Marine Spatial Planning for the Falkland Islands

‘Framing the process’

Workshop report

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Foreword

This workshop report offers another important step towards the eventual creation of comprehensive and coherent Marine Spatial Plan for the Falkland Islands. This work reflects the views and input of a range of resident and non-resident stakeholders.

Not everything is yet agreed but the summarising of these three days of discussion allows for the work of beginning to write a plan to occur. The work contained within demonstrates the range of stakeholders involved and impacted by such discussions. Such work also takes place in a wider political context and this document recognises that.

I would like to join the author in thanking all involved and commend this document as an important stepping stone towards integrated marine planning for the Islands.

Michael Poole, MLA
Summary

Marine Spatial Planning (MSP) is the process used to develop a strategic plan for co-ordinated management of the marine environment, with a holistic and ecosystem-based approach of managing activities and development. The Falkland Islands currently have no co-ordinated marine management in place. A third MSP workshop took place between 5 and 7 April 2016 in Stanley, Falkland Islands, as part of the Darwin-Plus project “Marine Spatial Planning for the Falkland Islands”. It gathered representatives of marine stakeholder groups of the Falkland Islands, including industry, government, NGOs, and a few international experts in MSP. The MSP project has produced an MSP GIS database and a range of tools for decision-support, along with draft MSP format and framework. These were presented and discussed with the participants. Further exercises undertaken by the participants provided platforms for determining what the management priorities should be, what format the Plan should have, and for understanding the complexity and inter-connectivity in the marine environment and the consequent need for an ecosystem-based approach and inclusion of cumulative impacts in management via MSP. This workshop report presents the summary of workshop sessions and the main recommendations to inform the next phase of Marine Spatial Planning implementation in the Falkland Islands.

The main priorities for the MSP process in the Falkland Islands that emerged from the workshop are to provide tools and protocols for streamlining EIA process, for managing shipping and boating, for facilitating emergency responses and safety protocols, for identifying ecologically important areas, and for preventing introduction of marine invasive species (biosecurity). These were also the main priority themes recommended to be included in the first Falkland Islands Marine Spatial Plan (FIMSP), along with descriptions of the marine environment and its uses and values, and already-established management, and detailed on the mechanisms and processes that will form the application of the Plan and its policies, and legislation. Shipping exclusion zones were seen as a needed management measure in particular around the Jason Islands, Beauchêne Island, Volunteer Point and Berkeley Sound, along with urgent needs to improve maritime communication (deployment of VHF relay stations), and start developing a way towards a Vessel Traffic System for Berkeley Sound as required for inshore oil transfers by oil companies. Establishing emergency and safe shelter zones to limit risks to ecological values was also seen as a priority. The potential for the inshore areas around the islands (approximately 3nm) to be proposed as a Marine Protected Area IUCN Category VI was also identified as a potential priority for MSP.

The Falkland Islands Government (FIG) has committed to producing the first FIMSP and this final workshop provided a great platform for stakeholder engagement in and consultation on the proposed MSP framework as recommendation from the Darwin-Plus process (delivered during the Foundation Phase). The outcomes of this report and the other outputs of the Darwin-Plus project will inform the next phase of MSP implementation (Development Phase) during which the first FIMSP will be developed, the MSP Forum formed and terms of reference produced, and the tools for FIG to implement and legislate MSP established.
1. The ‘Marine Spatial Planning for the Falkland Islands’ project

The project ‘Marine Spatial Planning (MSP) for the Falkland Islands’ started in July 2014. This two-year project was funded by the UK Department for Environment, Food & Rural Affairs (DEFRA) as part of the Darwin Plus program. The aim of the MSP project was to initiate the process of MSP in the Falkland Islands by preparing data, tools and analyses, and formulating a framework for MSP in the Falkland Islands. The results will inform the Falkland Islands Government (FIG) and its stakeholders on best practice and make recommendations on priorities for management and in developing a sustainable MSP process for the Economic Exclusive Zone (EEZ) of the Falkland Islands (Figure 1).

The project was built around three main workshops that provided regular platforms to frame the stakeholder-driven directions for the initiation of MSP in the Falkland Islands (Figure 2). The regular quarterly meetings of the MSP project steering committee (made of representatives of marine industries, government departments, NGOs and scientist) provided further opportunities for stakeholders’ engagement and inputs in the MSP project. The two previous workshops focussed on setting the scene (report available here) and developing the tools (report available here) for MSP.

From the second workshop, the main advice from MSP experts was to:

- “Ensure political support and financial commitment so that the MSP process is implemented, with no loss of momentum after the initial Darwin-Plus project
- Tease apart the vision and objectives to draw clear quantitative time-bound targets for MSP and clear outputs
- Create a clear and targeted GIS database and an accessible platform such as an online open-access GIS for displaying maps
- Work with stakeholders on a case study to demonstrate the benefits of MSP for the Falkland Islands”

Figure 1: The Falkland Islands Economic Exclusive Zone and location of the only town (Stanley) and three priority areas for MSP (Jason Islands, Berkeley Sound and Beauchêne Island).
A major prerequisite to enable coordinated and sustainable management of the marine environment, and implement MSP, is to understand the spatial distribution of environmental, social and economic values, and of human activities, current and future. The Darwin-Plus project provided the resources for gathering, producing, transforming and classifying spatial data to create the first MSP GIS database for the Falkland Islands with a QGIS project (QGIS Development Team, 2015) to display all the layers of this database (Figure 3). This consists of a metadata catalogue describing the data and how it can be used for MSP, and of datasets, in the form of rasters and shapefiles (all in WGS84 UTM21S project coordinate system). The datasets are classified as follow:

- Anthropogenic activity data (ANT)
- Management data (MGT)
- Environmental data (ENV)
- Biological data (BIO)
- Social data (SOC)
- Geographic data (GEO)
- Marine Spatial Planning data (MSP) – these will be created when MSP is implemented defining the zones
Figure 3: Illustration of the QGIS project displaying some layers of the Falklands MSP GIS database. All layers are found on the left panel and can be ticked for display as required, and available for further geo-spatial analyses.

The metadata for all data and copies of all data (unless data are already on another established database or not released by the owners) were entered in SAERI’s IMS-GIS Data Centre. The metadata can be accessed by searching “Marine Spatial Planning” in this data repository. Instructions on how to request or find the data are on the same page. Some datasets may not show up if they are not strictly MSP-related but can be searched by keywords (e.g. the shapefile of the Falklands coastlines can be search for with these terms instead of MSP). Another recommendation emerging from the “Developing the tools” workshop was also to try developing a tool that would allow stakeholders to visualise the spatial data produced for MSP, and later management measures, without the requirements of having to install a GIS or direct access to the data. I worked in partnership with Dr Ilaria Marengo from the IMS-GIS Centre to produce the first prototype Falklands MSP webGIS that provides an online platform where the MSP QGIS project above can be visualised in a very simple manner by anyone with internet access and the web address.

The webGIS is a simplified version of the MSP GIS database that is formatted and uploaded in an online platform on the web. It provides stakeholders and any member of the public with a visualisation of the maps produced for MSP. It allows users to display the different layers and peruse
the area at different scales, and also to overlap different types of data such as environmental values and human activities.

Following the recommendations from the “Developing the tools” workshop, efforts were also therefore made to ensure political and financial support for implementation of MSP in the Falkland Islands so that the momentum given by the initial Darwin Plus project would not be lost when it comes to an end. A paper was submitted to the FIG Executive Council in December 2015 to fulfil this recommendation. This paper was well received with the public minutes containing the following statements:

- “[Executive Council] acknowledged the importance of implementing an MSP process for the long-term sustainable and safe management of the coastal and marine environments of the Falkland Islands and that such a process is grounded in objective and sound science;
- [Executive Council] agreed to support and the creation of an MSP Plan, according to the framework and details provided in this paper and with the addition of a finer scale delivery and financial plan;”

This third workshop provided a platform to present the proposed framework for MSP to local stakeholders, and for them to understand the steps and requirements of an MSP process, and articulate the priorities for MSP in the Falkland Islands.

2. Workshop aims, agenda and participants

The general aims of the workshop were discussing and producing recommendations for various aspects of the MSP framework. The expected outcomes of the workshop were to produce agreed recommendations about the next phase of MSP implementation (Phase 2: Development of MSP) in the Falkland Islands.

The specific aims of the workshop were to:
- Develop targets to reach the 25-year vision and objectives previously set
- Revise the proposed framework and mechanisms for MSP
- Define actors and responsibility for Phase 2
- Identify policy options for coordinated management using case studies
- Determine the status and format that the Marine Spatial Plan should have

A copy of the complete agenda can be found in Appendix A. In summary, the workshop ran for 3 consecutive days and took place in Stanley and on-board the HMS Clyde. The days were each made of two major sessions tackling the following topics: Targets and format of MSP, MSP solutions for specific activities, Berkeley Sound case study, MSP framework, and MSP plan and implementation.

Representatives from all local marine stakeholder groups were invited to the workshop, including industry (commercial fishing, tourism, hydrocarbon, governmental), recreational and NGO representatives. Three international experts were also present to assist with the discussions and present examples of MSP from the Shetland Islands, other South Atlantic Overseas Territories and the UK. The full list of participants for each day is available in Appendix 2.

