

Opportunity: Tools for automating image analysis for biodiversity monitoring

Summary

Link to apply:	https://funding-service.ukri.org/OPP206/apply/210
Total Fund Amount:	£3,600,000
Opportunity Leads: Senior Programme Manager	Blanche Wynn-Jones
Contact Details: email for programme	digital.environment@nerc.ukri.org
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Timeline

Event	Date	Time
Opening date	12 July 2023	09.00
Closing Date	18 October 2023	16.00
Applicant webinar date (if applicable)	24 July	15.00
Applicants informed of decisions	Not specified	
Full Opportunity Opening date	12 July 2023	09.00

Opportunity Q&As

Question: Can I apply for resource funding with my application?

Answer: *Costs can include staff time, but such costs must be directly associated to the creation, production, development, and preparation of an asset, so that it is capable of operating as a tool or system for the advancing our understanding of biodiversity and biodiversity loss. For a definition of an asset in the context of this opportunity please refer to the additional information section of the funding opportunity.*

Question: What costs will not be funded under this call?

Answer:

We will not fund:

- *requests for resource, including staffing costs related to operation and maintenance of the tool (after the creation of the asset) and to user training*
- *single-user or single-project equipment*

- *development of novel technologies which are unlikely to generate a productive tool or asset*
- *applications have also been submitted to other award schemes during the same time frame (including all UKRI grant schemes)*
- *associated studentships*

As this is a capital funding opportunity the following costs are also not permitted:

- *pure research – original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding*
- *management overheads – unless that is performing technical development or solely purposed on the project*
- *incidental costs such as project office support, travel and subsistence, and training*
- *costs that only restore or maintain future economic benefit that was expected from the original asset*

Question: Can I apply for funding for a pure research activity?

Answer: It is not expected that this will primarily be a scientific research activity. The focus of this investment is on the development of software, pipelines, and systems, which can be used and maintained as tools for research. It will require dedicated effort from research technical professionals such as research software engineers and data scientists.

Question: Are inter-disciplinary applications welcome under this call?

Answer: We encourage applications from interdisciplinary, cross-disciplinary and multidisciplinary teams and collaborations between UK organisations.

Question: Will proposals be funded at 80% FEC?

Answer: No, we will fund 100% of the FEC.

Question: How much funding can I apply for?

Answer: The full economic cost (FEC) of your project can be between £500,000 and £750,000.

Question: Can we include research technical professionals on the team?

Answer: We encourage the inclusion of digital research technical professionals such as research software engineers and data scientists in applications.

We encourage successful applicants to foster knowledge exchange and collaborative working between the research technical professionals involved in the delivery of projects.

