Outer Hebrides Inshore Fisheries Group

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ACKNOWLEDGEMENTS

Archie Campbell, Chairman of the Outer Hebrides Inshore Fisheries Group, would like to thank all those involved in the formation of the Fisheries Management Plan for the area. In particular, all those that have given time to attending both Executive Committee and Advisory Group meetings.

Particular thanks to Anne McLay and the Marine Scotland Science Inshore Team for their contribution to the science background of the Plan and to Roddy McMinn and his colleagues at Scottish Natural Heritage for their environmental input to the Plan. The Marine Scotland Statistics Department, the Scottish Government GIS Team and Marine Scotland Compliance for providing valuable information.

Acknowledgement is also made to Comhairle Nan Eilean Siar, Scottish Natural Heritage and Scottish Environment Agency for providing meeting rooms with video and telephone conferencing facilities, to enable members to participate in meetings without losing valuable travel time and incurring travel costs.

Whilst agreement couldn’t be reached on all the issues raised at Executive Committee meetings, the Chairman would like to thank all members for reaching consensus on a wide range of issues that will improve future management of inshore fisheries that will provide the foundations for a more profitable and sustainable industry. The chairman is grateful for the work of the IFG Coordinator, Duncan MacInnes, whose knowledge of the industry coupled with his patience and negotiating skills has been crucial to the construction of the management plan.

Finally, thanks to the many fishermen who attended the public meetings at Barra, Uist, Harris and Lewis, to discuss the Management Plan and the issues raised at those events have been included in the final version of the Management Plan.
EXECUTIVE SUMMARY

The Outer Hebrides Inshore Fisheries Group (OHIFG) is one of six pilot Inshore Fisheries Groups (IFGs) which were established by the Scottish Government. The Strategic Framework for Inshore Fisheries in Scotland identified the need for more localised management of inshore fisheries around Scotland and recommended the formation of Inshore Fisheries Groups.

The remit of the IFGs is to engage with all sectors of the catching sector that have vessels fishing within the IFG area and to develop management measures that will make the industry more profitable, sustainable and well managed. An Executive Committee comprising of catching sector representatives, an independent Chairman and a Co-ordinator develop a Fisheries Management Plan for the area, assisted by an Advisory Group of stakeholders from Government Agencies and a wide range of other Organisations with an interest in the Marine Environment.

All Management Plans will be considered by the Scottish Inshore Fisheries Advisory Group (SIFAG) and will be subject to a Strategic Environmental Assessment (SEA) before Ministerial approval and future implementation.

Priority has been given, within the Management Plan, to address management measures for improving the shellfish stocks of most economic importance to the inshore fleet. A number of potential new fisheries could be developed and the various stakeholders will consider the most appropriate way forward for the sustainable development for those fisheries. Consideration has been given to address the need for additional amendments and removal of current unnecessary prohibitions within the Inshore Act.

The area covered by the OHIFG is an area in the Minches and Sea of the Hebrides bordering with the North West IFG in the North and with Mull and the Small Isles IFG in the South. The area to the West of the Hebrides following the 6 nautical mile fishery limit and a 6 mile radius around St Kilda, Flannan Isles, North Rona and Sula Sgeir.

The characteristics of the Outer Hebrides clearly show the significant importance of the shellfish sector to the inshore fleet operating within inshore waters around the Outer Hebrides. Whilst pelagic and white fish fisheries used to be of importance within inshore waters, migratory patterns for pelagic species and restrictive catch composition rules coupled with reduced quota allocations for white fish, has now resulted in minimal effort being directed at those fisheries.
An increasing number of renewable energy companies are showing a keen interest in developing wave and tidal projects to the west of the Hebrides and it’s of paramount importance that the interests of the fishing industries are protected. The Outer Hebrides Inshore Fisheries Group is represented on the various Renewable Groups that will be discussing all future developments of marine renewables within the inshore area.

Implementation of the Management Plan will require amendments to existing legislation for some of the management measures. Other measures can be progressed with improved data collection from new logbooks returns from inshore fishermen. Considerable financial support from both Comhairle Nan Eilean Siar (CNES) and Highlands and Islands Enterprise (HIE) has been of significant benefit to the inshore industry over the past number of years. Continued support from the various industry/government stakeholders coupled with assistance from European Funds will be required to progress the other measures to ensure that sustainable inshore fisheries are maintained to protect the future interests of the fragile communities that are permanently dependent on fisheries.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>9</td>
</tr>
<tr>
<td>2. Background to Inshore Fisheries Groups</td>
<td>10</td>
</tr>
<tr>
<td>2.1 Scope of Outer Hebrides Inshore Fisheries Group</td>
<td>11-13</td>
</tr>
<tr>
<td>3. Structure of the IFG</td>
<td>14</td>
</tr>
<tr>
<td>3.1 Membership and procedures</td>
<td>14-15</td>
</tr>
<tr>
<td>3.2 Consultation</td>
<td>16</td>
</tr>
<tr>
<td>4. Characteristics of the area</td>
<td>17</td>
</tr>
<tr>
<td>4.1 Key fisheries</td>
<td>18-20</td>
</tr>
<tr>
<td>4.2 Fishing activity</td>
<td>20-21</td>
</tr>
<tr>
<td>4.3 Processing</td>
<td>21</td>
</tr>
<tr>
<td>4.4 Live Shellfish</td>
<td>22</td>
</tr>
<tr>
<td>4.5 Ports and Services</td>
<td>23-24</td>
</tr>
<tr>
<td>4.6 Regulations and Legislation</td>
<td>24-27</td>
</tr>
<tr>
<td>4.7 Water Classification Shellfish Sites</td>
<td>27-31</td>
</tr>
<tr>
<td>4.8 Environment</td>
<td>31</td>
</tr>
<tr>
<td>4.8.1 Introduction</td>
<td>31</td>
</tr>
<tr>
<td>4.8.2 Protected Areas</td>
<td>32-36</td>
</tr>
<tr>
<td>4.8.3 Protected Species</td>
<td>37-39</td>
</tr>
<tr>
<td>4.8.4 Wider Sea</td>
<td>39-43</td>
</tr>
<tr>
<td>4.8.5 Invasive Non-Native Species</td>
<td>44-45</td>
</tr>
<tr>
<td>4.9 Other Activities</td>
<td>46</td>
</tr>
<tr>
<td>4.9.1 Marine Renewables</td>
<td>46-49</td>
</tr>
<tr>
<td>4.10 Aquaculture</td>
<td>49</td>
</tr>
</tbody>
</table>
5. Objectives

5.1 Introduction

5.2 High Level objectives

6. Management Measures

6.1 *Nephrops* Creel Fishery

6.2 Brown Crab Fishery

6.3 Lobster Fishery

6.4 Velvet Crab Fishery

6.5 *Nephrops* Trawl Fishery

6.6 Scallop Fishery

6.7 Inshore Fisheries Affected by Cod Recovery measures

6.7.1 Crawfish Fishery

6.7.2 Squid Fishery

6.8 Develop New Sustainable Fisheries

6.8.1 Cockles

6.8.2 Razorfish

6.8.3 Brown Shrimp

6.8.4 Small Scale Mackerel Fishery

6.9 Amendments to Inshore Fishing (Scotland) Act 1984

6.10 Fuel Efficiency

6.11 Fleet Renewal and Recruitment

7. Research and Monitoring requirements

7.1 Baseline Assessment Summary

7.2 Science Plan

7.2.1 SISP Project
7.2.2 Develop logbooks 91-92

7.2.3 Develop New Sustainable Fisheries 92

7.2.4 Observer Programme 92

7.2.5 Water Classification 92

8. Implementation of Plan 93-101

APPENDICES

Appendix 1 Constitution 102-124

Appendix 2 Local Code of Conduct Harris Trawl area 125-127

Appendix 3 Local Code of Conduct Chicken Head to Cellar Head 128-129

Appendix 4 SISP Project 130-137

Appendix 5 Squid Survey 138-160

Appendix 6 Cockle Survey 161-169

Appendix 7 Razorfish Water Jet Survey 170-244

Appendix 8 Scallop Good Practice Guide 245-249
<table>
<thead>
<tr>
<th>ACRONYMS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL</td>
<td>Carapace Length</td>
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<tr>
<td>CFP</td>
<td>Common Fisheries Policy</td>
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<tr>
<td>CNES</td>
<td>Comhairle Nan Eilean Siar</td>
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<tr>
<td>CPUE</td>
<td>Catch Per Unit Effort</td>
</tr>
<tr>
<td>CW</td>
<td>Carapace Width</td>
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<tr>
<td>EFF</td>
<td>European Fisheries Fund</td>
</tr>
<tr>
<td>EPS</td>
<td>European Protected Species</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>Ex Com</td>
<td>Executive Committee</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical Information System</td>
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<tr>
<td>HIE</td>
<td>Highlands and Islands Enterprise</td>
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<tr>
<td>HLO</td>
<td>High Level Objective</td>
</tr>
<tr>
<td>ICES</td>
<td>International Council for the Exploration of the Seas</td>
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<tr>
<td>IFG</td>
<td>Inshore Fisheries Group</td>
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<tr>
<td>JNCC</td>
<td>Joint Nature Conservation Commission</td>
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<tr>
<td>LCA</td>
<td>Length Cohort Analysis</td>
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<td>LCC</td>
<td>Lews Castle College</td>
</tr>
<tr>
<td>MPA</td>
<td>Marine Protected Area</td>
</tr>
<tr>
<td>MS-C</td>
<td>Marine Scotland – Compliance</td>
</tr>
<tr>
<td>MS-P</td>
<td>Marine Scotland - Policy</td>
</tr>
<tr>
<td>MS-S</td>
<td>Marine Scotland – Science</td>
</tr>
<tr>
<td>MSY</td>
<td>Maximum Sustainable Yield</td>
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<tr>
<td>NGO</td>
<td>Non Government Organisation</td>
</tr>
<tr>
<td>OHIFG</td>
<td>Outer Hebrides Inshore Fisheries Group</td>
</tr>
<tr>
<td>PMF</td>
<td>Priority Marine Feature</td>
</tr>
<tr>
<td>SAC</td>
<td>Special Area of Conservation</td>
</tr>
<tr>
<td>SEA</td>
<td>Strategic Environmental Assessment</td>
</tr>
<tr>
<td>SEPA</td>
<td>Scottish Environment Protection Agency</td>
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<td>SFC</td>
<td>Scottish Fisheries Council</td>
</tr>
<tr>
<td>SI</td>
<td>Statutory Instrument</td>
</tr>
<tr>
<td>SIFAG</td>
<td>Scottish Inshore Fisheries Advisory Group</td>
</tr>
<tr>
<td>SISP</td>
<td>Scottish Industry Science Partnership</td>
</tr>
<tr>
<td>SNH</td>
<td>Scottish Natural Heritage</td>
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<tr>
<td>SPA</td>
<td>Special Protection Area</td>
</tr>
<tr>
<td>SSSI</td>
<td>Site of Special Scientific Interest</td>
</tr>
<tr>
<td>TAC</td>
<td>Total Allowable Catch</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

1.1 The Outer Hebrides is one of the most peripheral and economically disadvantaged areas of the European Union. The Islands are located in the midst of some of the richest fisheries resources in Europe.

1.2 Fisheries are of vital importance to the local economy with the majority of fishing activities of the local fleet being in inshore areas within six nautical miles. The lack of alternative employment opportunities means that the Outer Hebrides is heavily dependent on marine resources for the future social and economic survival of its communities. Maximising the benefits from fisheries is of paramount importance to the local economy.

1.3 The Strategic Framework for Inshore Fisheries in Scotland identified the need for more localised management of inshore fisheries around Scotland and recommended the formation of Inshore Fisheries Groups. This new approach to inshore management places fishermen and other key stakeholders at the heart of the decision making process.

1.4 High level objectives set out by the Scottish Inshore Fisheries Advisory Group (SIFAG) in the Strategic Framework address, biological, economic, environmental, social and governance issues associated with inshore fisheries.

1.5 The Outer Hebrides Inshore Fishery Group (OHIFG) management plan has been developed by the OHIFG Executive Committee and an Advisory Group, to formulate local objectives that will contribute to the delivery of the SIFAG’s high level objectives and help to ensure that Scotland’s inshore fisheries are well managed, sustainable and profitable.

1.6 The OHIFG’s management plan proposes measures to improve the management of all creel fisheries in the IFG area; the introduction of new conservation measures for key fisheries; investigation of the potential for developing new fisheries managed on a sustainable basis; the provision of marketing support encourage the industry to ‘catch for the market’, the development of more selective fishing gear; training and support to encourage new entrants to the industry; and a review existing local fisheries legislation.

1.7 Despite the many challenges facing Scotland’s fishing industry, the future for inshore fishing, in particular high valued shellfish fisheries should remain buoyant provided measures to ensure their long term sustainable management are adopted at local level. Local inshore fisheries should continue to provide excellent career opportunities for young fishermen willing to invest in the future of the industry.
2. BACKGROUND TO INSHORE FISHERIES GROUPS

2.1. Since 1984, inshore fisheries in Scotland have been regulated primarily through the Inshore Fishing (Scotland) Act 1984. This Act provides for Ministers to regulate fishing for sea fish in inshore waters. A variety of Orders have been made under this Act since 1984, introducing a number of local and national measures for a range of fishery management purposes.

2.2. A strategic review of inshore fisheries was begun in 2002. The key output of this was the Strategic Framework for Inshore Fisheries in Scotland, which set out the strategic direction for policy and a network of Inshore Fisheries Groups (IFGs) around Scotland to plan the management of inshore fisheries at a local level.

2.3. It is the responsibility of each IFG to produce and implement a management plan for inshore fisheries in their area, which is in keeping with Scottish Ministers’ objectives of sustainable and well-managed inshore fisheries that support thriving coastal communities. Even though they are not statutory bodies, IFGs must conduct their business in accordance with a constitution, as developed by each IFG along the guidelines set out by the Scottish Government, which is committed to supporting the IFGs in their work.

2.4. On most occasions IFGs will have the ability to implement many of the actions that stem from their management plans. However, there will be some measures which require implementation by the Scottish Government through legislation. Scottish Ministers may possibly consider positively any IFG legislative proposals which are in keeping with the high level objectives (set out at a national level by SIFAG), stem from or complement local objectives, and have been formulated in an open and transparent manner.
2.1 SCOPE OF THE OUTER HEBRIDES IFG

Geographic Scope

2.1.1 The sea area between the Outer Hebrides and the Scottish mainland is divided into three main areas, the North Minch, the Little Minch and the Sea of the Hebrides. In the North Minch, the OHIFG forms a boundary with the neighbouring North West IFG between Kinlochbervie and the northern tip of Skye. A further boundary with the Small Isles and Mull IFG lies between the northern tip of Skye and an area south of Barra Head. The boundaries with neighbouring IFGs delineate a similar sea area to that proposed for the Western Isles Marine Region the Marine (Scotland) Bill.

2.1.2 The OHIFG boundary to the west extends out to six nautical miles from baselines between the Butt of Lewis and Barra Head. The sea six nautical miles out from St Kilda, the Flannan Isles, North Rona and Sula Sgeir are also included within the IFGs geographical scope.
Figure 1. Geographical Range of the Outer Hebrides Inshore Fisheries Group
Management Scope

2.1.3 The IFG Executive Committee may consider management measures for all commercial fishing operations within the intertidal area and out to six nautical miles in all areas covered by the OHIFG. All management measures considered will be consulted on with all FishingAssociations having members operating in the area.

Species Scope

2.1.4 Consideration can be given to the management of fisheries for all shellfish, white fish and pelagic species within the OHFG area
3. STRUCTURE OF THE IFG

3.1 MEMBERSHIP & PROCEDURES

3.1.1 The IFG comprises representatives of various fishermen’s associations, (representing a minimum of ten owners of fishing vessels) which fish in the area, an elected representative of non-affiliated fishermen, and an independent co-ordinator, who manages the group, deals with membership requests and is employed on the basis of an initial three year tenure.

3.1.2 The representatives of each fishermen’s association, the representative of non-affiliated fisherman, Chairman and co-ordinator make up the Executive Committee (ExCom), which is charged with the running of the group.

3.1.3 The Outer Hebrides Inshore Fisheries Group Executive Committee comprises representatives of the:

Anglo-Scottish Fishermen’s Association
Clyde Fishermen’s Association
Orkney Fisheries Association
Mallaig & North West Fishermen’s Association
Scallop Association
Scottish Pelagic Fishermen’s Association Ltd
Scottish White Fish Producers Association Ltd
Western Isles Fishermen’s Association

3.1.4 The Executive Committee is chaired by Archie K Campbell, who was selected, for a three year term, following a Marine Scotland approved appointments procedure. Under the IFG Constitution, the Chairman shall be a person who has no financial or commercial interests, as are likely to affect him or her in the discharge of his or her function as a Chairman independent of the sea fish industry.

3.1.5 The Ex Com is assisted by an Advisory Group. This group is responsible for advising the Ex Com in the drawing up of a management plan, and is comprised of various inshore and environmental stakeholders, government bodies and NGOs including Scottish Natural Heritage (SNH), Marine Scotland Science, Marine Scotland Compliance, Comhairle Nan Eilean Siar (CNES) and LINK.
3.1.6 The Outer Hebrides Inshore Fisheries Group Advisory Group comprises representatives of:

- Marine Scotland Science
- Marine Scotland Compliance
- Scottish Natural Heritage
- Scottish Environment Protection Agency
- Comhairle Nan Eilean Siar
- Highlands and Islands Enterprise
- Leader Group
- Seafish
- Seafood-Scotland
- University of the Highlands and Islands
- Visit Scotland Outer Hebrides
- RSPB
- Aquaculture Sector
- Shellfish Processing Sector
- The Crown Estate
- Marine Renewables Sector

3.1.7 The ExCom meets on a regular basis (approximately every six weeks), and the minutes of each meeting are made publicly available on the IFG’s website. The ExCom will consult extensively with the members of the organisation they represent and work collectively to achieve as high a level of agreement as possible for the measures proposed. The Coordinator consults with the Advisory Group on a regular basis, in order to engage stakeholders and to ensure that the IFG management plan has support from all stakeholders.

3.1.8 The issues raised by industry to make the main shellfish stocks more profitable and sustainable, within the OHIFG area, have been discussed at length at meetings with both the ExCom and Advisory Group. Marine Scotland Science has provided valuable information on the current state of the stocks and how recruitment could be increased with additional measures proposed.
3.2 CONSULTATION

OUTER HEBRIDES IFG PROCEDURES

3.2.1 Four public meetings were held in Barra, Uist, Harris and Lewis, between 18 November and 23 November 2011, to allow fishermen and members of the public to hear at first hand the management measures being proposed within the IFG management plan. These meetings were also attended by members of the ExCom and the Advisory Group. The Chairman and Coordinator agreed to give careful consideration to all matters raised at the public meetings and that those matters would be discussed by both the Executive Committee and the Advisory Group.

CONFLICT RESOLUTION

3.2.2 The protocol for dealing with conflict within the IFG is outlined in the Constitution which the OHIFG has been working under. The Executive Committee has reached consensus on all the management measures being taken forward. Some of the original measures proposed were discarded, due to lack of support from some ExCom members. Copy of Constitution is at Appendix 1.
4. CHARACTERISTICS OF THE AREA

4.1 The Western Isles economy is narrowly based with a focus on the provision of public services and primary industries such as fisheries and aquaculture, agriculture, construction, textiles and tourism.

4.2 The Western Isles are located in the midst of some of the richest fisheries grounds, in Europe. In the Minches, the main species targeted are *Nephrops*, scallops, crab and lobster, whilst inshore waters to the west and north provide the main grounds for lobster, brown crab and crawfish. Most white fish and pelagic species caught to the west of the Hebrides and are not landed into the area.

4.3 Shellfish account for virtually all landings by value into Western Isles ports and the majority are landed by boats that are owned and crewed by local residents. In some places such as Barra and Grimsay over 10% of the population is involved in fish catching activities.

4.3 Following government funded decommissioning schemes there has been a gradual downsizing of the fleet. The majority of the locally based fleet is now under 10 metres in length.

4.4 Shellfish prices have remained relatively static over the last 15 years, except for creel caught *nephrops*, against increasing operating costs. This has not encouraged new entrants to the industry and resulted in an unfavourable age profile of the vessels in the Western Isles fleet. Furthermore, the age profile of owners and skippers of the over 12 metre sector is of major concern to both the catching and processing sectors.

4.5 The value of the combined shellfish landings into the Outer Hebrides increased from £8.8M in 2005 to a peak of £12.7M in 2006, declining gradually thereafter to £10.2M in 2009.

