

Scottish Sustainable Marine Environment Initiative (SSMEI)  
SSMEI Clyde Pilot Project Proposal – Technical Annex

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10 Bernard Street  
Leith  
Edinburgh EH6 6PP  
United Kingdom  
+44 (0)131 555 0506 Telephone  
0131 555 0502 Fax  
info@edinburgh.royalhaskoning.com E-mail  
www.royalhaskoning.com Internet

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Author(s) Rod Cappell

Client Scottish Executive, Wildlife & Habitats Division,  
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**Drafted By Rod Cappell**

**Checked By Alistair Davison**

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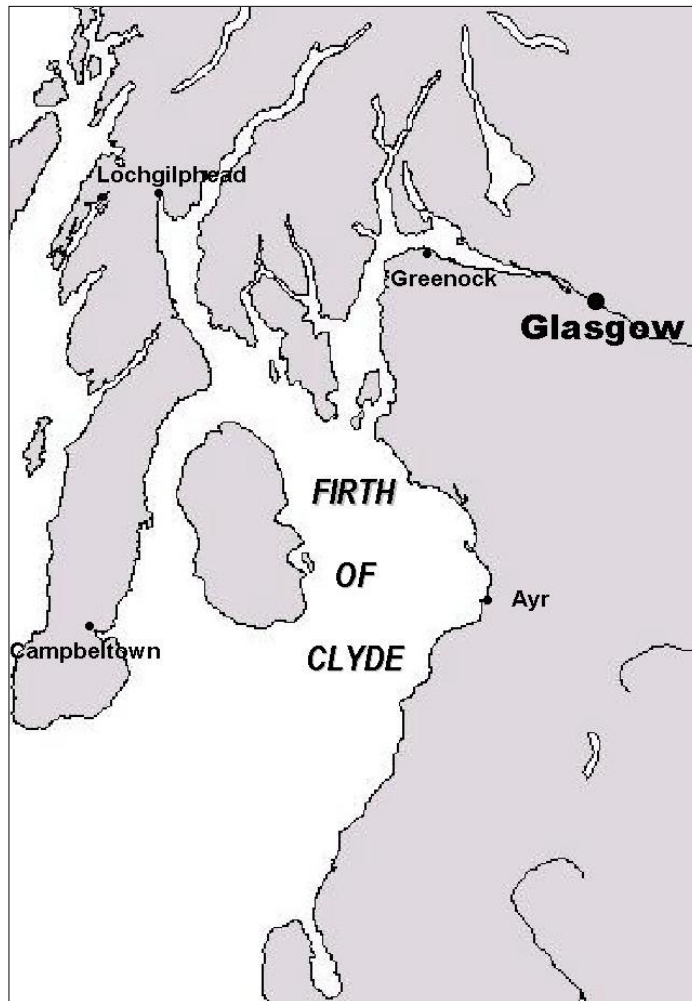
## Contents

|  |           |
|--|-----------|
| <b>1. NATURE AND ACTIVITIES.....</b>     | <b>1</b>  |
| <b>1.1 Natural Heritage.....</b>         | <b>2</b>  |
| <b>1.2 Activities.....</b>               | <b>3</b>  |
| <br>                                     |           |
| <b>2 MANAGEMENT IN THE CLYDE.....</b>    | <b>8</b>  |
| <b>2.1 Management Bodies.....</b>        | <b>8</b>  |
| <b>2.2 Communities.....</b>              | <b>9</b>  |
| <b>2.3 The Firth of Clyde Forum.....</b> | <b>10</b> |



## 1. NATURE & ACTIVITIES

The Firth of Clyde is the largest estuary on West Coast of Scotland. The Firth has a complex and rich range of species and habitats and a long history of human activity. Current economic activities range from intensive industrialised sectors through to more traditional and small scale resource exploitation.



Regulation and management of activities in the Firth of Clyde is undertaken differently between sectors. A wide variety of marine nature conservation initiatives and marine related regulations provide a further degree of complexity. As elsewhere in Scotland, there is no coherent regulatory or planning framework to manage the sometimes contrasting needs of different sectors and interest groups in the Firth of Clyde Sea area.

The separation of responsibilities between the Scottish Executive and the UK government adds a further level of complexity to the management of marine resources. The UK Government has reserved powers in relation to shipping and naval maritime activities both of which are significant sectors in the Firth of Clyde.

