Applicant: **Peyton, Jodey** Organisation: **Centre for Ecology and Hydrology** Funding Sought: **£238,838.00**

DPR7P\100030

Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus

PRIMARY APPLICANT DETAILS

Title Name Surname Organisation Website (Work)	Ms Jodey Peyton Centre for Ecology and Hydrology
Tel (Work) Email (Work) Address	

CONTACT DETAILS

Title Name Surname Organisation Website	Prof Helen Roy Centre for Ecology and Hydrology
Tel Email Address	

PRIMARY APPLICANT DETAILS

Title Name Surname Organisation Website (Work)	Ms Jodey Peyton Centre for Ecology and Hydrology
Tel (Work) Email (Work) Address	

CONTACT DETAILS

Title	Prof
Name	Helen
Surname	Roy
Organisation	Centre for Ecology and Hydrology
Website	
Tel	
Email	
Address	

GMS ORGANISATION

Туре	Organisation
Name Phone Email Website Address	Centre for Ecology and Hydrology

Q3. Lead organisation type

Please select one of the below options.

O UK Government

Please add any 'Committee Feedback' to the field below:

No Response

Please add any 'Specific Ineligibility' feedback to the field below:

No Response

Please add any 'Conditions' to the field below:

No Response

Please add any 'Positive Feedback to the field below:

No Response

Section 2 - Title, Dates & Budget Summary

Q4. Project title

Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus

Q5. Project dates

Start date:	End date:	Duration (e.g. 2 years, 3
01 April 2019	31 March 2021	months):
		2 years

Q6. UKOT(s)

(See Guidance Notes)

Which UK Overseas Territory(ies) will your project be working in? You may select more than one UKOT from the options below.

Sovereign Base Areas of Akrotiri and Dhekelia (on Cyprus)

* if you have indicated a territory group with an asterisk, please give detail on which territories you are working on here:

No Response

In addition to the UKOTs you have indicated above, will your project directly benefit any other country(ies)? If so, list here.

Cyprus directly (but remote sensing and biosecurity approaches will be disseminated to other UKOTs where relevant through our existing networks, e.g. Ascension, BIOT, Falklands)

Q7. Budget summary

Year:	2019/20	2020/21	2021/22	Total request
Q7a. Request	£126,814.00	£112,024.00	No Response	£
from Darwin:				238,838.00

Q7b. Proposed (confirmed and unconfirmed) co-financing as % of total project cost



Section 3 - Lead Organisation Summary

Q8. Lead organisation summary

Please provide the following information on the lead organisation

What year was your organisation established/ incorporated/ registered?	UK Research and Innovation was incorporated under the Higher Education Research Act 2017. Please note that CEH was formerly a part of the Natural Environment Research Council, incorporated in 1965
What is the legal status of your organisation?	⊙ Government
How is your organisation currently funded?	CEH is a Natural Environment Research Council (NERC) research centre and a body corporate as part of UK Research and Innovation (UKRI). We receive core 'National Capability' funding from NERC which amounts to approximately % of our funding. This funding delivers the underpinning terrestrial and freshwater science for the UK research community. The remaining of our funding is competitively won grants and contracts from UKRI, UK government departments (e.g. Defra), UK devolved administrations, the European Commission (e.g. DG Environment and the Research Framework Programmes) and the private sector.
Have you provided the requested signed audited/independently examined accounts? If you select "yes" you will be able to upload these. Note that this is not required from Government Agencies.	⊙ Yes

Please attach the requested signed audited/independently examined accounts.



The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

Q9. Has your organisation been awarded Darwin Initiative funding before (for the purposes of this question, being a partner does not count)?

• Yes

If yes, please provide details of the most recent awards (up to 6 examples)

Reference no.	Project leader	Title
DARSC186	Dr Jan Dick	Safeguarding the biodiversity of key urban forests, Nairobi City County
DPLUS056	Prof. Helen Roy	Assessment of current and future Invasive Alien Species in Cyprus
EIDPR11	Dr Alan Gray	St Helen's Millennium Forest: conservation, evolution and a changing climate
15031	Dr Jan Dick	Novel and Practical Conservation Strategies Following Mining in Sierra Leone
EIDPJ010	Dr Jan Dick	Selection, propagation, multiplication and distribution of indigenous tree species
11006	Dr Richard Wadsworth	Habitat audit and change detection in Sierra Leone

Section 4 - Project Partners

Q10. Project partners

Please list all the partners involved (including the Lead Organisation) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of partners to be involved in the project, and how local institutions, local communities, and technical specialists are involved as appropriate.

Please provide written evidence of partnerships. Please add fields for more partnerships, if required. Details on roles and responsibilities in this project must be given for the Lead Organisation and all project partners.

N.B. There is a file upload button at the bottom of this page for the upload of all letters of support.

Lead Organisation name:	Centre for Ecology and Hydrology
Details (including roles and responsibilities and capacity to engage with the project):	Professor Helen Roy (HER) has extensive experience in leading large multidisciplinary research teams to deliver high quality research and will lead the project team. Ms Jodey Peyton (JMP) has considerable expertise as a project manager and will manage the day-to-day running of the project. JMP and HER will lead cross-cutting tasks on capacity building. Dr Oliver Pescott (OLP) is a co-applicant and work package leader. He will lead the botanical components and analysis with JMP. HER will lead the ecological interactions component alongside Dr Marc Botham (MB) and Martin Harvey (MH). Dr France Gerard (FG) will lead on the Earth Observation aspect and Pete Scarlett (PS), Emily Trill (ET) and Linda Armstrong (LA) the hydrological sampling and processing. Dr Mike Bowes (MBow) and Dr James Blake (JB) will provide water quality data interpretation.
Have you included a Letter of Support from this organisation?	⊙ Yes

Do you have partners involved in the Project?

