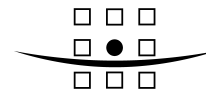


**Scottish Sustainable Marine Environment
Initiative (SSMEI)**

SSMEI Shetland Pilot Project – Technical Annex

June, 2005
Scottish Executive
9P1698



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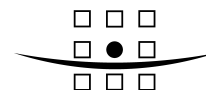
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The views expressed in this report are those of the researchers and do not necessarily represent those of the Department or Scottish Ministers.



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1 NATURE AND ACTIVITIES

Overview of the Shetland Islands

The Shetland Islands are situated in the north of Scotland, 150 kilometres north east of the mainland. The archipelago of Shetland is long and narrow, consisting of more than 100 rugged islands, 14 of which are inhabited, stretching 70 miles (113 km) from Muckle Flugga in the north to Sumburgh Head in the south. Fair Isle, part of the Shetland group of islands is incorporated into Shetland Islands Council (SIC), and lies 24 miles (39 km) further south of Sumburgh Head. The Shetland Islands are exposed to the North Atlantic and their coastline is the most wave-exposed in the UK. The Islands have a population of approximately 22,000 inhabitants. The largest population centres are in Lerwick and Scalloway which are the principle historic ports in the islands. The population of the islands is sparse and dispersed through many small crofting townships. The islands have a total surface area of 580 sq miles (1500 sq km) and are characterised by rounded hills, inlets, bays, voes and dramatic steep cliffs. Shetland's coastline is 1400 km long and highly indented.

Figure 1 - Map of Shetland Islands



Source: www.fairisle.org.uk

The main economic activities focus on agriculture, fishing, aquaculture, oil, knitwear, crafts, tourism and renewable energy. Despite the islands remoteness, they are strategically positioned close to Europe's fishing grounds in the North Sea and the North Atlantic oil fields. Historically Shetland has been resourceful and independent and this has resulted in the population adopting a community-focused emphasis in relation to everyday life which lacks the social divisions found in other parts of Scotland. The

islands communities have shown great adaptability in the past and are proactive in exploring ways to generate prosperity and improve the local way of life throughout the archipelago.

1.1 Natural Heritage

The section below details the flora, fauna, ornithology and geomorphology inclusively and does not differentiate between coastal marine or terrestrial habitats. The climate of the Islands is mild throughout the year; this is attributed to the Gulf Stream or North Atlantic Drift that brings relatively warm waters sweeping past the Shetland Islands. The Islands are dependent on its marine environment and are situated at a key point where the North Sea and Atlantic Ocean meet. The marine current of the Gulf Stream's North Atlantic drift affects the island's shores from the south. The colder Arctic currents then merge and sweep westwards towards Greenland. The rich currents around Shetland provide a constant stream of plankton that supports a huge range of marine wildlife. The wild coastline provides habitats for an array of wild plants and breeding sea birds. Shetland has unique species and subspecies of birds, plants and animals. This environment has been formed over millions of years of geological activity. The geological features found in the archipelago are extraordinarily contrasting with evidence of significant fault line activity and periods of glaciations influencing the current landscape and coastline.

Flora

Due to Shetland's northerly isolated location and extreme climate, flora is impoverished supporting 400 identified plant species. Many of the plants that are common in Shetland are becoming rare in other parts of the UK. The Keen of Hamar on Unst is a National Nature Reserve (NNR) where serpentine bedrock is present with species including northern rock cress, Norwegian sandwort, fairy flax, St John's wort, frog orchid and the extremely rare Edmundston's chickweed. Edmundston's chickweed is found nowhere else but in Unst.

On the sheltered, ungrazed sea cliff heath there are salt-tolerant species including thrift, Scots lovage and rose-root. The spray-affected cliff tops support eyebrights and frog orchid. Other species such as primrose, spring quill, moss campion, kidney vetch, thyme, sea campion, bird's foot trefoil and red campion can be found on the higher ledges and slopes. On the shingle beaches there are areas which are unstable with ephemeral habitats for rare oysterplant. The sand dunes and damp hollows at Quendale support unusual sedges, mosses and liverworts.

