
DPLR4\1073

Enhancing Fisheries Management through Otolith Analysis on Ascension Island

This project aims to develop local skills in otolith processing and age determination by utilising a large existing stockpile of fish otoliths, collected over the past 10 years on Ascension Island, to advance local fisheries management and scientific research. Through the processing of otolith samples, the project will enable age determination of at least two coastal species. Subsequently, age and growth models will be developed, providing valuable insights into the dynamics of fished populations providing the basis for stock assessments.

DPLR4\1073

Enhancing Fisheries Management through Otolith Analysis on Ascension Island

Section 1 - Project Title & Contact Details

Q1. Project Title

Enhancing Fisheries Management through Otolith Analysis on Ascension Island

Q2. Please select whether you are applying as an organisation or as an individual (Guidance section 3 and Guidance Glossary)

Organisation

PRIMARY APPLICANT DETAILS

Title Dr
Name Tiffany
Surname Simpson
Tel (Work) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

CONTACT DETAILS

Title Dr
Name Cuen
Surname Muller
Organisation Ascension Island Government
Tel (Work) [REDACTED]
Email (Work) [REDACTED]
Address [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

GMS ORGANISATION

Type	Organisation
Name	Ascension Island Government
Phone (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

Section 2 - Overseas Territory(ies)

Q3. Please state whether the same (or similar) project proposal has previously been submitted to the UK Government for funding, including through Darwin Plus Local, Defra's other Darwin Plus grant schemes or other UK Government funding mechanisms. Failure to do so may result in the application being ineligible.

No

Q4. Overseas Territory (Guidance section 1.3):

Which UK Overseas Territory(ies) will your project be working in? Please note that in case of a non-permanent resident population you need to demonstrate a clear, meaningful, long-term link to the territory.

St Helena, Ascension and Tristan da Cunha*

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

Ascension Island

In addition to the UKOT(s) you have indicated, will your project directly benefit any other UK OT(s) or country(ies)?

Yes

Please list these here and describe how they will benefit:

This project has the potential to benefit other UKOTs in the region through its contributions to fisheries management and scientific research. This project also aims to directly benefit those UKOTs, such as St Helena and Tristan da Cunha, that may not have their own facilities to process otoliths from cross-species as Ascension hopes to develop these skills, build capacity and potentially provide a service to other regions.





Section 3 - Project Partners

Q5. Project partners (Guidance section 3.2)

In this section, please give details of all the partners involved (including the Lead Organisation) and provide a summary of their roles.

Project Leader name (Guidance section 3.1):	Cuen Muller
Lead Organisation name (if applying as an organisation; Guidance section 3.1):	Ascension Island Government Conservation and Fisheries Directorate
Lead Organisation Website (if applicable):	No Response
Is the Lead Organisation based in a UKOT where the project is working (Guidance section 3.1)?	<input checked="" type="radio"/> Yes
List other partners involved and where are they based:	Cefas (Lowestoft, UK)
Summary of roles and responsibilities of each partner in the project:	Project Leader: Coordinate project and recruitment. Facilitate training of staff. Investigate partnerships and service provision for other territories. Deliver report. Lead Partner: Provide infrastructure and equipment necessary for processing of samples. Other partners: Provide expert training, general support (where required), quality control and assurance
I confirm that all listed partners are aware of this application and have indicated support:	Checked

Attach a Cover Letter for your application (Guidance section 4.2).

-  [DarwinLocal Otoltih Cover letter June](#)
-  24/06/2024
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-  pdf 164.95 KB

Section 4 - Project Summary & Description

Q6. Project Summary (Guidance section 3.8)

Please provide a brief summary of your project. This may be used in communication activities and/or published online, if your application is successful.

This project aims to develop local skills in otolith processing and age determination by utilising a large existing stockpile of fish otoliths, collected over the past 10 years on Ascension Island, to advance local fisheries management and scientific research. Through the processing of otolith samples, the project will enable age determination of at least two coastal species. Subsequently, age and growth models will be developed, providing valuable insights into the dynamics of fished populations providing the basis for stock assessments.

