



## Darwin Initiative Annual Report

### Important note:

To be completed with reference to the Reporting Guidance Notes for Project Leaders:  
it is expected that this report will be about 10 pages in length, excluding annexes



## 1. Darwin Project Information

|   |   |
|---|---|
| Project Reference   | 19-031  |
| Project Title   | Mapping St Helena's marine biodiversity to create a marine management plan    |
| Host Country/ies  | UK OT ST Helena   |
| UK contract holder institution  | Joint Nature Conservation Committee   |
| Host country partner institutions   | Nature Conservation Division, Environmental Management Department, St Helena. |
| Other partner institutions  |   |
| Darwin Grant Value  | £164,150  |
| Start/end dates of project  | Apr 2012 – Mar 2014   |
| Reporting period (eg Apr 2012 – Mar 2013) and number (eg Annual Report 1, 2, 3) | Apr 2012 – Mar 2013<br>Annual Report 1  |
| Project Leader name   | <i>Dr Tony Weighell</i>   |
| Project website   | <i>na</i>   |
| Report authors, main contributors and date                                      | Dr Judith Brown 25th April 2013   |

## 2. Project Background



One of the most remote island's in the world, Saint Helena is situated in the South Atlantic Ocean 1200 miles from southern Africa and 1800 miles from South America. The island is 47 square miles and has a sub-tropical climate, which is extremely rich in biodiversity and, due to its geographical isolation, is home to over 500 endemic species. Much is known about the terrestrial environment however the marine environment is relatively poorly studied with a lack of species and habitat inventories. This project aims to redress these knowledge gaps providing detailed habitat and species mapping around the island providing the necessary data for the creation of a Marine Management Plan allowing decisions to be made to sustainably manage St Helena's unique marine environment.

### **3. Project Partnerships**

#### **Project partnerships:**

During the first year of this project, collaboration between JNCC (the UK lead institution), and the Environment Management Directorate (EMD) of St Helena Government (host country partner) has been established and proved a successful partnership with effective communication and co-operation between lead and host organisations. Both UK lead and host were involved in the recruitment process of the Project manager and now the project manager is in place, regular updates are sent from the Project manager to the UK lead via email with further 3 monthly skype meetings for fuller project updates. The Project manager has spent much time training local staff from the marine team of EMD.

#### **Other collaborators:**

The Project manager has been in touch with numerous taxonomists in various locations worldwide who have agreed to assist with the project in identifying samples collected here (these include Drs Schroedl & Padula, University of Munich, Dr Rivera, University of Mexico, Prof Meyer, University of Carolina, Dr Nishi, Japan, Dr de Grave, Oxford Museum of Natural History, Dr Stahlschmidt University Landau, Germany) with more yet to be contacted.

The Project manager previously was part of the Darwin funded marine survey on Ascension and will be partaking in their follow up expedition (both as a volunteer). This has allowed an effective sharing of data between the two projects e.g. survey methodology is consistent; scientific literature passed between two Darwin marine projects; taxonomists involved in both projects.

JNCC and the South Atlantic Environmental Research Institute have received funding for a GIS project and one of the GIS expert's employed will be based on St Helena and provide training to the local staff and Project manager and direct assistance to this project. This post will start later in 2013.

On St Helena partnerships with the local dive groups and the fisheries association have been formed. These will form part of the stakeholder group to input into the Marine Management Plan and Policy papers on sustainably managed dive tourism and fisheries.

## **4. Project Progress**

Due to the isolation of St Helena, there was a delay in recruiting the Project manager this has resulted in a delay in the commencement of the main work for the project by six months, therefore this Project progress report is based on the four months work conducted since the Project manager has been in place (arrived on island 22<sup>nd</sup> November 2012).

### **4.1 Progress in carrying out project activities**

#### **Output 1 : Establishment of a marine database**

A reference database has been established (including links to PDF's) and a marine bibliography folder containing all electronic versions of papers has been compiled of all papers relevant to St Helena marine environment (147 papers found and entered to date – see Appendix 5). All historical data records have been checked taxonomically and 436 species entered onto a database including 68 algae, 193 molluscs, 42 echinoderms, 79 fish, 14 cnidaria and 40 crustaceans. There were 444 geo-referenced records at 103 sites. A questionnaire has been issued to the local community (with 111 completed and data entered) regarding how people use the local marine environment and also their current level of marine knowledge (Appendix 6).

#### **Output 2.** An electronic folder containing marine benthic data including, marine fauna, flora and habitats

A Project manager has been employed (22<sup>nd</sup> November 2012) and paid divers and volunteers have been recruited. All three members of the EMD marine team have been trained in describing habitats and completion of habitat forms, survey training and completion of survey forms, species collection, labelling and preservation techniques. This has been on-going since the Project manager arrived (4 months). A marine laboratory has been established and equipment ordered and installed (e.g. high power microscopes) and local staff will receive on the job training of all the new equipment. The field survey forms and an identification guide (Appendices 3 & 4) have been produced and data storage systems established. JNCC Marine recorder program has been downloaded onto St Helena Government computers ready to enter the survey data into as it is collected.

All marine data from the project is located within one folder with subfolders for the separate areas (e.g. artificial reefs, budget, survey forms, marine science papers, MPA information, sand extraction, species of St Helena, whale sharks etc.). A folder has also been set up for storage of paper copies of dives surveys i.e. dive log, specimens collected, JNCC habitat forms, dive survey forms).

#### **Output 4iv.** A marine conservation/ promotional communication strategy. Presentations, workshops and leaflets and media coverage. Raised awareness in schools

Appendix 8 details the numerous public talks, newspaper/newsletter articles and radio interviews which have been conducted by the Darwin marine biodiversity project to date. Marine Awareness week gave the whole community an opportunity to visit displays on marine life and marine conservation, and many of the local shops were involved decorating their shop windows with a marine conservation theme for the week. One high school student came for a week's work experience and assisted with species collection and identification as well as data entry.

## **4.2 Progress towards project outputs**

Considering the delayed start to the project great progress has been made on all aspects of the project in particular gathering historical data, ordering equipment and training local staff. A huge effort has been made on raising marine awareness and there has been a large amount of interest in the project from the local population. Species collections have been very productive to date (21 dives and 240 samples collected) building towards a detailed marine species list for St Helena. A sample collection has been established in the new marine laboratory (building on a few specimens collected historically), and over 50 samples have been sent to taxonomist specialists for further evaluation. Training has been given in use of underwater cameras and already over 2000 images of species and habitats (including some pictures of species in the laboratory) have been taken. These have been used in producing an identification guide and all photographs will be catalogued within Adobe Lightroom. Marine surveys will start in the next month (April) which will form the basis of the habitat and fish/invertebrate abundance data and all the systems are in place (forms, databases) for entering the data as collected.

The Project manager has input into meetings and a workshop on a new piece of legislation which is being produced to protect species and habitats, including the marine environment, on St Helena. The output from this project (the Marine management plan) will form an integral part of this environmental protection legislation.

## **4.3 Standard Measures**

**Table 1 Project Standard Output Measures**

| Code No. | Description   | Year 1 Total   | Total planned during the project |
|----------|---|--|----------------------------------|
| 5        | Number of people to receive at least one year of training               | 3 local marine team staff have had 3 months training each  | 2                                |
| 6A       | Number of people to receive other forms of education/training           | 1 (high school work experience), 17 divers took part in species identification dive  | 10                               |
| 6B       | Number of training weeks to be provided                                 | 1  | 10                               |
| 7        | Number of training materials to be produced for use by host country     | 1 (folder containing species ID information and showing preservation methods for specimens). Identification books purchased. | 3                                |
| 8        | Number of weeks to be spent by UK staff on project work in host country |  | 2                                |
| 9        | Number species/ habitat management plans to be produced                 |  | 1                                |

| Code No. | Description   | Year 1 Total   | Total planned during the project |
|----------|---|--|----------------------------------|
| 10       | Number of individual field guides/manuals to be produced to assist work related to species identification, classification and recording | 1 (first draft printed for local use, to be updated as more species added, taxonomy validated) | 2                                |
| 11A      | Number of papers to be published in peer reviewed journal   |  | 1                                |
| 11B      | Number of papers to be submitted to peer reviewed journal   |  | 1                                |
| 12A      | Number of computer based databases to be established  | 1  | 1                                |
| 12B      | Number of computer based databases to be enhanced   | 1  | 1                                |
| 13A      | Number of species reference collections to be established   | 1 (to be added to)   | 1                                |
| 13B      | Number of species reference collections to be enhanced  | 1  | 1                                |
| 14A      | Number of conferences/workshop/seminars to be organised   | 1 (Marine Awareness Week)  | 3                                |
| 14B      | Number of conferences/workshop/seminars to be attended  |  | 1                                |
| 15A      | Number of national press releases in host country   | 6 (see Appendix 8)   | 12                               |
| 15B      | Number of local press releases in host country  | 6 (see Appendix 8)   | 12                               |
| 15C      | Number of national press releases in UK   |  | 1                                |
| 16A      | Number of newsletters to be produced  | 5 (see Appendix 8)   | 8                                |
| 17A      | Number of dissemination networks to be established  |  | 1                                |
| 17B      | Number of dissemination networks to be enhanced   |  | 2                                |
| 19A      | Number of national radio interviews in host country   | 3 (see Appendix 8)   | 12                               |
| 19C      | Number of local radio interviews in host country  | 3 (see Appendix 8)   | 12                               |

| Code No. | Description   | Year 1 Total | Total planned during the project |
|----------|---|--------------|----------------------------------|
| 22       | Number of permanent field plots established during the project and continued after funding has ceased |              | 20                               |

**Table 2 Publications**

| Type<br>(eg journals, manual, CDs) | Detail<br>(title, author, year) | Publishers<br>(name, city) | Available from<br>(eg contact address, website) | Cost £ |
|------------------------------------|---------------------------------|----------------------------|---|--------|
|                                    |                                 |                            |   |        |

#### **4.4 Progress towards the project purpose and outcomes**

The project is working well towards its listed purpose and outcomes and to date there have been no issues raised with achieving these goals (excepting the delayed start to the project). All the data will feed into a Marine Management Plan (to be produced at the end of the project) which will form legal documentation to ensure the protection and future management of the St Helena marine environment. It is vital to have comprehensive species and habitat lists as well as information on marine uses to date to provide the best and most effective management advice. Raising awareness within the local population is one of the purpose outcomes for this project and a huge advancement has been made already in the first four months of the project in this area with high levels of public engagement in the project (see section 9 and Appendices 7&8).

#### **4.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

Already there has been a large number of new species records identified for St Helena (at least 20 species) and also some potential new species. Due to the lack of baseline data on habitats and species inventories this project will provide vital information to inform about types, location and extent of different habitats and species around St Helena and allow the provision of protection and sustainable management advice. The survey data will provide abundance data of native and endemic invertebrate and fish species, which will also include the commercially/recreationally fished for species.