## 1.1 Natural Heritage

### Marine

The Clyde contains a wide range of marine and brackish water environments, supporting a diverse range of plant and animal species. Historically the Clyde has supported large populations of whitefish, although in recent years a shift toward shellfish species, in particular prawns, has been experienced. The seas of the area also support large populations of common and grey seals, dolphins, whales, porpoises and basking sharks.

Many of the species and habitats of the Clyde are recognised as being of national or international importance and have been afforded increased level of protection through a variety of designation mechanisms. Although three areas of the Clyde have been recognised for their importance to seabirds through designation of terrestrial sites as European Special Protection Areas (SPAs), there are as yet not specific European marine protection designations below the mean low water mark.

Different areas and regions of the Firth of Clyde vary greatly in habitat type and biodiversity characteristics. The lochs to the north of the area are very different in character to that of the sounds and headlands further south. The lochs to the north of the Clyde area vary from the lochs further north and west in Scotland, due to relatively low salinity and high degree of shelter.

Upper Loch Fyne contains many species of conservation interest, such as the fireworks anemone, the brachiopod (*Neocrania anomala*) and the sealoch anemone. It has been designated a Marine Consultation Area, being recognised that its marine environment is deserving of particular distinction due to its quality and sensitivity. Elsewhere in Loch Fyne are rare gaping file shell reefs. The Cumbrae Islands have also been designated as a Marine Consultation Area.

Further south, the deep waters of Kilbrannan Sound and the Sound of Bute are noted for congregations of seabirds in winter and are a recognised 'hot spot' by the Marine Conservation Society for Basking Sharks (a protected species under the Wildlife and Countryside Act 1981, as amended by the Nature Conservation (Scotland) Act 2004).

Several relic marine species remain in the Clyde, left behind after the last ice age, including the sea squirt (*Styela Gelatinosa*), which has a Species Action Plan assigned under the UK Biodiversity Action Plan (UK BAP).

The water quality in the Clyde estuary was at its worst in the second half of the 19<sup>th</sup> century. Since that period of industrialisation there has been a slow but steady improvement in water quality and a trend toward recovery of its marine animal and plant life and their habitats. There remains some persistent eutrophication from sewage pollution and industrial effluent, in particular in the north of the region.

### Intertidal

17 species of seabird breed in the Firth of Clyde and 3 coastal Special Protected Areas (SPAs) have been recognised. The SPAs are located at:

- Inner Clyde, for redshank and other waders and waterfowl such as goldeneye and eider;
- Ailsa Craig, supports (40,000 pairs) of gannets and other breeding seabirds, such as Razorbill and guillemot;

- Black Cart, flows into the Clyde and supports many whooper swans

Aside from these designated areas, other coastal sites are also of considerable importance to seabirds, such as Horse Island, which is an RSPB reserve and Sanda Island.

## Terrestrial

The lands around the Firth of Clyde also vary greatly in their economic and recreational uses, population densities and above all, their scenic value. The Clyde has 2 National Landscape conservation designations. These National Scenic Areas (NSAs), are located at North Arran and in the Kyles of Bute. There are also several Regional Landscape Designations (RLDs) and Preferred Conservation Zones (PCZs) around the Firth.

## 1.2 Activities

### Shipping, Shipbuilding and M.O.D

The Clyde is a major international shipping location, home to several major ports, busy shipping lanes, Ministry of Defence activities and BP's Finnart oil terminal on Loch Long. Clydeport is the major port operator on the Clyde. The company owns and operates the ports of Glasgow, Greenock, Hunterston and Ardrossan.

Clydeport's operations cover 450 square miles on the Clyde River, estuary and lochs and handles approximately 7.5 million tonnes of cargo per annum. The intercontinental terminals, offer deep water services and rapid transfer facilities to rail or road haulage for all main categories of shipping and cargo, fundamental to the success of Scottish industry. Hunterston port is one of the prime facilities for dry bulk handling in Western Europe. The port currently handles up to 4.5 million tonnes of coal per annum, but additional capacity remains. There are plans to expand including development of a container hub.

