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FIRTH OF CLYDE MARINE SPATIAL PLAN





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July 2010



How to use The Firth of Clyde Marine Spatial Plan

The Plan provides direction and guidance for the sustainable development of activities, by both the public and private sector, within the Firth of Clyde. The policies in the Plan should not be interpreted in isolation. Instead, the Plan should be interpreted as a single document.

Policy number and title.
The letters reflect the specific section of the plan within which the policy sits.

The policy
This sets out the expressed intentions of the Plan and proposes a course of action for a particular purpose.

Policy R&T 7 Community engagement
Initiatives that encourage participation in marine recreation should be supported. Local Authorities and schools should be encouraged to provide increased provision for marine-based recreation.

Participation in sport and recreation is central to the quality of life and wellbeing in all communities. This policy has strong linkages to the Scottish Government's health agenda, with marine recreation as a focus for improving the health and wellbeing of coastal communities. Initiatives to encourage people to engage in marine recreation should be supported and encouraged.

Local Authority provision of marine sports, such as sailing, sea kayaking and surfing, make them potentially accessible to all. The first opportunity many people have to experience less populist sports is through local authority organised summer classes and events. These tasters provide young people with the opportunity to try out a range of activities. Even if they do not participate in any of the sports again, it can give them a greater appreciation of the skill involved and of the environment in which they take place.

Stramash
Organised by Argyll and Bute Council, Stramash enables young people to take part in pursuits new to them, which they normally would not have the opportunity to do.

There is a wide range of sports activities available, including a number of marine related activities such as sea kayaking, sailing and surfing. Each Stramash activity is heavily discounted to encourage everyone to take part.

The paragraphs following each policy include any relevant supporting information that should be taken into account.

Sailing in the City
The Royal Yachting Association Scotland established Sailing in the City (SITC) in 2004 to provide local and accessible sailing opportunities for children between 8 and 14 years of age. SITC aims not only to introduce children to sailing but also to encourage them to continue.

Info Box
Throughout the Plan, information boxes are provided that include supporting information or provide examples related to the policy.

Key to colour coding

Sectoral Interactions in the Firth of Clyde Summary

	Interactions identified by sectors as being mutually compatable in nature
	Competitive interactions acknowledged by sectors as being covered by existing management instruments and mechanisms
	Management instruments and mechanisms exist, however, they may not operate to the satisfaction of all key stakeholders and/or are largely untested
	Conflicting interactions that are perceived by sectors as largely unmanaged by existing instruments and mechanisms.

Strategic Environmental Assessment Summary Tables

	Policies have no effect on the status quo with respect to these aspects of the environment
	Potential effects of the policies on these aspects of the environment are uncertain
	Potential effects of the policies on these aspects of the environment are generally positive; some enhancements may be possible
	Potential effects of the policies on these aspects of the environment include some negative aspects for which mitigation measures may be desirable. There may also be potential for enhancement of positive environmental effects
	Potential effects of the policies on these aspects of the environment are predominantly negative and of a nature where both avoidance (in particular, with respect to choice of appropriate locations for particular activities or associated infrastructure within lower level Plans or at the project level) and mitigation measures may be desirable

Key to colour coding

Sectoral Interactions in the Firth of Clyde Summary

Key findings from the Sectoral Interactions in the Firth of Clyde study are summarised within sectoral chapters. Potentially conflicting interactions are centred on three themes that encompass: use of marine space; use of, and impacts upon, marine resources; and safety. A brief text section, highlighting key findings from the sectoral interactions study for that sector, follows each summary table.

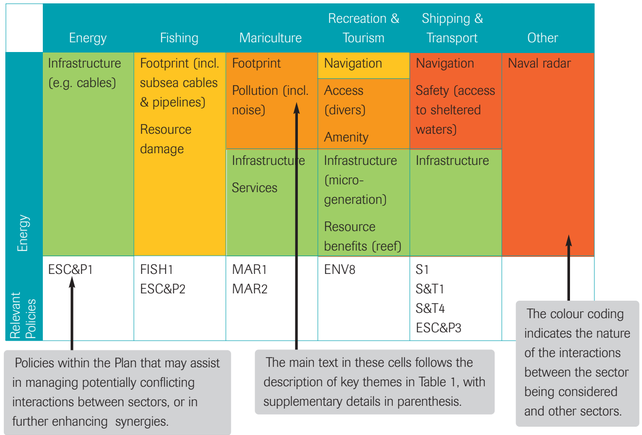


Table 1 Themes underlying interactions within and among sectors

Shorthand descriptor	Underlying theme
Footprint	Use of Space: Footprint overlap: Sectors seeking (permanent) use of same areas of sea(bed)
Navigation	Navigation through marine areas
Access	Access between shore and sea
Resource competition	Use of Resources: Direct competition: targeting of the same resources (e.g. fish stocks)
Pollution Resource damage Amenity or Nuisance Equipment damage Indirect competition:	activities potentially damaging to resources or environmental features utilised or valued by others. Such interactions may arise through: pollution; other incidental damage to natural or historic features (e.g. through disturbance of wildlife); loss of amenity or creation or nuisance (e.g. visual or noise impacts, litter); or, damage to equipment or infrastructure
Services Infrastructure Resource benefit	Synergy: potential for shared use of services (e.g. marine engine repair specialists) or infrastructure, or for resources utilised or valued by one sector to benefit from the activities of another (e.g. creation of artificial reefs)
Safety	Safety issues: Collision risk

Glossary

Alien Species: a species that has been transported by human activity, intentionally or accidentally, into a region where it does not occur naturally.

Appropriate Assessment: to test whether a plan or a project is likely to have significant negative impacts on SPA, SAC or Ramsar designated sites.

Aquaculture: the farming of freshwater and saltwater organisms including fish, molluscs (e.g. scallops), crustaceans (e.g. crabs) and aquatic plants.

Ballast Water: water carried in unladen ships to provide stability.

Biodiversity: the variety (within and between species) of living things from all sources (terrestrial, marine, aquatic).

Biotope: an area of uniform environmental conditions providing a living place for a specific assemblage of plants and animals

Capital Dredging: material arising from the excavation of the seabed, generally for construction or navigational purposes, in an area or down to a level (relative to Ordnance Datum) not previously dredged during the preceding 10 years.

Carrying Capacity: the capacity of a location, system or species population to cope with a particular use or activity without being fundamentally altered

Coastal Protection Act 1949 (Section 34): covers all construction, alteration or improvements works on, under or over any part of the seashore below the level of MHWS.

Ecosystem Approach: integrating and managing the range of demands on the natural environment in such a way that it can indefinitely support essential services and provide benefits for all.

Food and Environment Protection Act 1985 Part II (Deposits in the Sea): covers all construction, coastal defences, disposal of waste and burial at sea.

Gross Value Added: a measure of the contribution to the economy of each individual producer, industry or sector in the UK.

Habitat: the environment in which a species lives at any stage in its life cycle.

Integrated Coastal Zone Management: a process that brings together all those involved in the development, management and use of the coast within a framework that facilitates the integration of their interests and responsibilities.

Intertidal: the area of coast between the mean high water level and the mean low water level.

Locational Guidelines: provide guidance to regulators, in particular, Local Authorities, on the factors to be taken into account when considering proposals for new marine fish farms or modifications to existing operations.

Mariculture: aquaculture practised in marine environments.

Marine Renewables: wave and tidal power technologies.

Marine Spatial Planning: strategic, forward-looking planning for regulating, managing and protecting the marine environment.

National Scenic Areas (NSA): areas that are nationally important for their landscape quality. There are stricter planning controls within NSAs and planning authorities have to take care that new development does not detract from the scenic quality of the area.

Natura site: sites which represent areas of the highest value for natural habitats and species of plants and animals which are rare, endangered or vulnerable in the European Community (includes SPAs and SACs).

Nephrops: the scientific name is *Nephrops norvegicus*, and is also known as Dublin Bay prawns, scampi, langoustines, Norway lobster or more colloquially in Scotland as 'prawns'.

Non Native Species: see alien species.

Pressure-sensitive Measure or Indicator: a measure that indicates the sensitivity of an environmental feature (e.g. a habitat, species or group of species) to environmental stresses or pressures arising from particular human activities or natural processes.

Ramsar site: wetlands of international importance designated under the Ramsar Convention.

Seascape: the coastal landscape and adjoining areas of open water, including views from land to sea, from sea to land and along the coastline.

Site of Special Scientific Interest: areas of special interest by reason of their flora, fauna, geological or physiographical features. Notified under the Wildlife and Countryside act, 1981.

Special Protection Area: important habitats for rare, threatened or migratory birds. Classified under European Directive 79/409/EEC on the Conservation of Wild Birds, (the 'Birds Directive').

Strategic Environmental Assessment: the process of assessing policies, plans and programmes (rather than individual projects) for their environmental impacts.

Subtidal: seabed area from the low tide line to the seaward edge of the continental slope.

Sustainable Development: enabling development that meets today's needs without compromising the ability of future generations to meet their own needs.

Water Framework Directive: EC Directive which requires member states to achieve good ecological status of surface waters, including transitional and coastal water bodies.

Wireweed: Fast growing seaweed *(Sargassum muticum)* that competes with native species such as seagrasses and is considered a nuisance in harbours, beaches and shallow waters.

Scottish Sustainable Marine Environment Initiative



Firth of Clyde Marine Spatial Plan

J E Donnelly
K Thompson
D Ross

July 2010

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Abbreviations and Acronyms

AAG	Area Advisory Group
BAP	Biodiversity Action Plan
CFA	Clyde Fisherman Association
COAST	Community of Arran Seabed Trust
EIA	Environmental Impact assessment
FoCF	Firth of Clyde Forum
FoCMSP	Firth of Clyde Marine Spatial Plan
FRS	Fisheries Research Service
GRAB	Group for Recycling in Argyll and Bute
GVA	Gross Value Added
ICZM	MIntegrated Coastal Zone Management
IFG	Inshore Fisheries Group
LA	Local Authority
MarLIN	Marine Life Information Network for Britain and Ireland
MARPOL	Convention on Marine Pollution
MCA	Marine and Coastguard Agency
MCS	Marine Conservation Society
MHWS	Mean High Water Springs
MoD	Ministry of Defence
MPA	Marine Protected Area
MSP	Marine Spatial Plan(ning)
MSPD	Marine Strategy Framework Directive
NPF	National Planning Framework
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
RBMP	River Basin Management Plan
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCA	Scottish Canoe association
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection agency
SMR	Scottish Marine Region
SNH	Scottish Natural Heritage
SOLAS	Convention on Safety of Life at Sea
SPA	Special Protection Area
SPT	Strathclyde Partnership for Transport
SSMEI	Scottish Sustainable Marine Environment Initiative
SSSI	Site of Special Scientific Interest
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on climate Change
WFD	Water Framework Directive (2000/60/EC)

Our 20 Year Vision

“The Firth of Clyde will have a healthy marine and coastal environment, rich in biodiversity and natural resources. This will enhance the quality of life for local communities and contribute to a diverse and sustainable economy for the West of Scotland”

Foreword



I am delighted to present to you this Firth of Clyde Marine Spatial Plan. The Clyde is dear to the hearts of so many, both here in Scotland and across the world, and this Plan aims to help look after it now and into the future, for the sake of all who use or enjoy it.

The Plan is an innovative approach, and I am confident that it is a crucial milestone along the way to better management here on the Clyde. It has taken over three years of partnership effort by stakeholders and regulators and I commend the hard work and enthusiasm that has gone into this process. The Plan tackles issues such as the regulation, management and protection of the marine environment of the Clyde. It considers competing demands for access to marine resources and proposes ways in which these can be managed more sustainably for future generations.

This Pilot Project is one of a number around Scotland, set up under the Scottish Government's Scottish Sustainable Marine Environment Initiative (SSMEI). Results from this initiative will help inform the future development of a statutory marine planning system in Scotland; a system which the Scottish Government will implement to ensure sustainable economic growth of the marine area within environmental limits.

This Plan has been developed in consultation not only with public and voluntary bodies, and regulators, but also with a myriad of individuals who have an interest in the future of this marvellous and diverse marine area.

To be successful, the Plan will also depend on the goodwill of partners; it is a voluntary Plan, and its implementation over the next few years is primarily dependent on cooperation and consensus building.

I should also stress that this Plan is "work in progress", highlighting, as it does, further work or research required to better inform its future revisions over time.

Above all, these are exciting times for the marine environment of Scotland and the Firth of Clyde, and, quite rightly, this Plan will no doubt play a vital role in their better management. The Project Team and the Firth of Clyde Forum Team have worked beyond the call of duty over a long period of time to get this document to publication and I thank them on behalf of the Clyde Pilot Steering Group for their efforts.

Isabel Glasgow

Isabel Glasgow
Chair SSMEI Clyde Pilot Steering Group

The Firth of Clyde

The Plan area encompasses the marine and tidal extents of the Firth of Clyde including the River Clyde Estuary, the Inner Firth and associated sea lochs, and the Outer Firth.

The Plan's outer boundary, where the Outer Firth meets the Irish Sea, extends from the tip of the Mull of Kintyre across to Finnarts Point, north of Loch Ryan.

It extends north to the heads of Loch Long and Loch Fyne and east along the River Clyde Estuary to the tidal weir in the heart of the city of Glasgow.



Diagram 1. The Plan Area

The Plan covers some 1,000 km miles of coastline and a sea area of some 3,650 km^2

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Introduction

1. The Firth of Clyde Marine Spatial Plan (the Plan) establishes an overarching policy framework to facilitate the sustainable development of activities within the Firth of Clyde.

2. This is an area with a wealth of social and cultural, environmental and economic resources that are increasingly coming under pressure from the aspirations of a growing number of users.

3. The Plan has been in development since 2006 with the emphasis on consultation with stakeholders at all stages. This document represents an innovative approach to marine planning, based on Scottish Ministers' commitment to making marine management more efficient, inclusive and accessible now and for future generations.

4. As the Plan is being developed during a period of rapid evolution of marine policy at national and international levels, it should be considered as part of an ongoing process and, as such, a working document.

5. The Plan is a framework based on the aspirations of stakeholders and regulators within the Clyde which sets out how an agreed vision can be achieved. Its purpose is to give direction and guide the sustainable development of activities, by both the public and private sectors, within the Firth of Clyde.

6. At this stage, the Plan remains a strategic document with policy guidelines. Through implementation of the Action Plan and future revisions of the Plan, a more spatial element will be introduced.

7. The Plan is non-statutory and aims to complement and seeks to influence terrestrial plans. Terrestrial focused policies and proposals are included for guidance and it is to be hoped that these will be considered in future strategic and local development plans as these are prepared.

8. It is anticipated that Local Authorities and Regulators will have regard to the Plan in the determination of development applications or consents. Planning authorities should consider incorporating the Plan, or parts thereof, as supplementary planning guidance and for it to be a material consideration in planning decisions. The initial implementation of this Plan will test the effectiveness of this approach, which aims to deliver the key benefits of:

- Providing a plan-led approach to the management of the Firth of Clyde
- Enabling long-term protection and sustainable use of the marine environment

9. The Plan was subject to consultation during 2009 and responses from businesses, local authorities, regulators, community groups and individuals were taken into account to produce this final version of the Plan. For details of how to access the **Consultation Report** see Appendix 1.

Plan Outline
There are five parts to the Plan.

Background and Context
This provides an overview of the Firth of Clyde and sets the political context within which this plan has been developed.

The Framework
This establishes the framework within which the policies and proposals have been developed and integrated. It includes the Vision, Aims of the Plan, Objectives and Guiding Principles.

Crosscutting Policy Themes
There are four policy areas which impact upon the policies and proposals of the Sectoral Plans. These are: Environment, Communities, Heritage and Safety.

Sectoral Plans
Sectoral plans have been developed for key sectors within the Firth of Clyde: Energy and Subsea Infrastructure; Fishing; Mariculture; Recreation and Tourism; Shipping and Transport. These forward looking strategic plans will help guide the sustainable development of activities.

Implementation and Monitoring
The implementation of the plan will depend upon the actions of many different bodies and agencies both public and private. A five-year action plan, detailing what should be delivered by whom and when, is set out.

Defining Features

10. The Firth of Clyde is characterised by a set of defining features - which have evolved as a result of interactions between the environment of the Clyde, its communities and industries over many thousands of years. These defining features encompass distinctive aspects of the physical environment and of the natural and historic heritage, which combine to give the Clyde a unique, widely recognisable, identity. They have helped to shape the economic and cultural histories of surrounding communities and continue to make the Clyde attractive to coastal residents and visitors alike. They are also fundamental to the operation of sectors such as shipping and transport, fisheries, recreation and tourism, mariculture and naval defence. The Clyde is of value as an educational resource, as illustrated by the location of the University Marine Biological Station Millport on the Isle of Cumbrae. The Clyde also has an important role in maritime training; over 60% of all seamen world wide are trained at Glasgow Nautical College. The defining features include elements of wider regional, national or international significance. Safeguarding and encouraging responsible use of these defining features sits at the core of the Plan's strategy for the delivery of sustainable development. The defining features are briefly described below. The baseline **State of the Clyde Report** contains extensive additional information about the origins and status of many of these features.

Physical Features

11. The Firth of Clyde was formed as a consequence of glacial action and is essentially a large fjord separated from the Irish Sea by a broad underwater sill and from the Atlantic by the Kintyre peninsula.

12. The Clyde is characterised by sheltered and, in places, very deep waters which have enabled the development of ports and of the UK's nuclear submarine fleet base at Faslane in the Gare Loch. The Holy Loch was also formerly a US naval submarine base. The sheltered waters of the Clyde's sea lochs, such as Loch Fyne, have also proved favourable to the development of the mariculture sector.



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Diagram 2. Firth of Clyde Bathymetry

13. The Clyde has a diverse seascape and landscape. Scenic features of the Clyde include the combination of mountainous landscapes and tranquil seascapes, for example, the Kyles of Bute and North Arran National Scenic Areas. Such features are a particular draw for recreational sailing, cruising and kayaking.

14. There are also outstanding examples of raised beaches and beach platforms, including the nationally important shingle spit at Ballantrae. There are a number of other statutory designations for nationally important coastal geological and geomorphological features, which reflect the complexity of the Clyde's underlying geological structure. The open sandy beaches that line much of the Ayrshire coastline are the most frequently visited in Scotland and support a range of recreational pursuits. Their associated dune systems, which include a number of SSSIs, have been substantially modified to develop a number of Ayrshire's internationally renowned golf courses. The Clyde also contains five estuaries, of which the largest is that of the River Clyde.

Water Environment Features

15. Much of the Clyde is characterised by high and/or improving water quality, which is essential to industries such as salmon farming, shellfish growing, bathing and other marine leisure pursuits. The Clyde Estuary has suffered from severe pollution since the industrial revolution, with a densely populated catchment being reliant on the estuary for domestic and industrial waste disposal. The impacts of this waste on the estuary have been compounded by its poor flushing characteristics, which have been exacerbated by physical modification.

16. Sewage treatment works for Glasgow were installed in the late 19th century, but it was not until 1983 that salmon returned upstream of Dumbarton Rock. Despite substantial improvements, particularly over the past two decades, water quality in parts of the Clyde Estuary remains poor and some areas have sediments that are contaminated with industrial pollutants. There are also localised water quality issues in some coastal areas and there is a former sewage sludge dump site near Garroch Head.

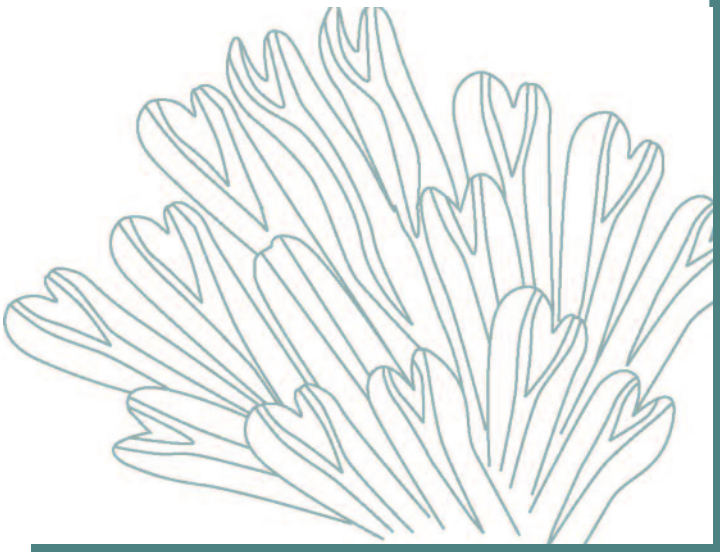
Natural Heritage Features

17. The Clyde's sheltered position, limited tidal range and relatively low surface salinity give it a biogeographic character distinct from the adjacent sea area. The Clyde contains a diverse range of seabed and intertidal habitats. Extensive areas of muddy or sandy seabed sediments provide habitat for the burrowing *Nephrops norvegicus* prawns and scallops that are the current mainstays of the inshore fishing industry. However, previously valuable stocks of herring and whitefish within the Clyde have largely collapsed. The Clyde also holds maerl beds, formed of *Lithothamnion glaciale*, an unusual nodule-forming calcareous alga while the Cumbraes and Upper Loch Fyne have been recognised by SNH as non-statutory Marine Consultation Areas.

18. Loch Goil contains two nationally important seabed communities, one of which, featuring a rare Scandinavian sea squirt *Styela gelatinosa*, is thought unique within the British Isles.

19. Within the Clyde Estuary, intertidal habitats include residual areas of saltmarsh and extensive mudflats, which support nationally important populations of wading birds such as redshank *Tringa tetonus,* oystercatcher *Haematopus ostralegus,* and curlew *Numenius arquata*. The Inner Clyde Special Protection Area (SPA) also holds nationally important numbers of various sea ducks, divers and grebes, while numbers of eider duck *Somateria mollissima* within the Clyde are of national importance. There are two other areas designated as SPAs: the Black Cart and Ailsa Craig. Whooper swans *Cygnus cygnus* winter in internationally important numbers within the tidal reaches of the Black Cart, while the seabird colony on the distinctive granite dome of Ailsa Craig includes a globally important population of over 30,000 pairs of gannets *Morus bassanus*.