### **5. Monitoring, evaluation and lessons**

Progress is monitored against a project timeline with fortnightly meetings between the project manager and with the director of EMD to discuss the workplan for the following two weeks. The project manager also has a yearly staff appraisal which examines the project outputs to date and the effectiveness of the project manager. During this meeting targets to be monitored at 6 months intervals are also set. Achievements are measured against the project outputs.

## **6. Actions taken in response to previous reviews (if applicable)**

Not applicable

## **7. Other comments on progress not covered elsewhere**

The delay in recruitment of the St Helena based project officer has been reported elsewhere. A new project timetable will be discussed in the near future with LTS to make appropriate adjustments to work within 2013-14. This has no implications for delivery of the projects objects (other than details of timing) or for the overall budget.

## **8. Sustainability**

To date the profile of the project has been raised through numerous newspaper articles, radio interviews, public talks, meetings with stakeholders and councillors and Marine Awareness Week. The marine team at EMD in the host country have with enthusiasm and dedication been involved in the first four months of the project. Their commitment to the work and ability to learn quickly has meant that all the relevant skills are being passed to the host country and will remain within the Environment Directorate after the completion of the project. These staff will be able to train others and ensure continued monitoring of the marine environment, as well as using knowledge and skills learned to continue raising awareness about the marine environment and the threats it faces. Liaison with external taxonomic and scientific experts has shown a great interest in the marine life around St Helena and the project manager and EMD marine team will continue to work with these experts over the next year to build good working relationships which will continue after the life of the project.

## **9. Dissemination**

Marine Awareness Week has been the highlight of promoting the project to date with presentations on marine issues given to all the islands primary and secondary school children. There is a huge sense of community on St Helena and this was strongly felt at the litter clean up's held during this week at the wharf steps, the Run and Sandy Bay beach as well as the harbour dive clean up. The local hotel ballroom was transformed into a spectacle of marine activities from posters and displays, a saltwater tank, a touch tank, marine survey game, marine crafts and a marine themed reading corner. The children and adults learned all about the different types of marine creatures found around St Helena from seabirds to cetaceans and from fish to all the different types of marine invertebrates. Marine Awareness Week will continue to be an annual event after the life of the project and will be funded by EMD (St Helena Government).

Six presentations have been given to date with a wide diversity of audiences from councillors, to the local community to the school children. Public engagement is a priority for St Helena Government so this will continue for the duration of the project and afterwards.

## **10. Project Expenditure**

**Table 3 project expenditure as per budget during the reporting period (1 April 2012 – 31 March 2013)**

| Item  | Budget | Expenditure | Variance/<br>Comments |
|---|--------|-------------|-----------------------|
| Staff costs specified by individual (Project manager) |        |             | Nil                   |
| Overhead costs  |        |             | Nil                   |
| Travel and subsistence                                |        |             | Nil                   |
| Operating costs                                       |        |             | Nil                   |
| Capital items/equipment (specify)                     |        |             | Nil                   |
| Others: Consultancy                                   |        |             | Nil                   |
| Others (please specify)                               |        |             | Nil                   |
| <b>TOTAL</b>  |        |             | Nil                   |

## **11. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes**

I agree for LTS and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

Diving beneath the waves into the crystal clear waters of St Helena's unique marine environment is not only advancing our scientific knowledge but has also opened the hearts and minds of the local community. Over 20 species have been recorded at St Helena for the first time and several potential new species are currently with some very excited taxonomists for further examination. As the dive surveys now start in earnest and the project team go further afield the potential for many more new finds exists. After the dive litter clean up (backed by the local dive operator), a local fisherman wrote a heartfelt article asking the community to take care of their marine environment- a great achievement for the project in conveying the marine awareness message. Seeing the local school children enthralled by the local marine species during Marine Awareness Week also highlights how this project is reaching far within the local community. Emails from walkers with photographs of unusual species they have seen and samples brought in by the fishing community also indicate that the local community is being inspired by this Darwin Initiative to learn more about their local marine life. The greatest achievement is however the capacity building within the local marine team and with local divers who in learning more about St Helena's marine species and conservation issues will ensure that marine awareness and marine management are continued after the project is complete.

**Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2012-2013**

| Project summary  | Measurable Indicators  | Progress and Achievements<br>April 2012 - March 2013  | Actions required/planned for next period  |
|--|--|---|---|
| <p><b>Goal:</b> Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p> <p><b>Sub-Goal:</b> To provide a marine management plan for St Helena's shallow marine resources</p> |  |   |   |
| <p><b>Purpose</b><br/>St Helena's marine environment is better managed and therefore more capable of supporting sustainable tourism and enhanced livelihood potential for St Helena</p>  | <p>A management plan for St Helena's marine environment is published and accepted for implementation by end of project.</p> <p>Awareness within local population of the importance of a well managed marine environment is increased by end of project.</p> <p>Local dive businesses show evidence from Darwin project in conducting sustainable dive tourism in the marine environment by end of project.</p> <p>Increased level of visitor awareness of marine management issues (as incorporated into MMP) amongst visiting tourists. Evidence of tourists keen to return to St</p> | <p>Papers gathered on Marine management Plans from other areas</p> <p>Marine Awareness week – started to raise awareness of importance of marine environment</p> <p>Discussions with dive businesses' show great enthusiasm for sustainable management. Both operators partaking in marine surveys</p> <p>Successful litter clear-ups (shoreline and underwater). Letter in local paper by local fishermen in support of litter cleanup indicated raised awareness.</p> | <p><i>Policy papers to be produced to form basis of sections of management plan.</i></p> <p><i>Workshops on Marine management to be organised nearer to the end of project</i></p> <p><i>Dive sustainably leaflet to be produced. Green award for Dive business to be established.</i></p> <p><i>Information leaflets produced for tourism on importance of marine environment.</i></p> |

| Project summary   | Measurable Indicators   | Progress and Achievements<br>April 2012 - March 2013   | Actions required/planned for<br>next period          |
|---|---|--|--|
|   | <p>Helena or recommend St Helena as a dive destination.</p> <p>A marine life guide to St Helena is published which also includes a dive site guide</p>  | <p>First draft of marine guide produced for use in surveys and local staff training</p>  | <p><i>Guide book to be written and published</i></p> |
| <p><b>Output 1.</b> Establishment of a marine database that contains all existing known material on the marine resources of St Helena</p> | <p>The database is fully populated with all existing material within 12 months of project start up.</p> <p>Data mining, of all existing marine records within 12 months of project start up and referenced and stored in a standardised electronic format.</p> <p>Meetings with stakeholders to research available data regarding sea users.</p> <p>Data management systems is functioning and can receive, store and retrieve all existing and new data.</p> | <p>Reference database established with 147 papers found and entered (including links to PDF's).</p> <p>Historical data records have been checked taxonomically and 436 species entered onto a database including 68 algae, 193 molluscs, 42 echinoderms, 79 fish, 14 cnidaria and 40 crustaceans. There were 444 geo-referenced records at 103 sites.</p> <p>Questionnaire issued to local community (with 130 completed) regarding how people use the local marine environment and also their current level of marine knowledge.</p> <p>JNCC Marine Recorder system loaded on Project manager and local EMD staff computer ready to enter data from surveys</p> |  |
| <p><b>Output 2.</b> An electronic folder containing marine benthic data including, marine fauna, flora and habitats</p>                   | <p>Recruitment of volunteers/expert at project commencement</p> <p>Training of staff/locals in identification and specimen collection. Construction of field survey forms and data storage templates designed, to be compatible with GIS software</p>   | <p>Project manager recruited (22<sup>nd</sup> November 2012) and paid divers and volunteers recruited.</p> <p>Local marine team have received training in specimen collection and identification. Field survey forms produced and data storage systems established.</p>  |  |

| Project summary  | Measurable Indicators  | Progress and Achievements<br>April 2012 - March 2013   | Actions required/planned for<br>next period |
|--|--|--|---|
|  | <p>60 surveys undertaken and data collated</p> <p>Datasheets containing marine data located in one folder.</p>   | <p>Training surveys undertaken and first 4 surveys conducted</p> <p>Marine data all located within one folder</p>  |   |
| <p><b>Output 4iv.</b> A marine conservation/ promotional communication strategy. Presentations, workshops and leaflets and media coverage. Raised awareness in schools</p> | <p>Stakeholder workshops undertaken regularly through the project with groups including fishers, tourism groups, wider community, government, industry</p> | <p>Local talk given to public at museum and during Marine awareness week. Talk given to all schoolchildren. Marine Awareness week gave whole community opportunity to visit displays on marine life and marine conservation.</p> |   |

## Annex 2 Project's full current logframe

| Project summary   | Measurable Indicators | Means of verification | Important Assumptions |
|---|-----------------------|-----------------------|-----------------------|
| <p><b>Goal:</b><br/>Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.</p> |                       |                       |                       |
| <p><b>Sub-Goal:</b><br/><b>To provide a marine management plan for St Helena's shallow marine resources.</b></p>  |                       |                       |                       |

| <b>Project summary</b>  | <b>Measurable Indicators</b>  | <b>Means of verification</b>  | <b>Important Assumptions</b>  |
|---|---|---|---|
| <b>Purpose</b><br><br>St Helena's marine environment is better managed and therefore more capable of supporting sustainable tourism and enhanced livelihood potential for St Helena | <p>A management plan for St Helena's marine environment is published and accepted for implementation by end of project.</p> <p>Awareness within local population of the importance of a well managed marine environment is increased by end of project.</p> <p>Local dive businesses show evidence from Darwin project in conducting sustainable dive tourism in the marine environment by end of project.</p> <p>Increased level of visitor awareness of marine management issues (as incorporated into MMP) amongst visiting tourists. Evidence of tourists keen to return to St Helena or recommend St Helena as a dive destination.</p> <p>Increased level of awareness of marine management issues (as incorporated into</p> | <p>Minutes of Govt. meetings show management plan is approved and sanctioned for use.</p> <p>Awareness survey results from start to end of project show improved awareness – at least a 30% increase in number of people aware.</p> <p>Minutes from meeting on sustainable use of the marine environment. Published "Dive Responsibly" leaflet embodies key recommendations from MMP.</p> <p>Awareness surveys of visitors to the island to establish level of awareness prior to and at end of project show increased awareness of marine issues. Surveys show an increased number of tourists keen to return to St Helena or recommend as dive destination.</p> <p>Survey of tour operators</p> | <p>Staff are available are capable and willing to be trained.</p> <p>There are species of conservation importance e.g. endemic species</p> <p>Throughout the project sufficient information has been collated to produce a report.</p> <p>There is an appetite for marine conservation amongst stakeholders</p> |