![Chart 1 - Value of Landings into Outer Hebrides](chart1.png)
4.1 KEY FISHERIES

4.1.1 *Nephrops* are the most valuable species landed in the Outer Hebrides accounting for over 60% by value of all landings between 2005 and 2009. Trawled *Nephrops* landings, have fluctuated in volumes from 1,121 to 1,762 tonnes; whilst creel caught *Nephrops* have been in the range of 561 to 416 tonnes. The price for creel caught *Nephrops* has increased by 48% since 2005 whilst that for trawled caught *Nephrops* has only increased by 6% since 2005. Effort in the creelng sector has increased over this period, whilst effort in the trawling sector has decreased. Considerable quantities of *nephrops* are caught in the OHIFG area by nomadic trawlers that land their catch into mainland ports. Creel caught *Nephrops* was the highest value fishery in 2009 accounting for around a third of the total shellfish landings. This reflects both the transfer of effort from *Nephrop* trawling to potting and the higher (premium) prices obtained for creel caught *Nephrops* which have increased by nearly 50% between 2005 and 2009.

![Chart 2](image)

4.1.2 Lobster is the second most valuable species landed into the Outer Hebrides. Annual landings average around 150 tonnes, accounting on average for 13% of landings by value over the last five years. Prices have only increased by 3% over the last five years. An estimated 20% of landings are held locally in live storage facilities for the Christmas market. Further catches from St Kilda, Flannans, North Rona and Sula Sgeir are landed into Ullapool, Scrabster and Orkney.

4.1.3 Scallops are the third most valuable species landed into the Outer Hebrides between 2005 and 2009, accounting on average for 10% of the landings by value. Landed volumes have fallen from 755 tonnes in 1995 to an average of 413 tonnes during the period 2006 - 2009. Most of the landings come from the Minches, with limited amounts caught by divers in Loch Roag and to the west of Harris.

4.1.4 Edible (or brown) crab is the fourth most valuable species landed in the Outer Hebrides during the last five years, accounting for an average 8% of landings by value. Annual catches have fluctuated from a peak of 988 tonnes in 2007 to 611 tonnes in 2005. Prices have remained fairly constant over the five year period. Most of the catches are taken to the west of the Hebrides with seasonal catches from the Butt of Lewis to Stornoway and South Uist and...
Barra in the winter months. Further catches from St Kilda, Flannans, North Rona and Sula Sgeir are landed into Skye, Ullapool, Kinlochbervie, Scrabster and Orkney. Fishing activity was curtailed in 2008 and 2009 due to lack of demand caused by over-supply on the European market.

4.1.5 Significant quantities of brown crab caught within the OHIFG area by vivier crabbers are landed elsewhere as detailed in the table below:

<table>
<thead>
<tr>
<th>Brown crab</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>£1.1M</td>
<td>£1.92M</td>
<td>£1.78M</td>
<td>£1.3M</td>
<td>£1.56M</td>
</tr>
<tr>
<td>Tonnage</td>
<td>1,019</td>
<td>1,444</td>
<td>1,427</td>
<td>1,116</td>
<td>1,388</td>
</tr>
</tbody>
</table>

Table 4.1.5 Brown crab catches caught in OHIFG area and landed elsewhere

4.1.6 Velvet crab is the fifth most valuable species landed in the Outer Hebrides during the last five years, accounting for an average 5% of landings by value. An annual average of around 267 tonnes is landed in the Outer Hebrides. Prices increased by 13% over the five year period. Most of the velvet crab is caught by under 8 metre vessels fishing in the sheltered waters of the Minch, the Sound of Harris and the Sound of Barra.

4.1.7 Volumes of Nephrops trawl landings in 2009 of 1,339 tonnes, were much lower than in the three preceding years. This may reflect several factors; the effects of increasing the minimum mesh size from 70 mm to 80 mm; a reduction in fishing effort in the sector; a reduction in the stock size and or the size of the animals within the stock, acting alone or in combination.

4.1.8 Volumes of creel caught Nephrops have declined to 420 tonnes in 2009 from a high of 561 tonnes in 2006. Effort in the fishery has increased both in
terms of the number of vessels targeting the fishery and the number of pots per vessel.

4.1.9 All the landings by Scottish based vessels, the structure of the Scottish fishing fleet, numbers of fishermen employed in Scotland, UK quota uptake and effort uptake by the Scottish fleet can be viewed at:

http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/PubFisheries

4.2 FISHING ACTIVITY

4.2.1 The number of active vessels based in the Outer Hebrides has reduced gradually, by nearly a quarter, from 335 in 2004 to 256 in 2009. The main reasons for this are government funded decommissioning schemes for over 10 metre vessels and inactive vessels non compliance with MCA requirements for remaining on the UK Shipping Vessel Register. Reduced profitability in the mobile gear sector, in Nephrops and scallops, due to higher operating costs and relatively static prices has meant that all recent additions to the fleet have been to the static gear sector. A new trend is for larger single rig Nephrop trawlers diversifying into Nephrop creeling, attracted by higher prices and lower fuel operating costs.

Number of active vessels in Outer Hebrides:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Change</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>335</td>
<td>-1</td>
</tr>
<tr>
<td>2005</td>
<td>311</td>
<td>-24</td>
</tr>
<tr>
<td>2006</td>
<td>303</td>
<td>-8</td>
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<td>2007</td>
<td>281</td>
<td>-22</td>
</tr>
<tr>
<td>2008</td>
<td>267</td>
<td>-14</td>
</tr>
<tr>
<td>2009</td>
<td>256</td>
<td>-11</td>
</tr>
</tbody>
</table>

Size distribution of Outer Hebrides fleet - 2009

<table>
<thead>
<tr>
<th>Size</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 8 metres</td>
<td>155</td>
</tr>
<tr>
<td>8–10 metres</td>
<td>46</td>
</tr>
<tr>
<td>10-12 metres</td>
<td>22</td>
</tr>
<tr>
<td>12-15 metres</td>
<td>8</td>
</tr>
<tr>
<td>Over15 metres</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>256</td>
</tr>
</tbody>
</table>

4.2.2 The shellfish processing sectors in Lewis, Uist and Barra are all dependent on shellfish landings from over 10 metre vessels. The most worrying trend is the average age of the Nephrop trawl fleet in the Stornoway.

Average age profile of vessels and skippers for over 10 metre categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Vessel</th>
<th>Skipper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static Gear</td>
<td>25</td>
<td>44</td>
</tr>
<tr>
<td>Scallop</td>
<td>25</td>
<td>45</td>
</tr>
<tr>
<td>Stornoway Nephrop Trawl</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>Barra Nephrop Trawl</td>
<td>30</td>
<td>44</td>
</tr>
</tbody>
</table>

4.2.3 The total number of fishermen employed in the industry has increased due to downturn in weaving, crofting and fish farming. This trend is unlikely to continue as these sectors are now showing signs of recovery with new
employment opportunities being created. Furthermore, due to reduced profitability, trawlers are reducing the numbers employed on deck and this is reflected in 2009 figures.

4.3 PROCESSING

4.3.1 Scottish Seafoods Ltd is the main processor in Lewis and Harris employing around 50 people. The company is mainly involved in primary processing for the UK scampi market, with secondary processing being completed in Grimsby. Whole trawled Nephrops are selected and sold either fresh or frozen to UK and European markets. The company was at the forefront of gaining Marine Stewardship Council (MSC) accreditation for the North Minch Nephrop fishery. Accreditation has opened up new marketing opportunities across Europe in whole Nephrops and in UK supermarkets for scampi.

4.3.2 Kallin Shellfish Ltd, in Uist, process scallops and brown crab and employ 14 people. They also buy winkles and store lobster for the Christmas market in live storage facilities at Kallin Pier.

4.3.3 Barratlantic Ltd, in Ardveenish, process Nephrops, scallops and white fish species, employing around 40 people. Recent investment in top of the range freezing facilities has shown significant product quality improvements and enabled the company to develop new marketing opportunities across Europe.
4.4 LIVE SHELLFISH

4.4.1 Significant investment supported by Highlands and Islands Enterprise and European funding has provided a network of strategically located live shellfish storage infrastructure throughout the Outer Hebrides.

4.4.2 Live storage facilities are used on a weekly basis by some companies to keep shellfish prior to distribution by vivier lorries, mainly destined for the Spanish market. Most shellfish buyers use their live storage facilities, from late summer to December, to store live lobsters for selling to the premium Christmas markets. Lobster buyers pay on average £2,000 per tonne more for lobsters that are stored compared to the usual seasonal selling price.

4.4.3 Aurora Shellfish and Sandray Shellfish are the main live shellfish buyers in Barra, buying lobster, brown and velvet crab, crawfish, cockles and *Nephrops*. All the live shellfish bought in Barra is destined for the Spanish market.

4.4.4 Kilbride Shellfish, North Uist Fish Marketing, W Stewart Live Fish, W MacDonald Shellfish, Live Langoustine, Sutherland Game and Scot West all have live storage facilities in the Uists. They all buy a full range of different live shellfish for the European markets.

4.4.5 Hebridean Marine, Sandray Shellfish, Keltic Seafare, Sutherland Game, Scot West and Mar Scot are the main live shellfish buyers in Lewis and Harris, with five live shellfish storage facilities in the area.
4.5 PORTS AND SERVICES

4.5.1 Comhairle Nan Eilean Siar (CNES) own 42 landing facilities which are all used by the Outer Hebrides fishing industry. Stornoway Port Authority and Caledonian MacBrayne own, Stornoway, Tarbert, Lochboisdale and Castlebay, which are the other facilities used by both local and visiting fishing vessels.

Figure 4.5.1 Location of all CNES owned piers

4.5.2 Scottish Fuels are the main fuel suppliers throughout the Outer Hebrides, with bulk storage depots at Stornoway and Loch Carnan. Barratlantic own storage tanks in Barra, whilst Highand Fuels have limited storage tanks close to Stornoway Airport.

4.5.3 Assistance from HIE and European funding enabled (CNES) to purchase 10 fuel tanks at their own piers which are operated through a swipe card system to supply fuel to all marine users. European Fisheries Fund (EFF)
assistance has recently been awarded to CNES to provide a similar service to users at Stornoway Harbour.

4.5.4 Engineering slipway facilities, operated by Stornoway Port Authority (SPA) exist at Goat Island, Stornoway, for vessels of 40 metres with a maximum displacement of 720 tonnes hull. An enclosed boatshed for vessels of under 12 metres was built several years ago at Kallin, with assistance from FIFG.

4.5.5 The only fish market is located in Stornoway, where *Nephrops* and any whitefish landed as by-catch by *Nephrops* trawlers white fish by-catch are kept in chilled facilities before consignment to Youngs Bluecrest and Scottish Fishermen’s Organisation.

4.5.6 Ice plants at Stornoway and Ardveenish service the mobile sector of the fleet. A new ice plant, owned by CNES, was commissioned in 2010 to service the catching, processing and aquaculture sectors in the Uists. CNES with assistance from HIE and European Fisheries Fund have recently completed, in March 2011, a new ice plant in Barra to service the requirements of both the processing sector and vessels operating in the South Minch.

4.6 REGULATIONS AND LEGISLATION

4.6.1 Marine Scotland Compliance (MS-C) covers the Outer Hebrides IFG area from its office in Stornoway. The office has two 2 full time fishery officers plus one full time and one part-time administrative staff.

4.6.2 The IFG area has one of the largest inshore fleets in Scotland and vessels target a wide range of shellfish species.

4.6.3 MS-C monitors compliance by sub dividing the area into 13 creeks covering the 256 registered and licensed local vessels that operate in the area. Fishery Officers monitor and record the landings of all vessels throughout the area.

4.6.4 There are a number of EU and domestic pieces of legislation that cover fisheries within the area. The main Legislative tool used for Inshore Fisheries is the Inshore (Scotland) Act 1984. The latest updated version can be viewed at:


PROHIBITIONS WITHIN THE OUTER HEBRIDES

- Lochmaddy to Stuley Island to Barra Head and Gurney Point

Mobile gear prohibitions 1 March – 31 October, scallop dredging permitted 1 March – 31 April and 24 August – 31 October, sandeel fishing permitted 1 March - 31 October in Stuley Island – Barra Head area
• **Sound of Harris**

Mobile gear prohibitions 1 March – 30 September, scallop dredging permitted during that period

• **Broad Bay**

All year prohibition on mobile gear to protect juvenile plaice

• **Loch Roag**

All year prohibition on mobile gear

• **Flannan Isles**

Prohibition of creel fishing 1 November – 31 March

• **West of Barra – Scarp Island**

Prohibition of creel fishing 1 November – 31 March

• **Bragar to Dell - West of Lewis**

Prohibition of creel fishing 1 July – 30 September
Figure 4.6.4 Prohibitions for mobile and static gear plus SPA and SACs in the Outer Hebrides Inshore Fisheries Group area
LOCAL CODE OF CONDUCTS

Trawl area off Harris

4.6.5 An area off Harris has been identified as grounds suitable for trawlers and a local agreement on access has been reached between both static and mobile gear sectors. Trawlers must give prior notification to static gear operators before they intend to commence fishing in the area, so that static gear can be shifted to allow access for the trawlers. Trawl activity in the area is usually on a seasonal basis.

Details of the code and chart for the area are given at Appendix 2.

Scallop Dredge Code

4.6.6 An area between Chicken Head and Cellar Head has a high concentration of brown crab creels from 1 November until 31 March. Scallop dredgers also dredge in the area on a limited basis during this period and an agreed code has been developed to accommodate both methods of fishing.

Details of the code for the area given at Appendix 3.

4.7 WATER CLASSIFICATION SHELLFISH SITES

4.7.1 CNES has two sampling officers, one covering Uist and Barra and another covering Lewis and Harris, who undertake water classification sampling on behalf of the Food Standards Agency (FSA).

4.7.2 All razorfish and cockles must come from an area where the waters have been classified and sold through an approved dispatch centre. Razorfish and cockles from a Class A area can be sold directly to the market, otherwise they must be depurated or heat treated within species specific time frames. All depuration systems must have an approval certificate from the environmental food health officer.
<table>
<thead>
<tr>
<th>Area</th>
<th>Species</th>
<th>Classification</th>
<th>Water Classification Sites in Uist and Barra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cidhe Eolaigearraidh</td>
<td>Pacific oysters</td>
<td>2010 = B - April to August, A - September to December 2011 = A - January, B - February to March</td>
<td>Bounded by lines drawn between NF 7107 0827 to NF 7173 0827 and between NF 7173 0782 to NF 7133 0782 extending to MHWS</td>
</tr>
<tr>
<td>South Ford</td>
<td>Common cockles</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Area in between lines drawn between NF 7919 4727 to NF 7990 4804 and NF 8100 4545 to NF 8300 4712</td>
</tr>
<tr>
<td>Traigh Cille Bharra Cockles</td>
<td>Common cockles</td>
<td>2010 = A - April to July, October to December, B - August &amp; September 2011 = A - January to March</td>
<td>Area bound by lines drawn between NF 7122 0734 and NF 7145 0727 and between NF 7145 0727 and NF 7169 0679 and between NF 7169 0679 and NF 7185 0620 and between NF 7134 0637 and NF 7103 0648 and extending to MHWS</td>
</tr>
<tr>
<td>Traigh Mhor</td>
<td>Common cockles</td>
<td>2010 = A - April &amp; May, December B - June to November 2011 = A - January to March</td>
<td>NF 7103 0649 and NF 7135 0635 and between NF 7180 0600 and NF 7123 0450 and between NF 7002 0504 and NF 7013 0521 and between NF 7013 0521 and NF 7019 0561 and between NF 7019 0561 and NF 7098 0630 and between NF 7098 0630 and NF 7080 0644 extending to M</td>
</tr>
</tbody>
</table>

**Change in Classification** - Unfavourable

**Table 4.7.2 water classification sites in Uist and Barra**
<table>
<thead>
<tr>
<th>Production Area</th>
<th>Map No</th>
<th>Species</th>
<th>Classification</th>
<th>Boundaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Loch Tarbert</td>
<td>14</td>
<td>Common mussels</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Area bounded by lines drawn between NG 2000 9653 to NG 2000 9810 then from NG 2281 9753 to NG 2281 9706 and from NG 2095 9596 to NG 2037 9619</td>
</tr>
<tr>
<td>Loch Erisort Outer</td>
<td>14</td>
<td>Common mussels</td>
<td>2010 = A - April to July B - August to December 2011 = B - January A - February &amp; March</td>
<td>Area bounded by lines drawn between NB 3300 2069 to NB 3300 1993 and between NB 3700 2064 to NB 3700 2144</td>
</tr>
<tr>
<td>Loch Leurbost</td>
<td>14</td>
<td>Common mussels</td>
<td>2010 = A - April to July, November &amp; December B - August to October 2011 = A - January to March</td>
<td>Area bounded by lines drawn between NB 3700 2544 and NB 3700 2503 and between NB 3800 2476 and NB 3800 2404 extending to MHWS</td>
</tr>
<tr>
<td>Loch Leurbost: Crosbost</td>
<td>14</td>
<td>Pacific oysters</td>
<td>2010 = B - April to December 2011 = B - January to March</td>
<td>Area bounded by lines drawn between NB 3800 2476 to NB 3800 2404 and between NB 3939 2368 and NB 4000 2410</td>
</tr>
<tr>
<td>Loch Roag: Barraglom</td>
<td>13</td>
<td>Common mussels</td>
<td>2010 = A - April &amp; May, December B - June to November 2011 = A - January to March</td>
<td>Area within lines drawn between NB 1860 3322 and NB 1886 3365 extending to MHWS and the B8059</td>
</tr>
<tr>
<td>Loch Roag: Ceabagh</td>
<td>Common mussels</td>
<td>2010 = A - April to July B - August to December 2011 = A - January to March</td>
<td>Area bounded by lines drawn between NB 1914 3460 and NB 1983 3460 and between NB 2014 3465 and NB 2073 3438 and between NB 2027 3360 and NB 2011 3359 and between NB 1939 3360 and</td>
<td></td>
</tr>
</tbody>
</table>

Comments: Change in Classification - Favourable
Sanitary Survey: Fuam an Tolla (LH-057-104-08)
Site Name: East Loch Tarbert 14

Comments: Change in Classification - Unfavourable
Sanitary Survey: Sound of Scalpay (LH-057-106-08)
Site Name: Loch Erisort Outer 14

Comments: Classification remains the same
Sanitary Survey: Garbh Eilean (LH-357-747-08)
Site Name: Loch Leurbost 14

Comments: Change in Classification - Unfavourable
Sanitary Survey: Creag an Rainich (LH-168-113-08)
Site Name: Loch Leurbost: Crosbost 14

Comments: Change in Classification - Unfavourable
Sanitary Survey: Site 1 Crosbost (LH-339-795-13)
Site Name: Loch Roag: Barraglom 13

Comments: Change in Classification - Unfavourable
Sanitary Survey: Complet (LH-185-120-08)
Site Name: Loch Roag: Ceabagh
<table>
<thead>
<tr>
<th>Location</th>
<th>Area/Classification Details</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loch Roag:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drovinish</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Complet (LH-186-121-08)</td>
</tr>
<tr>
<td>Eilean Chearstaigh</td>
<td>2010 = A - April to May, December B - June to November 2011 = A - January to March</td>
<td>Change in Classification - Unfavourable (LH-344-791-08)</td>
</tr>
<tr>
<td>Eilean Teinish</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Complet (LH-338-720-08)</td>
</tr>
<tr>
<td>Linngeam</td>
<td>2010 = A - April to July, December B - August to November 2010 = A - January to March</td>
<td>Complet (LH-188-123-08)</td>
</tr>
<tr>
<td>Miavaig</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Complet (LH-189-124-08)</td>
</tr>
<tr>
<td>Torranish</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td>Complet (LH-193-126-08)</td>
</tr>
<tr>
<td>Loch Seafort</td>
<td>2010 = A - April to December 2011 = A - January to March</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.7.3  water classification sites in Lewis and Harris

4.8 ENVIRONMENT

4.8.1 INTRODUCTION

4.8.1.1 Marine and coastal areas of particular ecological and conservation interest in the Outer Hebrides include sealochs, lagoons, seabird and wader breeding areas, reefs, and intertidal and near shore soft sediment habitats. Much of Scotland’s important flora and fauna is contained within these areas, including beds of maerl, horse mussels and seagrass. The marine environment of the Outer Hebrides is also important for otters, seals, cetaceans and numerous seabirds and waders.

4.8.1.2 Scottish Natural Heritage have a statutory duty to secure the conservation and enhancement of Scotland’s wildlife, environment and landscape, and encourage its sustainable use. This includes helping the Scottish Government meet its responsibilities under European environmental laws, particularly in relation to the Habitats and Birds Directives.

4.8.1.3 Inshore Fisheries Groups (IFGs) exist as a co-operative organisation of individuals representing the interests of many small businesses. However because IFGs are publicly funded, there is an expectation that their work will take full account of the Scottish Government’s biodiversity duty and other environmental commitments.