20. Common and grey seals *Phoca vitulina* and *Halichoerus grypus* are regularly sighted around the Clyde. Numbers of visiting populations of basking sharks *Cetorhinus maximus* , which were fished in the Clyde until 1992, are starting to recover. Other less regular visiting cetacean species such as the bottlenose and common dolphins *Tursiops truncatus* and *Delphinus delphis* and minke whales *Balaenoptera acutorostrata* are occasionally sighted.



Heritage and Infrastructure Features

21. The mixed settlement pattern along the shores of the Clyde reflects the historical development of a range of marine related industries. Many small towns were first established to exploit the fishing resource. The fishing industry has contributed to the image and character of the Firth of Clyde and many of its coastal towns. It is a complex, traditional industry and remains of economic importance for many communities.

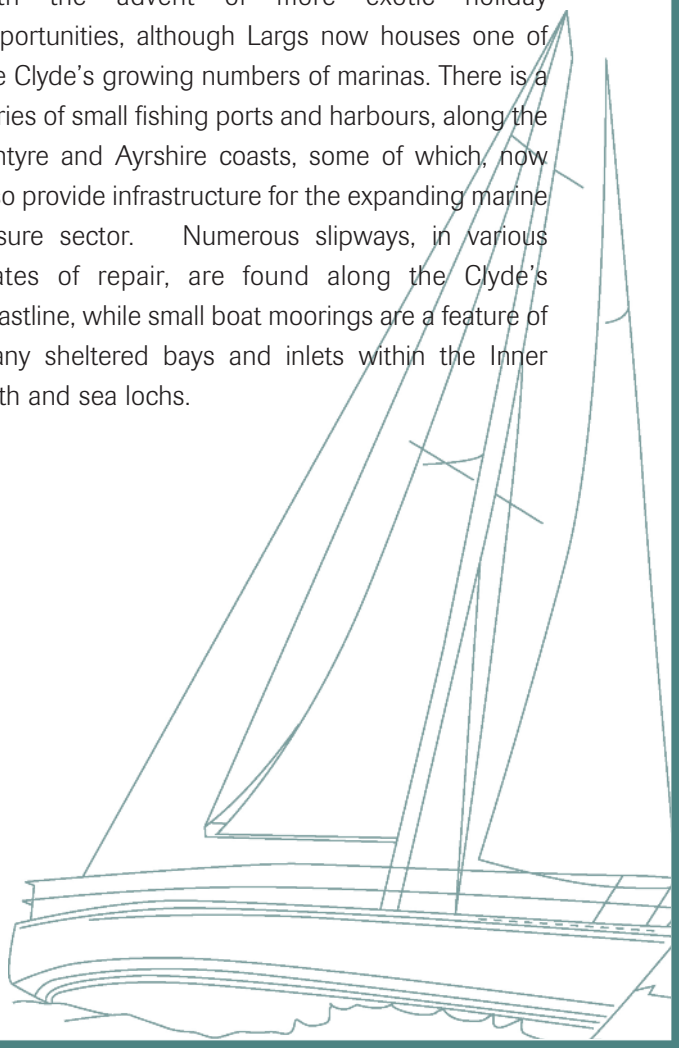
22. The development of many of the coastal towns and associated large or medium ports reflects the importance of the Clyde to shipping and transport in the West of Scotland and in the 17th century, Port Glasgow was the Clyde's first "deep water port." From the 18th to the early 20th century the Firth of Clyde became one of Europe's main hubs of transatlantic trade with the Americas, especially in sugar and tobacco, which brought great wealth to the area.

23. During this time the Clyde Estuary was substantially modified through major dredging, widening and straightening works, and associated land claim of intertidal areas to facilitate its rapid industrialisation. Many of the facilities that supported this trade are becoming increasingly unsuitable for larger international vessels. This has resulted in many (semi)derelict quaysides and warehouses along the estuary. These are being converted into housing or demolished to make way for luxury flats and the large cranes, such as Titan in Clydebank, once the backbone of the ports, are now becoming tourist attractions.

24. Shipping however, remains a major activity within the Clyde; the deep water port at Hunterston is able to handle modern ships of any size, the Finnart oil terminal in Loch Long is a vital link in Scotland's fuel supply chain, and Greenock Ocean Terminal handles both freight and cruise ships. Other ports and jetties are used by the ferry services that link the mainland coasts with the Clyde's island communities, with Ireland (from Troon) and with the Cowal and Roseneath peninsulas.

25. Synonymous with the Clyde is shipbuilding. At its peak over 100,000 people were working in 38 shipyards along the Clyde and in 1900 almost one in four boats afloat around the world had been built in the Clyde. While naval shipbuilding has recently seen some revival, the massive decline of the historically famous Clyde shipbuilding industry in the second half of the 20th century left numerous derelict dry docks along the heavily industrialised Glasgow riverfront and Clyde Estuary; many of these are being filled in and lost to future use. Other visible artefacts from the Clyde's shipbuilding past include the remains of the timber holding ponds near Langbank. There are several hundred wrecks within the Firth of Clyde, two of which are protected as military graves, and a number of these are popular with recreational divers.

26. Resort towns such as Ayr, Dunoon, Largs, Helensburgh and Rothesay in the Inner Firth were once popular destinations for day-trippers and holidaymakers from Glasgow who would go "doon the watter". This form of local tourism has declined with the advent of more exotic holiday opportunities, although Largs now houses one of the Clyde's growing numbers of marinas. There is a series of small fishing ports and harbours, along the Kintyre and Ayrshire coasts, some of which, now also provide infrastructure for the expanding marine leisure sector. Numerous slipways, in various states of repair, are found along the Clyde's coastline, while small boat moorings are a feature of many sheltered bays and inlets within the Inner Firth and sea lochs.



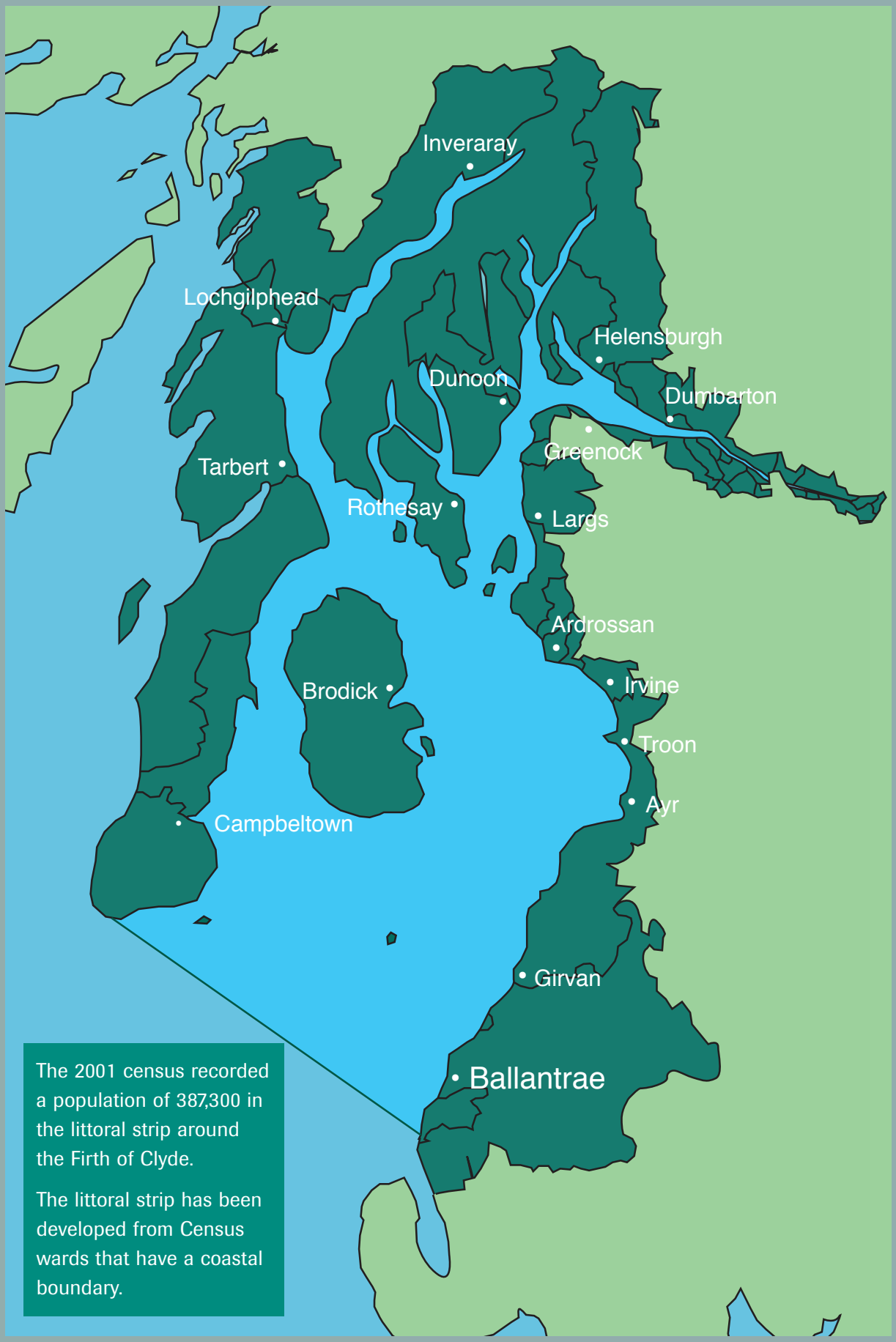


Diagram 3. The Littoral Strip Around the Firth of Clyde

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Context for the Firth of Clyde Marine Spatial Plan

Scottish Sustainable Marine Environment Initiative

27. The Plan has been developed under the auspices of the Scottish Sustainable Marine Environment Initiative (SSMEI), which was initiated by the Scottish Government to inform the debate on how to improve the management of Scotland's marine and coastal waters.

28. SSMEI is a unique and innovative approach to developing an overall marine planning framework. It aims to develop and then test the benefits of possible new management framework options for the sustainable development of Scotland's marine resource through the establishment of a number of pilot projects. The Clyde Pilot is one of four projects, with the others being located around the Shetland Islands, the Berwickshire Coast and the Sound of Mull.

29. The SSMEI National Steering Group oversees the four SSMEI Pilot Projects and provides consistent national advice and a Scottish wide context to the Plan. This national approach has ensured that parallel work, including the development of the United Kingdom and Scottish Marine Bills, has been fully taken into account.

SSMEI Clyde Pilot

30. The SSMEI Clyde Pilot aims to deliver integrated and sustainable management of the marine and coastal areas of the Firth of Clyde through an effective and integrated stakeholder-regulator partnership. It aims to achieve this through the creation of a Marine Spatial Plan, together with improved decision support mechanisms and integrated decision making. These will be underpinned by the application of an ecosystem-based approach to sustainable development.

31. The context within which the Plan has been prepared is one of significant policy development by the European Commission, the UK Government and the Scottish Government.

Marine Spatial Planning

32. Marine Spatial Planning is a mechanism to assist the delivery of sustainable development and management of resources in the marine environment. By considering competing demands for access to marine resources in a spatial context and at a scale readily understood by stakeholders, the process of marine spatial planning enables integration of these demands whilst protecting and enhancing the most important environmental assets.

33. Where integration is not possible Marine Spatial Planning enables decisions to be made through a policy-based approach to regulation, management and protection of the marine environment, using the best available data.

Integrated Coastal Zone Management

34. Integrated Coastal Zone Management (ICZM) seeks to balance environmental, economic and social objectives to enable the sustainable management of the coastal zone. It is a process which seeks to integrate the different policies that have an effect on the coast whilst bringing together various stakeholders to inform, support, and implement these policies. There is a strong focus upon partnership working and informed collaboration between stakeholders.

35. Within Scotland a number of voluntary Local Coastal Partnerships (LCP) promote and facilitate the delivery of ICZM. The relevant LCP within the area of this Plan is the Firth of Clyde Forum (FoCF). The role of the FoCF in delivering policies and proposals from this Plan is further defined within the Implementation and Monitoring section.

36. Effective ICZM requires the application of a range of instruments and tools such as legislation, technological solutions, research, voluntary agreements, education, stakeholder engagement and facilitation. Marine Spatial Planning is also a tool that enables the delivery of ICZM.



Diagram 4. SSMEI Pilot Projects

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Changing Legislation

37. The context within which the Plan has been prepared is one of significant marine policy development by the European Commission, the UK Government and the Scottish Government

Marine Strategy Framework Directive

38. The Marine Strategy Framework Directive (MSFD) was adopted by European Member States in June 2008 and has been broadly modelled on the Water Framework Directive. The MSFD aims to achieve Good Environmental Status of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. The MSFD must be transposed into domestic law by 15th July 2010 and both the UK and Scottish Parliaments have now achieved this. The MSFD constitutes the environmental pillar of the EU maritime policy, which is designed to achieve the full economic potential of oceans and seas in harmony with the marine environment.

UK Marine and Coastal Access Act

39. The UK Marine and Coastal Access Act 2009 grants executive devolution to Scottish Ministers of the new marine planning, conservation and enforcement powers in the offshore region (12-200 nautical miles), which coincides with the existing situation for marine licensing. The UK Act also gives responsibility for the implementation of the Marine Strategy Framework Directive to Scottish Ministers. UK marine policy will be integrated through the development of the Marine Policy Statement.

Marine (Scotland) Act

40. On 10th March 2010 the Scottish Marine Bill received Royal Assent making it the Marine (Scotland) Act. An essential part of the Marine Act and its delivery is marine planning: a new statutory marine planning framework will manage the competing demands for use of the sea whilst protecting the marine environment. A three-tier structure for marine planning comprises an international level beyond Scotland, a Scotland level and a regional level within Scotland for the delivery of sustainable economic growth in the marine environment.

41. The Marine Act provides a new legislative and management framework for Scotland's seas, including improved Marine Licensing and Marine Conservation. A streamlined licensing system will speed up decision-making for developments, while there will also be improved protection and enforcement for marine species and habitats and sites of cultural interest such as wrecks, and increased protection for seals.

42. At the Scotland level a National Marine Plan is being developed by Marine Scotland. This includes environmental and socio-economic national marine objectives, integrating high-level marine and coastal issues and will be part of the National Planning Framework.

43. The exact boundaries and format of local planning in the form of Scottish Marine Regions (SMRs), has not yet been decided, however, this Plan and the other SSMEI Pilot projects can inform the debate and contribute to the fine tuning of regional marine planning arrangements. It should be noted that, whilst future Plans are likely to be statutory in nature, this Plan is voluntary.

44. As the Marine Act is implemented over the coming years, the Plan will be further developed to reflect National Policy and the establishment of SMRs.

Year

2010	2010-2012	2012	2012-2014	2014
Marine (Scotland) Act entered into force Review Point for the Plan	Development of National Marine Plan	Review point for the Plan	Development of Regional Marine Plans (RMP)	the Plan adapted to be the RMP, if suitable

Event

Policy Context for the Plan

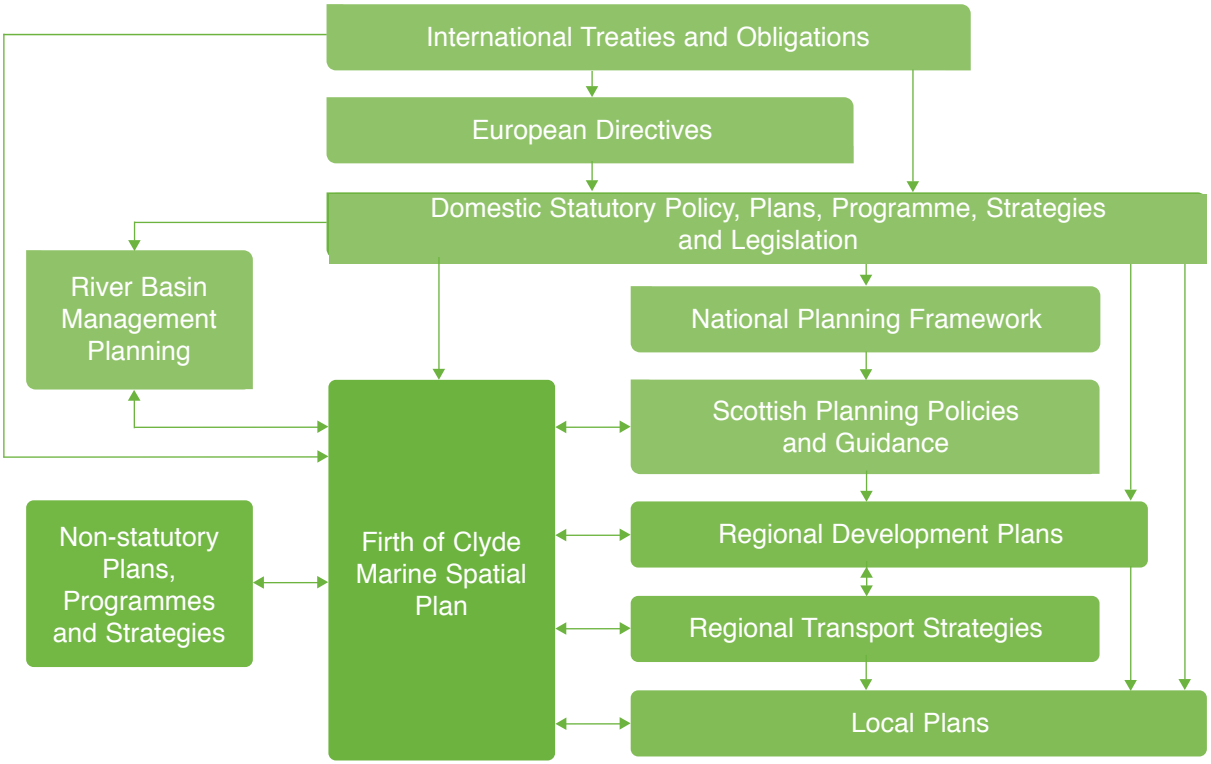


Figure 1. Relationships of the Plan to other Plans, Programmes and Strategies.

45. In the absence of a National Marine Plan for Scotland the development of this Plan was informed by a number of policy and strategy documents. The main policy drivers have been taken from the Scottish Government.

Scottish Government Objectives

46. The Scottish Government has an overarching strategy of Sustainable Economic Growth. The Economic Strategy sets out the specific actions to be adopted by Government and public services for creating a more successful country through increasing sustainable economic growth.

47. The National Planning Framework 2 (NPF2) sets out a strategy for development to 2030, which provides a national context for development plans and planning decisions, and informs the wider programmes of government, public agencies and local authorities.

48. There are a number of national strategies that are relevant to the development of the Plan. These include *A Strategic Framework for Scottish Aquaculture; A Strategic Framework for Inshore Fisheries in Scotland; A Scottish Biodiversity Strategy*, and the *Freight Action Plan for Scotland.*

49. The Scottish Government has set out five Strategic Objectives to enable Government and public services to create a more successful country through increasing sustainable economic growth.

WEALTHIER AND FAIRER

enable businesses and people to increase their wealth and more people to share fairly in that wealth.

HEALTHIER

help people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care.

SAFER AND STRONGER

help local communities to flourish, becoming stronger, safer place to live, offering improved opportunities and a better quality of life.

SMARTER

expand opportunities for Scots to succeed from nurture through to life long-learning, ensuring higher and more widely shared achievements.

GREENER

improve Scotland's natural and built environment and the sustainable use and enjoyment of it.

The Scottish Government's policy on nationally important land use and other planning matters is currently provided in Scottish Planning Policies (SPPs) and National Planning Policy Guidance (NPPGs).

Relevant current SPPs/NPPGs are:

SPP 2 Economic Development
NPPG 6 Renewable Energy Developments
SPP 7 Planning and Flooding
NPPG 13 Coastal Development
SPP 17 Planning for Transport
NPPG 18 Natural Heritage

Activity	Responsibility
Fishing	Devolved
Mariculture	Devolved
Nature Conservation	Devolved
Harbour & Harbour Orders	Devolved
Control of Land-based Discharges	Devolved
Planning	Devolved
Coast Protection Act	Devolved
FEPA	Devolved
Historic Heritage	Devolved
Renewable Energy	Executively Devolved
Telecommunications	Reserved
Shipping	Reserved
Defence	Reserved

Table 1. Devolved and reserved responsibilities of key marine activities within the Firth of Clyde. (Executively Devolved – Scottish Government administers the activity but has no powers to change the legislation)

International	European
United Nations Framework Convention on Climate Change (UNFCCC) Kyoto Protocol (1998)	EU Marine Strategy Framework Directive (2008/56/EC)
The Rio Declaration on Environment and Development 1992	European Strategy on Sustainable Development 2001 (renewed 2006)
Convention on Biological Diversity (Rio de Janeiro, 1992)	The Lisbon Agenda (2000)
The Johannesburg Declaration on Sustainable Development (2002)	2nd European Climate Change Programme (2005)
UN Convention on the Law of the Sea (UNCLOS)	Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora)
1974 Safety of Life at Sea (SOLAS) Convention	Wild Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds)
1974/78 Marine Pollution (MARPOL) Convention/Protocol	Water Framework Directive (2000/60/EC)
1971 Convention on Wetlands of International importance especially as Waterfowl Habitat 'The Ramsar Convention'	Shellfish Waters Directive (79/923/EEC)
1991 Agreement on the Conservation of Small Cetaceans in the Baltic and North Sea (ASCOBANS), made under the 1979 Convention on Migratory Species (Bonn Convention)	Bathing Water Directive (76/160/EEC) and new Bathing Waters Directive 2006/7/EC
1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)	EU green paper Towards a Future Maritime Policy for the Union: a European Vision for the Oceans and Seas (COM (2006) 275 (Final))
	Common Fisheries Policy
	European Convention on the Protection of the Archaeological Heritage (revised) ETS no. 143 ('The Valletta Convention') applied in UK from March 2000
	Council of Europe (2000) European Landscape Convention GETS No 176. Ratified by UK Govt. 2006
Full details of the relationship of International and European Policies, Plans and Programmes to the Firth of Clyde Marine Spatial Plan can be found in the SEA Scoping Report – Appendix 2.	

