

Applicant: **Roy, David**  
Organisation: **Centre for Ecology and Hydrology, UK**  
Funding Sought: **£28,826.00**

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## **DPR9F\1019**

Pollinators species such as Lepidoptera are threatened by land-use change, invasive non-native species and climate change. The proposed fellowship will enhance the knowledge of pollinators in the Sovereign Base Area of Akrotiri (on Cyprus) and will provide support for the implementation of citizen science schemes and the conservation of pollinators.

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## Section 1 - Contact Details

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### PRIMARY APPLICANT DETAILS

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Title Dr  
Name David  
Surname Roy  
Tel (Work) [REDACTED]  
Email (Work) [REDACTED]  
Address [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

### GMS ORGANISATION

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Type	Organisation
Name	Centre for Ecology and Hydrology, UK
Phone (Work)	[REDACTED]
Email	[REDACTED]
Website	[REDACTED]
Address	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

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## Section 2 - Title, Dates & Budget Summary

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### Q3. Name and official address of proposed Darwin Plus Fellow

Include email details where available.

Name Mrs Elli Tzirkalli

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Address [REDACTED]

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Email Address [REDACTED]

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### Q4. Summary of proposed Fellowship i.e. Outcome

Pollinators species such as Lepidoptera are threatened by land-use change, invasive non-native species and climate change. The proposed fellowship will enhance the knowledge of pollinators in the Sovereign Base Area of Akrotiri (on Cyprus) and will provide support for the implementation of citizen science schemes and the conservation of pollinators.

## Q5. Project dates

**Start date:**

01 July 2021

**End date:**

30 June 2023

**Duration (e.g. 1 year, 2 months):**

2 years

## Q6. Budget summary

	2021/2022	2022/2023	2023/24	Total
Darwin funding request (Apr - Mar)	9,900.00	14,815.00	3,300	£ 28,015.00

## Section 3 - Principals

### Q7. UKOT Involved


Q7a. Please state which UKOT (s) will be involved with the Fellowship? If you are applying from a UKOT which is not ODA eligible, you will need to apply via the Darwin Initiative.

Western Sovereign Base Area Cyprus


Q7b. Have you included a letter of support from the relevant OT Government(s)?

Yes


Please provide a combined PDF of all letters of support


 [Darwin bases 2021](#)


 02/02/2021


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 pdf 547.04 KB

 [SBAA ECO Darwinfellowship Support letter Elli Tzirkalli 29012021GJ](#)

 02/02/2021

 18:06:29

 pdf 74.99 KB

### Q8. Principals in the Fellowship

Please give the details of the individuals from the applicant and host organisations (and other institutions if relevant) who would be directly involved in supervising/working with the Darwin Plus Fellow.

Details	Project Leader	Other Expert	Other Expert	Other Expert
<b>Surname</b>	Roy	Martinou	No Response	No Response
<b>Forename(s)</b>	David	Angeliki	No Response	No Response

<b>Post held</b>	Head of the Biological Records Centre	Head Entomologist	<i>No Response</i>	<i>No Response</i>
<b>Organisation</b>	UK Centre for Ecology and Hydrology, UK	Joint Services Health Unit, British Forces Cyprus	<i>No Response</i>	<i>No Response</i>
<b>Telephone/Skype</b>	██████████	██████████	<i>No Response</i>	<i>No Response</i>
<b>Email</b>	██████████	██	<i>No Response</i>	<i>No Response</i>

**Do you require more fields?**

No

**Please provide a one page CV for each of these named individuals, including the Fellow named at Q3, uploaded as one PDF.**

-  [darwin fellowship Elli Tzirkalli cvs](#)
-  02/02/2021
-  18:13:30
-  pdf 147.41 KB

## Section 4 - Aims, Activities & Achievements

**Q9. Describe briefly the aims, activities and achievements of the proposed Fellow's employing organisation.**

**Large institutions please note this should describe your unit or department.**

The Joint Services Health Unit (JSHU) is a military unit established in 1968 with environmental health, entomological and pest control expertise that runs the integrated pest and vector management programme in the Sovereign Base Areas of Akrotiri, Episkopi, Dhekeleia, Ayios Nikolaos and Troodos and overseas upon request. The unit has military and civilian experts in environmental health, medical entomology, vector ecology and pest management. JSHU will greatly benefit from the proposed fellowship as it is seen as a priority to raise awareness regarding the importance of pollinators and support their conservation within the Sovereign Base Areas in Cyprus.