The King George V Dock and Rothesay Dock are located in the upper reaches of the Clyde, close to the centre of Glasgow. This provides them with excellent motorway and fast road access to locations all over Scotland. These docks cater for bulk commodities and also scrap metal.

Greenock Ocean Terminal was the first dedicated container facility in the UK and is the only container port on the Clyde. As such, the port is an important gateway to Scotland for the global traffic of container ships which transport whole ranges of commodities and products. In addition the Greenock port is an important transshipment depot for timber and forest products. Greenock is also one of the main cruise ship stopping off points on the Clyde providing access for tourist connections to Highland scenery and Scottish city sites.

Ardrossan is the 4th of Clydeport's major locations on the Clyde. The provision of RoRo facilities at Ardrossan, compliments the facilities provided by the other ports and enables the Clyde to offer a comprehensive range of commercial shipping requirements.

The Clyde is also home to the UK fleet of Trident nuclear armed submarines at Faslane Naval Base. The nearby port of Coulport on Loch Long serves as an additional submarine storage facility.

The Clyde is steeped in a rich shipbuilding history, but the decline in fortunes of this once dominant industry is well known. Overall procurement has declined and the industry has struggled to keep pace with changing technical specifications and other competing countries with lower production costs. This industrial demise is a common trend in other important shipbuilding areas in

the UK, notably the Tyne, which have lost out to shipbuilding competitors in the Far East in recent years.

In 2001 the Scottish Executive initiated the Clyde Shipyards Task Force, following the announcement of 1000 redundancies at BAE Systems yards at Scotstoun and Govan. This Task Force aimed to develop a long term strategy for the stabilisation and recovery over the Clyde Shipyards and to revitalise the Clydebuilt brand. The outcome of this work was a significant reduction in the amount of redundancies, new orders from the M.O.D and the prospect of significant further orders in the years ahead.

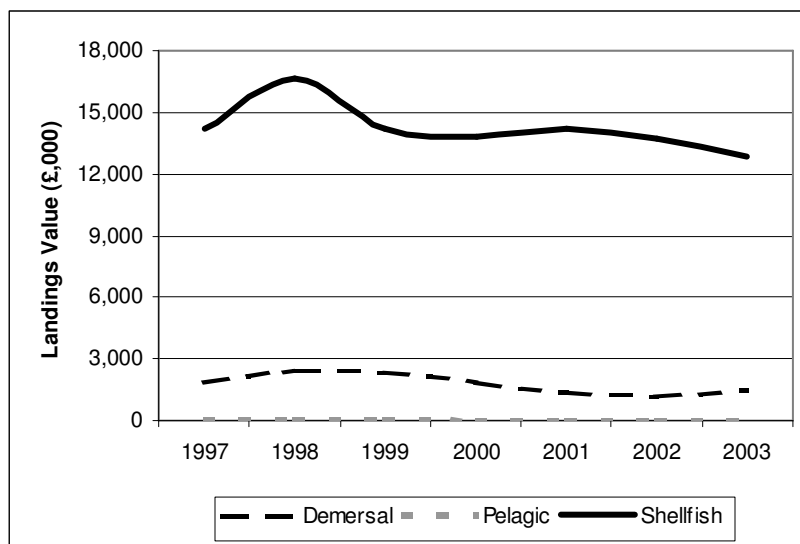
Current projects in the pipeline to build two M.O.D Carriers and ten T45 destroyers, as well as the prospect of further orders from the Chilean Navy and authorities in Malaysia and Thailand could lead to a further 1,300 jobs in the Clyde workforce. BAE systems recently inducted 112 apprentices, the largest intake for over a generation, as part of a 4 year recruitment programme, marking a significant upturn in the fortunes of shipbuilding on the Clyde.

### Fishing

The Firth of Clyde and the outer Clyde continue to support an important commercial fishery. In recent years Nephrops has become the principle component of the Clyde fishery both in volume and value. The whitefish fishery, which used to dominate Clyde landings, still remains to a lesser degree. Shellfish now accounts for over 90% of Clyde landings and the Nephrops fishery typically lands over 4,000 tonnes. Lobster, crab, mussels and scallops are also harvested from the Clyde.