4.8.1.4 The following sections provide a summary of key features of the Outer Hebrides marine environment that can help inform the work of the Inshore Fisheries Group, including protected areas and species, selected important species and habitats in the wider seas and the status of any invasive non-native species.
4.8.2 PROTECTED AREAS

4.8.2.1 Special Areas of Conservation (SACs). Designated by Scottish Ministers under the EC Habitats Directive, these areas represent the range and variety of habitats and (non-bird) species within the EU, as listed in Annexes I & II of the directive. The Outer Hebrides IFG area has 11 SACs with qualifying marine and/or coastal features (Table 1). Box 1 summarises generic advice on the vulnerability and sensitivity of the features of these SACs to fisheries operations.

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1 For complete information on protected areas, including complete lists of qualifying features and conservation objectives, see Sitelink at www.snh.org.uk/snh/
Box 1
Marine SACs in the Outer Hebrides are designated for particular features. Generic advice can be given on the vulnerability and sensitivity of these features to fisheries operations:

- **Coastal lagoons** – interaction with sea fisheries generally unlikely.
- **Large shallow inlets and bays** – various fisheries operate in these areas, where biological and substrate conditions can also be variable. Highly mobile substrates and associated fauna tend to recover relatively quickly from physical disturbance.
- **Intertidal mudflats and sandflats** – accessed for intertidal fisheries and bait-digging. The severity of physical disturbance is influenced by various factors including: gear type; fishing intensity; substrate type; and the biology of species therein. Highly mobile substrates and associated fauna tend to recover relatively quickly from physical disturbance.
- **Reefs** (including patchy cobble & boulder reefs) – Reef biota tends to be slow-growing and highly sensitive to physical disturbance.
- **Shallow subtidal sandbanks** – various fisheries operate within these areas. The vulnerability and sensitivity of features to fisheries depends on various factors including: the substrate type; fishing gear and fishing intensity. Habitats such as maerl and seagrass beds are associated with this feature and are particularly sensitive to physical disturbance.
- **Sea caves** – interaction with sea fisheries generally unlikely.
- **Grey seals** – fisheries and grey seals may compete for some of the same fish resources. Near haul-out sites, seals may be sensitive to disturbance.
- **Otters** – potentially relevant to some intertidal and shallow subtidal fisheries, otters are sensitive to disturbance in the vicinity of their land-based resting and breeding sites. Competition for marine food resources is unlikely to be an issue.

Some non-marine features within SACs may be relevant to marine features. **Coastal vegetation and dune systems** may be vulnerable to damage where access to intertidal fisheries occurs through these areas. Also, although **Atlantic salmon** are designated within freshwater SACs, their exposure to possible human-induced impacts during the marine phase of their life-cycle is relevant. SACs with these features are included in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>SAC name*</th>
<th>Qualifying features</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Rona</td>
<td>Grey seals, reefs, sea caves, vegetated sea cliffs</td>
</tr>
<tr>
<td>Loch Roag Lagoons</td>
<td>Lagoon</td>
</tr>
<tr>
<td>Langavat</td>
<td>Atlantic salmon</td>
</tr>
<tr>
<td>North Harris</td>
<td>Atlantic salmon, otter</td>
</tr>
<tr>
<td>Monach Islands</td>
<td>Grey seals, machair, shifting dunes with marram, dune grassland</td>
</tr>
<tr>
<td>St Kilda</td>
<td>Reefs, sea caves, vegetated sea cliffs</td>
</tr>
<tr>
<td>Loch nam Madadh</td>
<td>Lagoons, shallow inlets and bays, otter, inter-tidal mudflats and</td>
</tr>
</tbody>
</table>
sandflats, reefs, sub-tidal sandbanks

<table>
<thead>
<tr>
<th>Location</th>
<th>Qualifying Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Uist Machair</td>
<td>Annual vegetation on drift lines, Atlantic salt meadows, dune grassland, humid dune slacks, machair, shifting dunes, shifting dunes with marram</td>
</tr>
<tr>
<td>Obain Loch Euphoirt</td>
<td>Lagoon</td>
</tr>
<tr>
<td>South Uist Machair</td>
<td>Annual vegetation on drift lines, dune grassland, humid dune slacks, lagoons, machair, otter, shifting dunes with marram</td>
</tr>
<tr>
<td>Traigh na Berie</td>
<td>Machair</td>
</tr>
</tbody>
</table>

* Scottish Government may proceed to consultation on the possible designation of the Sound of Barra (sandbanks, reefs and harbour seals) and East Mingulay Reefs (cold water coral reef) as new SACs (pending decision from Scottish Government).

4.8.2.2 Special Protection Areas (SPAs). Classified by Scottish Ministers under the EC Birds Directive, these are areas identified as the most important for rare and regularly occurring migratory birds in the EU. The Outer Hebrides IFG area has 10 SPAs with qualifying species with links to the marine environment (including human access across coastal breeding habitat to intertidal beaches) (Table 2). Box 2 summarises generic advice on the vulnerability and sensitivity of the features of SPAs within the Outer Hebrides to fisheries operations.

<table>
<thead>
<tr>
<th>SPA name</th>
<th>Qualifying features</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Rona &amp; Sula Sgeir</td>
<td>Leach’s petrel, storm petrel, gannet, guillemot &amp; breeding seabird assemblage</td>
</tr>
<tr>
<td>Flannan Isles</td>
<td>Breeding seabird assemblage, fulmar, guillemot, kittiwake,</td>
</tr>
</tbody>
</table>

Box 2

SPAs in the Outer Hebrides are designated for particular bird species or aggregations of birds. For the purposes of this document, those that are relevant to the marine environment can be categorised for the provision of generic advice on the vulnerability and sensitivity of these features to fisheries operations:

- **Breeding seabirds** – some breeding seabirds are particularly dependent on marine food sources, which may be adjacent to their nesting sites or may be further offshore. Where prey species include small gadoids and sandeels there is potential for fisheries to impact seabird populations through either direct or indirect impacts of food sources. Disturbance of seabirds by fisheries operations is generally unlikely, except potentially terns, which often breed on nearshore coastal vegetation and shingle, rather than on sea cliffs; some intertidal fisheries operations may disturb breeding terns when accessing beaches.

- **Breeding and feeding waders** – wading birds breeding in coastal habitats may be vulnerable to disturbance along access routes to beaches. Waders feeding in the intertidal may be disturbed by intertidal fisheries operations and some species, such as oystercatchers, may be in direct competition for shellfish resources (i.e. cockles).

Table 2

2 DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 November 2009 on the conservation of wild birds
Leach’s petrel, puffin, razorbill
Shiant Isles Shag, razorbill, puffin & breeding seabird assemblage
St Kilda Leach’s petrel, storm petrel, gannet, great skua, puffin & breeding seabird assemblage
North Uist Machair & Islands Waders (various)
Monach Islands Little tern
South Uist Machair & Lochs Little tern, corncrake, dunlin, oystercatcher, redshank, ringed-plover, sanderling
Lewis Peatlands Red-throated diver
Loch Scadavay Red-throated diver
Mingulay & Berneray breeding seabird assemblage, fulmar, guillemot, kittiwake, puffin, razorbill

4.8.2.3 Sites of Special Scientific Interest (SSSIs). These areas provide protection for the best examples of the UK’s biological, geological or physiographical features, down to mean low water of spring tides (MLWS). Many SSSIs overlap with SACs and SPAs. The Outer Hebrides IFG area has 32 SSSIs with biological features that are intertidal or have a link with the marine environment (Table 3). Box 3 puts the features into broad categories summarise generic advice on the vulnerability and sensitivity of the features of SSSIs within the Outer Hebrides to fisheries operations.

<table>
<thead>
<tr>
<th>SSSI name</th>
<th>Designated features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rona &amp; Sula Sgeir</td>
<td>Fulmar, gannet, great black backed gull, grey seal, guillemot, kittiwake, Leach’s petrel, puffin, razorbill, breeding seabird colony, storm petrel</td>
</tr>
<tr>
<td>Loch Stiapavat</td>
<td>Machair, breeding bird assemblage</td>
</tr>
<tr>
<td>Loch na Cartach</td>
<td>Maritime cliff</td>
</tr>
<tr>
<td>Gress Saltings</td>
<td>Saltmarsh</td>
</tr>
<tr>
<td>Tong Saltings</td>
<td>Breeding bird assemblage, mudflats, saltmarsh, sand dunes</td>
</tr>
</tbody>
</table>

3 Sites for solely geological features have been excluded from this list on the assumption that interaction with fisheries is unlikely.
<table>
<thead>
<tr>
<th>Ramsar Site</th>
<th>Designated features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tob Valasay</td>
<td>Saline lagoon, tidal rapids</td>
</tr>
<tr>
<td>Loch Siadar</td>
<td>Saline lagoon, tidal rapids</td>
</tr>
<tr>
<td>Flannan Islands</td>
<td>Fulmar, guillemot, kittiwoke, Leach’s petrel, maritime cliff, puffin, razorbill, seabird colony, storm petrel</td>
</tr>
<tr>
<td>Small Seal Islands</td>
<td>Grey seals</td>
</tr>
<tr>
<td>Shiant Islands</td>
<td>Breeding bird assemblage, fulmar, guillemot, puffin, razorbill, shag</td>
</tr>
<tr>
<td>Luskentyre Banks and Saltings</td>
<td>Breeding bird assemblage, coastal geomorphology, machair, saltmarsh, sand dune, sand flat</td>
</tr>
<tr>
<td>Northton Bay</td>
<td>Breeding birds, machair, saline lagoon, saltmarsh, sand dune, sand flat, transition saltmarsh</td>
</tr>
<tr>
<td>St Kilda</td>
<td>Coastal geomorphology, gannet, guillemot, Leach’s petrel, maritime cliff, puffin, razorbill, seabird colony, storm petrel</td>
</tr>
<tr>
<td>Pabbay</td>
<td>Machair, coastal geomorphology, breeding birds</td>
</tr>
<tr>
<td>Berneray</td>
<td>Machair</td>
</tr>
<tr>
<td>Vallay</td>
<td>Machair, saltmarsh, sand dunes, breeding birds</td>
</tr>
<tr>
<td>Machairs Robach &amp; Newton</td>
<td>Machair, sand dunes, coastal geomorphology</td>
</tr>
<tr>
<td>Loch an Duin</td>
<td>Brackish water cockle, breeding birds, coastal geomorphology, otter, saline lagoon, tidal rapids</td>
</tr>
<tr>
<td>Loch nam Madadh</td>
<td>Coastal geomorphology, mudflat, reef, saline lagoon, tidal rapid</td>
</tr>
<tr>
<td>Obain Loch Euphoirt</td>
<td>Saline lagoon</td>
</tr>
<tr>
<td>Loch Obisary</td>
<td>Saline lagoon</td>
</tr>
<tr>
<td>Lochs at Clachan</td>
<td>Saline lagoon</td>
</tr>
<tr>
<td>Baleshare &amp; Kirkibost</td>
<td>Breeding bird assemblage, machair, saltmarsh, sand dune</td>
</tr>
<tr>
<td>Balarinal Bog &amp; Loch nam Feilthean</td>
<td>Breeding bird assemblage, machair, mudflats, salt marsh, sand dune</td>
</tr>
<tr>
<td>Monach Isles</td>
<td>Black guillemot, breeding bird assemblage, machair, sand dune</td>
</tr>
<tr>
<td>Loch Bee</td>
<td>Brackish water cockle, breeding bird assemblage, coastal geomorphology, machair, saline lagoon, saltmarsh</td>
</tr>
<tr>
<td>Loch Bee Machair</td>
<td>Breeding bird assemblage, coastal geomorphology, machair</td>
</tr>
<tr>
<td>Loch Druidibeg</td>
<td>Breeding bird assemblage, coastal geomorphology, machair, machair loch, sand dune</td>
</tr>
<tr>
<td>Howmore Estuary, Lochs Roag &amp; Fada</td>
<td>Breeding bird assemblage, machair, dunlin, redshank, saline lagoon</td>
</tr>
<tr>
<td>Loch Hallan</td>
<td>Breeding bird assemblage, machair, machair loch</td>
</tr>
<tr>
<td>Eolligarry</td>
<td>Coastal geomorphology, machair, sand dune</td>
</tr>
<tr>
<td>Mingulay &amp; Berneray</td>
<td>Fulmar, guillemot, kittiwoke, razorbill, breeding seabird colony</td>
</tr>
</tbody>
</table>

4.8.2.4 Ramsar. Meeting UK commitments under the Ramsar Convention, these sites are recognised as wetlands of international importance. The Outer Hebrides IFG area has 3 Ramsar sites with features relevant to the marine environment (Table 4). Generic advice on the vulnerability and sensitivity of these features to fisheries operations can be taken from Box 1 and 2.

Table 4
<table>
<thead>
<tr>
<th>Ramsar Site</th>
<th>Designated features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loch an Duin</td>
<td>Saline lagoon, tidal rapids</td>
</tr>
<tr>
<td>North Uist Machair &amp; Islands</td>
<td>Dunlin, ringed plover, turnstone</td>
</tr>
<tr>
<td>South Uist Machair &amp; Lochs</td>
<td>Dunlin, machair, machair loch, ringed plover, saline lagoon</td>
</tr>
</tbody>
</table>
4.8.3 PROTECTED SPECIES

4.8.3.1 European Protected Species (EPS). Listed on Annex IV of the EC Habitats Directive as species in need of strict protection, marine EPS that occur in the Outer Hebrides are otters, cetaceans and marine turtles. It is an offence to deliberately or recklessly injure, capture, kill, harass or disturb an EPS (for legal detail see the Conservation Regulations 1994).

- Otters are distributed widely throughout the Outer Hebrides region and were recorded as present in 97% of sites surveyed during the last national otter survey. They appear to be most numerous on the more sheltered eastern coasts of Harris, North Uist, Benbecula and Barra.

- Little is known about cetaceans in the waters around the Outer Hebrides other than that all the following species are found regularly in the IFG area:
  - Porpoise (*Phocoena phocoena*)
  - Risso’s dolphin (*Grampus griseus*)
  - Bottlenose dolphin (*Tursiops truncatus*)
  - White beaked dolphin (*Lagenorhynchus albirostris*)
  - Common dolphin (*Delphinus delphis*)
  - Minke whale (*Balaenoptera acutorostrata*)
  - Killer whale (*Orcinus orca*)

Other cetacean species do occur but are only occasional visitors to the inshore waters. The main period of cetacean activity in the inshore area is May to September for all species but porpoise have been recorded year round. A Whale and Dolphin Society survey of Broad Bay in the late 1990s suggests that it may be an important nursery for Risso’s dolphins. There is a small resident population of bottlenose dolphins in the Sound of Barra.

- Marine turtles are rare in Scotland but it is likely that they are annual visitors to the Outer Hebrides area. Most records have been of leatherback turtles, the largest and most cold-tolerant species. Turtles are at risk from entanglement in fishing nets and from collisions with boats and their propellers. No offence is committed if turtles are caught accidentally in fishing gear. Nor is it an offence to help turtles if entangled or stranded, or temporarily to hold dead turtles for later examination by experts. The UK Turtle Code gives information on what to do if one is seen or accidentally caught.

4.8.3.2 Wildlife & Countryside Act, 1981. Marine species with special protection under schedules 5 and 8 of this act include basking shark, otters and all cetaceans and marine turtles. Schedules 5 and 8 are reviewed every 5 years. Schedule 1 lists various protected bird species. For more information see the JNCC pages.

4.8.3.3 Seals. From the 1st February 2011 it is an offence to kill, injure or take a seal at any time of year except to alleviate suffering or where a licence has
been issued to do so by Marine Scotland under the **Marine (Scotland) Act 2010**. The method of killing or taking seals will be detailed by licences issued and regular reporting is required. It is also an offence to intentionally or recklessly harass seals at significant haul-out sites.

The **Marine (Scotland) Act 2010** also provides for Scottish Ministers to designate "seal conservation areas". The areas previously covered by the Conservation of Seal (Scotland) Orders namely Shetland, Orkney, the Moray Firth and the East Coast of Scotland have been transcribed into seal conservation areas and in addition the Outer Hebrides has also been scheduled as a seal conservation area under the Act. Marine Scotland must not grant a seal licence authorising the killing or taking of seals in a seal conservation area unless they are satisfied that there is no satisfactory alternative way of achieving the purpose for which the licence is granted, and that the killing or taking authorised by the licence will not be detrimental to the maintenance of the population of any species of seal at a favourable conservation status in their natural range.

More information is available at: [www.scotland.gov.uk/Topics/marine/Licensing/SealLicensing](http://www.scotland.gov.uk/Topics/marine/Licensing/SealLicensing)

Two species of seal live and breed in the Outer Hebrides’ waters; the grey seal (**Halichoerus grypus**) and the harbour seal (**Phoca vitulina**), which is also known as the common seal.

The Outer Hebrides has approximately 25% of the UK’s grey seal population, with about 12,000 pups being born in the region each year (SMRU survey 2008). Numbers have increased here since the 1960s but have stabilised since 1992 and now appear to have levelled off. Grey seals pup, then breed during the autumn months (sept - nov) and favour remote and uninhabited islands/coasts such as the Monachs, Gasker and Rona. Pups are born with a white fur covering (laguno) and will go to sea aged approximately one month. Grey seals will range over great distances for feeding but will normally stay within 100km of their haul outs. They mainly feed on the sea bed on demersal fish species.

The last survey of Harbour seals in the Outer Hebrides (SMRU 2008) estimates 1,800 individuals in the area which is approximately 7% of the UK population. Numbers here have reduced steadily since 1996 and are now 35% lower than at that time (even more dramatic declines have been recorded in Orkney, Shetland and the Moray Firth). The reasons for this reduction are not well understood and are the subject of research at present. Unlike grey seals, harbour seals come ashore in sheltered waters on sandbanks and skerries to pup in June/July, their pups are not born with a white coat and can swim immediately. In the Outer Hebrides harbour seals tend to favour the sealochs and the sounds (e.g. Bays of Harris, Lochmaddy, Grimsay, Sound of Barra). They will forage up to 40-50km from their haul out site and feed on a wide range of prey (including sand eels, gadoids, flatfish, herring and octopus).
For further information on seals in the Outer Hebrides (and Scotland) see the latest Special Committee on Seals report at the following link.

4.8.4 WIDER SEAS

4.8.4.1 There are some marine species and habitats present in the Outer Hebrides IFG area which do not receive explicit protection (except where designated as features of protected areas), but are particularly important in the context of biodiversity conservation and/or ecosystem function – many are listed under the Scottish Biodiversity List, UK Biodiversity Action Plan and OSPAR lists and may be vulnerable to fisheries impacts. The information below provides a summary of key species and habitats selected from the ‘SNH Draft Priority Marine Features List’ for which SNH has records. Mobile fish and shellfish of conservation importance, including commercial species, are not included here as this data is mostly held by other organisations, focussing instead on attached and low-mobility seabed species and habitats.

- **Maerl beds** – well developed around Scottish islands and in sealoch narrows, maerl beds support exceptionally high biodiversity, including juveniles of some fisheries species (e.g. scallops; cod). Known locations include Loch Boisdale, Loch Euphart, Loch Eynort, Tob Valasay, Sound of Stuley, Sound of Barra Eriskay, Loch Maddy, East Loch Tarbert, Loch Seafirth, Loch Resort and Loch Roag but likely to also occur elsewhere. Maerl is slow growing and very sensitive to physical disturbance. **Maerl or coarse shell gravel with sea cucumbers** is classified as a separate habitat of conservation interest, occurring in similar areas with additional records in Loch Tealasavay, Loch Uiskevagh, Loch Eport and West Loch Tarbert.

- **Horse mussel beds** – sensitive to mobile gear, horse mussel beds also support high biodiversity and juveniles of some commercial species. Known locations include Sound of Barra, Loch Euphart, East Loch Tarbert, Loch Erisort and Loch Roag, but likely to occur elsewhere.

- **Seagrass beds** – important for juveniles of many fish and shellfish species, including some commercial species. Seagrass beds are primarily sensitive to mobile gear, though at low-tide may also be damaged by vehicles accessing intertidal fisheries. Known locations include West Loch Roag, Loch Maddy, Sound of Barra, Loch Boisdale, Tob Valasay, Loch Bee, East Benbecula and the Sound of Eriskay.

- **Inshore burrowed mud** – associated faunal communities can be sensitive to mobile gear. Known locations include Loch Seaforth, Loch Claiddh and Loch Erisort, but likely to occur in other sea lochs. **Tall sea pens** are of particular conservation importance in this habitat, being rare in the UK and, unlike other sea pen species, unable to withdraw into the

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4 The SNH Priority Marine Features list is intended to focus future work on the conservation of marine species and habitats. Currently in draft form, this list will go to public consultation during 2010. Consequently, the list may change and require subsequent amendment to this document.