The UK Centre for Ecology & Hydrology is the UK's Centre of Excellence for integrated research in terrestrial and freshwater ecosystems. UKCEH provides innovative, independent and interdisciplinary science and long-term environmental monitoring. Our science helps the UK to meet strategic research needs underpinning our ability to undertake world-class environmental science.

**Q10. Describe briefly the proposed Fellow's current role within their organisation and what relevance this has to environmental management and/or climate change in the OTs.**

Mrs Elli Tzirkalli is an expert on butterflies and has been participating in the activities of the Joint Services Health Unit since 2017. She has been actively engaged with two Darwin Projects as a volunteer «Assessment of current and future Invasive Alien Species in Cyprus» and «Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus». She also provided support towards developing of the pollinator

monitoring scheme of Kypros for <https://www.ris-ky.info/>. She is particularly interested in the effects of climate and land use change on Lepidoptera communities on the island and has been involved in various environmental education activities including citizen science events and lectures on butterfly conservation at the Akrotiri Environmental Education Centre. Currently she is one of the coordinators of the newly established Cyprus Butterfly Monitoring Scheme that was initiated through the European Project «ABLE» and the wider eBMS partnership of butterfly monitoring in Europe. She will work closely with the Akrotiri community to expand the scheme within the SBA area and provided useful data for the conservation of pollinators and their many contributions to people.

## Section 5 - Outcomes & Objectives

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### **Q11. Provide a concept note on the Fellowship. This should include:**

#### **Q11a. A clear outline of the aim and objectives of the Fellowship**

Biodiversity declines and pollinators specifically are documented around the globe. Major threats are climate and land use change. Cyprus is expected to show an increasing temperature of ~1.5°C by 2050 and up to 4°C by the end of the century. Based on this scenario, a significant change in the distribution range of many species is expected. Development pressure (e.g. tourism) across Cyprus is threatening habitats and facilitating the rapid increase in invasive non-native species. Pollinators are important indicators of these impacts, as a vital biodiversity component and a key component of environmental health. Studying pollinators through citizen science will provide significant benefits to the local community of Akrotiri, giving an opportunity for engagement with nature and well-being benefits.

The aim is to develop citizen science monitoring of pollinators to study the impacts of climate, land use change and invasive non-native species on biodiversity. Direct involvement of communities across the SBA in citizen science monitoring will raise awareness about the importance of Lepidoptera (butterflies and moths) as pollinating insects.

The fellowship will:

1. Provide an updated baseline of pollinator species in the Akrotiri SBA
2. Promote innovative and distinctive citizen science as providing good value for money in monitoring of butterflies and moths, leaving a legacy for the SBA
3. Collaborate with leading researchers to assess the impacts of climate, land use change and invasive alien species on beneficial species such as moths and butterflies. Transfer of knowledge to the SBA, whilst achieving high quality science excellence
4. Propose conservation measures to improve the conditions of pollinators within the SBA. Contribute directly towards implementation of long-term strategic outcomes for the natural environment in the SBA as a UKOT.

Various capacity building actions will be implemented. All results will be communicated to relevant stakeholders within the SBA and the Republic of Cyprus.

#### **Q11b. The role of the applicant and/or host organisation, and others where relevant**

Mrs Tzirkalli will be responsible for undertaking the research under the leadership of Dr David Roy and Dr Angeliki Martinou (co-supervisors). The co-supervisors have strong experience of delivering collaborative projects and will mentor Mrs Tzirkalli to develop leadership and project management skills to ensure the successful implementation of the fellowship. The team (co-supervisors and Mrs Tzirkalli) will have online as well as face to face meetings on a monthly basis to assess progress and discuss next steps with Dr Martinou providing day-to-day supervision.

Mrs Tzirkalli will visit the UK Centre for Ecology & Hydrology once (2 week period) during the fellowship. The visit will provide her with the opportunity to work with ecological modellers to develop her capacity for using advanced modelling techniques for citizen science data. Additionally, she will meet with experts within UKCEH who have expertise in developing and running citizen science monitoring schemes, including the handling of big datasets. Mrs Tzirkalli will report on the outcomes of this visit through a report outlining the barriers and opportunities for comprehensively implementing the objectives of the project. Mrs Tzirkalli will transfer this knowledge to other researchers in Cyprus and the UKOT.