The main landing ports in the Firth of Clyde are Campbeltown and Ayr although there are many other smaller ports around the region that are locally important. Landings to these two main districts totalled over £14 million in 2003 with shellfish accounting for around 90% of the value of the catch. Landings by foreign vessels have been relatively insignificant in recent years, but as recently as 1999 over £900,000 of landings came into the area from foreign vessels, showing the potential contribution of this fleet.

Fig. 1: Landings value for Clyde Fisheries (Campbeltown & Ayr) 1997-2003

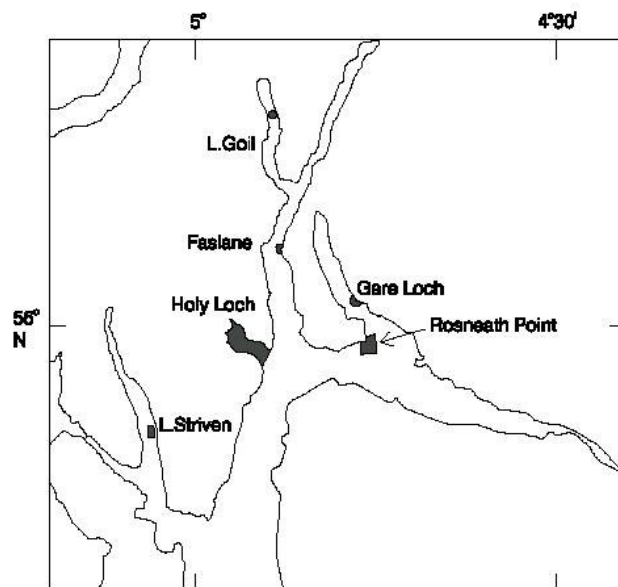


SOURCE: Scottish Fisheries Statistics.

The Clyde Inshore fleet has remained at around 350 vessels from 1995 to 2001, and has not been substantially affected by the recent rounds of decommissioning which has targeted whitefish catching capacity and which has led to large reductions in fleet size elsewhere in Scotland. Of these 350 registered vessels, the 2003 Clyde Inshore Fishery study estimate<sup>1</sup> that just 100 to 125 vessels actively fish the Clyde grounds, almost exclusively targeting nephrops.

There are a variety of areas closed to fishing in the Firth of Clyde. The majority of these restrictions are due to interaction with other sectors rather than for clear fishery enhancement benefit. The exception to this is in Gare Loch<sup>2</sup> where spawning and nursery grounds for demersal species have been protected through use of the Inshore Fishing Order (1989), which forbids the use of all mobile gears (trawl, Danish Seine, purse seine, ring net or dredge). This closure is enforced by local fishery officers.

Figure 2. Areas Closed to all fishing Activity.



SOURCE: Rodgers '97. Review of Closed areas in the UK EEZ. CEFAS Tech. Rep. No. 106

Other fishery closures in the Clyde are illustrated in figure 2. These closures are principally associated with Royal Navy activities:

- Holy Loch - Closed to all fishing.
- Faslane - No access to within 170m of jetties.
- Rhu (Gare Loch) - No access to exclusion area.
- Loch Striven - No access to within 170m of NATO fuel jetty.
- Loch Goil - Exclusion zone around fixed arrays of transducers.
- Rosneath Point - No access within the degaussing range.

There is also a small but significant salmon and sea trout fishery in the Clyde, accounting for 3% of all wild salmon and grilse caught in Scotland. Recently the numbers of returning salmon have

<sup>1</sup> Clyde Inshore Fishery Study – JM Watson & JT Bryson. Seafish 2003.

<sup>2</sup> Rodger, S. I. (1997). A Review of Closed Areas in the United Kingdom Exclusive Economic Zone. CEFAS Science Series. Technical Report No. 106.

been increasing and reaching areas which have not had a salmon fishery for many years<sup>3</sup>. This fishery is also supporting a rejuvenated sport angling fishery.

### Aquaculture

The Firth of Clyde has in recent years, in common with many areas further north on the West Coast of Scotland, become an increasingly important focus of aquaculture activities. There are a number of salmon farms in the lochs to the north of the region, such as Loch Fyne and Loch Striven, and one further south at Arran. Several major aquaculture companies have a presence in the Clyde area, including Marine Harvest (Scotland), Aquascot, Lighthouse of Scotland and Murray Seafoods. In addition there are a number of important smolt production units, which supply many of the on-growing marine sites in the region, including Lakeland Smolts Ltd., based at Cairndow, at the head of Loch Fyne. In addition the region is home to important aquaculture research centres such as Otter Ferry Seafish on Loch Fyne and Campbeltown.

