



Department  
for Environment  
Food & Rural Affairs



Foreign &  
Commonwealth  
Office



Department  
for International  
Development



DPLUS026

## Darwin Plus: Overseas Territories Environment and Climate Fund Project Application Form

Submit by Monday 23 September 2013

Please read the Guidance Notes before completing this form

Information to be extracted to the database and made public is highlighted in blue

### Basic Data

<b>1. Project Title</b> (max 10 words)	<b>British Virgin Islands MPA and hydrographic survey capacity building</b>
<b>2. UK OT(s) involved</b>	British Virgin Islands (BVI)
<b>3. Start Date:</b>	1st April 2014
<b>4. End Date:</b>	31st March 2016
<b>5. Duration of project (no longer than 24 months)</b>	24 months

Summary of Costs	2014/15	2015/16	Total
<b>6. Budget requested from Darwin</b>	£ 181,641	£ 71,802	£ 253,443
<b>7. Total value of Co-funding</b>	£ 43,845	£ 8,745	£ 52,590
<b>8. Total Project Budget (all funders)</b>	£ 225,486	£ 80,547	£ 306,033
<b>9. Names of Co-funders</b>	Cefas (in kind support) and National Parks Trust of the Virgin Islands (in kind support)		

<b>10. Lead applicant organisation (responsible for delivering outputs, reporting and managing funds)</b>	Centre for Environment, Fisheries and Aquaculture Research (Cefas)
<b>11. Project Leader name</b>	Koen Vanstaen
<b>12. Email address</b>	<a href="mailto:koen.vanstaen@cefas.eu">koen.vanstaen@cefas.eu</a>
<b>13. Postal address</b>	Cefas Laboratory Pakefield Road Lowestoft Suffolk NR33 0HT
<b>14. Contact details: Phone/Fax/Skype</b>	

<b>15. Type of organisation of Lead applicant. Place an x in the relevant box.</b>									
OT GOVT	UK GOVT	X	UK NGO	Local NGO	International NGO	Commercial Company	Other (e.g. Academic)		

16. Principals in project. Please identify and provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more personnel or more than one main, or other, project partner.

Details	Project Leader	Project Partner 1	Project Partner 2
Surname	Vanstaen	Parker	Smith Abbott
Forename(s)	Koen	David	Joseph
Post held	Team Leader Senior Seabed Mapper	Civil Hydrography Manager	Director
Institution (if different to above)	Cefas	United Kingdom Hydrographic Office (UKHO)	National Parks Trust of the Virgin Islands
Department	Environment & Ecosystems Division	Seabed Data Centre	
Telephone/Skype			
Email			

17. Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)? If so, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title

18. If your answer to Q17 was No, provide details of 3 contracts previously held by your institution that demonstrate your credibility as an implementing organisation. These contracts should have been held in the last 5 years and be of a similar size to the grant requested in this application. (If your answer to Q17 was Yes, you may delete these boxes, but please leave Q18)

Contract 1 Title	UK Marine Conservation Zones: Data and Evidence Collection Programme
Contract Value	£10M since start of project; Average £2-3M per annum
Contract Duration	2011 - ongoing
Role of institution in project	Lead contractor Cefas have been leading a partnership comprising Defra, JNCC, NE and the Environment Agency (EA) to implement additional evidence collection of acoustic and ground-truth data to assist the UK Government in the designation of Marine Conservation Zones (MCZ).
Brief summary of the aims, objectives and outcomes of the contract.	Cefas utilised the UK Government fleet, as well as the commercial charter sector, to deliver over 400 operational survey days between February 2012 and March 2013. To date, over 60 MCZ sites have been visited using a combination of multibeam, sidescan sonar, grabbing and camera techniques. The application of national and international data and sampling standards has ensured the quality of the data and its wider utility beyond this programme. To date, 20 terabytes (TB) of marine survey data has been acquired, over 30 number of survey reports and over 15 site reports have been produced.