Saltmarshes are spread throughout the islands and 31 small areas can be found greater than 0.1 hectares in size. Highly adapted plants such as sundews, sphagnum mosses, fungi and orchids (JNCC, 1997) are mainly found along the central spine of Shetland e.g. west side of Yell Sound or on Unst. Blanket bogs in Shetland support a variety of plants and provide nesting sites for rare breeds of birds. The heathland areas of Shetland are characterised by ling and bell heather. Below the canopy of heathers are an abundance of mosses and insects which support large numbers of moorland birds e.g. whimbrel.

The large stretches of blanket bog described above hold an abundance of cotton grasses, cross-leaved heath and deer grass. Some plants have adapted to a carnivorous state. The insect-eating plants such as butterwort and sundew which trap insects on their leaves and digest them can be found in Shetland. The high hill ground

in Shetland supports arctic-alpine habitats due to extreme exposure to frosts and wind. The upper slopes are home to various mountain plants such as mountain sorrel and trailing azalea.

Trees native to Shetland are not in abundance and are found mainly in ravines, crags or on small islands e.g. downy birch, aspen, rowan, willow and hazel. Due to farming and animal grazing trees mainly survive within inaccessible locations.

Fauna including birds

The Shetland Islands has a narrow range of fauna that are native to Shetland such as the Atlantic grey and the common seal. The majority of other mammals have been introduced to the islands. Only 25% of the mammals found in the mainland are found in Shetland. Otters are genetically distinct from others found in the UK and are commonly found along the remote coasts. The local population is considered to be both nationally and internationally important. There are two species of seal found in Shetland. The common or harbour seal is found in slightly greater numbers than the Atlantic grey seal. Whales, dolphins and porpoises are commonly found in summer and early autumn. These include minke whale, killer whales, pilot whales, humpback whales, harbour porpoises, white-sided dolphin, white-beaked dolphin and Risso's dolphin.

Freshwater fish are not found in great numbers due to lack of large stretches of water and rivers. There are only four lochs with a surface area of over 1 Km². Several lochs have been stocked with fish for angling purposes e.g. rainbow trout, brown trout and sea trout. Shetland does not have any historic or current salmon runs due to the lack of appropriate freshwater habitat and very small burns not appropriate for spawning purposes. Arctic charr occur in the Loch of Girdsta (SSSI status). This is the deepest freshwater loch in Shetland.

The Shetland Islands have an international reputation for their birdlife with over a million birds. Shetland's location is a crossroads for migrating birds and immense colonies of seabirds. Shetland has various National Nature Reserves (NNRs) and RSPB Reserves e.g. Hermaness in Unst (has the third largest colony of Great Skuas in the world) and Sumburgh Head at the southern tip of Shetland. There are 24 species of seabirds that breed in the UK and 21 can be found in Shetland. Breeding birds return to Shetland each year and nest on the soaring cliffs and their rocky ledges. Open ledges are preferred by kittiwakes, guillemots, fulmars and gannets. Shags nest in caves and boulder beaches as well as cliff ledges. Species such as shearwaters, petrels, and puffins nest in burrows. Razorbills and black guillemots favour nesting in rock crevices and amongst boulders on cliff ledges whilst gulls and skuas nest inland. Shingle beaches, islets and peninsulas are home to the Arctic tern.

Geomorphology of the Shetland Islands

The Shetland Islands are dominated by a rich natural environment which is profoundly influenced by the surrounding sea. The large steep sea cliffs are constantly eroded by powerful seas. Its northerly latitude exposes the coastline to the North Atlantic Ocean and the North Sea. The landforms of Shetland and Orkney are the remnants of a mountain belt which was raised between 400 to 600 million years ago. Shetland has a variety of geological influences comprising of Precambrian rocks (over 500 million years old) and Devonian rocks (over 360 million years old) made of red sandstone. In particular the island's geology has been influenced by north-south trending fault lines through steeply inclined layered rocks (Walls Boundary Fault which is an extension of

the Great Glen Fault, Nestling Fault and the Melby Fault). Other formations of igneous intrusions and extrusions can also be found. The landforms have been scoured out by glaciers during the ice ages resulting in valleys and hollows some of which are now flooded to create voes. A glacial till provides the foundation of the present landscape. The offshore geology is dominated by Precambrian, Devonian and Permo-Triassic rock forms.