⊙ Yes

The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

1. Partner Name:	Joint Services Health Unit (JSHU)
Website address:	NA
Details (including roles and responsibilities and capacity to engage with the project):	Major James Fawcett assisted by Sgt Edmund Foroma will be the project manager. Field and laboratory-based research on mosquito and (native and non-native) mosquito eating fish interactions will be undertaken by four JSHU members and supervised by Dr Kelly Martinou (KM). In part informed by this work KM will oversee the development and communication of a code of conduct for sustainable and sensitive mosquito management on the wetland. KM will lead alongside HER and JMP in disseminating this information to communities within the Cyprus SBA but also to other relevant UKOTs.
Have you included a Letter of Support from this organisation?	⊙ Yes

Do you have more than one partner involved in the Project?

• Yes

2. Partner Name:	Sovereign Base Area (SBA): Akrotiri Environmental Education Centre (AEEC)
Website address:	http://akrotirienvironment.com
Details (including roles and responsibilities and capacity to engage with the project):	Mr Pantelis Charilaou (CP) Environmental Officer and member of the AEEC Akrotiri Environmental Education Centre and his team, will assist with all citizen science initiatives and provide local expertise and knowledge on botany and hydrological issues.
Have you included a Letter of Support from this organisation?	● Yes

3. Partner Name:	No Response
Website address:	No Response
Details (including roles and responsibilities and capacity to engage with the project):	No Response
Have you included a Letter of Support from this organisation?	O Yes O No

4. Partner Name:	No Response
Website address:	No Response
Details (including roles and responsibilities and capacity to engage with the project):	No Response
Have you included a Letter of Support from this organisation?	O Yes O No

5. Partner Name:	No Response
Website address:	No Response

Details (including roles and responsibilities and capacity to engage with the project):	No Response
Have you included a Letter of Support from this organisation?	O Yes O No

6. Partner Name:	No Response
Website address:	No Response
Details (including roles and responsibilities and capacity to engage with the project):	No Response
Have you included a Letter of Support from this organisation?	O Yes O No

If you require more space to enter details regarding Partners involved in the Project, please use the text field below.

No Response

Please provide letters of support from the lead organisation and all partners as a combined PDF.



Section 5 - Project Staff

Q11. Project staff

Please identify the core staff on this project, their role and what % of their time they will be working on the project.

These should match the names and roles in the budget spreadsheet.

Please provide 1 page CVs for these staff.

Name (First name, Surname)	Role	% time on project	CV attached below?
Jodey Peyton	Project Leader	25	Checked

Helen Roy	Project leader, lead applicant, science communication and ecological expertise	5	Checked
Oliver Pescott	Co-applicant, analytical and botanical expertise	15	Checked
Marc Botham	Entomological expertise	5	Checked

Do you require more fields?

O Yes

Name (First name, Surname)	Role	% time on project	CV attached below?
France Gerard	Earth Observation specialist	5	Checked
Charles George	Earth Observation specialist	12	Checked
Emily Trill	Hydrologist	3	Checked
Mike Bowes	Hydrochemist	2	Checked
Linda Armstrong	Analytical chemist	6	Checked
Angeliki Martinou	Medical entomologist	30	Checked
Jim Fawcett	Project Manager	30	Checked
Pantelis Charilaou	Environmental Scientist	10	Checked

Please provide 1 page CVs (or job description if yet to be recruited) for the Project staff listed above as a combined PDF. Ensure CVs clearly correspond to the named individual and role above.

The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.



Have you attached all Project staff CVs?

⊙ Yes

Section 6 - Background & Methodology

Q12. Summary of Project

Please provide a brief summary of your project, its aims, and the key activities you to undertake. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on GOV.UK. Please bear this in mind, and write this summary for a non-technical audience.

The project focuses on monitoring and understanding drivers of change in the Akrotiri wetlands, Cyprus. We will use remote sensing, on-the-ground measurements of water quality and vegetation, and assess community interactions between native and non-native species including mosquitoes. We will establish baselines and procedures for evaluating the health of this highly-valued wetland. All tasks will be 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.

Q13. Background

What is the current situation and the problem that the project will address? How will it address this problem? What key OT Government priorities and themes will it address?

The Akrotiri wetlands are an internationally important habitat complex and a Ramsar site. There is an urgent need to improve understanding of the ways in which the functions of this important site will change with increasing pressure from invasive non-native species (INNS), climate and land-use change, from hydrological, ecological and societal perspectives. Knowledge of the interplay among these factors will inform conservation decision-making and sustainable management. Land-use changes, as urban development plans progress around the Akrotiri peninsula (Pescott et al. 2018), are likely to interact with the increasing impacts of climate change (MWO 2014) and may facilitate the incursion of INNS into natural habitats. This is predicted to affect locally-rare native plants and animals, but also undesirable resident mosquitoes, e.g. malaria and West Nile Virus vectors and nuisance species. Ecological and hydrological monitoring, underpinned by capacity building and supported by the development of an INNS database (established through project DPLUS056), will provide opportunities to use an evidence-based approach to manage the Akrotiri wetlands in the context of environmental change. The monitoring proposed here will address key aspects of the UKOT Biodiversity Strategy, responsibilities within the SBA's Ordinances (SBA Administration, 2012), including favourable conservation status, and priorities under the Ramsar Convention.