Client reference contact details (Name, e-mail, address, phone number).	<p>Carole Kelly  Marine Biodiversity R&amp;D Programme Manager  Department for Environment Food and Rural Affairs  Marine and Fisheries Evidence Unit  9 Millbank, Area 8 A  c/o 17 Smith Square  London SW1P 3JR  Tel: +44 (0) 20 7238 5285  Email: Carole.Kelly@defra.gsi.gov.uk</p>
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Contract 2 Title	Partnership agreement with Natural England (Special Areas of Conservation)
Contract Value	£440k (FY13/14)
Contract Duration	2010 - ongoing
Role of institution in project	<p>Lead contractor</p> <p>Cefas have a Partnership Agreement with Natural England for the provision of marine monitoring, surveillance and assessments in UK waters. Cefas co-ordinate the analysis, interpretation and reporting of the resulting survey data.</p>
Brief summary of the aims, objectives and outcomes of the contract.	<p>Cefas is responsible for the delivery and co-ordination of the collection of scientifically robust and cost-effective evidence from within Special Areas of Conservation. Cefas undertake surveys from its own research vessel or third party vessels. We have worked closely with local management organisations (Inshore Fisheries and Conservation Authorities) to deliver joined up surveys and training IFCA staff in survey procedures and techniques to build their capacity to implement monitoring of the SACs in their local areas. Data resulting from these surveys are reported upon by Cefas.</p>
Client reference contact details (Name, e-mail, address, phone number)	<p>Dr Mike Young  Marine Monitoring Senior Specialist.  Marine Monitoring and Evidence Team.  Natural England  c/o Suite D, Unex House  Bourges Boulevard  Peterborough, PE1 1NG  Tel: +44 (0) 7796948447  michael.young@naturalengland.org.uk</p>

Contract 3 Title	Provision of specialist technical and scientific fisheries advice to support sustainable fisheries advice to the Foreign and Commonwealth Office (Polar Regions Unit)
Contract Value	£1M, around £300k per annum
Contract Duration	3 year
Role of institution in project	<p>Lead contractor</p> <p>Advisor to the FCO and Government of South Georgia &amp; South Sandwich Islands</p>
Brief summary of the aims, objectives and outcomes of the contract.	<p>The government of South Georgia and the South Sandwich Islands (GSGSSI) is responsible for the sustainable management of a maritime area of &gt;1million square kilometres.</p> <p>The Foreign &amp; Commonwealth Office's (FCO) Polar Regions Unit has the</p>

	<p>responsibility of representing the UK at meetings of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and engaging in international negotiations to conserve marine life in the Southern Ocean.</p> <p>Cefas provides advice to GSGSSI and represents UK interests in committees and scientific working groups of CCAMLR in relation to scientific and technical advice to enhance the development of fisheries management, policy, fish stock assessment, ecosystem management advice, preparation of scientific and technical papers, the collection of data and reporting, the training of fisheries inspectors and statistical modelling.</p>
<p>Client reference contact details (Name, e-mail, address, phone number).</p>	<p>Jane Rumble  Head of Polar Regions Unit  Overseas Territories Department  Foreign and Commonwealth Office  Room WH2 30  Foreign and Commonwealth Office  London SW1A 2AH  Tel: +44 (0) 2070 081500  Email: <a href="mailto:Jane.Rumble@fco.gov.uk">Jane.Rumble@fco.gov.uk</a></p>

#### Project Details

**19. Project Outcome Statement:** Describe what the project aims to achieve and what will change as a result. (50 words max)

The project will result in the transfer of skills in mapping marine habitats using modern acoustic survey tools from UK organisations with proven expertise to the stakeholders in BVI. This in turn will provide essential information for spatial planning, sustainable use of marine resources, marine conservation and ensure safe navigation at sea.

**20. 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? (200 words max)

The British Virgin Islands (BVI) have a large marine area, which presents challenges in protecting biodiversity and sustainable management.

There has been a strong commitment towards marine conservation including the development of a Protected Areas System Plan, which aims to protect 33% of the near-shore marine environment. As part of that plan, maps of the shallow marine habitats were produced from aerial photographs. Large areas remain unexplored and acoustic methods could be utilised to improve knowledge of these areas. Navigation charts often rely on 19<sup>th</sup> Century lead line observations. A recent super-yacht grounding, releasing 30 tons of lead shot in the marine environment, has highlighted the need for improved navigational charts to protect safety of lives at sea, whilst at the same time protect the marine environment.

Whereas BVI organisations previously acquired acoustic survey tools, lack of knowledge transfer has limited usage of these systems. There is a need to bring local stakeholder up-to-date with modern survey tools and approaches, and effectively transfer skills and knowledge on their usage.

Local capability for undertaking surveys to recognised international standards will improve understanding of marine biodiversity to implement an MPA network and to meet obligations under the Convention of Biological Diversity (CBD), and allow updating navigation charts.

