Applicant: Jones, Rachel Organisation: Zoological Society of London Funding Sought: £330,476.00

DPR7P\100064

Reducing the impacts of plastic on the BIOT natural environment

PRIMARY APPLICANT DETAILS

NameRachelSurnameJonesOrganisationZoological Society of LondonWebsite (Work)Tel (Work)Tel (Mobile)Email (Work)AddressKebsite Kebsite K

PRIMARY APPLICANT DETAILS

Name	Rachel
Surname	Jones
Organisation	Zoological Society of London
Website (Work)	www.zsl.org
Tel (Work)	
Tel (Mobile)	
Email (Work)	
Address	

GMS ORGANISATION

Туре	Organisation
Name	Zoological Society of London
Phone	
Email	
Website	
Address	

Q3. Lead organisation type

Please select one of the below options.

⊙ UK NGO

Q4. Project title

Reducing the impacts of plastic on the BIOT natural environment

Q5. Project dates

Start date:	End date:	Duration (e.g. 2 years, 3
01 April 2019	31 March 2022	months):
		3 vears

Q6. UKOT(s)

(See Guidance Notes)

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

Sritish Indian Ocean Territory (BIOT)

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

No Response

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

No Response

Q7. Budget summary

Year:	2019/20	2020/21	2021/22	Total request
Q7a. Request	£139,732.00	£98,945.00	£91,799.00	£
from Darwin:				330,476.00

Q7b. Proposed (confirmed and unconfirmed) 15% co-financing as % of total project cost

Section 3 - Lead Organisation Summary

Q8. Lead organisation summary

Please provide the following information on the lead organisation

What year was your organisation established/ incorporated/ registered?	1963
What is the legal status of your organisation?	⊙ NGO
How is your organisation currently funded?	ZSL contains three operational centres in addition to central services; the Institute of Zoology (IOZ), Living Collections and Conservation Programmes (CP). ZSL core costs are met by income generated through ZSL London Zoo and ZSL Whipsnade Zoo and up to a 15% overhead portion of grant funds, where permitted by the donor. These core costs include operation of the living collections and central services, including finance, communications, development and HR. The vast majority (~90%) of IoZ and CP direct activities are funded through external restricted grants. Annual reports and accounts can be found at https://www.zsl.org/aboutus /zsl-annual-reports.
Have you provided the requested signed audited/independently examined accounts? If you select "yes" you will be able to upload these. Note that this is not required from Government Agencies.	⊙ Yes

Please attach the requested signed audited/independently examined accounts.

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

- La ZSL-Annual-Report-2016-17
- ₩ 31/08/2018
- 12:14:07
- 🖻 pdf 4.87 MB

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

⊙ Yes

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

Reference no.	Project leader	Title	
---------------	----------------	-------	--

25-024	Jeremy Huet	Securing marine biodiversity and fishers' income through sustainable fisheries, Mozambique
25-012	Gitanjali Bhattacharya	Steppe-up: Community-led recovery of Mongolia's iconic species and forest-steppe ecosystem
24-015	Gitanjali Bhattacharya	Community conservation of Chitwan National Park's freshwater ecosystems and Gharials
24-027	Heather Koldewey	Applying business models to sustain socio-ecological resilience in coastal Philippines
24-016	Matt Gollock	Sustainable community-based stewardship of freshwater resources in the Northern Philippines
23-001	Paul De Ornellas	Strengthening Cameroon's capacity to implement CITES

Section 4 - Project Partners

Q10. Project partners

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

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

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

Lead Organisation name: Zoological Society of London

Details (including roles and responsibilities and capacity to engage with the project):	ZSL delivers a diverse portfolio of collaborative international conservation projects in over 50 countries. ZSL's Marine and Freshwater Programme has extensive global experience of securing and improving marine biodiversity and livelihoods through community- based management of marine protected areas (MPAs) and species conservation. This is achieved through working with communities, government, private sector and other stakeholders to identify threats, design locally relevant management plans, increase implementation capacity, and improve livelihoods, with outcomes underpinned by sound science. The ZSL team has worked in the UKOTs for over 20 years and has helped deliver two Darwin projects in the British Indian Ocean Territory (19-027) and Pitcairn Islands (20-006). ZSL leads and coordinates a four year programme of science in BIOT (the Bertarelli Programme in Marine Science). The programme team comprises more than fifty scientists across fourteen institutions with an interdisciplinary programme of work on biodiversity and underlying physical and ecological processes in BIOT - the work of the programme is complementary to that outlined in this proposal.
Have you included a Letter of	⊙ Yes

Support from this organisation?

Do you have partners involved in the Project?