As an introduction to the state of MSP processes in the other UK Overseas Territories, Dr Jude Brown gave a presentation where she briefly introduced what actions the governments of South Georgia and the South Sandwich Islands, St Helena and Ascension Island have been taking towards MSP. An emphasis was made on the need to fulfil the ‘blue belt’ manifesto for the UKOTs, and how Ascension Island, for instance, was recently made to declare a Marine Protected Area (MPA) as a no-take
commercial fishery zone for half of their EEZ. This elicited the need for UKOTs to “demonstrate that they are acting towards marine management based on scientific evidence”.

### 3. Vision, objectives and targets of MSP

A vision for MSP and the related objectives were developed during a previous workshop with local stakeholders and follow-up consultation before finalisation (Augé, 2015b). The long-term MSP vision is:

*Well managed marine and coastal areas and resources of the Falkland Islands supporting sustainable economic development whilst protecting our biodiversity and wild unspoilt areas, and supporting the safe use of the sea and celebration of our maritime heritage*.

The 10-year objectives elicited that will provide the means to reach this vision are:

- **(1)** Facilitate the responsible and sustainable development of current and new economic activities to contribute to the national economy
- **(2)** Identify and safeguard the most ecologically important and unspoilt marine and coastal areas, many of which are of global significance
- **(3)** Enable the provision of safe and appropriate internal and international sea links for Islanders and business development
- **(4)** Celebrate and maintain the maritime Falkland Islands’ identity, including via the protection of historically and culturally important areas
- **(5)** Facilitate the enjoyment provided by marine and coastal areas for current and future recreational activities

These objectives should form the basis on which the MSP process and the first Plan should be drawn. These objectives, therefore, need to be unpacked in clearly defined goals and targets that will inform FIG on what the key actions needed are as part of the MSP process. MSP goals and targets are essential elements of MSP because they direct MSP efforts to ensure the results of the process and the management taken lead to the vision.

For all planning processes, including MSP, the production of targets that are “specific, measurable, achievable, relevant, and time-bound” (SMART) is an important step (Ahler & Douvere, 2007). These targets should also be drafted with the underlying need to have indicators. Targets can be custom-made for the Falkland Islands but can also be taken from international agreements, such as the Aichi biodiversity targets. These targets are required for a country or a territory to ratify the Convention on Biological Diversity (CBD) with for instance “Target 11: By 2020, at least [... 10 percent of coastal and marine areas, especially of particular importance for biodiversity and ecosystem services are conserved through effectively and equitably managed [...] and integrated into the wider [...] seascapes.”

The workshop participants were asked to unpack the five MSP objectives for the Falkland Islands to determine, first, what kind of actions would be needed to reach those objectives, and, second, what kind of targets they thought should be proposed for each objective. The exercise and following discussion indicated a number of potential targets, but in particular actions and processes that will be needed in relation to achieving the objectives. Participants also established that the process should start now. Tables 1 and 2 summarises the ideas given for actions and targets.
Table 1: List of ideas of actions and processes needed towards developing targets for each MSP objective in the Falkland Islands

| Objective 1                                                                 | Objective 2                                                                 | Objective 3                                                                 |
|                                                                           |                                                                           |                                                                           |
| • EIA and planning permission and the facilitation of the permitting process, including length of time | • Identify and formalise key ecological areas, considering local and global criteria | • Identify spatio-temporal risk areas                                      |
| • Stakeholder engagement                                                   | • Identify risks to these areas                                           | • Develop regulatory framework (e.g. speed)                                |
| • Legal framework                                                          | • Define importance with clear ranking                                   | • Provide resources for emergency responses                                |
| • Social impact of decisions (ESIA)                                         | • Habitat directive to identify priority habitats                         | • Provide information and awareness to mariners                            |
| • Formalise process of public/stakeholder consultation                      | • Reporting system for cruise ships or others entering important areas    | • Pilotage area                                                            |
| • Economically viability of proposed development, with feasibility studies | • Long-term monitoring to ensure protection is working from 2020         | • Increase AIS cover                                                       |
| • Complete GIS system to map high risk areas in advance of any development | • Broad-scale marine habitat maps produced by 2020                        | • Identify response/shelter areas for emergency situation and inclement weather |
| • Develop guidelines for EIA process                                       | • Develop ecosystem-approach to fisheries                                 |
| • Ensure policy matches legislative framework                               |                                                                           |                                                                           |

In summary, emphasis was placed on identifying areas relevant to different objectives, improving and facilitating EIA processes, providing guidelines for activities, and ensuring that legislation matches the policies needed. The need to have regular revisions and checks on the spatial data used (i.e. the designation of areas for various reasons) was highlighted. In many instances, this also linked to mention of the issue of enforcement where participants questioned the way that it could be delivered with limited resources. The discussion provided venues to identify the need for a process to prioritise competing interests. Participants also acknowledged that the MSP process would give
FIG a proactive approach to steer and promote marine development by identifying areas for developing particular activities.

Regarding Objective 2, it was pointed out that, in other countries, there are different scales for important areas, such as in the Shetland Islands with sites identified as “internationally important”, then “nationally important” or “regionally important” and finally “locally important”. Each has different management needs. It was suggested to establish such a scale in the Falkland Islands when producing importance criteria.

Regarding Objective 3, discussions raised the potential need to have regulations on ships from some flag states due to unsafe boat regulations in those countries; this would only apply to access to the territorial sea.

Participants pointed out, in particular for Objective 2, that the UK have spent a lot of resources on developing targets for ecological status and areas, and that the outcomes from the UK process could be used to inform the Falkland Islands process. Contingency plans for areas at risk but where there are no control (eg. at the moment shipping areas) should be developed or encouraged as part of the MSP process. The need to also have a continuous process of identifying key knowledge and data gaps to ensure best management was also highlighted for most objectives.

Table 2: List of ideas of targets for each MSP objective in the Falkland Islands

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<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
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<tr>
<td>• By 2017, develop guidelines for EIA process</td>
<td>• Ecosystem-based management by 2026</td>
<td>• By 2020, legislation in place to control vessel movements in territorial sea</td>
</tr>
<tr>
<td>• By 2017, SEA process targeted to public and developer consultation</td>
<td>• Priority and restricted habitat types listed in legislation by 2025</td>
<td>• By 2020, define management measures in place to mitigate high risks</td>
</tr>
<tr>
<td>• By 2018, ensure policy matches legislative framework</td>
<td></td>
<td>• By 2021, implement management and review cycle</td>
</tr>
<tr>
<td>• By 2018, implement Government policy for MSP process</td>
<td></td>
<td>• Indicators: incident %, near-miss, collision events numbers</td>
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<tr>
<th>Objective 4</th>
<th>Objective 5</th>
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<tr>
<td>• Implement 5-year survey of cultural important areas to re-assess designation (from now)</td>
<td>• Implement 5-year survey of recreationally important areas to re-assess designation (from now)</td>
</tr>
<tr>
<td>• By 2017, special and protected cultural areas criteria defined</td>
<td>• Formulate policy on special area designation, framework by 2017, with 25% of sites designated</td>
</tr>
<tr>
<td>• By 2017, designate 25% of areas identified under criteria</td>
<td>• Incorporate designated area policy into EIA, guidance by 2017</td>
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In the Shetland Islands, stakeholders define the broad objectives (similar to those in earlier section of this report for the Falkland Islands); detailed targets and policies are created in consultation with field experts (such as the Scottish Natural Heritage for conservation-relevant purposes) to ensure they matched the objectives. The draft policies are then submitted to the Shetland Islands Council for comments and sign-off. A similar process could be used to develop clear targets and policies in the Falkland Islands at the start of the Development Phase for the priority management needs (as described in a later section of this report). This would mean that the stakeholders identify the key issues and work out potential solutions to solve the issues, reduce the risks or enhance benefits, then FIG Departments and science experts help defining the targets and policies as draft. The Executive Council makes the final decision on the submitted draft targets and policies.

4. Format of MSP process

4.1. The Scottish example of an MSP process format

Scotland has been one of the pioneer countries in establishing an MSP process. Regional Marine Spatial Plans have now been actively developed throughout the country and used for policies and management. Rachel Shucksmith, the MSP Manager for the Shetland Islands has been part of the Scottish MSP process for many years, and presented a summary of the format, the actors and their roles, of MSP in Scotland. This example formed the basis for discussion through the workshop as a successful implementation of the MSP process and production of a useful MSP Plan.

The MSP process in the UK was launched in 2002 with a Marine Stewardship Report that set out the vision for MSP and the need for an improved management of UK’s marine resources. While the UK has an overarching policy statement for MSP and the legislation framework, each country has developed its own MSP format. In Scotland, the Marine Scotland Act 2010, provided the Scottish regions with the legislation to develop and implement Marine Spatial Plans.