Q7a. Description (Guidance section 2.1 and 6)

Please provide a description of your project, including:

- the overall objective
- the current situation and the problem the project is trying to address
- what success will look like and how you will measure it.

Please be as specific as possible when describing the project, using quantified data and evidence where available. You may wish to consider: what are the specific threats to the environment that the project will attempt to address, and what should we know about these threats? What does your successful project look like? And how will you demonstrate whether and how your project has been successful?

The main objective of this project is to process a large stockpile of sagittal otoliths which have been collected over ten years by AIG. The stockpile consists of over 700 otoliths from 16 different species although the majority come from four commercially and/or recreationally important species (yellowfin tuna, wahoo, almaco jack, rockhind grouper). This considerable stockpile represents a potentially valuable dataset which can be used to create local (central South Atlantic) age and growth models. Also, the creation of otolith reference collections will enable future employees to rapidly learn the species-specific age determination process and guarantee continuity in the data collection. Additionally, as many of these samples were collected from local recreational fisheries catches in an ongoing monitoring effort, the dataset will allow for the determination of changes in age of catch for the local fishery over a critical time period.

Prior to the establishment of the Ascension Island MPA in 2019, commercial fishing operations operated in surrounding waters although a fisheries ordinance, which was implemented in 2015, led to the closure of 52% of the Ascension Island EEZ to the international tuna fishery. Since 2019, 100% of the EEZ has been closed to commercial fishing. Our otolith stockpile, therefore, includes samples from the period preceding closure of the MPA to commercial fishing while contemporary samples are continuously being added with ongoing monthly sampling. This will allow us to monitor for changes in age classes of catches from the local recreational boat-based fishery. To our knowledge, no comparisons have been made in the compositions, lengths or age from contemporary catches with those preceding MPA proclamation. The processing of the stockpile will therefore additionally contribute to the monitoring and management of the Ascension Island MPA.

Despite the importance of this stockpile and the availability of the necessary equipment, our ability to process these samples is presently constrained by a shortage of personnel resources. We therefore aim to secure funding to provide temporary employment for a suitable individual to carry out the processing of samples, which includes sorting, mounting, cutting and age determination, as well as the acquisition of new samples, where necessary, and creation of age and growth models. Training in the use of otolith processing equipment, age determination, and age-growth models will be organised by the Ascension Island Government Conservation and Fisheries Directorate together with associated partners.

Success of this project will be measured by:

- Sorting, mounting, cutting and age determination of xx stored samples
- Creation of otolith reference collection of relevant species
- Ongoing collection and processing of otoliths from target species
- Determination of age and growth for two pelagic and two inshore species

- Training of AIG staff to ensure continuity and continued progress beyond this project

These outputs will ultimately lead to the desired outcomes of contributing to MPA management objectives and informing decision making and catch regulations.


Q7b. Long-term sustainability (Guidance section 2.1 and 6)

Please describe the long-term benefits of the project and the change it will bring about. How will the outcomes of the project be sustained after the funding is finished?


Otoliths have been used traditionally to obtain information about the age and size of fishes, this is important because age, growth rate, and mortality rate are three of the most influential life history characteristics controlling the productivity of fish populations. Information on age and growth can help in developing sustainable fisheries management strategies and conservation efforts by providing insights into population structure and dynamics as well as ecosystem health as it relates to changes in resource availability. This project will also add to the scientific knowledge base which can be used for future research and comparative studies in other regions.


The outcomes of this project will be used to inform future management strategies, as an assessment on the progress of the MPA, and provide baseline information towards which future assessments can be compared. Toward the completion of this project the candidate will give hands on training with staff of the Conservation and Fisheries Directorate. On completion of the contract, the candidate will be expected to provide a full handover report detailing the methodology for otolith collection, processing and reading, use and maintenance of equipment including cutting and grinding machinery, and age and growth modelling while also creating reference collections.