• Yes

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

1. Partner Name:	Dr. Nicole Esteban Swansea University
Website address:	www.swansea.ac.uk staff/science/biosciences/n.esteban/
Details (including roles and responsibilities and capacity to engage with the project):	The project partner is based in the Bioscience Department of the College of Science and has been actively involved in sea turtle research in BIOT since 2012 with a number of academic publications and ongoing involvement in development of the conservation management plan for BIOT and an ongoing sea turtle conservation project funded by the Bertarelli Programme for Marine Science until 2021. The activities of the project are complementary to the funded project.
Have you included a Letter of Support from this organisation?	● Yes

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

• Yes

Have you included a Letter of Support from this organisation?	⊙ Yes
	The EO will be directly involved in delivering key tasks in Territory collaborating with US and UK Military counterparts. Both the EO and CSA will also provide support based on their expert knowledge of BIOT to ensure plans are robust and reliable. Sufficient time for the EO and CSA to engage with the project has been agreed by the Administrator for BIOT. BIOTA has discussed the project with the United States, who are fully supportive.
	The BIOTA team is mainly based in London. The Environment Officer (EO) will be ZSLs main partner in the delivery of the project, working closely with the US Navy Environmental and Cultural Resource team. Support will also be provided by BIOTAs Chief Science Adviser (CSA).
Details (including roles and responsibilities and capacity to engage with the project):	The BIOT Administration (BIOTA) will publish a new Conservation Management Plan by end of 2018. Waste management has been identified as a key area for development. This project will help to deliver BIOTA's ambition to greatly reduce the amount of single use plastics on Diego Garcia and develop crucial beach clean initiatives to help ensure the nesting success of endangered green turtles and critically endangered hawksbill turtles, in line with our commitment to the International Year of the Reef 2018.
Website address:	https://biot.gov.io
2. Partner Name:	Harriet Morrall Environment Officer British Indian Ocean Territory Administration

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

4. Partner Name:

No Response

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

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

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

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

No Response

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

Supporting letters combined

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Section 5 - Project Staff

Q11. Project staff

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

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

Please provide 1 page CVs for these staff.

Name (First name, Surname)	Role	% time on project	CV attached below?
Rachel Jones	Project Leader	20	Checked
Fiona Llewellyn	Technical advisor	20	Checked
Emma Levy	Coordinator	60	Checked
Heather Koldewey	Project oversight	5	Checked

Do you require more fields?

⊙ Yes

Name (First name, Surname)	Role	% time on project	CV attached below?
Nicole Esteban	Researcher	15	Checked
Harri Morral	Technical delivery	10	Checked
Nestor Guzman	Technical delivery	5	Checked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked

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

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

BIOT Plastics CVs combined

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Have you attached all Project staff CVs?

O Yes

Section 6 - Background & Methodology

Q12. Summary of Project

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

BIOT's coastal ecosystems are threatened by the accumulation of large volumes of plastic debris. Consumption of single-use plastic (SUP) on Diego Garcia (DG) also creates waste streams that are hard to manage in this remote location. This project will empower BIOT stakeholders to implement cleaning strategies on target beaches, mitigating the impacts of plastics on nesting turtles. We will develop long-term strategies to enable systemic change, reducing DG's SUP consumption, improving disposal and recycling practices.

Q13. Background

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

The BIOT MPA covers 640,000km2 of oceanic wilderness. Although remote, large volumes of plastic waste pollute its coastlines, negatively impacting biodiversity including regionally important populations of green (Endangered) and hawksbill (Critically Endangered) sea turtles. Plastic waste aggregates on beaches, impeding access to nesting sites and degraded plastic particles can increase sand temperature, potentially affecting hatchling sex ratios. Plastics may also cause mortality by entanglement and ingestion. Occasional beach cleans remove shoreline debris that returns rapidly through flows of plastic into BIOT from heavily populated areas across the Indian Ocean. However, attention on this issue has resulted in national commitments to reduce plastic (e.g. single-use plastic ban in India from 2022).

The only human population is in DG, comprising ~3,000 people (US Navy, British Armed forces, contractors). Waste management is limited to a small landfill site and two incinerators. Plastic waste is stored for occasional visits from salvagers. Use of imported plastic items is high, although there is considerable local interest in reducing this and finding alternatives, encouraged by BIOTAs Chief Science Adviser.

With ~8 million tonnes of plastic entering the ocean annually, lasting 100s of years, a combined approach of reduction and mitigation is required.

Q14. Methodology

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

1. Quantify and mitigate impacts of macroplastic waste on BIOT turtles:

a) Survey DG beach (Index) and selected northern atoll nesting beaches to quantify composition, distribution and source of beach debris;

b) Quantify impacts of plastic on turtle nesting;

c) Experimentally establish effects of sub-surface plastic on incubation conditions for turtle nests;

d) Opportunistic post-mortem necropsies of stranded turtles to describe effects of ingested plastic;

e) Create beach clean best practice guidelines and implementation timetable, providing maximum benefit to turtles during breeding season.

Regular beach surveys will be delivered by the Environment Officer (EO) and Naval Facilities Engineering Command (NAVFAC) on DG, supported by volunteers, with data sent to ZSL and Swansea University (SU) for analysis. Experimental and necropsy work will be conducted by SU during biannual turtle expeditions to BIOT with help from volunteers. Analysis of plastic sources and routes to BIOT will be conducted by MSc student supervised by SU. Sand samples will be contributed to a global microplastics study on sea turtle nesting beaches led by Exeter University.