In Scotland, a new government body called Marine Scotland was created in 2009 to coordinate the MSP process in the country. From their website, Marine Scotland is described as the “Directorate of Scottish Government and is responsible for the integrated management of Scotland’s seas”. They produced a draft National Marine Plan in 2013 that was adopted in 2015. This Plan is a high level policy and sets out the strategic objectives required to reach the UK vision set out in 2002. The aim of the Plan is to provide policies for sustainable development and binds the public authorities making decision on maritime activities. The Plan was produced and published along with a range of supporting material such as the Scotland’s marine atlas (an e-book of maps), a GIS portal displaying marine data, a web-based library, and planning circular for coordinated land and marine planning. An example of the policies set out in the National Plan is “100% of electricity demand is produced from marine renewable energy by 2020”; the Plan then provide the framework by which regional guidance can be produced through consultation, environmental and socio-economic impact assessments, etc to lead to a sectoral marine plan. The National Plan applies to the entire EEZ. However, regions (such as the Shetland Islands) are given individual authorities for their territorial seas (12nm from shore). Local government agencies are responsible for the delivery of regional marine spatial plans.

The regional agencies conduct MSP under a Marine Planning Partnership (MPP) where stakeholder engagement is at the forefront of the process. The MPP includes the governmental agencies, the local government, NGOs, community groups, and industry representatives. Spatial data are a key element of the regional MSP process, along with the identification of policy areas. Regional authorities (for instance, the Shetland Islands Council and the NAFC Marine Centre in the Shetland Islands) lead the MSP process with delegated powers given to these entities to deliver the Plan. The
NAFC Marine Centre provides the science for the plan (and advice about development licences) and the Shetland Islands Council provides the legal powers to the plan. However, the Scottish Government remains legally responsible for the plan. The NAFC led the development of the first edition of the Shetland Islands Marine Spatial Plan, under the steering of the islands’ Coastal Zone Manager. NAFC staff led data collection, produced the scientific mapping and drafted policies, using policy sub-group of stakeholders and using specialist sub-group as required. The full stakeholder group was consulted for approval. Over a period of 9 years, the Plan was revised 4 times with some changes in its content and reformulation of policies following stakeholders’ feedbacks.

The National Marine Plan led by Marine Scotland also includes a Marine Strategy Forum made of representatives of governments, industries, NGOs, and community groups, and that has the aim to “Provide a strategic focus to ensure alignment and agreement of priorities and activities for integrated marine and coastal stewardship. Provide advice to Scottish Ministers on Marine Scotland’s key strategies and business planning.”

The Scottish example showed what kind of format, actors and responsibilities are needed to develop a successful and efficient MSP process. The success of MSP implementation in Scotland could provide a strong basis for the development of a similar process in the Falkland Islands.

4.2. Proposed format of MSP in the Falkland Islands

The MSP process in the Falkland Islands has been initiated through the Darwin-Plus funded project with the aim to provide FIG with a framework and recommend a way forward to implement MSP. From the outcomes and recommendations drawn from the second MSP workshop for the Falkland Islands (Augé, 2015a), the proposed format for MSP implementation within FIG was presented to the participants.

The proposed three phases of MSP implementation in the Falkland Islands is summarised in Figure 4 and explained in more details as follow:

- Phase 1 (Foundation)
  
This phase was funded by a Darwin Plus grant awarded to SAERI for 2 years and will be completed in July 2016. Together with FIG, local stakeholders and international experts, SAERI produced an MSP framework to plan the move into phase 2 (Development).

- Phase 2 (Development)
  
During the Development Phase (expected to be August 2016 to July 2018), the first Falkland Islands Marine Spatial Plan will be produced and mechanisms will be put in place for implementation of MSP within FIG. Once the first Plan is published and processes for MSP are in place within FIG, an ongoing Operation Phase will then follow. The outputs from Phase 1 (the framework, initial sets of tools and stakeholder engagement) will be implemented within FIG in order to produce the first Falkland Islands Marine Spatial Plan. The objectives and targets for MSP described as part of the framework will be submitted to the FIG committees and Executive Council for approval. SAERI will administer this phase to provide continuity and for a smooth transition from the Darwin Plus project, but an FIG steering committee will overview the phase. The MSP forum will be formed and will endorsed the proposed material and policies for the Plan, then submitted to the FIG Environmental and Fishery Committees before submission to the Executive Council (ExCo) for approval and for adoption by FIG of the Plan. It is important to acknowledge that FIG, through the committee structure and ultimately ExCo, will direct the decision making process for MSP.
• Phase 3 (Operation)

The Operation Phase will be ongoing once MSP is incorporated in FIG and its policies and the first Plan produced. FIG will lead on MSP coordination during the Operation Phase, while SAERI will, from then, provide the science inputs (in the form of research projects, geospatial analyses, etc.) needed for the process, evaluation and updates to the Plan. The MSP Forum will allow for the maintenance of the stakeholder driven process with regards to MSP. This Phase will allow evaluation and monitoring of the outputs from the Plan and updates to the Plan and further policies from acquisition of new scientific data and analyses, changes in the use of the marine environment and potential climate change impacts. Enforcement of the policies in the Plan by FIG and voluntary or legislated MSP measures will also be part of the Operation Phase.

The participants agreed that this format would provide a good mean of implementing MSP in the Falkland Islands, noting that a steering committee should overview the development phase (suggested members included government departments such as Fisheries, EPD, and policy).

Several points were raised by participants about the legislation aspect of MSP such as “is the plan subject to legislation or is legislation integrated within the plan?” “Can FIG adopt the Plan without legislation?”. The answer to these questions is that the Plan can be non-statutory. The Shetland Islands had a Marine Spatial Plan that the Council had attached to their Development Plan as guidance. However, participants thought that, in the Falkland Islands, it would be more appropriate to ensure that legislation is developed at the same time as the Plan making the policies it contains legally-binding to ensure better compliance and effectiveness of management.

Another point of discussion tackled the format of the MSP Forum, with concerns raised for instance that if the Forum was too large then there could be issues of strong personalities taking over during
the meetings with some stakeholder groups not getting heard. The Shetland Islands have restricted their MPP to 20 representatives. This was agreed by the workshop participants as a good number for the Falkland Islands MSP Forum. Sub-groups with more targeted stakeholder groups could also be conducted on specific topics as needed to ensure a good engagement in the process. Public consultation of material for the Plan will then allow for a broader involvement within the community before recommendations are submitted to FIG for decision.

4.3. Roles and responsibilities in the MSP process

The workshop participants were asked to work as break-out groups and determine what roles and responsibilities the different entities represented in the MSP format should have. The consensus on roles and responsibilities was:

- **FIG Member of the Legislative Assembly (MLA):** It was unanimously agreed that the elected FIG members will have the legal responsibility for the process, the Plan and its policies. All MSP documents will be submitted to FIG Committees (Fisheries and Environmental) and to the Executive Council that will make the decision to sign-off the Plan. Participants therefore suggested that the MLA should be conferred with at the start of the process (start of the Development Phase) to determine what they are looking for as overall policies.

- **FIG Departments:** The departments will be responsible for the application of the Plan through licensing activities, best-practice guidance etc based on the MSP Plan. They will also be responsible for enforcement. Departments will be responsible to ensure the needed data are collected and provided for the MSP process (in particular for human activities but for environmental data potentially collected for specific work such as EIA etc). An FIG Department (suggested to be Fisheries Department as the Marine Officer works there) should also be responsible for the MSP process and coordinate with FIG and external actors to ensure it follows the MLA’s vision.

- **MSP Forum:** The Forum will have an advisory role under a statutory consultation. Members can have casting votes, with a consensus and majority of votes to approve motions (this will be decided and included in the Terms of Reference at the start of the Development Phase). The stakeholder groups, such as industry should also be responsible to provide the data needed for the MSP process.

- **SAERI:** SAERI can be delegated the responsibility for data collation and curation, monitoring and developing the draft Plan (including MSP Forum coordination) under a performance contract by FIG, as well as advising the Departments as needed with licensing etc. A scientific committee was also proposed to overview the MSP science program. The science should include the GIS database, geo-spatial analyses, and scientific evidence-based identification of important and at risk areas.

4.4. MSP Forum representatives

The workshop participants were then asked, in break-out groups, to list the stakeholder groups that should be represented in the MSP Forum. In general, break-out groups listed the same stakeholder groups and a consensus was reached. The MSP Forum should be made of a maximum of 20 seats for representatives of the main marine stakeholders of the Falkland Islands. The following stakeholder groups should have seats on the MSP Forum (in brackets indicate if more than one representative can seat on the MSP forum):
• Chamber of Commerce
• Community member (2)
• Falklands Conservation
• Falkland Islands Fishing Company Association (FIFCA)
• Falkland Islands Petroleum Licensees Association (FIPLA)
• Falkland Islands Tourism Board
• FIG Department of Mineral Resources (DMR)
• FIG Department of Natural Resources (DNR)
• FIG Environmental Planning Department (EPD)
• FIG Policy Unit
• Falkland Islands Yacht Club
• Fishing industry (2)
• Ministry of Defence
• Shipping industry (2)
• South Atlantic Environmental Research Institute (SAERI)
• Tourism industry
• Wildlife Conservation Society

Other groups mentioned once by break-out groups were aquaculture (but currently this is included in the commercial fishing and one of the 2 fishing industry representative could be more related to aquaculture), independent researchers and consultants, the different companies working on shipping (2 seats were allocated for shipping industry), Falkland Islands Development Corporation, FIG Legal team, recreational groups/citizen science groups (e.g. Shallow Marine Survey Group) and Falkland Islands Museum National Trust. These other stakeholder groups could be part of targeted meetings to work on specific issues directly related to their remits.

