDC and shared with project partners and stakeholders through report (annex 6.5) (<b>activity 2.1</b>). Face to face and virtual meetings and email exchanges between project staff with RoC, JSHU and AEEC staff led to the design and ongoing development of project methods (available on project <a href="#">website</a>) with JSHU staff maintaining water sampling through summer and autumn 2020 (<b>activity 2.2</b>). Novel land cover/vegetation mapping developed and validated (<b>activity 2.3</b>). End of project stakeholder meeting reviewed reports (annex 6.5) reviewed results of water sampling along with highlighting methods used (through a training video) that are openly available and were used by JSHU staff (<b>activities 2.2 and 2.4</b>). UKCEH and JSHU presented on the work of the project at the UKOTs Conservation Forum conference in March 2021 and highlighted the outputs of the project.</p>

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
Activity 2.1. Wetland quality characterised by newly available water chemistry data		Complete - Water sampling data from year 1 and 2 from fixed sampling locations shared with RoC, JSHU and SBAA. Methods for sampling found here. Results have been uploaded to EIDC.
Activity 2.2. Key stakeholders at stakeholder meet with SBA, local Government, NGO etc. Demonstration of increased appreciation and understanding of the status, and key threats to, the Akrotiri wetlands		Complete - SBAA, AEEC, JSHU and RoC Water Development Department staff met in July 2019 for project kick off meeting to discuss project and feed into developing methods of delivery. JSHU, SBAA and UKCEH staff met throughout the project via monthly online meetings / email catch up. SBAA, AEEC, JSHU and RoC were invited to final meeting and reports and presentations were shared with those unable to attend. Data collected and project outputs has increased understanding of wetland (see 4)
Activity 2.3. Detailed assessment of native and non-native wetland plant communities around lake, with links to hydrology, characterised		Training and ground reference data for Output 3 were collected. Land cover/vegetation mapping produced (validation underway) – see report on website. Hydrological data have also been collected and discussed in published report on website.
Activity 2.4. Standardised wetland monitoring methods suitable for the Akrotiri environment available and shared with key stakeholder groups and other UKOTs to facilitate replication of methods elsewhere		A description of water sampling and habitat monitoring using drones methods are available through project website. In addition a review of Good Ecological Status of wetlands is now published on the project <a href="#">website</a> along with a training video. Report, with methods, shared with stakeholders prior to final workshop (annex 6.5).
<b>Output 3</b> We used <b>High resolution (2m) satellite imagery</b> of Lake Akrotiri lake and environs to give baseline assessment of plant communities and land cover, linking to ground-truthing data collected in DPLUS056 and Output 2. This work will also generate methods for others to interpret satellite data for ongoing analysis of saline Mediterranean wetland site quality	3.1 Digital plant community and land cover map of Lake Akrotiri become available, underpinned by baseline vegetation monitoring data  3.3 Datasets on Lake Akrotiri vegetation available Data used by local stakeholders.  3.4 Methods of analysing remotely sensed data shared with at least one other UKOT [by Mar 2021]	A change request was submitted to LTS Darwin in August 2020 when it became clear that travel was not possible and UKCEH could not undertake the planned ground-reference data gathering for the remote sensing. We requested to move funds from T&S to UKCEH staff time to deliver training and support additional remote sensing data processing within UKCEH.  Training of SBA and JSHU staff in remote sensing techniques (three staff members) – a series of seven training sessions were delivered virtually by UKCEH enabling SBA and JSHU staff to independently assess satellite and remote sensing imagery for the presence of INNS. There is an increased use of existing imagery for the ground-referencing of remote sensing data (see report annex 6.6).
Activity 3.1. Digital plant community and land cover map of Lake Akrotiri, underpinned by baseline vegetation monitoring data, available on website		The Digital plant community and land cover map of Lake Akrotiri and environs was completed and handed over to the SBA and JSHU staff.
Activity 3.2. Production of published open access dataset on extent (current and future) of Lake Akrotiri water levels		Because of lack of suitably frequent imagery to capture the water level dynamics, and not being able to visit the Akrotiri peninsular to collect frequent ground truth due to COVID, this activity was changed (see August 2020 Change Request) to a series