**21. Methodology:** Describe the methods and approach you will use to achieve your intended outcomes 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. (500 words max)

High priority areas for the use of acoustic techniques to produce habitat maps of previously unknown seabed will be identified and agreed by all partners at the start of the project. Areas will be selected considering; their importance for navigational purposes, their potential biological importance and logistical limitations of acquiring high-quality data.

In the chosen high priority areas, data on topography and hardness of the seabed will be gathered using a Cefas-owned Multibeam Echosounder (MBES) system mounted on a local survey vessel. Bathymetric data collected will be utilised by the UKHO to revise SOLAS standard navigational chart for the mapped area. The MBES bathymetry data will also be processed to produce GIS layers of topographical variables, such as slope and seabed roughness. Backscatter data will also be collected to provide information on substrate type as the intensity of the signal is a proxy for the substrate type. Object based image analysis (OBIA) will be used to identify distinct regions from the topographic and seabed reflectance layers, which will guide the placement of biological ground-truth sampling.

The ground-truth sampling survey will be designed using the MBES survey results, targeting representative regions and distinct features. An underwater camera system or a Remotely Operated Vehicle (ROV) will be deployed to collect video and still images of the seabed. Set-up and operation will follow the MESH 'Recommended Operating Guidelines (ROG) for underwater video and photographic imaging techniques' (Coggan *et al.*, 2007), developed by Cefas staff. Camera tows or ROV transects will last a minimum of 10 minutes, with still images captured at regular one-minute intervals and opportunistically if specific features of interest are encountered. Video and still images will be analysed following an established protocol developed and used by Cefas (Coggan and Howell, 2005). Camera images are important for characterising the surficial sediments and associated epifaunal communities.

Maps of the physical benthic habitat types, such as subtidal rock or sand, recorded in the study areas will be produced via statistical analysis of dependencies between the ground-truth data and the GIS layers. Species distribution modelling (SDM) methods can be used to further model the distributions of habitat building species in the mapped area. The environmental GIS layers and habitat maps will be delivered in a GIS database with a set standard structure enabling the addition of further layers from

future mapping exercises.

Training and capacity building courses aimed at local partners will be held before each stage of the survey, each in turn detailing: 1) the acoustic data acquisition and processing methods, 2) the ground-truthing survey methods and 3) methods for habitat analysis and the production of habitat maps.

A workshop targeting the wider group of stakeholders for marine conservation and management in the BVI will be held at the beginning of the project to inform and encourage their interest in the survey process. A further interactive stakeholder workshop will be held at the stage when acoustic survey is complete, and a final seminar disseminating the results of the project will be held upon its completion.

#### References

Coggan, R., Populus, J., White, J., Sheehan, K., Fitzpatrick, F. and Piel, S. (eds.) (2007). Review of Standards and Protocols for Seabed Habitat Mapping. MESH. [Available online: <http://www.searchmesh.net/default.aspx?page=1442>; last accessed 17/09/2013]

Coggan, R. and Howell, K. (2005). Draft SOP for the collection and analysis of video and still images for groundtruthing an acoustic basemap. MESH report, 10 pages.

#### **22. How does this project:**

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

**a)**  
The BVI have a national GIS which includes layers on the environment that are utilised in planning and management. The project will produce high resolution marine habitat maps to support the development of marine protected areas. The BVI have a Protected Areas System Plan with a number of long term aims for a network of marine parks and protected areas, including ensuring their sustainable use and contributing to economic development. The MPA network will support the Convention on Biological Diversity target to have 10% of the world's oceans protected by 2020, and the UK Government's desire to have the rich environmental assets of the Overseas Territories protected for the future (UK Government White Paper on the UK Overseas Territories, June 2012). Skills needed to produce future data to populate this GIS will be transferred, helping the BVI deliver sustainable spatial planning and management of marine resources.

**b)**  
Cefas and UKHO are trusted partners of the UK Government to provide technical excellence in delivery of environmental surveys and advice, and hydrographic surveys and charting, respectively, in support of good environmental management and decision making. This project will apply recognised and proven procedures and quality standards to the work undertaken in the BVI, and where necessary adjust them to local needs and conditions. By sharing knowledge and transferring skills to local BVI stakeholders, this will embed these practices into good local decision making policies and processes. The suggested methodologies are routinely and successfully used in UK marine mapping programmes (Environmental: e.g. Marine Conservation Zones evidence collection and habitat mapping; Hydrographic: Civil and Defence Hydrography Programmes). This has allowed realistic and effective planning of the proposed work, recognising potential risks. Contingency planning for weather downtime or equipment failure, with alternative options, is included as part of the survey plan. Success of the project can be evaluated through the effective delivery of mapped products (both hydrographic and habitats), the new skills obtained by local stakeholders and through feedback from the project steering group.