(Optional) Please upload any additional and supporting materials or files (such as maps of project sites, etc) below. Maximum of 5 sides of A4, and is combined as a single PDF:

 [Reference material](#)

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 pdf 435.93 KB

Section 5 - Project Outcome(s)

Q8. Project Outcome(s) (Guidance section 1.2)

Successful Darwin Plus Local projects must demonstrate measurable outcomes in at least one of the themes of Darwin Plus with a clear focus on biodiversity and the natural environment, either by the end of the project or soon after through a credible plan.

Please note: Any proposals including research or monitoring are required to demonstrate a clear link to tangible outcomes for conservation of biodiversity and the natural environment. Please explain how any new research will be applied to drive environmental outcomes on the ground.

Please confirm that your project has a clear focus on biodiversity and the natural environment.

Checked **Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;**

Please tick which additional theme(s) of Darwin Plus your project contributes to (if relevant):

Unchecked **Climate change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;**

Checked **Environmental quality: improving the condition and protection of the natural environment**

Checked **Capability and capacity building: enhancing the capacity within OTs, including through community engagement and awareness, to support the environment in the short- and long-term.**

Please justify your selection. Please use quantitative information where possible here.

Monitoring of age and growth of populations over time can provide valuable insight on population trends and dynamics. This is crucial for early identification of population declines or changes, which can prompt conservation actions. By understanding age at maturity and growth rates, fisheries management can implement sustainable fishing practices and set effective regulations that ensure long-term viability of species. This contributes to maintaining biodiversity in marine ecosystems. The findings of this study will be used to inform policy development and decision-making processes related to marine conservation and biodiversity protection.





Section 6 - Workplan

Q9. Workplan (Guidance section 2.2)

Please provide anticipated dates for the start and end of your planned project here. Please use the Darwin Plus Local Project Workplan (available at: <https://darwinplus.org.uk/apply/local-applications/>) to provide a list of the individual activities you have planned for this project, a brief description of what each activity entails, and the months in which the activities will be carried out. If the project involves only one activity (e.g. a purchase), please still provide project start and end dates (noting estimated times for procurement). Please note that your project must start after 1 October 2024 and be completed by 31 March 2025.

Start date:	End date:	Duration (e.g. 3 months):
01 October 2024	31 March 2025	6 months

Please upload the completed Darwin Plus Local Project Workplan with your proposed project activities here

 [R4 DPlus Local Implementation Timetable Template FINAL](#)
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Section 7 - Costs

Q10. Costs (Guidance section 2.2 and please read the Finance Guidance)

Please provide a breakdown of costs to be funded through Darwin Plus Local (in GBP).

Are you seeking any matched funding for this project?

No

Budget line	Explanation	Cost in GBP
Staff costs:	Recruitment of suitable candidate to carry out work (salary, food and utility allowance on Ascension Island (6 months))	£ [REDACTED]
Consultancy costs:	None - Cefas support as in kind	£0.00
Overhead costs:	Office and lab space use	£ [REDACTED]
Travel & subsistence costs:	Flights - St Helena return	£ [REDACTED]
Operating costs:	Consumables - Resin, Crystalbond, grinding and polishing discs, filters, cutting discs	£ [REDACTED]
Capital equipment:	none - equipment available	£0.00
Other Costs	Shipping charges (£500) Collection of additional samples at other locations which includes boat costs as Fuel and servicing fees (£ 1 150)	£ [REDACTED]
Total:		12,938.00

This section provides more information on the budget to help evaluators understand how you will use the funds you are requesting. You do not need to list all costs, but please list and detail costs of more than £1,000 per item below, under the appropriate budget line.

Details of staff costs over £1,000 (if relevant)

Five months staff costs for processing and reading of otoliths and creating reference collection. This cost includes a food and utility allowance according to AIG standard rate.

Ten days additional cost of senior member providing training and assistance with data analysis.

Details of overhead costs over £1,000 (if relevant):

Costs associated with rental of lab and desk space (cleaning and utilities)

Details of travel and subsistence costs over £1,000 (if relevant):

Return flight to Ascension from St Helena for local candidate.

Details of operating costs over £1,000 (if relevant):

Standard consumables necessary for otolith processing

Details of capital equipment costs over £1,000 (if relevant):

No Response

Details of consultancy costs over £1,000 (if relevant):

No Response

Details of other costs over £1,000 (if relevant)

Shipping charges of consumables from UK.