| <b>Project summary</b> | <b>Measurable Indicators</b>  | <b>Means of verification</b>  | <b>Important Assumptions</b>   |
|------------------------|---|---|--|
|                        | <p>MMP) amongst tour operators and the value of such in promoting sustainable tourism</p> <p>Surveys conducted to examine the benefit of different types of artificial reef both through a literature review and dive surveys.</p> <p>A marine life guide to St Helena is published which also includes a dive site guide</p> <p>Establish long –term monitoring sites.</p> | <p>promoting St Helena tourism to establish level of awareness concerning nature and value of effective marine management in the context of promoting sustainable tourism.</p> <p>Fish survey data analysed and report on comparison of fish numbers (including commercial species) between areas near and on artificial reefs produced</p> <p>Book published highlighting vast diversity of the St Helena marine life and also importance of good marine management</p> <p>Set dive sites established for long-term monitoring of increases in fish numbers.</p> |  |
| <b>Outputs</b>         | <p>1. Establishment of a marine database that contains all existing known material on the marine resources of St Helena</p>   | <p>The database is fully populated with all existing material within 12 months of project start up.</p> <p>Data mining, of all existing marine records within 12 months of project start up and referenced and stored in a standardised electronic format.</p>  | <p>Copy of database available</p> <p>Dedicated file containing bibliography. Commercial data collated /purchased (receipts for purchased commercial data)</p> <p>Data/location of data is accessible (via various routes)</p> <p>Stakeholders provide data/ location of data</p> |

| <b>Project summary</b>   | <b>Measurable Indicators</b>  | <b>Means of verification</b>  | <b>Important Assumptions</b>  |
|--|---|---|---|
|  | <p>Meetings with stakeholders to research available data regarding sea users.</p> <p>Data management systems is functioning and can receive, store and retrieve all existing and new data.</p>  | <p>E-mail/ meeting appointments with stakeholders.</p> <p>The data management system is routinely utilized for data management staff trained and are competent and confident in all aspects of data management system.</p>  | <p>Stakeholders will regularly attend meetings.</p> <p>Project manager has sufficient data management experience. Marine recorder can be adapted to St. Helena.</p>   |
| 2. An electronic folder containing marine benthic data including, marine fauna, flora and habitats | <p>Recruitment of volunteers/ expert at project commencement</p> <p>Training of staff/locals in identification and specimen collection. Construction of field survey forms and data storage templates designed, to be compatible with GIS software</p> <p>60 surveys undertaken and data collated</p> <p>Datasheets containing marine data located in one folder.</p> | <p>Volunteers/ contractors in place<br/>Contract for volunteers / expert.</p> <p>Interested parties obtain certificate of attendance at course.<br/>Survey forms laminated and ready to use and data templates compatible with GIS.</p> <p>Completed surveys forms and data stored in a standardised format</p> <p>Referenced data sheets within folder, completed and accessible within marines section.</p> | <p>Volunteers or an expert can be recruited to undertake works at start of project. Initial preparation undertaken.</p> <p>Marine conservation staff and personnel are interested in attending course.</p> <p>Surveys will be undertaken during non-rainy season.</p> |

| <b>Project summary</b>   | <b>Measurable Indicators</b>  | <b>Means of verification</b>  | <b>Important Assumptions</b>  |
|--|---|---|---|
| 3. Generation of a series of GIS maps of the distribution and extent of both St Helena shallow marine resources and commercial usage of these resources.         | <p>Maps of the extent and distribution of marine resources are produced. A list of maps will be made available.</p> <p>Training for up to 3 marine staff in GIS to sufficient level of competency to use data systems available within 18 months of project startup.</p> <p>Staff will be capable of undertaking mapping exercises with limited outside support by end of project. Less reliance on off-island support for GIS mapping.</p> | <p>Electronic maps to be published within project report (and potentially on website) and open source</p> <p>Certificates of attendance</p> <p>On island generation of maps and other outputs.</p>  | <p>Permission is granted to publish maps on Government web site. Internet infrastructure is able to withstand large images</p> <p>Staff attend course</p> |
| 4 i A report on proposed monitoring and management plans (using above outputs as a basis). Including the identification of current and potential future threats. | Recommendations for management plans using evidence from outputs of surveys provided.   | <p>Stand-alone paper, protocols and project report.</p> <p>Marine management plans produced to include identification of local and sports fishing areas and identify requirements for marine Environmental Impact Assessments in particular the provision of mitigation measures under the 'polluter pays' principle.</p> | <p>St Helena will be provided with information on the range of management tools.</p> <p>Monitoring and management protocols will be fit for purpose.</p>  |

| <b>Project summary</b>  | <b>Measurable Indicators</b>  | <b>Means of verification</b>  | <b>Important Assumptions</b>   |
|---|---|---|--|
|   | Stakeholder discussions on best monitoring and management tools.                      | Guidance for divers and sea-users on sensitive biodiversity hotspots and recreational areas produced.<br><br>Meeting agendas and meeting minutes including any agreements circulated.               |  |
| 4 ii. A marine management plan published consisting of: species and habitats of high conservation importance; proposed monitoring and management plans; potential marine protected areas; sites that would benefit from artificial reefs' | List of candidate sites   | Publication of report   | Outputs from point 4 i are achieved  |
| A list of potential marine protected areas  | List of species and habitat including those of commercial and conservation importance | Published list of marine species of conservation importance to national and where applicable, international databanks   | Correct interpretation and application of existing national and international criteria e.g. IUCN/ BAP      |
| A list of species and habitats of high conservation importance  | 6 months after survey completion  |   |  |
| 4 iii. A list of sites that would benefit from artificial reefs, including one for lobster fisheries.   | List of candidate sites.  | An artificial reef monitoring plan report with recommendations on use of artificial reefs for tourist purposes e.g. set up snorkel/ dive trail. Use drop down camera/ video for tourist information | There are sites that can be used for the location of artificial reefs for the benefit of lobster fisheries |

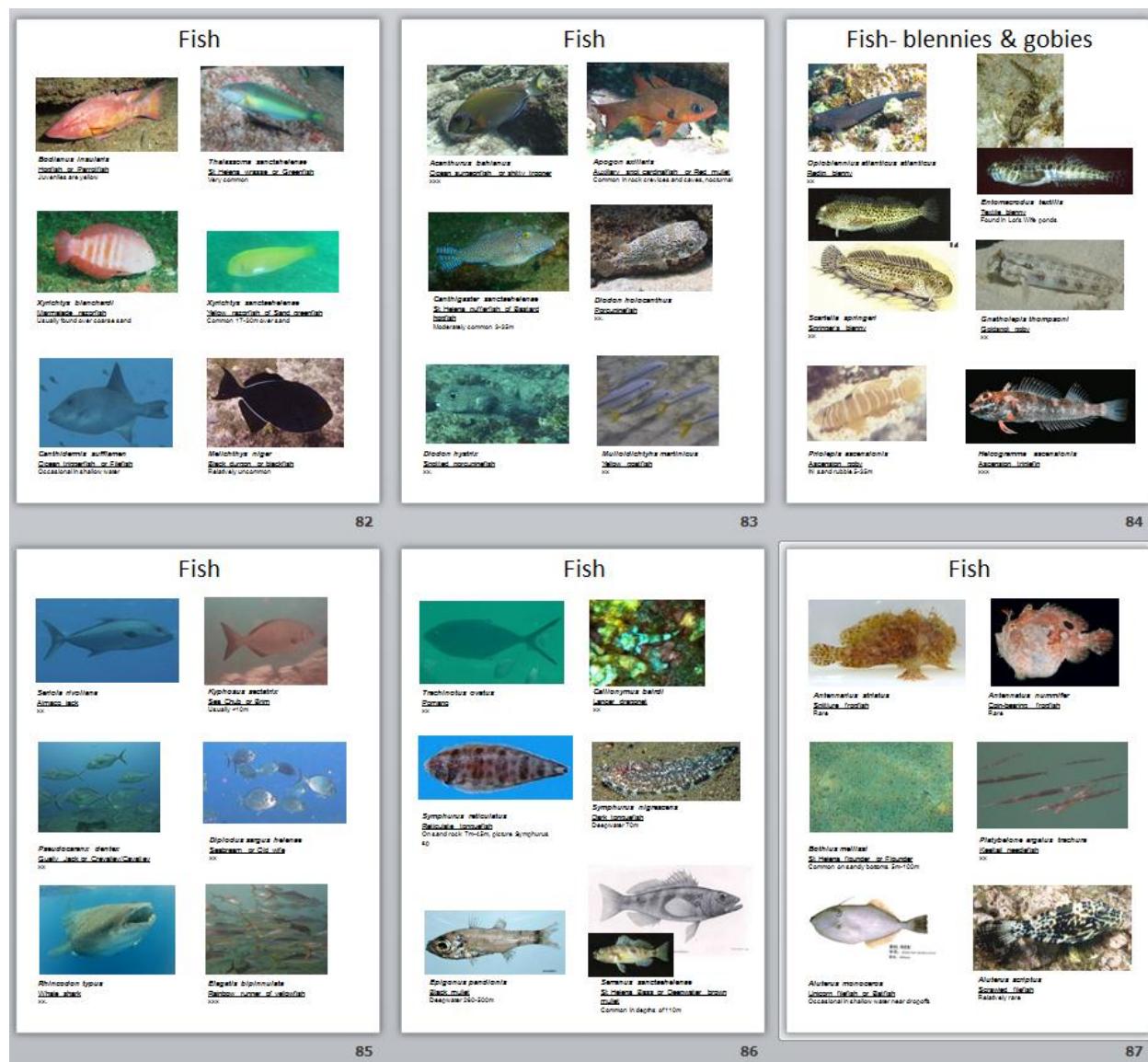
| <b>Project summary</b>  | <b>Measurable Indicators</b>  | <b>Means of verification</b>   | <b>Important Assumptions</b>  |
|---|---|--|---|
| <p>4 iv. A marine conservation/promotional communication strategy. Presentations, workshops and leaflets and media coverage.</p> <p>Raised awareness in schools</p> <p>Stakeholder engagement strategy developed and implemented to achieve agreement on proposed management strategy</p> | <p>Stakeholder workshops undertaken regularly through the project with groups including fishers, tourism groups, wider community, government, industry</p> <p>Agreement reached on management strategies outlined by each stakeholder group by end of project. .</p> <p>Overall agreement reached on the management plan by end of project.</p> <p>School children in St Helena show greater understanding and awareness of marine environment with measurable increase from start to end of project.</p> | <p>Workshop meeting minutes</p> <p>Workshop meeting minutes<br/>Letter to Ministry of Environment endorsing management strategies from each stakeholder group</p> <p>Government Meeting Minutes – HANSARD or equivalent for St Helena.</p> <p>Management Plan published on St Helena Govt. website.</p> <p>Awareness survey undertaken at start and end of project. shows measurable increase in awareness in school children aged from 10-12.</p> | <p>Local and international media will be interested in publishing marine/project updates</p> <p>Workshops will be well attended<br/>School children will be interested in learning about St Helena's marine environment and participate in activities</p> |