There is an increasing number of shellfish farms producing mainly the common mussel and pacific oyster. These farms tend to be smaller and more diverse and are often characterised by owner-operator units. In most cases the clean waters of the region support production without the associated need for additional cleansing of the oysters. The small scale and often extensive nature of these operations mean that they often only employ on a part-time basis.

Constraints associated with shellfish aquaculture production in the region include storm and predator damage, reliance on variable reproduction rates and market locations. There are also ecological considerations, in particular threats from nutrient enrichment and eutrophication caused by local pollutant sources such as domestic or urban drainage or agricultural run off. The West Coast shellfish fishery has also suffered in the past due to toxic algal blooms leading to Amnesic Shellfish Poisoning.

### Tourism and Recreation

The Firth of Clyde is also an important tourism and recreation destination. There are long stretches of pristine beaches and coasts which attract large number of tourists each year who come to enjoy coastal walks or wildlife spotting.

The Ayrshire coast is home to a number of important yachting centres, in particular at Inverkip, Largs, Ardrossan and Troon. Holy Loch and Rhu on Gare Loch are also important for yachting. The Firth of Clyde also hosts the 'Scottish Series', based at Tarbet, one of the most important dates on the Scottish sailing calendar, attracting visiting boats from across the UK and further afield.

The Firth of Clyde and the waters of the surrounding region also attract increasing numbers of visiting recreational divers. Loch Fyne is a particularly popular destination for divers and there has been concern raised about removal of shellfish by divers, particularly scallops, from vulnerable inshore waters. Paradoxically there is a concern that increased recognition or designations in the area could result in increased publicity and result in increased pressure on the natural heritage of the area, which local communities are eager to protect.

Other sectors of recreation are also increasing in popularity in the Clyde and add to the level of pressure from tourist activities in the region - these include sea kayaking and sea angling. It is likely that these areas, as well as the more established recreational activities will continue to create new businesses eager to capitalise on the current trend for outdoor activities.

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<sup>3</sup> Fisheries Research Services. "Salmon are Back in the Clyde". News 06/05/2003

The beaches in the Clyde Sea Area have benefited from improvements in water quality over many years, however in many areas there remains further scope for progress in terms of beach quality. In 2004, just 2 beaches in the area, Troon South and Culzean, received a Marine Conservation Society recommendation. Most of the beaches in the area received an EC mandatory pass, whilst 3 beaches, Etrick Bay (Bute), Largs main and Helensburgh failed to comply with EC mandatory levels. In the case of Etrick Bay this was due to agricultural run off<sup>4</sup>.

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<sup>4</sup> Marine Conservation Society, Good Beach Guide: <http://www.goodbeachguide.co.uk>

## **2 MANAGEMENT IN THE CLYDE**

The management of activities of the Clyde and the Clyde sea area is typical of marine management in Scotland. This pilot represents many of the issues, impacts and conflicts that are prompting a review of marine management in Scotland and elsewhere in Europe.

The management of activities on the Clyde is principally sector-based. Over many years, these sector-based approaches have been successful in introducing a certain amount of order into the marine management system and have prevented the worst excesses of resource exploitation, natural degradation, over-development or pollution. Changes have occurred in restrictions and regulations in sectors to keep apace of changing international and national legislation, obligations, guidance and opinion. As a result, existing conditions and practices within many sectors on the Clyde have undoubtedly improved significantly in recent decades. This sectoral focus remains and conflict avoidance or resolution can still be difficult.

This progress is undoubtedly welcome but much work remains to drive forward sustainable management on the Clyde in order to improve water and environmental quality. This should lead to further habitats and species recovery and help to ensure a long term and sustainable future for the communities and businesses of the Clyde. There are also new approaches such as the ecosystem approach and new commitments that result from the adoption of sustainable development.

### **2.1 Management bodies**

There are a wide range of regulatory authorities and supporting legislation controlling activity in the Clyde. The levels of organisation involved include International, UK and Scottish. This range of controlling and regulatory bodies undoubtedly adds a significant degree of complexity to the objectives of sustainable resource management. There is a complex array of legislation that supports the roles and responsibilities of the various bodies. 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.