Extra sample collection which includes boat time of five days at sea - fuel and servicing

If your project budget was prepared in another currency and converted to GBP, please provide the exchange rate, its source, and the date it was accessed:

Other currency:	Exchange rate:	Source of this exchange rate:	Date exchange rate accessed:
No Response	No Response	No Response	No Response

Darwin Plus Local has been created to build capacity and contribute to local economies in-territory.

What % of the total will be spent in the OTs?



If less than 80% of the total project spend is to be spent within the OT(s), please explain why.

No Response

Section 8 - Local and National Priorities

Q11. Local and national priorities

Please explain how this project aligns with local and national priorities? You may wish to consider the project in the context of national environmental laws, objectives, strategies, territory specific agreements, action plans or policies.

This project aligns with local and national priorities by supporting marine conservation and sustainable fisheries management objectives. It aids compliance with environmental law and regulations, contributing to the conservation of marine ecosystems. It contributes to local agreements and action plans, operational objectives of the Ascension Island MPA Management Plans [1], such as:

- 1c. No loss of species and no reduction in species abundance or ecosystem complexity in inshore areas
- 1e. Maintain the size distribution and age at maturity of species in inshore areas
- 3a. The Ascension Island MPA becomes a world-renowned site for the scientific study of marine species and ecosystems


Additionally, the Monitoring, Evaluation and Research Strategy document [2] establishes that otoliths will be collected from the most heavily targeted inshore species as part of “2. Data underpinning stock assessments of inshore species” so as to identify size at age, age at maturity, and longevity of these species.


Overall, the project’s alignment with international commitments further underscore its relevance and importance in addressing key environmental, economic and scientific objectives. This includes, for example, the UK’s initiative of effective conservation and management of at least 30% of the world’s oceans by 2030, established in the Convention on Biological Diversity.


Will the project take place on Government owned land or water or involve biocontrol, invasive alien species control or eradication?


Yes

Please attach evidence that you have Government support for this project i.e. a Letter of Support. Applications which indicate that they do not take place on Government land or water, but which propose work that appears to the reviewers would be difficult/impossible to carry out without working on government land or waters may be ineligible if no Letter of Support is provided.

 [20240621 AIG Letter of support - Darwin Local R 4 - Enhancing Fisheries Management through Otolith Analysis on Ascension Island](#)

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Section 9 - Project Risks

Q12. Project Risks

Please demonstrate your consideration of any risks involved in this project and how you intend to manage them. Please note the importance of health and safety and environmental risk assessment in the design of your project. If there is any possibility that your project may have negative impacts on the environment or human health, it is important that you provide a comprehensive analysis of potential environmental and human health risks, and the prevention measures you will take to ensure the work does not cause harm.

Depending on your project, you may wish to consider:

- Biosecurity risks – particularly for projects involving external equipment.
- Safeguarding risks – particularly for projects involving vulnerable groups such as children, older people or people with disabilities.

Risk	Mitigation
Ascension Island is isolated and occasionally faces difficulties and delays in deliveries of items, which could delay the project.	Necessary capital equipment which includes, saw, grinder, microscope is already available along with a limited supply of consumables suitable to start the project.

Health and safety risks at sea	The AIGCFD team is composed of experienced, certified and well-trained members with many hours logged on local sea conditions. Prior to initiation of sample collection, a project specific risk assessment will be drafted which outlines any potential safety risks and mitigation strategies.
Health and safety risks on land	Otolith processing involves the use of sharp tools and chemicals. To mitigate these risks, the project member will undergo thorough safety training before handling equipment or chemicals. Personal Protective Equipment such as gloves, goggles and lab coats will be provided. Hazardous chemicals will be used in well ventilated areas or under a flume-hood. Regular safety inspections and protocols for handling hazardous materials will be strictly followed to minimise accidents.

Do you require more fields?