Q14. Methodology

Describe the methods and approach you will use to achieve your intended Outcome and Impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc). Give details of any innovative techniques or methods.

WP1: Developing online wildlife recording

An online database of INNS (CyDAS) was created through DPLUS056. WP1 will build on this to enable citizen scientists and professionals to submit records. We will contract the University of Cyprus to manage marine INNS information, whilst CEH will oversee terrestrial/ freshwater INNS. Capacity-building (WP4) will ensure that SBA/Cypriot staff will continue to manage CyDAS, alongside volunteers, after project completion.

WP2: Hydrological and vegetation sampling

We will collect baseline data for water quality, soil moisture and vegetation in the summer of the first year (dry season) and the spring of the second year (wet season) to develop indicators for saline Mediterranean wetlands. Vegetation data will be linked to remote sensing WP3 through ground-truthing. We will carry out sampling along hydrological and land-use gradients, and share methods with local staff to ensure

monitoring continues post-project.

WP3: Remote sensing of vegetation

We will use high resolution (50cm-4m) multi-spectral (8 bands in the 400nm–1040nm range) WorldView imagery to establish a baseline vegetation map, suitable for future monitoring of hydro-ecological change. We will aim to separate the main distinct vegetation types for the Akrotiri peninsula (open salt pan, salt marsh, dunes, rush salt meadow, phrygana, maquis) and identify invasive tree species (acacia and casuarina), aided by a 3D surface model. Seasonal behaviour between vegetation types will be investigated.

WP4: Capacity-building, biosecurity and engagement

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

1. Monitoring priority INNS and their interactions to inform understanding of ecosystem functioning. We will develop technical training (building on DPLUS056) and resources to support online recording of wildlife in Cyprus, including interactions between INNS (WP1) and native species e.g. pollinators. We will produce a conceptual diagram demonstrating 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.

2. Development of mobile recording app and methods for participatory engagement

The project will develop education packs for the AEEC to engage people in species recording, including introduction to an app, and highlighting the importance of wetland conservation and management e.g. sustainable water use and interactions of ecological communities within wetlands.

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

We will work with civilian and military personnel to develop an accessible document advising on pathway action plans and biosecurity for SBAs in Cyprus. The document will be relevant for other UKOTs and will include a Code of Practice for Managing Mosquitoes in Wetlands. Local communities, schools, civilian and military personnel will be given training in INNS identification and biosecurity to minimise risk of establishment.

Attached PowerPoint shows relationships between WPs, in the DPSIR Framework (A) and Conceptually (B).

CEH is responsible for overall project management and coordination of activities according to PRINCE2 protocols. CEH uses a software tool to manage tasks and milestones and maintain audit trails. Video conference meetings between the team will be used for progress updates/planning.

If necessary, please provide supporting documentation e.g. maps, diagrams etc., using the File Upload below.

The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.





Section 7 - Objectives, Stakeholders & Sustainability

Q15. Project Objectives

How does this project:

- Deliver against the priority issues identified in the assessment criteria
- Demonstrate technical excellence in its delivery
- Demonstrate a clear pathway to impact in the OT(s)

The project will use a combination of knowledge review (progressing CyDAS database), expert involvement (consultation, etc.), data collection (field survey) and capacity building (local expertise and biosecurity) to provide a plan that is achievable within two years and will deliver future benefits by linking to European-wide projects such as MedWet and the EU COST Action Alien CSI.

The project and outputs have been developed to address three of the six Darwin Plus key priorities: dealing with INNS, implementing national BAPs, and wise use of wetlands. The pathway to impact will be achieved through the following outputs demonstrating technical excellence:

-produce open access data (through the Environmental Information Data Centre; eidc.ceh.ac.uk) to provide information on species, habitats, biophysical measures and remotely-sensed data for conservation and management for this internationally important wetland;

-publish biosecurity measures for species identified as high risk through DPLUS056 to aid prevention of the spread or introduction of established and newly-introduced INNS respectively;

-provide accessible information on terrestrial and aquatic species for an education programme on their interactions within wetlands;

-provide training on INNS surveillance, biosecurity and management to civilian and military personnel for local and global applications e.g. to other UKOTs through the publication of a Code of Practice on mosquito management and accessible biosecurity guidance documents;

-contribute to the modernisation of surveillance procedures at AEEC and JSHU, as well as the wider biological recording community within Cyprus, through development of online recording tools;

-form an educated community who understand the importance of the wetland, and link this into European initiatives on wetland conservation such as MedWet.

The partners have identified the risks for delivery (Section 26) and have the capacity to compensate for unforeseen events if required. Key themes of the work going forward include ensuring capacity for Cypriot-based personnel to sustain the project and dissemination of relevant products (biosecurity) to other UKOTs. Preliminary consultation with the Caribbean OTs and BIOT have confirmed the relevance of the planned biosecurity outputs.

By the start of this proposed project, the project team will have undertaken Horizon Scanning workshops and associated pathway action plans in all the UKOTs which can further inform biosecurity guidance.

