

Applicant: **Botham, Marc**
Organisation: **UK Centre for Ecology & Hydrology (UKCEH)**
Funding Sought: **£49,500.00**

DPR11F\1012

Andri Varnava

Wild bees are threatened by agricultural intensification, habitat loss, invasive species, and climate change. The fellowship will study the wild bees in the Eastern Sovereign Base Areas, Cyprus (ESBAs) and will develop a conservation strategy for their protection while raising public and stakeholder awareness regarding their importance.

PRIMARY APPLICANT DETAILS

Name Marc
Surname Botham
Tel (Work) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Name Marc
Surname Botham
Tel (Work) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

GMS ORGANISATION

Type	Organisation
Name	UK Centre for Ecology & Hydrology (UKCEH)
Phone (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

Section 2 - Title, Dates & Budget Summary

Q3. Name and official address of proposed Darwin Plus Fellow

Include email details where available.

Name	Andri Varnava
Address	[REDACTED]
Email Address	[REDACTED]

Q4. Summary of proposed Fellowship i.e. Outcome

Wild bees are threatened by agricultural intensification, habitat loss, invasive species, and climate change. The fellowship will study the wild bees in the Eastern Sovereign Base Areas, Cyprus (ESBAs) and will develop a conservation strategy for their protection while raising public and stakeholder awareness regarding their importance.

Q5. UKOT involved

Q5a. Please state which UKOT(s) will be involved with the Fellowship?





Eastern Sovereign Base area (ESBA) Cyprus: Dhekelia, Ayios Nikolaos and Cape Pyla

Q5b. Have you included a letter of support from the relevant OT Government(s) and/ or

OT-based civil society organisation?

Yes

Please provide a combined PDF of all letters of support

 [Letters of Support](#)
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Q6. Project dates

Start date:

01 April 2023

End date:

31 March 2025

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

24 months

Q7. Budget summary

	2023/24	2024/2025	2025/2026	Total
Darwin funding request (Apr - Mar)	23,400	26,100.00	0.00	£ 49,500.00





Please complete the template below which provides the Budget for this application.

[Budget form for projects under £100,000](#)

[Budget form for projects over £100,000](#)

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. Darwin Plus cannot agree any increase in grants once awarded.

Please upload your completed Budget Form Excel spreadsheet using the field below.

 [BCF Budget under 100K MASTER Apr22](#)
 15/10/2022
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 xlsx 35.38 KB

Section 3 - Principals

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
Surname	Botham	Martinou	Menelaos	Denis
Forename(s)	Marc	Angeliki F (Kelly)	Stavrinides	Michez
Post held	Ecologist	Head Entomologist	Associate Professor	Associate Professor
Organisation	UK Centre for Ecology & Hydrology (UKCEH)	Joint Services Health Unit (JSHU) & Enalia Physis Environmental Research Center	Department of Agricultural Sciences, Biotechnology and Food Science, Sustainable Agriculture Group Cyprus University of Technology	Faculty of Science Laboratory of Zoology University Of Mons
Email	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]


Do you require more fields?


No

Please provide a one page CV for each of these named individuals, including the Fellow named at Question 3, uploaded as one PDF.


 [Cover letter](#)


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 [Curriculum vitae](#)

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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.

UKCEH is the UK's Centre for Excellence for integrated research in terrestrial and freshwater ecosystems, providing innovative, independent and interdisciplinary science and long-term environmental monitoring. UKCEH science helps the UK meet strategic research needs underpinning its ability to undertake world-class environmental science.

Joint Services Health Unit is a military unit with environmental health, entomological and pest control expertise. JSHU will benefit from the fellowship as it is seen as a priority to develop a strategy for wild bees to support their conservation in ESBA's. The project is also supported by the Defence Infrastructure Organization (DIO).

The Laboratory of Zoology, UMons, is specialized in the study of wild bees (Hymenoptera, Apoidea) and especially bumblebees.

The Sustainable Agriculture Group of the Department of Agricultural Sciences, Biotechnology and Food Science, CUT is the only University Department on the island carrying out research on the conservation of wild bees in natural and agricultural landscapes.

Q10. Describe briefly the proposed Fellow's current role within their organisation and what relevance this has to one or more of the main themes of Darwin Plus.