## Annex 3 Supplementary material – dive survey form

|               |  |
|---------------|--|
| Date:         |  |
| Site code:    |  |
| Surveyors:    |  |
| Start depth:  | End depth:   |
| Triggerfish   | Black triggerfish/durgon<br>Ocean triggerfish  |
|               | Sea Chub   |
|               | Pompano  |
| Silver fish   | Stonebras Scad (yellow tail)<br>Round scad (clearish tail)   |
|               | Mackerel scad  |
|               | Rainbow runner   |
|               | Great barracuda  |
|               | Flying fish  |
| Jacks         | Almaco jack<br>Gullly jack   |
| Surgeonfish   | Ocean surgeonfish  |
| Butterflyfish | Hedgehog butterflyfish<br>St Helena butterflyfish  |
| Damsel fish   | Brown chromis<br>St Helena Damselfish<br>St Helena Gregory A<br>St Helena Gregory J<br>Sergeant major<br>Sea bream |
| Filefish      | Scrawled filefish<br>Unicornfish   |
| Goatfish      | Yellow goatfish  |
| Needlefish    | Kestrel needlefish   |
| Trumpetfish   | Trumpetfish  |
| Razorfish     | Marmalade razorfish A<br>Marmalade razorfish J<br>Yellow razorfish   |
| Boxfish       | Cowfish<br>St Helena pufferfish<br>Porcupinefish<br>Spotted porcupinefish  |
| Wrasse        | St Helena wrasse A<br>St Helena wrasse J<br>Island hogfish A<br>Island hogfish J                                   |
| Parrotfish    | St Helena Parrotfish   |
| Grouper       | Rockhind   |
| Soapfish      | Greater soapfish   |
| Squirrelfish  | Squirrelfish   |
| Soldierfish   | Blackbar soldierfish   |
| Snapper       | Glasses snapper  |
| Cephalopod    | Octopus  |
| Ray           | Manta ray  |
| Sharks        |  |
| Turtles       | Green turtle<br>Hawksbill turtle   |

|              |   |
|--------------|---|
| Moray eels   | Spotted moray<br>Brown moray<br>Fangtooth moray<br>Goldentail moray<br>Snake eel  |
| Goby         | Ascension goby<br>Goldspot goby   |
| Blenny       | Redline blenny<br>Textile blenny  |
| Cardinalfish | Auxillary-spot cardinalfish   |
| Lizardfish   | Bluntnose lizardfish<br>Diamond lizardfish  |
| Flattish     | St Helena flounder  |
| Triplefin    | Ascension triplefin   |
| Frogfish     | Frogfish  |
| Hawkfish     | Red spotted hawkfish  |
| Scorpionfish | Spotted scorpionfish<br>Red scorpionfish  |
|              | Sand star   |
| Echinoderms  | Purple seastar<br>8-armed starfish<br>Pencil urchin -long spine<br>Pencil urchin -short spine<br>Black longspined urchin<br>Black short spine urchin<br>Sand urchin |
| Crustacean   | Crayfish-longlegs<br>Slipper lobster<br>Hairy hermit crab ( <i>Dardanus</i> )<br>Hermit crab stripy legs<br>Red reef lobster<br>Spray crab<br>Sponge crab           |
| Shrimp       | Scarlet-striped cleaning<br>White striped cleaner shrimp  |
| Holothurian  | Yellow banded sea cucumber<br>Red sea cucumber  |
| Polychaetes  | Fireworm (very hairy)<br>Fireworm (less hairy)<br>Parchment worm<br>Devil worm  |
| Molluscs     | Pen shell ( <i>Pinna rudis</i> )<br>Triton's trumpet ( <i>Charonia</i> )<br>Helmet shell<br>Whelk ( <i>Monoplex</i> )<br>Scallop<br>Cowrie shell                    |
| Nudibranch   | Warty umbrella snail<br>Sea hare<br>Side gill -( <i>pleurobranchus</i> )<br><i>Bornella</i> (orange & white)<br><i>Tambja</i> (green & black)                       |

## Annex 4 Supplementary material – sample pages from marine ID guide (whole document is 97 pages)



## **Annex 5 Supplementary material – reference list (all entered onto reference database system)**

- Almeida, J., Santos, R.S., and Wirtz, P. 2001. Patterns of diversity of the north-eastern Atlantic blenniid fish fauna (Pisces: Blenniidae). *Global Ecology & Biogeography* **10**: 411–422.
- Alves, A.M., Nascimento Moura, C.W., Alves, G.L., and Souza Gestinari, L.M. 2009. Os gêneros Chaetomorpha Kutz. nom. cons. e Rhizoclonium Jutz. (Chlorophyta) do litoral do Estado da Bahia, Brasil. *Revista Brazil Botany* **32**: 545–570.
- Anderson, D.T. 1992. Structure, function and phylogeny of coral-inhabiting barnacles (Cirripedia, Balanoidea). *Zoological Journal of the Linnean Society* **106**: 277–339.
- Anker, A., and Grave, S. De. 2012. Description of *Alpheus cedrici* sp. n., a strikingly coloured snapping shrimp (Crustacea, Decapoda, Alpheidae) from Ascension Island, central Atlantic Ocean. *ZooKeys* **183**: 1–15. doi: 10.3897/zookeys.183.3073.
- Arnaud, F., Arnaud, P.M., and Loeuff, L.E. 1976. Transport d'Invertébrés benthiques entre l'Afrique du sud et Sainte Helene par les laminaires (Phaeophyceae). *Bulletin du Museum national d'histoire naturelle* **384**.
- Ávila, S.P., Goud, J., and De Frias Martins, A.M. 2012. Patterns of diversity of the Rissoidae (Mollusca: Gastropoda) in the Atlantic and the Mediterranean region. *The Scientific World Journal* **2012**: 1–30. doi: 10.1100/2012/164890.
- Azzurro, E., Aguzzi, J., Maynou, F., Chiesa, J.J., and Savini, D. 2013. Diel rhythms in shallow Mediterranean rocky-reef fishes: a chronobiological approach with the help of trained volunteers. *Journal of the Marine Biological Association of the United Kingdom* **93**: 461–470. doi: 10.1017/S0025315412001166.
- Bahia, J., and Padula, V. 2009. First record of *Pseudoceros bicolor* and *Pericelis cata* (Platyhelminthes: Polycladida) from Brazil. *Marine Biodiversity Records* **2**: 1–5. doi: 10.1017/S1755267209000918.
- Bahia, J., Padula, V., and Delgado, M. 2012. Five new records and morphological data of polyclad species (Platyhelminthes: Turbellaria) from Rio Grande do Norte, Northeastern Brazil. *Zootaxa* **3170**: 31–44.
- Barroso, R., Klautau, M., Solé-Cava, A.M., and Paiva, P.C. 2009. *Eurythoe complanata* (Polychaeta: Amphinomidae), the “cosmopolitan” fireworm, consists of at least three cryptic species. *Marine Biology* **157**: 69–80. doi: 10.1007/s00227-009-1296-9.
- Bernardi, G., Bucciarelli, G., Costagliola, D., Robertson, D.R., and Heiser, J.B. 2004. Evolution of coral reef fish *Thalassoma* spp. (Labridae). I. Molecular phylogeny and biogeography. *Marine Biology* **144**: 369–375. doi: 10.1007/s00227-003-1199-0.
- Bernardi, G., Robertson, D.R., Clifton, K.E., and Azzurro, E. 2000. Molecular Systematics, Zoogeography and Evolutionary Ecology of the Atlantic Parrotfish Genus *Sparisoma*. *Molecular Phylogenetics and Evolution* **15**: 292–300.
- Bhave, V., and Apte, D. 2011. Illustrated checklist of Opisthobranch fauna of Ratnagiri, Maharashtra, India, with eight new records to India. *Journal of the Bombay Natural History Society* **108**: 172–182.
- Bowen, B.W., Bass, A.L., Muss, A., Carlin, J., and Robertson, D.R. 2006. Phylogeography of two Atlantic squirrelfishes (Family Holocentridae): exploring links between pelagic larval duration and population connectivity. *Marine Biology* **149**: 899–913. doi: 10.1007/s00227-006-0252-1.
- Bowen, B.W., Bass, A.L., Rocha, L.A., Grant, W.S., and Robertson, D.R. 2001. Phylogeography Of The Trumpetfishes (*Aulostomus*): Ring Species Complex On A Global Scale. *Evolution* **55**: 1029–1039.
- Bradshaw, C., Fitzpatrick, B., Steinberg, C., Brook, B., and Meekan, M. 2008. Decline in whale shark size and abundance at Ningaloo Reef over the past decade: The world's largest fish is getting smaller. *Biological Conservation* **141**: 1894–1905. doi: 10.1016/j.biocon.2008.05.007.