The landscape is exposed to the ravages of the elements and results in waterlogged moorland with deep deposits of peat and hills covered in stunted vegetation. The highest point is the summit of Ronas Hill in the North Mainland which is 450m high. The coastline of Shetland is amongst the most dramatic to be found in Northern Europe and is characterised by fjord-like voes, bays and inlets. The formation of sea lochs has prevented the formation of large sandy beaches, however narrow spits of shingle or sand called 'ayres' cut across the landward and seaward ends of some bays and voes. The Shetland Islands have steep dramatic sea cliffs over 300 metres in some places (Kame of Foula at 370m) and towering sea stacks, caves, geos, blowholes and arches. The seas around the islands slope gently away from the coast to around 80m in depth. At further distances (10km) from the shore the depth increases up to 120m. Further out the depth can exceed 1500m e.g. to the north-west in the Faroe-Shetland channel.

Marine Environment

The marine environment is spectacular supporting a variety of habitats and species which are sustained by the Continental Shelf around the islands which has very cold, clear and clean productive waters. Shetland's waters around the continental shelf provide an excellent mixing zone for nutrient rich up welling waters from the Atlantic Ocean which is extremely productive resulting in a host of sub arctic species at the southern end of their range e.g. northern sea urchin. The coastline of Shetland (approximately 1500km) is complex with predominantly rocky coastline. The islands have some of the most spectacular wave-exposed coastal scenery in the UK, with high cliffs, stacks, caves, arches and geos. There are numerous voes: drowned river valleys with long, narrow, steep sided channels which can reach depths of up to 60m. The more sheltered areas at the heads of the voes have lagoons, known locally as 'houbs' and 'vadills'. There are numerous sounds and channels between the islands with tidal streams up to 5 knots or more. The sea bed communities are influenced by wave action, type of substratum and tidal streams.

Bedrock and boulder reefs support extensive kelp forests which can be found down to depths of 30m. Below the kelp, numerous sponges, sea anemones and corals exist. A relatively short tidal range can be found in Shetland and thus restricts the intertidal area available for feeding birds. The sandy areas between islands supports dense beds of corals, maerl, brittle stars and horse mussels whilst sea grasses are found in more sheltered locations. The seas around Shetland have produced 159 recorded species of fish as well as commercially important fish and shellfish species such as lobster, edible crab, velvet crab, scallop, herring, mackerel, haddock, saithe and sea trout. The availability of a variety of fish is an important food source for seabirds as well as otters, seals and cetaceans which rely on this food source.

Nature conservation

Sites of Special Scientific Interest (SSSIs)

In the Shetland Islands there are 81 areas designated as Sites of Special Scientific Interest (SSSIs). The sites are notified under Section 28 of the Wildlife and Countryside Act 1981.

Special Areas of Conservation (SACs)

In the Shetland Islands, there are currently 12 Special Areas of Conservation (SACs) designated under the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora commonly referred to as the Habitats Directive (Table 1). The designation of these sites requires both the implementation of conservation measures which correspond to the ecological requirements of Annex I 'habitats' and Annex II 'species' present on the site and requires taking appropriate steps to avoid the deterioration of the natural habitats and habitats of species, as well as eliminate significant disturbance of species for which the site is designated. Competent authorities are required to assess plans and projects which have the possibility to affect features of the SAC.

Table 1: A list of 12 SACs designated in the Shetland Islands

SAC	Area (ha)
East Mires and Lumbister	620.32
Hascosay	164.92
Keen of Hamar	38.52
Mousa*	530.60
North Fetlar	1584.43
Papa Stour*	2076.69
Ronas Hill – North Roe	4900.90
Sullom Voe*	2698.55
The Vadills*	62.43
Tingon	569.30
Yell Sound Coast*	1540.55
Fair Isle*	561.27

Source: SNH, 2004

* SAC with marine or coastal interest features

Special Protection Areas (SPAs)

There are 12 Special Protection Areas (SPAs) designated in Shetland under the EC Directive on the Conservation of Wild Birds (79/409/EEC) – commonly referred to as the Birds Directive (Table 2). The Birds Directive is designed to protect wild birds, and to provide sufficient diversity of habitats for all species to maintain populations at an ecologically sound level. It lists birds of special conservation interest that require special conservation measures and includes regularly occurring migratory species. Additionally it requires most suitable territories to be designated as SPAs. The SPAs are intended to safeguard the habitats of the species for which they are selected and to protect the birds from significant disturbance (SNH, 2004).