Ms Varnava is an expert on wild bees and has participated in the activities of JSHU SBAs Cyprus since 2017. She has been actively engaged on a voluntary basis in the Pollinators Monitoring Scheme of Kýpros developed by UKCEH in collaboration with JSHU and provided guidance and advice during the design of the FIT Count App. She has participated in raising

awareness events in Akrotiri SBA and DPlus56 workshop on biodiversity monitoring needs and she is a co-author of the publication by Peyton et al., 2022, produced from this workshop. She has participated in the activities of SUPER-B COST Action and co-organized the second Bee-Course in Cyprus (CUT) in collaboration with Denis Michez (UMons). She has conducted her PhD thesis looking at the biodiversity of wild bees within the Akrotiri Peninsula, SBA. Her previous work and currently proposed fellowship are in line with all 4 broad Darwin Plus themes (especially the biodiversity) as it aims at protecting the biodiversity of wild bees with a wider aim of protecting the environmental quality and essential foraging habitats of the wild bees that could also help towards climate change mitigation. Her fellowship will help build capacity and network with stakeholders in SBAs.

Section 5 - Outcomes & Objectives

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

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

The proposed fellowship aims to enhance our knowledge and raise awareness about the importance of wild bees to different stakeholder groups by studying the fauna of wild bees of the Eastern Sovereign Base Areas (ESBAs): Dhekelia, Agios Nikolaos and Cape Pyla.

Wild bees are among the most important pollinators. Cyprus hosts 369 bee species of which 21 are endemic. Biodiversity loss in recent years includes the worldwide extinction of insect species, including bees. Major drivers include climate change, habitat loss and fragmentation, invasive species, pathogens and pesticides. Studying wild bees through citizen science will provide significant benefits to the local community of ESBAs, giving an opportunity for engagement with nature and well-being benefits.

The fellowship will:

1. Provide a baseline of the wild bee species present in the ESBAs.
2. Identify the plant species and habitats important for the wild bees found in the ESBAs.
3. Propose conservation measures to improve the conditions for wild bees within the SBA. Contribute directly to the implementation of long-term strategic outcomes for the natural environment in the SBA.
4. Promote the use of the Pollinators Monitoring Scheme of Kýpros (PoMS-Ký), to the ESBAs public, students and stakeholders.
5. Update the wild bees of Cyprus online database with any new records found in the ESBAs.

Various capacity-building actions will be implemented (workshops, and field samplings including the use of the FITCount app use). Results will be communicated to stakeholders, universities and citizen scientists within the SBA and the Republic of Cyprus. In addition, the fellow will promote the use of the POMS-Ký scheme including the FITCount app to environment centers, schools and teachers and adult stakeholder groups and policy makers.

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

Ms Varnava will be responsible for undertaking the research under the leadership of Marc Botham and co-supervisors. The co-supervisors have strong experience in delivering collaborative projects and will mentor Ms Varnava to develop leadership and project management skills to ensure the successful implementation of the fellowship. The team (co-supervisors and Mrs Varnava) will have online and face-to-face meetings on a monthly basis to assess progress and discuss the next steps, with Dr Marc Botham providing monthly supervision.

Ms Varnava will visit UMONS in Belgium and UKCEH, UK (for 2-weeks in each country) during the fellowship. The visits will provide her with the opportunity to work with bee taxonomy and training on DNA barcoding on bee species (UMONS) to further develop her knowledge of Cyprus bee's taxonomy and familiarize herself with developing and running citizen science monitoring schemes, including the handling of big datasets (UKCEH).

Ms Varnava will report on the outcomes of this visit through a report outlining the barriers and opportunities for comprehensively implementing the objectives of the project. Also, will transfer this knowledge to other researchers in Cyprus. Ms Varnava will support capacity building for monitoring pollinators such as wild bees through citizen science. This will include the preparation of information material, training on wild bees identification as well as using monitoring apps such as the Butterfly Count and FITCount app. This will provide a unique opportunity to raise awareness of the importance of pollinators in SBAs areas and especially in the ESBAs. A questionnaire will be used to capture feedback on the outputs delivered which will enable Ms Varnava to evaluate the progress of the project.

Q11c. Where appropriate, how the Fellowship will contribute towards one or more of the four of the four themes of Darwin Plus in the OTs i.e. what the expected outcome of the Fellowships will be.

This innovative Fellowship contributes to two key priority issues of Round 11:

1) Biodiversity and 2) Environmental quality. It will also help with the important issue of capability and capacity building and climate change which is one of the main threats to pollinators.