The recruitment process for representatives of the community was identified as a potential concern and this is something that should be decided carefully at the start of the Development Phase when the Terms of Reference for the MSP Forum are written.

5. Framework for MSP

The draft MSP framework that was drawn as part of the second MSP workshop and further stakeholder consultation during the Darwin Plus project steering committee meetings was presented and explained to the workshop participants. In general, the participants agreed that the framework was a good representation and summary of all the components needed for a successful MSP process and efficient Plan. One main point that the participants recommended updating was the position of stakeholder engagement which was thought to require a higher level compared to the other inputs needed and feeding in the vision and objectives. Figure 5 is the revised conceptual model of the MSP framework.

6. Recommended priorities for MSP in the Falkland Islands

6.1. Managing shipping traffic

The Darwin-Plus project provided new insights in the level of shipping traffic in and transiting through the Falkland Islands' waters from the analyses of one-year of AIS data from 3 ground stations deployed on the islands. Fishing boats account for a large part of the traffic, but there were also 220 different large cargo ships and 75 different oil tankers that operated in the waters over that year (see maps in Appendix C for more details on shipping routes). Some of these ships navigated within 2 km from Volunteer Point or the Jason Islands, and within 20 km of Beauchêne Island.
Chris Locke, the FIG marine office and harbour master, gave a presentation to introduce the current state of shipping and its management in the Falkland Islands. The existing management in place for shipping are (1) Vessel Management System (VMS) for fishing licensee boats, (2) seasonal fishing areas and closures, (3) Information Navigational Service (INS) with real-time locations from satellite AIS, to assess Stanley port control, allocation of anchorages, and port closures, and (4) class requirements for Falkland Islands flagged vessels for safety. There are currently no shipping management zones (restricted areas, speed limits etc) in the Falkland Islands. A new Marine Harbour Bill is under progress, and will be required for oil development, in particular for inshore transfers (inshore VTS, radar and assisted service, designated anchorage, exclusion zones will be required).

This presentation was followed by a Q&A session for participants to clarify the current situation:

- The VMS system is only for licensed fishing boats and the requirements is for them to take one location per day.
- There is currently no law to refuse entry to a vessel in any part of the Falkland Islands’ waters, including in Berkeley Sound. This is an issue that Chris particularly emphasised during the discussion. Vessels are asked to provide information when they enter and pass the Cape Pembroke/Volunteer Point line (number of passengers, amount of oil on board etc) but their response is voluntary.
- The Marine Harbour Bill will provide a legal power to implement shipping restriction zones within the territorial sea, in particular in inclement weather. Chris used the example of cruise ships entering potential navigational hazard areas in inclement weather; he can advise them but he does not currently have the legal powers to stop them.
A particular concern was raised by Chris in his presentation and emphasises from the Q&A session is about the lack of communication means with vessels. The Le Boréal accident in November 2015 particularly illustrated this concern as the vessel had no way of contacting the authorities and the rescue services by VHF. A network of communication system (VHF transponders) around the islands for emergency and control should be put in place.

- Any maritime traffic spatial management will have to be submitted to the International Maritime Organisation (IMO)
- Improving navigational aids was also discussed and highlighted as a requirement to facilitate accident prevention and environmental protection.
- The lack of local knowledge by the crews of the boats or ships working in or transiting through the Falkland Islands was also highlighted as an issue, in particular if vessels enter inshore waters.

The workshop participants were then asked to work in break-out groups using printed copies of layers from the MSP GIS database relevant to shipping, ecological important areas, wildlife distribution and other activities (all maps are available in Appendix C), and some blank maps of the Falkland Islands to draw on. Participants were instructed to complete some exercises as if they were now the managers in charge of the islands. They were asked to identify risks and risk areas from shipping using the maps provided and what kind of management measures they would possibly recommend to eliminate or mitigate risks.

The risks identified by participants included:
- Large vessel grounding
- Vessel collision
- Fire on-board vessel
- Mechanical breakdown of vessel
- Anchorage
- Ballast water transfer
- Dredging
- High traffic areas
- Boat traffic in difficult areas or during bad weather for shelter
- Impact of lights on seabirds
- Impact of shipping noise on marine mammals
- Oil leak during bunkering

The risk areas that participants identified as most likely to be in need of management to mitigate the risks for safety and environmental values are:
- Western coast
- Stanley Harbour
- Berkeley Sound
- Jason Islands
- Beaufche’ne Island
- Bird Island
- Other biologically sensitive areas

The management measures that were proposed by participants to mitigate the risks caused by shipping were:
- Classify vessels by size and role (different policies can apply)
- Exclusion zones for large vessels or vessels with toxic cargo
- Designated shipping lanes
• Exclusion zones as 3nm, 5nm buffers (with a priority around sensitive areas first, but a full buffer around the island was also proposed in the long term), with different buffers/rules depending on size and cargo type (although this was seen as too difficult)
• Designate “safe heavens” (also called “recommended shelter”) where boats can go to shelter in case of distress (due to weather or mechanical issues) with no-go areas and alternative areas for emergencies
• Identify risky navigational routes
• Additional navigational aids
• Anchorage sites defined (safer areas to use to minimise risk to wildlife)
• Fixed moorings to limit anchorage impacts
• Policy for ballast water exchange, with zones
• Fuel transfer policies with compulsory emergency kit (such as boom etc)
• Inspection of ships and blacklist of ships deemed unsafe
• Pre-approved routes and anchoring areas for cruise ships (with routes closed during bad weather)
• Light management plan
• Wind speed limit for bunkering activities
• Spatial emergency response plan (with pollution clean-up plan)
• Include shipping area restrictions in fishing licence conditions
• Biosecurity management plan for all international vessels (eg. first point of entry restricted)

Other principles mentioned were that high level policy definition as a start point through MSP would guide the definition of areas and make implementation easier for risk management. The topic of communication came up throughout the discussion as a major point for shipping management. Communication was also often linked with the need for improved emergency responses with portable equipment that could be quickly deployed for environmental protection.

Participants agreed that FIG should develop shipping zones as part of the MSP process for safety and environmental protection. The risk should be further assessed to understand where restricted zones should be implemented exactly. AIS data are currently saved every 3 months with a manual process and request to Sure (the data are deleted otherwise); there is therefore a need to ensure that this data acquisition is maintained in the next phase of MSP implementation for further analysis of shipping traffic, consistency across years in particular, or to detect potential increases in traffic in the future. Overall, there was also a consensus that managing shipping would increase safety, human and environmental, while providing tools for better emergency responses with enhanced collaboration across agencies.

6.2. Marine conservation

There is currently no official marine protected area in the Falkland Islands. The Falkland Islands need to determine the threats, current and future, to the marine environment, and if and what kind of management measures would be needed to ensure key areas are safeguarded and provide international recognition. Identification of key ecological marine areas and the threats that apply to them, now and in the future, is an important element of marine conservation. Part of the Darwin-Plus MSP project includes a sub-project on identifying key areas for marine megafauna (see Appendix C for a draft of the results). Other areas have also already been mapped such as offshore islands with high tussac cover (a proxy for a range of wildlife), breeding colonies of seabirds and pinnipeds, as well as important area for tourism (all maps are available in Appendix C).
The workshop participants worked in break-out group to identify some areas they thought may require protection and what values they hold. They were also prompted to think of management measures that would minimise risks.

The Jason Islands and Beaufchêne Island were consistently named when management measures were discussed. Other areas mentioned included Kidney Island, Volunteer Point, Bird Island, and New Island. Although important bird areas were seen as a primary way to classify conservation areas, it was noted that the benthic habitat should also be included in assessing the ecological importance of an area. Offshore protection areas were also mentioned for consideration (such as Burdwood Bank and the shelf break north of the islands). Management of shipping traffic as part of marine conservation measures was reiterated in this session, for many of these areas.

The link between land and marine protection was emphasised by several groups, with the need to coordinate both whenever possible (for instance for tussac islands). Private land ownership may restrict this coordination so marine protection around land already under protection (FIG, FC or WCS owned) was seen as more favourable. Criteria for designation of important areas will be developed based on international literature to have a consistent approach to key areas designation and risk assessment.

Participants identified several areas of the coastal environment where multiple values could be protected from impacts of maritime uses and development. Kidney Island was the main example given because the island and surrounding waters used for tourism, science, regular dive monitoring, school groups, and because it is a tussac island and an important breeding ground for several seabird species.