Table 2. The UK and Scottish Government are subject to a number of international obligations to protect and manage the marine environment

Integration and Relationships with other Plans

50. The Plan recognises the interactions between the terrestrial and marine environment and suggests ways to develop a more integrated approach between jurisdictions. The primary focus of the Plan is to provide a means of better informing public bodies who have responsibilities for marine and coastal planning functions. It will inform decision making, guide priorities and seek to achieve a balance between national and local interests.

52. As a voluntary plan it can make suggestions, propose direction and highlight opportunity. However, it does not have a statutory basis. It is hoped that the policies and proposals will become a material consideration in the determination of new applications for development by planning and regulatory authorities, and that they will subsequently be given statutory recognition, for example, through incorporation into the new strategic and local Development Plans.

Structure Plans

Ayrshire

Argyll and Bute

Glasgow and Clyde Valley

Local Plans

Argyll and Bute

Arran

East Renfrewshire

Inverclyde

Glasgow

West Dunbartonshire

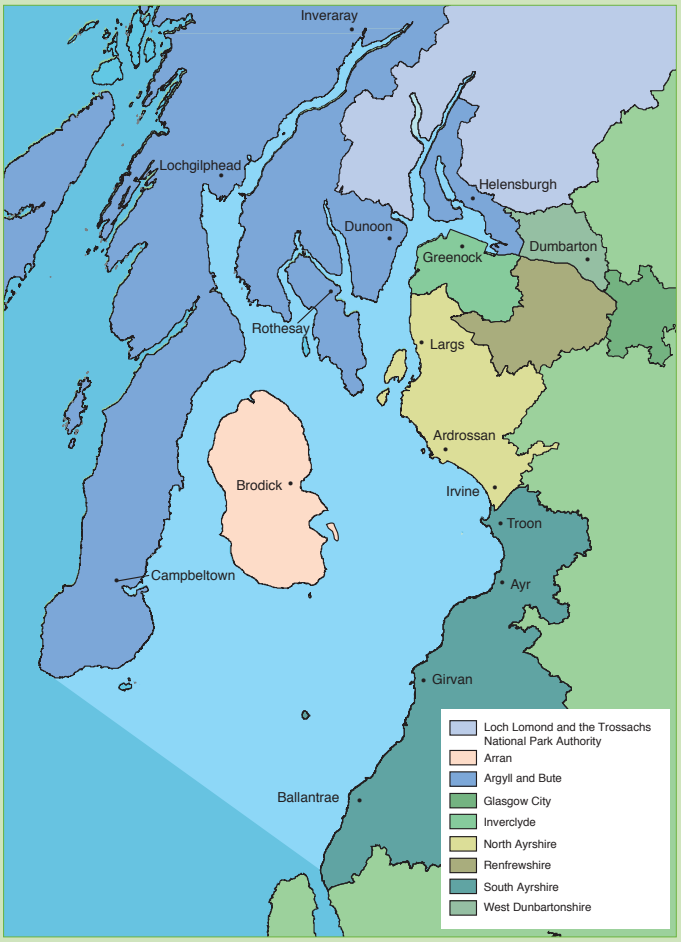
North Ayrshire

South Ayrshire

Loch Lomond and The Trossachs

National Park Plan

Loch Lomond and The Trossachs



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Diagram 5. Planning Authorities

Development Plans

51. Surrounding the Firth of Clyde are three structure plan areas and eight local planning authorities: the Plan aims to support the objectives of the Structure Plans and the Local Plans. The report **Summary of Local and Structure Plan Policies**, describes the relevant policies from the adjacent development plans that affect the Firth and marine activities.

53. It is hoped that planning authorities will have a regard to the Plan and relate the policies and general proposals of the Plan to particular areas within their planning authority boundary.

Loch Fyne ICZM

54. Argyll and Bute Council has produced an ICZM plan for Loch Fyne. This more localised plan provides supplementary guidance for aquaculture development in Loch Fyne. It is an example of a local plan within a regional MSP.

Transport Strategies

55. The Transport (Scotland) Act 2005 established statutory Regional Transport Partnerships (RTPs) throughout Scotland. There are two Regional Transport Partnerships within the Plan area, Highlands and Islands Transport Partnership (HITrans) and Strathclyde Partnership for Transport (SPT).

56. The RTPs are required to prepare Regional Transport Strategies, which set out the framework for investment in strategic transport infrastructure and services for the next 15 to 20 years. The Plan takes account of these in its development and also highlights specific transport infrastructure requirements that enable the sustainable development of marine based activities.

57. Local Transport Strategies, developed by councils, encourage the availability of accessible, efficient and low carbon transport options. They are an important tool for improving marine-based transport at a local level.

River Basin Management Plan

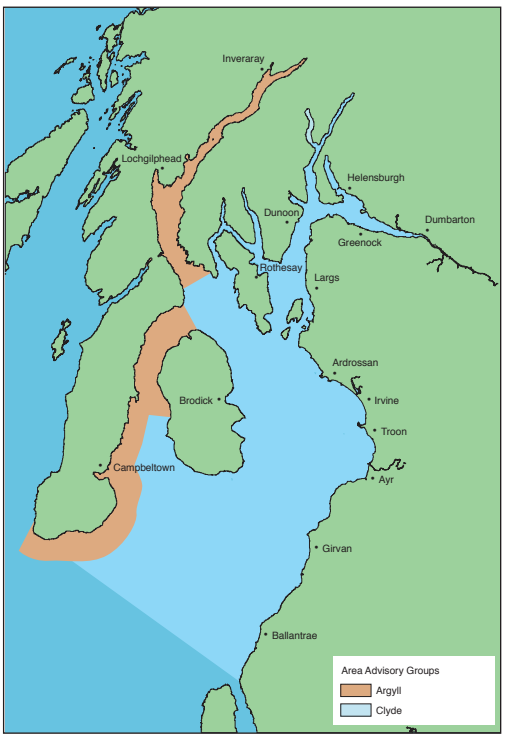
58. The Water Framework Directive was transposed into Scot's law through the Water Environment and Water Services (Scotland) Act 2003. The Act requires the creation of a river basin planning system that will promote sustainable water use while protecting and improving the water environment.

59. SEPA is charged with delivering the river basin planning process in Scotland, which required the publication of the first River Basin Management Plan (RBMP) in 2009. The RBMP provides a comprehensive framework for coordinating and integrating the management of inland, coastal and ground waters from 2009 to 2015.

60. The RBMP sets out the environmental objectives for all water bodies, presents a programme of measures to achieve these objectives and contains a monitoring programme to assess progress.

61. A network of eight Area Advisory Groups (AAGs), based on surface water catchments and coastal water units, covering the whole of the Scotland River Basin District has been formed. These groups contribute to and assist the river basin planning process within their area. The Plan is within both the Clyde and Argyll AAG areas.

62. It is essential that RBMP objectives are co-ordinated with any future marine planning objectives at both a national and local level in order to avoid conflict or duplication of effort. As a framework for marine planning evolves, it will be important to clarify roles and responsibilities of organisations involved in both RBMPs and marine planning.



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007002-SEPA)

Diagram 6 . Area Advisory Groups in the Firth of Clyde

Clyde Inshore Fisheries Group

63. Inshore Fisheries Groups (IFGs) have been set up across Scotland to devolve the management of the fisheries to local fishing interests. One of the first groups to be established was the Clyde IFG. The Clyde IFG will develop a realistic Management Plan for the area. This plan will reflect local priorities and fit with wider national objectives for Scotland's inshore fisheries, fishing communities and the marine environment as a whole. The plan will also take account of the requirements and aspirations of others who are involved in or dependent on the inshore marine environment. As a result this Plan does not consider the management of the fishing resource or gear types employed. Instead it focuses upon infrastructure requirements and how planning and other activities interact with the fishery.

64. When developing the Fisheries Management Plan, the Clyde IFG should take account of the policies and proposals within this Plan. During the process of developing the Plan a number of issues and conflicts that the IFG may be able to address were identified. These include unresolved conflicts between mobile and static gear fisheries with respect to stocks maintenance, access to fishing grounds, and gear damage. Through working with representatives of other interests, including marine recreation, biodiversity conservation and mariculture the IFG can also potentially work proactively to resolve issues over access to marine space and to key infrastructure such as harbours and slipways.

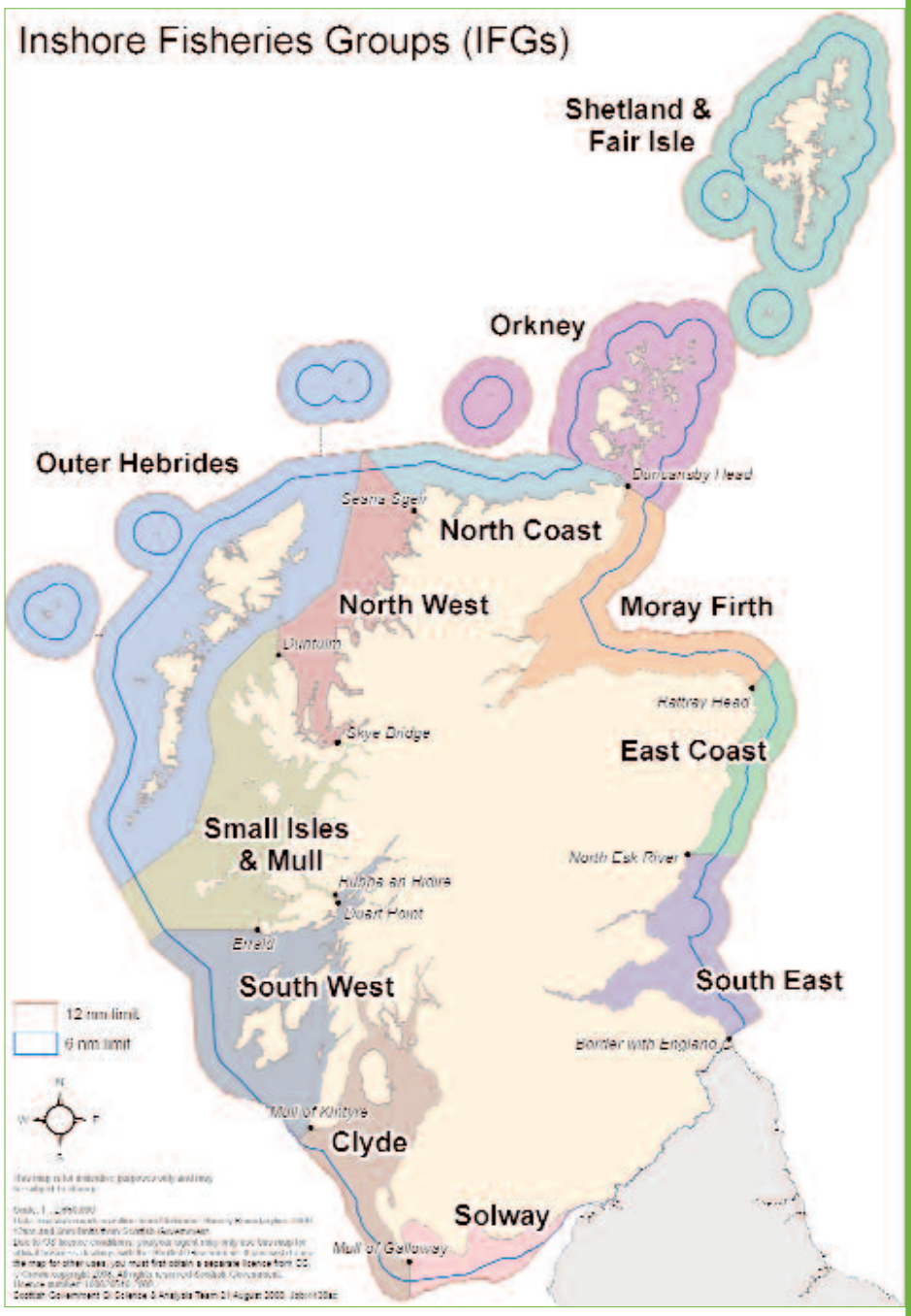
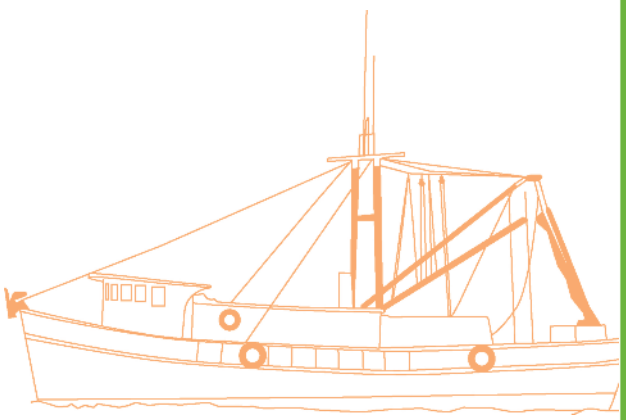


Diagram 7. Inshore Fisheries Groups. Supplied by Scottish Government Sea Fisheries (Management) Division.



Climate Change

65. There is increasing evidence and agreement within the scientific community that human activities, which release greenhouse gases to the atmosphere, are the major cause of the observed average increase in global temperatures over the last century. An increase in sea temperatures around the coast of Scotland has been observed with the potential to alter the abundance and distribution of marine species. Exactly how climate change may affect marine species is the subject of much research in the UK.

66. Increasing global temperatures have led to a rise in sea level, caused by both the melting of polar ice caps and the thermal expansion of water. In Scotland this is moderated, to a degree, by the uplift of the land surface following the melting of the last Scottish ice sheet around 10,000 years ago. It is estimated that by 2080, net sea level will be around 20cm higher in the Clyde. Due to the rising sea level, storm events that coincide with high spring tides can lead to storm surges with the potential to inundate and damage coastal settlements and infrastructure. Analysis of tidal gauges at Millport, however, indicates that observed increases in surge levels are not linked with storminess to date. Under EC Directive 2007/60/EC, the Scottish Government now has explicit duties to assess and manage coastal flooding within flood risk management. It is the intention that future versions of the plan will contain shoreline management guidance including coastal defences and location guidance for coastal development which avoids areas subject to inundation.

67. The Scottish Government has also committed to aggressive carbon emission reduction targets of 42% by 2020 and 80% by 2050. In order to achieve this, there will need to be substantial changes in many sectors of the economy. Among these will be a greater reliance on renewable energy, an important source of which is the marine environment. Scotland has 25% of Europe's total tidal and offshore wind resource and 10% of potential wave power. Whilst the Clyde is not identified as a prime development location for marine renewable installations, the area could supply servicing facilities to those further afield. The sectoral plan for Energy and Subsea Infrastructure sets out the Plan's approach to such developments.



Rising sea level	Greater incidence of coastal flooding in at-risk areas, leading to greater degree of "coastal squeeze".
Increasing sea temperature	Changes in abundance and distribution of marine species
Increasing sea temperature	Potential increased rate of spread of non-native species
Increasing sea temperature	Potential for earlier phytoplankton blooms and changes in the food web
Increased storminess	Greater incidence of coastal flooding and storm surges in at-risk areas, with associated negative impacts on breeding birds

Table 3. Potential impacts of Climate Change in the Firth of Clyde

Developing the Plan

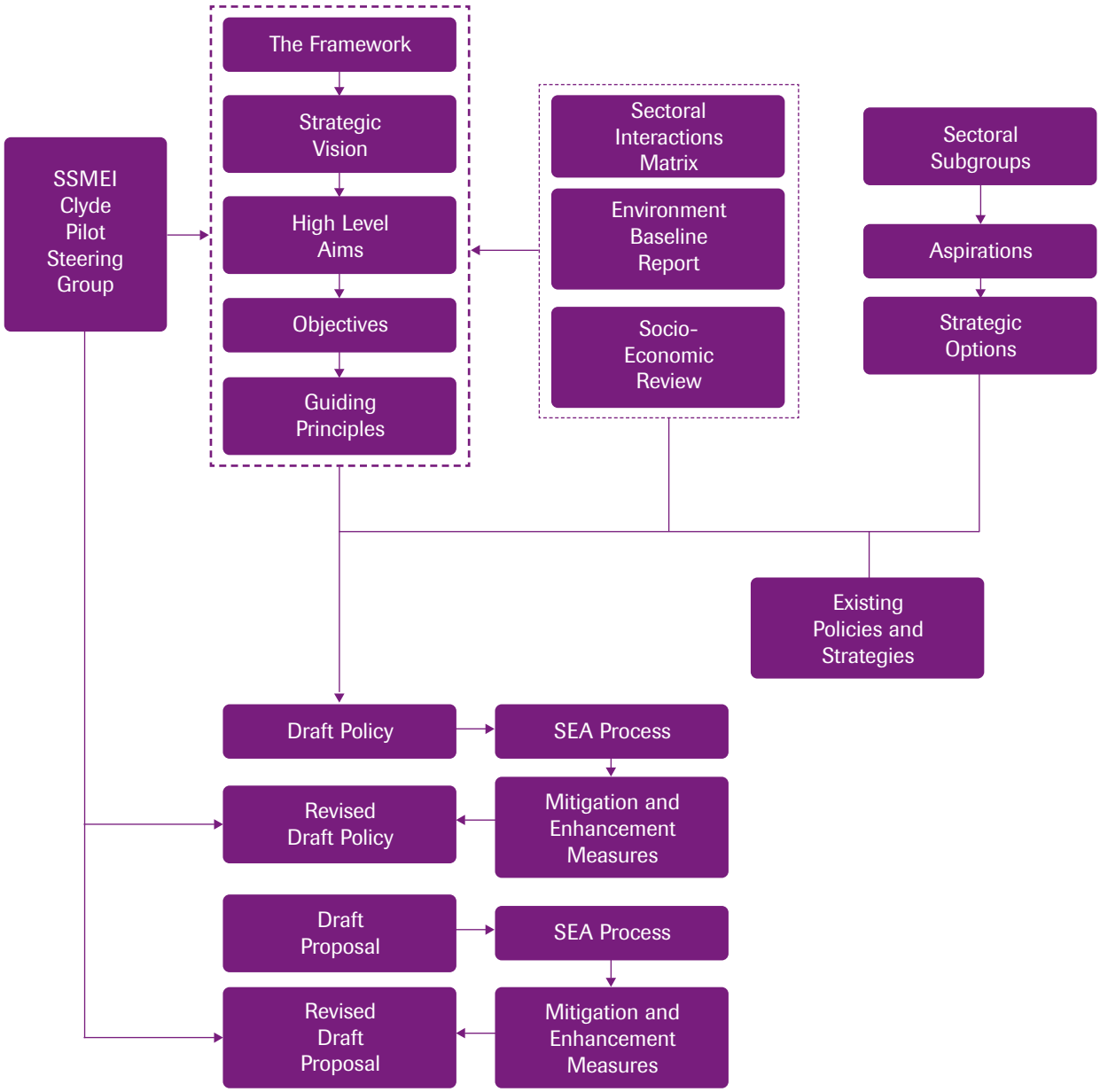


Diagram 8. Process for Plan and Policy Development

68. The Plan has been developed by the SSMEI Clyde Pilot project team, with support from a local stakeholder-regulator steering group and targeted input from sectoral interests. Wider public consultation has been used at significant milestones in the Plan's development. This approach has been an important aspect of ensuring the Plan is robust and takes account of the views of those with an interest in the Firth of Clyde.

SSMEI Clyde Pilot Steering Group

69. The SSMEI Clyde Pilot Steering Group represents the main stakeholders and regulators within the Firth of Clyde. (see Appendix 2). The membership of the group is made up of the Firth of Clyde Forum Core Group, ensuring that the Plan has benefited from the extensive expertise developed by the Forum since its formation in 1994.

70. Local steering group meetings were held quarterly, with the steering group setting the strategic direction for the draft Plan, and providing input at important stages during its development. During the final phase of development, monthly meetings were held to ensure that agreement on the Plan's final content could be reached.

Evidence Gathering

71. A number of background studies were completed during the course of preparing the Plan. These were needed to fill important information gaps relating to our knowledge of the Clyde.

72. Of particular importance are the **Sectoral Interactions in the Firth of Clyde Report**, the **State of the Clyde Report** and the **Socioeconomic Review,** which have all helped shape the Plan. Key to implementing an ecosystem based approach to spatial planning and management is identifying "what is where" so that suitable areas can be identified for economic development, conservation or protection, or a combination. To enable this a **Review of Biodiversity for Marine Spatial Planning within the Firth of Clyde** was carried out and the **Firth of Clyde Seabed Habitat Map** was developed. A full list of relevant background documents can be found in Appendix 1. These documents provide the evidence base for identifying the issues and opportunities in the Clyde.

Sectoral Interactions in the Firth of Clyde

73. This report describes the interactions among key sectors utilising the marine environment of the Firth of Clyde. One of the key findings was that there were substantially fewer unmanaged conflicts or incompatibilities within and among sectors operating in the Firth of Clyde than might be anticipated, especially given the range and level of activities present. Fewer interactions were classed as conflicting or incompatible than as positive or synergistic in nature. It should be noted that in some cases where management systems exist, they are not necessarily operating to the satisfaction of all stakeholders. A summary of relevant Interactions is presented in a table at the beginning of each sectoral policy section.

The State of the Clyde Report

74. **The State of the Clyde Report** is a summary of existing environmental information. It describes the current status and, where known, trends in status, of some specific environmental components of the Clyde. This baseline document assisted in identification of issues for the Plan and SEA, and informs the selection of monitoring elements used to assess the impacts of the plan.

Socioeconomic Review

75. **A Socioeconomic Review** was carried out which found that the Firth of Clyde marine environment directly supports around 14,400 jobs in nearly 840 businesses. These jobs create a turnover of £1,150 million, which in turn generates around £416 million for the Scottish economy each year.