Biodiversity: This fellowship will discover the species of wild bees that exist in ESBAs, Cyprus. It will also help in the design of conservation actions and in improving the conditions for pollinators and their habitats.

Environmental quality: throughout this fellowship information on the abundance and species richness of bee species as well as plant-pollinator networks will help us to identify the main threats of anthropogenic changes on bee populations and will inform the DIO of the ESBAs on how to better manage habitats and wildflowers. This will help of improving the condition and protection of pollinators' natural environment.

ESBAs are very promising as they host a variety of plants important to pollinators and the pollinators of ESBAs have never been studied. The proposed fellowship will provide a checklist of the bee species present in ESBAs areas and the plant-pollinator networks such as the most important drivers of pollinators' decline.

Ms Varnava and co-supervisors will focus on ESBAs and discover the bee species present there. Additionally, the fellowship will provide guidance on bee species and their habitats and will communicate the results of the study within the SBAs and the Republic of Cyprus.

Section 6 - Legacy & Collaboration

Q12. Legacy

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

Ms Varnava has designed a database (Varnava and Stavrinides, 2015, <http://www.wildbeesofcyprus.org/>), and through this fellowship will enrich and include the new findings from the ESBAs areas. The project plan includes a strategy to ensure the Fellow will utilize, promote, and disseminate the outcomes of the fellowship and ensure its legacy. The Fellow will produce a report, including guidance, relevant to other regions, on implementing approaches to assess the impacts of climate and land use that will be widely disseminated (through a project website and Darwin Newsletters). A dissemination event will be organised in the Dhekelia area, schools, University lessons and conferences, where Ms Varnava will have the opportunity for feedback from the local community and other stakeholders in Cyprus and abroad. A summary of these discussions with key recommendations will be included with the strategy to achieve legacy. Throughout the fellowship, Ms Varnava will consider opportunities for knowledge exchange with other UK Overseas Territories and will report on these as key recommendations. Additionally, Ms Varnava will be guided by her co-supervisors to deliver high-quality scientific outputs such as publications, outreach to citizens, newspaper articles and web dissemination to ensure wide accessibility.

Q13. Priorities

How will the Fellowship assist the OT's environmental priorities? Please refer to international or national environmental conventions, treaties, agreements, strategies and/or action plans relevant to the OT as appropriate.

The Eastern Sovereign Base Areas of Cyprus which includes a base at Ayios Nikolaos plus parts of twelve village districts are under a lot of pressure from threats such as urbanization, pollution, agricultural intensification and pesticides and invasive alien species. Protecting biodiversity and natural habitats is a priority. Many pollinators, including wild bees, are threatened. 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 at the SBAs; 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. The bee fauna of the Eastern Sovereign Base Areas has never been studied. The proposed fellowship will provide baseline information on the wild bees of the Eastern Sovereign Base Areas in Cyprus and guidelines that will help the policymakers of the SBAs develop conservation strategies for these important organisms.

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 their own territory.

The fellow has worked in collaboration and produced this proposal with Dr Botham (UKCEH), Dr Martinou (JSHU, British Forces Cyprus), Dr Stavrinides (CUT) and Dr Michez (UMons) after having consulted the Defence's Infrastructure Organization and Mr Davy Reynolds regarding the needs and gaps of knowledge on pollinators at the Sovereign Base Areas. During the proposal, Ms Varnava will work together with her Cypriot co-supervisors and the experts from the University of Mons in order to ensure that she meets the objectives of the project. Ms Varnava has been collaborating with Dr Stavrinides and Dr Michez as they supervised her PhD Thesis. Both experts have an experience in fieldwork in Cyprus and co-organized with the fellow the Second European Bee Course, conducted in Cyprus and CUT, on which the Entomologist from JSHU, Dr Martinou participated.

Ms Varnava has already worked collaboratively with JSHU, British Forces Cyprus and has assisted during several activities dedicated to pollinators such as the initiation of Poms-ky scheme and the creation of Bee-Hotels in Akrotiri. Ms Varnava will have the opportunity to collaborate with staff at UKCEH on citizen science initiatives and, collaborate with other fellows who work on plant-insect interactions.

Q15. Where will the Fellow be based?