Results will be used to inform DG residents about direct and indirect effects of plastic on local wildlife to influence change in attitudes and policies.

2.Map, quantify and reduce SUP in DG

a) Develop a 'system map' of the composition and flow of disposable plastics through DG, identifying key items, procurement routes, sources and rates of disposal, and sorting of waste;

b)Develop a reduction strategy that tackles the problem at several different levels;

i)Working with buyers, retailers, stores and food outlet managers, to identify the most effective points at which to intervene, what alternatives are or could be made available and how this should be done;

ii)Run a campaign to reduce the use of SUP water bottles on DG as an accessible, everyday flagship item, following ZSL's #OneLess model, and explore alternatives, such as refillable containers, to enable a culture-shift to refilling and wider SUP reduction. Outreach activities will include showing a film in the DG cinema, with messaging centered on connecting people to the ocean and making the link between everyday actions and ocean health;

c) Map attitude and behaviour change over the lifetime of the project using before and after surveys (over varying timeframes considering military staff turnover), and by monitoring the total amount of SUP in use, and use of alternatives.

3. Analyse composition of plastic waste streams in BIOT and create a suite of alternative options for their disposal.

a)Assess total quantities of plastic waste currently accumulating in DG from both beach cleans and locally generated sources;

b)Design a quantitative sampling strategy that produces statistically robust monitoring data. It will identify the most common items and the component plastic types they contain;

c)Alternative ways to reuse, reduce or recycle will be assessed using existing networks engaged in plastic waste innovations;

d)Cost benefit and environmental impact assessments will be conducted and reviewed, comparing and ranking options across economic, logistical and environmental criteria. From this, we will make costed recommendations of the best options with an implementation plan.

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

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

<u>References</u>

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Section 7 - Objectives, Stakeholders & Sustainability

Q15. Project Objectives

How does this project:

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

Policy priorities

The project outcomes are measurable in terms of a) mitigation of the impact of plastics in sea turtle beach habitats, notably the direct effects of plastics on turtle nesting success rate (through the timing of beach cleans) and incubation conditions for turtle nests; and b) reduction in plastic waste streams on DG.

The project meets a range of existing priorities and commitments:

The BIOT Interim Conservation Management Framework identifies the threat to turtles from shoreline debris and the need to better understand its distribution and effectively deliver a programme of beach cleans. This also forms a key part of the new BIOT marine management plan currently in production.

The Overseas Territories 2014 Joint Ministerial Council communiqué encourages and supports the territories to develop waste management strategies where they do not already exist. This project contributes towards development of that strategy regarding common types of plastic waste.

The UK's 25 Year Environment Plan (published January 2018), sets out ambitions to eliminate all avoidable plastic waste by 2042, and significantly reduce and, where possible, prevent all kinds of marine plastic pollution.

Good local ownership - the BIOT EO is part of the project team and plays a key role in delivery on the ground alongside colleagues from the US support staff. The DG Integrated Natural Resources Management Plan (INRMP) prioritises monitoring and protection of sea turtles by the Natural Resources Programme at Naval Facilities Engineering Command (NAVFAC) Far East.

Impact

The project team has years of combined experience working in BIOT as well as technical expertise in the ecology and conservation of turtle species2,3 and running successful plastics reduction systems change programmes.

The project will develop strategies for plastic reduction, monitoring and management that will carry on beyond the end of the grant period, supported by the EO and NAVFAC.

The project contributes to environmental goods and services within the

UKOT(s), e.g. beach clean-ups and a reduction in plastic debris will enable optimum growth rates in littoral vegetation that provides a buffering effect for storm events protecting the coastal fringe from erosion.

The project proposes to convene a workshop of stakeholders from the UKOTs with an interest in plastic waste management at a meeting in London to discuss best practice and share expertise and findings.

Technical Excellence

The project has three clear outputs that deliver the overall goal of reducing the environmental harm caused by plastics in BIOT. The objectives have been developed by technical experts in the UK that already work in these fields and have delivered similar successful projects of this type.

The importance of compelling communications in achieving behaviour change in complex systems is clearly understood and the team have valuable experience with this. Creating sustainable changes to individual behaviour that can be both measured and monitored over time is a key aim.

The risks of working in a remote oceanic location and the limitations of DG in particular are well understand by the project team who are experienced at delivering complex logistical projects in this territory

Q16. Project Stakeholders

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

BIOT administration (BIOTA)

BIOTA in the UK has been consulted from the inception of the project with meetings and workshops to develop project ideas that involved BIOTA team and project partners. The BIOT EO is a member of the project team and key to delivery and engagement with personnel on DG.

UK/US military and contractors

The US Commander and British Representative on DG have both been consulted in the preparation of this application as their support is a prerequisite of achieving projects aims.