The project aligns with the UK Overseas Territories Biodiversity Strategy, particularly priorities (i) and (ii). Actions toward improving the conservation of the Akrotiri wetland is the key deliverable for SBA Akrotiri, Cyprus, whilst the MoD are committed to biodiversity protection on their estates (Joint Services 2009; Anon. 2007). Additionally, through the development of the biosecurity material around prevention of establishment and rapid response towards new INNS, and through our proposed communication and engagement activities, we will promote the conservation, restoration and wise use of wetlands.

Both CEH and JSHU have extensive experience in delivering projects of similar scale and complexity; collaborations through our current project DPLUS056 have already secured high quality outputs (see www.ris-ky.eu). The proposed project has SMART goals and a sustainable programme of activities that will be delivered locally through the AEEC, including outputs that will be applicable elsewhere (other UKOTs).

Q16. Project Stakeholders

Who are the stakeholders for this project and how have they been consulted (include local or host government support/engagement where relevant)? Briefly describe what support they will provide and how the project will engage with them.

We have had the opportunity to consult widely with stakeholders through workshops organised within DPLUS056. Consequently the Western SBA, as well as the Department of Environment, Republic of Cyprus, have provided letters of support for this project recognising the importance to their strategic monitoring aims. Other departments that will benefit from this work include: the Republic of Cyprus Water Development Department, the Department of Fisheries, Republic of Cyprus, JSHU and the Republic of Cyprus Ministry of Health. Local Universities such as the University of Cyprus and the Cyprus Institute, and the wider community surrounding the Akrotiri salt lake, such as BirdLife Cyprus and Terra Cypria, will contribute to workshops and citizen science activities, as well as having access to any open access data generated through the project. As with DPLUS056, emphasis will be placed on capacity building activities and working with school children in collaboration with the AEEC; these activities will also involve members of the public and national volunteer wildlife experts who have an interest in biological recording, INNS and wetland habitats and ecology. The CEH project team will also liaise with the JNCC Overseas Territories and Crown Dependencies Programme to ensure data produced within the project are shared and have optimal impact in enhancing current and future activities.

Q17. Institutional Capacity

Describe the lead organisation's capacity (and that of partner organisations where relevant) to deliver the project.

CEH, JSHU, British Forces Cyprus and the SBA Akrotiri Environmental Education Centre (AEEC) co-propose this project.

CEH is a research centre of the Natural Environment Research Council (NERC), the UK's Centre of Excellence for integrated research in terrestrial and freshwater ecosystems and their interaction with the atmosphere. For over 40 years, CEH has carried out research and capacity building on the impact of INNS and their distributional changes under climate change, and how this might affect biodiversity, human health and ecosystem services. Recent work in this area has included the maintenance and development of INNS databases at the European and GB level (DAISIE and the GB-Non-Native Species Information Portal (GB-NNSIP)), and risk assessment and horizon scanning work for the European Commission, which have informed the delivery of the EC Regulation on invasive non-native species. CEH is also active in leading COST Actions linking and analysing information on INNS across Europe and providing capacity building; both ALIEN Challenge (TD1209) and Alien CSI (CA17122) are led by HER (CEH). Through the Biological Records Centre (BRC), CEH is at the forefront of citizen science, working with the volunteer recording community to utilise new online tools and approaches to the monitoring of biodiversity, including INNS.

The JSHU is a military unit with environmental health, entomological and pest control expertise that runs the integrated pest and vector management programme in all OTs in Cyprus (Akrotiri, Episkopi, Dhekelia, Ayios Nikolaos and Troodos). The unit, managed by Major James Fawcett, comprises military and civilian

experts in environmental health, entomology, and pest management. The unit runs two field courses on insect vectors for military personnel studying for a degree in Environmental Health and is hosting military students who want to conduct their final year theses in Cyprus. JSHU is responsible for monitoring invasive mosquitoes and management of invasive freshwater fish.

The AEEC is located at the heart of Akrotiri and has been operating since 2004 within the context of a collaboration among the SBAs, the Ministry of Education and Culture of the Republic of Cyprus and the local community. In 2007 it joined the Network of Environment Education Centres of the Ministry of Education and Culture. The Centre's mission is to promote the environmental and cultural value, as well as the uniqueness of Akrotiri peninsula through its programmes and exhibits. The Centre offers educational programmes to organised school groups, whilst welcoming individuals, families and other groups who seek to learn about the environment. It is perfectly placed to promote knowledge of the Akrotiri wetlands, to link between key environmental organisations, and to carry on key environmental monitoring tasks developed by this project,

Q18. Sustainability

How will the project ensure benefits are sustained after the project has come to a close? If the project requires ongoing maintenance or monitoring, who will do this and how will it be funded?

WP1 will further develop the open CyDAS portal (www.ris-ky.eu/cydas), creating local expert-led biological recording to promote and disseminate INNS occurrence data. This will enable local citizens and professionals, particularly those reached under WP4, to continue to contribute to the long-term INNS evidence-base for Akrotiri. Linked to this, under WP4, and through continued discussion with AEEC, Terra Cypria, University of Cyprus and Cyprus Institute, we will explore further development of biological recording on Cyprus, recognising the need for open access occurrence data across taxa to generate long-term trends as indicators of response to environmental change. The monitoring of broader wetland condition under WP2 and WP3 will be sustained through training of AEEC and JSHU staff. In addition, protocols and data created by these WPs will be openly shared and disseminated to relevant stakeholders within Cyprus, and other UKOTs, allowing for continued monitoring using the same protocols and data types, creating robust long-term datasets that will be of value to wider communities studying wetlands such as MedWet. Our focus will be on technical excellence through the development of open access protocols, datasets, and tools, all delivered through partnership working to build local capacity and knowledge sharing across the Akrotiri community and beyond.