Most participants thought that protected areas, if they were well-designed, would ensure safeguarding of the key sites for environmental values. A generally-accepted idea proposed at the workshop would be that the 3nm area around the baseline of the islands (Figure 6) could be candidate as a IUCN Category VI (Protected Area with sustainable use of natural resources; see Appendix D for full description of this type of protected area). Such an MPA category requires that 75% of the area is in a relatively pristine and protected state, which is a criterion that the participants agreed should be met with the low level of current activities and restricted areas. A multi-use protected area rather than a complete ban of activities was seen best for the Falkland Islands, so is the holistic approach conferred by MSP. Therefore a clear policy framework for conservation should be considered, in particular to define what an ‘Important Marine Area’ is and to have a robust logical process in place for designation.

6.3. Berkeley Sound management needs

MSP applies for all of the Falkland Islands’ EEZ but can also expand with more detailed spatial management and policies for focal areas. Berkeley Sound was identified as one of the most used areas for maritime activities, and also hosts a range of species (such as breeding colonies of penguins and known whale hotspots, see Appendix C and E that contain all maps provided to participants during the workshop). Berkeley Sound has also been proposed as the potential site for inshore oil transfer for oil development.

An important spatial planning tool that forms part of MSP is the use of scenarios to understand what may happen in the future. This approach encourages managers and stakeholders to think more broadly about, not only current, but future issues, and provides an overview of potential threats, while identifying scenarios that managers and government would want to avoid. The workshop participants were therefore asked to work in break-out groups to build two scenario storylines of
Figure 6: Area of no commercial fishing around the Falkland Islands (a 3nm around the baseline made of a convex polygon). Areas around outer islands that were excluded from this area were recommended to be added to the 3nm from baseline, with the final area proposed as an IUCN protected area category VI.

what Berkeley Sound could look like in 15-20 years (what type of activities and level, wildlife numbers, a port etc). The groups were asked to summarise the main characteristics of each scenario and give them a title. Next, they were asked to define a potential zoning plan for each scenario to demonstrate how all the values and activities could be coordinated. They were provided with blank maps of Berkeley Sound to visualise scenarios and map potential spatial management measures that they would recommend.

Examples of the scenarios that the participants described were:

a) **Flooding the market**
- Population in Stanley doubled
- Increase in oil extraction
- Ship to ship transfers, including crude oil
- Road and rail on the coast
- Transfer pier/platform
- Diamond Cove developed as oil refinery
- Increase in tourism
- Lodges developed with wharf and boating

b) **Fracking rules the world**
- Population decrease
- Oil business pull out
- Squid stocks decreased
- Some tourism (whale watching, tours, cruise ships)

c) **Oil is ok (see Figure 7)**
- Oil development with inshore oil transfers
Figure 7: Example of management measures proposed by a break-out group for a scenario of future use of Berkeley Sound (“Oil is ok”)

Figure 8 shows another example where a clear scenario was not defined but where participants identified management areas for the protection of important social and ecological values in and around Berkeley Sound. Other potential activities mentioned in other scenarios were:

- Submarine tourism
  - Large port
  - Increase in scientific activities
  - Increase in whale and penguin numbers

- Kelp harvesting
- Aquaculture
- Renewable tide power

The exercise provided a platform for discussion. Table 3 summarises the types of management measures that were suggested during the scenario exercise.

The discussion also tackled the data limitation to understand environmental impacts of activities. Questions were raised, for instance, on whether anchoring and anchor drag have had impacts on the benthos community. There was a study conducted during winter 2015 as part of an EIA that may indicate the level of impact. Consideration of the effects of disturbance, noise and light pollution, on whales was also recommended. Due to the limited space available in Berkeley Sound, it was recommended that a study on how many ships could physically fit in the Sound (accounting for safety and environmental features) be conducted, with different buffer zones and exclusion zones around ships.

A focus of the discussion included the need for immediate start on the development process for a Vessel Traffic System for Berkeley Sound. VTS will be required by the oil industry for inshore oil transfers. Within 18 months, there needs to be a plan agreed for moving towards implementing VTS, with financial commitment needed. MSP can provide tools for this process.
Figure 8: Example of management measures suggested by one of the break-out groups for Berkeley Sound. Note in particular the exclusion areas approximately 2km buffer around Volunteer Point, Kidney and Cochon Islands, including the area up to the main island coast.

Table 3: Main management measures mentioned by participants to ensure safe and sustainable use of Berkeley Sound in the future

<table>
<thead>
<tr>
<th>Zone-base management</th>
<th>Practice-based management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusion zones around ecological/cultural important sites (Kidney Cove, Island and Cochon, Volunteer Point)</td>
<td>Oil spill response with emergency gear in place at the mouth of the sound (shore facility, booms etc)</td>
</tr>
<tr>
<td>Vessel exclusion zones around oil transfers, bunkering ships, with chase vessel</td>
<td>VTS (Vessel Traffic System) in place</td>
</tr>
<tr>
<td>Fixed moorings for reefer/bunkering</td>
<td>Weather limits for bunkering, oil transfers</td>
</tr>
<tr>
<td>Transit/shipping lane (channel)</td>
<td>Flag state requirements</td>
</tr>
<tr>
<td>Speed limit zones</td>
<td>Crew competency vetting by harbour authority</td>
</tr>
<tr>
<td>Designated anchoring areas</td>
<td>On-vessel emergency response approved facility</td>
</tr>
<tr>
<td>Pilotage areas</td>
<td>Cruise ship ban</td>
</tr>
<tr>
<td>Aquaculture exclusion area (all sound)</td>
<td></td>
</tr>
</tbody>
</table>

7. **MSP: Towards ecosystem-based management**

The ultimate goal of the MSP process is to lead to an ecosystem-based management, where all activities are coordinated to ensure sustainable development where social and environmental values and ecosystem services provided by the marine environment are safeguarded. More than in the terrestrial environment, the interconnectivity between ecological functions and processes, features,
and resources in the marine environment are extensive, complex and wide-ranging (Halpern et al., 2015). Impacts on a single natural feature may impact a large part of the system, and in turn, the values that the sea provides to the local community. Consequently, MSP aims to provide holistic management of the marine ecosystems, providing a platform for managing connectives between processes, features and values.

7.1. Inter-connectivity in the marine environment: Trophic relationship example

Trophic cascade is one example of interconnectivity in the marine environment where human disturbance can trigger responses and impacts for a wide range of species and habitats, with potential disruption in the ecological functions of marine ecosystems. An interesting and informative example can be found in the North Pacific waters of Alaska. It is likely that human-induced changes on the oceanic ecosystems (overfishing, whale depletion) there have started a suite of impacts through the trophic cascade that also led to major effects on the coastal marine and terrestrial environments. Detailed analyses of this trophic cascade can be found in (Anthony, Estes, Ricca, Miles, & Forsman, 2008; Estes, Tinker, Williams, & Doak, 1998). In summary, orcas (Orcinus orca) changed their diet due to the reduced amount of suitable pelagic prey, and increased their predation on sea otters (Enhydra lutris). Sea otter population declined by 90% of their original population size, which led to an increase in a species of sea urchin (the otter’s preferred prey items) that feeds exclusively on kelps. With the explosion in numbers of sea urchins (7 times higher), the kelp density in coastal zone diminished to less than 10% of original density. Kelp beds are a key component of the coastal ecosystem, including as a nursery habitat for juvenile oceanic fish and, therefore, the coastal ecosystems were disrupted, with also reduction of habitat for juvenile oceanic fish to grow. The trophic cascade linked the oceanic to the coastal habitats (with negative feedback loops via impact on nursery habitat for fish), but also to terrestrial coastal habitat as scientists also found that the decrease in sea otter populations affected bald eagles (Haliaeetus leucocephalus) via indirect effects, with diet shift from coastal marine community prey to seabirds (this is turn affected some breeding populations of seabirds).

The Alaskan example illustrates how the interconnectivity of the marine environment can lead to impacts across a wide range of species and habitats. This is the reason why MSP develops methodology to ensure holistic management and improve our understanding of how human development may directly and indirectly affect the environment and the ecosystem services it provides to local and global community. Cumulative impacts of different pressures from human activities enhanced such effects. In the case of the example above, mis-management of two human activities affected one of these activities (commercial fishery) directly due to overfishing but also indirectly as the reduction of nursery habitat in coastal waters meant that the fish stocks have recovered very slowly, if at all. Impacts could have also potentially affected the tourism or coastal customary fisheries, and overall the well-being of local coastal communities.

7.2. Cumulative impacts and benefits: Interconnectivity in the marine system

The Falkland Islands’ economy relies on the marine environment, and the marine environmental, economic and cultural values are all interlinked. It is therefore important to manage it in a coordinated manner to account for direct and indirect links, and cumulative impacts through MSP. The participants were given an exercise where they were asked, in sub-groups, to focus on one marine activity (a value) and to draw conceptual models as per the example given below for a cultural value: ‘beach walking’ as in Figure 9.
Each sub-group was given a marine activity (commercial fishing, cruise ship tourism, shipping, and diving) and asked to identify the benefits (financial, well-being, etc), the risks that the activity may cause to other activities and values, and what impacts other activities may cause to the activity and its benefits. Conceptual models provided a visual way of summarising this information. Figure 10 shows the conceptual models that each sub-group produced to illustrate the complexity and the relationships between activities, values, and impacts. Blue elements are activities (values); green and white elements are those needed to ensure the activity is successful or that can increase the value of the activity; red and black are the elements that can negatively affect the value; and in red and white, the impacts that the activity can have on other activities and values. These draft models can be used as a basis to develop full complete models to better understanding all the relationships and identifying the key cumulative impacts for improving MSP analyses and management in the Development Phase as a priority analysis as a decision-support tools and for EIA facilitation.