The following bodies have roles particular to the Firth of Clyde area:-

#### Local Authorities

The overview report summarises local authority functions.

As the Clyde sea area and the Firth of Clyde is such a large area, seven Local authorities are involved in the management and regulation. These are:

- Glasgow City Council
- Renfrewshire
- Inverclyde
- North Ayrshire
- South Ayrshire
- Argyll & Bute
- West Dumbartonshire

## 2.2 Communities

In addition to international, national and governmental and non-governmental bodies and commitments, which shape resource management in the Clyde there are also smaller initiatives, often voluntary based which are also helping to shape a sustainable future for the area. These initiatives tend to have a more local focus, often with particular emphasis on social aspects of sustainability, although environmental and local economic factors are also recognised as important. These initiatives may be locally funded or rely upon external funding, notably, but not exclusively, in the form of European Structural Funds.

These local bodies do not have statutory roles to play, but none the less play an important role in contributing to local social and economic well-being.

There are also a large number of local community councils in and around the Clyde sea area which occasionally get involved with coastal and marine activities.

### Strathclyde European Partnership

The Western Scotland Objective 2 and Clyde Waterfront URBAN II European Funds Programmes are co-ordinated and implemented by the Strathclyde European Partnership (SEP Ltd.), a partnership of around 200 agencies. The partnership includes the Scottish Executive, local authorities, enterprise bodies, further and higher education, voluntary and community organisations and the environmental and equality agencies. SEP Ltd was established in 1999 to promote economic and social regeneration, deriving up to 50 per cent of its income from a Technical Assistance grant, co-financed by partners' contributions.

### Glasgow and Clyde Valley Structure Plan Joint Committee (GCVSPJC)

The Joint Committee was constituted under a formal Minute of Agreement in the late 90's enabling the local authorities involved to develop a joint Structure Plan for the area. The Committee is responsible for preparing, monitoring and reviewing the joint structure plan for the area and providing advice on policy content for the plans. Consequently those working for the Committee liaise with national and regional authorities and groups to ensure consistent and appropriate policy advice. The GCVSPJC is a member of the Clyde Forum Core Group, and acts as financial administrator for the Forum.

### Glasgow and Clyde Valley Greenspace Trust (GCVGT)

Regeneration and sustainable development of the urban environment has become one of the Scottish Executive's fundamental policy drivers. The GCVGT aims to develop the quantity and quality of greenspace in the Glasgow and Clyde Valley area through partnership, particularly with local authorities, voluntary sector, community and business interests to facilitate communities' involvement in greenspace management. The Trust aims to operate on a budget in the region of £1 million a year over a 3-year establishment period with support from SNH, local authorities, and the New Opportunities Fund (through the Fresh Futures programme).

The partnership approach helps to ensure that improvements contribute to planning, health, social justice and economic as well as environmental agendas; and should stimulate increased involvement and action by local communities in caring for their local environment.

Although the work of the trust is of most potential value in inner cities, peripheral housing schemes and the urban-rural fringe, there is also considerable scope for valuable contribution in former industrial areas, including shipyards at the coastal margins.

## The Community of Arran Seabed Trust (COAST)

COAST is an organisation with 400, mainly local members promoting the establishment of a 'no-take zone' and gear restriction within Lamlash Bay. It also successfully petitioned against the positioning of a wastewater outflow pipe in Lamlash Bay by inviting scientists to survey the seabed in the area. The project has the support of some locally based fishermen and the Trust have canvassed the opinion of other users of the Bay. The Trust welcomes anyone interested in the sustainable regeneration of marine life.

## Clydebank Regeneration

The Scottish Enterprise initiative aims to co-ordinate the redevelopment of brownfield sites from the UIE yard to the Erskine Bridge. Plans include new housing, business space, and a wide range of community, education, and cultural and recreational uses. The project aims to ensure that "communities (are) reunited with the river".

Clydebank Re-built is an Urban Regeneration Company Limited by Guarantee and is also a registered charity. The two founders are West Dunbartonshire Council and Scottish Enterprise Dunbartonshire.