Section 8 - Funding and Budget

Q19. Budget

Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that there are different templates for projects requesting over and under £100,000 Darwin Plus budget

- <u>R7 D+ Budget form for projects under £100,000</u>
- <u>R7 D+ Budget form for projects over £100,000</u>

Please refer to the <u>Finance Guidance for Darwin and IWT</u> for more information.

N.B.: Please state all costs by financial year (1 April to 31 March) and in GBP. Budgets submitted in other

currencies will not be accepted. Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.



Q20. Co-financing

Are you proposing co-financing?

• Yes

Secured

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity, as well as any your own organisation(s) will be committing.

(See "Finance for Darwin & IWT" and the "Guidance for Applicants" documents)

The Centre for Ecology and Hydrology, The Joint Services Health Unit and the Akrotiri Environmental Education Centre all support this application and have agreed to co-fund this project through in-kind contributions to the value of **Equivalent** to **a** co-funding for the project, as the proposed project delivers a central aim to develop economically viable solutions (through collaboration with multiple stakeholders) to conserve biodiversity and build resilience against potential future threats and it builds on the already hugely successful DPLUS056 award of 2016.

Unsecured

Provide details of any co-financing where an application has been submitted, or that you intend applying for during the course of the project. This could include co-financing from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor Organisation	Amount	Currency code	Comments
No Response	No Response	No Response	No Response	No Response
No Response	No Response	No Response	No Response	No Response
No Response	No Response	No Response	No Response	No Response
No Response	No Response	No Response	No Response	No Response

Please give brief details including when you expect to hear the result. Please ensure you include the figures requested in the Budget Spreadsheet as Unconfirmed funding.

Do you require more fields?

O No

Section 9 - Financial Controls, Value for Money & Open Access

Q21. Financial Controls

Please demonstrate your capacity to manage the level of funds you are requesting. Who is responsible for managing the funds? What experience do they have? What arrangements are in place for auditing expenditure?

Project oversight will be undertaken by Prof. Helen Roy who has experience managing large projects for the EU and UK Research Councils. She will be supported by Jodey Peyton who has experience coordinating the operational aspects of the DPLUS056 Darwin Initiative project, as well as other EU and UK Government funded projects. Together they will be responsible for the management of project resources, project reporting and delivery, and any communications. For all aspects of project management, Prof. Roy and Ms Peyton will be supported by local project administrators, systems support staff and finance experts within CEH.

Control of resources (effort, time and money) will be exercised throughout the various stages of the project through adoption of CEH's Oracle-based Resource Management System (RMS), an established framework for project and financial management and, specifically, through the appropriate timely reporting at each tier of project governance, including to the Darwin Initiative.

Q22. Financial Management Risk

Explain how you have considered the risks and threats that may be relevant to the success of this project, including the risks of fraud or bribery.

The exposure to risk will be managed at project level using CEH's risk management and issue tracking system. Key risks to the project are below with our identified mitigations:

· Loss of core expertise (illness/staff/organisation changes)

o Identification of successors; CEH and partners have a depth of experts

· Delays in inception and/or timetable slippage

o Good project planning; effective project management & communication; timetables reviewed to ensure problems in resource allocation are identified and avoided.

· Non-delivery by project partners

o Partners selected based on known track record and involved in proposal stage

 \cdot Estimated project costs or resources incorrect

o Rigorous approach to costing and resourcing

· IT services disrupted

o Back-up systems and protection; IT specialists to maintain systems

 \cdot Weather conditions limit survey

o Project team flexible and use opportunities to undertake field work during favourable weather conditions.

The above risks are not likely to have an overall risk factor above the acceptable threshold. CEH takes the issues of fraud and bribery seriously, as detailed in the NERC Fraud policy, which sets out the roles and responsibilities for the public sector in close partnership with the Gifts and Hospitality policy and undertake

annual training on this.

Q23. Value for money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

The project will use CEH staff to develop and test approaches that can be applied by personnel from the OTs. The significant input from JSHU and the SBA's AEEC combines vital relevant expertise with economies that arise from local involvement in project implementation. The project budget is based partly on the need for consistency and comprehensiveness in the initial stages of the project, complemented by matched funding from relevant experts drawn from Cyprus and other countries. This rigorous early effort (within the Darwin funding period), coupled with stakeholder involvement, and with collaboration between CEH and JSHU, will ensure delivery of realistic, robust and sustainable methods. The project will gain from ongoing JSHU work as well as CEH projects (COST Action, Defra funded GB Non-Native Species Information Portal) where some of the required data-collection and preliminary horizon-scanning methods testing is underway. The project approach has been designed to minimise requirement to purchase expensive equipment while focussing on capacity building. JSHU staff are offering time in-kind, with field assistants from the local community, and as such the project feeds directly back into the local OT economy. In this regard and with other local involvement (catering and accommodation), the proposal represents excellent value.

Q24. Outputs of the project and Open Access

All outputs from Darwin Plus projects should be made available on-line and free to users whenever possible. Please outline how you will achieve this and detail any specific costs you are seeking from Darwin Plus to fund this.