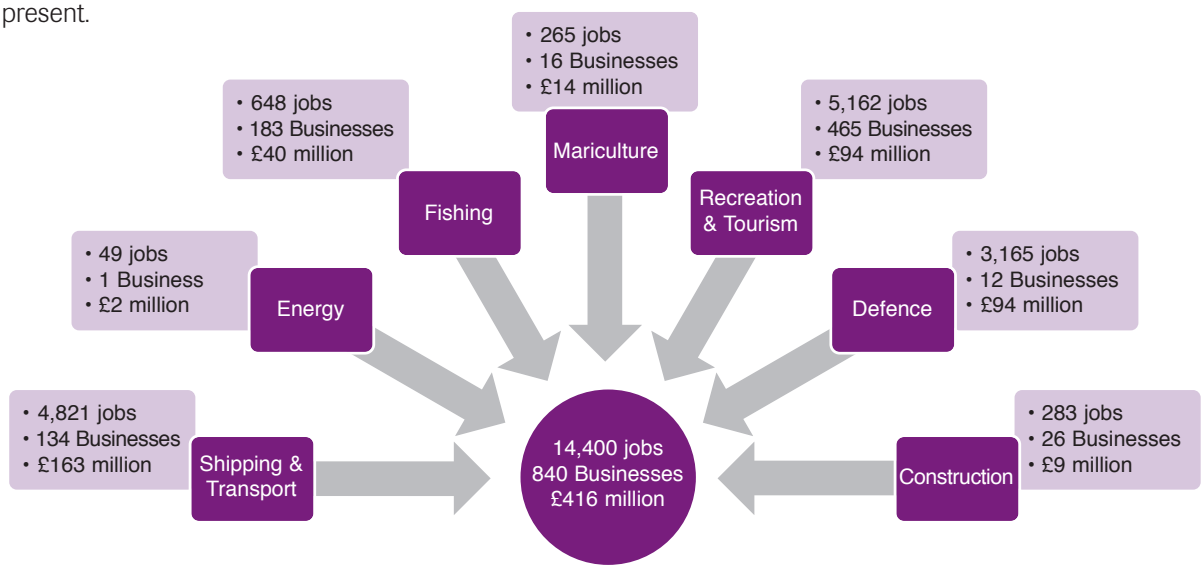


Diagram 9. The Jobs, Businesses and Gross Value Added Supported by the Firth of Clyde Marine Environment Based on 2005 statistics

Review of Biodiversity for Marine Spatial Planning within the Firth of Clyde

76. This review involved the collection, collation and review of existing marine biodiversity knowledge on the Firth of Clyde to identify areas of biodiversity interest and gaps in current knowledge. It found that despite the wealth of information available for identifying important marine biodiversity within the Firth of Clyde, there are some significant gaps both spatially and in terms of the type of information available. It highlighted that data quality and quantity show a bias towards the coastal areas and sea lochs. This limited the study and it was only possible to map the distribution of priority species, priority biotopes and hotspots in restricted areas of the Firth of Clyde. The data gap analysis will be used to identify requirements for future surveys and studies.

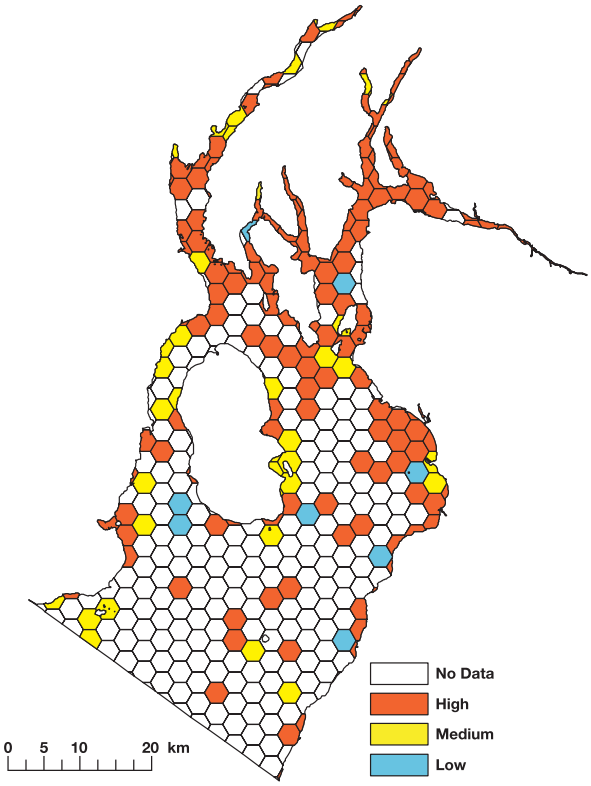


Diagram 10. The spatial distribution of data by quality across the Firth of Clyde for species sample data.

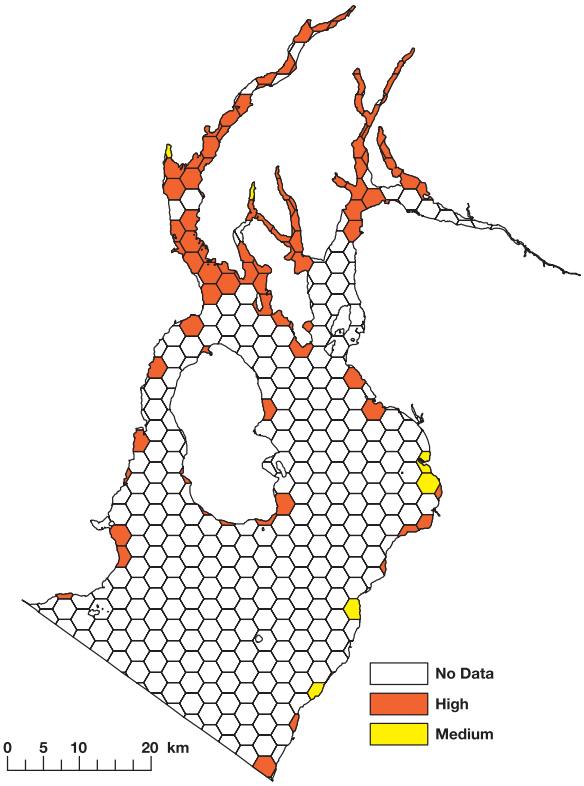


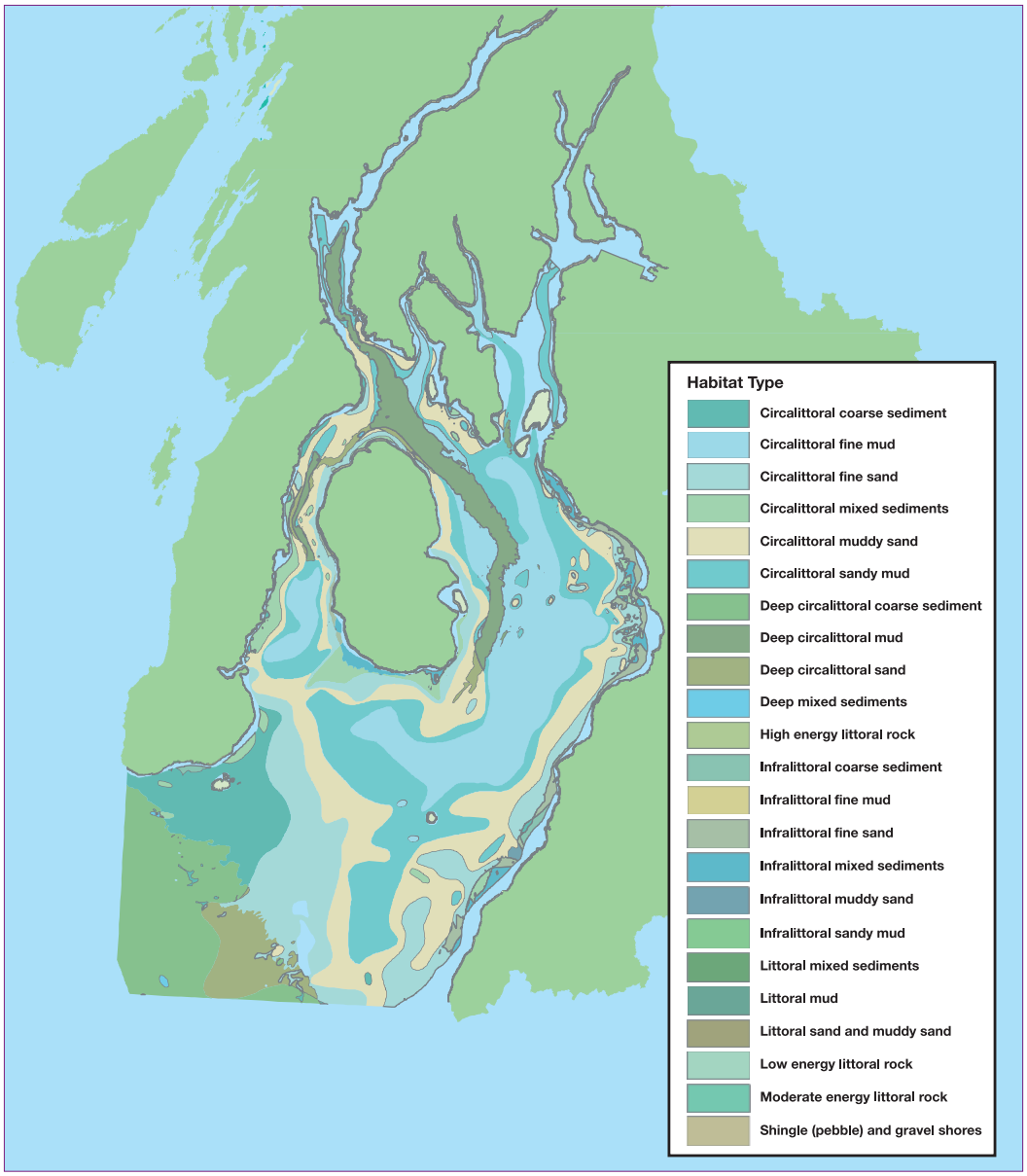
Diagram 11. The spatial distribution of data by quality across the Firth of Clyde for habitat sample data.

Firth of Clyde Seabed Habitat Map

77. As can be seen from the **Review of Biodiversity** there are large areas of the Firth of Clyde which have no habitat survey information. This is mainly because habitat and species mapping has historically been limited in the marine environment due to high cost and logistical complexity.

78. An alternative approach to traditional mapping techniques is to create a model of the environment based on observed correlations between habitats and various data that have been collected, for example depth or current speed. This model creates an indicative **Seabed Habitat Map**. Whilst data availability in the **Review of Biodiversity** was biased towards coastal areas and sea lochs, the data sets used to develop the **Seabed Habitat Map** are biased against these areas. It should be noted that the **Seabed Habitat Map** does not reflect habitat quality or value or show changes due to human activities.

79. This technique of using a model has been applied in similar initiatives, for example the SSMEI Shetland, UKSeaMap and Mapping European Seabed Habitat (MESH) projects. It has also been used in the development of management plans by the Highland Shellfish Management Organisation.



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Diagram 12. Indictive Seabed Habitat Map for the Firth of Clyde

Ecosystem Approach

80. The Ecosystem Approach is defined in **Sustainable Seas for All** as "integrating and managing the range of demands placed on the natural environment in such a way that it can indefinitely support essential services and provide benefits for all." The approach embraces the sustainable development concept of enabling all people to satisfy their basic needs and enjoy a better quality of life without compromising the ability of future generations to meet their needs. It recognises that holistic management of natural resources is required to ensure maintenance of critical ecosystem services. The UK Government and European Union have signed-up to the Ecosystem Approach as a Party to the Convention on Biological Diversity and it is underpinning relevant Scottish Government policies. For further details on the ecosystem approach in the context of marine planning, see Appendix 1

81. In developing the Plan, extensive efforts have been made to engage with a broad range of stakeholders and to draw upon and collate relevant information held by numerous agencies and individuals. In addition, the application of Strategic Environmental Assessment to strategy and policy development, together with recognition of the environment as a crosscutting theme, are examples of how the ecosystem approach has been followed.

Ecosystem Approach

"integrating and managing the range of demands placed on the natural environment in such a way that it can indefinitely support essential services and provide benefits for all."

Sustainable Seas for All

Sectoral Subgroups

82. To assist in developing the sectoral policies, subgroups were set up for each of the key sectors on the Clyde: Shipping and Transport; Conservation and Biodiversity; Mariculture; Fishing; Recreation and Tourism (see Appendix 2). Through professionally facilitated workshops, the aspirations and drivers for each sector were identified and a number of strategic options, for the the Plan to deliver, were proposed. These sectoral aspirations were taken into account during the development of draft policies, alongside the Plan's aims and objectives.

Public Consultation

83. Public consultation has focused on two significant steps of the Plan writing process. The first consultation exercise focused on helping define the strategic objectives for the Plan and took place in November 2006 at the SSMEI Clyde Pilot/Firth of Clyde Forum Marine Spatial Planning Conference. Workshops at this event enabled early input from a large number of stakeholders. The second consultation exercise, which took place during 2009, provided the opportunity for the public and other stakeholders to review and comment on the draft policies and proposals presented within the Draft Plan. The views expressed during this second consultation have been considered during development of the final Plan.

Strategic Environmental Assessment

84. In accordance with the Environment Assessment (Scotland) Act 2005 a Strategic Environmental Assessment (SEA) has been carried out. The SEA improves the environmental sustainability of strategic policies contained in this Plan, through evaluation of alternative options. It ensures negative environmental impacts are mitigated while enhancing positive impacts and it facilitates transparency and robustness in the decision-making process. To consult a copy of the SEA, see details in Appendix 1.

Habitats Appraisal - Appropriate Assessment

85. In accordance with the Conservation (Natural Habitats, & c.) Regulations 1994 as amended, a Habitats Appraisal has been carried out to assess any likely significant effect of the Plan on both marine and terrestrial Natura 2000 sites (Special Areas of Conservation and Special Protection Areas) in the Firth of Clyde area. Where relevant, Appropriate Assessment has also been undertaken. For details of this report, see Appendix 1

The Framework

86. Development of the Plan has been guided by a Framework comprising a 20 year Vision, Aims, Objectives and Guiding Principles. These have been developed and agreed through a consultative process involving a wide range of the Clyde's stakeholders.

87. This Framework establishes the context within which the policies and proposals detailed in the Plan have been developed and sets out the approach for delivery of the Vision. The Plan recognises that marine-based industries and activities within the Firth of Clyde have considerable potential to contribute to the economic prosperity and social wellbeing of coastal communities and beyond. For such potential to be realised and sustained in the long term, development should be undertaken in a manner that recognises the need to safeguard marine ecosystem processes and the features that make the Clyde attractive to a wide range of interests. The key benefit arising from the Framework is delivery of integrated planning in the marine environment that enables a broad range of activities to develop in an ecologically sustainable manner.

88. This first Marine Spatial Plan for the Firth of Clyde, and future revisions of it over the coming 20 years, will focus on delivering these aims.

The Framework is composed of four interrelated elements:

The Vision

Sets out how the Clyde should look in 20 years time following Plan implementation.

Aims

These are the overarching goals that set out the purpose of the plan.

Objectives

These specify the direction of desired change in trends or conditions that policies and proposals should deliver.

Guiding Principles

These provide the key policy functions, guide the strategy and set the tone of the document.

The Strategic Vision of the Firth of Clyde in 2029

89. The Plan aims to deliver an agreed cross-sectoral vision of how the Firth of Clyde will look in 20 years time.

> **"The Firth of Clyde will have a healthy marine and coastal environment, rich in biodiversity and natural resources. This will enhance the quality of life for local communities and contribute to a diverse and sustainable economy for the West of Scotland."**

Aims

90. This long-term vision for the Firth of Clyde encompasses three high-level interrelated aims for marine planning. These are based on the three pillars of sustainability:

Environmental

91. Maintaining and enhancing the biodiversity, landscape and seascape of the Firth of Clyde, by protecting and improving its natural resources.

Economic

92. Providing a framework that supports current economic activity, opportunities for growth and attracts investment.

Social

93. Maintaining the wellbeing and cultural diversity of coastal communities.

Objectives

94. Eight key objectives of the Plan have been identified. These are 20-year objectives, which will be reviewed after 5 years.

O1: Develop an integrated suite of policies and proposals for future development of activities within the Firth of Clyde including Spatial elements

There are a number of different government departments and agencies that manage activities within the marine environment, predominantly on a sectoral basis. Through an integrated approach social, economic and environmental benefits can be maximised, with potential future conflicts minimised.

O2: Improve the knowledge base of habitats, species and pressures to better underpin decision making

Current knowledge is limited, especially for subtidal habitats, species and the pressures upon them. Improving our knowledge will allow important habitats and species to be protected and enable effective forward planning, allowing improved management of the Clyde's environmental resource.

O3: Promote maritime transportation

There is a drive to shift the balance of transport from road and aviation towards rail and shipping. The increased transportation of goods and people by sea will be facilitated through the provision of appropriate infrastructure.

O4: Enhance understanding of the importance of seascape and associated landscapes

Currently, planning considerations have a primarily terrestrial focus and may not necessarily take full account of the impact upon views from the marine environment. Providing guidance on assessing visual impacts from a marine perspective will enable more effective and consistent decision making.

O5: Increase participation in marine-related recreational activities

There are potential benefits, both economically and socially, from increased participation in a wide range of marine-related activities. A more coordinated approach is needed to develop the network of facilities required in the Firth of Clyde and increase awareness of the marine environment.

O6: Maintain and improve the wellbeing, culture, heritage and diversity of coastal communities

The high amenity value of the Firth of Clyde, together with the rich maritime heritage of many of its coastal settlements, has considerable potential to enhance the well-being of coastal communities. The Plan will seek to maximise such benefits, including health and social cohesion, through sympathetic development of marine-based activities that recognise and celebrate the Clyde's maritime heritage.

O7: Increase commercial confidence through better-informed decision making

Marine businesses within the Firth of Clyde seek increased certainty as to the probable outcome of development proposals in order to reduce financial risk. This can be achieved through: enhanced provision of information to both developers and regulators to promote consistent and effective decision-making; and through the development of policies that seek to optimise the benefits derived from sustainable growth of key sectors across the Clyde.

O8: Safeguard and enhance the quality of marine, coastal and intertidal habitats and species

The Clyde contains internationally and nationally protected assets which bring responsibilities for guardianship. Although our knowledge of other habitats and species is currently limited, everyone has a responsibility to consider the impact of their decisions on the ecosystem and take positive steps to improve biodiversity.

Sustainable Development

The goal of sustainable development is to enable all people to satisfy their basic needs and enjoy a better quality of life without compromising the ability of future generations to meet their needs. Sustainable development recognises the fundamental dependence of human economic and social well-being on the maintenance of ecosystem services and equitable use of natural resources.

The UK Shared Framework sets out five principles of sustainable development:

- **Living within environmental limits**
- **Ensuring a strong, healthy and just society**
- **Achieving a sustainable economy**
- **Promoting good governance**
- **Using sound science responsibly.**

Guiding Principles

89. The Plan's policies and proposals have been developed in accordance with a set of six overarching Guiding Principles. These articulate key underlying functions of marine planning within the SSMEI Clyde Pilot context (GPs1, 2) and establish the particular tone of the Plan(GPs 3-6)

GP1: Sustainable Development

The vision for the Firth of Clyde can only be realised through sustainable development.

GP2: Ecosystem Approach

The Plan adopts the ecosystem approach to sustainable development.

GP3: Responsible Use

The Plan encourages stakeholders to use the Firth of Clyde responsibly in pursuit of their activities.

GP4: Quality of Life

The Plan aims to improve the quality of life for those living around the Firth of Clyde.

GP5: Adding Value

The Plan adds value through identifying and addressing existing policy, information and process gaps that limit the delivery of sustainable development.

GP6: Partnership Working

The successful delivery of the Plan requires proactive and committed partnerships among local authorities, regulators and other key stakeholders.

Crosscutting Policy Themes

96. To ensure that the environment and the results of the Strategic Environmental Assessment are truly integrated into the Plan, several Crosscutting Policy Themes have been developed.

The four crosscutting policy themes are:

- Environment
- Communities
- Heritage
- Safety

97. These themes provide a consistent framework to ensure that the Plan delivers sustainable development through the identification of policies and proposals that deliver environmental benefits alongside the needs of each sector.

Environment

98. The Firth of Clyde has been subject to human activity for thousands of years, providing sheltered waters and abundant natural resources to allow habitation along its shores. The population has expanded and human impact on the Firth has intensified in recent times due to the development of heavy industry, navigation requirements for large vessels, fishing effort and recreation. In some cases this has caused damage to the natural heritage of the Clyde, for example through reclamation of land and loss of important intertidal habitats. The presence of these activities within the Plan area requires that we manage both natural resources and human activities within the Clyde to maintain biodiversity and ecosystem functions.

99. There are a number of distinctive natural habitats within the Firth of Clyde, such as sea lochs, maerl beds and intertidal mud flats. The area is nationally and internationally important for birds such as gannets, eider ducks and redshank. Firework anemone, fan mussel and the Loch Goil sea squirt are just some of the nationally rare or scarce species that can also be found in the Clyde.

100. Other species, such as the basking shark, are gradually increasing in numbers. Since the early 1980s, as a result of pollution control and water quality improvement, migratory salmon and sea trout have been returning to the River Clyde in increasing numbers.

101. Conservation of the marine environment is a complex matter involving multiple agencies and stakeholders across a range of marine industries. Delivery of environment policies will undoubtedly overlap with other desired uses of the Clyde. A strategic approach is required to help regulators and statutory advisors maximise benefits and minimise potential future conflicts between management of natural heritage interests and other users.

102. A number of international and national designations exist for the protection of important coastal intertidal communities. These include Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites and Sites of Special Scientific Interest (SSSIs). There are three SPA designations and fifteen biological SSSIs with a maritime connection in the Firth of Clyde.

103. The Loch Lomond and The Trossachs National Park, created in 2002 under the National Parks (Scotland) Act 2000, includes 39 miles of coastline around 3 sea lochs; Loch Long, Loch Goil and Holy Loch. The Park boundary extends to low water mark. The Park is home to many species including the otter *Lutra lutra* which lives in and around major lochs and rivers.

104. Statutory and voluntary efforts to protect and enhance the marine resources of the Firth of Clyde will be supported where they help deliver the Scottish Government's three pillar approach to conservation and sustainable management of Scottish seas. The appropriate balance of these approaches will be determined in response to both local factors and evolving national policies in support of international imperatives such as OSPAR, the Water Framework Directive and the European Marine Strategy Directive.