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
		of seminars given remotely to teach some of the SBA and JSHU staff the basics of remote sensing, and basics of image classification, as outlined above.
Activity 3.3. Production of published open access dataset on current and future vegetation changes around Lake Akrotiri. Datasets on Lake Akrotiri vegetation available and used by local stakeholders		Given restrictions on field visits to collect additional vegetation samples, the land cover/vegetation mapping was based on one survey and previously collected GIS data. The resulting land cover map will provide scientists and stakeholders with the option to examine change in the future.
Activity 3.4 Generation of standardised methods of analysing remote sensing data that can be used on other UKOTs, such as British Indian Ocean Territory, where changing water levels will be a critical aspect to the ongoing activities on island	Methods of analysing remotely sensed data shared with at least one other UKOT	Complete - Project team updated members of the UKOTs Conservation Forum European Territories Working Group, through the quarterly meetings and a newsletter article. Methods were shared with webinar attendees by France Gerard as part of her talk for the February Wetland Monitoring conference held by project team (see here for agenda and talks).
<b>Output 4.</b> Generation of outreach and engagement material around species network interactions and further recording of species network data	<p>4.1 New teaching and education topics available to, and incorporated into, AEEC education programme, including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology [by Sep 2020]</p> <p>4.2 Engagement material to show complexities of wetland habitat and interlinkages between hydrology, ecology and society newly utilised by AEEC in teaching and outreach [by Sep 2020]</p> <p>4.3 Citizen Science (and associated QA) surveys looking at interactions between native pollinators and plant INNS become available [by Mar 2021]</p> <p>4.4 Code of Practice for Mosquito Management including rapid response for INNS newly available and used by site managers and policy makers at Akrotiri [by Sep 2020]</p>	The project team completed this output with several examples of outreach materials openly available on the project website (annex 6.1 and section 3 of the report). We worked well as a project team to co-design and develop the materials ( <b>activities 1.5, 4.1, 4.2. and 4.3</b> ). Pollinator surveys have been carried out by JSHU and AEEC staff and student visitors ( <b>activity 4.3</b> ). <b>Activity 4.4</b> is complete; the Code of Practice was accepted for publication in April 2020 and will be made open access through the project funding. Methods were shared with webinar attendees by Kelly Martinou as part of her talk for the February Wetland Monitoring conference held by project team (see here for agenda and talks). DPLUS123 will also support collecting and engagement on pollinators for Cyprus. A highlight for PoMS-Ky was Filming of education video by the European Service Network on the methods of PoMS-Ky for the European Commission.