Table 2: A list of 12 SPAs in the Shetland Islands

SPA	Area (ha)
Fair Isle*	561
Fetlar*	2,595
Foula*	1,323
Hermaness, Saxa Vord and Valla Field*	1,663
Lochs of Spiggie and Brow	141
Mousa*	198
Noss*	344
Otterswick and Graveland*	2,241
Papa Stour*	569
Ramna Stacks and Gruney*	12
Ronas Hill – North Roe and Tingon	5,470
Sumburgh Head*	39.04

Source: SNH, 2004

* Coastal SPA

Nature Reserves & National Scenic Areas

There are 3 National Nature Reserves (NNR) designated in the Shetland Islands: Hermaness, Keen of Hamar and Noss.

There are also a number of other nature reserves with internationally important sea bird colonies including Fetlar Nature Reserve with 90% of the British population of red-necked phalaropes and Sumburgh Head Nature Reserve (the most accessible seabird colony in Shetland with puffins, kittiwakes, guillemots and razorbills and recognised as one of the best place in Shetland to spot killer whales and other cetaceans during the summer months).

Currently, the only statutory recognition given for an areas' landscape quality is that of National Scenic Areas (NSA). Shetland has one NSA that covers Fair Isle, Foula and most of the south west coast of mainland Shetland as well as parts of some of the other islands totalling 11,600 ha.

1.2 Activities

Historical and cultural context

The Shetland Islands has some 5000 years of history and culture dating from Neolithic times to the present day. The islands have a rich Viking (Norse) history and only became part of Scotland in 1469 when King Christian of Denmark gave the Shetland Islands as a dowry for his daughter's marriage to King James III of Scotland. Today's Shetlanders celebrate their Viking heritage at the Up-Helly-Aa Festival every year in January. Shetlander's have traditionally made their living from both the land and the sea and have often been described as 'crofter fishermen'. Despite diversification into other economic activities crofting and fishing dominate the local economy. In essence Shetland has a narrow economic base and its activities are linked to the clean environment and sustainable use of common resources. Even today without the surrounding seas and the local harvest Shetland would find it difficult to survive,

therefore stewardship of the local environment through informed management practices which balance biodiversity with resource use is crucially important to the island's future.

Shetland Islands economy

The economy of Shetland was valued by Fraser of Allander Institute in 1998 at over £761 million. Table 3 illustrates the high dependence of the Shetland Island's economy on marine resources.

The combined fisheries sector, including aquaculture is the major contributor to economic output followed by the oil production sector. Other important sectors for the Shetland economy are marine engineering, construction, transport and distribution, finance and business services.

Table 3 Value of key sectors to Shetland economy*

	1996	1999	2000	2001	2002
Oil Production Operations	50.4	53.7	53.0	116.1	65.0
Combined Fisheries Output	97.8	185.9	202.8	223.9	208.2
Agriculture	14.3	11.8	11.7	12.4	13.1
Knitwear	4.0	4.9	5.0	2.5	3.0
Tourism	11.3	14.4	12.0	12.75	12.6
Shetland Islands Council	111.1	112.7	124.7	150.5	133.4
Total	288.9	383.4	409.2	518.1	435.3

*from Shetland in Statistics, 2004

Unemployment is traditionally lower than the Scottish national average. The economy has historically been affected by its remoteness from mainland Scotland; however this has been compensated by effective policies, measures, and effective business networks in conjunction with development agencies that has brought favourable prosperity over the last 30 years.

The Shetland Islands has a long tradition of a very strong fishing sector, mainly pelagic and demersal, although inshore fishing is important for many villages. Despite the problems facing Scotland's fishing industry Shetland has a modern fishing fleet and processing facilities involved in both sectors of the industry.

Aquaculture

Aquaculture is dominated by salmon production, which has grown rapidly in the last 20 years. Other species such as halibut, sea trout and cod are now farmed as the industry diversifies. Shellfish farming centred on mussel production provides half the Scottish total and is on the increase. The aquaculture sector contributes highly to local economic prosperity, however the industry has been under pressure recently and will have to adapt to remain sustainable.