The Scottish Government is committed to ensuring that Scotland's marine and coastal environment is "clean, healthy, safe, productive and biologically diverse" and managed to meet the long-term needs of nature and people. This includes managing our seas sustainably to protect their rich biological diversity but also to ensure they continue to provide economic, social and other benefits for people and communities.

Sustainable Seas For All



Diagram 13. Natural Heritage Designations

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Policy ENV 1 Improving the knowledge base of the marine environment

A strategic approach should be developed to gather and record data on the marine environment of the Firth of Clyde. This strategy should give priority to improving the knowledge of mobile and migratory species, developing a better understanding of seabed species and delivering accurate habitat maps.

105. Effective management of the marine environment requires improvement in our knowledge, especially of internationally, nationally and locally important species and habitats. In particular, gaps in our knowledge of subtidal habitats and species and some mobile species represent a significant challenge to delivering the environmental, social and economic aims of this Plan.

106. Improving our knowledge of the marine environment will enable policies to be developed and information to be provided to allow developers and decision makers to ensure development can take place in appropriate locations whilst protecting and safeguarding important species and habitat

107. The first steps towards delivering this improved knowledge have been carried out by the SSMEI Clyde Pilot. The three main pieces of work that contribute to this are: **State of the Clyde Report; Review of Biodiversity for Marine Spatial Planning within the Firth of Clyde; and The Process for Developing a Seabed Habitat Map for the Firth of Clyde.**

108. The **Review of Biodiversity** report has examined possible options for the analysis of the existing biodiversity data. It also highlights data gaps where surveys should take place.

Policy ENV 2 Identifying and mapping species, habitats and sensitivities

The location of internationally, nationally and locally important species and habitats in the subtidal zone should be identified and mapped, with levels of sensitivity assessed to determine appropriate management and compatible uses.

109. A range of activities can take place in the Firth of Clyde without impacting upon the integrity of species and habitats. However, in some locations or at certain times, conflict will arise. Through mapping known species and habitats, with locations of activities and sensitivity/pressure information, potential conflicts can be identified.

Policy ENV 3 Mobile species

Existing information on the occurrence of mobile and migratory species should be collated and analysed in order to determine whether there are important areas or times mobile and migratory species may be disturbed by activities.

110. There are issues relating to disturbance of mobile species. Key issues include collision with basking sharks and disturbance of birds rafting or while at important feeding grounds.

111. In particular, increased vessel movements within the Clyde could potentially raise the risk of collision with marine wildlife, such as basking sharks and cetaceans. Greater knowledge of their movements can reduce these risks.

Sections of the 2008 Round Britain Powerboat Race were re-routed to avoid areas known for high concentrations of basking shark.

Policy ENV 4 Pressure/sensitivity indicators

A suite of Clyde specific pressure/sensitivity indicators for important species and habitats should be developed. Where possible, these should be established from existing national indicators but, where no appropriate indicators currently exist, they should be developed to enable their adoption elsewhere in Scotland.

112. Changes in species and habitats can be used as indicators to monitor ecosystem health. Shifts in species composition are indicators of a change in the ecosystem that relates to a change in the quality of the habitat.

113. Some species and habitats are particularly sensitive to the effects of certain human activities. This makes them useful as indicators of the intensity and severity of that activity on the biological health of an area. These indicator species and habitats may be sensitive to pressures such as physical disturbance, chemical pollution or increased noise levels.

114. Seabirds are potentially valuable indicators of the health of the marine environment and of environmental change. The abundance of Scottish seabird populations is one of the suite of high level summary Scottish Biodiversity Indicators.

115. A range of such pressure sensitive biological indicators has been developed through the introduction of the Water Framework Directive (WFD). However, these do not include assessments of the health of mobile and migratory species such as basking sharks, whales, dolphins and turtles, and these species may be particularly sensitive to increased human activity through the potential for increased noise, disturbance and collision.

Water Framework Directive

This directive requires the most sensitive biological element to be used to assess the effects of specific human activities on the environment, and sets standards against which the severity of the activity can be judged.

The effects of the disposal of dredge spoil on the seabed can be assessed using a tool for assessing the state of the animals that live in the seabed.

These subtidal species are particularly sensitive to the effects of organic enrichment and smothering, and hence provide a means of classifying the effects of this activity, as well as the effects of seabed trawling and dredging the historic legacy of sewage sludge disposal and the release of feed and faeces from fish farms.

Policy ENV 5 Non-native invasive species

A guiding framework for invasive non-native species mitigation within the Firth of Clyde should be developed.

116. This guiding framework should identify the sensitivity and vulnerablity of native habitats and species to specific non-native invasive species. An action plan to reduce any significant detrimental impact of existing invasive non-native species on such sensitive and vulnerable habitats and species should be included. It should also promote compliance with best practice guidance to reduce risks of introduction and spread.

117. After habitat loss, non-native invasive species are considered by the UN to pose the greatest threat to biodiversity. The effects of introduced species on their host environment can include competition with native species for food and space, habitat alteration, changes in water quality and the transmission of disease or parasites. **Scotland's Seas: Towards Understanding their State** identifies shipping and aquaculture as the main industries that may introduce non-native species into the marine environment.

118. Guidance from SNH and the UK "marine aliens" project has identified that the spread of marine alien species can be reduced by:

- reporting any sightings
- not moving non-native species to new locations
- maintaining boat hulls clear of fouling organisms
- cleaning boats and equipment before transporting them from one water body to another
- cleaning and drying dive and fishing gear after use
- not releasing aquarium plants or animals into the environment

Wireweed

Wireweed was first found in Loch Ryan in 2004. It was subsequently found in Loch Fyne in 2006 and has now been recorded in a number of locations throughout the Firth of Clyde.

It is a fast-growing species and competes with native seaweeds and seagrasses through over-growing, shading and abrasion, which can alter the ecology and visual character of the shore.

Where wireweed becomes established in large quantities it has the potential to be a nuisance. In harbours and shallow waters, floating masses may become a hazard to commercial and recreational boating through the entanglement of propellers or blocking engine cooling systems.

Scottish Natural Heritage has listed Wireweed in its Species Action Framework, as an active invasive species with high potential for adverse impact on important biodiversity features. A five-year action plan has been drawn up for the management of Wireweed and research is being carried out to find out more about it distribution and impacts on native ecosystems.

Policy ENV 6 Appropriate location and scale

Developments and activities should be in locations appropriate to their scale and impact upon the wider environment in order to minimise damage or disturbance. Developers, marine users and regulators should be encouraged to take account of information on environmental and sectoral interactions that is gathered through further development of the Plan.

119. Existing and future activities in the Firth of Clyde can potentially have negative impacts upon a range of species and habitats. These impacts may include habitat loss, noise, pollution and visual intrusion to seascapes or landscapes. The appropriate location of developments and activities should minimise adverse impacts and protect habitats and species and be consistent with Local Development Plan Policy.

120. Development proposals have an opportunity to minimise their impacts and in many cases improve their immediate and wider natural environment. Developers should be encouraged to evaluate the implications their developments will have on the marine environment and identify where negative impacts can be avoided or mitigated, but also where enhancements can possibly be made. For certain types of development an Environmental Impact Assesment (EIA) must be carried out before they are granted development consent. The requirement for EIA comes from a European Directive (85/33/EEC as amended by 97/11/EC). The procedure requires the developer to compile an Environmental Statement describing the likely significant effects of the development on the environment and proposed mitigation measures.

Policy ENV 7 Natura sites

Any development likely to have a significant effect on Natura 2000 sites (including Special Protection Areas, Special Areas of Conservation, and Ramsar Sites) will be subject to an appropriate assessment. Where an assessment is unable to conclude that a development will not adversely affect the integrity of the site, development will only be permitted where there are no alternative solutions, and there are imperative reasons of overriding public interest. These can be of a social or economic nature except where the site has been designated for a European priority habitat or species. Consent can only be issued in such cases where the reasons for overriding public interest relate to human health, public safety, beneficial consequences of primary importance for the environment or other reasons subject to the opinion of the European Commission (via Scottish Ministers).

121. The EC Habitats Directive is implemented in Scotland, England and Wales through the Conservation (Natural Habitats, &c.) Regulations 1994. Part 4 of the 1994 Regulations provides the statutory basis for a competent authority to undertake an appropriate assessment of a plan or project which is likely to have a significant effect on a European site. The purpose of an Appropriate Assessment is to ensure that the protection of the integrity of SPAs and SACs is a part of the planning process at a regional and local level. The assessment should be confined to the effects on the internationally important habitats and species for which the site is classified. Where such a site hosts a priority habitat and/or priority species as defined by the Habitats Directive (92/43/EC), the only overriding public interest must relate to human health, public safety or beneficial consequences of primary importance to the environment. Other allowable exceptions are subject to the views of the European Commission.

Policy ENV 8 Sites of Special Scientific Interest

Development affecting Sites of Special Scientific Interest (SSSIs) will not be permitted unless it can be demonstrated that the overall objectives of the designation and the overall integrity of the designated area would not be compromised, or any adverse effects are clearly outweighed by social or economic benefits of national importance and mitigation measures put in place.

Policy ENV 9 Other approaches to protection

Voluntary approaches to protect or enhance important areas of marine biodiversity should be encouraged and promoted in locations where activities have negative impacts upon important species and habitats.

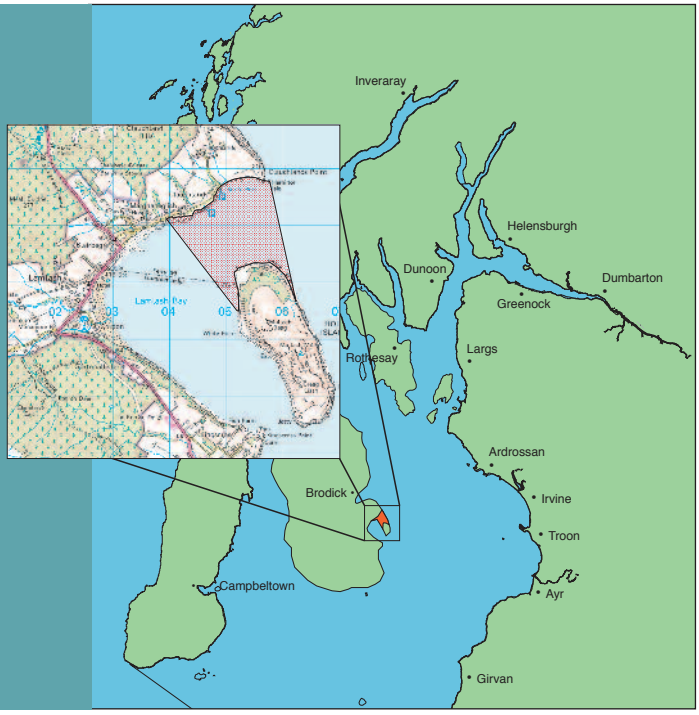
122. Whilst designated sites may contain the most important examples of species and habitats there are currently limited regulatory mechanisms to protect the marine environment in the Firth of Clyde. It should be recognised that the majority of such species and habitats are found outwith these designated sites. The three pillar approach is advocated by the Scottish Government to protect the rich diversity of the seas; wider seas measures, species conservation and site protection. Wider seas measures are those that benegit marine nature conservation but are more general than the other two pillars, or related to specific arrangements for economic sectors. They can include sector-based plans, developments consents and voluntary agreements.

123. There is a history within the Firth of Clyde of sectors and the community working together and employing voluntary measures to preserve and enhance the ecological status, condition and biodiversity of the marine environment. These mechanisms could include spatial and/or temporal exclusion, management agreements and codes of conduct.

124. In September 2008 a No Take Zone (NTZ) came into effect in part of Lamlash Bay, off the Isle of Arran. It is underpinned by stature- the Inshore fishing (Prohibition on Fishing) (Lamlash Bay) (Scotland) Order 2008. Its establishment is a result of initial campaigning by the Community of Arran Seabed Trust (COAST), aiming to conserve and enhance the biodiversity of the Bay, and the subsequent work of a voluntary Working Group of the main interested parties; Clyde Fishermen's Association (CFA), COAST, SNH, Fisheries Research Services (FRS), Scottish Government, chaired by the FoCF. From this often difficult work, the NTZ was eventually established, with broad agreement by all parties. Baseline surveys and monitoring will seek to establish the effects of the NTZ within is own area and possible advantages to fisheries, in particular scallop fisheries, in adjacent areas. Any further management measures for the rest of the Bay are currently under discussion.

"Lamlash Bay: This unique project shows what can be achieved when different interests put their heads together and find common, mutually beneficial ground"

Cabinet Secretary for Rural Affairs and the Environment Richard Lochhead



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Diagram 14. Lamlash Bay and No Take Zone (Red)

Policy ENV 10 Seascape and landscape

The seascape and landscape assets of the Firth of Clyde should be safeguarded and enhanced. A seascape/landscape analysis of the Firth of Clyde should be carried out and guidance for developers and Local Authorities developed. New development should be required to demonstrate that it will not have a significant adverse effect on landscape and seascape character.

125. Well-designed developments, when sited in the appropriate location, can have a positive effect on both coastal character and visual amenity. Many potential problems can be avoided by directing developments to areas where they can more easily be accommodated as part of the seascape/landscape.

126. Through a combined assessment of scenic qualities, visual experience and understanding of place, this study will identify both the character and qualities of the landscape considered to be of particular value within the Firth of Clyde. Key issues relating to maritime and coastal developments will be identified. Consideration will be given to the capacity of the seascape/landscape to accommodate change from a range of developments and the cumulative effects of developments.

127. There are interconnecting relationships between seascape/landscape and sustainable development. Landscape is important in supporting national objectives for health improvement, education, social inclusion, regeneration and rural development.

128. The landscape of the Firth of Clyde is a major asset that contributes to the social and economic development of the area. It provides an attractive setting that encourages people to live in, work in, and visit the area. There are three nationally important designated areas of landscape interest within or adjacent to the the Plan area:

- Kyles of Bute National Scenic Area (NSA)
- North Arran NSA
- Loch Lomond and The Trossachs National Park

129. Views from the sea can be greatly impacted by coastal developments. Consideration should be taken of viewpoints from the marine environment. Views from boats within the Firth of Clyde are an important aspect of why the area is a renowned sailing location. The expansion of recreational tourism is very much dependent upon the quality of the landscape.

130. The Local Authorities surrounding the Clyde have their own distinctive local landscape designations, with associated policies for their management; these have different names, but similar aims. Local Plans also have more general policies aimed at conserving and enhancing the scenic and environmental quality of the coast more generally, with a particular emphasis on undeveloped coastlines.

131. When undertaking local landscape designation reviews, authorities should carefully consider the importance of seascapes and their potential influence on the value of land based designations. Key views to and from important seascapes should be identified within local landscape designation reviews.

132. The identification of key views to seascapes may also have applicability to other aspects of strategic planning; for example local housing strategies, spatial strategies for on-shore windfarms and other potential forms of coastal edge development.

SSMEI Sound of Mull

As part of this pilot project a landscape capacity study was undertaken to consider the implications of aquaculture development on the landscape character and scenic quality of the Sound of Mull.

The study has informed the development of aquaculture policy in the Marine Spatial Plan developed for the Sound.

Policy ENV 11 Marine litter and debris

A coordinated marine litter strategy for the Firth of Clyde should be developed, taking account of any national strategy introduced . This should include establishing a systematic monitoring network in the Firth of Clyde to assess the extent of the problem, identify priority areas and the main sources of marine litter and debris. Existing initiatives should be supported in their efforts to combat the problem of marine litter. These include: Fishing for Litter; the Green Blue; MCS Adopt a Beach and Beachwatch; Bag it and Bin it; Keep Scotland beautiful and the GRAB Trust.

133. Marine and beach litter is a significant issue at UK, Scottish and Firth of Clyde levels. **Scotland's Seas: Towards Understanding their State** highlights that 80% of marine litter originates from land-based sources.

134. No agency in Scotland has overall responsibility for coordinating efforts to tackle marine litter. This has resulted in little being known of the extent and composition of beach litter around the Firth of Clyde as a whole as no systematic monitoring programme is in place. The current lack of understanding of litter in the marine environment, contributes to a continued lack of coordination and impetus to organise a coherent strategy to deal with the issue.

135. Marine litter originates from many different sources, circulates through a range of pathways in time to accumulate at various locations known as litter sinks. The identification of these sinks and pathways in the Firth of Clyde is important in defining the spatial context of marine litter.

136. **Adopt a Beach and Beachwatch** are coastal environmental initiatives organised by the Marine Conservation Society (MCS), involving local individuals, groups and communities in caring for their coastal environment. A nationwide beach clean-up and litter survey takes place once every year, always on the third weekend of September to coincide with the International Coastal Clean. The results are reported in their annual Beachwatch Report. In Scotland as a whole, 46 beaches were involved in 2008, with 28 of these located in the Firth of Clyde.

Water Witch

Since 2003 Glasgow City Council has operated the specialised clean-up boat, the St Mungo that cleans flotsam and jetsam from the Clyde.

137. The GRAB Trust's **Beaches and Marine Litter Project** aims to promote and enhance the sustainability of beaches within Argyll and Bute. It has set up a beach forum for those individuals, community groups and organisations that actively help to manage the beaches of Argyll and Bute. It also organises beach cleans and helps inform communities of the effects of marine litter and what they can do to minimise their impacts. Keep Scotland Beautiful is also involved at a national level and provides information on marine litter and clean up kits.

138. The **Green Blue** is an environmental awareness initiative by the British Marine Federation and the Royal Yachting Association. It promotes the sustainable use of coastal and inland waters by boating and water sports participants, and the sustainable operation and development of the recreational boating industry.

139. **The Bag It & Bin It** campaign run by Scottish Water discourages the disposal of inappropriate items into the sewerage network. This type of waste can cause blockages at water treatment works and, during heavy rainfall, can escape from the overflow pipes directly into rivers and the sea.

140. **KIMO's Fishing for Litter** initiative engages the support of the fishing industry in tackling marine litter by providing litter bags for fishermen to fill and deposit on the quayside for collection. The scheme is being adopted by an increasing number of vessels operating out of Scotland's Designated Landing Ports.

Environmental Impacts

141. The potential environmental impacts of the crosscutting environment policies within this Plan, as detailed in section 8 of the Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: efficient use of infra-structure
SEA					
Mitigation and Enhancement	MAR1	R&T4 R&T5	HER1	S&T6 S&T7 R&T6 MAR1 MAR2 MAR3 FISH4	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and

142. The policies relating to expanding knowledge of the biodiversity, flora and fauna of the Firth of Clyde are identified as being potentially extremely positive and long-lasting with respect to the safeguard of the marine environment. The mapping of seabed habitats and species, and key areas for mobile and migratory species is, together with the development of pressure/sensitivity measures, identified as crucial to future planning of activities across the Clyde. While the mechanisms for delivery of safeguard may be voluntary, the SEA identifies a strategic approach as being necessary to both the identification of those features for which management would be beneficial, and to the development of associated monitoring systems.

143. Water quality is not addressed directly as it is generally high and subject to statutory regulation and particular aspects are addressed in the relevant sectoral Plans. However, the SEA indicates that alterations to aspects of water quality can be the mechanism through which sensitive biodiversity interests are impacted by activities and developments within the marine or coastal zone. Future management for enhanced safeguard of biodiversity interests may potentially exert positive impacts on aspects of water quality. Similarly, protection of features such as spawning and nursery grounds for fish and shellfish or favoured aggregation areas for basking sharks or cetaceans may safeguard sectors such as inshore fisheries and tourism that contribute to the viability of coastal communities.

144. A strategic approach to the safeguard of landscape and seascape is identified as having very considerable potential to give significant added protection to the high visual amenity of the Firth of Clyde, with indirect benefits to the viability and population health of coastal communities. The potential for a more strategic approach to litter management to deliver real gains is anticipated to be highly dependent upon origins of litter in the Firth of Clyde and it will be important to build tools to assist in identifying the geographical origin of litter into strategic surveys. In addition to direct benefits to amenity and reduced risks of injury to marine fauna, potential indirect benefits arising from management to reduce litter include more efficient use of coastal infrastructure, improved human health, and higher water quality.

Communities

Policy COM1 New developments

Developments for marine-based activities should generally be located and designed to assist in delivering the aspirations of local communities.

145. The Plan aims to maximise the potential social and economic benefits of living adjacent to the Firth of Clyde. The redevelopment of existing harbours and waterfronts has acted as an important catalyst to the regeneration of the Clyde coast. In rural areas employment in marine-based activities can be very important, especially in Argyll and Bute. This Plan should enable such benefits to continue and be expanded.

Policy COM 2 Re-engaging with the coastal environment and maritime heritage

Communities should be encouraged to re-engage with their coastal environment and maritime heritage and to better recognise that the Firth of Clyde remains a living, working environment. The Plan generally supports the promotion of the maritime culture and heritage of coastal communities

146. The Plan recognises the importance of re-engaging local communities with the marine environment and of promoting increased access to it, particularly for leisure purposes. The provision of coastal access and a coastal path network would encourage local communities to better appreciate their coastal location. Becoming knowledgeable on the marine environment and the rich heritage of the area will engender a sense of ownership and a desire to safeguard the marine environment. The installation and promotion of novel art works in the coastal area can also help to engage local communities in the marine environment

147. The heavy industrial use of the area and the fishing industry have declined over the past century. People living in these communities have varying degrees of engagement with the marine environment. Few are now directly employed in activities relating to the marine environment, but many people have remained while others have chosen to live along the shoreline due to the breathtaking beauty and healthy surroundings or the vitality of the urban areas.

Environmental Impacts

148. The potential environmental impacts of the crosscutting communities policies within this Plan, as detailed in section 8 of the Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other
SEA					infrastructure carbon
Mitigation and Enhancement	ENV8 ENV10	R&T4	R&T8 S&T1 MAR2	ENV1 ENV4 ENV5	R&T2 FISH2

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and bacteriological status of the water column

149. In relation to policy COM1, it proved difficult to determine the likely nature, direction or scale of potential effects at this level. Specific defining features of the Firth of Clyde should be safeguarded through appropriate siting and design of developments in order to ensure that marine-related development is sustainable in the long-term, and that the amenity value of the Clyde to local communities is safeguarded or enhanced. Potential impacts would require to be assessed in project-level EIA associated with individual developments.