**c)**  
Work was undertaken in the BVI during 1980/90s and 2001-2002 to develop a coastal atlas. This project will build on this by verifying the accuracy of historic maps in context of present-day decision making requirements, but also initiate data collection in deeper, unexplored waters. Working with the local stakeholders, the project will use state-of-the-art survey equipment to achieve the best possible survey

results, whilst demonstrating to local stakeholders the benefits of these techniques and training them in their usage.

An important component of this project is bringing together the hydrographic and environmental survey aspects through the "collect once, use many times" concept. By achieving multiple aims through a single survey, outcomes can be delivered in a much more efficient way by BVI stakeholders in future. The high quality multibeam bathymetry data, collected to international standards, will lead to updates of navigational charts, improving safety, decreasing risk of shipping incidents with environmental impacts, and can bring economic benefits to the region as a result of improved access.

**23. 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. (250 words max)**

#### **BVI stakeholders**

This proposal was developed during discussions between UKHO/Cefas and BVI stakeholders in August and September 2013. Stakeholders below were all consulted and are all fully supportive of the proposal (see letters of support).

#### National Parks Trust of the Virgin Islands (NPT)

The NPT is responsible for preserving and managing designated natural and cultural areas in order to improve the quality of life in the BVI. The NPT will guide the project and provide survey support.

#### Conservation and Fisheries Department

The Conservation and Fisheries department's mission is to ensure that the environment, fishing industry and resource base on which they depend are managed in a sustainable manner. Equipment from this department may be used as part of the environmental survey.

#### Virgin Islands Shipping Registry (VISR)

VISR seeks to ensure that Virgin Islands ships can safely, securely and efficiently enjoy the freedom of the seas and the support of a vigorous and effective Maritime Administration.

#### BVI Ports Authority

The Ports Authority have an interest in safe access routes and local capability building.

#### Department of Disaster Management

The department has an interest in seabed survey data to assess marine related risks.

#### Survey Department

The survey department will be key to the transfer of skills and capacity building.

#### **UK stakeholders**

#### JNCC

JNCC have an Overseas Territories and Crown Dependencies Programme which gives advice and support to UK, OT and CD governments on nature conservation.

Representatives from the above organisations will be invited to the project steering group.

**24. Institutional Capacity:** Describe the implementing organisation's capacity (and that of partner organisations where relevant) to deliver the project. (500 words max)

The Centre for Environment, Fisheries and Aquaculture Science (Cefas) is an Executive Agency of the UK Government's Department for Environment, Food and Rural Affairs (Defra). Cefas are internationally renowned in delivering applied marine science solutions based on high quality science to conserve and enhance the aquatic/terrestrial environment, promote sustainable management of its natural resources,

and protect the public from contaminants. It has a range of resources and wide breadth of expertise with more than 500 staff based in two UK laboratories, our own ocean-going research vessel, and over 100 years of experience. Many Cefas scientists are leaders in their fields and advisors on international bodies such as the International Council for the Exploration of the Sea (ICES).

Cefas has widespread capability across the spectrum of marine habitat mapping and ecology; extending across tropical, temperate and polar marine and freshwater ecosystems. Cefas employs in excess of 35 marine ecologists with expertise ranging from benthos, and reefs through to higher trophic levels, including fish and marine mammals. We apply ecological skills across a broad spectrum of assignments including: marine mapping projects, modelling programmes, monitoring and wider ecological survey.

The United Kingdom Hydrographic Office (UKHO), a trading fund of the Ministry of Defence, is the world's leading producer of nautical charts and navigational services for all mariners, the quality of which depends on the underlying survey data. Hydrography, core to the work of the UKHO, is the science of surveying and mapping the seabed to identify the key dangers and safe areas for shipping, enables the 'blue economy' and helps protect the mariner, the public and the environment. The UKHO is the national repository for hydrographic bathymetric survey datasets. The SOLAS Convention requires signatory states to adequately survey and chart their waters for safe passage of shipping. From 2015 the International Maritime Organisation (IMO) will include hydrography when auditing SOLAS signatory states.