Through the life of the project volunteer engagement will ensure involvement of staff based in BIOT, highlighting positive ways their efforts can make a difference to the environment in which they live. Engagement includes:

Participating in beach cleans and plastic waste surveys;

Creating alternatives to SUP use that empower individuals to make behaviour changes with real impact on the environment;

Making a connection between SUP and the ocean through outreach and education materials such as a film to be shown at cinema on DG in both English and Tagalog (most contractors are Filipino) to make it accessible to a wide range of personnel.

Other UKOTs

The project team have consulted with teams from Ascension and St Helena administrations who have delivered waste plastics projects and initiatives themselves and sought to share lessons learned and areas of shared interest. We aim to deliver a workshop to convene OTs practitioners and share best practices around this issue.

Q17. Institutional Capacity

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

ZSL delivers practical conservation projects around the world. The Marine and Freshwater Conservation team, overseen by Heather Koldewey, has a varied and effective global portfolio of conservation projects, including innovative and award winning initiatives to tackle the impacts of plastic waste e.g. Net-Works (Philippines, Cameroon). Heather is also a National Geographic Fellow advising their 'Planet or Plastic' initiative. ZSL's #OneLess initiative, managed by Fiona Llewellyn, is working to eliminate SUP water bottles in London and create a cultural shift towards refilling. With the Mayor of London on-side, and a growing network of influential #OneLess Pioneers, the project has gained a high public profile and is making significant progress in reducing plastic bottled water across London.

Rachel Jones and Emma Levy manage the Bertarelli Programme in Marine Science, a four year programme of research in BIOT delivered by a team of 68 scientists that aims to inform and improve management efforts in the MPA. They deliver a complex annual programme of expeditions and other fieldwork activities in the territory and are experienced at the challenging logistics this entails. Heather, and Rachel have both undertaken regular visits and science expeditions to BIOT.

Both the Environment Officer (EO) and Chief Scientific Adviser (CSA) of the BIOT Administration (BIOTA) oversee and input into all in Territory conservation initiatives. Being based in Diego Garcia the EO has a good understanding of the associated logistical complications of operating through a remote US Naval Support Facility. As such, she will ensure effective liaison between Territory stakeholders and the project manager to ensure all relevant personnel are engaged and informed on Island to help guarantee the success of the project by exploring all possible methodologies.

BIOTA is fully committed to supporting and helping deliver this project. The Administration successfully collaborates with both ZSL and Swansea University (SU) personnel to help deliver the Bertarelli Programme in Marine Science. The crucial research from the programme has been used to inform the production of the Administration's Conservation Management Plan and the US Navy Integrated Natural Resources Management Plan. The EO will provide the link to introduce the project team to the relevant on-Island stakeholders. BIOTA has discussed the project with US and UK military personnel, who are in full support.

SU has worked extensively on the conservation biology of sea turtles around the world for two decades. Dr Esteban has led six expeditions to BIOT in the last six years to assess the abundance of turtles, successfully

attach satellite tags and monitor incubation conditions, and is also involved in the development of the BIOT MPA management plan. Additionally, Dr Esteban has 20 years' experience in protected area management, producing Protected Area Management Plans and targeted Species Monitoring Plans. This experience will assist with incorporation of project results into sustainable conservation management in BIOT.

Q18. Sustainability

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

There is an ongoing commitment to a beach clean programme by NAVFAC through an annual programme of activities and continued inclusion of planning in the INRMP. NAVFAC are keen to ensure that the programme is optimised using project results to enhance sea turtle nesting success.

A comparison of accumulation of plastic debris on a cleaned beach versus uncleaned beach in the Northern Atolls will inform policy decisions on a structured programme of beach cleans in remote islands.

The monitoring of nesting turtle populations in BIOT will continue after the end of the project, supported by the Bertarelli Programme in Marine Science and with on-going support from NAVFAC for staff time to conduct regular surveys.

DG will become part of the #OneLess community; people and places all working towards eliminating SUP water bottles and creating a more sustainable culture of refilling. Through this community, lessons and experiences are shared to help achieve long-lasting change.

DG will receive recognition as a Surfers Against Sewage 'Plastic Free' community for its single-use plastic reduction, anticipated to be the first UKOT to do so. This recognises stakeholder engagement, steps to reduction and an ongoing action plan.

Section 8 - Funding and Budget

Q19. Budget

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

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

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

N.B.: Please state all costs by financial year (1 April to 31 March) and in GBP. Budgets submitted in other currencies will not be accepted. Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

- BIOT Plastics darwin-plus-round7-budget-ov er-100k FINAL
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Q20. Co-financing

Are you proposing co-financing?

O Yes

Secured

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

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

Contribution from the Bertarelli Programme in Marine Science (of which ZSL and SU are partners) will include expedition costs which include administration and coordination as well as time in the field for:

Experimental study of the effects of plastics on incubation conditions of sea turtle nests (during two expeditions in 2019 and 2020).

Revision of beach surveys of sea turtle nesting surveys with NAVFAC staff (during expeditions in 2019-2020). Post-mortem necropsies of stranded turtles (during expeditions in 2019 and 2020).