Yes

Risk	Mitigation
Environmental risks	Unintended risks to the environment through the disposal of chemicals are limited as small quantities are used during the processing of otoliths. Disposal and storage of chemicals will however adhere to local environmental regulations. Spill containment measures and emergency response protocols will be established to mitigate the risk of accidental spills.
<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 10 - Terms & Conditions

Q12. Terms and conditions (Guidance section 3.10)

By applying for Darwin Plus Local you are adhering in full to the grant Terms and Conditions in full (available at: [Darwin Plus website](#) and as referenced in the Guidance at section 3.10). For information, the Terms and Conditions include requirements for all applicants to (amongst other requirements as per the full Terms and Conditions):

- Uphold a zero tolerance for inaction approach to tackling sexual exploitation, abuse, and harassment.

- Where appropriate, make all reasonable and adequate efforts to address gender inequality and other power imbalances.
- Notify all cases of fraud and theft (whether proven or suspected) relating to the project to the Grant Administrator as soon as they identified.

Please indicate you have read, and understood, and will adhere to the Terms and Conditions.

Checked

Supporting documents list (please have these ready to attach with application)

- Cover Letter of no more than two A4 pages. (Guidance section: 4.2 has information on what this cover letter should include).
- If the project takes place on public land or water or is addressing invasive alien species, a Letter of support from OT Government.
- Project Workplan in the template provided for Darwin Plus Local (available at: <https://darwinplus.org.uk/apply/local-applications/>).
- Map and additional information (optional) maximum five additional pages.

If your application is successful

If your project application is successful, the Fund Administrator (NIRAS) will ask you to provide some financial evidence for due diligence checks before you receive your project grant. (Please see section 3.3 of the Darwin Plus Local Finance Guidance). Please be ready to provide this evidence promptly.

- **Financial evidence for organisations:** Year-end financial statements, the latest management accounts or audited accounts (if you have these).
- **Financial evidence for individuals:** Proof of identity such as a passport, ID card or driving licence and solvency (such as bank statements) and a police check.

Section 11 - Certification

Certification

I certify that, to the best of my knowledge and belief, the statements made in this application are true and the information provided is correct.





Checked

I have the authority to submit an application on behalf of my organisation.

Checked

Name: Cuen Muller

Position in the organisation: (if applicable) Marine Team Leader

Signature (please upload e-signature)  [Muller Signature](#)
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Date: 24 June 2024

Section 12 - Submission Checklist

Checklist for submission

	Check
I have read the Guidance documents, including the "Darwin Plus Local Guidance" and the "Darwin Plus Local Finance Guidance".	Checked
If my proposed project takes place on public lands or water or is addressing alien invasive species, I have uploaded a Letter of Support from Government.	Checked
I have uploaded a cover letter that details the information requested in the guidance (Guidance section 4.2 has information on what this cover letter should include).	Checked
I have read, and can meet, the current Terms and Conditions for this fund (found at: https://darwinplus.org.uk/apply/local-applications/) for this fund.	Checked
I have provided actual start and end dates for my project that fit this Round.	Checked
I have provided my summary budget based on UK government financial years i.e. 1 April – 31 March and in GBP in the application form.	Checked
I have uploaded my project workplan using the specific template provided (available at: https://darwinplus.org.uk/apply/local-applications/).	Checked
I have uploaded all supplementary documents if I have any.	Checked
(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.	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 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 Darwin Plus. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share project news. 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: Enhancing Fisheries Management through Otolith Analysis on Ascension Island

Darwin Plus Local

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. Round 4 is for a **maximum of 6 months** with activities starting from 1 October 2024. All activities must be completed by 31 March 2025.

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 months in which an activity will be carried out. The workplan can span multiple pages if necessary.

Activity #	Description (max 25 words)	No. of months	UK Financial Year 2024/25					
			Calendar Year 2024			Calendar Year 2025		
			Oct	Nov	Dec	Jan	Feb	Mar
1	Local advertisement of vacancy, procurement of consumables	1						
2	Appointment of applicant, training	1						
3	Sorting and processing of otoliths	4						
4	Create reference library	2						
5	Data analysis, produce age and growth models	2						
6	Write up and deliver report	1						