The UKHO is concerned that many of the UK Overseas Territories and Crown Dependencies (CDs) are inadequately surveyed with underlying survey data that does not properly support safe and efficient navigation, thus presenting risks to the safety of life at sea and to the environment. It also means that some areas may not meet the requirements of the International Convention for the Safety Of Life At Sea (SOLAS) to which the UK and some of the OTs and CDs are party. The UK's National Hydrographer therefore established a Cross Government Working Group to further develop a strategy to improve the quality of the data through re-engagement and capacity building with the OTs and CDs.

The National Parks Trust of the Virgin Islands manages national parks and designated marine and terrestrial protected areas. They are well placed to guide the project to areas where the impact will be greatest.

## 25. Expected Outputs

Output ( <i>what will be achieved e.g. capacity building, action plan produced, alien species controlled</i> )	Indicators of success ( <i>how we will know if its been achieved e.g. number of people trained/ trees planted</i> )	Status before project/baseline data ( <i>what is the situation before the project starts?</i> )	Source of information ( <i>where will you obtain the information to demonstrate if the indicator has been achieved?</i> )
1. Project Steering Group and collaboration group established	Number of local stakeholders joining project steering group; Collaborative research delivered.	No active exchange of knowledge or ideas between UK and BVI in marine habitat mapping or hydrography	At least 3 local stakeholder organisations join project steering group.
2. Knowledge transfer on bathymetric survey and post-processing methodology	Deliver training session for BVI surveyors. Number of people trained to undertake hydrographic surveys to International Hydrographic Organisation standards.	Little multibeam bathymetry survey experience and experienced surveyors in BVI	Training delivered. Number of attendees at training events. Increase in the number of experienced surveyors in the BVI.



3.Data for improved navigational Chart	High resolution multibeam bathymetry data successfully collected within BVI	Navigation charts often rely on 19 <sup>th</sup> century lead line observations and have poor accuracy	Successful identification of all hydrographic features. Bathymetric data validated and accepted by UKHO for charting purposes. Data passed on to RT6 – The Americas charting team.
4. Knowledge transfer on analysis of acoustic and ground-truthing data to produce marine habitat maps	Training workshop delivered to local stakeholder. Representatives of National Parks Trust and Conservation & Fisheries Department attend workshop; Number of local staff participating in field surveys.	Little expertise for analysis of acoustic and ground-truthing data	Training agenda. Training attendees list. Survey reports with staff list.
5. GIS Database with environmental layers and maps of marine benthic habitats in shelf waters	All survey data made available in GIS format. Number of data layers in database.	Historic maps of shallow coastal waters. Little knowledge about habitats beyond shallow subtidal.	Number of data layers provided to BVI GIS Information Centre.
6. Knowledge of the distribution marine biodiversity at shelf depths (10 - 40 m)	Papers published in peer-reviewed journals	Grey literature with limited peer-review research publications	Number of journal listings
7. Training materials and operating procedures	Provision of workshop presentations and handouts on survey methods and operating protocols for all survey equipment and techniques used.	National Parks Trust recognised lack of skills and knowledge to undertake field surveys	Outputs generated by training workshops. Protocols made available for survey tools.

**26. Expected Outcomes:** How will each of the outputs contribute to the overall outcome of the project? (100 words max)

Outcomes 1, 2, 4 and 7 will lead to local capacity building and ensure long term ability to collect high quality data to inform marine management through training and operating guidelines. Outcomes 5 and 6 will directly contribute to the BVI's ability to implement marine protected areas and manage its resources in a sustainable manner. Successful implementation of MPAs will ensure internationally agreed targets are met (e.g. Convention on Biological Diversity). Outcome 3 will directly contribute to improving safety for mariners at sea. Once charts are updated, mariners can have high confidence in the charts for planning safe routes.

**27. Main Activities**

Activities or tasks to be done to deliver the outputs. Include activities on open access information sharing and collaboration with other OTs

<b>Output 1</b>	<b>Project Steering Group and collaboration group established</b>
1.1	A project kick-off meeting will be held and steering group formed. The most appropriate area for survey will be agreed with local stakeholders.