- Briggs, J.C., and Bowen, B.W. 2012. A realignment of marine biogeographic provinces with particular reference to fish distributions. *Journal of Biogeography* **39**: 12–30. doi: 10.1111/j.1365-2699.2011.02613.x.
- Brook, G. 1889a. Report on the Antipatharia. In *Challenger report, Zoology*.
- Brook, G. 1889b. Plumapathes pennacea.
- Cadenat, J., and Marchal, E. 1963. Résultats des campagnes oceanographiques de la Reine-Pokou aux îles Sainte-Hélène et Ascension. *Bulletin de l'Institut Français d'Afrique Noire* **4**: 1235–1368.
- Carlgren, O. 1941. Papers from Dr Th. Mortensen's Pacific Expedition 1914-16. LXX. The Actiniaria and Zoantharia of St Helena.
- Carlin, J.L., Robertson, D.R., and Bowen, B.W. 2003. Ancient divergences and recent connections in two tropical Atlantic reef fishes *Epinephelus adscensionis* and *Rypticus saponaceus* (Percoidei: Serranidae). *Marine Biology* **143**: 1057–1069. doi: 10.1007/s00227-003-1151-3.
- Carr, M.H., and Hixon, M.A. 1997. Artificial reefs the importance of comparisons with natural reefs. *Fisheries* **22**: 28–33.
- Carricart-Ganivet, J., Carrera-Parra, L., Quan-Young, L., and García-Madrigal, M. 2004. Ecological note on *Troglocarcinus corallicola* (Brachyura: Cryptochiridae) living in symbiosis with *Manicina areolata* (Cnidaria: Scleractinia) in the Mexican Caribbean. *Coral Reefs* **23**: 215–217. doi: 10.1007/s00338-004-0381-2.
- Castro, P., Williams, A.B., and Cooper, L.L. 2003. Revision of the family Latreilliidae Stimpson, 1858 (Crustacea, Decapoda, Brachyura). *Zoosystema* **25**: 601–634.
- Catlin, J., and Jones, R. 2010. Whale shark tourism at Ningaloo Marine Park: A longitudinal study of wildlife tourism. *Tourism Management* **31**: 386–394. Elsevier Ltd. doi: 10.1016/j.tourman.2009.04.004.
- Chace, F.A.J. 1966. Decapod crustaceans from St. Helena Island, South Atlantic. *Proceedings of The United States National Museum* **118**: 623–662. BioStor. Available from <http://biostor.org/reference/85473> [accessed 18 December 2012].
- Chace, F.A.J. 1968. A new crab of the genus Cycloes (Crustacea; Brachyura; Calappidae) from St Helena, South Atlantic Ocean. *Proceedings of the Biological Society of Washington* **81**: 605–612.
- Choat, J.H. 2006. An ecological survey of the St Helena and Ascension Island populations of the jack (*Epinephelus adscensionis*) with a review of management options.
- Conservation, W.S., Overview, C., and Proceedings, S. 2005. The First International Whale Shark Conference : In *The First International Whale Shark Conference*. pp. 1–116.
- Costagliola, D., Robertson, D.R., Guidetti, P., Stefanni, S., Wirtz, P., Heiser, J.B., and Bernardi, G. 2004. Evolution of coral reef fish *Thalassoma* ssp . ( Labridae ) 2 . Evolution of the eastern Atlantic species. *Marine Biology* **144**: 377–383.
- Cunningham, J.T. 1910. On the marine fishes and invertebrates of St Helena.
- Daly-Engel, T.S., Randall, J.E., and Bowen, B.W. 2012. Is the Great Barracuda (*Sphyraena barracuda*) a reef fish or a pelagic fish? The phylogeographic perspective. *Marine Biology* **159**: 975–985. doi: 10.1007/s00227-012-1878-9.
- Domínguez, M., García, F.J., and Troncoso, J.S. 2006. Some aspects of the family Chromodorididae ( Opistobranchia : Nudibranchia ) from Brazil , with description of a new species. *Scientia Marina* **70**: 621–634.
- Edwards, A. 1986. A new damselfish, *Chromis lubbocki* (Teleostei: Pomacentridae) from the cape Verde archipelago, with notes on other Eastern Atlantic Pomacentrids. *Zoologische Mededelingen* **60**: 181–207.
- Edwards, A.J. (n.d.). Key to the Pomacentridae-damselfish.
- Edwards, A.J. 1933. Echinoderms of St Helena.

- Edwards, A.J. 1993. New records of fishes from the Bonaparte Seamount and Saint Helena Island , South Atlantic. *Journal of Natural History* **27**: 493–503.
- Edwards, A.J., and Glass, C.W. 1987. The fishes of Saint Helena Island , South Atlantic Ocean . I . The shore fishes. *Journal of Natural History* **21**: 617–686.
- Eléaume, M., Bohn, J., Roux, M., and Améziane, N. 2012. Stalked crinoids (Echinodermata) collected by the R / V Polarstern and Meteor in the south Atlantic and in Antarctica. *Zootaxa* **3425**: 1–22.
- Engler, A. 1920. Algae Mildbraedianaes Annononenses. *Botanische Jahrbuchor LVII*: 1–14.
- Eschmeyer, W.N. 1971. Two new Atlantic scorpionfishes. *Proceedings of the California Academy of Science* **37**: 501–507. Available from <http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200490137/abstract> [accessed 13 December 2012].
- Evseenko, S. a. 2008. Early life history stages of peacock flounder *Bothus lunatus* (Bothidae) from the western and central tropical Atlantic. *Journal of Ichthyology* **48**: 515–524. doi: 10.1134/S0032945208070059.
- Feistel, R., Hagen, E., and Grant, K. 2003. Climatic changes in the subtropical Southeast Atlantic: the St. Helena Island Climate Index (1893–1999). *Progress in Oceanography* **59**: 321–337. doi: 10.1016/j.pocean.2003.07.002.
- Floeter, S.R., and Gasparini, J.L. 2000. The southwestern Atlantic reef fish fauna: composition and zoogeographic patterns. *Journal of Fish Biology* **56**: 1099–1114. doi: 10.1006/jfbi.2000.1231.
- Floeter, S.R., Rocha, L.A., Robertson, D.R., Joyeux, J.C., Smith-Vaniz, W.F., Wirtz, P., Edwards, A.J., Barreiros, J.P., Ferreira, C.E.L., Gasparini, J.L., Brito, A., Falcon, J.M., Bowen, B.W., and Bernardi, G. 2007. Atlantic reef fish biogeography and evolution. *Journal of Biogeography* **Special re**: 1–26.
- Galparsoro, I., Connor, D.W., Borja, A., Aish, A., Amorim, P., Bajjouk, T., Chambers, C., Coggan, R., Dirberg, G., Ellwood, H., Evans, D., Goodin, K.L., Grehan, A., Haldin, J., Howell, K., Jenkins, C., Michez, N., Mo, G., Buhl-Mortensen, P., Pearce, B., Populus, J., Salomidi, M., Sánchez, F., Serrano, A., Shumchenia, E., Tempera, F., and Vasquez, M. 2012. Using EUNIS habitat classification for benthic mapping in European seas: present concerns and future needs. *Marine pollution bulletin* **64**: 2630–2638. Elsevier Ltd. doi: 10.1016/j.marpolbul.2012.10.010.
- Gislen, T. 1933. Papers from Dr Th. Mortensen's Pacific Expedition 1914-16. LXVII. A small collection of crinoids from St Helena.
- Gomon, M.F., and Lubbock, R. 1980. A new hogfish of the genus Bodianus (Teleostei: Labridae) from islands of the Mid-Atlantic. *Northeast Gulf Science* **3**: 104–111.
- Grave, S. 2010. A new species of the genus *Typton costa* (Decapoda, Palaemonidae, Pontoniinae) from Ascension Island. *Studies on Malacostraca* **14**: 209–218.
- Grave, S. De. 2007. On the occurrence of *Gnathophylleptum tellei* D'Udekem D'Aoz 2001 (Decapoda, Gnathophyllidae) in St Helena, South Atlantic Ocean. *Crustaceana* **80**: 893–895.
- Grossman, B.G.D., Jones, G.P., and Seaman, W.J. 1997. Do Artificial Reefs Increase Regional Fish Production ? A Review of Existing Data. *Fisheries* **22**: 17–23.
- Guimarães, S.M.P.B., and Horta, P.A. 2004. Morphology and reproduction of *Predaea feldmannii* Børgesen ( Nemastomataceae , Rhodophyta ), an uncommon species from Brazil. *Revista Brazil Botany* **27**: 507–513.
- Gunther, A., Smith, E.A., Miers, E.J., Waterhouse, C.O., Bell, F.J., and Ridley, S.O. 1881. Report on a collection made by Mr. T Conry in Ascension Island. *The Annals and magazine of Natural history*: 430–440.
- Hagen, E., Agenbag, J.J., and Feistel, R. 2005. The winter St. Helena climate index and extreme Benguela upwelling. *Journal of Marine Systems* **57**: 219–230. Elsevier. doi: 10.1016/j.jmarsys.2005.03.006.
- Hartmann-Schroder. 1992. The polychaetes of the Amsterdam expedition to Ascension Island. *Bijdragen tot de Dierkunde* **61**: 219–235.

- Hartnoll, R.G. 2009. Sexual Maturity and Reproductive Strategy of the Rock Crab *Grapsus Adscensionis* (Osbeck, 1765) (Brachyura, Grapsidae) on Ascension Island. *Crustaceana* **82**: 275–291. doi: 10.1163/156854009X409090.
- Hartog, J.C. Den, and Tiirkay, M. 1991. *Platypodiella georgei* spec . nov . ( Brachyura : Xanthidae ), a new crab from the island of St . Helena , South Atlantic Ocean , with notes on the genus *Platypodiella* Guinot , 1967. *Zoologische Mededelingen* **65**: 209–220.
- Hoeksema, B.W. 2012a. Extreme morphological plasticity enables a free mode of life in *Favia gravida* at Ascension Island (South Atlantic). *Marine Biodiversity* **42**: 289–295. doi: 10.1007/s12526-011-0106-z.
- Hoeksema, B.W. 2012b. Extreme morphological plasticity enables a free mode of life in *Favia gravida* at Ascension Island (South Atlantic). *Marine Biodiversity* **42**: 289–295. doi: 10.1007/s12526-011-0106-z.
- Hoeksema, B.W., and Wirtz, P. 2012. Over 130 years of survival by a small, isolated population of *Favia gravida* corals at Ascension Island (South Atlantic). *Coral Reefs DOI 10.100*: 1. doi: 10.1007/s00338-012-1002-0.
- Holthuis, L.B. 1993. *Scyllarides obtusus* spec , nov ., the scyllarid lobster of Saint Helena , Central South Atlantic ( Crustacea : Decapoda Reptantia : Scyllaridae ). *Zoologische Mededelingen* **67**: 505–515.
- Holthuis, L.B., Edwards, A.J., and Lubbock, R. 1980. The decapod and stomatopod crustacea of St Paul's Rocks. *Zoologische Mededelingen* **56**: 27–52.
- Häussermann, V., and Försterra, G. 2005. Distribution patterns of Chilean shallow-water sea anemones (Cnidaria : Anthozoa : Actiniaria , Corallimorpharia ), with a discussion of the taxonomic and zoogeographic relationships between the actinofauna of the South East Pacific , the South West Atlan. *Scientia Marina* **69**: 91–102.
- Irving, R. 2013. Ascension Island's Hermatypic but non-reef building corals. *Coral Reefs of the United Kingdom Overseas Territories* **4**: 213–221. Springer Netherlands, Dordrecht. doi: 10.1007/978-94-007-5965-7.
- Johnsson, R., Neves, E., Franco, G.M.O., and Silveira, F.L. 2006. The Association of Two Gall Crabs (Brachyura: Cryptochiridae) with the Reef-building Coral *Siderastrea stellata* Verrill, 1868. *Hydrobiologia* **559**: 379–384. doi: 10.1007/s10750-005-9307-4.
- Kavanagh, K.D., and Olney, J.E. 2006. Ecological correlates of population density and behavior in the circumtropical black triggerfish *Melichthys niger* (Balistidae). *Environmental Biology of Fishes* **76**: 387–398. doi: 10.1007/s10641-006-9044-1.
- Keatinge, W.R., Donaldson, G.C., Bucher, K., Jendritzky, G., Cordioli, E., Martinelli, M., Katsouyanni, K., Kunst, A.E., McDonald, C., Näyhä, S., and Vuori, I. 2000. Winter mortality in relation to climate. *International Journal Of Circumpolar Health* **59**: 154–159. Available from [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list\\_uids=11209660](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=11209660).
- Kouyoumtzakis, G. 1989. Samples taken off Jamestown, Saint Helena Island (South Atlantic Ocean). *J. micropalaeontol.* **8**: 1–8.
- Kropp, R.K., and Manning, R.. 1987. The Atlantic gall crabs, family Cryptochiridae (Crustacea: Decapoda: Brachyura). *Smithsonian Contributions to Zoology*: 1–21. doi: 10.5479/si.00810282.462.
- Lawson, G., John, D.M., and Price, J.H. 1993. The Marine Algal Flora of St . Helena : its Distribution and Biogeographical Affinities. *Courier Forsch. Inst. Senckenberg* **159**: 103–107.
- Lessios, H.A. 2010. Speciation in sea urchins.
- Lessios, H.A., Kessing, B.D., and Pearse, J.S. 2001. Population Structure and Speciation in Tropical Seas : Global Phylogeography of the Sea Urchin *Diadema*. *Evolution* **55**: 955–975.
- Lessios, H.A., Kessing, B.D., Robertson, D.R., and Paulay, G. 1999. Phylogeography of the Pantropical Sea Urchin *Eucidaris* in Relation to Land Barriers and Ocean Currents. *Evolution* **53**: 806–817.