5 SNH marine data is updated regularly, as should this information, forming part of the IFG Management Plan as a living document.
Burrowing heart urchins are also of conservation interest in this habitat; known to occur in Loch Roag, but likely to occur elsewhere.

- **Cold water coral reef** - comprised of the coral *Lophelia pertusa*, reefs occur east of Mingulay, being the only known to occur in UK inshore waters. Coral habitats support very high biodiversity and are very sensitive to physical disturbance.

- **Northern seafan communities** – seafans are very sensitive to physical disturbance and exist on rocky substrates supporting high biodiversity. Known locations are distributed mostly on the east coast of the Outer Hebrides, including Loch Seaforth, Loch Claidh, Loch Boisdale, Loch Skipport, Loch Uiskevagh, Loch Eport, East Loch Tarbert, Loch Erisort and Loch Eynort.

- **Intertidal sediment flats** – intertidal mudflats and sediment flats may be commercially exploited, particularly for various bivalves, but are also often of conservation importance. Intertidal sandflats and mudflats are widely distributed in the Outer Hebrides, but are particularly prominent features of the Uists and Barra.

- **Iceland cyprine** – *Arctica islandica* is a large, long-lived bivalve capable of inhabiting a wide range of sediment types and water depths. Records range from Vatersay Bay and Oitir Mhòr to Loch Erisort, Loch Seaforth, West Loch Roag, and in Village Bay (St Kilda).

The above is not a comprehensive list of species and habitats of conservation interest in the Outer Hebrides, but identifies some of the most important benthic features which are most relevant to fisheries and for which SNH has data. Others which are less likely to be impacted by fisheries, but are still worthy of note include Shallow tideswept coarse sands with burrowing bivalves, Tideswept algal communities, Kelp and seaweed communities on sublittoral sediment and Low or variable salinity habitats. Features which may be impacted by fisheries but for which data is limited include Native oyster beds, Blue mussel beds, Heart cockle, White cluster anemone, Feather star and Burrowing sea anemone. Further to those mentioned in sections 2 and 3, other unprotected bird species may be subject to direct or indirect impacts from fisheries operations. Also note that fish and shellfish species of conservation importance are not listed here.

4.8.4.2 Seabed mapping resources. Various projects have sought to compile existing data and use modelling techniques (and knowledge of physical environmental attributes) to fill gaps with predictive mapping of biotopes, habitats and dominant biota. These are available at various scales and resolutions. Such modelled data should be used with caution, being more accurate in some areas than others, but may provide a useful starting point in data deficient areas.

- **MESH** ([www.searchmesh.net](http://www.searchmesh.net)) maps broad habitat types over a very large area (to the EEZ of 5 countries in NW Europe), but at a limited resolution.

- **UKSeaMap 2010** ([http://www.jncc.gov.uk/page-2117](http://www.jncc.gov.uk/page-2117)) will produce a new seabed habitat map for the UK marine area, building on the 2006 work and the MESH project.

- **HHOME** (Highland, Hebridean and Orkney Marine Environment) GIS project used modelling techniques on a similar scale and resolution to the SSMEI projects to refine predictive habitat and biotope maps within the Moray, Orkney, North Coast, North West, Outer Hebrides and Small Isles & Mull IFG areas. This GIS resource is held by SNH – example extracts from the Outer Hebrides IFG area are shown in Figures 1 & 2. SNH can provide more detailed extracts and interpretation of this information if required for particular areas.
Figure 1: Predicted distribution of major biotopes in the Outer Hebrides IFG (and surrounding) Area. Where only substrate is shown, data was insufficient to predict biota with an acceptable degree of confidence.
Figure 2: Predicted distribution of major life forms in the Outer Hebrides IFG (and surrounding) Area. Where only substrate is shown, data was insufficient to predict biota with an acceptable degree of confidence.
4.8.5 INVASIVE NON-NATIVE SPECIES

4.8.5.1 The introduction of non-native species can be a risk to some fisheries sectors by competing with native species, causing imbalance in natural food-webs or interfering with the operation or efficiency of fishing gear. Non-native species can thrive in a new environment where there is a lack of natural predators or competitors\(^6\). Vectors for the introduction of non-natives include ships ballast, fouled hulls and fishing gear or through the movement or release of live plants and animals. Fishermen may be in a good position to report on the presence of non-native species and to take action to reduce the risk of introducing non-native species. Table 5 provides specific information on risk species, identifies which may be a particular issue for the Outer Hebrides IFG area, possible consequences for fishing activities, actions to reduce risk of introduction and relevant links for more information and reporting sightings.

Table 5

<table>
<thead>
<tr>
<th>Species</th>
<th>UK Status</th>
<th>Outer Hebrides likelihood of introduction*</th>
<th>Potential fisheries impacts</th>
<th>Other impacts</th>
<th>Actions to reduce risks</th>
<th>More information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireweed</td>
<td>Well established in England, Wales &amp; N Ireland. Found on west coast of Scotland as far north as Skye</td>
<td>High; Short-term</td>
<td>May inhibit oyster bed recovery. Entanglement in propellers and fishing gear</td>
<td>Competition with native species. Hazard to commercial and recreational boating through entanglement of propellers or blocking engine cooling systems</td>
<td>Keep boat hulls, buoys and pontoons clean. Keep fishing gear clean</td>
<td><a href="http://www.snh.org.uk/wireweed">www.snh.org.uk/wireweed</a> <a href="http://www.nonnativespecies.org">www.nonnativespecies.org</a></td>
</tr>
<tr>
<td>Carpet sea squirt</td>
<td>Found in Wales, N Ireland &amp; south coats of England. 1 population in Scotland (Firth of Clyde)</td>
<td>High; Long-term</td>
<td>Important nursery habitats (e.g. maerl) and some fishing grounds may be smothered. Static fishing gear may be smothered.</td>
<td>Smothers native species. Smothering of aquaculture equipment and other underwater structures e.g. pontoons</td>
<td>Keep boat hulls, buoys and pontoons clean. Keep fishing gear clean (allow to dry out periodically)</td>
<td><a href="http://www.snh.org.uk/carpetsea">www.snh.org.uk/carpetsea</a> squirt <a href="http://woodshole.er.usgs.gov/project-pages/stellwagen/didemnum/">http://woodshole.er.usgs.gov/project-pages/stellwagen/didemnum/</a></td>
</tr>
</tbody>
</table>

\(^6\) Climate change also enables species to populate new areas; where existing species are unable to adapt at the rapidity of climate change the consequence of these distribution shifts may be similar to non-native introductions.
<table>
<thead>
<tr>
<th>Species</th>
<th>Region</th>
<th>Risk</th>
<th>Duration</th>
<th>Impact</th>
<th>Management</th>
<th>Additional Resources</th>
</tr>
</thead>
</table>

*Time scales could be dramatically shortened if species are directly transported by*
4.9 OTHER ACTIVITIES

4.9.1 MARINE RENEWABLES

4.9.1.1 The waters around the Outer Hebrides provide ideal conditions for significant development opportunities for offshore wind, wave and tidal power.

4.9.1.2 No short term developments have been identified around the Outer Hebrides, however, a number of areas have been earmarked for medium term (2020 – 2030) development.

Details of Marine Scotland’s proposals for offshore wind can be viewed at:


4.9.1.3 Most of the areas identified for possible future development are of significant importance to different sectors of the fishing industry and extensive consultation must be undertaken with the fishing industry to identify areas of least economic importance to the fishing industry.

Details on Blue Sea – Green Energy post adoption statement can be viewed at:


4.9.2 SCOTTISH AND SOUTHERN ENERGY

4.9.2.1 Scottish and Southern Energy are planning to install a 132kV Submarine Power Cable from Arnish to Grabhair during the summer of 2012. Following consultation with the local fishing industry, the Company agreed that the cable would be buried to a target depth of 1 m in all areas possible, throughout the route. Vessels operating in the area are satisfied that the proposed route will not have any negative impact on fishing operations in the area.
4.9.2.2 In addition, Scottish and Southern Energy propose to lay a subsea cable from Grabhair to Little Loch Broom, burying the cable to a depth of at least 1 m. Several meetings have been held with the local fishing industry and they are satisfied that the cable lying operation should have minimal impact on fishing activity. The cable will transfer electricity from the four proposed wind farms at 150 MW each for Beinn Mor and Stornoway Wind Farm Projects, a 138 MW for Pentand and a 94MW for Pairc to the mainland.

4.9.3 NpOWER

4.9.3.1 NpOWER renewables have been successful in a planning application for oscillating turbines in Shader Bay. The Scottish Government approved the project in January 2009. When developed and built, the Siadar Wave Energy Project will be one of the first wave power stations in the world, providing up to 4MW and could provide electricity to 1800 homes in Lewis and Harris. The local community are very supportive of this development. The fishing industry did not raise any concerns regarding this project.

4.9.4 AQUAMARINE POWER

4.9.4.1 Aquamarine Power have been granted a lease from Crown Estate to develop a 40MW project using 40 Oyster wave machines, in the area between Carloway and Galson, off the West of Lewis. The Company has already met with local fishermen fishing in that area to explain their proposals. An Environmental Impact Assessment will be undertaken in 2011. The first 3 structures should be on site in 2014.

Further information about North West Lewis project can be viewed at:

4.9.5 PELAMIS WAVE POWER

4.9.5.1 Pelamis Wave Power are proposing to develop a 20MW capacity wave farm project off Lewis. The location would be in water depths of 50 metres or more East of the Old Hill directly out from the entrance to East Loch Roag. This location has been shifted further East to reflect concerns raised with their initial location which coincided with white fish trawl grounds.

4.9.5.2 An area of 2 kms would be occupied by a 20 MW farm. The identified area is currently fished by static gear boats fishing pots for lobster and brown crab. Up to 25 Pelamis wave energy converters would be required, with several machines joined together to share a single subsea cable back to shore. The Company intends to have more finalised plans drawn up by end of summer with a target date of 2015 for installation of first machines.

4.9.6 OUTER HEBRIDES REGIONAL INITIATIVE

4.9.6.1 In March 2009, CNES,0 established a Marine Energy Zone Steering Group to progress the outputs from the Halcrow Study relating to future development of marine renewables around the Western Isles. At a meeting with the Scottish Government (Marine Spatial Planning) in May 2009, it was agreed that the Outer Hebrides should become the second Scottish Government Regional Initiative, after Pentland Firth and Orkney waters.

4.9.6.2 As part of the Outer Hebrides Regional Initiative, a Project Board was formed and will engage with fishing interests to ensure that the development zone put in place is compatible with fishing and navigational interests and other sea users.

4.9.6.3 The Outer Hebrides Regional Initiative Project Board is comprised of Member Organisations as follows:

Scottish Government
The Crown Estate
Comhairle Nan Eilean Siar
Highlands and Islands Enterprise
Scottish Natural Heritage
Scottish Marine Renewables
Marine Coastguard Agency
EMEC
Outer Hebrides Inshore Fisheries Group
4.9.6.4 Feedback from all meetings will be circulated amongst all members of the Executive Committee and the Advisory Group and this will ensure that the OHIFG is fully consulted with on all matters relating to future developments of marine renewables within the area.

4.10 AQUACULTURE

4.10.1 Salmon farming had played an important role in the Outer Hebrides economy for over 30 years. The industry is now mostly concentrated in the hands of three large Salmon Producers with one large processing unit in Stornoway and two smoking units in Uist. Most of the salmon grown in the Outer Hebrides are transported to the mainland for further processing.

4.10.2 Recent expansion has been in deeper and more exposed sites, in the Minches, with Marine Harvest investigating expansion of more sites off South Uist and Barra.

4.10.3 Concern has been expressed by fishermen, in some sheltered sea lochs of the Outer Hebrides, that chemicals used for sea lice treatments could be impacting on shellfish recruitment at locations in close proximity to salmon cages.

4.10.4 Mussel farming has grown steadily in Loch Roag, East of Lewis and Harris, providing employment in more remote areas. Proposals for significant mussel farming developments in the Uists have had EFF approval and production is scheduled to commence there in 2011.
5. OBJECTIVES

5.1 INTRODUCTION

5.1.1 The Outer Hebrides Inshore Fisheries Group (OHIFG) management plan includes local objectives aimed at ensuring well managed, profitable and sustainable inshore fisheries in the IFG area.

5.1.2 The local objectives were developed by the OHIFG ExCom within the Strategic Framework for Inshore Fisheries in Scotland, developed by the Scottish Inshore Fisheries Advisory Group (SIFAG) and published in 2005.


5.1.3 They have been formulated to be consistent with existing national and UK legislation and ongoing management initiatives including the Scottish Fisheries Council (SFC) Groups

5.1.4 All the local objectives have been assessed against the High Level Objectives (HLOs), developed by SIFAG and set out in the Strategic Framework, to ensure that they are consistent with or contribute to the HLOs. Some of the local objectives support more than one HLO.

5.2 HIGH LEVEL OBJECTIVES

The High Level Objectives set out in the Strategic Framework for Inshore Fisheries area as follows:

**BIOLOGICAL**: to conserve, enhance and restore commercial stocks in the inshore and its supporting ecosystem.

**ECONOMIC**: to optimise long-term and sustained economic return to communities dependent on inshore fisheries, and to promote quality initiatives.

**ENVIRONMENTAL**: to maintain and restore the quality of the inshore marine environment for fisheries and for wildlife.

**SOCIAL**: to recognise historical fishing practices and traditional ways of life in managing inshore fisheries, to manage change, and to interact proactively with other activities in the marine environment.

**GOVERNANCE**: to develop and implement a transparent, accountable and flexible management structure that places fishermen at the centre of the decision-making process, and that is underpinned by adequate information, legislation and enforcement.
5.2.1 An overview of the OHIFG local objectives and rationale, aligned with SIFAG HLOs is presented in Table 1 below. The fisheries or issues addressed in the Plan, the measures proposed, information requirements, partners and resources required, are summarised in Table 2. More detail and supporting information is presented in Section 6.

<table>
<thead>
<tr>
<th>High Level Objectives</th>
<th>Local Objectives and Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological:</strong></td>
<td><strong>Improve management of creel fisheries/proposal additional conservation measures for key fisheries</strong> Effort in all creel fisheries is effectively uncontrolled, indications are that target stocks are fully or overexploited. Some form of effort cap in creel fisheries, and in some instances a reduction in effort, is therefore a priority.  <strong>Assist industry in developing new sustainable fisheries</strong> New fisheries have the potential to diversify existing fishing effort and create new employment opportunities. A diverse sector is more flexible and able to respond to changes in availability, market price and demand for particular products.</td>
</tr>
<tr>
<td>To conserve, enhance and restore commercial stocks in the inshore and its supporting ecosystem.</td>
<td></td>
</tr>
<tr>
<td><strong>Economic:</strong></td>
<td><strong>Encourage the fishing sector to ‘catch for the market’. Assist the industry in implementing cost reduction measures.</strong> A sustainable industry must be profitable. Improved profitability for the sector is likely to come from maximising the value of the catch and reducing costs.  <strong>Provide marketing support to current and developing fisheries.</strong></td>
</tr>
<tr>
<td>To optimise long-term and sustained economic return to communities dependent on inshore fisheries, and to promote quality initiatives.</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental:</strong></td>
<td><strong>Reduce fishing’s impact on the environment, particularly sensitive species and habitat</strong> All fisheries should integrate with wider marine management, including the management of designated nature conservation sites.  <strong>Develop more selective catching practices to reduce unwanted catch of target and non-target species.</strong> Fishing method and gear design should be adapted to support measures to reduce any negative environmental impacts associated with fishing.</td>
</tr>
<tr>
<td>To maintain and restore the quality of the inshore marine environment for fisheries and for wildlife.</td>
<td></td>
</tr>
<tr>
<td><strong>Social:</strong></td>
<td><strong>Provide advice, training and facilitate access to available funding for fishermen</strong> Support training, access to funding, group purchasing agreements to reduce key costs such as fuel and gear.  <strong>Encourage new entrants into the fishing industry at a sustainable level.</strong> Promote appropriate engagement with all other marine stakeholders to ensure fisheries issues are fully integrated with wider decision-making on the marine environment.</td>
</tr>
<tr>
<td>To recognise historical fishing practices and traditional ways of life in managing inshore fisheries, to manage change, and to interact proactively with other activities in the marine environment.</td>
<td></td>
</tr>
</tbody>
</table>
Governance:
To develop and implement a transparent, accountable and flexible management structure that places fishermen at the centre of the decision-making process, and that is underpinned by adequate information, legislation and enforcement.

Improve decision-making and reduce conflict in the sector and between other marine sectors
Decision-making in fisheries management to be improved through agreed actions, developing access arrangements for all users.

Table 1 - local objectives and rationale, aligned with SIFAG HLOs

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Status (2010) and Management Advice?</th>
<th>Measures / actions proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nephrops Creel</td>
<td>ICES 2010. Advice is for a reduction in fishing mortality towards F_{MSY} (proxy) in both North and South Minch. Implies landings of less than 3100 tonnes (North Minch) and &lt;4,000 tonnes (South Minch) in 2011. ICES notes i) management should be at functional unit level. ii) Overall effort in creel numbers is not known and measures to regulate creel fisheries are not in place</td>
<td>Limit creel numbers by vessel length &lt; 8 metre 600 – verified crew of 2 limit 800 8-10 metre 1,000 – verified crew of 3 1,200 10-12 metre 1,200 verified crew of 3 1,500 &gt;12 metre 1,800</td>
<td>See MS-SCI Report. Information on numbers of creels and catch per unit effort (CPUE) data (log book scheme). Numbers of vessels fishing in the area</td>
<td>Marine Scotland SFC Langoustine working group,</td>
<td>MS-Compliance Industry self policing. Creel tagging system Logbook costs</td>
</tr>
<tr>
<td>Nephrops Creel</td>
<td>Evaluate effects of creel mesh size and escape panel on creel catch composition</td>
<td>Detailed in SISP application</td>
<td>Marine Scotland SFC Langoustine working group, Other IFGs</td>
<td>SISP</td>
<td></td>
</tr>
</tbody>
</table>
### Local objective: Propose additional conservation measures for key fisheries

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Status (2010)</th>
<th>Measures proposed/actions</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
</table>
| 1.2 | Brown Crab | MS-Sci Brown crab fishing mortality close to $F_{\text{MAX}}$ (2006-2008). No increase in effort | Limit creel numbers by vessel length and 50% max number being parfours. 
- 8 metre 600 – verified crew of 2 limit 800 
- 8-10 metre 1,000 – verified crew of 3 limit 1,200 
- 10-12 metre 1,200 verified crew of 3 limit 1,500 
- 12-15 metre 1,800 
- 15 metre 2,000 Increase MLS to 150mm | See MS-SCI report | Marine Scotland, SFC Crab and lobster working group | MS-Compliance Industry self policing. Tagging system Logbook costs |
| 1.3 | Lobster | Male lobsters growth overfished, females fished close to $F_{\text{MAX}}$ | Limit creel numbers same as for crab Phased increase in MLS. Reduction in maxLS for females. Ban on landing crippled females | See MS-SCI report | Marine Scotland, SFC Crab and Lobster working group | MS-Compliance Industry self policing. Tagging system Logbook costs |
| 1.4 | Velvet crab | Fished close to $F_{\text{MAX}}$ | Limit creel numbers by vessel length same as for crab and lobster Encourage improved grading practices | See MS-SCI report | Marine Scotland, SFC Crab and lobster working group. Seafish | Leaflet distribution of good practice procedures |

### Local objective: Propose additional conservation measures for key fisheries

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Status (2010)</th>
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<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>Nephrops trawl</td>
<td>As in 1.1.</td>
<td>Increase MLS to 25 mm carapace length 85 mm overall length to correspond with North Sea MLS</td>
<td>Size data from buyers</td>
<td>Marine Scotland SFC Langoustine working group. Other IFGs</td>
<td>Link in with National Policy development</td>
</tr>
<tr>
<td>1.6</td>
<td>Scallops</td>
<td>MS-SCI. Spawning stock biomass and recruitment declining. Fishing mortality (F) above $F_{0.1}$ No increase in effort and increase in</td>
<td>Increase from 100 mm to 105 mm</td>
<td>See MS-SCI report</td>
<td>Marine Scotland, Scallop working group</td>
<td></td>
</tr>
<tr>
<td>MLS to 110 mm to increase chances of improved recruitment.</td>
<td></td>
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<tr>
<td>1.7 Crawfish</td>
<td>Stock status unknown</td>
<td>Prohibit landing of berried females and introduce max landing size males and females</td>
<td>Initiate programme of data collection</td>
<td>MS-C, Industry, Buyers</td>
<td>Logbook design</td>
<td></td>
</tr>
</tbody>
</table>