	At the time of submission of the proposal, a proposed MPA area on the North-West of Anegada is considered for survey. We will be flexible in choosing the most appropriate area at the time of survey.
1.2	Six monthly project steering group meetings will be held to discuss project progress and identify future collaborative opportunities.
1.3	Six monthly progress reports and final project report.
<b>Output 2</b>	<b>Knowledge transfer on bathymetric survey and post-processing methodology</b>
2.1	Planning of training workshops aimed at local stakeholders and an BSc student (currently funded by National Parks Trust) on acoustic survey methodology and post-processing of acquired acoustic data,
2.2	Arrange 1 day training workshop on acoustic survey methodology
2.3	Provide at least 2 days of practical hands-on training on the setup of the multibeam echosounder and data acquisition onboard the survey vessel
2.4	Arrange 1 day workshop on the post-processing of acoustic data
<b>Output 3</b>	<b>Data for improved navigational chart</b>
3.1	Undertake 14 days of multibeam echosounder surveys (including any weather downtime).
3.2	Fully process all multibeam echosounder data to meet charting requirements.
3.3	All bathymetry data validated and accepted by UKHO for charting purposes.
3.4	Identify sites suitable for establishing moorings (within MPA, if appropriate)
<b>Output 4</b>	<b>Knowledge transfer on analysis of acoustic and ground-truthing data to produce marine habitat maps</b>
4.1	Planning of training workshop on the analysis of acoustic and ground-truthing data to produce marine habitat maps, including image analysis and distribution modelling methodology
4.2	Arrange a 3 day training workshop on habitat mapping using acoustic and ground-truthing data
4.3	Researcher Exchange – provide opportunity for National Parks Trust BSc student to visit experts in UK to participate in data analysis and interpretation and gain hands on knowledge and experience.
<b>Output 5</b>	<b>GIS Database with environmental layers and maps of marine benthic habitats in shelf waters</b>
5.1	Undertake a 7 day physical and biological validation survey.
5.2	Additional processing of multibeam bathymetry and backscatter datasets to produce various topographic and seabed reflectance variables in GIS format.
5.3	Image analysis to extract coherent regions in acoustic data based on the bathymetry, backscatter and their derivative layers.
5.4	Statistical analysis relating habitats to acoustic features and production of habitat maps.

5.5	Collation of acoustic data layers, derivative layers, ground-truthing point data and habitat maps into a GIS database with a set structure to meet BVI GIS Centre requirements.
<b>Output 6</b>	<b>Knowledge of the distribution marine biodiversity at shelf depths (10 – 40m)</b>
6.1	Preparation of peer reviewed publications.
6.2	Present results to appropriate audiences, especially targeting other overseas territories. For example, a JNCC/UKOT Technical Workshop focussing on marine protected areas will take place on 28-29 November 2013. Project team members are already invited to attend at the planned event and will seek to present work from this project at future events.
6.3	Work with local stakeholders to review survey outcomes and implications for management of biodiversity, human activities and policy development.
<b>Output 7</b>	<b>Training materials</b>
7.1	Production of PowerPoint presentations and written materials from training workshop, for future reference and training of BVI staff in the future.
7.2	Provision of recommended operation guidelines for marine survey tools and techniques employed during the project.
7.3	A compilation video of the hydrographic survey results and the marine benthic habitats characterising the areas surveyed. Hydrographic survey results will be presented as a 3D fly-through animation.

<b>28. Risks</b>			
Description of the risk	Likelihood the event will happen (H/M/L)	Impact of the event on the project (H/M/L)	Steps the project will take to reduce or manage the risk
Lack of suitable and safe platform to undertake surveys	L	H	Vessel availability was discussed with the National Parks Trust. During the planning phase of the project, potential vessels will be visited and the most suitable vessel selected for survey purposes.
Restrictions in import and export regulations impeding the shipping of key equipment	L	M	State of the art multibeam and highly sensitive motion sensors can be subject to export restrictions. We have selected equipment with minimal restrictions allowing easy worldwide export.
Equipment failure	M	H	The key pieces of equipment used for this project are owned and maintained by Cefas. All equipment will be tested prior to shipping. The tropics are a harsh environment for the highly sensitive survey equipment. Specialist engineers will be available to deal with any equipment failures. A suitable vessel will be identified to protect the sensitive equipment from over-heating.

Vessel breakdown	L	M	During vessel reconnaissance visit, alternative vessels will be identified to be employed if the main survey vessel breaks down.
Inclement Weather	M	M	Weather conditions are a major risk when undertaking any marine based survey work. Survey work will be undertaken in July/August 2014, on recommendation of the National Parks Trust as being most favourable weather conditions. As part of survey planning, alternative survey sites will be identified should the main survey site be unsuitable for survey due to weather conditions.
Loss of key staff	L	M	Both Cefas and UKHO have several suitably qualified members of staff.
Survey vessel groundings due to uncharted waters	M	M	Due to poorly charted waters, there is a risk of survey vessel grounding and equipment damage. This will be mitigated by staying in the previous swath of data and working from deep to shallow waters.