Analysis of plastic waste from beach cleans from 2017 onwards can be done as part of annual BPMS management visit to DG.

Pilots of plastics survey work can be initially done on outer islands by EO and volunteers during Outer Island Sovereignty Patrols (OISP).

Unsecured

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

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

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

All co-funding is confirmed

Do you require more fields?

⊙ No

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

Q21. Financial Controls

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

ZSL project team, supported by centralised Finance and Operations teams, will oversee management of project funds. ZSL maintains financial records on an accrual basis in accordance with International Accounting Standards. ZSL maintains separate general ledger sub-accounts to identify revenue for grants received and track expenses. ZSL is audited annually with financial statements publicly available. Finance teams provide regular monitoring reports, reviewed and approved by project managers and relevant administrators. Additional to this, reporting to Directors occurs on a monthly basis.

SU has strict financial controls subject to audit control each year. Staff follow financial and procurement procedures with separation of duties and departmental authorisation of personal expenses. All purchases are carried out and administered centrally. The Project PI (Dr Esteban) authorises purchases on the fund, manages the grant, and will be responsible for project administration and reporting to ZSL.

Q22. Financial Management Risk

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

ZSL maintains a Fraud, Corruption and Anti-Bribery Policy (2015), and is committed to instilling a strong anti-corruption culture and to upholding all laws relevant to countering fraud, corruption and bribery, including, but not limited to, the UK Bribery Act 2010. The Society has a zero tolerance position on all fraud, corruption and bribery.

There are risks inherent in working in a remote territory like BIOT particularly in regard to getting staff on and off DG. Delays to flights are common and may be severe in the case of military activity from DG. They will be factored in planning for each trip.

Customs authorities in the Maldives will sometimes confiscate equipment they are unsure of and/or charge a import tax - particularly for technical equipment. We use an experienced local agent there to minimise the chances of having to pay unexpected extra charges.

Q23. Value for money

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

have made when working out your budget.

The budget was created using recent values for all known costs based on work conducted in the territory in the last 12 months.

Costs for beach cleans in the northern atolls were estimated using a very conservative approach to fuel consumption for the British Patrol Vessel Grampian Frontier.

We will take advantage of crew changes by the patrol vessel in the Maldives to load equipment for the project - this will result in large costs savings over importing freight via Singapore.

We established proof of concept for a study of incubation conditions for sea turtle nests during expeditions in 2012-2018 and know how to maximise our achievements in a short time period in BIOT, for example combining temperature logger deployment with daytime track surveys of nesting density and by inviting assistance from volunteers of the resident community.

We will combine the plastics survey with existing fieldwork activities being conducted under the Bertarelli Programme in Marine Science, optimising resources and logistics.

Q24. Outputs of the project and Open Access

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

Reports and recommendations will be made available on the websites of ZSL, Swansea Uni, biot.io, and #OneLess;

Digital maps will be generated, using modelling of plastic waste by ocean currents, and these will be made available online;

The systems diagnosis, map and action plan will be published as a report (print and online) with infographics that is included in the budget for Forum for the Future's contract;

We have included design and print costs for the beach clean guide;

Communications materials will be hard copy (posters, postcards etc. with print costs in the budget) due to the limitations of internet access in DG, but be shared digitally and open access;

The film, that will be produced as part of the SUP water bottle behaviour change campaign, will initially be shown in the cinema on DG, then made publicly available on ZSL's YouTube channel, as well as on the biot.io and ZSL websites;

A budget line has been included for Open Access publication of the experimental study of the effects of plastics on sea turtle incubation conditions.

Q25. Safeguarding

See Guidance Note 3.7

Projects funded through Darwin Plus must fully protect vulnerable people all of the time, wherever they

work. In order to provide assurance of this, we would like projects to ensure they have the appropriate safeguarding policies in place. Please check the box to confirm you have relevant policies in place at that these can be available on request.

Checked

Section 10 - Logical Framework

Q26. Logical Framework

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

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

Impact:

Effective waste management, near-zero single-use plastic, and a refill culture that connects personnel to the ocean, eliminates BIOT marine plastic waste, whilst maintenance achieves plastic-free beaches supporting thriving marine life.

Project Summary	Measurable Indicators	Means of Verification	Important
			Assumptions

Outcome:

Effective beach cleaning reduces plastic waste on BIOT beaches, improving turtle nesting success, while DG personnel, better connected to the ocean and conservation, drive a decline in SUP. 0.1 Number of abandoned nesting attempts by hawksbill and green turtles recorded on the 2.75km Diego Garcia Index Beach (BIOT turtle nesting reference site) by Q4 Yr3 from baseline set by Q2 Yr1.

0.2 Hatchling sex ratios of hawksbill and green turtles maintained close to 2016 baseline of 50:50 on the 2.75km Diego Garcia Index Beach by Q4 Yr3

0.3 Estimated proportion of DG-generated waste comprising SUP water bottles reduced by min of 75% by Q4 Yr3 from baseline established by Q3 Yr1.