The following points were also made during discussions following presentations of the models:

- Legislation for a particular value (such as on wildlife) will also be connected to other values and activities (such as shipping), so there are also relationships at that level.
- The relationship strength should be quantified as for instance, participants felt that the construction of an oil terminal in Stanley would likely have a much higher impact on tourism than a decline in penguin numbers.
- There are clear links with social impacts of maritime activities and development, such as the increased pressures on services; this needs to be accounted for in the MSP process.
- Maritime safety is integral to all activities and values
- These models can also be used to look at scenarios of future development and their impacts (for instance, an activity may not be currently extensive but its increase may then create significant impacts).
Figure 10: Conceptual models developed by workshop participants to illustrate the complexity of interconnectivity between marine values, activities, and impacts (top focus on shipping, bottom, focus on cruise ship tourism).
Figure 10 –continued (top focus on commercial fishing, bottom, focus on diving).
Climate change was also mentioned in some models (not included in Figure 10) and in the discussion as something that would also cumulatively impact on activities, resources and values. Climate change is, however, not something that can be managed through MSP, but, it can be incorporated in analyses to ensure management measures include necessary adaptations for the changes it will bring to the marine ecosystems, and consequences on natural resources.

7.3. Fishery management: Towards ecosystem-based management for MSP

The commercial fishing industry has been managed by FIG with a quota management system (Barton, 2002) that is based on stock assessment analyses conducted by several fishery scientists since 1986. Dr Michaël Gras, FIG fishery scientist, presented the different commercial stocks exploited and managed under this quota management. He highlighted the current single species stock assessment methodology, and how the lack of multi-species models could hinder the sustainable exploitation of stocks, in particular for the finfish fishery which is a multi-species licence.

In the context of MSP and its ultimate aim of holistic ecosystem-based marine management, developing tools to move towards a multi-species, first, then later, ecosystem-based fishery management was seen as an important step for the Falkland Islands. Along with managing commercial species, such an approach will also improve our understanding of the interconnections between the commercial species and the environment (providing models to predict climate change impacts), as well as improving data and models on impacts of bycatch on non-commercial species (fish but also marine mammals and seabirds for instance) taking into account trophic relationships of the entire ecosystem.

8. Proposed format for the first Falkland Islands Marine Spatial Plan

FIG has committed to producing the first Falkland Islands Marine Spatial Plan following the Initiation Phase provided by the Darwin-Plus project. The MSP process produced a range of tools and identified critical analyses to be conducted, as well as data gaps. The MSP process is continuous, but in order to define policies and provide decision-support tools for managers, a Marine Spatial Plan needs to be produced with clear policies and detailed states of the marine environment (and then regularly revised based on the monitoring, improved analyses and new data obtained through the MSP process).

The Shetland Islands Marine Spatial Plan was presented by Rachel Shucksmith from the NAFC Marine Centre. The content of this Plan can be found in Appendix F. The full plan is available online at https://www.nafc.uhi.ac.uk/research/msp/simsp/simsp. The NAFC Marine Centre led the development of the 1st edition of this Plan, with overview of the process from the Coastal Zone Manager for the Shetland Islands. It brought existing data and maps together with policies, and was made of two documents: the plan (policies) and the maps.

The workshop participants were asked in sub-groups to identify the sections, elements and key policies that the Falkland Islands Marine Spatial Plan should contain, using the Shetland Islands Plan as a basis for discussion, along with the different topics and management priorities discussed during the workshop.

It was almost unanimously agreed that a format based on the Shetland Islands Plan would be useful and a good basis, including for identification of knowledge gaps, and examples of policy statements that can be used as a start point for the Falkland Islands. The sections suggested overall were:
a) Introduction  
   - Geographic context and coverage  
   - Current state of marine waters  
   - Purpose of the Plan  
   - Current situation  

b) Strategic vision  
   - Vision  
   - Objectives  
   - Strategic framework  

c) MSP Policies – priorities  
   - General policies  
   - Industry-specific policies (shipping)  
   - Area-specific policies (Berkeley Sound, Stanley Harbour)  
   - Activity-specific policies (emergency shelter and responses, maritime communication, oil spill readiness)  

d) Current management, licensing, regulations and legislation  

e) Mechanisms and implementation of MSP  
   - Application, regulation and enforcement  
   - Land-sea spatial management coordination  
   - Advisory group: The MSP Forum  
   - Resourcing and funding  

f) Policy framework  
   - Clean and safe (shipping, safety hotspots, VTS, pollution, biosecurity)  
   - Productive (infrastructures)  
   - Healthy and diverse (recreational boating and water sports, international and national areas of biodiversity importance, wrecks)  

g) Industry specifics  
   - Policies and expectations for each industry described  
   - Best-practice when no policy or legislation in place  
   - Infrastructure required (jetties, deep water port, VTS)  

h) Monitoring and review  

Other points mentioned in relation to the development of the plan were:  
- Ensuring that all policies are coordinated so they do not conflict, and if there are some conflicts created, there should be a priority order (for instance safety as a priority).  
- It was suggested that the FIG Department responsible for the Plan should be the Natural Resources, Fisheries, and/or Environmental Planning Departments  
- Biosecurity is one of the top threats identified in the FIG Biodiversity Framework; there are currently limited policies in place to prevent issues, in particular with spatial and ecological sensitivity considerations. It was recommended to include such policy to be developed with the expertise of the biosecurity office (eg ballast exchange).  
- Policies should not be aspirations, and careful definitions are required to avoid this common mistake  

9. Summary of workshop outcomes  

A range of topics on MSP were presented, explained and discussed through the 3-day workshop. This workshop was also the initial stakeholder consultation on what format MSP should have in the Falkland Islands. Using the data and mapping currently available from the outputs of the Darwin-Plus MSP project, and the example of the Shetland Islands MSP in particular, participants identified a number of priorities and needs that MSP should fill.
Some of the main identified recommendations are that MSP should, in the first instance, focus on facilitating EIA process by streamlining policies and collating needed information such as maps, on defining criteria for designation of ecological and cultural important areas, on shipping management and legislation (in particular around the Jason Islands, Beauchene and in Berkeley Sound), on improving and facilitating maritime emergency responses and safety, and on preventing the risk from introduction or spread of marine invasive species (biosecurity).

The possibility of working toward the declaration of the 3nm buffer area as an MPA IUCN Category VI in an MSP framework was seen as a potential to officialise an area already under protection from commercial fishing and with minimal human activities. This area also contains key sites of ecological, cultural and economic values. There is currently no industrial scale commercial fishing in this zone, and the small scale activities within that zone can be managed sustainably with appropriate policies and zoning.

Participants were reminded throughout the workshop of the difference between the process of MSP and the Marine Spatial Plan:

- **Marine Spatial Planning**: A continuous process of stakeholder engagement, political commitment, gathering and analysing of spatial data, monitoring, identification of new or potential future issues and opportunities from changes in the marine environment and socio-economic factors. This process provides the tools to produce regular Marine Spatial Plan.

- **The Marine Spatial Plan**: A written statement of the snapshot of uses and values of the marine environment and policy at a point in time that is revised regularly (e.g. every 5 years) to ensure maps and policies are updated to reflect and address the up-to-date maritime activities as provided by the Marine Spatial Planning process.

The MSP process applies to the entire EEZ of the Falkland Islands, but the Plan will address policies and management in two areas: Inshore (within the 12nm territorial sea) and Offshore (the rest of the EEZ). This is to reflect a different legislative status and therefore the type of management measures that can be used. Offshore areas within the oceanic marine environmental are also more dynamic and, therefore, require a different approach to spatial planning.

The format of MSP in the Falkland Islands will be based on the Shetland Islands with some adjustments to local conditions due to the absence of higher level policies for MSP and marine conservation currently in place (compared to the EU, UK and Scottish policies that apply for the Shetland Islands). It is recommended that the first edition of the Marine Spatial Plan be kept small and simple, with sections to detail the existing uses and values of the sea, the new policies, the MSP mechanisms, and industry-specific policies and best-practice guidelines when legislation does not exist. It should also include a section on monitoring to facilitate review every 5 years, and determine whether the objectives and targets are being met.

**10. Next phase of MSP Implementation the Development Phase**

Based on the discussions and recommendations from this third MSP workshop for the Falkland Islands, the next phase of MSP Implementation can now start to ensure continuity in the MSP process. The next phase will lead to the production of the first Falkland Islands Marine Spatial Plan while ensuring implementation of the MSP process within FIG.

The recommended work for this next phase is to have an FIG Department taking responsibility for the application of the Plan and delegating the role of developing the Plan to SAERI, including the
coordination of the MSP Forum. A steering committee made of representatives of this Department, the Environmental Planning Department and the Policy Unit will form a steering committee that will have overview of the phase.