Agriculture

The human history of Shetland can be traced back over 5000 years to neolithic times. Human influences continue to exert a strong influence on the use of land that has contributed to a wide diversity of species, habitats and landscapes. Agriculture is of great economic and cultural importance to the local economy with intensive sheep farming replacing the traditional hill and mixed agricultural practices during the last 30

years. Shetland has around 400,000 sheep and 6,000 cattle. Agricultural practices, mechanisation and land management practices have diversified land use and changed local habitats. Due to the harsh environment the islands concentrate on a small range of agricultural products and have developed a reputation for breeding high quality livestock that is highly sought after in markets on the mainland.

Oil

The oil industry established itself in Shetland in the mid 1970's and has had a huge impact on the islands' development. As North Sea reserves become depleted, new oil fields are being exploited west of Shetland (Scotlink, 2004). The prosperity generated from the opening of the Brent and Ninian oil fields together with Sullom Voe Oil Terminal in 1978 (largest in Europe) has brought jobs and improved infrastructure to the islands. Shetland is the fifth largest port in the UK accounting for 38.2 million tonnes of traffic in 2000 principally for oil and petroleum products. Sullom Voe alone accounts for 20% of all crude oil traffic in the UK.

Tourism

Tourism in Shetland is focused on history, culture, heritage and the natural environment. It has grown steadily over the last 20 years and after fishing it is the largest economic provider in the 'traditional' industries sector. In recent years this has expanded largely due to the growth in special interest holidays, eco-tourism and short breaks (e.g. bird watching, coastal scenery, angling and archaeology). The industry employs over 372 directly in the accommodation sector and over 900 full-time equivalents are estimated to have employment in the sector. The Shetland Visitor Survey of 2000 found that over 47,000 visitors were attracted to the Islands with a total expenditure of over £11 million. The islands rely heavily on air and sea transport to support its tourist trade. Shetland welcomes over 40 cruise liners per annum being at the 'crossroads of the North Atlantic' and acts as gateway into Scotland from Scandinavia.

Renewable energy

Renewable energy is seen as a sector which will help diversify the local economy away from the maturing oil sector. It is also seen as a way of creating self-sufficiency in green electricity. Due to Shetland's geographical position and its natural wind and tidal resources, it is seen as an ideal location to develop new wind and tidal energy technology. At present development of this new sector is of limited growth; however it is fulfilling the local market complimenting existing electricity infrastructure capacity. Renewable energy projects include wind turbines at Burradale Hill overlooking the Tingwall valley and the sea trials that Engineering Business Ltd are undertaking of the 'Stingray' (tidal energy device) in Yell Sound. Shetland has a Renewable Energy Forum which is actively involved in, or facilitating the development of various green energy initiatives such as 'Lerwick's Waste-to-Energy' plant that supplies district heating to the town from incinerating waste. Wind farm projects are being investigated.

Marine related activities

Shetland has several issues which affect development within the Islands. These include distance from the mainland, a harsh environment and limited range of natural resources. General economic activities in Shetland have impacted on both the terrestrial and marine environments. Many of the activities are inter-related in terms of the impacts and pressures they exert. Within this context the communities of Shetland have developed a

proactive approach to sustainable development. The coastal communities of Shetland, like its coastline, are both complex and dynamic. Areas around Lerwick and Sullom Voe have seen considerable development, but areas in rural localities have seen much less. The marine environment is central to life on Shetland and no part of the archipelago is more than three miles from the sea. In Shetland emphasis is put on striking a balance between conservation and development. There is a continuing need to provide for new infrastructure and to utilise local resources in order to sustain the population and the local economy. To strike a balance local agencies work in partnership to produce a sustainable and consistent approach to local development that ultimately aims to protect the local natural environment.

2 MANAGEMENT IN SHETLAND

Details of some of the main organisations responsible for controlling and regulation in the marine environment are listed in Annex 1 of the SSMEI overview.

2.1 Management Bodies

Shetland Islands Council (SIC)

The SIC administers local government services in common with other Scottish Local Authorities but has additional powers conferred through the Zetland County Council Act 1974.

The Shetland Islands Council is responsible for local government services provision and was established under the Local Government (Scotland) Act 1973 although the SIC was not constituted until 1975. Prior to this Local Government integrated service delivery to the local population was undertaken by the Zetland County Council. Shetland and Orkney find themselves in a unique position of having additional powers compared to other Scottish Local Authorities. Additional powers were conferred under the 1974 Zetland County Council Act designed to regulate and control the development of the oil industry in Shetland. The Local Authority is responsible for the development of strategic and local development plans and for implementing planning development controls. The Council's activities are centred around its main aims relating to planning, sustainable development, transport, local services, social inclusion etc.