150. Under COM2 enhanced access to the coast and increased local participation in marine leisure activities is potentially beneficial to the health and long-term viability of coastal communities as well as to the efficient use of existing infrastructure, such as slipways and jetties. However, increased access, especially to the shore, also has potential to exert negative environmental impacts which require management. A strategic approach to the development of infrastructure associated with improving access to the shore would assist in avoiding or reducing impacts such as disturbance of wildlife or loss of tranquillity.

Heritage

Policy HER 1 Protect and safeguard maritime heritage

Significant maritime heritage should be safeguarded and protected. As the majority of maritime heritage below the MHWS has limited protection, any development should be undertaken with consideration to the potential importance of currently unscheduled monuments. The impact of activities should also be considered on the integrity of maritime heritage and voluntary approaches should be encouraged, such as Joint Nautical Archaeology Committee's Code of Practice for Seabed Development and' after 'as the British Sub-Aqua Club's Code of Conduct.

151. Scotland as a nation has been shaped by its maritime past and the Firth of Clyde has played a major part in this. The fishing industry has contributed to the image and character of the Clyde's coastal towns. The ports played a vital role in the prosperity of the nation and shipbuilding made the accolade "Clydebuilt" known around the world. The maritime heritage is rich and varied, including wrecks, purpose-built historic ports, docks, quays, warehouses and cranes, which all provide a historical record of the Clyde's past.

152. **The Scottish Historic Environment Policy (SHEP)** has been updated in 2009 by Historic Scotland and sets out Scottish Ministers' policies for the Historic Environment. Future revisions of **SHEP** will include policy on the protection of historic features in the marine environment.

153. There are two Scheduled Ancient Monuments that directly relate to the Firth of Clyde: The Forth and Clyde Canal at Bowling Harbour; and the Crinan Canal. There are no subtidal scheduled sites in the Firth of Clyde.

Relevant Acts

There are four relevant acts for the conservation of maritime heritage:

Protection of Wrecks Act 1973

Ancient Monuments and Archaeological Areas Act 1979

Protection of Military Remains Act 1986

Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997

154. There are 390 Wrecks within the Firth of Clyde. However, none of these are protected under the Wrecks Act. Two wrecks have been designated under the Protection of Military Remains Act 1986. The primary reason for designation is to protect the last resting place of servicemen and women. HMS Dasher is designated a controlled site. The Act makes it illegal to conduct any operations, including any diving or excavation, within the controlled site, that might disturb the remains, unless licensed to do so by the Ministry of Defence. The submarine HMS Vandal is designated a protected place. The Act makes it an offence to interfere with a protected place, to disturb the site or to remove anything from the site.

155. The **British Sub-Aqua Club's (BSAC) Code of Conduct for divers** encourages responsible diving in and around wrecks. This voluntary code of conduct encourages best practice by recreational divers. Another voluntary initiative aimed at divers is the Maritime and Coastguard Agency and the Nautical Archaeology Society's **Adopt a Wreck** scheme. This is aimed at developing effective partnerships for monitoring sites, intended to help divers develop their survey and preservation of wrecks.

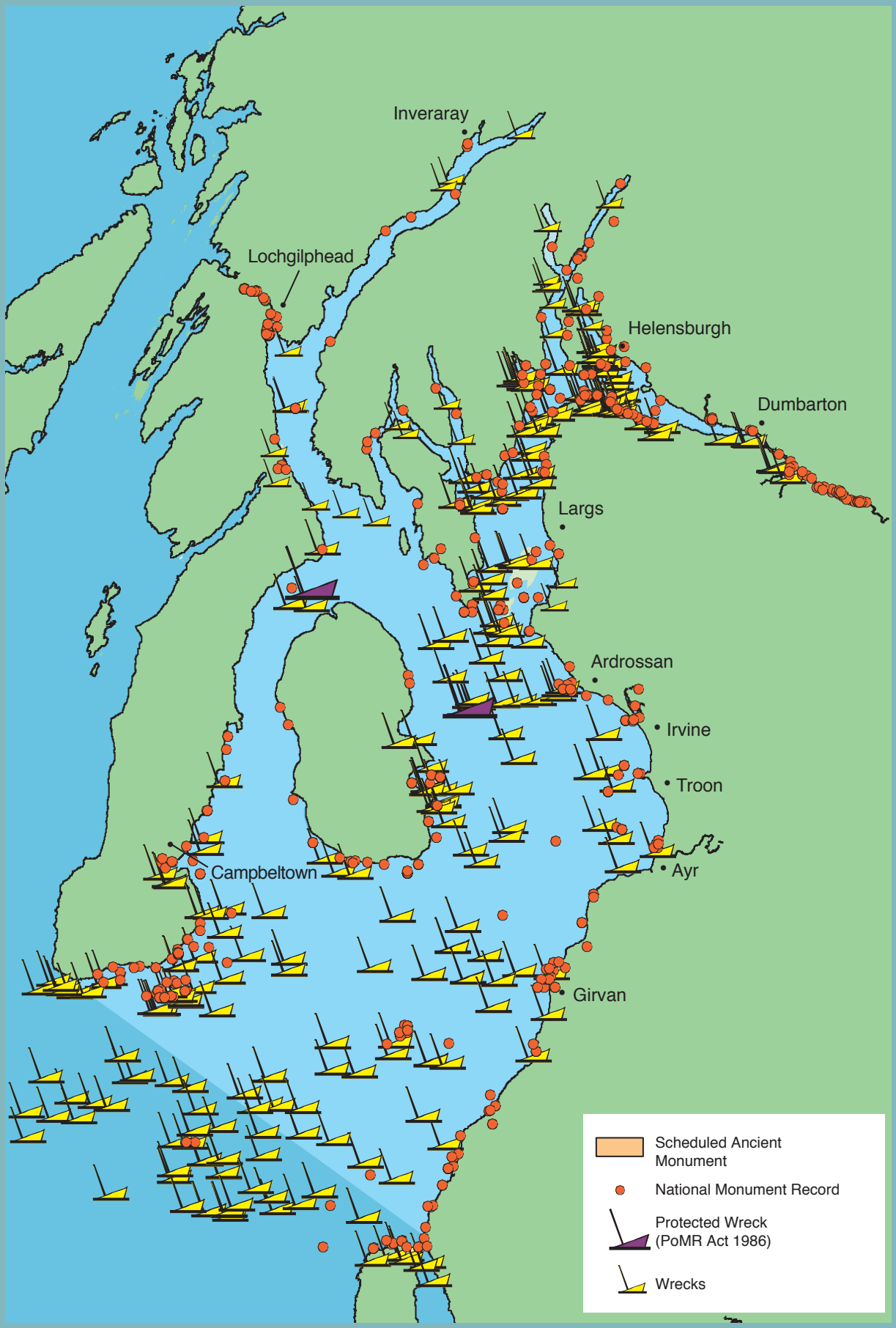


Diagram 15. Historic Heritage Features

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Environmental Impacts

156. The potential environmental impacts of the crosscutting heritage policy within this Plan, as detailed in section 8 of the Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other
SEA					infrastructure
Mitigation and Enhancement	ENV8		COM2 S&T7		R&T2

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and bacteriological status of the water column

157. The policy is not anticipated to impact upon aspects such as water quality or, within the intertidal zone, biodiversity. The policy has the potential to impact positively both directly on the safeguarding of historic heritage and indirectly on aspects such as the safeguarding or enhancement of marine biodiversity (for example through provision of reefs around wrecks), cultural awareness or health. This potential could be considerably enhanced through the application of a proactive strategic approach to identify elements of the historic heritage, such as wrecks and dry docks, which while not subject to statutory protection are of particular local or regional interest. The development of voluntary approaches to the safeguard of such features could also be explicitly linked to associated potential biodiversity or amenity gains and to the development of innovative interpretative materials.

158. The potential impacts on efficient use of existing, maritime, infrastructure are uncertain. Improved safeguard of infrastructure such as slipways and piers could potentially facilitate their continued uses, especially for recreational activities such as kayaking, diving or angling. For larger structures, which have more direct commercial value, such as historic fishing harbours, safeguarding historic features could, potentially, constrain options for ongoing use such as the development of marina facilities.

Safety

Policy SAFE 1 Marine safety

Consideration should be given to the impacts of developments and related activities on maritime safety. Voluntary approaches should be encouraged including the development of local codes of conduct. Mechanisms that increase awareness of issues and enable the dissemination of information to marine users such as the District Marine Safety Committee, the River Clyde Users Group and Glasgow City Council's Water Safety Working Group should be supported.

159. The impact of light pollution from new development and associated infrastructure can have a serious impact upon the safety of navigation within the Firth of Clyde. This is particularly relevant in the Inner Firth and adjacent to harbours, jetties and marinas. Consultation by developers and planning/regulating authorities with the Clydeport Harbour Master or Queen's Harbour Master would enable issues to be raised and appropriate mitigation measures to be considered.

160. The construction, alteration or improvement of any works on, under or over any part of the seashore lying below the level of MHWS requires consent under the Coastal Protection Act 1949 (Section 34). A works licence issued by the Harbour Master is also required for work that takes place within a Harbour Authority. These ensure that the appropriate measures are in place should the works interfere with the safety of navigation.

161. The marine safety regime is underpinned primarily by international safety codes and regulations issued by the International Maritime Organisation (IMO). Since 1959 a whole series of measures have been introduced, in the form of conventions, recommendations and other instruments. The best known and most important of these measures are: the International Convention for the Safety of Life at Sea, 1974 (SOLAS); the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG); and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW). These measures are primarily administered in UK waters by the Maritime and Coastguard Agency (MCA).

162. The majority of the conventions only apply to large commercial ships. However, parts of SOLAS, Chapter V, introduced in 2002, specifically apply to small, privately owned pleasure craft and the Merchant Shipping (Distress Signals & Prevention of Collisions) Regulations 1996 apply to all vessels. Notwithstanding, the recreational sector is largely unregulated and there is currently no requirement for a certificate of competence or insurance for pleasure craft carrying fewer than 12 people.

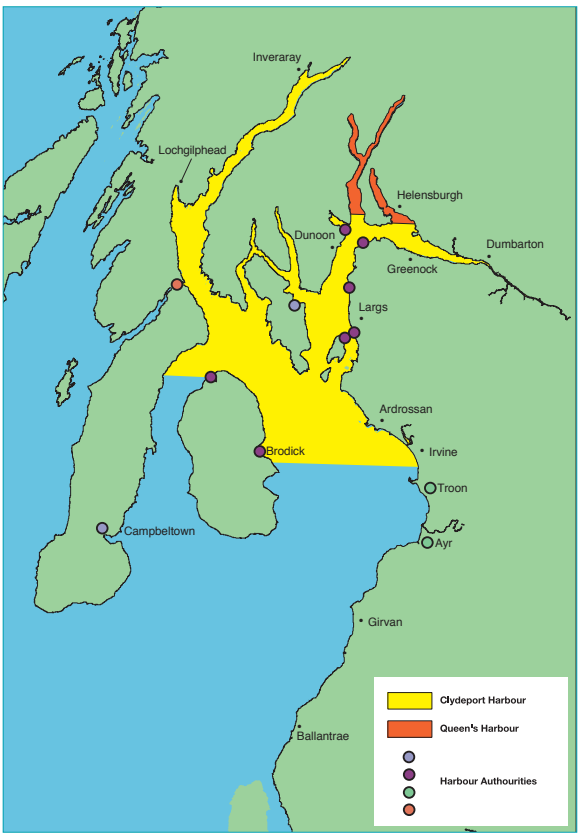
163. The District Marine Safety Committee (DMSC) is convened by the Maritime and Coastguard Agency. There are a number of these committees across the UK, which meet at least annually to discuss issues relating to marine safety and pollution control. The Firth of Clyde is within the Scotland and Northern Ireland DMSC and this is split into subcommittees concerned with specific areas, with one for the Firth of Clyde, which is chaired by the Clydeport Harbour Master.

Harbour Authorities

164. Harbour Authorities have statutory powers to regulate the conduct of vessels within the Harbour's jurisdiction and to assist in managing the risks of marine operations. The main Harbour Authority within the Firth of Clyde is Clydeport, with jurisdiction over 450 square miles.

Environmental Impacts

165. No formal SEA was undertaken of the crosscutting safety policy within this Plan. However, informal general consideration of the interaction of maritime safety within the Firth of Clyde with the themes encompassed by the SEA suggests that the means and mechanisms by which safety matters are addressed might potentially be enhanced to provide better safeguard of the environment, while maintaining safety as of paramount concern. For example, the Plan could include a proposal that future (5-yearly) revisions of the Firth of Clyde oil spill contingency plan take account of any new information arising from the marine planning process (e.g. with respect to locations of important species and habitats - ENV2, hotspots for mobile/migratory species - ENV3, and development of pressure/sensitivity indicators - ENV4).



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Diagram 16. Harbour Authorities in the Firth of Clyde

Harbour Authorities
Associated British Ports (ABP)
Clydeport
Ministry of Defence
Tarbert (Loch Fyne) Harbour Authority
Caledonian Maritime Assets Ltd (CMAL)
Argyll & Bute Council

Where there is no harbour authority the regulatory and enforcement functions are the responsibility of the Maritime and Coastguard Agency (MCA)

General Duties of Harbour Authority

A. Harbour authorities have a duty to take reasonable care, so long as the harbour is open for the public use, that all who may choose to navigate it may do so without danger to their lives or property.

B. This includes an obligation to conserve, and facilitate the safe use of, the harbour; and a duty of care against loss caused by the authority's negligence.

C. Each harbour authority has an obligation to have regard to efficiency, economy and safety of operation as respects the services and facilities provided.

D. Harbour authorities typically have an express duty to take such action as the harbour authority consider necessary or desirable for or incidental to the maintenance, operation, improvement or conservancy of their harbour.

Port Marine Safety Code

Sectoral Plans

166. The following sectoral plans are designed to help deliver the sustainable development of activities across the Firth of Clyde. They provide a current snapshot of key sectors together with a series of policies and proposals designed to help achieve the Vision and Aims of the Plan.

The five key sectors considered within the Firth of Clyde are:

- Recreation and Tourism Page 49-58
- Shipping and Transport Page 59-69
- Mariculture Page 70-75
- Fishing Page 76-83
- Energy and Subsea Infrastructure Page 84-88

167. These sectoral plans should be viewed within the context of the Crosscutting Policy Themes. The Strategic Environmental Assessment has also influenced these policies and proposals, to ensure that environmental objectives are delivered alongside the needs of each sector. The sectoral interactions tables included in each section indicate where stakeholders believe there to be issues of conflict between sectors – shown by the orange and red colour coding. Relevant policies from the plan are also indicated for each interaction.

Recreation and Tourism

Context

168. The Firth of Clyde contains some of the most attractive and readily accessible coastline and islands in Scotland. Its proximity to the population centres of Glasgow and surrounding towns has long made it popular as a destination for day-trippers and holidaymakers.

169. The combination of the Clyde's sheltered waters and beautiful scenery make it an especially popular area for recreational sailing and motor cruising. There are over 5,000 leisure craft, such as keel boats and motor cruisers, based in the Firth of Clyde, with over 3,000 pontoon (marina) berths, and around 2,000 moorings. Recreational sailing activity was traditionally based around sailing clubs such as Largs, Helensburgh and Royal Western at Greenock. However, the recent growth in leisure boating has been mainly associated with development of marinas such as those at Largs, Inverkip, Ardrossan and Holy Loch, which are attracting customers from outwith the immediate area; around 20% of owners of vessels berthed in the Clyde live in England.

170. Sea angling is also a long established leisure activity. Up to the mid 1980s the Clyde was renowned throughout Europe as a first-class sea angling destination. However, due to depletion of stocks of favoured sports fish this is no longer the case and from over 100 angling charter boats only a few remain in business. Sea angling from the shore remains popular with many local residents. Other leisure activities, for example scuba diving, sea kayaking, jet skiing, wind and kite surfing, are growing in popularity in the Clyde. The Firth of Clyde is home to Sportscotland's National Centre Cumbrae, which offers exceptional facilities for water sports enthusiasts of all levels. This is Scotland's premier water sports centre and instructor training facility. The centre was established on Cumbrae as it is surrounded by safe water with easy access to the open sea and has good transport links.

171. A number of events take place in the Firth of Clyde, from the River Festival within Glasgow to the Tall Ships Race, which was held at Greenock in 1999 and is to return in 2011. In 2002 the world windsurfing championships took place at Largs, which also regularly hosts national and international sailing events at the Scottish Sailing Institute as well as powerboat events. The Clyde Cruising Club's Scottish Series held each May at Tarbert, Loch Fyne, is a premier event for larger racing yachts, attracting entries from all over the British Isles and further afield. The Fife Regatta, which celebrates the internationally famous boatyard that was based in Fairlie, is held every five years. The only Olympic event ever to take place in Scotland was hosted in the Firth of Clyde; the 12 meter class sailing event at the 1908 Olympics.

172. Cruise ships are becoming more common with increased numbers visiting the Clyde each year. These bring overseas visitors to the area for a day and a positive experience may lead to longer visits in the future. Groups such as the Inverclyde Tourist Group are doing much to promote local heritage, as an alternative to visits to more distant parts of Scotland. Visits by high profile cruise vessels may also remind coastal communities of their local heritage.

173. A number of wildlife watching businesses have been established, which take tourists to see the birds at Ailsa Craig, seals around Cumbrae and occasionally basking sharks.

174. Walking along the coastline provides both those who live around the Clyde and those just visiting with an opportunity to appreciate the beauty and history of the area, while at the same time offering the occasional glimpse of a seal, dolphin or redshank.

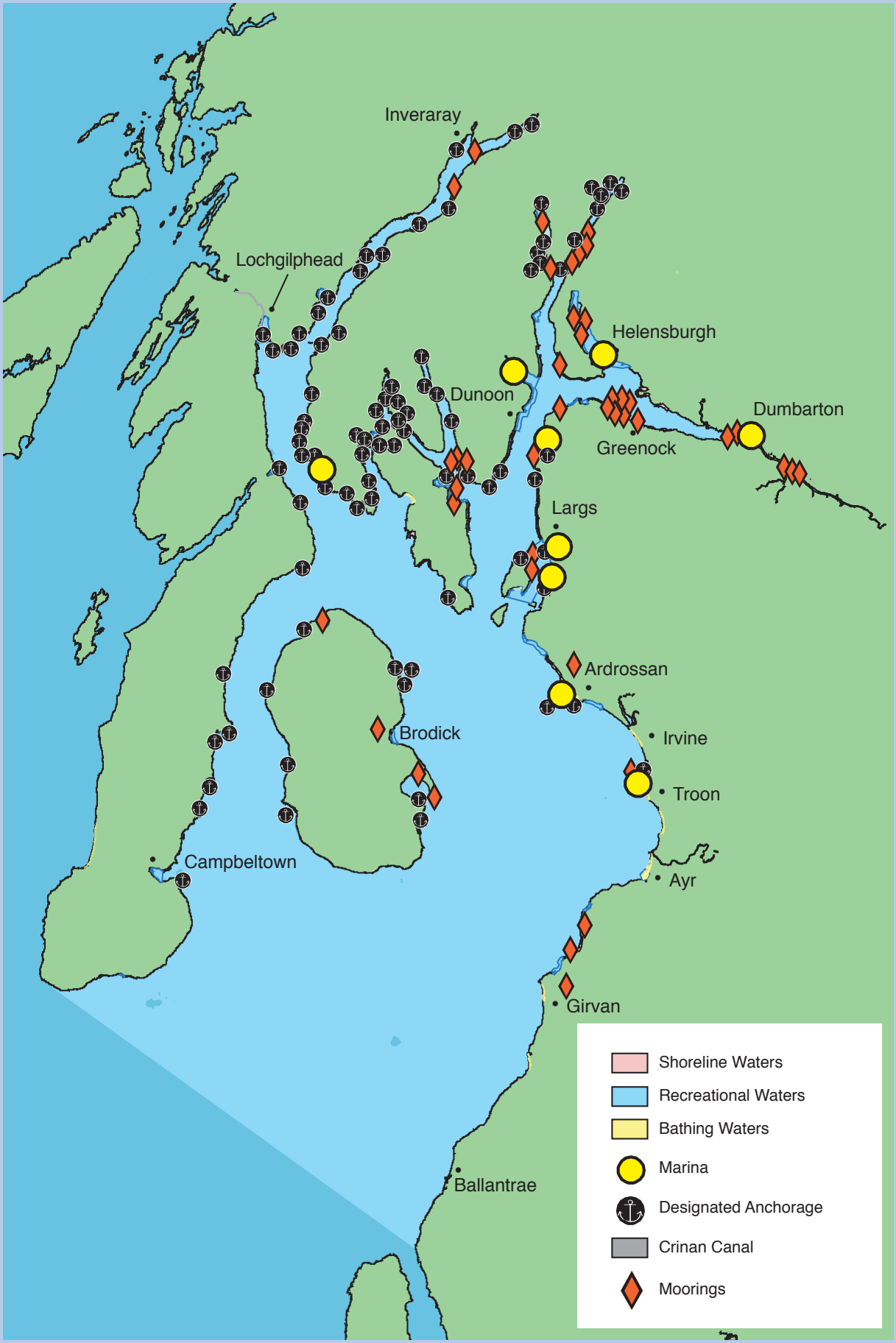


Diagram 17. Recreation and Tourism Ifrastructure and Designations

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Socioeconomic Data

175. It is estimated that around 5,160 jobs and a turnover of £290 million within the Scottish recreation and tourism sector can be attributed to the Firth of Clyde. Of this, it is estimated that marine leisure-based industries in the Clyde account for £80 million and employ 1,500 people[1].