**Local objective: Assist industry in developing new sustainable fisheries**

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Status Marine Scotland Science and others</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9 Razorfish</td>
<td>Surveys in Broad Bay, Grimsay Loch Carnan (1998)</td>
<td>Obtain guidance on distribution and sustainable harvesting levels and methods</td>
<td>Stock surveys. Fishery and management advice. Good practice from other areas</td>
<td>Seafish, MS-SCI, SNH</td>
<td>EFF, CNES, HIE, SNH</td>
</tr>
<tr>
<td>1.10 Brown shrimp</td>
<td>Not assessed</td>
<td>Identify vessels to participate in a pilot fishery Investigate markets</td>
<td>Identify scale and marketing requirements of this fishery.</td>
<td>MS-S Seafood Scotland, HIE, CNES, LEADER</td>
<td>Funding for pilot Fishery (gear, expertise, etc.)</td>
</tr>
<tr>
<td>1.11 Squid</td>
<td>Not assessed</td>
<td>Seek review of current prohibition on use of small trawl mesh west of Scotland</td>
<td>Identify scale and marketing requirements of this fishery. Previous work by Seafish and Aberdeen University</td>
<td>MS-S, Seafood Scotland, HIE, CNES</td>
<td>Suitable gear for vessels</td>
</tr>
<tr>
<td>1.12 Mackerel</td>
<td>ICES - Fished at FPA but above FMSY. Transition to MSY implies landings of between 592 and</td>
<td>Investigate establishing small-scale mackerel and herring fishery using lines and drift nets</td>
<td>Consider a maximum number of vessels. Potential</td>
<td>Marine Scotland Policy, CNES,</td>
<td>Quota for inshore Sector. Market</td>
</tr>
</tbody>
</table>
### Local objective: Provide marketing support to current and developing fisheries

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>All</td>
<td>Responsible Fishing Scheme environmental aspects to be included</td>
<td>Support to private companies ‘own brand’ development or joint marketing</td>
<td>Seafish, GTA</td>
<td>Funding for assessment process</td>
</tr>
</tbody>
</table>

### Local objective: Encourage ‘catching for the market’

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>Nephrops creel</td>
<td>Increase creel caught min landing size to 32 mm carapace length</td>
<td>Impact on fleets, enforceability, extension to other IFGs</td>
<td>MS-S, MS-C WIFA, SFC Langoustine WG</td>
<td>SISP</td>
</tr>
<tr>
<td>2.4</td>
<td>Nephrops Trawl</td>
<td>Increase min tail size to 45 mm in trawl fishery</td>
<td>Impact on fleets, enforceability, extension to other IFGs</td>
<td>MS, SFC Langoustine working group, Seafish</td>
<td>Link in with national policy developments</td>
</tr>
<tr>
<td>2.5</td>
<td>Scallop</td>
<td>Increase MLS to 105 mm</td>
<td>Impact on fleets, enforceability, extension to other IFGs</td>
<td>MS, Scallop working group</td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>Crab</td>
<td>Increase MLS size to 150 mm (brown crab) and 70 mm (velvet crab)</td>
<td></td>
<td>MS</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>Lobster</td>
<td>Phased Increase Min. LS to 90 mm Decrease Max. LS to 145 mm &amp; ban landing of crippled females</td>
<td></td>
<td>MS</td>
<td></td>
</tr>
</tbody>
</table>

### Local objective: Assist the industry in cost reductions

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
<td>Fuel</td>
<td>Support fuel efficiency, gear adaptation measures.</td>
<td>Explore all fuel efficiency measures including gear adaptations, bulk purchasing, alternative fuel e.g. hydrogen</td>
<td>MS, CNES, Seafish, LCC</td>
<td>EFF</td>
</tr>
</tbody>
</table>
**Environmental** To maintain and restore the quality of the inshore marine environment for fisheries and for wildlife

**Local objective: Reduce impact of fishing on the marine environment & develop more selective gear**

<table>
<thead>
<tr>
<th>#</th>
<th>Fishery</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Nephrop Traw;</td>
<td>Apply for extension of Stornoway Nephrops Trawl fishery MSC Accreditation</td>
<td>Already achieved for North Minch trawl fishery</td>
<td>MS-S, MSC, WIFA, SNH, Industry</td>
<td>Funding for assessment process</td>
</tr>
<tr>
<td>3.2</td>
<td>All</td>
<td>Review existing fishing prohibitions</td>
<td></td>
<td>MSC, MSS, MSP, SNH</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Nephrops Creel</td>
<td>Use mesh sizes, which reduce discards and by-catch and select nephrops at sizes required by the market.</td>
<td>SISP gear trials - quarterly monitoring by observer over a year period</td>
<td>MS-Science, WIFA</td>
<td>SISP</td>
</tr>
<tr>
<td>3.4</td>
<td>Scallop</td>
<td>Promote use of eco – dredge UK Scallop Code of Conduct</td>
<td>Evaluate research on gear design</td>
<td>Marine Scotland, Seafish All stakeholders</td>
<td>Trialling of gear in commercial environment</td>
</tr>
</tbody>
</table>

**Social** - to recognise historical fishing practices and traditional ways of life, to manage change, and to interact proactively with other activities in the marine environment

**Local objective: Provide advice, training and facilitate access to available funding for fishermen**

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Credit</td>
<td>Ensure necessary levels of access to credit for fisheries sector</td>
<td>Impact that credit arrangements are having on the sector. State aid compliant</td>
<td>CNES, Banks, HIE, Marine Scotland, Seafish Economics</td>
<td>CNES, HIE, Banks</td>
</tr>
<tr>
<td>4.2</td>
<td>Fuel</td>
<td>Support fuel efficiency measures, assistance with engine improvements, bulk purchasing</td>
<td>Explore all fuel efficiency measures, fishing practices, engine replacements</td>
<td>CNES, MS, HIE, Seafish Technology</td>
<td>EFF, CNES, MS, HIE</td>
</tr>
<tr>
<td>4.3</td>
<td>Gear</td>
<td>Facilitate access to available funding support for new gear for pilot fisheries or gear adaptations for conservation purposes.</td>
<td>New pot design, lining, jigging, eco-friendly gear</td>
<td>MS, CNES, HIE, SNH, Seafish Technology</td>
<td>EFF, MS, HIE, CNES, SNH</td>
</tr>
<tr>
<td>4.4</td>
<td>Training</td>
<td>Marketing and handling practices for current and new fisheries, recognised qualifications for inshore skippers</td>
<td>Access to new markets, local delivery of training to Nationally recognised standards</td>
<td>MS, GTA, CNES, HIE, SDS, Seafood Scotland, LCC</td>
<td>EFF, MS, Seafood</td>
</tr>
</tbody>
</table>

**Local objective: Encourage new entrants into the fishing industry at a sustainable level**

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Measures proposed</th>
<th>Information requirements</th>
<th>Partners</th>
<th>Resources needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>Recruitment</td>
<td>Develop Outer Hebrides Fisheries Support Scheme &amp; Community Quota Scheme</td>
<td>Compliant with State Aid Rules Promotion in schools</td>
<td>MS, CNES, Banks, HIE, WIFA, LCC, Schools</td>
<td>CNES, HIE, EFF</td>
</tr>
<tr>
<td>Issue</td>
<td>Action proposed</td>
<td>Partners</td>
<td>Resources needed</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>5.1 Decision making</td>
<td>Establish a conflict resolution procedure and determine appropriate actions for those found not fishing according to IFG agreements. Non consensus issues referred to SIFAG.</td>
<td>ExCom, AG, MS-Compliance, SIFAG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Review access arrangements in all fisheries</td>
<td>ExCom, AG, SFPA</td>
<td>Distribution network to all users.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3 Engagement</td>
<td>Develop process and contacts for effective regular consultation with Marine Scotland and other government departments and agencies.</td>
<td>Marine Scotland (and others)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>Develop process for engagement with marine developers, aquaculture, renewables</td>
<td>CNES, ExCom, AG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>IFG membership of Scottish Marine Regions</td>
<td>Nominated IFG member</td>
<td>Time, T&amp;S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6 Monitoring</td>
<td>Review and reporting of progress in applying management measures to achieve objectives.</td>
<td>IFG co-ordinator, MS</td>
<td>Production of Annual report / attendance at national IFG meetings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7 Information and communication</td>
<td>Develop a website for the IFG with access to useful documentation (plan, constitution, minutes, and background on industry), contacts &amp; potentially marketing info.</td>
<td>IFG co-ordinator, CNES, HIE, Seafood Scotland, MS</td>
<td>Budget/staff resources from Marine Scotland.</td>
<td></td>
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</tr>
</tbody>
</table>

Table 2 - Summary of fisheries issues, proposed measures, information requirements, partners and required resources
6. MANAGEMENT MEASURES

6.1 NEPHROPS CREEL FISHERY

ICES Assessment and Advice

6.1.1 Nephrops stocks west of Scotland (VIa) are managed under the Common Fisheries Policy (CFP) by the European Commission. Management advice, formulated by the International Council for the Exploration of the Sea (ICES) on the basis of underwater TV surveys estimates of abundance, is for individual functional units whereas the Total Allowable Catches (TACs) are applied to the larger ICES finfish areas. The 2010 TAC for Area VIa, which includes the North Minch, the South Minch and Clyde functional units was 16,057 tonnes (UK share 15,677 tonnes), 15% less than that in 2009. The North and South Minch functional units are most relevant to the Outer Hebrides IFG area.

6.1.2 There are no precautionary reference points for Nephrops stocks or any formally agreed management objectives or plans. Under the ICES MSY (maximum sustainable yield) framework, which was adopted in 2010, exploitation rates which generate high long term yield with a low probability of over fishing have been estimated and proposed for each functional unit. It is not possible to estimate $F_{MSY}$ for Nephrops directly, therefore ICES use a series of $F_{MSY}$ proxies. The most appropriate proxy for each functional unit is selected on the basis of a number of factors including burrow density, harvest rate, stability of stock size and nature of the fishery. In general, $F_{35\%,SpR}^7$ is used as a proxy for $F_{MSY}$.

6.1.3 ICES advice in 2010 indicates that Nephrops stocks in both the North and South Minch are stable but at lower levels than observed between 2003 and 2006. Based on the transition approach to MSY, ICES recommended a reduction in harvest ratio to 20.1%, with landings of no greater than 3,100 tonnes in the North Minch and a harvest ratio of 12.9% and landing of less than 4,000 tonnes in the South Minch in 2011. These imply lower landings than have been taken in recent years.

6.1.4 ICES note that abundance in the North and South Minch should be considered a minimum estimate as fishing takes place outside the area covered by the underwater TV survey. Also, that overall effort in terms of creel numbers is not known and measures to regulate the fishery are not in place.

The Fishery

6.1.5 The Nephrops creel fishery developed in the Outer Hebrides IFG area around 25 years ago. Initially, it was a seasonal fishery, mainly between January and April, after which vessels targeted lobster and brown crab. The

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7 ($F_{35\%,SpR}$ is the fishing mortality associated with 35% of the spawning stock biomass per recruit when $F=0$. i.e in the unexploited state.)
fishery has since expanded considerably, stimulated by the premium prices paid for whole live prawns.

6.1.6 The value of landings of creel caught *Nephrops* into the Outer Hebrides peaked in 2005 but has since declined, despite significant increases in effort in terms of both vessel numbers and number of creels. The fishery is still however the most important by value in the area. Landings from the OHIFG area of 420 tonnes in 2009 were valued at £3.339 M selling at an average price of £7,950 per tonne.

6.1.7 It is estimated that there are currently up to 80 creel vessels fishing for *Nephrops* using around 100,000 creels in the OHIFG area. Some fish in the area all year round whilst others operate on a seasonal basis. The numbers of creels per vessel have increased dramatically, from around 200 when the fishery first developed to over 4,000 for some vessels. Many vessels have two sets of gear, which are hauled every second or third day. According to fishermen, the sizes of creel caught *Nephrops* have decreased, in the last five years and the catch per unit effort has declined. Many vessels have increased the numbers of creels fished in an attempt to maintain previous catches.

6.1.8 *Nephrops* grounds are at a premium as vessels compete for the most lucrative and productive grounds. In some cases, creel vessels now fish on recognised trawl tows increasing likelihood of interaction with trawlers. Competition for suitable grounds for creeling also means that static vessels shoot gear over one another.

6.1.9 The issue of increasing creel numbers has been raised at the Scottish Fisheries Council (SFC) Langoustine Implementation Group and at its predecessor, SeaFAR. A consultation paper was issued in 2005 proposing the introduction of a *nephrops* permit scheme for under 10 metre and non sector vessels and for creel limits based on overall vessel length. Despite widespread industry support, no action was taken on either and additional vessels and additional creels have since joined the fishery.

6.1.10 There are no regulations relating to minimum mesh sizes in the *Nephrops* creel fishery, with traditional mesh sizes ranging from 32 – 36 mm. There are regulations which prohibit parlours in creels with a mesh size smaller than 60 mm. Fishermen using mesh sizes between 32 and 36 mm, report significant discards (up to 50%) of undersized or small prawns (smaller than those required for the live market), and variable discards of other species that are returned to the sea. Many of the *Nephrops* discarded are eaten on the surface by sea birds. The remainder may not survive return to the seabed. From a stock conservation perspective, it would be better if these were not caught in the first place. The Scottish Industry Science Partnership (SISP) has approved a project to investigate the issues raised in the local fishery and the SISP application form is at Appendix 4.

6.1.11 Current minimum landings sizes for *Nephrops* west of Scotland are total length of 70 mm or carapace length of 20 mm. This applies to both the
creel and the trawl fishery. The trawl fishery supplies, a tail or fresh whole or frozen market, whereas virtually all creel caught Nephrops are sold to the live market, mostly in Spain, which requires animals of 110 mm overall length or 32 mm carapace length or over.

ISSUES

6.1.12 The Nephrops creel fishery is the most valuable fishery in the Outer Hebrides and supports employment in the most fragile areas of the region. The uncontrolled increase in creel vessels in the under 10 metre sector, coupled with uncontrolled numbers of creels deployed is of serious concern to the future management of this important and valuable fishery. TACs and quota limits on quantities landed apply over the wider stock area, are more relevant to trawlers and are not generally restrictive of landings in the creel fishery. The introduction of measures to monitor and control fishing effort (mortality) in the creel fishery is therefore a priority.

6.1.13 In addition, the current Nephrops minimum landing sizes were set before the creel fishery developed and relate to a trawl fishery supplying a mainly Nephrops tail, fresh and frozen market. The creel fishery supplies Nephrops to live markets that require larger sized Nephrops, it is therefore considered that a different landing size should be set to reflect market demand. In addition, more selective gears, designed to catch the sizes of nephrops required by the live market should be evaluated.

6.1.14 Currently, very little information is available to indicate the state of the stocks on creel fishing grounds within the IFG area. The increase in static gear being set on the grounds for lower returns suggests that abundance has declined. A suitable logbook to monitor the catch per unit effort in the Nephrops creel fishery is urgently required to assist with the evaluation of effects of the management measures proposed for the fishery.

OBJECTIVE

Improved management of the Nephrops creel fishery - introduce fishing effort control, evaluate/introduce additional management measures.

MANAGEMENT MEASURES and ACTIONS PROPOSED

6.1.15 Creel limits - maximum number based on vessel overall length:

- < 8 metre – 600 creels verified crew of 2 limit 800
- 8 – 10 metres - 1,000 creels verified crew of 3 limit 1,200
- 10 – 12 metres – 1,200 creels verified crew of 3 limit 1,500
- > 12 metres – 1,500 creels verified crew of 3+ limit 1,800
**Contribution to SIFAG HLOs**

Biological: creel limits offer the potential to control fishing effort in a locally important and expanding fishery which is currently effectively uncontrolled. It is anticipated that introduction of the limits specified above will reduce fishing effort.

Social: limits proposed allow proportionate capacity to fishery related to vessel size and crew number.

Environmental: reduced effort will reduce any associated impact on seabed.

Economic: potential to increase in price due to lower landings. Reduction in operating costs as CPUE would increase. Ability to manage effort would support accreditation and may bring market benefits.

Governance: reduced creel numbers should/will reduce conflict, competition for space.

6.1.15 Evaluate effects of creel mesh size increase and escape panels

**Contribution to SIFAG HLOs**

Biological & Environmental: Improved selection will reduce discards, any decreased retention of berried females has the potential to improve spawning potential and increase recruitment.

Economic: consistent with catching for the market - may reduce returns from the fishery initially but improved value at a later date.

Governance: easily enforced through creel manufacturers.

6.1.16 Increase in minimum landing size in the creel fishery

**Contribution to SIFAG HLOs**

Biological & Environmental: has the potential to preserve spawning stock and may improve recruitment assuming discards survive.

Economic: catching for the market improved value at later date.

Governance: easy to enforce.

6.1.17 Develop fit for purpose logbook to monitor effort and calculate CPUE

**Contribution to SIFAG HLOs**

Biological & Environmental: relevant to improved management and evaluation of measures introduced.
Economic: Information would support fishery accreditation, which could bring market benefits

6.2 BROWN CRAB FISHERY

Marine Scotland Science - Assessment and Advice

6.2.1 Marine Scotland science uses length cohort analysis (LCA) to assess brown crab (or crab and lobster) stocks around Scotland. Assessments are done tri-annually on a regional basis, and are based on reported landings data and size data (carapace width or length) collected as part of MS-S market sampling programme.

6.2.2 The LCA method uses the commercial catch size composition data (size frequency) along with estimates of growth parameters and natural mortality to estimate stock biomass and fishing mortality at length. Because of differences in growth males and females are stocks are assessed separately. The key assumption of the approach is that the length distribution is representative of a typical cohort over its lifespan. However, this is only true of length frequency data from a single year if the population is in equilibrium and therefore the LCA is usually applied to data averaged over a number of years during which recruitment and exploitation rates have been stable. LCA also assumes uniform growth among all animals.

6.2.3 The results can be used to predict long-term (equilibrium) changes in the stock biomass and yield-per-recruit based on changes in mortality, fishing effort or size regulations. Assuming a direct relationship between fishing mortality and effort, lower levels of fishing effort will result in an increase in stock size and a reduction in landings. A higher level of effort will reduce total stock biomass but landings may also fall, as animals are caught before they may have time to grow to a size that would contribute much weight to the yield (growth overfishing). In between these lies $F_{MAX}$, the fishing mortality rate that maximises yield per recruit.

6.2.4 The changes that the LCA predict are long term (equilibrium). The approach gives an indication of the exploitation of the stock in terms of growth overfishing, but not recruitment overfishing; it does not provide any indication of short term stock dynamics or recruitment over-fishing. It is therefore best to interpret the LCA analyses in conjunction with other information such as catch rate (CPUE) data. This is because if the stock is not in equilibrium, if for example recruitment is decreasing and fewer small individuals are entering the stock, the stock may appear healthy as the size of those individuals being removed increases.

6.2.5 MS-S most recent assessment for brown crab in the Hebrides region, which corresponds quite closely to the OHIFG area, based on data from 2006 – 2008, indicates males and females were fished close to $F_{MAX}$, the fishing mortality that maximises the yield-per recruit. An increase in fishing mortality could potentially reduce the biomass and the yield per recruit in the long term.
6.2.6 The brown crab fishery is not subject to EU TAC regulations or national quotas although there are EU measures in place to restrict the fishing effort (kW days) of all vessels > 15 m (including creel boats) in ICES Sub area VI. In Scotland, vessels landing brown crab are required to have a licence with a shellfish entitlement. Vessels without this entitlement are only allowed to land limited amounts (25 crabs per day). The main regulatory mechanism is a minimum landing size of 140 mm carapace width (CW) to the north of 56 °N and 130 mm CW to the south of 56 °N (except for the Firth of Forth).

6.2.7 In addition, it is illegal to land female egg-bearing edible crabs, or crabs that have recently moulted (The Sea Fisheries (Shellfish) Act 1967). Landings of crab claws (detached) are restricted to 1% of total catch when fishing with pots or creels, or 75 kg if they are by-catch from another fishery (Article 18(4) of Council Regulation (EC) No 850/98).

6.2.8 There are no existing management plans, targets limits or reference points or limit reference points for brown crab.

The Fishery

6.2.9 The brown crab fishery in the OH IFG area developed in the mid seventies by a fleet of nomadic vivier vessels from the Channel Isles, selling their catch to the live market. Local vessels started to target the fishery in the early eighties supplying both live and processing markets. The biggest problem experienced in the early years was high levels of poor quality black spotted crab.

6.2.10 Since 2005, landings into the Outer Hebrides have ranged from 611 – 988 tonnes. However, vivier vessel catches from the IFG area and landed elsewhere are significant. Currently, up to 12 large vivier crabbers target the more offshore ground of North Rona, Sula Sgeir, Flannans, and St Kilda. These vessels land into Mallaig, Uig, Ullapool, Scrabster and Orkney. A further 60 local vessels, mostly under 10 metres, fish for brown crab along with lobster, landing their catch to either the processed or live market depending on season and meat yield. Frozen fresh bait is usually sourced from the mainland.