In practice the SIC has been actively promoting more integrated marine management for many years. More recently it has sought to promote the ideals of Coastal Zone Management through the appointment of a Coastal Zone Management Officer, and through the development of draft coastal management plans. Much work has also been done in relation to marine Special Areas of Conservation, especially with regard to stakeholder participation in marine planning issues.

Shetland has already implemented statutory and non-statutory regulation of its marine environment. These include;

Shetland Shellfish Regulating Order (2001) which is managed by Shetland Shellfish Management Organisation and regulates shellfish boat activities out to six miles by licence.

Marine Special Areas of Conservation have involved SNH, SIC and local community and industry stakeholders in the drafting and approval of plans under the steerage of a Marine SAC Advisory Panel.

The Zetland County Council Act 1974 is used in the allocation of marine works licences.

A Sand Eel Fishery Agreement has been in place since 1989 limiting this fishery in order to protect the main food source of sea birds during the breeding season.

Marine Management Steering Group

Shetland has already embarked on the process of developing a marine management plan steered by Shetland Islands Council. The Marine Management Steering Group is supported by various local marine stakeholder organisations however the process is

constrained by inadequate resources, lack of underpinning information on certain aspects of the marine environment, unresolved issues relating to mapping and zoning, competition between different users of the marine environment, and issues relating to the works licensing process. There now exists an opportunity to bring together, strengthen and build on these initiatives in order to create a more integrated and better informed framework for marine planning and management in Shetland, which might serve as a model for improved marine management elsewhere in the country.

The Council has been involved in developing marine management framework plans for Shetland and has formed a Marine Management Steering Group. The Coastal Zone Manager has had responsibility for steering the consultation process with group members (stakeholders). This resulted in the compilation of a draft local plan which was put out to consultation within the Steering Group. Any future efforts to develop a marine plan will require significant resources and extensive stakeholder consultation as there is currently a lack of information on the marine environment and multi-sectoral influences.

SIC policy on coastal management is set out in the Shetland Structure Plan 2001 – 2016. This states that “in determining applications for works licences (under the Zetland County Council Act 1974), the Council will take into account:

- The implications for fishing interests
- The need to ensure that safe navigation is maintained
- Existing marine fish farms in the locality
- The availability of any necessary infrastructure and potential impact on existing infrastructure, when relevant
- The implications on recreational interests
- Potential effects, including cumulative, on the environment and the natural heritage interests”

The plan also states that they will establish a Coastal Zone Management Plan that meets the need of the Shetland Community.

Zetland County Council Act and Works Licences

It is widely accepted that integrated coastal zone management, or integrated marine management, requires an appropriate legal or institutional framework. Shetland is unique in Scotland in having the 1974 Zetland County Council Act, which gives a single non-sectoral authority – the Shetlands Islands Council – authority over most marine management issues out to 12 nautical miles. Through this arrangement facilitation of sectoral integration and fostering of a more holistic approach to marine management has been attempted.

The local Council in Shetland under the Zetland County Council Act controls all development within its local marine environment from the mean high water spring mark to 12 miles offshore. This includes harbours, piers, fish farms, marinas, sea defences, moorings, pontoons, barges and pipelines all of which require issue of a “works licence” prior to commencement. Originally the Council’s Legal Services Department was responsible for administering the licence process. In 1999 the Development Control Section of the Public Protection Service (Planning Department) took over this remit which was then transferred to a dedicated, appropriately staffed Fisheries and Marine Resource section in January 2001. During this period Shetland experienced a steady growth in its salmon and shellfish sectors putting the licensing system heavily under pressure due to a large volume of applications.

The council is committed to sustainable development of the local marine environment and this is reflected in the Shetland Islands Council Works Licence policy of 31st March 2004. The Council's Marine Development Sub-committee, established in April 2002, has delegated authority to grant works licences for any development within the marine environment around Shetland up to 12 miles. If an application is outside the works licence policy, it is referred to full Council for a decision. Additionally the Sub-committee has the power to invoke a waiver of the parameters set out in the policy under exceptional circumstances although the final decision rests with the full Council. All works licence applications to the Council are considered within the context of the Works Licence Policy, the Shetland Islands Council structural and local plans, and Scottish Executive National Planning Policy Guidance (NPPG), Memoranda and Advice as contained in, for example, NPPG 13 'Coastal Planning' and NPPG 14 'Natural Heritage'. Furthermore applications must meet regulations of statutory bodies and existing development and environmental legislation.