- Lin, M., Kitahara, M. V., Tachikawa, H., Keshavmurthy, S., and Chen, C.A. 2012. A New Shallow-Water Species, *Polycyathus chaishanensis* sp. nov. (Scleractina: Caryophylliidae), from Chaishan, Kaohsiung, Taiwan. *Zoological studies* **51**: 213–221.
- Lubbock, R. 1980. The shore fishes of Ascension Island. *Journal of Fish Biology* **17**: 283–303.
- MacLeod, C.D., and Bennett, E. 2007. Pan-tropical spotted dolphins (*Stenella attenuata*) and other cetaceans around St Helena in the tropical south-eastern Atlantic. *Journal of the Marine Biological Association of the United Kingdom* **87**: 339–344. doi: 10.1017/S0025315407052502.
- Manning, R.B., and Chase, F.. 1990. Decapod and Stomatopod Crustacea from Ascension Island , South Atlantic Ocean. *Smithsonian Contributions to Zoology* **503**: 1–82.
- Manning, R.B., and Holthuis, L.B. 1989. Two new genera and nine new species of Geryonid crabs (Crustacea, Decapoda, Geryoniidae). *Proceedings of the Biological Society of Washington* **102**: 50–77.
- Mau, R. 2008. Managing for Conservation and Recreation : The Ningaloo Whale Shark Experience. *Journal of Ecotourism* **7**: 208–220. doi: 10.2167/joe-02320.
- McCartney, M.A., Keller, G., and Lessios, H.A. 2000. Dispersal barriers in tropical oceans and speciation in Atlantic and eastern Pacific sea urchins of the genus *Echinometra*. *Molecular Ecology* **9**: 1391–1400.
- Mellis, J.C. 1875. St Helena: A physical, historical and topographical description of the island.
- Meyer, D.L., and Macurda Jr, D.B. 1976. Distribution of shallow-water crinoids near Santa Marta, Columbia. *Mitt. Inst. Colombo-Aleman Invest. Cient.*: 141–156.
- Mironov, A.N. 2006. Centers of Marine Fauna Redistribution. *Entomological Review* **86**: S32–S44. doi: 10.1134/S0013873806100034.
- Mortensen, T. 1933. Papers from Dr Th. Mortensen's Pacific Expedition 1914-16. LVI. The Echinoderms of St Helena (other than crinoids).
- Moura, R.L., and Castro, R.M.C. 2002. Revision of the Atlantic sharpnose pufferfishes (Tetraodontiformes: Tetraodontidae: Canthigaster), with description of three new species. *Proceedings of the Biological Society of Washington* **115**: 32–50.
- Munroe, T.A. 1990. Eastern Atlantic tonguefishes (Symphurus:Cynoglossidae, Pleuronectiformes), with descriptions of two new species. *Bulletin of Marine Science* **47**: 464–515.
- Munroe, T.A., Brito, A., and Hernandez, C. 2000. *Symphurus insularis* : A New Eastern Atlantic Dwarf Tonguefish (Cynoglossidae : Pleuronectiformes). *Copeia* **2**: 491–500.
- Murray, J.D. 1994. Policy and management assesment of U.S. artificial reef programs. *Marine Science* **55**: 960–969.
- Muss, A., Robertson, D.R., Stepien, C.A., Wirtz, P., and Bowen, B.W. 2001. Phylogeography of *Ophioblennius* : The Role of Ocean Currents and Geography in Reef Fish Evolution. *Evolution* **55**: 561–572.
- Nunes, F.L.D., Norris, R.D., and Knowlton, N. 2011. Long distance dispersal and connectivity in amphi-Atlantic corals at regional and basin scales. *PloS one* **6**: e22298. doi: 10.1371/journal.pone.0022298.
- Ortea, J., Valdes, A., and Espinosa, J. 1994. North Atlantic nudibranchs of the *Chromodoris clenchi* colour group (Opisthobranchia: Chromodorididae). *Journal of Molluscan studies* **60**: 237–248.
- Page-albins, K.N., Vroom, P.S., Hoeke, R., Mark, A., and Smith, C.M. 2012. Patterns in benthic coral reef communities at Pearl and Hermes Atoll along a wave exposure gradient. *Pacific Science* **66**: 1–32.
- Pawson, D.L. 1978. The echinoderm fauna of Ascension Island, South Atlantic Ocean. *Smithsonian Contributions to the Marine Sciences*: 1–31. doi: 10.5479/si.01960768.2.1.
- Pawson, D.L., and Pawson, D.J. 2008. An illustrated key to the sea cucumbers of the South Atlantic Bight.

- Pedgley, D.E. 2001. A rare hail shower in St Helena. *Weather* **56**: 408–411.
- Perrin, W.F. 1985. The Former Dolphin Fishery at St Helena. *Expedition* **35**: 423–428. Rep. Int. Whal. Commn 35. Available from <http://swfsc.noaa.gov/publications/CR/1985/8568.PDF>.
- Perrin, W.F. 1998. *Stenella longirostris*. American Society of Mammalogists **599**: 1–7.
- Perrin, W.F. 2001. *Stenella attenuata*. American Society of Mammalogists **683**: 1–8. doi: 10.1644/1545-1410(2001)683<0001:SA>2.0.CO;2.
- Perrin, W.F. 2002. *Stenella frontalis*. American Society of Mammalogists **702**: 1–6. doi: 10.1644/1545-1410(2002)702<0001:SF>2.0.CO;2.
- Perrin, W.F., and Perrin, M.J. 1983. Investigation of the cetacean fauna and former dolphin fishery of St Helena.
- Perrin, W.F., and Perrin, M.J. 1984. Investigation of the cetacean fauna and former dolphin fishery of St Helena. *National Geographic Society* **6**: 355–360.
- Pickering, H., and Whitmarsh, D. 1997. Artificial reefs and fisheries exploitation: a review of the “attraction versus production” debate, the influence of design and its significance for policy. *Fisheries Research* **31**: 39–59. doi: 10.1016/S0165-7836(97)00019-2.
- Pierce, S.J., Méndez-Jiménez, A., Collins, K., Rosero-Caicedo, M., and Monadjem, A. 2010. Developing a Code of Conduct for whale shark interactions in Mozambique. *Aquatic Conservation: Marine and Freshwater Ecosystems* **20**: 782–788. doi: 10.1002/aqc.1149.
- Pinheiro, H.T., Gasparini, J.L., and Joyeux, J.-C. 2010. Reef fish mass mortality event in an isolated island off Brazil, with notes on recent similar events at Ascension, St Helena and Maldives. *Marine Biodiversity Records* **3**: 1–4. doi: 10.1017/S1755267210000424.
- Pola, M., Cervera, J.L., and Gosliner, T.M. 2003. The Genus *Roboastra* Bergh , 1877 (Nudibranchia : Polyceridae : Nembrothinae ) in the Atlantic Ocean. *Proceedings of the California Academy of Science* **54**: 381–392.
- Pola, M., Cervera, J.L., and Gosliner, T.M. 2006a. Description of two new phanerobranch nembrothid species (Nudibranchia: Polyceridae: Doridacea). *Journal of the Marine Biological Association of the UK* **86**: 403. doi: 10.1017/S0025315406013269.
- Pola, M., Cervera, J.L., and Gosliner, T.M. 2006b. Taxonomic revision and phylogenetic analysis of the genus *Tambja* Burn, 1962 (Mollusca, Nudibranchia, Polyceridae). *Zoologica Scripta* **35**: 491–530. doi: 10.1111/j.1463-6409.2006.00241.x.
- Pola, M., Rudman, W.B., and Gosliner, T.M. 2009. Systematics and preliminary phylogeny of Bornellidae (Mollusca : Nudibranchia : Dendronotina) based on morphological characters with description of four new. *Zootaxa* **1975**: 1–57.
- Polaperez, M., Cervera, J.L., and Gosliner, T.M. 2005. A new species of *Tambja* (Nudibranchia : Polyceridae : Nembrothinae) from southern Brazil. *Journal of the Marine Biological Association of the United Kingdom* **85**: 4969.1–4969.6.
- Price, J.H., and John, D.M. 1980. Ascension Island, South Atlantic: a survey of inshore benthic macroorganisms, communities and interactions. *Aquatic Botany* **9**: 251–278.
- Quenouille, B., Bermingham, E., and Planes, S. 2004. Molecular systematics of the damselfishes (Teleostei: Pomacentridae) Bayesian phylogenetic analyses of mitochondrial and nuclear DNA sequences. *Molecular Phylogenetics and Evolution* **31**: 66–88.
- Randall, J.E. 1963. An analysis of the fish populations of artificial and natural reefs in the Virgin Islands. *Caribbean Journal of Science* **3**: 31–47.
- Rassweiler, A., Costello, C., and Siegel, D. a. 2012. Marine protected areas and the value of spatially optimized fishery management. *Proceedings of the National Academy of Sciences of the United States of America* **109**: 1–6. doi: 10.1073/pnas.1116193109.
- Reid, D.G. 2011. The genus *echinolittorina* Habe, 1956 (Gastropoda: Littorinidae) in the eastern Atlantic Ocean and Mediterranean Sea. *Zootaxa* **2974**: 1–65.

Reimer, J.D., Hirose, M., and Wirtz, P. 2010. Zoanthids of the Cape Verde Islands and their symbionts : previously unexamined diversity in the Northeastern Atlantic. Contributions to Zoology **79**: 147–163.

Robertson, D.R. 2001. Population maintenance among tropical reef fishes: inferences from small-island endemics. Proceedings of the National Academy of Sciences of the United States of America **98**: 5667–5670. doi: 10.1073/pnas.091367798.

Robertson, D.R., Karg, F., Leao de Moura, R., Victor, B.C., and Bernardi, G. 2006. Mechanisms of speciation and faunal enrichment in Atlantic parrotfishes. Molecular phylogenetics and evolution. doi: 10.1016/j.ympev.2006.04.011.