0.4 75% of personnel on DG (approx 2250) understand the impact of their use of single use plastic on marine wildlife by Q4 Yr3 and have implemented pledges to reduce their single-use plastic consumption by at least three different items (e.g. bottles, bags, straws) Q4 Yr3 as a result. 0.1 Regular bimonthly surveys by NAVFAC record turtle nesting activities including tracks, species and abandoned bodypits with any obvious interference from plastic waste. Data returned to Swansea University for analysis. (Swansea)

0.2 Scientific publication submitted by Q1 Yr3. (Swansea)

0.3 Volume of single use plastic measured in the BIOT waste management system biannually and retail sales and procurement figures for SUP water bottles. (ZSL)

0.4 Before After Control Impact surveys of DG personnel (military and support). (ZSL) 0.4.1 DG achieves Surfers Against Sewage 'Plastic Free' community status which validates reduction measures, stakeholder engagement and action plan. (ZSL) Abandoned nest attempts are primarily due to plastic obstruction.

Temperature loggers are successfully retrieved after 12 month deployment in beach. Relocating buried loggers after a year can be challenging.

Plastic particle accumulation in sand will result in temperature increase, as has been recorded elsewhere. Limiting plastic accumulation will maintain sand temperature within a range conducive to a balanced sex ratio in hatchlings.

Reduction in SUP on DG is reflected in a reduction in proportion found in waste streams.

Level of plastic waste accumulating on BIOT beaches from non-DG sources remains constant during lifespan of the project.

SUP water bottles are an effective flagship item to represent the issue of marine plastic pollution and connect people better to the ocean, as has been the case in the London-based #OneLess campaign.

A values-based approach increases

Output 1:

1. Characteristics of plastic waste pollution on BIOT marine turtle nesting beaches, and negative effects on nesting turtles and hatchlings, are understood with appropriate mitigation measures developed and implemented. 1.1 Nesting beach plastic monitoring strategy developed and in place by Q2 Yr1 with 24 bimonthly surveys on 2.75km Diego Garcia Index Beach (BIOT turtle nesting reference site) to quantify nesting activities that were unsuccessful due to presence of surface and subsurface plastic.

1.2 Effect of subsurface macro and micro plastics on sand temperature and humidity at turtle nesting depth and effects on turtle hatchlings is understood by Q4 Yr3.

1.3 Volume, types, source and pathways of plastic occuring on three target nesting beaches understood by Q2 Yr3. Source and ocean circulation of plastic debris around BIOT understood by Q4 Yr3.

1.4 Nesting beach cleaning strategy developed and implemented on 2.75km Diego Garcia Index Beach (BIOT turtle nesting reference site) and two pilot Northern Atoll beaches by Q2 Yr1 with cleans carried out by teams of eight people (supervised by EO), one-four times a year, timed to coincide with start of peak green 1.1 Bimonthly surveys (coordinated by BIOT, delivered by NAVFAC) to record nesting attempts and those that were aborted/interrupted by plastic waste, with data submitted to and analysed by Swansea University.

1.2 Data loggers are buried for 12 months to quantify temperature/humidity at a range of plastic % content (in sand over the nest) and a range of turtle nesting depth at 3 stations on Index Beach in Diego Garcia by Q2 Yr1. Scientific publication submitted by Q4 Yr3. (Swansea)

1.3 Analysis of waste collected during beach cleans to establish main sources and composition i.e. type of item and plastic materials. MSc thesis published.(Swansea)

1.4 Nesting beaches identified and mapped on DG and northern atolls (Swansea). Nesting timings recorded and optimum times for beach cleans written into best practice guidelines and an annual workplan for beach cleans. (Swansea) Each nesting beach assigned a beach clean team of volunteers. (BIOT) Beach clean best practice guidelines written (Swansea),

Reduction in SUP on DG is reflected in a reduction in proportion found in waste streams.

Level of plastic waste accumulating on BIOT beaches from non-DG sources remains constant during lifespan of the project.

SUP water bottles are an effective flagship item to represent the issue of marine plastic pollution and connect people better to the ocean, as has been the case in the London-based #OneLess campaign.

A values-based approach increases engagement in marine conservation

Project team can continue to access DG through military flights during project period within the same parameters and constraints known from over 5 years of conducting research on DG and hawksbill nesting periods (June & November) printed (ZSL), distributed(BIOT) and followed by volunteer teams conducting future beach cleans.

Output 2:

2. The system of SUP on DG is understood, with a proposed strategy developed to reduce SUP in identified priority areas, with pilot completed to reduce SUP water bottles, increase refilling and enhance connection between personnel and the ocean.

2.1 SUP system of retail (supply and sale) and usage (purchase and use) on DG audited, analysed and mapped by Q4 Yr1.

2.2 A minimum of three potential intervention points for change (retail and sale) are identified by Q1 Yr2, with assessment of appropriate alternatives completed by Q4 Yr2 and recommendations made by Q1 Yr3.

2.3 Behaviour change campaign aimed at reducing SUP water bottle consumption by DG personnel (military and civilian) developed by Q1 Yr2 and launched by Q2 Yr2.