AIAB Webinar questions and answers

Theme	Question	Response
Collaboration	How are NERC supporting collaboration?	The webinar has been designed to enable sharing of research interests and biographies will all those who have registered. So, we encourage those looking to join with other researchers to use the webinar information pack to do so. This will be circulated after the webinar has taken place.
Scope	Is data capture (image and ground truthing) within scope?	We do not envisage applications being substantially about capture of new data, but it is up to applicant to make the case. Verification/validation will be a key to assessors.
Scope	Is bioacoustics biodiversity monitoring in scope?	Outside scope of this call but we recognise that the development of tools or systems for bioacoustics datasets is also an interesting area.
	Perhaps a niche question. Is acoustic analyses covered by this call. Acoustics are typically analysed using computer vision tools (oddly).	Outside scope of this call but we recognise that the development of tools or systems for bioacoustics datasets is also an interesting area. Where there are potential overlaps the eligibility of proposals can be looked at, but they would be at the margins of the scope of this call.
Scope	Is aerial photography and satellite data in scope?	Within scope – it is up to applicant to make the case in application as per assessment criteria.
Scope	What TRLs are within scope?	<ul style="list-style-type: none"> We are looking for the development of robust and verified environmental image processing and software tools which can be broadly used across environmental science and can be maintained beyond this initial investment Tools proposed may span TRLs but would not just be low TRL research to develop the robust tools
Scope	On the requirement for 'broad applicability': does this rule out domain specific applications, for example a project focussed on tree crowns or wildfires as in Simon's examples	Approaches toward domain specific challenges are eligible within the context of this call – particularly if they lead toward the development of robust tools which can be generalised across wider environmental science and used in other contexts.
Scope	Could you elaborate on what is meant by software platforms/pipelines/toolkits etc that can be “broadly used across environmental science”? (Does this preclude development of software which focuses on processing of specific image/video data (content) only)?	Approaches toward domain specific challenges are eligible within the context of this call – particularly if they lead toward the development of robust tools which can be generalised across wider environmental science and used in other contexts.
Scope	Will you fund the development of open-source software / tools?	Yes. We will fund the development of open-source software and tools and part of this call.
Scope	is 3D photogrammetry an eligible area within this context?	Within scope – it is up to applicant to make the case in application as per assessment criteria.
Scope	Are we required to already hold video and image data to automate, or can this call be used to help collect data too?	The call is focused on development and use of training datasets and therefore we would not envisage collection of new monitoring data being a substantial component of an application
Scope	Many software tools are already available for automated image processing. How are you looking for something different?	There is a strong interdisciplinary aspect of this call as we are looking for approaches that may learn from developments in other domains such as healthcare and image and vision computing. Our focus is on enabling environmental scientists to develop and use such tools - and use to advance our understanding of biodiversity loss.
Scope	Are you looking for trained machines, optimised for specific taxa/groups, with SOPs for data gathering or are you looking for tools that facilitate machine training?	The call is looking to support development of tools such as software, pipelines, and systems, which can be used and maintained as tools for research. Up to applicant to justify what a useful tool/system looks like.
Scope	How, or to what extent, should the approach link to statutory biodiversity assessments (which can be limited, for example, to relatively few taxa, e.g., priority marine features which include 'composite taxa')	Up to applicant – bearing in mind assessment criteria.
Scope	For underwater image analysis, to test pipelines we must have appropriate training/validation/test imagery (from different suppliers, using different approaches) and this needs to be accurately annotated. Is this type of activity eligible for this funding?	As stated in the call the development of training datasets is within-scope. It is up to applicants to make the case in their application based on assessment criteria.
Scope	The call covers tools, software, and building training datasets. What is the scope for variation in weighting?	We have not specified such weighting. As stated, tools, software and building training datasets are within scope of the call. We would advise applicants to focus on the assessment criteria and in particular reviewer questions and to take this into account when formulating your application.
Scope	Can the project be to develop new (software) tools (say for tracking or detection) or must it use existing tools?	This has not been specified within the call. We would advise applicants to focus on the assessment criteria and in particular reviewer questions and to take this into account when formulating your application.
Scope	A huge breadth of examples of image analysis were presented earlier - are there any expectations on what sort of breadth is expected for work outlined in the applications? Would applications focussed on just one type of image analysis be considered too narrow?	We do not have any specific requirements around breadth of work included in applications. We would advise applicants to focus on the assessment criteria and in particular reviewer questions and to take this into account when formulating your application.