NERC CEH adheres to the RCUK policy on Open Access (OA) and aims to make all its publications available via the NERC Open Research Archive, and all data available through the EIDC. All outputs (e.g. photos, videos, clear descriptions of methods, computer code etc.) from the project will be uploaded to at least one major open scientific network (e.g. ResearchGate) and the project website. OA outputs include [link to logframe outputs given as O1,2 etc.]:

· OA online recording system (supported though CEH) for INNS with real-time integrated maps plotting distributions (e.g. see www.brc.ac.uk/irecord). This system is coded using the open Indicia toolkit (http://www.indicia.org.uk/) [O1]

 \cdot Datasets, with relevant protocols, from hydrological monitoring and remote-sensing will be published through the EIDC or equivalent OA platform [O2,3]

· All research publications created by the project will be published in peer-reviewed OA journals [O1,2,3,4,5]

· ID guides for wetland species available on website [O4]

· Mosquito code of conduct and cross-UKOT biosecurity publications published in OA archive [O5]

 \cdot An educational programme for military and civilian personnel dealing with INNS and biosecurity in Cyprus that is useful across all UKOTs [O5]

· Updates and results of the project will be communicated to the media of British Forces Cyprus and Cyprus press [O1,2,3,4,5]

£ has been added to the proposal for OA publishing costs.

Q25. Safeguarding

See Guidance Note 3.7

Projects funded through Darwin Plus must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, we would like projects to ensure they have the appropriate safeguarding policies in place. Please check the box to confirm you have relevant policies in place at that these can be available on request.

Checked

Section 10 - Logical Framework

Q26. Logical Framework

Darwin Plus projects will be required to report against their progress towards their expected Outputs and Outcome if funded. This section sets out the expected Outputs and Outcome of your project, how you expect to measure progress against these and how we can verify this.

Annex D and Annex E in the Guidance Notes provides helpful guidance on completing a logical framework, including definitions of the key terms used below.

Impact:

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

Project Summary	Measurable Indicators	Means of Verification	Important
			Assumptions

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 Engagement of Government, NGO, tourist and other local stakeholders in leading surveillance of Lake Akrotiri [by Mar 2021] 0.2 Development of parameters for baseline assesment of quality of the wetland of Akrotiri [by Mar 2021] 0.3. Publication of datasets in an open access format [by Mar 2021] 0.4 Workshops co-led with AEEC and JSHU with involvement from additional local stakeholders to ensure continued engagement between the Cypriot and SBA staff [by Mar 2021] 0.5 Collaboration with AEEC to provide the platform for discussions and workshops [by Mar 2021]

0.1 Key stakeholders will be involved with project delivery from outset through virtual and face to face meetings, workshops and site visits 0.2 Open access datasets published by EIDC and shared with local stakeholders 0.3 Open access datasets published by EIDC 0.4 Two workshops involving 25 people from relevant organisations 0.5 AEEC involved throughout the project including virtual or face-to-face meetings every three months to plan education activities. Minutes of the meeting circulated across project team

0.2 Data are collected according to scientific standards, and are therefore worthy of publication. 0.3 Data are collected according to scientific standards, and are therefore worthy of publication. 0.4 Interest from relevant stakeholders and time available to commit to workshops 0.5 Project team review relevant materials and outputs from meetings including minutes

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

1.1 Supporting information on INNS in Cyprus (e.g. taxonomy, pathways etc.) updated bi-annually through the continued support and development of CyDAS [by Mar 2021] 1.2 Checklists of INNS maintained and published through **RIS-Ky and GRIIS** websites [by Mar 2021] 1.3 At least 500 new records of INNS added over the two year duration of project [by Mar 2021] 1.4 Engagement of at least 5 local stakeholders in curation of records [by Mar 2021] 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 [by June 2019]

1.1 Information on INNS available through RIS-Ky and GRIIS websites
1.2 Checklist available through RIS-KY website
1.3 500 new INNS records within CyDAS
1.4 Verification of records from the local stakeholders
1.5 Website will be displaying up-to-date data and information covering measurable indicator

1.1 Sufficient information available to update the inventory 1.2 Our website manager is able to continue to interface with global datasets and standards (e.g. Catalogue of Life) 1.3 Predicted effort sufficient to complete survey. Survey strategy approved by stakeholders 1.4 Involvement of local experts sufficient to oversee curation and verification 1.5 Stakeholders view webpages and find them useful

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

2.1 Soil moisture and water chemistry data available sufficient for characterising wetland quality [by June 2020] 2.2 Results of survey discussed with key stakeholders at stakeholder meeting with SBA, local Government, NGO etc. [by September 2020] 2.3 Detailed assessment of native and non-native wetland plant communities around lake, with links to hydrology [by June 2020] 2.4 Wetland monitoring methods will be shared with key stakeholder groups and other UKOTs to facilitate replication of methods elsewhere [by Dec 2020]

2.1 Water samples collected and processed and results shared as open data 2.2 Stakeholder engagement (25 people from at least six organisations) at workshop 2.3 Data and reports published on project website and in EIDC 2.4 Methods outlined within user-friendly best practice document available for download from RIS-Ky website

2.1 Water samples able to be collected within timeframe and resource limits 2.2 Stakeholders attend the workshop 2.4 Data are collected according to scientific standards and within resource limits, and are therefore useful and publishable 2.4 Methods are carefully documented throughout the project and can be clearly summarised and made available

Output 3:

Employ remote sensing of Lake Akrotiri lake and surroundings 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 Generate digital plant community and land cover map of Lake Akrotiri underpinned by baseline vegetation monitoring data [by June 2020] 3.2 Production of published open access dataset on extent (current and future) of Lake Akrotiri water levels [by Mar 2021] 3.3 Production of published open access dataset on current and future vegetation changes around Lake Akrotiri [by Mar 2021] 3.4 Generation of standardised methods of analysing remote sensing data that can be used on other UKOTs, such as the British Indian Ocean Territory, where changing water levels will be a critical aspect to the ongoing activities on island [by Mar 2021]

3.1 Innovative
visualisation of the
datasets available
through RIS-Ky website
3.2 Dataset published
on EIDC
3.3 Dataset published
on EIDC
3.4 Methods outlined
within user-friendly best
practice document
available for download
from RIS-Ky website

3.1 Data collected allow useful separation of plant communities 3.2 Data are collected according to scientific standards, and are therefore worthy of publication 3.3 Data are collected according to scientific standards, and are therefore worthy of publication 3.4 Stakeholders from other UKOTs engage with the methods and find them useful

Output 4:

Generation of outreach and engagement material around species interactions and further recording of species network data 4.1 Teaching pack developed in collaboration with AEEC including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology [by Sep 2020] 4.2 interactive web-based tool for use in engagement material to show complexities of wetland habitat and interlinkages between hydrology, ecology and society [by Sep 2020] 4.3 Further structured Citizen Science (and associated QA) surveys looking at interactions between native pollinators and plant INNS [by Mar 2021] 4.4 Publication of Code of Practice for Mosquito Management including rapid response for INNS [by Sep 2020]

4.1 Teaching pack available through RIS-KY website and feedback gathered from participating students 4.2 Materials will be promoted through Project Website RIS-Ky 4.3 Observations from 20 new sites recorded on-line and visible from the RIS-Ky website 4.4 CoP will be published in in Open Access Journal

4.1 Implementation of the teaching pack aligns with guidance and training
4.2 Stakeholder view or download the material
4.3 Predicted effort sufficient to complete
survey. Survey strategy
approved by
stakeholder
4.4 CoP will be
acceptable for
publication.

Output 5:

Training and capacity building provided for UKOT 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 [April 2019] 5.2 Engagement workshop and training event occurs [by September 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

5.1 Report on start-up meeting on website 5.2 Workshop report and feedback forms 5.3 Details of events on project websites and social media announcements and through posters at JSHU and AEEC 5.4 Training workshops take place; reports on website and feedback gathered 5.5 Biosecurity guidance will be distributed within stakeholder network and on project website

5.1 Stakeholders interested in attending. Scoping confirms access and practicality. Scoping inform the risk assessments 5.2 Stakeholders interested in attending. Trainers are adequately briefed. Relevant risk assessments conducted 5.3 Stakeholders interested in attending training sessions; relevant expertise available to provide workshops 5.4 Stakeholders interested in attending. Stakeholders support prioritisation decisions. Year 1 surveys yield sufficient data to prioritise Year 2 efforts 5.5 Stakeholders engage with the biosecurity guidance and adequate resources are provided to ensure effective communication

Do you require more Output fields?

It is advised to have less than 6 Outputs since this level of detail can be provided at the Activity level.

O Yes

Project Summary	Measurable Indicators	Means of Verification	Important
			Assumptions

Output 6: Effective project management and reporting	 6.1 Teleconference to assess year 1 and set up for year 2 [Oct 2019] 6.2 Progress teleconference meetings [Monthly] 6.3 Annual Report [Mar 2020] 6.4 Half year report [Oct 2019, Oct 2020] 6.5 Project closure meeting [Feb 2021] 6.6 Final report on project completion [Apr 2021] 6.7 Publications [from 	 6.1 Minutes of meeting available to staff involved on project 6.2 Teleconferences minuted as appropriate 6.3 Annual Report submitted to Darwin 6.4 Half year reports submitted to Darwin 6.5 Minutes of meeting available to staff involved on project 6.6 Final project report submitted to Darwin 6.7 Publications available on journal 	 6.1 Project team access and review minutes 6.2 Project team access and review minutes 6.3 Project team access and report 6.4 Project team access and report 6.5 Project team access and review minutes 6.6 Project team access and report 6.7 Work is high-enough quality and sufficiently novel to merit publication in
Output 7:	April 2021]	No Response	No Response
No Response			
Output 8: No Response	No Response	No Response	No Response

Activities

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.

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

1.1 Information on INNS in Cyprus (e.g. taxonomy, pathways etc.) updated by the project team bi-annually through the continued support and development of CyDAS

1.2 Checklists of INNS maintained and published through RIS-Ky and GRIIS websites

1.3 At least 500 new record of INNS added over the two year duration of project by surveys carried out by the project team but also through engagement of other stakeholders (see 1.4)

1.4 Engagement of at least 5 local stakeholders in curation of records and records curated by local or regional experts following discussions at the engagement workshop and training event (5.2)

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

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

2.1 Soil moisture and water chemistry data available 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

Output 3 Remote sensing of Lake Akrotiri lake and surroundings employed to give baseline assessment of plant communities and land cover, linking to ground truthing data collected in DPLUS056 and Output 2. 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 levels3.3 Production of published open access dataset on current and future vegetation changes around LakeAkrotiri

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

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.)