2.4 A minimum of 75% of personnel (2250 people) pledge to 'go #OneLess' and stop using SUP water bottles and switch to refilling by Q4 Yr2, and: A minimum 75% of people signed up to go #OneLess state they have adhered to it by Q4 Yr4 (on DG at the time or assessed remotely)

2.5 No new imports of SUP water bottles to DG for sale by Q1 Yr2; and all retail outlets on DG to run down the sale of SUP water bottles by Q4 2.1 Audit of SUP usage undertaken. (BIOTA/ZSL) Stakeholder interviews conducted. (BIOTA) System analysed and 'systems map' produced. (ZSL)

2.2 Assessment of alternatives completed and report produced. (ZSL) Strategy produced that identifies and recommends key intervention points and reduction activities, with cost benefit analysis. (ZSL)

2.3 Campaign materials developed. (ZSL) Outreach plan developed and implemented. (ZSL) Film produced, including testimonials from pledges, and shown to personnel. (ZSL)

2.4 Pledges to 'go #OneLess' collected. (ZSL) SUP water bottle usage surveys completed (before and after). (ZSL) Survey data 'before and after' compared (on DG and through online surveys for those who have left during the project period). (ZSL)

2.5 Retail data analysed every six months to determine any changes in number of SUP water bottles sold. (ZSL)

2.6 Sampling and

Data available from retail outlets and surveyed stakeholders accurately captures volumes and movement of SUPs.

Beyond SUP water bottles, additional priority intervention points and practical alternatives can be identified.

An effective campaign can be implemented in an environment with relatively high turnover of military personnel.

Majority of individuals pledging to go #OneLess will maintain behaviour change beyond life of project. More 'ocean friendly' alternatives can be

alternatives can be procured and supplied to DG.

Waste sorting and management allows for data collection and analysis.

Personnel are willing and able to participate in multiple surveys. Personnel on short rotations can be contacted once off DG to complete follow up

	Yr4 2.6 A minimum of 75% reduction in SUP water bottles found in waste sampling by Q4 Yr4 from baseline set established by Q3 Yr1. 2.7 A minimum of 75% of DG personal surveyed demonstrate understanding of the link between plastics use and ocean health in surveys carried out Q3 Yr3, from baseline survey in Q1/2 Yr1.	analysis of DG generated waste streams to identify number of SUP water bottles. (ZSL) 2.7 Survey data 'before and after' compared (on DG and through online surveys for those who have left during the project period). (ZSL)	surveys
Output 3: 3. Strategy for recycling DG-generated plastic waste and plastic waste collected during beach cleans developed and recommendations made to BIOT administration.	 3.1 System for analysis of all collected plastic (beach and DG-generated) to determine utility for recycling and inform sorting in place by Q2 Yr3. 3.2 Minimum of three suitable options for reduction, reuse or recycling plastic waste (methods and products) defined by Q3 Yr 3 	 3.1 Analysis of beach plastic as collected + analysis of DG generated plastic. Report (ZSL/Swansea /BIOT) 3.2 Identify the top 3-5 plastic types Comparative study of strategies for those plastic types based on waste reduction reuse or recycling. (ZSL) 	DG beach cleans continue and beach cleans in Northern atolls from patrol vessel are conducted as planned. Dependent on resources for beach cleans in DG remaining available from US authorities and patrol vessel is available and not required for enforcement duties. Plastic types are identifiable and condition of plastics are suitable for treatments under consideration in great enough quantities.
	3.3 Report produced summarising options and making recommendations for plastic waste management to BIOT managers Q4 Yr 3	3.3 Compare options in criteria matrix and produce report/ make recommendations (ZSL)	Report is considered by BIOT administration and findings incorporated into decision making framework
Output 4: No Response	No Response	No Response	No Response

Do you require more Output fields?

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

⊙ No

Activities

Each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each new activity should start on a new line.

1.1 Bimonthly surveys to record hawksbill and green turtle nesting attempts and those that were aborted/interrupted by (sub-) surface plastic waste on 2.75km Index Beach on Diego Garcia.

1.2 Deployment of 30 temperature/humidity data loggers on Index Beach by Q2 Yr1, retrieval after 12 months. Data analysis at Swansea University and submission of manuscript about the effect of macro and micro plastic on turtle incubation conditions in BIOT.

1.3 Analysis of waste collected during beach cleans to establish main sources and composition i.e. type of item and plastic materials. MSc study of ocean currents to increase understanding of source/circulation of plastic debris arriving in BIOT.

1.4 Nesting beaches identified and mapped with nesting seasons recorded, optimum timings for beach cleans written into a programme. Each nesting beach assigned a beach clean team of volunteers. Beach clean best practice guidelines written, distributed and followed by teams.