6.2.11 Despite several attempts to establish crab processing locally, only limited processing takes place in Uist, with the remainder of landings are sold live to the export market. The brown crab caught at North Rona and Sula Sgeir is processed in Orkney. Brown crab quality tends to vary considerably throughout the year and some processors buy most of their stock over a 3 to 4 month period in the late autumn.

6.2.12 Over the last 5 -10 years, there has been increased effort on the inshore OH IFG grounds, resulting in an oversupply onto the market. In some instances the larger vivier vessels have had to tie up due to lack of demand. Higher fuel and bait costs and static prices over the last five years has
resulted in catchers having had to land more crab to remain viable. Buyers are becoming more selective, with some only purchasing crab above 150 mm carapace width. Many are reluctant to purchase or will only pay reduced prices for crippled brown crab.

ISSUES

6.2.13 The most recent assessments indicate that brown crab are exploited close to $F_{\text{MAX}}$. There is currently no control on fishing effort or landings. Within the OHIFG area effort has increased and some fishermen have observed declining catch rates suggesting local stocks are becoming depleted. The IFG therefore wants to introduce limits on the number of creels per vessel as a measure to allow for improved management of the fishery.

6.2.14 There is a better market for larger brown crab and there is therefore a good market case to increase the minimum landing size, currently 140 mm to 150mm in the IFG area. This would also potentially benefit the stock.

6.2.15 There is also a requirement for information on local stock dynamics. The IFG therefore proposes to establish a logbook scheme to improve future stock assessment and to allow for the evaluation of the effects of introducing management measures. Having a means to control effort and improvements to data collection will help the case for MSC accreditation. MSC accreditation for brown crab at pan Scottish level is the favoured position of the SFC Crab and Lobster Sub Group members.

OBJECTIVE

Improved management of the brown crab creel fishery - introduce fishing effort control (creel limits), evaluate/introduce additional management measures.

PROPOSED MANAGEMENT MEASURES

6.2.16 to introduce creel limits and limits on numbers of parlour creels based on vessel overall length and crew numbers

- < 8 metre – 600 creels verified crew of 2 limit 800
- 8 – 10 metres - 1,000 creels verified crew of 3 limit 1,200
- 10 – 12 metres – 1,200 creels verified crew of 3 limit 1,500
- 12 – 15 metres – 1,800 creels
- > 15 metres – 2,000 creels
- maximum 50% parlour creels permitted per boat
Vessels that fish with both brown crab and *nephrops* creels and have landed more than 10 tonnes of brown crab in any of the previous 5 years in the period 1 Dec – 31 March are permitted to have up to a maximum 75% of each gear type during this seasonal period.

During all other periods of the year vessels would be able to fish different types of gear up to the maximum permitted for one type.

**Contribution to SIFAG HLOs**

Biological: creel limits offer the potential to control fishing effort and by implication fishing mortality in a locally important fishery which is currently effectively uncontrolled. It is anticipated that introduction of the limits specified above will reduce or cap fishing effort.

Social: The limits proposed allow proportionate allocation of gear related to vessel size and crew number

Environmental: Any reduction in the numbers of creels hauled will reduce any associated impact on seabed

Economic: May increase or decrease the value of landings in the short term. Potential economic benefits from increased efficiency if effort reduction/cap increases CPUE in the medium term. Ability to manage effort in the fishery would support accreditation and may bring market benefits.

Governance: reduced creel numbers should/will reduce conflict, competition for space

**6.2.17 Increase brown crab minimum landing size to 150 mm**

**Contribution to SIFGA HLOs**

Biological & Environmental: has the potential to reduce fishing mortality on the stock. May conserve or increase spawning stock biomass and may improve recruitment.

Economic: Catching for the market - may reduce returns from the fishery initially but improve value and efficiency in the medium term

Governance: easily enforced

**6.2.18 Develop fit for purpose logbook to monitor fishing effort and calculate CPUE in the crab (and lobster) creel fishery**

**Contribution to SIFAG HLOs**

Biological & Environmental: will support improved management of the fishery and allow for evaluation of measures introduced
Economic: Better information would support fishery accreditation, which could bring market benefits

6.3 LOBSTER FISHERY

Marine Scotland Science (MS-S) Assessment and Advice

6.3.1 Marine Scotland science uses length cohort analysis (LCA) to assess lobster stocks around Scotland. Assessments are done tri-annually on a regional basis, and are based on reported landings data and size data (carapace width or length) collected as part of MS-S market sampling programme.

6.3.2 The LCA method uses the commercial catch size composition data (size frequency) along with estimates of growth parameters and natural mortality to estimate stock biomass and fishing mortality at length. Because of differences in growth males and females are stocks are assessed separately. The key assumption of the approach is that the length distribution is representative of a typical cohort over its lifespan. However, this is only true of length frequency data from a single year if the population is in equilibrium and therefore the LCA is usually applied to data averaged over a number of years during which recruitment and exploitation rates have been stable. LCA also assumes uniform growth among all animals.

6.3.3 The results can be used to predict long-term (equilibrium) changes in the stock biomass and yield-per-recruit based on changes in mortality, fishing effort or size regulations. Assuming a direct relationship between fishing mortality and effort, lower levels of fishing effort will result in an increase in stock size and a reduction in landings. A higher level of effort will reduce total stock biomass but landings may also fall, as animals are caught before they may have time to grow to a size that would contribute much weight to the yield (growth overfishing). In between these lies $F_{\text{MAX}}$, the fishing mortality rate that maximises yield per recruit.

6.3.4 The changes that the LCA predict are long term (equilibrium). The approach gives an indication of the exploitation of the stock in terms of growth overfishing, but not recruitment overfishing; it does not provide any indication of short term stock dynamics or recruitment over-fishing. It is therefore best to interpret the LCA analyses in conjunction with other information such as catch rate (CPUE) data. This is because if the stock is not in equilibrium, if for example recruitment is decreasing and fewer small individuals are entering the stock, the stock may appear healthy as the size of those individuals being removed increases.

6.3.5 The lobster fishery is not subject to EU TAC regulations or national quotas. In Scotland, vessels landing lobster are required to have a license with a shellfish entitlement. Vessels without this entitlement are only allowed to land limited amounts (5 lobsters per day).
6.3.6 The main regulatory mechanism is a minimum landing size of 87 mm carapace length (CL). This applies to all areas except Shetland where the minimum landing size is 90 mm.

6.3.7 In addition, it is illegal to land ‘V’-notched lobsters, or animals that have been mutilated in any way. (The Lobsters and Crawfish (Prohibition of Fishing and Landing) (Scotland) Order 1999). Lobsters and Crawfish can only be retained on board or landed whole. (Article 18(3) of Council Regulation (EC) No 850/98). There is a maximum landing size of 155 mm for female lobsters (Article 9 of The Inshore (Prohibition of Fishing Methods)(Scotland) Order 2004).

6.3.8 There are no existing management plans, targets limits or reference points or limit reference points for lobster. The SFC Crab and Lobster Sub Group have indicated that lobster management at local level should be devolved to IFGs.

The Fishery

6.3.9 The lobster fishery in the OHIFG area developed over 60 years ago, initially fishermen used single chamber wooden creels, then progressing to steel creels with further progression to the increased use of parlour creels.

6.3.10 Since 2005, landings into the Outer Hebrides have ranged from 90 - 178 tonnes. The majority of landings are from local vessels of under 12 metres in length. Prices have remained fairly constant over the last five years. From early autumn, significant volumes of lobsters are stored in onshore live storage facilities before being sold for the Christmas market. A fleet of around 80 local vessels target lobster on the inshore grounds to the west of the Hebrides, mainly from April – October. Larger nomadic vivier vessels target the more offshore grounds all year round and land into Mallaig, Uig, Ullapool, Scrabster and Orkney.

6.3.11 Creel numbers have increased gradually over the years, with pots being hauled every second or third day compared to daily pattern of hauling in the early years of the fishery. Parlour creels tend to retain relatively large numbers of lobster, compared to single chamber creels. The retained lobsters fight and many lose their claws and fetch lower prices when sold. Legislation in Jersey caps the use of parlours at 50% of total permitted creels. Fishermen have reported that catch per unit effort has reduced significantly, in the OH IFG area, over the years resulting in vessels having to increase the number of creels to retain similar catches.

6.3.12 The Scottish Fisheries Council Lobster and Crab Sub Group has given widespread support to introducing creel limits in the lobster fishery. The introduction of parlour creels has increased the efficiency of creels and cause damage to the shellfish when left for several days. Creel limits already operate in other parts of the UK and the Channel Isles, where only a maximum 50% of
total creel limits can be parlours. MSC accreditation for lobster fishery at pan Scottish level is the favoured position of SFC Sub Group members.

** ISSUES **

6.3.13 Lobster stocks are exploited at or above $F_{\text{MAX}}$ and there is currently no control on effort or landings. Effort has increased and fishermen have observed declining catch rates indicating local stocks are becoming depleted. The IFG therefore wants to introduce limits on the number of creels as this would allow for improved management of the fishery with potentially benefits to stocks and future of the fishery.

6.3.14 A logbook scheme to improve future stock assessment (provide information on stock dynamics) and assist in the evaluation of the effects of introducing the management measures also is required. Having a means to control effort and more and better data collection will help the case for MSC accreditation.

6.3.15 Market demand for large and crippled lobsters is poor, resulting in lower prices being paid for premium sizes. Previous increases in minimum landing sizes have benefited stocks and provided increased economic returns to vessels. Further phased increases in minimum landings sizes will benefit the stocks and provide long term economic benefits to the industry.

** OBJECTIVE **

Introduce effort control and improved management in the lobster creel fishery

** PROPOSED MANAGEMENT MEASURES **

6.3.16 To introduce creel limits and numbers of parlour creels based on vessel overall length

- Similar limits to brown crab fishery

*Contribution to SIFAG HLOs *

- Similar to brown crab fishery

6.3.17 Phased increase in minimum landing size 87 – 88 - 90mm for one year

*Contribution to SIFAG HLOs *

Biological & Environmental: may reduce fishing mortality and improve recruitment

Economic: catching for the market improved value at later date

Governance: easily enforced
6.3.18 Reduce maximum landing size of females from 155mm to 145mm and ban landing crippled females

*Contribution to SIFAG HLOs*

Biological & Environmental: may reduce fishing mortality and improve recruitment

Economic: catching for the market

Governance: easily enforced

6.3.19 Develop fit for purpose logbook

*Contribution to SIFAG HLOs*

Biological & Environmental: Improved data collection and CPUE/LPUE

6.4 VELVET CRAB FISHERY

**Marine Scotland Science (MS-S) Assessment and Advice**

6.4.1 Marine Scotland science uses length cohort analysis (LCA) to assess velvet crab stocks around Scotland. Assessments are done tri-annually on a regional basis, and are based on reported landings data and size data (carapace width or length) collected as part of MS-S market sampling programme.

6.4.2 The LCA method uses the commercial catch size composition data (size frequency) along with estimates of growth parameters and natural mortality to estimate stock biomass and fishing mortality at length. Because of differences in growth males and females are stocks are assessed separately. The key assumption of the approach is that the length distribution is representative of a typical cohort over its lifespan. However, this is only true of length frequency data from a single year if the population is in equilibrium and therefore the LCA is usually applied to data averaged over a number of years during which recruitment and exploitation rates have been stable. LCA also assumes uniform growth among all animals.

6.4.3 The results can be used to predict long-term (equilibrium) changes in the stock biomass and yield-per-recruit based on changes in mortality, fishing effort or size regulations. Assuming a direct relationship between fishing mortality and effort, lower levels of fishing effort will result in an increase in stock size and a reduction in landings. A higher level of effort will reduce total stock biomass but landings may also fall, as animals are caught before they may have time to grow to a size that would contribute much weight to the yield (growth overfishing). In between these lies $F_{\text{MAX}}$, the fishing mortality rate that maximises yield per recruit.
6.4.4 The changes that the LCA predict are long term (equilibrium). The approach gives an indication of the exploitation of the stock in terms of growth overfishing, but not recruitment overfishing; it does not provide any indication of short term stock dynamics or recruitment over-fishing. It is therefore best to interpret the LCA analyses in conjunction with other information such as catch rate (CPUE) data. This is because if the stock is not in equilibrium, if for example recruitment is decreasing and fewer small individuals are entering the stock, the stock may appear healthy as the size of those individuals being removed increases.

6.4.5 MSS' LCA assessments for velvet crab in the Hebrides region, which corresponds quite closely to the OHIFG area, for the period 2002 to 2005 and 2006 – 2008 indicate that both male and female velvet crab stocks were fished close to $F_{\text{MAX}}$.

**The fishery**

6.4.6 The velvet crab fishery was developed 25 years ago, with the main market being in Spain. The Hebrides had the fourth largest Scottish landings by weight between 2002 and 2006 and the fishery is of particular importance to the under 8 metre sector. All the velvet crab are sold to vivier lorries on a weekly basis. Prices have remained constant over many years, with the smaller class of velvets tending to fetch around £1.00 per kilo less than the larger velvets.

6.4.7 The fishery is currently managed by a shellfish licence, a minimum size of 65 mm carapace width. The fishery has no restrictions on landings and is pursued by around 40 local vessels, fishing in depths shallower than 20 metres. Vessels use similar gear to target velvets as they do for lobster and brown crab, although on different grounds and creel numbers used have increased steadily over the years to maintain catches at similar levels. Fishing for velvet crab tends to be better in areas of strong currents.

**ISSUES**

6.4.8 Stocks are exploited at around $F_{\text{MAX}}$ and there is currently no control on effort or landings. Effort has increased and fishermen have observed declining catch rates as local stocks are becoming depleted. The IFG therefore wants to introduce limits on the number of creels as this would improve the management of the fishery and would be potentially beneficial to stocks.

6.4.9 A logbook scheme to improve future stock assessment (provide information on stock dynamics) and assist in the evaluation of the effects of introducing the management measures. Having a means to control effort and more and better data collection will help the case for MSC accreditation.

6.4.10 Continued landings of berried velvets could have a negative impact on the future of the fishery. Improved selection procedures are necessary to ensure that selection of catch is undertaken at time of hauling. Increasing the minimum landing size should increase SBB and has the potential to increase
recruitment and provide enhanced returns to vessels in the short to medium term.

6.4.11 Due to lack of space for sorting the catch aboard the vessels, fishermen generally leave their selection until market day, resulting in many velvets being rejected on the quayside and dying and being lost to the fishery.

**OBJECTIVE**

Improved management of the creel fishery, introduce effort control and improved management in the velvet crab fishery

**PROPOSED MANAGEMENT MEASURES**

6.4.12 To introduce creel limits and parlour numbers based on vessel overall length size:

- Similar numbers to lobster and brown crab

**Contribution to SIFAG HLOs**

Biological: sustainable management of stock due to less effort

Social: equal access to fishery dependent on vessel size

Environmental: reduction in associated impact on seabed

Economic: increase in price due to lower landings

Governance: reduce conflict

6.4.13 Introduce legislation to prohibit landing of berried velvet crab

**Contribution to SIFAG HLOs**

Biological & Environmental: will improve recruitment (designed to protect SBB and may improve future recruitment)

Economic: improved value at later date

Governance: easily enforced

6.4.14 Increase in minimum landing size from 65 – 70mm carapace width length

**Contribution to SIFAG HLOs**

Biological & Environmental: will improve recruitment

Economic: catching for the market improved value at later date
Governance: easily enforced

6.4.15 Promote improved grading and selection procedures

*Contribution to SIFAG HLOs*

Biological & Environmental: may improve recruitment

Economic: catching for the market

6.4.16 Develop fit for purpose logbook

*Contribution to SIFAG HLOs*

Biological & Environmental: Improved data collection/ stock assessments

6.5 NEPHROPS TRAWL FISHERY

**Marine Scotland Science (MS-S) Assessment and Advice**

6.5.1 In addition to creel *Nephrops* fishery, the ICES advice noted concerns about discards of white fish in the fishery. *Nephrops* trawlers are required to use more selective gear as part of the west of Scotland emergency measures. Under the EU Cod Recovery Plan, trawl effort in Division V1a has declined significantly. So far this has mainly affected effort in the larger mesh gears > 100mm and effort in the *Nephrops* fisheries has been relatively stable. Conditions of the Stornoway MSC *Nephrops* trawl fishery stress the need for management at functional unit level and for monitoring by catch and discards. Vessels are restricted to days at sea depending on their previous cod catches.

The fishery

6.5.2 The trawl fishery for *nephrops* has been in existence for over 50 years. *Nephrops* were initially taken as a by-catch by white fish trawlers, being tailed and sold for the UK scampi market. As new marketing opportunities for whole prawn developed in the early eighties, many of the trawlers moved to rougher grounds to target larger *nephrops* which commanded higher prices.

6.5.3 Minimum mesh sizes in the *Nephrops* trawl fishery were increased in May 2009 from 70 mm to 80 mm for single rig trawl with a 3 metre square mesh panel at 120 mm. Those increased mesh sizes were introduced to protect white fish stocks and to reduce discards of juvenile fish. Mesh size for twin rig vessels reduced in 2008, from 95 mm to 80 mm in the area north of 56ºN. Mesh sizes on the west coast are now similar to those in the North Sea.

6.5.4 Current minimum landing sizes for *Nephrops* in the V1a are total length 70 mm and carapace length 20 mm, with tail sizes at 37 mm, whereas those in for the North Sea are total length 85 mm, carapace length 25 mm, with tail sizes being 46 mm.
6.5.5 A fleet of around 100 trawlers operate in the North and South Minch area. Landings and the size of animals landed have been stable over a number of years. Volumes of *Nephrops* tails landed however have reduced since the increase in mesh size to 80 mm. This could be due to changes in the selection pattern, but could also be reflect a reduction in abundance and or the size of the animals.

6.5.6 The *Nephrops* fishery has proven itself to be sustainable at level of vessel effort. Large *Nephrops* freezer trawlers, previously built for white fish offshore grounds, now operate in the area. Those vessels remain at sea for longer trips and freeze all the catch at sea.

6.5.7 Following a lengthy process Youngs Bluecrest financed the North Minch nophrops trawl fishery through successful MSC accreditation. The accreditation has opened up new marketing opportunities for the company in Germany, Switzerland and Belgium and has meant that local vessels have maintained a competitive price structure for whole trawl caught *nephrops*. Youngs Bluecrest pioneered the Youngs Trace system aboard a number of Stornoway *nephrops* trawlers. This new system provides full traceability of the product from the point of capture to the point of sale

**OBJECTIVE**

Propose additional conservation measures for key fisheries

**PROPOSED MANAGEMENT MEASURES**

6.5.8 To increase the minimum landing size of trawl caught *Nephrops* to total length 85 mm, carapace length 25 mm and tail size 46 mm.

*Contribution to SIFAG HLOs*

Biological: More smaller *Nephrops* discarded to improve recruitment

Environmental :Reduce discards of non target species due to larger mesh size

Economic: result in higher prices

Governance: consistency with NS - easily enforced
6.6 SCALLOP FISHERY

Marine Scotland Science (MS-S) Assessment and Advice

6.6.1 Marine Scotland Science (MS-S) conducts assessments of scallop stocks around Scotland on a regional basis. These use reported landings and market sampling data to derive estimates of spawning stock biomass, fishing mortality and recruitment and annual dredge surveys provide a fishery independent indicator of the state of the stocks.

6.6.2 Marine Scotland Science’s North West assessment region corresponds most closely with the Outer Hebrides Inshore Fisheries Group area. The most recent assessment indicated that spawning stock biomass (SSB) has decreased steadily from high values in 1999, a pattern mirrored by landings from the area. Both the assessment and the surveys indicate a decline in recruitment between 1999 and 2003, some improvements in 2004 and 2005 and a decrease thereafter.

6.6.3 Fishing mortality in the North West region has also declined since 2004 and is still low but this has not so far been accompanied by an increase in SSB or recruitment.

6.6.4 There are no agreed target or reference points for scallops and no management plans. A yield per recruit analyses indicate that fishing mortality is currently above $F_{0.1}$ – higher than that consistent with the maximum long term yield.

6.6.5 The reasons for the persistently low stock and recruitment levels, despite the decline in fishing mortality, are not known. Under such circumstances, management advice from MSS is for no increase in effort and for introduction of measures to increase the spawning stock biomass. One such measure is to increase the current MLS from 100 mm to 110mm. The survival of discarded scallops is high and therefore most undersized scallops returned to the sea have the potential to grow, to increase the reproductive capacity of the stock and potentially improve future recruitment.