4.1 Teaching pack developed in collaboration with AEEC including activities relevant to monitoring biodiversity (including INNS), water quality and hydrology through face-to-face and virtual meetings with staff at the AEEC

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 Design of structured Citizen Science (and associated QA) surveys and relevant supporting resources looking at interactions between native pollinators and plant INNS

4.4 Publication of Code of Practice for Mosquito Management including rapid response for INNS

Output 5 Training and capacity building provided for UKOT 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 [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

Output 6 Effective project management and reporting

6.1 Teleconference to assess year 1 and set up for year 2 [Oct 2019]

6.2 Progress teleconference meetings [Monthly]

6.3 Annual Report [Mar 2020]

6.4 Half year report [Oct 2019, Oct 2020]

6.5 Project closure meeting [Feb 2021]

6.6 Final report on project completion [Apr 2021]

6.7 Publications [from April 2021]

Section 11 - Implementation Timetable

Q27. Provide a project implementation timetable that shows the key milestones

in project activities

Please complete the Excel spreadsheet linked below to describe the intended workplan for your project.

Darwin Plus Implementation Timetable

Please add columns to reflect the length of your project.

For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out.

Once you have completed your implementation timetable please upload it using the file upload tool below.



Section 12 - Monitoring and Evaluation

Q28. Monitoring and evaluation (M&E) plan

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

A detailed M&E plan will be agreed between the project partners and confirmed by a project steering group comprising senior CEH staff and representatives of the partners at the outset of the project. The plan will include the collection of baseline data on, for example, current lists and maps of INNS, information of biosecurity and current surveillance work undertaken and any INNS management activities, remote sensing data and hydrological information.

Monitoring will take place throughout the project using the log frame as a live tool to: a) monitor and control all operational aspects of the work;

b) maintain an audit trail detailing all actions taken and the process of internal review of protocols, analytical procedures, data analyses and reports;

c) maintain a risk register where potential issues and contingency planning can be addressed and monitored; and

d) organise regular meetings of the steering group and of the project team to ensure effective progress and management (conducted via video-link where necessary).

We will proactively address matters arising through the monitoring ensuring flexibility to deliver technical

excellence in pursuit of the overarching objectives. The regular project team meetings will be particularly important for assessing progress and providing feedback on points of action across the partnership. At the end of the project we will assess the impact of the project through structured evaluation. We will focus on but not be limited to: examples of use of data collected throughout the project (especially that resulting from the stakeholder workshops, hydrological monitoring and from the online species recording system); interviews with trained staff to determine to what extent their knowledge has improved and what difference the project has made to their work; assessment of the level of surveillance (numbers of records, taxonomic, spatial and temporal extent) for INNS along with plans for strategy implementation; and evidence of implementation of biosecurity around INNS management regimes that have resulted. The outcome of the evaluation will be compared to the baseline data collected at the start of the project to determine the immediate and potential long-term impact of the project.

From an organisational perspective, Quality Assurance (QA) will be delivered across the project by following the procedures outlined in the CEH QA policy (ISO9001 accredited) and according to the CEH Project Management Framework. The CEH Business Development and Engagement team routinely review project impacts and develop impact case studies for publication on the CEH website and for other reporting purposes. This project will contribute to a planned CEH case study on 'Linking hydrological, ecological and societal factors to address drivers of ecological change in wetlands'. This CEH case study will build upon results and quotes gathered during stakeholder interviews and workshop feedback.

Number of days planned for M&E	10.00
Total project budget for M&E (this may include Staff and Travel and Subsistence Costs) (£)	£
Percentage of total project budget set aside for M&E (%)	

Section 13 - Certification

Certification

On behalf of the

company

of

The Centre for Ecology and Hydrology

I apply for a grant of

£238,838.00

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I enclose one page CVs for key project personnel and letters of support.
- I enclose the most recent 2 sets of signed and audited/independently verified accounts.

Checked

Name	Helen Roy
Position in the organisation	Head of Zoology and Group Lead of Population Ecology, Biological Records Centre
Signature (please upload e-signature)	
Date	02 September 2018

Section 14 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance documents, including the "Guidance Notes for Applicants" and "Finance Guidance".	Checked
I have read, and can meet, the current Terms and Conditions for this fund.	Checked
I have provided actual start and end dates for this proposed project.	Checked
I have provided a budget based on UK government financial years i.e. 1 April – 31 March and in GBP.	Checked
I have checked that the budget is complete, correctly adds up and have included the correct final total at Q7.	Checked
The application has been signed by a suitably authorised individual.	Checked
I have included a 1 page CV for all the Project staff (listed at Q11) on this project, including the Project Leader.	Checked
I have included a letter of support from the applicant organisation, main partner(s) organisations and the relevant OT Government.	Checked
I have uploaded a signed copy of the last 2 years annual report and accounts for the lead organisation, or provided an explanation if not.	Checked

I have checked the Darwin Plus website immediately prior to submission to ensure Checked there are no late updates.

l have read and understood the Privacy Notice on GOV.UK.

Checked

We would like to keep in touch! Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative, Darwin Plus and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.

Checked

Data protection and use of personal data

Information supplied in this application form, including personal data, will be used by Defra as set out in the latest copy of the Privacy Notice for Darwin, Darwin Plus and the Illegal Wildlife Trade Challenge Fund available **here**. This Privacy Notice must be provided to all individuals whose personal data is supplied in the application form. Some information, but not personal data, may be used when publicising the Darwin Initiative including project details (usually title, lead organization, location, and total grant value) on the GOV.UK and other websites.

Information relating to the project or its results may also be released on request, including under the 2004 Environmental Information Regulations and the Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality nor will we act in contravention of our obligations under the General Data Protection Regulation (Regulation (EU) 2016/679).