Project summary	Measurable Indicators	Progress and Achievements for the life of the project
Activity 4.1. New teaching and education teaching packs available to, and incorporated into, AEEC education programme, including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology		Complete - AEEC, JSHU and UKCEH co-developed a wetland guide for invertebrates for Lake Akrotiri which will be used to support education and teaching. AEEC and UKCEH developed lesson material for understanding pollinators and UKCEH and JSHU designed a mini-guide to Cyprus pollinators (Annex 6.1.2) which are on display and for use in the AEEC. UKCEH, through consultation with the AEEC educational staff, also developed arthropods in resin to support teaching on taxonomy for students of different species found around the lake (Annex 6.1.3). The project has also developed an <a href="#">infographic</a> for understanding drivers of change in wetlands for use in educational material and for visitors to the website (Annex 6.1.4). This has been shared through the project Facebook site. In addition an orienteering map was designed by the AEEC educational staff to support interactive lessons on the wetland (annex 6.1.5). The AEEC educational staff have also developed a QR code game with educational material on the wetland at the centre for students and visitors (annex 6.1.6). Annex 6.1.7 shows the project website and resources available.
Activity 4.2. Creation of interactive web-based tool for use in engagement material showing complexities of wetland habitat and interlinkages between hydrology, ecology and society utilised by AEEC in teaching and outreach		Complete - See <b>activity 4.1</b> for update on the <a href="#">infographic</a> . In addition, Darwin Fellow, Ioanna Angelidou, completed her MSc Thesis using data collected as part of the project (annex 6.1.8) – this thesis looked at interactions between pollinators and native and non-native species in Cyprus.
Activity 4.3. Structured Citizen Science (and associated QA) surveys looking at interactions between native pollinators and plant INNS become available [by Mar 2021]		Complete - The <a href="#">PoMS-Ký</a> and <a href="#">Mini-PoMS-Ký</a> pages are now up and running with survey forms and both video and written guidance available and a new smart phone Application is being created and will be ready to launch soon (6.1.9). Additional links to other biodiversity recording methods eg iNaturalist promoted through website and social media ( <b>activity 1.5</b> )
Activity 4.4. Publication of Code of Practice for Mosquito Management including rapid response for INNS available and used by site managers and policy makers at Akrotiri		Complete – the Code of Practice was published and methods used by JSHU as part of the surveys of Lake Akrotiri (Martinou et al. 2020b)
Output 5. Training and capacity building provided for OT government and military staff on biosecurity and continued biological recording of INNS	5.1 Project start-up meeting and scoping survey finalise precise scope of subsequent workshops and surveys, leading to practical and sustainable changes in project planning [April 2019]  5.2 Engagement workshop and training event occurs leading to increased knowledge about Akrotiri, its biodiversity,	The SBAA, AEEC, JSHU and UKCEH staff met in July 2019 for the project kick off meeting to discuss project and feed into developing methods of delivery ( <b>activity 5.1</b> ), and maintained monthly contact throughout the project via online meetings and emails. The project undertook a workshop on impacts of INNS, with a session on biosecurity in November 2019 (annex 6.4 and <b>activity 5.2 and 5.4</b> ) with subsequent follow up meetings between SBAA, JSHU, UKCEH and GBNNSS. Although the planned biosecurity workshop was ultimately unable to go ahead due to ongoing changes with the COVID-19 situation for military and SBAA personnel, we have developed an infrastructure for a Biosecurity Working Group that both JSHU and the

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
	<p>and biological recording as a means of monitoring change [by September 2019].</p> <p>5.3 Local capacity for recording increases, through events such as Bioblitzes and volunteer engagement days at JSHU and the AEEC, webinars on INNS, information leaflets etc. [until Mar 2021].</p> <p>5.4 Year 2 training and engagement workshops building on survey and biosecurity issues highlighted in Year 1 leading to increased knowledge and understanding of the themes by staff [May 2020].</p> <p>5.5 Biosecurity guidance will be distributed within stakeholder network and on project website as downloadable posters and short guidance documents will be the key outputs. Available both in English and Greek. Examples of uptake of biosecurity actions will be documented through short case study statements.</p>	<p>SBAA are committed to building on beyond the life of the project and undertaking a workshop. The GBNNSS provided template materials for pathways access planning and provided support to project team to establish initial pathway action plans and analysis for SBAA/BFC. This forms baseline for biosecurity working group going forward. The GBNNSS supported project staff (SBAA &amp; JSHU) with materials and templates for undertaking engagement with staff involved with biosecurity delivery. This information gathering enabled assessment of current policies and procedures, and forms the basis of subsequent risk assessments (<b>activity 5.4 and annex 6.2.1 - 4</b>). The GBNNSS provided guidance and support for customs and logistics (<b>activity 5.5</b>). Please see annex 6.2.1 – 4 for materials relating to Biosecurity from the project.</p> <p>The AEEC and JSHU have run internal and external events for pollinator monitoring, along with moth identification (<b>activity 5.3</b>).</p>
Activity 5.1. Project start-up meeting and scoping survey and plan for subsequent workshops and surveys		Complete - Workshop held in July 2019 and plans drafted for workshop. Plans were re-visited regularly throughout the project via online meetings and emails.
Activity 5.2. Engagement workshop and training event occurs. Event leads to increased knowledge about Akrotiri, its biodiversity, and biological recording as a means of monitoring change		Complete - Horizon scanning and impacts of INNS workshop held in November 2019 which gave an overview of the project and the local area. Biological recording encouraged through social media, AEEC school programme and partners ( <b>activity 1.5</b> )
Activity 5.3. Capacity building, through Bioblitzes and volunteer engagement days at JSHU and the AEEC, webinars on INNS, information leaflets etc		Complete – various events held throughout the project, although planned engagement events have been severely disrupted by COVID-19. We have however managed to run events over the two years. For example, a moth night <a href="#">event</a> held at AEEC in July 2019 as part of National Moth week, PoMS-Ký surveys undertaken by project staff ( <b>activity 4.3</b> ) and educational resources created e.g. annex 6.1 PoMS-