Acknowledgments

I would like to thank all the workshop participants for taking the time to join, for their enthusiasm and interest in MSP, and for their awareness of the need to ensuring the sustainable use and development of the Falkland Islands’ marine environment. Jude, Rachel, Emily, Michael, Chris, and Karen prepared and gave some very useful presentations during different sessions. Many thanks to Cdr Bill Dawson for offering and organising the day on the HMS Clyde and to Lt Cdr Steve Bamfield and Lt James Young for their great hospitality on-board, and the field trip to Berkley Sound; this was the best first-hand experience the workshop participants could have had, with the bunkering ships, fishing boats, great scenery, and whales! Sammy Hirtle provided excellent logistic assistance (and found so much great food!) and Emma Beaton took many crucial notes (with beautiful hand writing!).
References


## Appendix A
### Workshop agenda

**Tuesday 5 April – 8.30 to 16.30 – Chamber of Commerce**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.30</td>
<td>Arrival – tea and coffee</td>
<td></td>
</tr>
<tr>
<td>9.00</td>
<td>Start</td>
<td></td>
</tr>
<tr>
<td>9.00-9.10</td>
<td>Forewords/opening address</td>
<td>MLA Michael Poole</td>
</tr>
<tr>
<td>9.10-9.30</td>
<td>MSP project update and aims of workshop</td>
<td>Amélie</td>
</tr>
<tr>
<td><strong>Session 1: Targets of MSP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.30-9.45</td>
<td>Targets and their initiatives in other UKOTs</td>
<td>Judith Brown</td>
</tr>
<tr>
<td>9.45-10.30</td>
<td>Dissecting the objectives</td>
<td>Breakout groups + presentation</td>
</tr>
<tr>
<td>10.30-10.50</td>
<td><strong>Smoko</strong></td>
<td></td>
</tr>
<tr>
<td>10.50-11.20</td>
<td>Eliciting targets</td>
<td>Brainstorm</td>
</tr>
<tr>
<td>11.20-12.30</td>
<td>Formulating and assessing targets</td>
<td>All</td>
</tr>
<tr>
<td>12.30-13.15</td>
<td><strong>Lunch</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Session 2: Format of MSP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.15-13.45</td>
<td>The Scottish example and discussion</td>
<td>Rachel Shucksmith</td>
</tr>
<tr>
<td>13.45-15.15</td>
<td>The proposed format for MSP and discussion</td>
<td>Amélie</td>
</tr>
<tr>
<td>15-15.30</td>
<td><strong>Smoko</strong></td>
<td></td>
</tr>
<tr>
<td>15.30-16.30</td>
<td>Operations, actors and roles</td>
<td>Breakout groups + presentation</td>
</tr>
<tr>
<td>16.30</td>
<td>End</td>
<td></td>
</tr>
<tr>
<td>17.30-18.30</td>
<td><strong>Public talk</strong></td>
<td>Rachel Shucksmith</td>
</tr>
<tr>
<td>19.00</td>
<td>Dinner at the Malvina restaurant</td>
<td>For international visitors</td>
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</table>
### Appendix A - continued

**Workshop agenda**

**Wednesday 6 April – 8.30 to 16.30 – FIDF Hall**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>8.30</td>
<td>Arrival – tea and coffee</td>
</tr>
<tr>
<td>9.00</td>
<td>Start</td>
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**Session 1: MSP solutions for specific activities**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00-9.20</td>
<td>Current management context of individual activities: fisheries, oil licenses</td>
</tr>
<tr>
<td>9.20-9.45</td>
<td>Shipping management in the Falklands</td>
</tr>
<tr>
<td>9.45-10.45</td>
<td>Shipping and boating traffic in the Falklands</td>
</tr>
<tr>
<td>10.45-11.00</td>
<td>Smoko</td>
</tr>
<tr>
<td>11.00-11.15</td>
<td>Mapping valued areas for multiple benefits: ecological, tourism, cultural</td>
</tr>
<tr>
<td>11.15-12.00</td>
<td>Marine conservation in the Falklands</td>
</tr>
<tr>
<td>12.00-13.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.00-13.15</td>
<td>Oil management policies in the UK MSP</td>
</tr>
<tr>
<td>13.15-13.45</td>
<td>MSP and oil operations in the Falklands</td>
</tr>
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**Session 2: Berkeley Sound case study**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.45-14.15</td>
<td>Maps of values and activities in Berkeley Sound</td>
</tr>
<tr>
<td>14.15-14.30</td>
<td>Smoko</td>
</tr>
<tr>
<td>14.30-15.30</td>
<td>Scenarios of future activities in Berkeley Sound and zoning/practice options</td>
</tr>
<tr>
<td>15.30-16.30</td>
<td>Presentations of scenarios and discussion on MSP benefits</td>
</tr>
<tr>
<td>16.30</td>
<td>End</td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>08:30-08:45</td>
<td>Embark the ship + safety briefing</td>
</tr>
<tr>
<td>09:00-09:30</td>
<td>Sail out of Port Stanley, sightseeing</td>
</tr>
<tr>
<td><strong>Session 1: MSP Framework</strong></td>
<td></td>
</tr>
<tr>
<td>09:30-10:00</td>
<td>MSP framework and discussion</td>
</tr>
<tr>
<td>10:00-11:15</td>
<td>Interconnectivity in the marine environment</td>
</tr>
<tr>
<td>11:15-11:45</td>
<td>Towards ecosystem-based marine management</td>
</tr>
<tr>
<td>11:45-12:15</td>
<td>Guided ship tour</td>
</tr>
<tr>
<td>12:15-13:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Coastal tour of Berkeley Sound</td>
</tr>
<tr>
<td><strong>Session 2: MSP Plan and implementation</strong></td>
<td></td>
</tr>
<tr>
<td>14:00-14:30</td>
<td>The Shetland Island MSP Plan</td>
</tr>
<tr>
<td>14:30-15:00</td>
<td>What should be in the Plan?</td>
</tr>
<tr>
<td>15:00-15:15</td>
<td>Legal status of the Plan and mechanisms</td>
</tr>
<tr>
<td>15:15-15:45</td>
<td>Monitoring, enforcement and financial considerations</td>
</tr>
<tr>
<td>15:45-16:30</td>
<td>Summary of recommendations from this workshop</td>
</tr>
<tr>
<td>16:30-17:00</td>
<td>Sail back to Port Stanley, sightseeing</td>
</tr>
<tr>
<td>17:00</td>
<td>Disembark the ship</td>
</tr>
<tr>
<td>19:00</td>
<td>Tapas at the Narrows, with closing address</td>
</tr>
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### Appendix B

**Workshop participants**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Participation in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam Cockwell</td>
<td>Workboat Services</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Amélie Augé</td>
<td>SAERI – workshop facilitator</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Andy Stanworth</td>
<td>Falklands Conservation</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Chris Locke</td>
<td>Fisheries Department - Marine Officer</td>
<td>Day 1*, 2, 3</td>
</tr>
<tr>
<td>David Blockley</td>
<td>SAERI</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Emily Hancox</td>
<td>Minerals Resources/Environmental Committee</td>
<td>Day 2, 3</td>
</tr>
<tr>
<td>Emma Beaton</td>
<td>SAERI – note-taker</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Graham Harris</td>
<td>World Conservation Society</td>
<td>Day 1*, 2, 3</td>
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<tr>
<td>Grant Munro</td>
<td>Austral Biodiversity</td>
<td>Day 1, 2</td>
</tr>
<tr>
<td>Jackie Cotter</td>
<td>FIFCA</td>
<td>Day 1, 2, 3</td>
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<tr>
<td>Joost Pompert</td>
<td>Fisheries Department - Scientist</td>
<td>Day 1</td>
</tr>
<tr>
<td>Judith Brown</td>
<td>Ascension Island Government - Fisheries</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Karen Hall</td>
<td>JNCC</td>
<td>Day 1, 2, 3</td>
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<tr>
<td>Martin Mendez</td>
<td>World Conservation Society</td>
<td>Day 1*, 2, 3</td>
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<tr>
<td>Michael Gras</td>
<td>Fisheries Department - Scientist</td>
<td>Day 1, 2, 3</td>
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<tr>
<td>Michael Poole</td>
<td>Member of the Legislative Assembly</td>
<td>Day 1*, 3</td>
</tr>
<tr>
<td>Nick Rendell</td>
<td>Environmental Planning Department</td>
<td>Day 1, 3</td>
</tr>
<tr>
<td>Paul Brickle</td>
<td>SAERI</td>
<td>Day 1*, 2*, 3</td>
</tr>
<tr>
<td>Pippa Christie</td>
<td>FIPLA</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Rachel Shucksmith</td>
<td>University of Highlands and Islands</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Roddy Cordeiro</td>
<td>Mineral Resources Department</td>
<td>Day 1, 3</td>
</tr>
<tr>
<td>Ross James</td>
<td>Natural Resources - Biosecurity Officer</td>
<td>Day 1, 2, 3</td>
</tr>
<tr>
<td>Roy Summers</td>
<td>Sulivan Shipping</td>
<td>Day 2, 3</td>
</tr>
<tr>
<td>Sally Poncet</td>
<td>FI Yacht Club/Beaver Island Trust</td>
<td>Day 1*, 2</td>
</tr>
<tr>
<td>Sammy Hirtle</td>
<td>SAERI – workshop logistics</td>
<td>Day 1, 2, 3</td>
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<tr>
<td>Steve Bamfield</td>
<td>Royal Navy</td>
<td>Day 3*</td>
</tr>
<tr>
<td>Tim Martin</td>
<td>FIPLA</td>
<td>Day 1, 2</td>
</tr>
<tr>
<td>Tom Blake</td>
<td>RBC Ltd</td>
<td>Day 1, 2, 3</td>
</tr>
</tbody>
</table>