The company's main aim is to help regenerate Clydebank. Clydebank Re-built work with the community, the public sector and private companies - acting as both a "facilitator" and a "developer". They work closely with the many owners of land and buildings in Clydebank seeking to ensure that all share a common aspiration for the town's future.

## 2.3 The Firth of Clyde Forum

### Background

The Firth of Clyde Forum was established in 1994 as a voluntary partnership to promote integrated approaches to marine management in the Clyde. Each of the 7 local authorities are members of the forum, as well as sector and industry representatives and statutory bodies with particular interest and responsibility for marine matters, such as Crown Estates and Scottish Water.

The aims of the Forum, as restated in the 2000 Integrated Management Strategy and Action Plan are to:

- Harness the economic and environmental advantages of the Firth of Clyde;
- Bring about regeneration of its (FoCF) role as a focus of activity;
- Co-ordinate and manage this change on sustainable principles; and thereby
- Balance the commercial, environmental and social interest of the users of the Firth.

The Clyde Forum also remains a voluntary partnership. As a result it has no power to impose management regimes or controls. Instead the Forum serves to enable integration and communication between diverse users, thereby reducing conflict and co-ordinating sustainability management efforts.

The Forum has achieved much good work, and has contributed to pushing sustainable marine management up the local and national agenda. Unfortunately in the late 90's the Forum had a period of little or no operation, without an officer in post. This was principally due to internal

reorganisation and uncertainty over future funding sources. A lack of a long term funding package continues to be a pressing concern for the Forum, and the existing round of funding will last until 2006. Currently the project is funded by SNH, Scottish Enterprise, Crown Estates and SEPA. No commercial or industrial bodies based on the Clyde contribute to the funds of the forum.

The 2000 Strategy and Action Plan, sets out four key areas of action, and for each highlights specific actions which can be undertaken by the forum, to drive forward sustainable management in the Clyde.

Table 2.1 Firth of Clyde Forum Action Areas

| <b>Economic Enterprise</b> | <b>Management of environmental resources</b> | <b>Renewal of the Infrastructure</b>               | <b>Engaging the Community</b>             |
|----------------------------|--|--|---|
| Fishing and aquaculture    | Water Quality                                | Coastal defence                                    | Co-operation between users of the Firth   |
| Transport                  | Nature Conservation                          | Quayside/ embankments/ access channels maintenance | Reclaiming the waterfront for communities |
| Industry and commerce      | Heritage resource mgt                        | Waste disposal                                     | Education and awareness                   |
| Recreation and Tourism     | Landscape protection                         |  | Development of the Firth of Clyde Image   |

As a result of the inevitable restrictions placed on the scope of the Forum, due to its voluntary status, limited funds and lack of statutory authority, there is a limit to the actions that can realistically be proposed. A high degree of imagination must be used to promote achievable strategies, which will achieve local stakeholder support and which can be implemented within the existing framework. Evidence of this innovative approach is clear on examination of the actions that will be undertaken. Phrases such as 'establish liaison', 'encourage development', 'promoting campaigns' and 'review progress' give a clear indication that much of the actions rely more on willing co-operation than anything more structured.

#### Capacity Assessment

There are areas where the Clyde SSMEI pilot project could utilise and add value to the existing capacities of the Clyde Forum; it should also recognise the current constraints facing the Forum. The Forum has a membership of 250 organisations with a 20-member Core Group (consisting of funders, local authorities and some stakeholder groups). This existing network and consultation/dissemination function of the Forum is viewed as a key strength of the Forum. The core group meetings have now resumed regular meetings after a break of almost a year when no project officer was employed due to a lack of funding. The Forum secretariat employs only one project officer and is highly reliant on lead partners to provide resources and/or additional funding in order to implement many of the actions proposed in the Forum's strategy and action plan.

The ICZM stocktake carried out for the UK Government in 2003 recognised that many ICZM initiatives have been constrained by the lack of long-term resources and commitment by some stakeholders. This is certainly the case for the Firth of Clyde Forum where meetings of the Core Group have suffered from only a moderate attendance of members, although this is improving. Funding remains difficult to secure and the commitment by SNH, SEPA and other Core Group members is invaluable, but it has led to the notion amongst some stakeholders that the Firth of

Clyde Forum is an environmentally-focused initiative. Although the Forum secretariat works to redress the balance with social and economic based actions, this perception remains.