**29. 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? (200 words max)

Capability building lies at the heart of the project proposal, as it was found to be the main obstacle to ensure long term sustainability following previous projects.

Through workshops and active involvement knowledge will be shared with local staff. Training materials and operating guidelines for survey equipment will be produced, to facilitate ongoing survey activities after this project.

High quality marine surveys are expensive, therefore delivering surveys efficiently is essential. This project will introduce the concept of “collect once, use many times” and bring together all parties interested in collection of marine survey data, and demonstrate how joined up delivery can bring benefits to all.

Working closely with local stakeholders, will ensure personal and professional relationships will be maintained beyond the project, and provide continued remote support after the project.

The outputs will provide a basis for the development of marine protected areas and sustainable management beyond the duration of the project.

The bathymetry dataset may also become a control dataset for potential application of satellite derived bathymetry mapping, currently being trialled by the UKHO in Antigua, which will facilitate all shallow waters around the BVI to be mapped in future.

**30. Monitoring & Evaluation:** How will the project be monitored and who will be responsible? Will there be any independent assessment of progress and impact? When will this take place, and by whom? (250 words max)

To ensure the effective management of projects and project funding, Cefas maintain a pool of qualified project managers. Every project has a Project Sponsor and a Project Manager. The project sponsor will be internally accountable for the delivery of the project through in-life monitoring and review to final completion. The Project Manager will have the day-to-day responsibility for all elements of the project including implementation and monitoring of an appropriate project plan, resourcing schedule and risk register. The project manager will submit 6-monthly monitoring reports.

Cefas have developed protocols and quality standards for the collection of acoustic and biological data for validating the presence and extent of habitats and features. These standards would be utilised to ensure the quality of the projects scientific content. Peer-reviewed publications in quality scientific

journals would be produced using the data collected during this project providing an indicator of scientific quality.

Bathymetry data will be collected to recognised international standards (International Hydrographic Organisation – Standards for Hydrographic Surveys – Special Publication S44 Edition 5) by a Charge Surveyor and validated by UKHO Bathymetry Analysts.

A project steering group will be formed to oversee progress and impact of the project. Local stakeholders will be invited to the group, as well as the JNCC's Overseas Territories Advisor. The steering group will meet on a 6 monthly basis. Meeting minutes detailing progress and impact as assessed by the project steering group will be produced and made available as part of the final report.

The project completion report is after the project is over and is linked to the final payment.

**31. 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?)

To ensure that the resources of the project are utilised in the best possible way, only certain members of staff within Cefas have authority to approve and control requisitions and expenditure. An Audit Committee (AC), a formally constituted committee of the Cefas Management Board (CMB) considers and provides advice on: the establishment and maintenance of an effective system of internal control and risk management, oversees the appointment and effective operation of internal audit, enhances the effectiveness of the relationship with external audit and reviews the annual financial statements. Cefas receives regular reports by internal audit to government audit standards which includes the Head of Internal Audit's independent opinion on the adequacy and effectiveness of the agency's system of governance, internal control and the system for risk management, together with recommendations for improvements.

The Project Manager will be responsible for managing the project funds. All project expenditure will be approved by the Project Sponsor or a member of the Cefas Senior Management Team. The project manager has over 6 years experience managing projects and project budgets, ranging from £20k to £500k projects for Government and commercial customers, and varying complexity. A purpose build Management Information System is available to manage and audit expenditure.

As an Executive Agency of Defra, Cefas is subject to Government Spending Controls as set out in the Cabinet Office Controls guidance document (<https://www.gov.uk/government/publications/cabinet-office-controls-guidance-version-3-1>). All sub-contract expenditure between £10k and £20k will be reviewed and approved by the Divisional Director, and all expenditure over £20k will require review and approval by the Cefas Spend Approval Panel. All goods and services will be procured in a fair and open manner.

**Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.**

**NB:** 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.

### **33. 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. (200 words max)

The budget for this project has been built based on the Cefas and UKHO experience undertaking similar work in the UK and overseas (e.g. the UKHO are undertaking a similar survey in Antigua in September 2013), allowing us to provide a realistic budget.

As Government organisations, Cefas and UKHO are well versed in the cost effective and efficient delivery of projects and programmes. This experience will be used in delivery of this Darwin Plus project.