2.1 Collect and analyse supply chain data

2.2 Interview procurement officers, retail and waste managers

2.3 Conduct before attitudes and behaviour survey with 300 people (?) to assess personal use of SUP and levels of awareness around environmental impacts of ocean plastic in general and effects on BIOT turtles specifically

2.4 SUP system map for DG formulated and distributed for comment that identifies current procurement, use, waste disposal and recycling strategies/barriers

2.5 System map used to identify key intervention points with most impact and for each point identify alternative behaviours/products/approaches that could be used to reduce SUP use

2.6 Rank interventions to identify highest priority actions with greatest impact and work them into an SUP reduction campaign

2.7 Develop and implement SUP water bottle reduction campaign, including drive for residents to sign the #OneLess pledge

2.8 SUP water bottle amnesty held in DG to raise awareness of project and distribute refillable bottles with information - a stand at July 4th street celebrations

2.9 Film commissioned, produced and shown in cinema , radio materials produced and interviews given on MWR radio station and in Tropical Times newsletter

2.10 Plastic waste sampled quarterly from waste storage area and numbers of plastic bottles/ tonne of waste estimated

2.11 Report produced that analyses changes in attitudes and behaviours, as well as actual number of SUP water bottles used on DG, over lifetime of project:

Findings from #OneLess pledge data and before and after surveys of self-reported awareness of issues raised by campaign and use of SUP

Analysis of data from waste analysis showing reduction in SUP water bottles component

3.1 Design sampling strategy based on estimates of total plastic waste collected annually

3.2 Samples taken from beach cleaned plastic and DG generated plastic and most common items sorted

and quantified by plastic waste stream type

3.3 Each plastic type assessed for suitability for circular economy type approach - all alternative reuse and recycling options considered in against matrix of cost, benefit and environmental impact3.4. Report produced summarising options and making recommendations for plastic waste management to BIOT managers

3.5 Convene a workshop to host practitioners and stakeholders from the UKOTs to discuss their approaches to plastic waste management, discuss new technologies and propose innovative solutions.

Section 11 - Implementation Timetable

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

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

Darwin Plus Implementation Timetable

Please add columns to reflect the length of your project.

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

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

- BIOT Plastics R7_DPlus Implementation_Ti metable
- ₿ 03/09/2018
- ☑ 11:25:01
- 🖈 xlsx 13.68 KB

Section 12 - Monitoring and Evaluation

Q28. Monitoring and evaluation (M&E) plan

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

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

The project lead will have overall responsibility for monitoring project progress, milestones and outputs. Each element of this project has its own technical specialist either as part of the project team or on a consultancy basis and the timeline will be managed through Project software to identify dependencies and milestones for each of these specialists to report against. The project team will meet twice a year, at a) the start of Q1 and of Q3 to agree the annual workplan, reporting milestones and review performance indicators against which to evaluate progress and b) start of Q3 to conduct a mid-year review and planning for the second 6 months.

ZSL's internal reporting requires updates are recorded on a monthly basis on the on-line Zoological Projects Database which will be used as the basis for keeping the project team up to date with developments and for discussion on a monthly Skype call between the partners.

Indicators to be monitored by Swansea University partner

Beach surveys show reduction in accumulated waste over life of project. Surveys of turtle nesting behaviour shows reduction in aborted nesting attempts attributed to (sub-) surface plastic.

Indicators to be monitored by BIOTA partner

Surveys of DG personnel will establish a baseline that measures attitudes (ocean awareness and plastic) and personal use of SUP. Follow up surveys over the course of the project (to reflect rapid turnover of military personnel) will establish reduction in SUP use, clearer identification of appropriate disposal and awareness and increased use of alternatives to SUP available.

Indicators to be monitored by ZSL

Sampling programme for general plastic waste and for plastic water bottles specifically will be developed in the first part of the project, using tools already established by #OneLess but adapted for the DG context. Project team is liaising with contacts in other UKOT's who have delivered similar sampling programmes for advice on the best way to proceed.

Evaluation matrix for options for waste plastic reuse and recycling will compare options against a series of weighted categories. Once comparable scores assigned recommendations can be made for those with the greatest positive impact.

Communication outputs will be monitored for reach and impact, with communication targets (e.g. number of blogs, press release opportunities, social media posts) agreed with the project team at the annual planning and mid-year review meetings and approved by the BIOT administration.

The M&E plan will be reviewed regularly by the project management team through reports and ongoing communications and regular meetings. This will enable workplans to be revised as required and the logframe to be used as a 'living' management tool and adapted accordingly.

Number of days planned for M&E	579.00
Total project budget for M&E (this may include Staff and Travel and Subsistence Costs) (£)	
Percentage of total project budget set aside for M&E (%)	0.19

Certification

On behalf of the

trustees

of

Zoological Society of London

I apply for a grant of

£330,476.00

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

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

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

Checked

Name	Mathew Hatchwell	
Position in the organisation	Director of Conservation	
Signature (please upload e-signature)	 ★ ZSL DI+ signature page 03/09/2018 16:47:40 pdf 58.44 KB 	
Date	03 September 2018	

Section 14 - Submission Checklist

Checklist for submission

Check

I have read the Guidance documents, including the "Guidance Notes for Applicants" and Checked "Finance Guidance".

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