2.2 Issues and opportunities

During consultations stakeholders raised several key management issues and opportunities that deserved attention, and a comprehensive list was confirmed during a workshop convened under the SIC marine management committee. It should be stressed that views outlined below on the nature and relative importance of the issues were varied.

Management Issues	Opportunities
<p>Information</p> <ul style="list-style-type: none"> • Effective policy and strategy depends on better information. This should be the priority for the project particularly in relation to the lack of adequate information on the location and distribution of natural resources, and their social, economic and cultural value; • Information is very costly. Sullom Voe Terminal Environment Advisory Group (SOTEAG) currently spends £300K/year collecting marine environmental information. 	<ul style="list-style-type: none"> • Use better information to facilitate more balanced and strategic decision making within ZCC policy, planning and works licence procedures; • Build on existing aquaculture GIS, and assimilate data from SOTEAG assessment and monitoring data; • Generate information to underpin and take forward spatial planning/zoning already established; • Build on existing initiatives by SIC to develop marine management plans.
<p>Management systems</p> <ul style="list-style-type: none"> • Some stakeholders take the view that there has been a “pro-development” presumption in the issuing of works licences, especially with respect to fish farming. This is related in part to the lack of information on the actual or potential value of alternative uses or designations; • Lack of consultation and discussion <i>prior to</i> the development and submission of full proposals for works licences under the Zetland County Council (1974) Act; • Lack of compliance, or lack of knowledge of compliance, with works licence conditions; • The lack of EIA for shellfish farms and the requirement for EIA for fin-fish farms; • The rights of the people of the Shetlands to the seashore and seabed under Udal law, and the rights of the Crown Estate, are not yet fully resolved; • Sometimes there is too much consultation; sometimes too little. 	<ul style="list-style-type: none"> • Build on existing mechanisms under ZCC for consultation and integration; • Improve guidance to works licence applicants which will clarify council policy, promote more appropriate, better informed and better designed applications, and reduce conflict ; • Explore/test introduction of “expression of interest” as preliminary stage in works licence application to allow for negotiation with other interests; • Build on consultation procedures developed in relation to Special Areas of Conservation (SAC) designation; • Develop cost effective consultation and participation procedures.
<p>Aquaculture</p> <ul style="list-style-type: none"> • Increasing but still limited understanding of environmental capacity of Voes for both finfish aquaculture (assimilative capacity) and shellfish culture (productive capacity); • The need to rationalise and improve the spacing and distribution of fish farms, increase 	<ul style="list-style-type: none"> • Commission studies and use environmental capacity information to underpin more strategic decision making; • Build on existing area management initiatives being promoted by the

<p>biosecurity and economic viability;</p> <ul style="list-style-type: none"> • The existence of redundant or unused marine sites which nonetheless retain works licences; and the associated issue of “strategic” or “pre-emptive” licence application. 	<p>industry.</p>
<p>Fisheries</p> <ul style="list-style-type: none"> • The lack of awareness and knowledge of the fishery resource and its associated social, economic and cultural value; • The effects of e.g. fisheries re-stocking; • The power of the EU over some dimensions of marine management limits the scope and potential for integrated marine management at the Shetland Isles level; 	<ul style="list-style-type: none"> • Draw on fishermen’s knowledge and research capacity more effectively; • Improve knowledge of spawning and nursery areas.
<p>General</p> <ul style="list-style-type: none"> • Lack of manpower resources to take forward existing marine management initiatives; • The need to ensure that improved marine management strengthen and sustain communities; • That the pilot should in no way compromise the Zetland County Council (1974) Act , which is widely regarded as a good thing in the Islands; • That the pilot should not be related to the moves to extend the planning powers of local authorities into the marine environment. 	<ul style="list-style-type: none"> • Bring together existing initiatives with SSMEI as an overarching supporting and facilitating framework; • Provide a strategic cross-sectoral context for evolving planning initiatives – inshore fisheries, aquaculture, biodiversity, renewables.

3 FLOW CHART OF SSMEI SHETLAND PILOT AND MARINE SPATIAL PLAN DEVELOPMENT