Interactions with other Sectors

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Energy	Fishing	Mariculture	Recreation & Tourism	Shipping & Transport	Other
Recreation & Tourism	Navigation Amenity	Navigation & Safety Services	Services	Navigation & Safety	Navigation & Safety Resource competition (berthing space)	Navigation & Safety (naval craft)
	Resource benefit (reefs)	Safety (wash) Footprint (moorings/ anchorages) Resource damage Equip. damage	Footprint Access Pollution (sewage from leisure craft) Amenity Resource damage Safety (power craft)	Access Amenity/ safety (jet skis & power craft)	Safety (wash) Safety (jet skis) Resource damage (dredging)	Safety (wash - naval craft) Access Amenity (marine litter) Pollution (untreated sewage)
Relevant Policies	ENV8	S1 R&T6 FISH1 FISH4	S1 R&T2 R&T5 R&T6 ENV8 MAR1 MAR2	S1 R&T2 R&T6	S1 R&T3 R&T6 S&T7	R&T2 R&T4 ENV10

176. Existing mechanisms, such as Harbour Byelaws as well as the work of the District Marine Safety Committee, Clyde Moorings Committee and the River Clyde Users group, are generally sufficient to manage potential navigational or safety conflicts of current levels of marine leisure activity within the Firth of Clyde. However, some jet skiers and/or small power boat users pose safety risks and cause nuisance for other activities. An increase in the number of yachts and motor boats could raise the risk of conflict, especially if the number of ships entering the Clyde also increases.

177. Provision and maintenance of publicly accessible slipways or beaches with adjacent car parking is a key issue for many activities. Leisure moorings and anchorages can often compete for space with trawl fisheries and mariculture, while the discharge of untreated sewage from leisure craft is also an issue for shellfish growers.

178. Activities that damage seabed habitats reduce the value of an area for diving. Also, the reduction in the stocks of sport fish has severely impacted on the viability of sea angling within the Clyde.

[1] McKenzie Wilson Partnershiip, 2006. Sailing in the Clyde Estuary: A Marketing Assessment, Economic Impact Study and Action Plan

Recreation and Tourism Policy Objectives

The policies are intended to support opportunities for the sustainable growth of a broad range of marine recreation activities, for the benefit of both local residents and tourists. They focus on the provision of improved infrastructure and facilities, and on the management of potential conflicts with other marine users, both within the sector and beyond.

179. There is considerable potential for growth of the marine leisure sector in the Firth of Clyde. The redevelopment of existing harbours and waterfronts has acted as an important catalyst to the regeneration of the Clyde coast. The demand for recreation facilities has been a key driver for this, with demand continuing to outstrip supply. **The Sailing in the Clyde** report highlights that pontoon berthing on the Clyde is virtually at capacity, suggesting that any future growth will have to be met by increased infrastructure development. The potential growth of the sailing industry in particular will depend upon having an effective network of facilities and infrastructure.

180. There is also great potential for growth in other recreational activities in the Clyde, such as angling, scuba diving, sea kayaking and wind and kite surfing. To ensure these activities are able to grow, shoreside facilities such as slipways and car parking require to be improved. The improvement of facilities and infrastructure across the Clyde can benefit coastal communities, those that stay within central Scotland, and those from further afield. Development of marine leisure facilities provides "tourism hubs", which attract visitors also wishing to participate in other leisure activities, such as walking and golf. Hence, wider tourism benefits for the area will come as a result of enabling policies for marine recreation.

181. Wildlife tourism is a sector experiencing growth internationally and nationally, however, in Firth of Clyde is currently not as well developed in this sector as other parts of the country. Given its central belt location and transport links, an opportunity exists for the Clyde area to develop the ecotourism industry with, for example, trips to view seals or the seabird colonies at Ailsa Craig.

Policy R&T 1 Marine recreation and tourism

The development of tourism and recreation related facilities and infrastructure should generally be supported, particularly those which extend the tourism season, spread economic benefits more widely and are accessible.

182. Developments should be sensitive to the coastal environment in which they are being established. In considering proposals for the development of service centres and large tourist hubs, preference would be given to developments located on areas of coastline currently designated as "developed coast" in strategic and local development plans. New or enhanced facilities and infrastructure should be of a scale appropriate to the location and potential use of the site.

183. Particular attention should be focused on promoting the development of smaller facilities where they will contribute to the social and economic development of isolated coastal communities. The use of marinas or yacht clubs as focal points in coastal communities for marine leisure activities should actively be promoted. In addition, it is important that terrestrial facilities such as lodgings, food and drink, and retail are able to meet any increased demand, and that marine recreation facilities are located to ensure benefit to existing terrestrial businesses. Successful tourism locations are those that demonstrate strong cooperation and collaboration. The provision of appropriate waste and wastewater services should take account of the seasonal nature of activities associated with tourism in Scotland. An attractive, well-functioning and highly competitive tourist destination requires a well-planned environment within which appropriate forms of tourist developments are encouraged and facilitated. This can only be developed through a broad based collaboration among organisations across the public and private sectors.

Policy R&T 2 Slipways and shoreside infrastructure

The network of slipways and shoreside infrastructure across the Firth of Clyde should be maintained and enhanced to facilitate increased access to both waterside and water resources. To ensure that investment is targeted in the most appropriate locations an infrastructure audit and capacity analysis should be carried out.

184. A diverse range of leisure activities, such as scuba diving, sea kayaking, jet skiing, and wind and kite surfing, are growing in popularity in the Clyde and there are a number of wildlife watching or adventure boating businesses. Sea angling is also a long established leisure activity, although it has declined in recent decades. The Clyde waterside is a popular location for coastal walks by visitors and local residents. To facilitate these activities a range of access to the shore and to the water is required. For example, stepped access is preferable for canoeists and shore divers, while surfers and kite surfers need a level or gently sloping beach. Sea anglers will utilise piers to fish from the shore. Walkers require access not just from the roadside or settlement to the shore, but also for a reasonable distance along the shoreline. Slipways facilitate the launch of small vessels that may be used for a variety of interests, including diving and angling. Wet suit sports can benefit from changing facilities, ideally with showers, and all activities benefit from adequate off-road parking and associated toilets.

185. A detailed audit of existing coastal access points and associated shoreside infrastructure combined with a capacity analysis would enable a targeted approach to providing marine and coastal recreation infrastructure requirements and identifying future maintenance and development. The capacity analysis will examine where forms of marine and coastal recreation are likely to occur and where there is an associated demand for infrastructure from these activities. Certain areas have characteristics that make them more attractive to different forms of marine recreation. Wind and kite surfing is predominantly found off the beaches around Troon. Scuba diving on wrecks takes place off Largs, Greenock and Gourock, while wildlife centred diving is concentrated at the top of Loch Fyne and along the east coast of Loch Long. Sea kayakers use slipways and beaches throughout the Clyde for short paddles, but longer multiday paddles, that often include shoreside camping, focus on the lochs and around Bute.

Policy R&T 3 Sailing and Cruising

Increased infrastructure capacity for the sailing and cruising industry should be encouraged within the Firth of Clyde. The development of facilities and infrastructure that enhance opportunities for tourism should be promoted, including increasing berthing capacity and developing a network of “sail to” facilities.

186. Increased berthing capacity should be provided through different scales of development. Large scale marinas act as service centres or hubs. These marine business parks are a synergistic cluster of companies that provide all the services required by boat owners. Service centres can provide a focus for local economic development and substantial job creation. These should be situated in locations that are accessible by a variety of means of transport.

187. Arran is a key priority area for development as it offers the opportunity for weekend sails from the majority of existing marinas. Small-scale developments offer the opportunity for community engagement. An example of this is the Lochranza and Catacol Sea Society, which was formed with the aim of securing a pontoon in Lochranza. This community organisation wanted to improve opportunities for safe transition between the sea and land, and to get more people in the community involved in sailing. The Sailing in the Clyde Estuary Study indicated that visitors want to access the shore via a pontoon wherever possible and that additional step-ashore facilities, such as pontoons and moorings are required to improve the Clyde sailing experience. This policy will encourage the development of a high value tourism product that will increase visitor spending and provide a resource for the coastal communities of the Clyde.

Sail Clyde Partnership and Strategy

188. Sail Clyde is a partnership of the Scottish sailing industry and the public sector to expand and develop the Clyde Sailing product. They have developed a strategy, which aims in the next ten years, to double the number of yachts and motor cruisers using the Clyde. The Sail Clyde Strategy has identified a number of distinct areas within the Firth of Clyde which have differing development needs and target markets: sail from facilities; sail through facilities; and sail to facilities.

Sail from facilities:

Service Centres

Large marinas with boat sales/repair, chandlery and other associated facilities. Largely bases from which to sail in the Clyde but with supporting tourism products, such as food and drink.

• Largs • Ardrossan • Kip • Troon
• Holy Loch • Portavadie • Rhu

Sail through facilities: Staging Posts

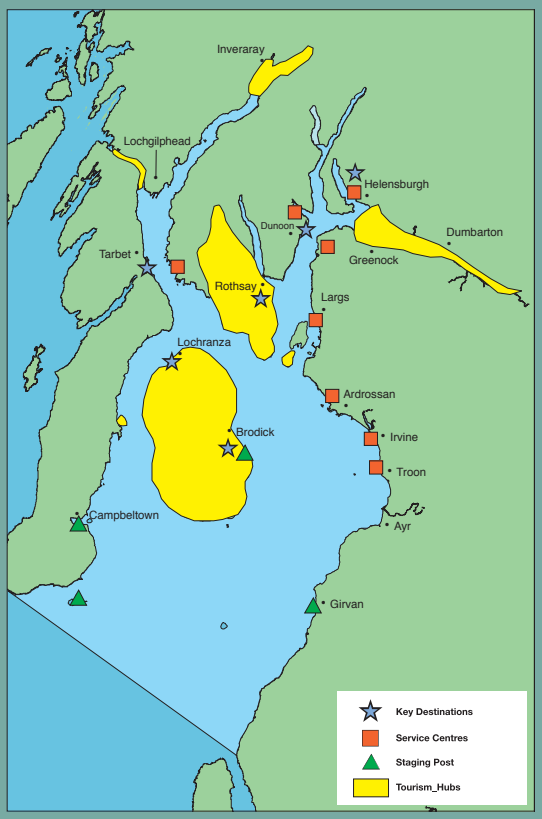
Safe havens for boats on passage to the Irish Sea, England, Wales, Ireland and beyond.

• Girvan • Sanda • Campbeltown

Sail to facilities: Tourism Hubs

Areas that attract visitors to participate in other tourism products, such as walking, golf and heritage.

• Arran (Brodick, Lamlash and Lochranza)
• Carradale • Cumbrae • Bute • Kyles of Bute
• The Inner Estuary • Glasgow • Crinan Canal
• Upper Loch Fyne



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Diagram 18. Sail Clyde Strategy

Key Destinations

Medium or large towns that are viewed as destinations because of the range of tourism services combined with their innate appeal.

• Tarbert • Rothesay • Helensburgh • Dunoon
• Brodick • Lochranza

Niche Places

Individual businesses in smaller settlements that can attract sailing visitors because of the quality of a specific product, such as a restaurant, combined with an attractive setting.

For example:

• Kames • Otter Ferry • Kilchattan Bay
• The Inner Estuary

Policy R&T 4 Sea Angling

Initiatives to improve finfish stocks in the Clyde, thus encouraging a diverse and fully functioning ecosystem, should be supported. The development of appropriate infrastructure and facilities for sea angling should be promoted, including slipways, safe anchorages and fishing piers

189. Sea angling, both from the shore and from boats, has been an important recreational activity in the Clyde for many years and the area once had a reputation as one of the best sea angling destinations in the UK. The Clyde held major competitions including the European Cod Festival, the Scottish Open Shore and the Saltcoats Sea Angling Competition. There was a healthy charter market, however, over the last 20 years most of the charter boats have gone out of business. The decline in the sport's popularity in recent years is linked to the decline in finfish stocks. Despite the fact that commercial fishing activity in the Clyde is now limited to trawling for nephrops and shellfish, there has been little recovery of finfish stocks. It is still not fully understood why this should be the case.

190. A Scottish Government report from 2009 estimated total expenditure by anglers in the Firth of Clyde (not including Argyll and Bute) at around £24M per year; by far the greatest contribution is from local anglers as opposed to visitors. Sea angling is estimated to now support around 250 jobs and £6M of income.

191. Whilst mackerel is the most targeted species, there is a wide range of species taken including pollack, dogfish, coley, conger, sea trout and small sized cod. The Scottish Sea Angling Conservation Network promotes their Give Fish a Chance initiative which encourages anglers to only keep fish over a certain size and to release smaller individuals, thereby maximising reproduction potential. They provide guidelines on the best tackle to use and handling and release techniques to improve survival rates of released fish.

Policy R&T 5 Migratory Salmonids

Initiatives to further improve environmental conditions in the Firth of Clyde and thus increase the numbers of migratory salmonids able to pass through the estuary should be supported. Any development perceived to limit the ability of salmonids to migrate should only be supported if suitable mitigation measures are in place.

192. From the Industrial Revolution up until the early 1980s, the Clyde estuary suffered badly from industrial and domestic waste pollution which lowered water quality and settled out in the subtidal and intertidal sediments. As a result, the level of oxygen in the water was insufficient to support many species. Migratory salmonids were unable to pass through the water body. Environmental and water treatment legislation over the last 30 years has helped water quality to recover; salmon and sea trout have been returning to the Clyde in increasing numbers since the 1980s.

193. The Clyde Salmon Fishery District does not currently have a Fishery Board. Whilst this allows for free fishing, there is an opportunity to promote the protection and improvement of the local fishery and to encourage stock management initiatives.

Policy R&T 6 Water quality

The potential for creating a recreational water quality standard and designation for areas of the Firth of Clyde where there is a high demand for marine recreation should be investigated.

194. The quality of the water within the Firth of Clyde is an important resource for attracting marine recreation and tourism. Standards exist for bathing beaches, however much marine recreation activity takes place away from designated bathing waters. A key indicator of water quality is the number of faecal indicator organisms present, such as faecal coliforms and faecal streptococci. These bacteria exist in human sewage and in traces of animal faeces washed from farmland during periods of wet weather. If swallowed in sufficient quantities they can cause illnesses such as stomach upsets and ear infections.

195. Water quality is particularly at risk following heavy rainfall as this washes potentially polluting material from land into surrounding watercourses. Run-off from a single source may not seem important, but across a whole catchment these diffuse sources can have serious implications for nearby waters. The proposed Recreation Waters designation will be an indication of locations where water quality should normally be maintained at levels where no ill effects would be anticipated should it be ingested. Water quality in these areas would be monitored and reported as per Bathing Beaches. A capacity analysis will assist in identifying important recreational areas to which such a standard could be applied. However, there is recognition that not all areas within the Firth of Clyde could realistically be anticipated to meet such a standard within the foreseeable future given existing settlement and land use patterns.

Policy R&T 7 Voluntary Codes of Conduct

Promotion of existing codes should be encouraged. Where there is a need for a specific code of conduct to minimise damaging impacts and conflicts with other marine and coastal users, and no suitable code exists, Firth of Clyde specific voluntary codes of conduct should be developed in partnership with recreation, business and other stakeholders. The adoption of voluntary codes of conduct in relation to wildlife, such as the Scottish Marine Wildlife Watching Code, should also be encouraged.

196. Safety and navigational aspects of marine leisure activities are partially regulated by international agreements, such as the International Convention for the Safety of Life at Sea (SOLAS) and through the jurisdiction of the Harbour Master. However, many aspects of marine recreation activities are largely self regulating.

197. The **Sectoral Interactions in the Firth of Clyde** study found very little actual conflict between marine recreation users and other sectors at present. However, some conflict does exist and if the volume of marine recreation is to increase it would be prudent to put advance systems in place to minimise the risk of increased conflict, for example with inshore fishing vessels or marine wildlife. It is not the volume of recreational activity that takes place in the Firth of Clyde *per se* that may cause an issue, but rather the intensity of use in time and space as well as the behaviour of users that may conflict with the natural environment and otheractivities.

198. Under the Nature Conservation (Scotland) Act 2004, SNH have prepared The Scottish Marine Wildlife Watching Code for those actively watching marine wildlife. It is designed to help increase enjoyment for those observing wildlife, whilst minimising disturbance and helping individuals and businesses stay within the law.

Policy R&T 8 Marketing the Firth of Clyde

An integrated marketing strategy should be developed to promote the Firth of Clyde as a visitor destination for marine leisure pursuits and existing partnerships initiatives, such as Sail Clyde and Sail Scotland, should be supported.

199. It is important that a strategic marketing campaign is developed that can support the proposed increased infrastructure development. This should include a greater involvement of, and cooperation between, Sportscotland, Event Scotland, Visit Scotland, Local Authorities, Enterprise Companies and Industry in the marketing of the marine recreation and tourism sector within the Firth of Clyde. The Sail Clyde Report highlights that marine trades in Scotland spends a significant budget on their own promotions, but that generic marketing of Scotland's water spaces needs to be developed to ensure that the Clyde does not lose out to other parts of the UK with stronger marketing and promotional budgets.

Policy R&T 9 Community engagement

Initiatives that encourage participation in marine recreation should be supported. Local Authorities and schools should be encouraged to provide increased opportunity for marine-based recreation.

200. Participation in sport and recreation is central to the quality of life and wellbeing in all communities. This policy has strong linkages to the Scottish Government's health agenda, with marine recreation as a focus for improving the health and wellbeing of coastal communities. Initiatives to encourage people to engage in marine recreation should be supported and encouraged.

201. Local Authority provision of marine sports, such as sailing, sea kayaking and surfing, make them potentially accessible to all. The first opportunity many people have to experience less populist sports is through local authority organised summer classes and events. These tasters provide young people with the opportunity to try out a range of activities. Even if they do not participate in any of the sports again, it can give them a greater appreciation of the skill involved and of the environment in which they take place.

Stramash

Organised by Argyll and Bute Council, Stramash enables young people to take part in pursuits new to them, which they normally would not have the opportunity to do.

There is a wide range of sports activities available, including a number of marine related activities such as sea kayaking, sailing and surfing. Each Stramash activity is heavily discounted to encourage everyone to take part.

Sailing in the City

The Royal Yachting Association Scotland established Sailing in the City (SITC) in 2004 to provide local and accessible sailing opportunities for children between 8 and 14 years of age. SITC aims not only to introduce children to sailing but also to encourage them to continue.

Environmental Impacts

202. The potential environmental impacts of the recreation and tourism policies, as detailed in section 8 of the SEA Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: carbon emissions
SEA					
Mitigation and Enhancement	R&T6 ENV9 ENV10 ENV11	R&T4 R&T5	R&T8 COM1 COM3 HER1	R&T6/ENV6 ENV1 ENV2 ENV3 ENV4 ENV5 ENV7	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and bacteriological status of the water column

203. The assessment indicated that major expansion of infrastructure such as marinas, and pontoons for leisure boating may potentially exert significant cumulative impacts on intertidal and subtidal habitats and associated species, and on landscapes/seascapes. Smaller scale developments, particularly the provision of slipways and associated parking facilities, for other leisure activities may also exert cumulative impacts on habitats. Carbon emissions could increase, particularly as a consequence of boat owners from other regions of the UK accessing the Clyde by air. The infrastructure audit and capacity assessment should promote efficient use of existing infrastructure, such as slipways.

204. Tourism also risks increased disturbance of sensitive species both at sea and along the shore and may also generate additional marine litter. There may also be localised impacts on water quality adjacent to major developments in sensitive locations. Conversely, poor water quality could be an ongoing issue in some locations for marine leisure users. Increased availability of infrastructure to enable participation in marine recreation activities is potentially beneficial to the health of local residents, provided that such facilities are made suitably accessible in terms of location, cost and ethos.

Shipping and Transport

Context

205. Historically, the Firth of Clyde's ports have played a vital role in the prosperity of Scotland. The development of many towns along the banks of the Clyde is due in large part to the importance of shipping and transport to the west of Scotland. In the 17th century Port Glasgow was the Clyde's first "deep water port" and from the 18th century to the early 20th century the Firth of Clyde became one of Europe's main hubs of transatlantic trade with the Americas. These ports and the trade associated with them, especially in sugar and tobacco, brought great wealth to the area during this time. Many of the facilities at the existing ports are becoming increasingly unsuitable for larger international vessels.

206 Transportation systems have a great impact on population patterns and economic development. The growth of towns is associated with the development of transportation systems and economic activity is attracted to places where transhipment takes place. The relative importance of towns often changes over time as different methods of transportation become prevalent. This is evident along the Firth of Clyde, where a number of formerly important port towns have suffered economic decline, as their ports have decreased in importance. Equally, however, investment in transportation systems can provide the stimulus for regeneration.

207. The contribution of ports and water transportation to business and Scotland's economy should not be underestimated. About 95% of UK imports and exports are transported by sea. Clydeport is the third largest port in Scotland and the eleventh largest in the UK by volume of traffic, with almost 15 million tonnes of cargo passing through the port in 2006. The Firth of Clyde has also seen an increase in more local coastal transhipment of freight. This is mostly bulk cargo such as coal, timber, fuel oil, aggregates, steel, grain and waste. The deep water port at Hunterston is able to handle modern ships of any size and Finnart oil terminal in Loch Long can handle the largest oil tankers.

208. Various vehicle and passenger ferries connect communities in the upper Firth and provide links to the islands of Arran, Bute and the Cumbraes, but there are no direct cross-Firth links between Ayrshire and Kintyre. These ferry links also serve to transport freight and integration of freight and passenger services is desirable. The only water-based transport link within the greater Glasgow conurbation is the cross-river Yoker-Renfrew ferry. Six of the top seven ferry routes by passenger numbers in Scotland are found in the Clyde, with over 4 million people transported by ferry in the Clyde in 2007. The number of passengers has increased by almost 10% since 1996 against a backdrop of a relatively static population.

209. In response to climate change and road congestion, there are strong policy drivers encouraging goods and people to be moved by methods other than road and air. The European Union (EU) is encouraging sustainable transport, such as multimodal and intermodal transport operations involving road, rail, inland waterway and short sea shipping. The Scottish Government actively encourages a modal shift of freight from roads onto rail and water.

210. Synonymous with the Clyde is shipbuilding. At its peak, over 100,000 people were working in 38 shipyards along the Clyde and in 1900 almost one in four boats afloat around the world had been built in the Clyde. Shipbuilding on the Clyde now employs fewer than 4,000, across three yards: the naval shipbuilders BVT Surface Fleet's yards at Govan and Scotstoun; and Ferguson Shipbuilders at Port Glasgow, the last yard building merchant ships on the Clyde.