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

The fellow will be conducting her fieldwork at the Eastern Sovereign Base area (Dhekelia, Ayios Nikolaos, Cape Pyla) and she will be conducting her laboratory work at the premises of the Cyprus University of Technology in Limassol. She will travel during the 1st year to UMons, Belgium and the Laboratory of Zoology for bee taxonomy and training on DNA barcoding and UKCEH, UK to acquire experience in citizen science. The visit to UMons will take place in autumn 2023, while the fellow will finish the 1st sampling round to be able to gather the specimens for further analysis. The visit to UKCEH will take place in the spring of 2024, to acquire a detailed analysis of the collated data and to work alongside experts in the field of citizen science, especially on bees. After that, Ms Varnava will outreach her research program in SBAs areas and generally in Cyprus.

Section 7 - Programme of Work

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

Provide a project implementation timetable that shows the key milestones in project activities.


[Implementation Timetable Template](#)

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

 [BCF Implementation Timetable Template 2022-23](#)

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Section 8 - Certification

Certification

On behalf of the

Trustees

of

UK Centre for Ecology & Hydrology

I apply for a grant of







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 project principals, cover letter, budget, implementation timetable, and letters of support as requested in the Guidance Notes.

Checked

Name	MARC BOTHAM
Position in Organisation	Ecologist
Signed	 Marc Motham  15/10/2022  18:36:47  pdf 18.37 KB
Dated	15 October 2022

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 my project.	Checked
I have provided a budget based on UK government financial years i.e. 1 April - 31 March and in GBP.	Checked
The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have checked the Darwin Plus website immediately prior to submission to ensure there are no late updates.	Checked
I have provided the relevant letters of support, cover letter, implementation timetable, and CVs with this application.	Checked
I have read and understood the Privacy Notice on the Darwin Plus website.	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 the application form, including personal data, will be used by Defra as set out in the Privacy Notice, available from the [Forms and Guidance Portal](#).

This **Privacy Notice** must be provided to all individuals whose personal data is supplied in the application form. Some information may be used when publicising Darwin Plus including project details (usually title, lead partner, project leader, location, and total grant value).

Project Title: Biodiversity of wild bees in ESBA areas in Cyprus

Guidance – please delete before submitting

Provide a **Project Implementation Timetable** that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project. Quarters are based on UK FYs (**1 April – 31 March** - Q1 therefore starts April 2023).

Please add/remove 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 shade only the quarters in which an activity will be carried out. The activity numbers should correspond to the activities in your logical framework (logframe). The workplan can span multiple pages if necessary.

This template covers multiple Biodiversity Challenge Funds schemes, so ensure you check the eligible dates/project length for the scheme you are applying to and feel free to delete later years if not applicable for your project.

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Biodiversity of wild bees in ESBA areas	24	3	3	3	3	3	3	3	3
1.1	Selection of sampling sites in ESBA areas	1	1							
1.2	Wild bee surveys (netting – pan traps at selected sites)	12	3	3			3	3		
1.3	Preparation of bee specimens and identification to Genus level. Identify plant species visited by bees using photographs and materials collected (where needed)	4			1	3				
1.4	Fellow travels to Belgium to identify bees to species level and training in DNA Barcoding	1			1*					
1.5	Literature review, update the wild bee’s database (constant updating throughout the project)	2				2				
1.6	Organized a workshop on wild bees, and promote the Pollinator Monitoring Scheme(public, students, and stakeholders)	1				1				

Project Title: Biodiversity of wild bees in ESBA areas in Cyprus

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2	Data analysis and literature review	24								
2.1	Preparation of specimens collected in the 2 nd year of the project, identification using the reference collection from 1 st year samplings	3							3	
2.2	Fellow travels to UKCEH to familiarize with developing and running citizen science monitoring schemes, including the handling of big datasets	1					1*			
2.3	Data analysis of bee species and their habitats in ESBA areas	6							3	3
2.4	Literature review, preparation, and submission of scientific publication (Wild bee of ESBA)	3							3	
2.5	Visit of experts to the island – material surveys, data analysis	2								2
Output 3	Public outreach and creation of conservation measures along with wild bees' checklist for ESBA areas	24								
3.1	Creation of the final bee species and plant species list and important habitats for the wild bees found in the ESBA	3								3
3.2	Promote the use of the Pollinators Monitoring Scheme of Kýpros (PoMS-Ký) and FIT-count app, workshops and field samplings with the public, students, stakeholders and policy-makers.	2					2			
3.4	Creation of a list with conservation measures to improve the conditions for wild bees within the SBA.	3								3

1* = Travel for 2 weeks in Belgium, UMons Laboratory in the 1st year of the Project and travel for 2 weeks in the UK, UKCEH in the 2nd year of the Project.