Rocha, L. a, Robertson, D.R., Rocha, C.R., Van Tassell, J.L., Craig, M.T., and Bowen, B.W. 2005. Recent invasion of the tropical Atlantic by an Indo-Pacific coral reef fish. Molecular ecology **14**: 3921–3928. doi: 10.1111/j.1365-294X.2005.02698.x.

Rocha, L.A., Bass, A.L., Robertson, D.R., and Bowen, B.W. 2002. Adult habitat preferences , larval dispersal , and the comparative phylogeography of three Atlantic surgeonfishes. Molecular Ecology **11**: 243–252.

Rosewater, J. 1975. An annotated list of the marine mollusks of Ascension Island, South Atlantic Ocean. Smithsonian Contributions to Zoology: 1–41. doi: 10.5479/si.00810282.189.

Ross, A., and Newman, W.A. 1973. Revision of the coral-inhabiting barnacles (Cirripedia: Balanidae). Transactions of the San Diego Society of Natural History **17**: 137–174.

Rowlands, B.W. (n.d.). Important bird areas in Africa and associated island- St Helena, Ascension Island and Tristan da Cunha, including Gough Island. In Important bird areas in Africa and associated island. pp. 711–726.

Rudorff, C.A.G., Lorenzetti, J.A., Gherardi, D.F.M., Lins-Oliveria, J.E., Ocha, L.A., Robertson, D.R., Rocha, C.R., Van Tassell, J.L., Craig, M.T., and Bowen, B.W. 2009. Application Of Remote Sensing To The Study Of The Pelagic Spiny Lobster Larval Transport In The Tropical Atlantic. Brazilian Journal Of Oceanography **57**: 7–16.

Santos, M.N., Oliveira, M.T., and Cúrdia, J. 2012. A comparison of the fish assemblages on natural and artificial reefs off Sal Island (Cape Verde). Journal of the Marine Biological Association of the United Kingdom **93**: 437–452. doi: 10.1017/S0025315412001051.

Schmiing, M., Afonso, P., Tempera, F., and Santos, R. 2012. Predictive habitat modelling of reef fishes with contrasting trophic ecologies. Marine Ecology Progress Series **474**: 201–216. doi: 10.3354/meps10099.

Sekizawa, A., Seki, S., Tokuzato, M., Shiga, S., and Nakashima, Y. 2013. Disposable penis and its replenishment in a simultaneous hermaphrodite. Biology Letters **9**: 1–4.

Shcherbakova, A., Riera, R., Almansa, E., Felipe, B., Rodríguez, C., Reis, D., Andrade, J.P., and Sykes, A.V. 2011. Reproductive investment and fecundity of the Red rock crab ( Grapsus adscensionis ) in Tenerife ( Canary Islands , Atlantic Ocean ) ( Decapoda , Grapsidae ). Vieraea **39**: 139–147.

Smith, E.A. 1890a. On the Marine Mollusca of Ascension Island. Proceedings of The Zoological Society of London: 317–322.

Smith, E.A. 1890b. Report on the Marine Molluscan Fauna of the Island of St . Helena. Proc. Zool. Soc. Lond.: 247–317. Available from <http://biostor.org/reference/99510>.

Smith, J.. L.. B.. 1965. Acanthurus bahianus Castelnau , 1855 , in the Southeast Atlantic Ocean. Copeia **1**: 110–111.

Smith-Vaniz, W.F., and Carpenter, K.E. 2007. Review of the crevalle jacks, Caranx hippos complex (Teleostei: Carangidae), with a description of a new species from West Africa. Fisheries Bulletin **105**: 207–233.

Van Soest, R.W.M. 1990. Monanchora stocki n. sp. (Porifera, Poecilosclerida) from the mid-Atlantic islands. Bijdragen tot de Dierkunde **60**: 249–255.

Springer, V.G. 1972. Additions to revisions of the blenniid fish genera *Ecsenius* and *Entomacrodus*, with descriptions of three new species of *Ecsenius*. Smithsonian Contributions to Zoology **134**: 1–13. doi: 10.5479/si.00810282.134.

Stampar, S.N., Maronna, M.M., Vermeij, M.J. a, Silveira, F.L.D., and Morandini, A.C. 2012. Evolutionary diversification of banded tube-dwelling anemones (Cnidaria; Ceriantharia; Isarachnanthus) in the Atlantic Ocean. PloS one **7**: e41091. doi: 10.1371/journal.pone.0041091.

Stock, J.H. 1996a. Origin of the non-marine aquatic crustacean fauna of St. Helena and Ascension. Proceedings of the 2nd Symposium of Fauna and Flora of the Atlantic Islands **5**: 455–462.

Stock, J.H. 1996b. The genus *Platorchestia* ( Crustacea , Amphipoda ) on the Mid-Atlantic islands , with description of a new species from. Miscel-lania Zoologica **19**: 149–157.

The Mendeley Support Team. 2011. Getting Started with Mendeley. Mendeley Ltd., London. Available from <http://www.mendeley.com>.

Trunov, I. a. 2006. Ichthyofauna of seamounts around the island of Ascension and St. Helena Island (Atlantic ocean). Journal of Ichthyology **46**: 493–499. doi: 10.1134/S0032945206070010.

Tyler, J.C. 1965. The Trunkfish Genus *Acanthostracion* (Ostraciontidae , Plectognathi) in the Western Atlantic : Two Species Rather than One. Proceedings of the Academy of Natural Sciences of Philadelphia **117**: 1–18.

Vaske Junior, T., Lopes de Lima, K., Ribeiro, A.C.B., and Lessa, R.P. 2008. Record of the St . Helena deepwater scorpionfish , *Pontinus nigropunctatus* (Günther) (Scorpaeniformes : Scorpaenidae), in the Saint Peter and Saint Paul Archipelago , Brazil. Pan-American Journal of Aquatic Sciences **3**: 46–48.

Vermeij, G.. T.. 1972. Endemism and Environment: Some Shore Molluscs of the Tropical Atlantic. The American Naturalist **106**: 89–101.

Werner, T.B. 1997. Recent Zooxanthellate Corals (Order: Scleractina) from Ascension and St Helena Islands, South Atlantic, with a summary of their geographic distribution in the Atlantic Ocean.

Wilding, T. 2002. Evaluating artificial reef performance: approaches to pre- and post-deployment research. ICES Journal of Marine Science **59**: S222–S230. doi: 10.1006/jmsc.2002.1266.

Wirtz, P. 2009. Thirteen new records of marine invertebrates and two of fishes from Cape Verde Islands. Life and Marine Sciences **26**: 51–56.

Yáñez-Rivera, B., and Salazar-Vallejo, S.I. 2011. Revision of *Hermodice* Kinberg, 1857 (Polychaeta: Amphinomidae). Scientia Marina **75**: 251–262. doi: 10.3989/scimar.2011.75n2251.

Zibrowius, H. 1974. Redescription of *Sclerhelia hirtella* from Saint Helena, South Atlantic, and remarks on Indo-Pacific species erroneously referred to the same genus (Scleractinia). Journal of Natural History **8**: 563–575. doi: 10.1080/00222937400770481.

## Annex 6 Supplementary material – Marine awareness/local marine use questionnaire



Dear participant,

The following questionnaire is designed to gain information on what is known about St. Helena's marine environment. We would like to quantify how and to what extent the marine environment on St. Helena is used. We would be grateful if you could answer the questions set out below.

### Section 1: General information

1. What is your age? (Please tick)

|                    |  |
|--------------------|--|
| 16 years and under |  |
| 16 to 18 years old |  |
| 19 to 24 years old |  |
| 25 to 34 years old |  |
| 35 to 44 years old |  |
| 45 to 54 years old |  |
| 55 to 64 years old |  |
| 65 to 74 years old |  |
| 75 years older     |  |

2. Are you male or female? (Please tick)

|        |  |
|--------|--|
| Male   |  |
| Female |  |

3. In what district do you live? (Please tick)

|           |                  |           |           |           |          |           |              |                      |
|-----------|------------------|-----------|-----------|-----------|----------|-----------|--------------|----------------------|
| Jamestown | Half Tree Hollow | St. Pauls | Sandy Bay | Blue Hill | Longwood | Levelwood | Alarm Forest | Other (please state) |
|           |                  |           |           |           |          |           |              |                      |

4. What is your status on St. Helena? (Please tick)

|                                      |  |
|--------------------------------------|--|
| Permanent Resident                   |  |
| On Contract (up to 2 years)          |  |
| On Contract ( 2 years plus)          |  |
| Visitor (tourist)                    |  |
| Visitor ( Saint Helenian on holiday) |  |

Please state reason for visit:

5. What is your occupation?

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## **Section 2: Environmental knowledge**

1. Name ANY endemic species of St Helena (i.e. birds, plants, marine, insects etc)

(if possible name up to 5 different ones – please do not look up, if you don't know leave blank)

---

---

2. Place the numbers 1 -6 (1 being most important, 6 being least important) next to the following groups in the order you think are most important to St Helena:

|  |  |
|--|--|
| Whales/Dolphins  |  |
| Birds  |  |
| Plants/trees   |  |
| Commercial fish  |  |
| Land invertebrates (beetles, moths etc)                            |  |
| Other fish/marine invertebrates (crabs, starfish, sea urchins etc) |  |

3. Place the numbers 1 -6 (1 being most known about, 6 being least known about ) next to the following groups in the order you think we know the most or least about for St Helena :

|   |  |
|---|--|
| Whales/Dolphins                         |  |
| Birds                                   |  |
| Plants/trees                            |  |
| Commercial fish                         |  |
| Land invertebrates (beetles, moths etc) |  |
| Other fish/marine life                  |  |

4. When is the closed season for spearfishing in St Helena?( please do not look up, if you don't know leave blank)
- 
- 

5. Why should you not take crayfish in berry (with eggs)? Please tick- you can tick more than one)

|                            |  |
|----------------------------|--|
| They don't taste very good |  |
| Because it's the law       |  |
| Protects future stocks     |  |
| Don't know                 |  |

6. Thinking about the current level of protection for the marine environment around St Helena - do you agree or disagree with the need to increase this level of protection?

|                 |  |
|-----------------|--|
| Strongly agree  |  |
| Mildly agree    |  |
| Neutral         |  |
| Mildly disagree |  |

|                           |  |
|---------------------------|--|
| Strongly disagree         |  |
| Don't know current levels |  |

7. If you support the creation a Marine Protected Area what would be your reason? (Please tick- you can tick more than one)

|                         |  |
|-------------------------|--|
| Increase fish numbers   |  |
| Protect endemic species |  |
| Protect a special area  |  |
| Encourage tourism       |  |
| Unsure                  |  |

If other, please state why

---

8. What do you think the largest threat to the St Helena marine environment is? (Please tick)

|  |  |
|--|--|
| Commercial fishing                     |  |
| Recreational fishing from land or boat |  |
| Spearfishing                           |  |
| Sand extraction                        |  |
| Pollution                              |  |
| Tourism                                |  |

9. How would you rate your knowledge of the marine environment (Please tick)

| None | Poor | Some | Moderate | Good | Excellent |
|------|------|------|----------|------|-----------|
|      |      |      |          |      |           |

10. Would you like to know more about St Helena's marine environment? (Please tick)

|     |  |
|-----|--|
| Yes |  |
| No  |  |

If yes which aspect (Please tick - you can tick more than one)

|                      |  |
|----------------------|--|
| Types of habitat     |  |
| Types of species     |  |
| Biology of species   |  |
| General information  |  |
| Other (please state) |  |

### Section 3: How is St. Helena's marine environment used

1. What are your reasons for using the sea? (Please tick- you can tick more than one)

| Fishing from the rocks | Fishing from a boat | Swimming           | Snorkelling    | Spear fishing    | Diving      |
|------------------------|---------------------|--------------------|----------------|------------------|-------------|
|                        |                     |                    |                |                  |             |
| Sailing                | Water skiing        | Looking at the sea | Day by the sea | Dolphin watching | Inspiration |
|                        |                     |                    |                |                  |             |

If other, please state use?