Project summary	Measurable Indicators	Progress and Achievements for the life of the project
		<p>Ký surveys encouraged in gardens through Facebook as part of COVID-19 lock down and outside of lockdown, with events being held where COVID-19 restrictions were lifted.</p>
<p>Activity 5.4. Year 2 training and engagement workshop hosted which builds on survey and biosecurity issues highlighted in Year 1. Workshop leads to increased knowledge and understanding of the themes by staff</p>		<p>Complete - Horizon scanning and impacts of INNS <a href="#">workshop</a> held in November 2019. Workshop brought together experts across Europe and held talks on INNS Risk assessments at European and national levels e.g. on the invasive Lionfish in Cyprus. The list created through this workshop (<a href="#">annex 6.2.2</a>) was shared with the RoC to help support their Risk Assessment processes and was also written up as an open access peer-reviewed publication (Peyton et al. 2020).</p>
<p>Activity 5.5 Biosecurity guidance becomes available, linked to DPLUS056 and informed by priority species identified through UK OTs horizon scanning currently led by CEH. This guidance will be applicable for terrestrial habitats and will be applicable to all UKOTs</p>		<p>Partially complete - Horizon scanning and impacts of INNS workshop held in November 2019 had a session on biosecurity with the GBNNSS expert providing a presentation and separate Q&amp;A session. UKCEH and SBAA have had several follow on meetings on this topic with the aim of improving communication. GBNNSS and SBAA have developed plans for pathway actions plan for species from the horizon scanning lists of DPLU056 and the November 2019 workshop (<a href="#">annex 6.2</a>), for use by the SBAA when they are in a position to undertake this work. A biosecurity <a href="#">page</a> has been set up on the project website and UKCEH and AEEC education discussed using materials created by the GBNNSS for use in lessons going forward when normal visits resume. We developed a Biosecurity Alert for INNS poster for the AEEC, ready for translation and dissemination when supporting infrastructure for reporting is ready (<a href="#">annex 6.2.5</a>). Jill Key from the GBNNSS presented her talk on “invasive species and wetlands”, which included biosecurity, for the February Wetland Monitoring conference held by project team (see here for agenda and talks). The SBAA were able undertake interviews as part of the biosecurity work (<a href="#">annex 6.2.3</a>), but the proposed workshop was unable to go ahead project, given setbacks due to COVID-19 and resulting staffing issues (<a href="#">annex 6.2.1</a>). We created a Citizen Science Mosquito flier with the EU COST Action Alien CSI for awareness raising on mosquito control which was shared with the UKOT Conservation Forum. Although we were unable to deliver the workshop, we have been able develop the first stages of the biosecurity work outlined ready for when COVID-19 restrictions ease more.</p>

## Annex 3 Standard Measures

Code	Description	Totals (plus additional detail as required)
<b>Training Measures</b>		
1	Number of (i) students from the UKOTs; and (ii) other students to receive training (including PhD, masters and other training and receiving a qualification or certificate)	0
2	Number of (i) people in UKOTs; and (ii) other people receiving other forms of long-term (>1yr) training not leading to formal qualification	Three people, not from the SBA, but working through the JSHU and the SBA are undertaking Darwin Fellowships
3a	Number of (i) people in UKOTs; and (ii) other people receiving other forms of short-term education/training (i.e. not categories 1-5 above)	
3b	Number of training weeks (i) in UKOTs; (ii) outside UKOTs not leading to formal qualification	
4	Number of types of training materials produced. Were these materials made available for use by UKOTs?	
5	Number of UKOT citizens who have increased capacity to manage natural resources as a result of the project	3
<b>Research Measures</b>		
9	Number of species/habitat management plans/strategies (or action plans) produced for/by Governments, public authorities or other implementing agencies in the UKOTs	0
10	Number of formal documents produced to assist work in UKOTs related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals written by (i) UKOT authors; and (ii) other authors	2, 2 more in prep
11b	Number of papers published or accepted for publication elsewhere written by (i) UKOT authors; and (ii) other authors	
12b	Number of computer-based databases enhanced (containing species/genetic information). Were these databases made available for use by UKOTs?	1 - yes
13a	Number of species reference collections established. Were these collections handed over to UKOTs?	0