Scope	Fieldwork and creating training data are mentioned in the call, but it also says, "It is not expected that data will be produced as an output of this funding opportunity". What is the potential role of fieldwork and the creation of training data?	We do not expect to receive applications with a substantial fieldwork component as stated this call is focused on the development of tools for biodiversity monitoring. If a minor fieldwork component were included strong justification would have to be made and we would advise applicants to focus on the assessment criteria and in particular reviewer questions and to take this into account when formulating your application.
Scope	Do you offer any feedback on bid ideas? In other words, can I send you a sort one paragraph description of my project idea and ask you if it is within scope?	NERC will not be providing any feedback on application ideas. However, NERC can advise whether a proposed idea is within remit – if you have a question on this please contact support@funding-service.ukri.org
Data	It is mentioned on the call webpage that it is not expected that data will be produced as an output of this funding opportunity but also that the opportunity could include the development of training data sets. Could you clarify the expectation here.	The following text is included within the funding opportunity in reference to data management: It is not expected that data will be produced as an output of this funding opportunity, therefore an outline data management plan is not required. The use of training data sets is within scope for proposed capital equipment to be developed.
Data	The call text recommends links with data centres. Are data storage costs (if large) provided, e.g. if using Jasmin, or do they need to be costed as part of the funding?	
Eligibility	Is the project-lead expected to be within NERC remit or could lead be Mathematicians and Statisticians?	Not a problem if lead is outside of NERC remit, we want to encourage innovative, transdisciplinary consortia which advance the state-of-the-art.
Eligibility	Do companies need to be based in the UK? Are the funding/reporting requirements similar to the Small Business Innovation and Research Program in the United States?	Project leads and project co-leads based outside the UK are not permitted to apply for funding via this opportunity
Eligibility	For 'no more than two applications'. Is that an individual or organisational limit?	This is an individual limit.
Eligibility	Who is eligible to apply for this funding	This funding opportunity is open to eligible researchers at: <ul style="list-style-type: none"> ▪ higher education institutions (HEIs) ▪ research council institutes (RCIs) ▪ approved independent research organisations (IROs) ▪ public sector research establishments (PSREs) ▪ catapults
Policy	Does Demand Management apply to this call?	No
Specifics of call	Size of consortium, definition of asset	<ul style="list-style-type: none"> • Projects are between £500k-£750k. • Definition of an asset is usually defined as something that depreciates with time. For the purposes of this funding opportunity, we intend it to mean development of a software toolkit, pipeline, or workflow for the automated analysis of images and videos. It could include automated image annotation and segmentation, high-throughput image analysis, the development and use of training data sets, and of automated pipelines
Specifics of call	Successful projects will develop robust and verified environmental image processing and software tools" - how is verified defined in this context?	Verified by the community through use
Project partners	Are UK ltd companies eligible to apply	No. You can include any UK partners not based at approved organisations as project partners. This includes organisations from the business or financial sectors. Project partners fund their own involvement. We will only fund minor incidental expenses, such as some travel costs, if needed for project partners
Project partners	Are non-UK collaborators/partners eligible to be involved	Yes - International collaborators or UK partners not based at approved organisations can be included as project partners
Project partners	Is core government (e.g. Scottish Government) eligible for funding under this call	No. You can include any UK partners not based at approved organisations as project partners. This includes organisations from the business or financial sectors. Project partners fund their own involvement. We will only fund minor incidental expenses, such as some travel costs, if needed for project partners
Project partners	Is subcontracting permitted such as in the case of costs associated with the development of services / assets? Can non-academic (i.e. commercial companies) be sub-contracted e.g. to deliver software tools?	Subcontracting would be permitted. Any costs should be included under the equipment heading cost.
Project partners	Can technical expertise be brought in on secondment either from another eligible organisation or a project partner?	Please consult following pages for NERC Policy: Check if you're eligible for funding – NERC – UKRI