Mrs Tzirkalli will support capacity building for monitoring pollinators such as butterflies and moths through citizen science. This will include preparation of information material, training on butterfly and moth identification as well as using monitoring apps such as the Butterfly Count app. This will provide a unique opportunity to raise awareness on the importance of pollinators of SBAs areas and especially on the Akrotiri wetlands. A questionnaire will be used to capture feedback on the outputs delivered that will enable Mrs Tzirkalli to evaluate the progress of the project.

**Q11c. Where appropriate, how the Fellowship will contribute towards environment and/or climate change management in the OTs i.e. what the expected outcome of the Fellowship will be, with regard to the aim of Darwin Plus.**

This innovative Fellowship contributes to two key priority issues of Round 9: 1) invasive non-native species conservation and 2) the restoration and wise use of wetlands. It will also tackle the important issue of climate change which is one of the most important stressors of pollinator loss in Mediterranean islands.

Pollinators (butterflies and moths) are among the best-known invertebrate taxa and are considered sensitive indicators of environmental change. In recognition of this, the European Commission adopted an EU initiative to address the decline of pollinating insects in 2018. The EU Biodiversity Strategy 2030 strengthens the commitment to reverse the decline of pollinators. To fulfil this commitment, an ambitious EU Pollinator Monitoring Scheme is in development; this project will complement this wider EU initiative for the Cyprus SBA. UKCEH are actively involved in the development of the EU Pollinator Monitoring Scheme.

Akrotiri Peninsula as well as Akrotiri wetlands are hosting a variety of pollinator species that are currently under pressure posed by humans and climate change. The proposed fellowship will provide a complete assessment of the drivers of pollination decline such as climate and land use change as well as biological invasions.

Mrs Tzirkalli and co-supervisors will ensure transfer of knowledge with reports from the fellowship made accessible to all OTs including specific guidance, relevant to other regions, on implementing approaches for citizen science monitoring to help predicting the effects of stressors on pollinators. Additionally Mrs Tzirkalli will ensure communication of her work to SBAs and government authorities, public and non-governmental organisations and other stakeholders. The co-supervisors will provide opportunities for Mrs Tzirkalli to be involved in wider EU projects on pollinator monitoring and guide her in producing high quality outputs that will help towards the sustainable management of Akrotiri wetlands and habitats that will benefit and support the pollinators.

## **Section 6 - Legacy & Collaboration**

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### **Q12. Legacy**

**Provide information on how the Fellow will utilise, promote and disseminate the benefits of the Fellowship on return to his/her UKOT. Will a strategy be developed during the Fellowship to ensure this is achieved?**

The project plan includes a strategy to ensure the Fellow will utilise, promote and disseminate the outcomes of the fellowship and ensure its legacy. Citizen science for pollinator monitoring has proven to be cost-effective and sustainable across the EU. The Cyprus Butterfly Monitoring Scheme component of the study will provide an effective way of raising awareness with the Akrotiri community along with public participation. The Fellow, will produce a report, including guidance, relevant to other regions, on implementing approaches to assess the impacts of climate and land use and invasive non-native species that will be widely disseminated (through a project website and Darwin Newsletters). A dissemination event will be organised at the Akrotiri Environmental Education Centre, where Mrs Tzirkalli will have the opportunity for feedback from the local community and other stakeholders. A summary of these discussions with key recommendations will be included with the strategy to achieve legacy. Throughout the fellowship Mrs Tzirkalli will consider opportunities for knowledge exchange to other UK Overseas Territories and will report on these as key recommendations. Additionally Mrs Tzirkalli will be guided by her co-supervisors to deliver high quality scientific outputs such as publication, information material and web dissemination to ensure wide accessibility.

### **Q13. Priorities**

**How will the Fellowship assist the OT's environmental priorities? Please refer to strategy papers, white papers or other materials as appropriate.**

Akrotiri peninsula is currently threatened from urbanization, land abandonment and climate change. The proposed fellowship will address these threats and their impacts on pollinators. According with the Akrotiri Peninsula Environmental Management Plan 19 important Lepidoptera species are found in the area. This project will not only give an updated list of the pollinators found in the SBA but also within the Special Areas of Conservation and Akrotiri wetlands, hence enhancing the availability of data for these important areas. It will also enhance citizen science activities by engaging relevant stakeholders and members of the public to actively contribute data and strengthen the relationships between the UK and the Sovereign Base Areas in Cyprus. This project will also contribute to the scope of the White Paper (2012), The Overseas Territories: security, success and sustainability, which set out the UK's commitment to work with the Territories to address the challenges of climate change together.