---

2. How often do you use the sea?(Please tick)

|                           | Daily | Once a week | Once a month | Once every three months | Once every year | Other (Please state) |
|---------------------------|-------|-------------|--------------|-------------------------|-----------------|----------------------|
| Fishing from the rocks    |       |             |              |                         |                 |                      |
| Fishing from a boat       |       |             |              |                         |                 |                      |
| Swimming                  |       |             |              |                         |                 |                      |
| Snorkelling               |       |             |              |                         |                 |                      |
| Spear fishing             |       |             |              |                         |                 |                      |
| Sailing                   |       |             |              |                         |                 |                      |
| Diving                    |       |             |              |                         |                 |                      |
| Water sports (skiing etc) |       |             |              |                         |                 |                      |
| Looking at the sea        |       |             |              |                         |                 |                      |
| Day by the sea            |       |             |              |                         |                 |                      |
| Dolphin watching          |       |             |              |                         |                 |                      |
| Inspiration               |       |             |              |                         |                 |                      |
| Work                      |       |             |              |                         |                 |                      |
| Other (Please state)      |       |             |              |                         |                 |                      |

3. Is there anything that has stopped you from using the sea?(Please tick)

|     |                          |
|-----|--------------------------|
| Yes | <input type="checkbox"/> |
| No  | <input type="checkbox"/> |

If you have answered yes, please state why?

---

4. Is there anything that has or will encourage you to use the sea more?

|     |                      |
|-----|----------------------|
| Yes | <input type="text"/> |
| No  | <input type="text"/> |

If you have answered yes, please state why?

---

5. Which months of the year do you use the sea the most? (Please tick- you can tick more than one)

|         |          |           |         |          |          |
|---------|----------|-----------|---------|----------|----------|
| January | February | March     | April   | May      | June     |
| July    | August   | September | October | November | December |

6. Where is your favourite seaside destination on the Island and why?

Please rank in order of preference 1 – 8 or 1-9 if “other” row has been filled in (1 being most favourite and 8 being least favourite) and tick associated reason/s.

|                            | Ranking<br>* | Easy<br>access | Safe<br>for<br>the<br>family | Good for<br>the activity<br>that will be<br>undertaken | Close<br>to<br>home | It's a<br>family<br>tradition | Unsure<br>of<br>location | Other<br>(Please<br>state) |
|----------------------------|--------------|----------------|------------------------------|--|---------------------|-------------------------------|--------------------------|----------------------------|
| Jamestown<br>Wharf         |              |                |                              |  |                     |                               |                          |                            |
| Rupert's                   |              |                |                              |  |                     |                               |                          |                            |
| Sandy Bay                  |              |                |                              |  |                     |                               |                          |                            |
| Lemon<br>Valley            |              |                |                              |  |                     |                               |                          |                            |
| Dock Yard                  |              |                |                              |  |                     |                               |                          |                            |
| Egg Island                 |              |                |                              |  |                     |                               |                          |                            |
| Egg Island<br>Main         |              |                |                              |  |                     |                               |                          |                            |
| West<br>Rocks              |              |                |                              |  |                     |                               |                          |                            |
| Other<br>(Please<br>state) |              |                |                              |  |                     |                               |                          |                            |

If you would like to be kept updated with the progress of the Darwin Marine Biodiversity and Mapping Project please provide a contact email here

**Upon completion of this form please return to reception at Essex House at your earliest convenience  
Thank you for your time**

**Annex 7 Supplementary material – Newspaper article (published in both St Helena newspapers, The Sentinel and The Independent) – written by a local fisherman**

**VANDAL OR HEROE -THE CHOICE IS YOURS**  
By Trevor Otto Thomas

I was personally on site to witness the excellent clean up undertaken by Dr. Judith Brown and her Team of esteemed helpers of the adjacent waters surrounding the Wharf landing steps area last week. I was almost ashamed to see the wide variety of items that was brought from the sea bed, which as we read last week even included a couple of motor vehicle discarded batteries.

I stood on the point and watched the activity taking place and wondered why people would go through such lengths to clean up something virtually hidden from the casual observer. I have never seen the ocean floor from a dive mask perspective; even though I have spent more than 3 decades harvesting live animals as a commercial fisherman. But I have had opportunity to follow closely the wonderful discoveries and studies of the ocean and seabed that often appears on the Discovery Channel or other natural information documentaries.

It suddenly dawned on me that here in front of me was our very own real live Discovery Channel unfolding. Here were similar people who were passionate about what happens beneath the cobalt blue surface waters. These were people who wanted to make a difference, not for gain or popularity, but because they cared. I thought they could be curled up on the couch at home watching a movie or other, but instead chose to clean up someone else's mess. Indeed being the person I am this left me feeling very sobered and humbly grateful.

The following day I returned to the Wharf to board our fishing boat Catfish, and was dismayed to observe a number of soda cans floating in the very area that was tidied the day before. Dismay soon gave way to a moment of passion as I tried to understand why with trash bins so close to hand would the need arise to use the sea as a dumping ground. Gosh even we hardened fishermen have long since stopped discarding unwanted items into the sea, but instead use the bins allocated for this purpose. Years ago we would simply dump used lubricants over the side, instead these days we sensibly bring this ashore in sealed containers for proper disposal. Yes it was pretty hard at first, but with a little thought we eventually understood the damage we cause to our marine environment.

It is clear that with the recent incidences involving vandalism of property along with continues littering problems we have amongst us a number of people who certainly have no regard for the environment they live in. Take for example one incident that occurred when we had our fishing boat on the Wharf during the block leave period, which involved the deliberate dumping of my anchor, chain and some rope over the side where the Sennebogen cranes are normally parked. Why would someone want to do this, to what avail, what was the point. In fact it would have been easier if they had come up to me and just kicked me in the knee.

Has it not yet dawned on us all that this Island is going through a phase of change, when we soon hope to see an increased number of visitors coming to our shores? There will be those who will want to enjoy the many walks we have to offer, others who revel at the opportunity to dive beneath the waves to marvel at the many natural wonders revealed here, those who visit our leisure parks and other local areas of

interest, and the anxious angler who waits patiently for that big one to take the bait, etc, etc, etc. **What Kind of impression will we give?** We often refer to St Helena as the jewel of the South Atlantic, well what kind of stone do we want to portray, a dull stained semi precious component, or should we all be working diligently to present a shining attractive emerald of the sea. In the end the choice is ours to make, it is clear that some have already made that choice evidenced by Judith and her Team and others like them, **WHAT IS YOUR CHOICE, WILL YOU HELP?** Thank you.

## **Annex 8 Supplementary material – Presentations, articles, interviews completed to date for Darwin marine biodiversity project**

### Record of articles done for Darwin marine biodiversity project

1. November 2012 EMD monthly newsletter – article introducing Project manager and brief outline of Darwin marine biodiversity project (article also in Sentinel 29<sup>th</sup> Nov and Independent 30<sup>th</sup> Nov)
2. December 2012 article on 1000<sup>th</sup> dive and information on the Project manager in EMD quarterly newsletter
3. January 2013 EMD monthly newsletter – Darwin marine biodiversity project update (article also in Sentinel 28<sup>th</sup> Jan and Independent 29<sup>th</sup> Jan)
4. February 1<sup>st</sup> 2013 Article on whale sharks including biology (article in Independent)
5. 8<sup>th</sup> March – St Helena Government report on marine awareness week
6. March 2013 EMD monthly newsletter –Project update – Mollusc March (article also in Sentinel and Independent – both 28<sup>th</sup> March)
7. March 2013 EMD quarterly newsletter - Darwin marine biodiversity project update
8. March 2013 – submitted to Darwin newsletter - Darwin marine biodiversity project update

### Record of talks/events done for Darwin marine biodiversity project

1. 7<sup>th</sup> December 2012 – talk/dissection/marine invertebrate display to Prince Andrew secondary school (Marine biology and fisheries as a career)
2. 22<sup>nd</sup> Jan Public talk on Darwin marine mapping and biodiversity project at the St Helena Museum
3. 18<sup>th</sup>, 20<sup>th</sup>, 21<sup>st</sup> February Marine Awareness Week talk at each Primary school (given by Elizabeth Clingham) including Darwin marine biodiversity project
4. 22<sup>nd</sup> February Darwin marine biodiversity project including Marine Awareness Week talk at Prince Andrew Secondary school
5. 23<sup>rd</sup> February-1<sup>st</sup> March – Marine Awareness Week – including Darwin marine biodiversity project dive at Munden's Point; Darwin marine biodiversity corner in conference hall; guided marine invertebrate tour to all who came to the Marine Awareness Week conference hall (including all school children); and public talk on the 1<sup>st</sup> March.
6. 20<sup>th</sup> March NRDEC talk to councillors– introduction to the Darwin marine biodiversity project

### Radio interviews

1. 20<sup>th</sup> February – Introduction to Darwin marine biodiversity project
2. 23<sup>rd</sup> February - Marine Awareness Week
3. 25<sup>th</sup> February – Marine Awareness Week – events and feedback on success so far

### Other articles generated in response to Darwin marine biodiversity project

1. 7<sup>th</sup>/8<sup>th</sup> March (published in Sentinel/Independent)– Trevor Thomas – local fisherman – article on marine pollution
2. 28<sup>th</sup> March 2013 - article on St Helena online by Simon Pipe on St Helena molluscs

## Checklist for submission

|  | Check |
|--|-------|
| <b>Is the report less than 5MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ItSi.co.uk">Darwin-Projects@ItSi.co.uk</a> putting the project number in the Subject line.  | Yes   |
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| <b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number.  | No    |
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