6.6.6 It has also been suggested that mapping of scallop grounds, or collecting CPUE data from the fleet to identify areas of high concentrations of small or undersized scallops would be beneficial to identify areas where the fishery would be most adversely affected by increasing MLS. Logbooks would be useful in providing some of the above information.

The fishery

6.6.7 The scallop fishery has been developed successfully over a 40 year period. Around 35 scallop dredgers, of which 6 are locally based, are active in the IFG area. Further teams of scallop divers, some locally based and other nomadic vessels operate in the area throughout the year. Mobile
vessels operate mainly in the Minches area, whilst dive teams operate in the Minches, Loch Roag and west of Harris areas.

6.6.8 Scallop processing is an important part of the local economy, with processing plants in North Uist and Barra. Kallin Shellfish employ 15 people that process scallops from the six locally based vessels. Barratlantic employ 40 people processing mainly *nephrops* and scallops from around 7 mainland based vessels that fish in the South Minch and as far south as the Clyde. Other nomadic vessels fish the area on a more seasonal basis, mostly in winter and spring, and land to mainland ports for onshore processing in north east Scotland.

6.6.9 The inshore scallop fishery is regulated with scallop entitlement on the licence, a maximum of eight dredges per side, seasonal closures and an EU minimum landing size of 100 mm. Dive teams must operate from a licensed vessel, have a diving qualification and must comply with minimum manning levels. Scallop licence entitlements do not apply to under 10 metre vessels. Seasonal scallop closures for conservation purposes, from Lochmaddy to Barra, have been very successful, with reduced conflict and improved catches to correspond with seasonal marketing demands and are easily enforced.

6.6.10 Scallop prices have remained relatively constant for over 15 years, whilst operating costs, in particular fuel and steel, have risen rapidly during that period. Profitability in the sector has been greatly reduced, resulting in many vessels with scallop entitlement diversifying to the *nephrops* fishery when it became more profitable.

6.6.11 MSC accreditation for scallops at pan Scottish level is the favoured position of Scottish Fisheries Council Scallop Sub Group members

**ISSUES**

6.6.12 Scallops are of significant importance to the local economy providing employment both on vessels and onshore processing. Whilst scallop entitlements introduced a cap on the number of vessels permitted to fish for scallops, significant latent entitlements exist that could increase effort into the fishery if stocks and market economic conditions improve. Very little data is available on CPUE in the scallop fishery therefore designing a fit for purpose logbook would be useful, particularly to evaluate stocks locally. Measures to enhance market prices and controlling fishing mortality are therefore a priority for this fishery.

6.6.13 Seafish through the UK Scallop Working Group have been involved in designing more selective gear to reduce impact on the seabed. Promotion of more eco-dredge use and all scallop dredgers operating in the area participating in the UK Scallop Code of Conduct will reduce impact on the seabed and promote a better image for the fishery.
OBJECTIVE

Propose additional conservation measures for key fisheries

PROPOSED MANAGEMENT MEASURES

6.6.12 Increase minimum landing size for scallops to 105 mm with immediate effect then 110 mm within 2 years

Contribution to SIFAG HLOs

Biological & Environmental: aimed at protecting and increase spawning stock biomass

Economic: catching for the market improved value at later date

Governance: easily enforced

6.6.13 Mapping of scallop grounds

Contribution to SIFAG HLOs

Biological: improve data information on seabed

6.6.14 Develop fit for purpose logbook

Contribution to SIFAG HLOs

Biological & Environmental: Improved data collection on grounds fished and location of undersized scallops

6.6.15 Develop more selective lighter gear

Contribution to SIFAG HLOs

Environmental: Reduce impact on seabed

Economic: Reduce fuel costs and improve profitability

6.6.16 Adopt UK Scallop Good Practice Guide Appendix 8

Contribution to SIFAG HLOs
6.7 INSHORE FISHERIES AFFECTED BY COD RECOVERY MEASURES

6.7.1 CRAWFISH FISHERY

Marine Scotland Science (MS-S) Assessment and Advice

6.7.2 Marine Scotland Science (MS-S) do not assess crawfish stocks in the IFG area. Hence status is unknown. Reported landings are much lower than historical levels, this could be due to crawfish having been included with lobster landings. It is a candidate for protection under Wildlife and Countryside Act Schedule 5 (out to consultation in Scotland) and on SNH’s priority PMF list. Based on experience in other areas, measures to protect the stock from over-fishing and a programme of data collection would be advised.

The fishery

6.7.3 Tangle netting, with a minimum mesh size of 250mm, for crawfish was developed to the West of the Hebrides in the mid-seventies with trials funded by the White Fish Authority. The main areas targeted were to the West of Barra, Uist and Lewis, with further development of the grounds to the East of Uist and Scalpay

6.7.4 A local fleet of 20 under 10 metre static gear vessels targeted the fishery from April – September. The fishery is directed at crawfish with no white fish by catch a few lobsters are also caught in the tangle nets. Fishing grounds are mostly within the 6 mile limit, in water depths of up to 60 metres. Nets are set over the rough, peaky, hard grounds usually frequented by shellfish.

6.7.5 Vessels were attracted to this seasonal fishery to take effort away the traditional stocks of lobster, *Nephrops*, velvet and brown crab during periods when those stocks command low prices and markets are over-supplied.

6.7.6 All crawfish are sold live and in many cases both fishermen and merchants store the catch to benefit from higher Christmas prices. Mortality rates during storage are low with fishermen and merchants storing them individually using a specially designed netted bag. The main market is in Spain with prices in excess of £40 per kilo being paid at Christmas.

6.7.7 End of year, December 2008, EU agreements in keeping West of Scotland mobile demersal fisheries open resulted in a prohibition in the use of gill and tangle nets, unless tied to the shore with a stake.

ISSUES

6.7.8 The directed crawfish fishery using a minimum mesh size of 250 mm has had no impact on white fish stocks and the IFG consider a derogation is urgently required to allow this method of fishing to continue. Skippers are keen to take observers aboard to gain independent approval that the fishery has no impact on white fish stocks.
6.7.9 Local stocks in the IFG area appear to be healthy with many larger animals over 2 kgs being caught. The market prefers crawfish smaller than 2 kgs with lower prices being paid for larger animals. Therefore introducing a maximum landing size and introducing a ban on the landing of berried crawfish would be beneficial to stock recruitment. The fishery would benefit from vessels having logbooks to indicate current effort and CPUE in fishery. Data collection required to progress stock assessment and advice.

**OBJECTIVE**

Propose additional conservation measures for key fisheries.

**PROPOSED MANAGEMENT MEASURES**

6.7.9 Introduce a maximum landing size of 145 mm carapace length (males and females) and a ban on landing berried females

*Contribution to SIFAG HLOs*

Biological & Environmental: intended to protect spawning females, potential to maintain improve recruitment

Economic: catching for the market

Governance: easily enforced

6.7.10 Develop a log book for the fishery

*Contribution to SIFAG HLOs*

Biological & Environmental: Improved data collection

6.7.11 Commence an observer programme

*Contribution to SIFAG HLOs*

Biological & Environmental: Improved data programme

Governance: An open and transparent environment

Social: Provide long term fishery

6.7.2 SQUID FISHERY

*Marine Scotland Science (MS-S) Assessment and Advice*

6.7.2.1 MS-S do not assess the West Coast inshore squid fishery. However, Seafish and Aberdeen University have completed a report on the inshore squid fishery in the North Minch. This report is available at Appendix 5.
The fishery

6.7.2.2 The squid fishery was developed by around six local inshore *nephrops* trawlers around six years ago. Fishing was mainly on a seasonal basis, in the North Minch, from September to November when prawn catches were low.

6.7.2.3 This non quota fishery created new alternative opportunities for local vessels at time when traditional fishing opportunities were limited. All the squid was sold to the domestic market.

6.7.2.4 Local squid sizes vary from 4” – 12”, with prices ranging from £15 - £18 per stone, averaging around £90 per box.

6.7.2.5 Seafish Industry Authority staff have used net monitoring equipment to replicate net design at the Flume Tank, in Hull, and have designed the optimum rig for the type of squid net to be used in the inshore waters of the Minches. White fish catches were very low due to squid net being rigged off the seabed, with a cod end mesh size of 32-34 mm.

6.7.2.6 Following the EU Council meetings in December 2008, it is no longer permitted to target squid, with mesh size of 32 - 34 mm in the inshore waters of the west coast of Scotland. This prohibition is to protect juvenile cod, haddock and whiting from being caught in small meshed gears. Local fishermen indicate that a clean targeted squid fishery could be pursued in inshore waters provided the squid net was professionally rigged to avoid catches of juvenile white fish.

6.7.2.7 Similar squid gear is already used in the inshore waters of the Moray Firth and it would be prudent to investigate the possibility of seeking a derogation which would permit similar gear types to be used in the inshore waters of the Minches. Fishermen are requesting that independent observers are used to verify that a clean targeted squid fishery, that will have no impact on juvenile cod, haddock and whiting, can be pursued in the inshore waters of the Minches.

PROPOSED MANAGEMENT MEASURES

6.7.2.8 Commence an observer programme

Contribution to SIFAG HLOs

Biological & Environmental: Improved data programme

Governance: An open and transparent environment

Social: Provide long term seasonal fishery
6.8 DEVELOP NEW SUSTAINABLE FISHERIES

6.8.1 COCKLES

Marine Scotland Science (MS-S) Assessment and Advice

6.8.1.1 A survey of the cockle beds in Lewis, Harris and North Uist, funded by HIE, CNES and SNH was completed in 2010. Copy of survey is at Appendix 6.

A summary of the findings are:

- Shore based surveys of eight cockle grounds on the Uists, Harris and Lewis were carried out between 13.11.09 and 29.2.10.

- All of the grounds had been previously surveyed in 2000 and a number had also been surveyed in 1993.

- A stratified random survey design was used allowing comparison of the results with previous surveys.

- In total 416 sites were sampled. At each site sediment was sampled from an area of 0.1m² and cockles were removed with a sieve.

- A total of 1064 cockles were counted, aged, measured and weighed.

- Estimates of total biomass for each ground ranged from 132 at Tong tonnues to 709 tonnes at Traigh ear. North Ford and Traigh ear in Uist supported highest cockle biomasses including a high proportion of cockles in 5 and 6+ age classes.

- All grounds contained a broad age range of cockles.

- Ten percent or more of the cockles at North Ford, Vallaquie and Traigh ear were larger than 30 mm (the minimum size permitted in the Outer Hebrides fishery). Cockles larger than 30 mm were estimated to make up less than 10% of the total stocks on Baleshare, Traigh Leathann, Luskentyre, Tong and Vallay. No cockles over 30 mm were found in Vallay samples.

- The cockles sampled took a minimum of three years and more generally six or seven years to reach 30 mm.

- Current survey results are broadly similar to those from surveys in 1993 and 2000.
• The recent survey provides a useful overview of cockle distribution and abundance. Future surveys should examine exploited cockle grounds in detail to provide more precise information on target stocks.

The fishery

6.8.1.2 Cockles were harvested by mechanical methods in Barra, North Uist, Harris and Lewis until a prohibition was introduced on mechanical harvesting by a Statutory Instrument through the Inshore Fishing (Scotland) Act.

6.8.1.3 Hand racking is undertaken in Barra and Harris, with gatherers supplying catch for the live market. Concern was expressed in Harris that stocks could become over-exploited as there was no minimum size in place to protect the fishery.

6.8.1.4 Following a period of local consultation, a pre-cautionary minimum landing size of 30mm was introduced, under a Statutory Instrument (SI), for cockles in the Outer Hebrides. This was to prevent over-fishing until appropriate measures for the long term management of the fishery could be considered.

6.8.1.5 Biomass estimates (in tonnes) for 25% of the cockle stock available at each of the possible minimum landings sizes for 25 – 30mm:

<table>
<thead>
<tr>
<th>MLS</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traigh Leathann</td>
<td>33</td>
<td>33</td>
<td>29</td>
<td>24</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Baleshare</td>
<td>41</td>
<td>35</td>
<td>30</td>
<td>30</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>North Ford</td>
<td>133</td>
<td>125</td>
<td>116</td>
<td>108</td>
<td>93</td>
<td>73</td>
</tr>
<tr>
<td>Vallay</td>
<td>20</td>
<td>13</td>
<td>13</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Traigh Ear</td>
<td>153</td>
<td>133</td>
<td>110</td>
<td>90</td>
<td>66</td>
<td>52</td>
</tr>
<tr>
<td>Vallaquie</td>
<td>50</td>
<td>49</td>
<td>41</td>
<td>40</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Luskentyre</td>
<td>48</td>
<td>42</td>
<td>37</td>
<td>29</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>Tong</td>
<td>35</td>
<td>35</td>
<td>33</td>
<td>28</td>
<td>26</td>
<td>26</td>
</tr>
</tbody>
</table>

ISSUES

6.8.1.6 The OH IFG Cockle Sub Group, consisting of MS-S, MS-C, SNH, CNES, Seafish, RSPB and LCC, will recommend to the Executive Committee the way forward to manage the fishery, in a sustainable manner taking into consideration, market requirements, site designation status, seasonal closures, minimum landing sizes, licensing, quotas, days fished and site specific extraction methods.

6.8.1.7 Depending on the final agreed minimum landing size there could be a potential to harvest from between 200 – 500 tonnes. This could generate a fishery that could be valued up to £400,000.

6.8.1.8 The Executive Committee and the Advisory Group of the OH IFG consider that the IFG should be the Management Group that should be
delegated the powers to licence and manage the cockle fishery on behalf of all stakeholders.

**OBJECTIVE**

Assist the industry in developing new fisheries on a sustainable basis

**PROPOSED MANAGEMENT MEASURES**

**6.8.1.9 Licence the fishery in a sustainable manner**

**Contributes to SIFAG HLOs**

- Biological, Environmental & Governance: Involvement of all stakeholders
- Economic: Generate additional income in communities
- Social: Provide new employment opportunities

**6.8.2 RAZORFISH**

**Marine Scotland Science (MS-S) Assessment and Advice**

6.8.2.1 Survey worked completed in Broad Bay, Grimsay and Loch Carnan in 1998. Copy of survey can be seen at Appendix 7.

**The fishery**

6.8.2.2 There are limited commercial diving fisheries for razorfish at locations throughout the Western Isles. Stock surveys were completed in 1999 using a water jet dredge system and it was recommended that further studies should be undertaken on distribution of stocks and to investigate sustainable harvesting levels and methods. Advances have been made in dredge design that reduce impact on the seabed and commercial razorfish extraction occurs at other locations throughout the UK.

**ISSUES**

6.8.2.3 The Executive Committee of the Outer Hebrides IFG has approved a recommendation that a Razorfish Sub Group, consisting of MS-S, MS-C, SNH, CNES, Seafish, HIE, RSPB and LCC, should be formed to progress the potential for developing a commercial razorfish fishery in the area.

6.8.2.4 There is a good market for razorfish and it would be beneficial to the OH IFG if a small scale well controlled licensed fishery could be developed. However, wide range consultation with a wide range of stakeholders would have to be convened to gain knowledge of good practices in other areas, where razorfish stocks are fished sustainably.
6.8.2.5 The Executive Committee and the Advisory Group of the OH IFG consider that the IFG should be the Management Group that should be delegated the powers to licence and manage a sustainable local razorfish fishery on behalf of all stakeholders.

**OBJECTIVE**

Assist the industry in developing new fisheries on a sustainable basis

**PROPOSED MANAGEMENT MEASURES**

6.8.2.6 Investigate the possibility of developing a small scale local razorfish fishery

Contributes to SIFAG HLOs

Biological, Environmental & Governance: Involvement of all stakeholders

Economic: Generate additional income in communities

Social: Provide new employment opportunities

**6.8.3 BROWN SHRIMP**

**Marine Scotland Science (MS-S) Assessment and Advice**

6.8.3.1 Marine Scotland Science (MS-S) have not assessed this stock

**The fishery**

6.8.3.2 Fishermen report very small catches of brown shrimp in their velvet crab pots when fishing in very shallow waters. Catches seem to be higher during the late autumn and winter months. There is a strong market demand for brown shrimp with prices of up to £20 per kilo being paid.

**ISSUES**

6.8.3.3 The opportunity exists to develop a small scale brown shrimp fishery for the benefit of under 8 metre vessels that fish in shallow waters. Local shellfish buyers are aware of potential marketing outlets for brown shrimp and would sell the product direct to the live market in Spain.

6.8.3.4 A small scale pilot project to develop this fishery could be costed and applications made to a range of funding agencies. The project would look at distribution, sizes, markets, discards and mortality rates.

**OBJECTIVE**

Assist the industry in developing new fisheries on a sustainable basis
PROPOSED MANAGEMENT MEASURES

6.8.3.5 Investigate the possibility of developing a small scale local brown shrimp fishery

Contributes to SIFAG HLOs

Biological, Environmental & Governance: Involvement of all stakeholders

Economic: Generate additional income in communities

Social: Provide new employment opportunities

6.8.4 SMALL SCALE MACKEREL FISHERY

6.8.4.1 A number of local under 10 metre vessels have shown an interest in developing a small scale local inshore mackerel fishery, using lines. They already have a small monthly quota allocation of up to 2 tonnes depending on season. The fishery would be close inshore and could be developed without any conflict with any other fisheries.

6.8.4.2 Vessels could set feelers to establish that the quality of any mackerel on the grounds was of good quality, before commencing a targeted fishery in any area.

6.8.4.3 Local markets could cater for small volumes of line caught mackerel, with options of smoking, salting or selling fresh to local outlets.

OBJECTIVE

Assist the industry in developing new fisheries on a sustainable basis

PROPOSED MANAGEMENT MEASURES

6.8.3.5 Investigate the possibility of developing a small scale local inshore hand line mackerel fishery

Contributes to SIFAG HLOs

Biological, Environmental & Governance: Selective fishing methods, no discards, easy to monitor on small vessels

Economic: Generate additional income in communities

Social: Provide new employment opportunities
6.9 AMENDMENTS TO INSHORE FISHING (SCOTLAND) ACT 1984

6.9.1 A number of prohibitions have been introduced in waters around the Outer Hebrides through the Inshore Fishing (Scotland) Act 1984. The last review was undertaken in 2002 and it is now considered that it would be beneficial to remove measures which are no longer relevant. Furthermore, additional measures are necessary to take account of changes in fishing patterns that have occurred within the Outer Hebrides since the last review.

Amendments to area within which prohibitions applies:

6.9.2 Stuley Island to Barra Head and Gurney Point

Any method of fishing for sandeels to be amended from 1 March to 31 October in each year to 1 June to 31 August in each year.

This is to reflect the period during which sandeel licences have been issued.

6.9.3 Sound of Harris

Mobile gear prohibition to be removed

This prohibition was introduced in error and this area is already covered with seasonal scallop dredging.

6.9.4 Bragar to Dell

Prohibition of fishing with creels to be amended from 1 July – 30 September to 1 January to 31 March in each year and 1 November to 31 December in each year.

The size of vessels fishing in this area has changed and brown crab processing in the area has ceased since the previous measure was introduced. The new prohibition period would coincide with all the other creel prohibition periods throughout the Outer Hebrides area.
6.9.5 Lochmaddy to Stuley Island

Seasonal prohibition periods to include all methods for catching scallops

The current seasonal prohibitions only apply to scallop dredging and to aid conservation this should be extended to cover all methods of fishing.

6.9.6 Northern Barra, South Uist, Benbecula, North Uist and Harris

Prohibition of fishing with creels 1 January to 31 March in each year and 1 November to 31 December in each year to be extended South following the 6 mile limit contour to join a line running South from Sgeir Mhore Berneray 56º46.90 N 7º 36.48 W running south for 3 miles to a position 56º 43.87N 7º 36.48W then west to intersect the UK 6 mile limit at 56º 43.92’N, 7º48.78W.

The extension of the creel prohibition area would include all the areas fished by the local static gear fleet and would prevent over-fishing in the small area that is not currently covered by the creel prohibition.
6.9.7 Loch Roag

New prohibition of fishing for sea fish with creels from 1 May – 31 July in each year:

**OBJECTIVE**

Improve decision making and reduce conflict in the sector and between other marine sectors

**PROPOSED MANAGEMENT MEASURES**

1. Review arrangements in all fisheries

**Contributes to SIFAG HLOs**

Biological : Environmental: Reduce effort in areas and improve recruitment

Economic : Fishing area to meet market requirements

Governance: Easy to enforce
6.10 FUEL EFFICIENCY

6.10.1 The Outer Hebrides fishing fleet has suffered from paying much higher fuel costs over many years, resulting in the fleet being less profitable than those operating in other areas of Scotland.

6.10.2 Fuel tanks have been installed by CNES at most of the main fishing ports in the area, however, fuel prices continue to be significantly higher than at piers owned by Highland Council.