The project will also help towards the protection of pollinator species and pollination services (e.g. economic value) by highlighting the important role of pollinators and by proposing appropriate conservation measures that could also be applied to other UK Overseas Territories for safeguarding pollinators and compacting pollinator loss.

### **Q14. Collaboration**

**What collaboration has there been with the proposed Fellow to date in developing the proposal, and what collaboration is planned for the duration of the Fellowship? Where relevant, describe any consultation or collaboration by the proposed Fellow within his or her own territory.**

The fellowship proposal has been co-created with the Fellow, Dr Roy and Dr Martinou with which Mrs Tzirkalli has been collaborating for the past three years on the development of Butterfly Monitoring Scheme in Cyprus and together formed the concept of the proposal. Dr Roy is the lead of the European Butterfly Monitoring Scheme and, with Dr Martinou is engaged with the Darwin Plus project «Addressing drivers of ecological change in Lake Akrotiri SBA, Cyprus». For example, Dr Roy gave a keynote talk at a workshop to prioritise monitoring on the impacts of non-native species within the Cyprus SBA.

Throughout the fellowship Mrs Tzirkalli will engage with a number of stakeholders' from the SBA and beyond (Republic of Cyprus) and collate data regarding the presence of pollinators (butterflies and moths). In addition she will work together with the teachers of the Akrotiri Environmental Education Centre for the development of information material about pollinators. Mrs Tzirkalli has already established links with various stakeholders including Officers from the Department of Environment as well as NGOs and nature

enthusiasts. Mrs Tzirkalli will have the opportunity to collaborate with Dr Isaac and Dr Pocock at UKCEH for data analysis and citizen science initiatives.

## Q15. Where will the Fellow be based?

**Please be specific with organisational details and dates (where more than one location).**

The fellowship involves collaboration among experts based at the UK Centre for Ecology & Hydrology (CEH, Wallingford, UK), Joint Services Health Unit (British Force Cyprus, Akrotiri Headquarters) and the Akrotiri Education and Environmental Centre (Akrotiri, Cyprus). Mrs Tzirkalli will focus her studies on the Akrotiri SBA and accordingly be based at the Joint Services Health Unit and Akrotiri Education and Environmental Centre but with regular contact with the UK Centre for Ecology & Hydrology including one visit to acquire and implement modelling skills alongside citizen science recording schemes. Mrs Tzirkalli will first implement the research programme at Akrotiri area for 12 months and after that she will visit UKCEH providing an opportunity for Mrs Tzirkalli to work alongside experts in ecological modelling and undertake detailed analysis of her collated dataset as well as to meet other experts on pollinators monitoring and data collection.

## Section 7 - Programme of Work & Funding

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### Q16. Provide a programme of work, including key milestones, through the duration of the Fellowship


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

[Fellowship Implementation Timetable Template](#)

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


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

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 [darwin-plus-round9-fellowship-imp-timetable](#)

[ET](#)

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### Q17. Costs

**Using UK Government Financial Years (i.e. April 2021 – March 2022 etc.), please provide details of the costs associated with this Fellowship in the appropriate Darwin Plus spreadsheet.**


[Darwin Plus Fellowship Budget Template](#)

**Please note, this should not be presented as academic years.**




 [darwin-plus-round9-fellowship-budget](#)

 02/02/2021

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 xlsx 26.61 KB

## Q18. Other Sources of funding: provide details and amounts

Date applied for	Donor Organisation	Amount (include currency)	Comments (including confirmed/unconfirmed)
01 February 2021	Joint Services Health Unit, British Forces Cyprus		In-kind contribution by the JSHU for using the car during fieldwork
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	<i>No Response</i>

## Section 8 - Certification

### Certification

#### On behalf of the

Trustees

#### of

Centre for Ecology and Hydrology, UK

#### I apply for a grant of

£28,826.00

**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 fellowship 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 have uploaded CVs for fellowship principals and letters of support.

Checked




Name

David Roy

Position in Organisation

Hear of Biological Records Centre

Signed

 #sign  
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Dated

02 February 2021

## Section 9 - Submission Checklist

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 the Fellowship.** 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 Q6.** Checked

The application has been signed by a **suitably authorised individual (clear electronic or scanned signatures are acceptable).** Checked

I have included a **1 page CV for the proposed Fellow and the experts listed in Q8 as one PDF document, or provided an explanation of why not.** Checked

I have included a **letter of support from the applicant organisation, training organisation (if different from applicant org) and the relevant OT Government, or provided an explanation of why not.** Checked

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

I 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).