*indicates partial attendance for that day
Appendix C
Maps provided to workshop participants for shipping and conservation exercises (for metadata details, check the MSP GIS database online)

TUSSAC ISLAND - % Cover

SOUTHERN GIAN PETREL NEAR-SHORE USE
(% Breeding pairs, rafting areas near breeding colonies)
Appendix C - continued

BLACK-BROWED ALBATROSS NEAR SHORE USE
(% Breeding pairs, rafting areas near breeding colonies)  

SOUTHERN SEA LION NEAR SHORE USE
(% population, areas near breeding colonies)
Appendix C - continued

INSHORE WHALE HOTSPOTS (Number of sightings per km²)

MARINE MEGAFUANA KEY AREAS (Index of intensity of use) DRAFT
Appendix C - continued

PLEASURE BOATING (Frequency of use)

HISTORICAL COASTAL VALUED AREA (Number of points given)
Appendix C - continued

NATURAL BEAUTY COASTAL VALUED AREA
(Number of points given by interviewees)

SEASONAL FISHING CLOSURE AREAS – SPAWNING GROUNDS
Appendix C - continued

SEASONAL FISHING LICENSE AREAS

LISTED ENVIRONMENTAL AREAS
Appendix C - continued

SHIPPING ROUTES (May 2014-2015)  HUMAN ACTIVITIES

ANCHORAGE AREAS (Number of boats over one year)  HUMAN ACTIVITIES
Appendix C - continued

FISHING ACTIVITIES (vessel locations when not travelling)  HUMAN ACTIVITIES

FISHING BOAT SHELTERING AREAS (above zoomed-in)  HUMAN ACTIVITIES
Appendix C - continued

FISHING CATCH – TOOTHFISH (% catch over 10 years)  

HUMAN ACTIVITIES

FISHING CATCH – LOLIGO (% catch over 10 years)  

HUMAN ACTIVITIES
Appendix C - continued

FISHING CATCH – ILLEX (% catch over 10 years)  

HUMAN ACTIVITIES

FISHING CATCH – GRENADIER (% catch over 10 years)  

HUMAN ACTIVITIES
Appendix C - continued

SEABED GEOMORPHOLOGY

BATHYMETRY (Depth, in metre)
Appendix C - continued

SUMMER SEA SURFACE TEMPERATURE (in degree Celsius)  

SUMMER PRIMARY PRODUCTION (Chlorophyll a concentration in mg/m³)
Appendix D
Description of IUCN Protected Areas Category VI
(Reproduced from http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/gpap_category6/)

Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

Primary objective

To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.

Other objectives

- To promote sustainable use of natural resources, considering ecological, economic and social dimensions;
- To promote social and economic benefits to local communities where relevant;
- To facilitate inter-generational security for local communities' livelihoods – therefore ensuring that such livelihoods are sustainable;
- To integrate other cultural approaches, belief systems and world-views within a range of social and economic approaches to nature conservation;
- To contribute to developing and/or maintaining a more balanced relationship between humans and the rest of nature;
- To contribute to sustainable development at national, regional and local level (in the last case mainly to local communities and/or indigenous peoples depending on the protected natural resources);
- To facilitate scientific research and environmental monitoring, mainly related to the conservation and sustainable use of natural resources;
- To collaborate in the delivery of benefits to people, mostly local communities, living in or near to the designated protected area;
- To facilitate recreation and appropriate small-scale tourism.

Distinguishing features

- Category VI protected areas, uniquely amongst the IUCN categories system, have the sustainable use of natural resources as a *means* to achieve nature conservation, together and in synergy with other actions more common to the other categories, such as protection.
- Category VI protected areas aim to conserve ecosystems and habitats, together with associated cultural values and natural resource management systems. Therefore, this category of protected areas tends to be relatively large (although this is not obligatory).
- The category is not designed to accommodate large-scale industrial harvest.
Appendix D - continued

- In general, IUCN recommends that a proportion of the area is retained in a natural condition,\(^7\) which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds; IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas.

**Role in the landscape/seascape**

- Category VI protected areas are particularly adapted to the application of landscape approaches.
- This is an appropriate category for large natural areas, such as tropical forests, deserts and other arid lands, complex wetland systems, coastal and high seas, boreal forests etc. – not only by establishing large protected areas, but also by linking with groups of protected areas, corridors or ecological networks.
- Category VI protected areas may also be particularly appropriate to the conservation of natural ecosystems when there are few or no areas without use or occupation and where those uses and occupations are mostly traditional and low-impact practices, which have not substantially affected the natural state of the ecosystem.

**What makes category VI unique?**

Allocation of category VI depends on long-term management objectives and also on local specific characteristics. The following table outlines some of the main reasons why category VI may be chosen in specific situations *vis-à-vis* other categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>Category VI differs from the other categories in the following ways:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category Ia</td>
<td>Category VI protected areas do conserve biodiversity, particularly at ecosystem and landscape scale, but the aim would not be to protect them strictly from human interference. Although scientific research may be important, it would be considered a priority only when applied to sustainable uses of natural resources, either in order to improve them, or to understand how to minimize the risks to ecological sustainability.</td>
</tr>
<tr>
<td>Category Ib</td>
<td>Category VI protected areas in certain cases could be considered close to “wilderness”, however they explicitly promote sustainable use, unlike the situation in category Ib wilderness areas where such use will be minimal and incidental to conservation aims. They also contribute to the maintenance of environmental services, but not only by exclusive nature conservation, as the sustainable use of natural resources can also contribute to the protection of ecosystems, large habitats, and ecological processes.</td>
</tr>
<tr>
<td>Category II</td>
<td>Category VI protected areas aim to conserve ecosystems, as complete and functional as possible, and their species and genetic diversity and associated environmental services, but differ from category II in the role they play in the promotion of sustainable use of natural resources. Tourism can be developed in category VI protected areas, but only as a very secondary activity or when they are</td>
</tr>
</tbody>
</table>

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MSP Falkland Islands: Framing the process

51
part of the local communities' socio-economic strategies (e.g., in relation to
ecotourism development).

### Appendix D - continued

| Category III | Category VI protected areas might include the protection of specific natural or cultural features, including species and genetic diversity, among their objectives, whenever the sustainable use of natural resources is also part of the objectives, but they are more oriented to the protection of ecosystems, ecological processes, and maintenance of environmental services through nature protection and promotion of management approaches that lead to the sustainable use of natural resources. |
| Category IV | Category VI protected areas are more oriented to the protection of ecosystems, ecological processes, and maintenance of environmental services through nature protection and promotion of the sustainable use of natural resources. While category IV protected areas tend to prioritize active management, category VI promotes the sustainable use of natural resources. |
| Category V | Category V applies to areas where landscapes have been transformed as a result of long-term interactions with humans; category VI areas remain as predominantly natural ecosystems. The emphasis in category VI is therefore more on the protection of natural ecosystems and ecological processes, through nature protection and promotion of the sustainable use of natural resources. |

### Issues for consideration

- Protection of natural ecosystems and promotion of sustainable use must be integrated and mutually beneficial; category VI can potentially demonstrate best management practices that can be more widely used.
- New skills and tools need to be developed by management authorities to address the new challenges that emerge from planning, monitoring and managing sustainable use areas.
- There is also need for development of appropriate forms of governance suitable for category VI protected areas and the multiple stakeholders that are often involved. Landscape-scale conservation inevitably includes a diverse stakeholder group, demanding careful institutional arrangements and approaches to innovative governance.
Appendix E
Maps provided to workshop participants for the Berkeley Sound exercise (for metadata details, check the MSP GIS database online)

Berkeley Sound with in green: Terrestrial Nature Reserves; red stars: location of breeding colonies of seabirds; yellow star: location of breeding colony of fur seals; blue dots: locations of ships over one year; pink line: Concordia Bay route; and bathymetry in background.

Berkeley Sound, now displayed: red lines: all tanker routes across one year; in orange: all cargo routes over one year
Berkeley Sound, now displayed: Potential core foraging areas of rockhopper penguins from extrapolation of actual foraging area from 2 colonies.

Berkeley Sound, now displayed: Top left: pleasure boating (in green favoured area, in yellow, used area and in red, inaccessible coast), and Top right: Natural beauty cultural values (from yellow, low, to red, high); and Bottom: Anchorage areas (from low in yellow, to high in dark purple).
Appendix F
Content of the Shetland Islands Marine Spatial Plan

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