6.10.3 Discussions have been held with Lews Castle College, (LCC) to investigate the potential for alternative sources of cheaper fuel that would be appropriate for use on inshore vessels. Following those discussions, LCC have been successful in having been awarded EFF funding to investigate the use of hydrogen aboard inshore vessels. It is expected that savings of up to 15% in fuel costs once the hydrogen system has been installed aboard fishing vessels.

6.10.4 The hydrogen project will be over a 3 year period during which commercial trials will be undertaken aboard an inshore trawler to ensure that this new technology will be appropriate for use aboard inshore vessels.

6.10.5 The IFG and the wider Scottish fishing industry will be updated on a regular basis with an update on the various stages of the project. LCC research staff will be available to travel to around Scotland to demonstrate the benefits that can be achieved from the project.

OBJECTIVE

Assist the industry in cost reductions

PROPOSED MANAGEMENT MEASURES

6.10.5 Investigate the possibility of using hydrogen as a fuel source aboard fishing vessels

Contributes to SIFAG HLOs

Environmental: Reduce CO2 emissions

Economic: Reduce costs and increase profits

Social: Provide new research employment opportunities
6.11 FLEET RENEWAL AND RECRUITMENT

6.11.1 There has been a gradual downsizing of the Outer Hebrides fleet, following decommissioning schemes and reduced profit margins in the over 10 metre sector of the fleet. Currently, nearly 80% of the fleet is under 10 metres in length.

6.11.2 The onshore shellfish processing sector depend on supplies from the over 10 metre sector for all of their raw material. Therefore, it’s of paramount importance to the local economy that funding is available to enable young fishermen to become shareholders in over 10 metre vessels.

6.11.3 The average age of the various sectors for over 10 metre vessels range from 25 – 38 years old and is in urgent need of significant investment to renew that sector of the fleet. Similarly, the average age of the skippers of the over 10 metre sector is 45 years old.

6.11.4 CNES has been very supportive to the fishing industry providing a loan guarantee scheme of £1M, in partnership with the Royal Bank of Scotland. The Fisheries Loan Scheme was very successful with only £12,000 of guarantee being called in during the 10 year duration of the Scheme. However, this arrangement has had to be renewed with the State Aids Unit and it’s becoming increasing more difficult to devise a State Aid compliant scheme that can offer any assistance for the purchase of fishing vessels.

6.11.5 CNES invested £700,00 in the purchase of West of Scotland Nephrops quota, with this quota held by the Scottish Fishermen’s Organisation and the Orkney Fish Producers Organisation and leased to fishermen at commercial rates. This has enabled new entrants to lease Nephrops quota rather than incurring the additional capital costs of buying quota, along with a vessel and licence.

6.11.6 Access to fisheries training to National Standards is available throughout the Outer Hebrides through a network of qualified trainers. However, skippers of the larger vessels are finding recruitment of qualified deckhands extremely difficult and are dependent on EU Nationals, following visa restrictions being imposed on Filipino fishermen.

6.11.7 Currently, in excess of 150 fishermen have completed their Inshore Skippers Ticket for under 15 metre vessels, through Government funded courses. Those new qualifications are fully transferable to both the aquaculture and marine tourism sectors, with the addition of an ENG1 medical certificate. Many of those skippers are now keen to move into vessel ownership, with the main barrier being lack of finance due to Banks being reluctant to support the fishing industry.

6.11.8 Conditions could be attached to any approved new entrant scheme to ensure that vessels adopted selective gear, completed specific logbooks to enhance data collection and targeted stocks that were considered to be sustainable.
OBJECTIVE

Encourage new entrants into the fishing industry at a sustainable level

PROPOSED MANAGEMENT MEASURES

6.11.8 Investigate setting up a State Aid Compliant Scheme for the purchase of vessels for suitably qualified fishermen

Contributes to SIFAG HLOs

Economic: Create additional employment, protect processing sector employment

Social: Sustain population in fragile communities
7. RESEARCH AND MONITORING REQUIREMENTS

7.1 BASLINE ASSESSMENT SUMMARY

7.1.1 Marine Scotland Science currently undertake surveys and regional stock assessments for Nephrops, scallops, lobster, brown crab and velvet crab. They operate a nephops discard programme, recorded sizes of landed and discarded nephrops in the trawl fishery, and collect length frequency data from shellfish landings.

7.1.2 Observer trips are undertaken aboard nephrops trawlers by Glasgow University as part of the North Minch Nephrops MSC Accreditation Scheme. Results from those trips are shared with industry and Marine Scotland Science. Further observer trips are undertaken aboard Nephrops trawlers as part of West of Scotland cod recovery measures. By-catch and discard details are recorded as part of those observer programmes.

7.1.3 Vessel monitoring systems currently aboard all over 15 metre vessels and Youngs Trace Systems aboard all Nephrops trawlers landing to Youngs Bluecrest provide information on location of trawled Nephrops.

7.1.4 Additional data on quantities landed are provided by by inshore skippers who complete log sheets, (Nep 1 and Shell 1 forms) and submit sheets to the local fishery office as required under national legislation

7.2 SCIENCE PLAN

7.2.1 SISP Project

7.2.1.1 The current SISP project at Appendix 4 should provide the IFG with the required information to introduce improved management measures for the Nephrops creel fishery:

- creel minimum mesh size to catch for market
- evaluate benefit of escape panels
- increase minimum landing size
- seasonal ban on landing berried Nephrops
- reduce discards in the fishery

7.3 Develop logbooks

7.3.1 There is currently very little data on catch rates in creel fisheries in the IFG area. Assessments of crab and lobster stocks in particular would be improved if there was information on stock dynamics and or recruitment. The evaluation of the effects of introduction of additional management measures in the IFG area will require such information. It is therefore proposed that Marine
Scotland and Industry develop a logbook scheme to gather CPUE data, this to be completed by selected but representative vessels providing good coverage of the IFG fishing ground / geographic area.

7.3.2 The information collected will provide information on effort, by-catch, discards, hours fished and area distribution of the fisheries. Furthermore, information provided will illustrate benefits of eg increasing minimum landing sizes.

7.4 Develop New Sustainable Fisheries

7.4.1 It is anticipated that regular cockle stock surveys to be undertaken once a licensed cockle fishery is established.

7.4.2 Conduct further studies on razorfish as recommended by the Marine Laboratory in their earlier report on the effects of water jet dredging in some Western Isles populations.

7.5 Observer Programme

7.5.1 An independent scientific observer to be sourced to observe by-catches in an inshore squid fishery.

7.5.2 An independent scientific observer to be sourced to observe by-catches in the crawfish tangle net fishery to the West of the Hebrides.

7.6 Water Classification

7.6.1 Water classification must be completed for all new areas where cockles and razorfish are harvested. Both CNES and Food Standards Agency (FSA) will have to be involved in sampling procedures to determine the classifications of sites prior to the product being sold directly to the market.
8. IMPLEMENTATION OF PLAN

8.1 There will be several stages involved in the consideration and implementation of the objectives set out in the IFG Management Plans.

8.2 SIFAG will consider whether the management plans are consistent with the high level objectives and whether proposals in them have been assessed for legislative requirements. Marine Scotland will assess the impact of the proposals. It is expected that a Strategic Environmental Assessment (SEA) be required on at least some objectives and this will be carried out by the SEA Gateway team in Marine Scotland. These Assessments will run simultaneously and on receipt of their conclusions the plans will be sent to Scottish Ministers.

8.3 Once the plans have been approved by Scottish Ministers, then the agreed appropriate managed measures will be underpinned by legislation. Marine Scotland will be responsible for implementing national legislation where necessary to deliver the objectives which may include Regulating or Several Orders, mechanisms under the Inshore Fishing (Scotland) Act 1984 or other legislation such as the Sea Fish (Conservation) Act 1967.

<table>
<thead>
<tr>
<th>Objective:</th>
<th>Improve management of creel fisheries additional conservation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Measures</td>
<td>Timing</td>
</tr>
<tr>
<td>▪ Limit creel numbers in all creel fisheries</td>
<td>2011 onwards</td>
</tr>
<tr>
<td>▪ Evaluate effects of creel mesh size and escape panel on catch composition</td>
<td>2010 - 2011</td>
</tr>
<tr>
<td>▪ Increase minimum landing sizes for lobster, brown and velvet crab</td>
<td>2012 onwards</td>
</tr>
<tr>
<td>▪ Reduce maximum landing size for lobster, ban on landing berried female lobsters</td>
<td>2012 onwards</td>
</tr>
<tr>
<td>▪ Encourage improved grading</td>
<td>2012</td>
</tr>
</tbody>
</table>
practices for velvets onwards Scotland discards and undersized at vivier lorries

**Data:**

Existing: No existing data available on creel numbers and no measures in place to limit number of vessels in IFG area

Required: Develop creel tagging system, develop logbook system, statutory consultation process on new measures 2012 onwards IFG, MS-Policy, MS-Sci, MS-Comp.

**Relationship with national measures (existing or proposed)**

Linking in with the relevant Sub Groups of the Scottish Fisheries Council, measures could be introduced through existing legislation

**Additional funding/resources identified**

SISP funding approved for evaluating effects of creel mesh size and escape panel on catch composition. EFF funding required for logbooks. Cost implications for a creel tagging system

---

**Objective:**

**Additional conservation measures for key fisheries**

<table>
<thead>
<tr>
<th>Management Measures</th>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase MLS for trawl caught <em>nephrops</em></td>
<td>2012</td>
<td>IFG, MS, SFC Sub Group</td>
<td>Monitor sizes</td>
</tr>
<tr>
<td>Increase scallops MLS to 105mm</td>
<td>2012</td>
<td>IFG, MS-Sci, SFC Sub Group</td>
<td>Monitor size of SSB</td>
</tr>
<tr>
<td>Prohibit landing of berried females and introduce a maximum landing size for crawfish</td>
<td>2012</td>
<td>IFG, MS-Sci, MS-Comp, Buyers</td>
<td>Logbook for monitoring numbers returned to fishery</td>
</tr>
</tbody>
</table>

**Data**

Existing: Size data available from some processors, in case of trawled *nephrops*, MSS market and discard sampling 2012 onwards IFG, *Nephrops* buyers

Required: Similar data from other *nephrops* processors. Additional data on meat weight sizes from scallop buyers, MS sampling landings 2012 onwards IFG, *Nephrops* and Scallop processors

**Relationship with national measures (existing or proposed)**

West of Scotland minimum mesh sizes in the *nephrops* trawl fishery are similar to the North Sea and similar MLS should be adopted. Increasing scallops sizes to 110mm
would have too much economic impact on scallop vessels, with a phased increase being the most logical step for the West Coast.

**Additional funding/resources identified**

No additional resources required other than cost of consultation with industry prior to introducing such measures.

**Objective:**

**Assist industry in developing new sustainable fisheries**

**Management Measures**

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Year</th>
<th>Responsible Body</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cockle Sub Group develop a management plan for a sustainable fishery</td>
<td>2012</td>
<td>IFG Cockle Sub Group</td>
<td>Agree harvesting areas, exploitation rates, number of licences</td>
</tr>
<tr>
<td>Obtain guidance on developing sustainable harvesting methods for razorfish</td>
<td>2012</td>
<td>IFG Razorfish Sub Group</td>
<td>Stock surveys and best practices from other areas</td>
</tr>
<tr>
<td>Pilot trial to develop a small scale brown shrimp fishery</td>
<td>2012</td>
<td>IFG, MS, Seafood Scotland, SNH</td>
<td>Monitor catches and markets</td>
</tr>
<tr>
<td>Investigate potential in developing a localised squid fishery</td>
<td>2012</td>
<td>IFG, MS</td>
<td>Monitor catches and markets, observer programme</td>
</tr>
<tr>
<td>Investigate the possibility of developing small-scale handline and drift net herring and mackerel fishery</td>
<td>2012</td>
<td>IFG, MS, Pelagic sector</td>
<td>Landings from fishery, economic return and develop local market</td>
</tr>
</tbody>
</table>

**Data**

Luskentyre, Tong 2000,2010

Razorfish Surveys in Broad Bay, Grimsay Loch Carnan (1998)

Information on squid from Aberdeen University and Seafish
**ICES Advice available for herring and mackerel**

- Required:
  - Develop new approach to managing localised fisheries e.g. cockles, raorfish
  - New survey for Barra cockle beds
  - Further studies on Razorfish gear development to improve selectivity and reduce damage to catch and by-catch and reduce impact on seabed
  - Observers to determine cod by-catch in squid fishery
  - Identify local markets for locally caught mackerel from small inshore vessels

**Relationship with national measures (existing or proposed)**

Scottish licensing review for new approach to licensing local fisheries incorporating the IFGs Executive and Advisory Groups as the Managing Body to manage particular local fisheries. Current observers used for cod recovery measures to be used in squid fishery for investigating cod by-catch in west Coast fishery.

**Additional funding/resources identified**

Developing new fisheries could be eligible for funding from EFF, CNES, HIE, LEADER, SNH

<table>
<thead>
<tr>
<th>Objective:</th>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide marketing support to current and developing fisheries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management Measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- MSC <em>Nephrops</em> trawl fishery accreditation.</td>
<td>2012 onwards</td>
<td>IFG, Youngs Bluecrest</td>
<td>Continued Accreditation</td>
</tr>
<tr>
<td>- Consider pan Scotland level MSC accreditation for scallop and brown crab</td>
<td>2012 onwards</td>
<td>IFG, MS,SFC Crab/scallop sub groups</td>
<td>Improved data collection</td>
</tr>
<tr>
<td>- Responsible Fishing Scheme</td>
<td>2012</td>
<td>IFG, GTA, SeaFish</td>
<td>Monitor vessel numbers</td>
</tr>
</tbody>
</table>

**Data**

Existing: Youngs Bluecrest for North | IFG, MS,
Minch *Nephrop* trawl fishery
Crab and scallop sub groups forward plans
Develop existing base of vessels for joining RFS

<table>
<thead>
<tr>
<th>Required:</th>
<th>Coordination of existing workstreams</th>
<th>IFG</th>
</tr>
</thead>
</table>

**Relationship with national measures (existing or proposed)**
Promotion of MSC for key fisheries and Seafish and SNH to develop RFS to consider more environmental criteria.

<table>
<thead>
<tr>
<th>Additional funding/resources identified</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Continuation of Seafish funding for RFS and EFF for promotion and marketing

<table>
<thead>
<tr>
<th>Objective:</th>
<th>Encourage ‘catching for the market’</th>
<th></th>
</tr>
</thead>
</table>

**Management Measures**

- Increase minimum landing sizes for trawl and creel caught nephrops, scallops, brown and velvet crab
- Introduce maximum landing size for crawfish and reduce MaxLS for lobster
- Ban landing of crippled female lobsters
- Ban landing of berried female crawfish

<table>
<thead>
<tr>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>IFG, MS, Industry</td>
<td>Prices per kg and value of landings</td>
</tr>
</tbody>
</table>

**Data**
Existing: Existing legislation in place for enforcement of minimum landing sizes
Required: Amendments to existing legislation

<table>
<thead>
<tr>
<th>Timing</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>MS</td>
</tr>
</tbody>
</table>

**Relationship with national measures (existing or proposed)**
Develop issues raised at SFC Sub Group meetings

<table>
<thead>
<tr>
<th>Additional funding/resources identified</th>
<th>None</th>
</tr>
</thead>
</table>

**Timing** | **Responsibility** | **Monitoring**
---|---|---|
### Objective:

**Assist industry in cost reductions**

<table>
<thead>
<tr>
<th>Management Measures</th>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support fuel efficiency</td>
<td>2011 onwards</td>
<td>LCC, IFG, CNES MS, Seafish</td>
<td>Progress report with LCC</td>
</tr>
<tr>
<td>Gear adaptation methods</td>
<td>2012</td>
<td>IFG, MS, Industry</td>
<td>Monitor discards fuel usage</td>
</tr>
</tbody>
</table>

**Data**

Existing: Lews Castle College research on use of hydrogen approved 3 year EFF funding. Seafish studies on more cost effective and fuel efficient gear.

**Required:**

*Relationship with national measures (existing or proposed)*

Improve profitability of the fishing fleet.

**Additional funding/resources identified**

EFF application submitted to Marine Scotland.

---

### Objective:

**Reduce impact of fishing on the marine environment & develop more selective gear**

<table>
<thead>
<tr>
<th>Management Measures</th>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop environmental aspects of the Seafish Responsible Fishing Scheme</td>
<td>2012</td>
<td>Seafish, SNH, GTA</td>
<td>Reduce discards</td>
</tr>
<tr>
<td>Review existing fishing prohibitions</td>
<td>2012</td>
<td>MS, IFG</td>
<td>Local coordination of benefits</td>
</tr>
<tr>
<td>Reduce by-catch and marine organisation and small <em>nephrops</em> with larger mesh size in <em>nephrops</em> creels</td>
<td>2012</td>
<td>MS-Sci, IFG, Industry and Creel manufacturers</td>
<td>Additional data collection by vessels</td>
</tr>
<tr>
<td>Promote use of scallop eco-dredge</td>
<td>2012</td>
<td>MS, IFG, SNH and Industry</td>
<td>Monitor catch rates, seabed impact and fuel consumption</td>
</tr>
<tr>
<td>UK Scallop Good Practice Guide</td>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing: Seafish RFS criteria, SISP project has commenced, Seafish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>report available on eco-scallop dredge, Code of Conduct in draft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required: Progress with Seafish to develop environmental aspects of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFS. More research on use of eco-dredge and finalisation of Scallop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code of Conduct.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Relationship with national measures (existing or proposed)

Seafish Scallop Working Group to continue work on scallop dredge design and Code of Conduct for all sectors of the scallop sector

### Additional funding/resources identified

Seafish with UK Scallop Working Group

<table>
<thead>
<tr>
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<th>Monitoring (key indicators)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective:**

**Provide advice, training and facilities to available funding for fishermen**

### Management Measures

- Access to State Aid compliant credit facilities
- Fuel efficiency measures
- Facilitate access to funding for new gear for pilot fisheries or adapt gear for conservation purposes
- Promote skipper training and training for marketing and improved handling practices

<table>
<thead>
<tr>
<th></th>
<th>CNES, IFG, Banks</th>
<th>Monitor number of applicants and successful applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Seafish, CNES, Business</td>
<td>Monitor profitability of vessels</td>
</tr>
<tr>
<td>2012</td>
<td>Gateway LCC IFG, MS</td>
<td>Monitor numbers</td>
</tr>
<tr>
<td>2012</td>
<td>GTA, IFG, Industry</td>
<td></td>
</tr>
</tbody>
</table>

### Data

Existing: CNES have details on range of business support schemes. Nationally recognised training schemes in place for catching sector.

Required: Determine State Aid Compliant assistance. Develop selective gear for new fisheries
### Relationship with national measures (existing or proposed)
Scottish Seafood Training Partnership developing career pathways for all sectors of the fishing industry

<table>
<thead>
<tr>
<th>Additional funding/resources identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNES already operate a loan guarantee with the Royal Bank of Scotland for business support</td>
</tr>
</tbody>
</table>

### Objective:

**Encourage new entrants into the industry at a sustainable level**

#### Management Measures

- Enhance Fisheries Support Scheme
- Promote Community Quota Scheme
- Promote Maritime Skills for Work

<table>
<thead>
<tr>
<th>Timing</th>
<th>Responsibility (lead &amp; others)</th>
<th>Monitoring (key indicators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 onwards</td>
<td>IFG, GTA, LCC, CNES, Seafish, SSTP, MS, Schools</td>
<td>Monitor number of applicants</td>
</tr>
</tbody>
</table>

#### Data

**Existing:**

**Required:**
Assistance with developing state aid compliant assistance for vessel purchase. Access to promote fisheries within schools

### Relationship with national measures (existing or proposed)

Marine Scotland keen to assist new entrants into the fishing industry

<table>
<thead>
<tr>
<th>Additional funding/resources identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNES guarantee of £1M available plus £700,000 for Community Quota</td>
</tr>
</tbody>
</table>

### Objective:

**Improve decision making and reduce conflict in the sector between other marine sectors**

#### Management Measures
- Review access arrangements to improve cooperation amongst different fisheries sectors
- Engage with marine developers, aquaculture, marine renewables
- IFG Membership of Scottish Marine Regions
- Develop website

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>IFG, Industry, MS-C</th>
<th>IFG, CNES Planning</th>
<th>IFG,MS</th>
</tr>
</thead>
</table>

Monitor numbers of gear conflict
Transparent feedback from meeting

Data

Existing:
Outer Hebrides Regional Initiative Project Board for Marine Renewables

Required:
Develop links with Marine Planning, undertake mapping of areas of high economic importance to fisheries

Relationship with national measures (existing or proposed)
Marine Scotland Science mapping programme established for pilot areas

Additional funding/resources identified

Marine Scotland and Renewables Sector