		If you would like further advice on this matter, please contact support@funding-service.ukri.org
Project partners	Would an unfunded partner need to demonstrate their own source of funding (to support their project work)?	Full information is included within the 'Project Partners' section within the funding opportunity. For any project partners please e, download and complete the project partner contributions template (DOCX, 52KB) and copy and paste the table within it into the Project Partners text box on The Funding Service.
Costs	What funding is available?	This is a capital funding opportunity, as such NERC will fund 100% of the full economic cost for equipment only. The full cost of your project can be between £500,000 and £750,000.
Costs	Would staff count as directly incurred costs? Can staff only be DA costs or are DI (PDRA) allowed?	For this Capital Call, all costs will be listed as 'Exceptions – Equipment' (rather than DI Equipment because of the fixed percentages) as this is the only way to fund at 100% on the TFS.
Costs	What costs are allowable	<ul style="list-style-type: none"> Costs can include staff time, but such costs must be directly associated to the creation, production, development, and preparation of an asset, so that it is capable of operating as a tool or system for the advancing our understanding of biodiversity and biodiversity loss. For a definition of an asset in the context of this opportunity please refer to the additional information section of this funding opportunity. Development costs that are directly attributable to bringing the asset into working condition are allowable.
Costs	How much of the grant can be used to conduct some research to expand on the development?	We do not expect such research to be a substantial component of an application. Applicants would have to ensure full justification is given considering the assessment criteria for the call.
Costs	As international co-leads are not can you include Visiting Researchers? And if yes, can salary be costed for them?	No as we are not funding research as such
International links	Geographical scope	<p>This funding opportunity is not linked to any geographical region, country, or continent.</p> <p>We are looking to fund proposed work that is:</p> <ul style="list-style-type: none"> is of excellent quality and importance within or beyond the fields or areas has the potential to advance current understanding, generates new knowledge, thinking or discovery within or beyond the field or area is timely given current trends, context and needs <p>impacts world-leading research, society, the economy, or the environment</p>
Misc	Do we have visibility of other pre-proposals since there is likely to be overlap and potential benefit to merging	<ul style="list-style-type: none"> Applicants will not have visibility of pre-proposals. We have promoted the funding opportunity and today's through many channels. All those who have registered for the webinar will receive an information pack including contact details, biographies, and research interests, where permission from attendees has been gained. Through these routes we have aimed to create a level playing field for all applicants and the possibility to build collaborations.
Misc	Is there expectation for the outputs of the project to be commercialized at the end of the project?	<ul style="list-style-type: none"> There are no specific expectations for outputs of the project to be commercialised. Within the Vision section assessors will be looking for the applicant to demonstrate clear and effective plans for how the asset will be accessed, utilised, and shared by users across an appropriately broad user base, and how this use and access will be supported within and beyond this initial investment.
Misc	The call is clear that tools etc should be maintained beyond the initial investment (project). Do you have any examples in mind of how you see this working in practice	<p>An example would be the tools once developed being made available to multiple users through equipment sharing and assets should be listed on appropriate equipment sharing databases.</p> <p>Within your application when writing the Vision and Approach sections we expect you to:</p> <ul style="list-style-type: none"> demonstrate a demand for the tool being developed from multiple beneficiaries, including significantly beyond the development team include links with industry and government users of the technology if relevant, and in such cases provide evidence that the asset could stimulate innovation and/or support policy making demonstrate clear and effective plans for how the asset will be accessed, utilised, and shared by users across an appropriately broad user base, and how this use and access will be supported within and beyond this initial investment

Misc	Will further development of tools previously supported under UKRI funding be supported?	
Misc	In the call description it is stated that a URL link to the equipment (i.e. pipeline) is required – does this mean that the developed software [platform] needs to be accessible (usable) via the Web, or just information on it?	<p>The text quoted is from a section that relates to reporting requirements of successful applicants on. The text is as follows:</p> <p><i>To encourage equipment sharing, grant holders of equipment must list their asset on the equipment.data website. The URL link to the equipment will be requested in the grant reporting.</i></p> <p>This is entirely distinct from the description of what NERC are looking for from applications.</p>
Misc	The call says projects must start by 29 February 2024, but the deadline is October 2023 with a 6-month decision period. So decision might not come until after the latest start date?	Included within the call is the following text: We aim to complete the assessment process within 6 months of receiving your application – this is the maximum decision period. We are aiming to notify applicants if successful by end of 2023.
Misc	You mentioned that tools that can be used by others are encouraged. Could you expand on this. How do you see the applicability of this particularly in the context of citizen science?	The announcement of opportunity states that the work may include citizen science, or other approaches, to develop labelled training datasets.
Misc	Would NERC entertain the idea of e.g. 2 bids which contribute to development of a common platform, but which exploit it for different use cases in the 2 bids? (Or prefer to have completely independent bids and ascertain later if there are synergies between funded projects)?	Each application to the call will be assessed on its own merit alone using the assessment criteria within the call. We would encourage all applicants to bear this in mind when submitting applications.