<b>Code</b>	<b>Description</b>	<b>Totals (plus additional detail as required)</b>
13b	Number of species reference collections enhanced. Were these collections handed over to UKOTs?	0
<b>Dissemination Measures</b>		
14a	Number of conferences/seminars/workshops/stakeholder meetings organised to present/disseminate findings from UKOT's Darwin project work	4
14b	Number of conferences/seminars/workshops/stakeholder meetings attended at which findings from the Darwin Plus project work will be presented/ disseminated	14
<b>Physical Measures</b>		
20	Estimated value (£s) of physical assets handed over to UKOT(s)	
21	Number of permanent educational/training/research facilities or organisation established in UKOTs	0
22	Number of permanent field plots established in UKOTs	0
23	Value of resources raised from other sources (e.g., in addition to Darwin funding) for project work	0

## Annex 4 Publications

Type *	Detail	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. weblink, contact address, annex etc)
Journal	Peyton et al. (2020) Horizon Scanning to Predict and Prioritize Invasive Alien Species With the Potential to Threaten Human Health and Economies on Cyprus. <i>Frontiers in Ecology and Evolution</i> 8.	UK	UK	Female	Frontiers in Ecology and Evolution	
Journal	Martinou et al. (2020c) A call to arms: Setting the framework for a code of practice for mosquito management in European wetlands. <i>Journal of Applied Ecology</i>	Greek	UK	Female	Journal of Applied Ecology	
Dataset	Pescott, O. L., J. Peyton, and J. O. Mountford. 2020a. UKSBA Cyprus - Habitat Samples, 2019. Version 1.1. Biological Records Centre. Sampling event dataset. GBIF.	UK	UK	Male	GBIF	
Dataset	Pescott, O. L., J. Peyton, and J. O. Mountford. 2020b. UKSBA Cyprus Plant Records 2018. Version 1.2. Biological Records Centre. Occurrence dataset. GBIF.	UK	UK	Male	GBIF	
Dataset	Pescott, O. L., J. Peyton, M. Onete, and J. O. Mountford. 2020c. UKSBA Cyprus - Quadrats 2015-2017. Biological Records Centre. Sampling event dataset GBIF.	UK	UK	Male	GBIF	
Dataset	Bowes, M.; Scarlett, P.; Trill, E.; Nicholls, D.; Armstrong, L.; Philippou, M.; Georgiou, M.; Peyton, J.; Taylor, C.; Pescott, O.; Young, E. (2021). Water chemistry data from Lake Akrotiri, Cyprus, and its main inputs, July 2019 - November 2020. NERC Environmental Information Data Centre. <a href="https://doi.org/10.5285/0de897cd-3aa3-45a3-8bff-3bff62c01f30">https://doi.org/10.5285/0de897cd-3aa3-45a3-8bff-3bff62c01f30</a>	UK	UK	Male	EIDC	
Unpublished report	Bowes, M. (2020) Potential chemical and biological indicators for Lake Akrotiri report	UK	UK	Male	Project website	
Unpublished report	Bowes, M, Scarlett, P. and Trill, E. (2021) Water quality investigation of Lake Akrotiri	UK	UK	Male	Annex 6.5 for final report	
Unpublished report	George, C. and Gerard, F. (2021) Akrotiri peninsula habitat map using remote sensing	UK	UK	Male	Annex 6.6 for final report	

## Annex 5 Darwin Contacts

<b>Ref No</b>	DPLUS088
<b>Project Title</b>	Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus
<b>Project Leader Details</b>	
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## Annex 6 Supplementary material (optional but encouraged as evidence of project achievement)

### Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	NA
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	Yes
If you are submitting photos for publicity purposes, <b>do these meet the outlined requirements (see section 11)?</b>	NA
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	