High quality marine evidence collection is expensive, but when delivering benefits for a wide range of stakeholders, is a very cost effective approach. Whereas the cost of one day of multibeam data collection and processing for the UK Civil Hydrography Programme costs on average £25,000/day, this project will deliver such survey effort at significantly lower cost and deliver additional outcomes. The multibeam echosounder system will be made available to the project free of charge by Cefas as an in-kind contribution valued at £35,100.

Training materials will be prepared by the UKHO and Cefas staff based on their existing operating procedures and guidance. Building on existing training materials and programmes, we will be able to deliver training in a cost effective manner, delivering good value compared to purchasing training packages from commercial training centres.

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 (Q1 starting April 2014)

Activity	No of Months	Year 1 (FY14/15)				Year 2 (FY15/16)				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Project Steering Group and collaboration group established												
1.1	Planning and kick off meeting	2/3											
1.2	Steering Group meetings	5, 11, 17, 20											
1.3	Progress and final reporting	6, 12, 18, 21											
Output 2	Multibeam survey knowledge transfer												
2.1	Training planning	1-3											
2.2	Survey vessel mobilisation training	4/5											
2.3	Data acquisition training	4/5											
2.4	Data processing	4/5											
Output 3	Improved charting data												
3.1	Undertake multibeam survey	4/5											
3.2	Process all data	7/8											
3.3	Data validated and accepted	9											
3.4	Identify mooring sites	11											
Output 4	Habitat survey knowledge transfer												
4.1	Workshop planning	2-3											
4.2	BVI workshop	5											
4.3	Researched exchange	6											
Output 5	GIS database development												
5.1	Biological field survey	5											
5.2	Acoustic data derivatives	10											
5.3	Image analysis	11-12											
5.4	Statistical analysis	13-15											
5.5	GIS data collation	16-17											

Output 6	Biodiversity knowledge													
6.1	Peer reviewed publication	19-24												
6.2	Local and international workshop/conference presentations	18												
6.3	Review for implementation	18												
Output 7	Training materials													
7.1	Training materials	4,5,18												
7.2	Recommended operating guidelines	20												
7.3	Outreach materials	21												



**CERTIFICATION**

On behalf of the organisation\* of **Cefas**  
(\*delete as appropriate)

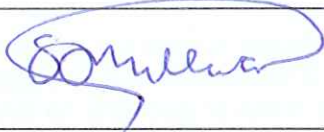
I apply for a grant of £253,443 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

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 lead institution to submit applications and sign contracts on their behalf.)*

**I enclose CVs for project principals and letters of support. Our most recent audited/independently verified accounts and annual report are also enclosed/can be found at (delete as appropriate):**

<b>Name (block capitals)</b>	STEVE MILLWARD
<b>Position in the organisation</b>	Operations Director

**Signed**



**Date:**

20/09/2013

## Application Checklist for submission

	Check
Have you <b>read the Guidance Notes</b> ?	Yes
Have you <b>checked the Darwin Plus website</b> immediately prior to submission to ensure there are no late updates?	Yes
Have you provided <b>actual start and end dates</b> for your project?	Yes
Have you provided your <b>budget based on UK government financial years</b> i.e. 1 April – 31 March and in GBP?	Yes
Have you checked that your <b>budget is complete</b> , correctly adds up and that you have included the correct final total on the top page of the application?	Yes
Has your application been <b>signed by a suitably authorised individual?</b> (clear electronic or scanned signatures are acceptable in the email)	Yes
Have you included a <b>1 page CV for all the principals?</b>	Yes
Have you included a <b>letter of support from the <u>main</u> partner(s) organisations?</b>	Yes
Have you included a <b>copy of the last 2 years' annual report and accounts</b> for the lead organisation? An electronic link to a website is acceptable.	Yes

Once you have answered the questions above, please submit the application, not later than midnight GMT at the end of Monday 23 September 2013 to [Darwin-Applications@ltsi.co.uk](mailto:Darwin-Applications@ltsi.co.uk) using the first few words of the project title **as the subject of your email**. If you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (e.g. whether the e-mail is 1 of 2, 2 of 3 etc). You are not required to send a hard copy.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of Darwin Plus. Application form data will also be held by contractors dealing with Darwin Plus monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (i.e. name, contact details and location of project work) on the Darwin Initiative and Defra/FCO/DFID websites (details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Governor's Offices outside the UK, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.