Socioeconomic Data

211. The socio economic data covers three distinct but related industries: shipbuilding and repair; passenger and freight transport; and port operations. There are 134 such businesses employing over 4,800 people. They generate a turnover of £463 million and produce a GVA of £163 million. Some businesses, especially shipbuilding, are significant local employers. However, shipbuilding is highly dependent upon one main employer operating in a specialist market. The prospects for growth of national and international freight movements are very positive and have implications for future development of ports on the Clyde.

Interactions with other Sectors

A key to the colour coding can be found in the fold out section at the start of the

	Energy	Fishing	Mariculture	Recreation & Tourism	Shipping & Transport	Other
Shipping & Transport	Navigation	Navigation & Safety	Safety (access to sheltered waters) Pollution	Navigation & Safety Resource competition (berthing space)	Navigation & Safety	Navigation & Safety (naval craft)
	Infra-structure	Safety (wash) Infra-structure		Safety (wash) Resource damage (dredging) Safety (jet skis)		Navigation (coastal lighting) Equip. damage & Safety (marine litter)
Relevant Policies	S&T1 S&T4 ESC&P3	FISH1 FISH2	ENV7 S&T6 S&T7 MAR1 MAR2	S1 R&T6 S&T7		ENV10 S1

212. Competition within the Firth of Clyde for sea space among commercial, naval, fishing and pleasure vessels is, generally, adequately managed through international maritime agreements and local statutes and byelaws; any issues not adequately addressed in the legislation or agreements is managed by the District Marine Safety Committee. However, Personal Water Craft, which are not subject to all aspects of marine legislation cause safety concerns to this and other sectors particularly when operating at speed in close proximity to commercial vessels and other leisure users. The presence of ports and harbours is generally beneficial to marine interests such as fisheries, energy and leisure craft, although there may be competition for berthing space.

213. Mariculture developments potentially impact on access to inshore refuges for commercial vessels. Lighting associated with coastal developments may affect navigation. Marine litter can also be a problem for commercial shipping in the Firth of Clyde.

214. Pollution from oil spills, though a risk, is adequately covered through oil spill contingency planning. However, there are concerns regarding the introduction of invasive species from ballast water, dredging operations and litter associated with the shipping and transport sector.

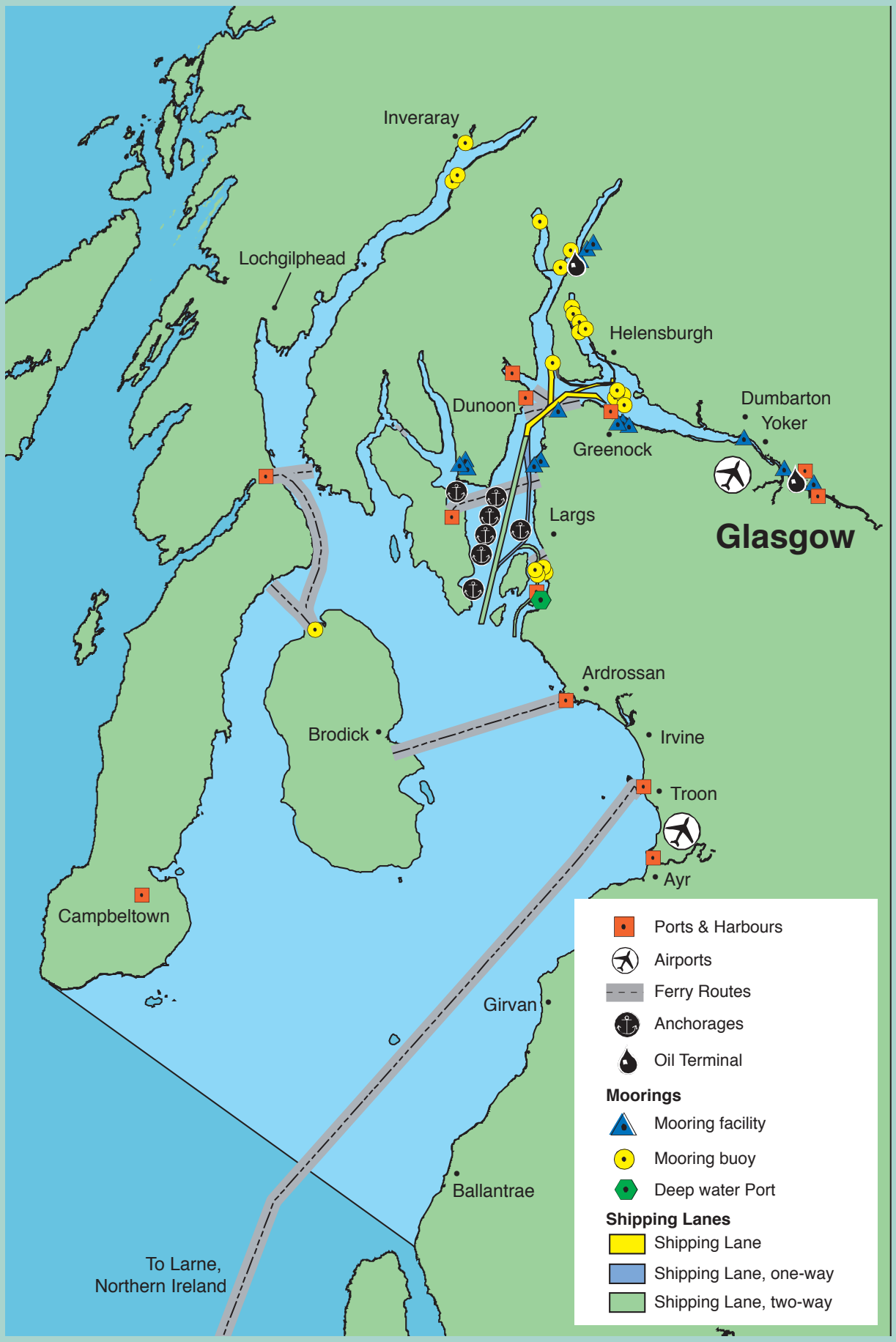


Diagram 19. Shipping and Transport Infrastructure

Based upon Ordnance Survey Data with the permission of the Controller ofHMSO (GD03135G0005)and Seazone Hydrospatial Data (022007.002-SEPA)

Shipping and Transport Policy Objectives

The movement of goods and people by sea should be encouraged and, where possible, integrated and the associated infrastructure safeguarded and developed to accommodate increases in coastal freight transhipment and the movement of passengers.

The policies in this section seek to promote:

- Measures to increase sea transportation of freight currently handled by road
- A presumption against marine development that would impede the operational requirements of existing ports or ferry services
- Improvements in associated terrestrial infrastructure, especially rail, to ensure the potential of the Firth of Clyde as a conduit for freight transport can be realised
- Better integration of ferry services with other public transport

215. The Scottish Government is promoting a modal shift from road to rail and shipping. This is also expressed in Local Development Plans and Regional Transport Strategies for the area. The efficient movement of both goods and people is essential to economic prosperity. Therefore, it is important for the future competitiveness of the regional and national economy to have good internal and external transport links. Ports and harbours provide the interface between land and sea and play a key role in domestic, as well as international, transport. Coastal transhipment of freight is of particular importance to the Firth of Clyde given the remote locations of many coastal and island settlements and limited road network. Policies relating to marine transport have implications that extend above the Mean High Water Springs and will require integration with terrestrial development plans and cooperation with local authorities and regional transport partnerships.

Strategic Locations

A number of strategic locations have been identified in the Development Plans that support the economic competitiveness of the West of Scotland. This infrastructure is to be safeguarded from inappropriate uses and the economic role of these assets promoted.

International Gateway Ports

- Campbeltown Harbour
- Finnart Ocean Terminal
- Great Harbour/Inchgreen (Greenock)
- Greenock Ocean Terminal
- Hunterston Deep Water Terminal
- King George V Dock (Glasgow)
- Rothesay Dock (Clydebank)
- Troon Harbour

New Multimodal Terminals

- Hunterston Deep Water Port
- Ocean Terminal (Greenock)
- Ayr Harbour

Key Coastal Transhipment Ports

- Ardrishaig
- Greenock Ocean Terminal
- King George V Dock (Glasgow)
- Tarbert Harbour
- The Timberlink Network

Key Ferry Route

- Dunoon-Gourock

Lifeline Ferry Routes

- Brodick-Ardrossan
- Largs-Cumbrae
- Rothesay-Weymss Bay

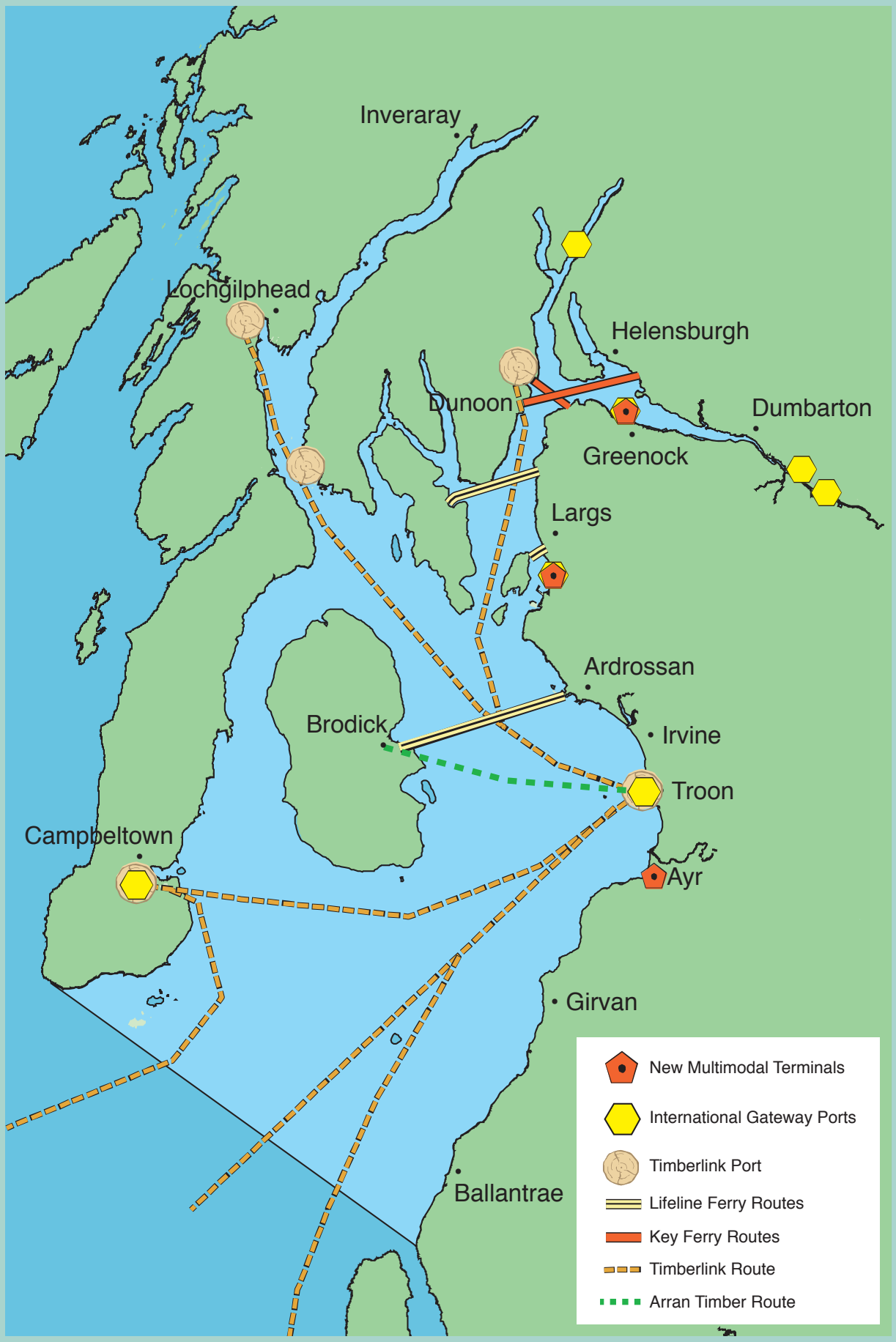


Diagram 20. Shipping and Transport Strategic Locations

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Policy S&T 1 Ferries

Existing ferry routes should be safeguarded from marine developments that might hinder current operations or future service expansion. Where demand or need exists, new or extended ferry services should be established, including any necessary harbour improvements.

216. The Firth of Clyde can present a barrier to movement, however it also has an important role to play in the transportation of people. There are a number of ferry routes that provide lifeline services, connections to remote peninsulas and link Scotland to Ireland. It is important that these links are maintained.

217. The ability of people to move across the Clyde makes rural communities more attractive to live and work in. Routes where there is enough demand to make a ferry service commercially viable, or where socio-economic or environmental considerations might justify central and local government funding support, should be developed. The tourism potential for such developments should also be considered.

218. The provision of such services and the associated infrastructure should take into account:

- the transport, economic and regeneration benefits
- the balance of beneficial and adverse impacts on the wellbeing of communities including potential air quality and noise impacts
- the protection of the nationally and internationally important natural environment within the Clyde
- the ability to integrate harbours with the existing road and rail network and the impacts associated with any consequential links with these networks.

219. A review of ferry services is being carried out by the Scottish Government to inform the Scottish Ferries Strategy. It will consider the potential for new ferry services within the Clyde. The Scottish Ferries Strategy and accompanying SEA are currently in public consultation.

220. The Clyde is underused as a transport route both within Glasgow City Centre and further afield. An opportunity exists to encourage locals and visitors alike to visit Glasgow and the surrounding area using river transport. SPT are reviewing the opportunity of introducing a Waterbus service for the Clyde with various potential routes identified reaching as far as Helensburgh and Dunoon. 'Alternative operators are currently being sought for the Yoker-Renfrew passenger ferry service and options exist for the extension of the service to other destinations such as Braehead and Scotstoun.

Policy S&T 2 Public transport integration

Terrestrial public transport infrastructure should be integrated where possible with ferry services through the provision of appropriate infrastructure improvements and synchronisation of timetables.

221. Efficient integration between bus, rail and ferry is vital in keeping journey delays to a minimum and encouraging modal shift. The Regional Transport Strategies highlight that the smooth transfer of passengers between transport services is an important element of the "seamless journey". Consideration should be given to infrastructure improvements such as enabling passengers to transfer from ferry to train or bus under cover as well as synchronisation of timetables, including a degree of flexibility within bus and train services to accommodate delays in ferries due to inclement weather.

Ports are key to the logistics chain in providing the interface between land and sea and the infrastructure to support cargo movements by sea. To enable ports to fully exploit this strategic and economic role, as well as future potential opportunities such as international transhipment, they need to have effective landside transport connections.

Freight Action Plan for Scotland

Policy S&T 3 Freight handling infrastructure

The development of new multimodal hubs, which would combine rail and shipping and allow transhipment from rural roads should be encouraged and promoted. Ports and harbours should be better integrated and incorporated into the wider transport system and supply chain. Connections to strategic corridors and Scottish networks should be improved; capacity constraints reduced; and additional routes able to carry standard European containers provided.

222. The availability of interchange facilities is a critical factor in the movement of freight by sea. Facilities within ports for transhipment between land transport, ship and barge for port, coastal or international movements are important for promoting the sea transportation of freight. These hubs will help to concentrate existing traffic and improve economies of scale. They may further attract transhipment opportunities from the Republic of Ireland and elsewhere to strengthen international flows and expand direct services. Local Development Plans have identified three potential multimodal terminals at Hunterston, Greenock Ocean Terminal and Ayr harbour.

223. Capacity constraints on the terrestrial transport network in Scotland create a competitive disadvantage for ports, harbours and businesses that rely upon them for the transportation of freight. The preferred modal option for the Firth of Clyde is sea-rail interchanges. However there are few ports that have a suitable rail connection at this time. Until new rail links and interchanges are developed, to encourage the increase in sea transportation, there will be a need to rely on road haulage in the first instance. Worldwide intermodal transport has been facilitated by the standardised cargo container. The containerisation of international maritime transport has resulted in higher productivity in ports. The ability to move these containers efficiently and quickly from ship to train to truck or even to plane has supported dramatic increases in the volume of cargo moved around the globe. There are constraints on the railway network in Scotland, with only the West Coast Mainline suitable to transport the larger standard European container between Scotland and England. There are, however, vessels which provide a feeder service from Greenock to the existing hub ports in England and mainland Europe.

Ferry Operators

CalMac Ferries Ltd is a company owned by David MacBrayne Limited, which is itself wholly owned by the Scottish Government. It operates the Clyde & Hebrides Ferry Services.

Cowal Ferries Ltd is a company owned by David MacBrayne Limited, which is itself wholly owned by the Scottish Government. It operates a subsidised service between Dunoon and Gourock .

Western Ferries is a privately owned operator of an unsubsidised car ferry service between Dunoon (Hunter's Quay) and Gourock (McInroy's Point).

Strathclyde Partnership for Transport (SPT) is the regional transport partnership for the west of Scotland, and operates the Renfrew ferry that links the Clydeside communities of Yoker (north bank) and Renfrew (south bank). It also operates the Kilcreggan ferry, which links the Firth of Clyde communities of Helensburgh, Kilcreggan and Gourock.

Modal Shift-Timber Transport and Timberlink

The Timberlink Service, run by Associated British Ports moves around 100,000 tonnes of timber a year by sea on the west coast of Scotland. The Timberlink Service operates from the four Argyll ports of Ardrishaig, Campbeltown, Portavadie and Sandbank to Troon in Ayrshire, where it is moved to local wood processing plants such as Egger at Auchinleck, Caledonian Paper and Mairs Sawmill (both in Irvine), and Wilson's Sawmill in Troon.

As well as promoting economic development around these local ports, the service removes around 8,000 lorry journeys, or 1,400,000 lorry miles, a year from roads between Argyll and Ayrshire.

Policy S&T 4 Fuel imports and exports

The nationally important infrastructure of Finnart Ocean Terminal and Hunterston Deep Water Port should be protected. Marine developments that may have a negative effect upon navigation by large ocean-going vessels to these facilities should be discouraged.

224. The Firth of Clyde is important for the distribution of both coal and oil related products. The Finnart Ocean Terminal in Loch Long and Hunterston Deep Water Port on the Ayrshire coast are both important because they can accommodate large ocean-going vessels. Finnart Ocean Terminal provides the refinery at Grangemouth with logistics and deep water marine facilities for the import of non-Forties crude oil and a West Coast outlet for finished refinery products and components, primarily for export to markets in Ireland. In 2007 just over two thirds of the coal supply in the UK was imported from countries such as Russia, Australia, Colombia, South Africa and Indonesia. In 2007 over 6 million tonnes of coal was imported via Hunterston for use in power stations in both Scotland and England. Currently 33% of Scotland's electricity is generated from coal fired power stations.

Hunterston – Multimodal distribution hub

The Hunterston bulk terminal deepwater port is an example of a multimodal distribution hub. Coal is transported to Hunterston from as far afield as South Africa and Australia in large ocean-going vessels. It is then transferred to rail for transportation to Longannet Power Station in Kincardine and to smaller vessels for coastal transhipments to ports at Manchester and Belfast. A small proportion of the coal is also transported locally by road to low volume users.

Policy S&T 5 Hunterston deep water container port

This plan recognises the potential development of an international transhipment hub requiring deep water for sea freight movement at Hunterston. The area should be safeguarded and marine developments discouraged that may have a negative effect upon such a development.

225. Hunterston Deep Water Container Port is included in the National Planning Framework. The Ayrshire Structure Plan safeguards Hunterston for the development of an international transhipment hub and proposals likely to prejudice this development are not supported

226. Forecast increases in volumes of international trade and in the proportion of freight that can potentially be containerised (from 60% currently to 90% by 2015) necessitate expansion of current European and UK container port capacity. There is a trend for UK international freight capacity to be based in England, predominantly along the south coast. This impacts upon the cost of importing and exporting goods to Scotland and reduces economic competitiveness. In a response to these capacity issues the National Planning Framework has highlighted potential opportunities in Scotland for developing new transhipment hubs linked to world shipping routes. A deep water port has been proposed at Hunterston. Given the relatively small domestic market this would rely heavily on third country transhipment, including by sea or rail, to England and Wales.

Policy S&T 6 Terrestrial Developments

Planning authorities should give consideration to the impacts of terrestrial development along the banks of the inner estuary on the ability of vessels to navigate along the Clyde.

227. Terrestrial development can impact upon navigational capabilities along the inner estuary. Bridges create height restrictions. The Erskine Bridge restricts the height of the vessels that can be built on the Clyde or berth at King George V Docks, the Clyde Arc at Finnieston restricts the height of vessels that can reach the city centre. Shore-side developments can also impact upon the movement of vessels when they reduce the width of the channel. Berthing of the Glenlee at the new quayside at the new Transport Museum will significantly reduce the channel width. Such a development further down stream would have an impact upon the navigation of vessels.

Policy S&T 7 Ballast Water

Expansion or development of port facilities to handle increased volumes of international freight within the Firth of Clyde should include infrastructure and procedures compatible with the Ballast Water Exchange and Ballast Water Performance Standards as set out in the Ballast Water Convention.

228. The trend for ports to move to deep sea coastal locations is seen as increasing the risk posed by ballast water. The water around ports at upstream locations is diluted with fresh water, which reduces the salinity levels making the conditions less favourable for non-native marine species in ballast water discharge. Risk of introduction of invasive alien species in ballast water has been identified by the UN as one of the four main threats to the world's marine ecosystems. The 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediment aims to address this issue but has yet to be ratified (as at February 2009, 18 nations, not including the UK, representing 15.36% of world merchant shipping tonnage had signed up, well short of the 35 nations and 35% of world tonnage required).

Planning for Seaports

As noted in the National Planning Framework for Scotland, international trends in container shipping present substantial opportunities for the deep water facilities at Scapa Flow and Hunterston. These give scope for new transhipment and gateway facilities linked to world shipping routes to contribute to the Scottish economy.

Coastal shipping can provide an environmentally friendly means of moving heavy freight. This requires wharves and harbour facilities able to handle and distribute the goods. Planning authorities should liaise with port authorities and have an access strategy for freight traffic serving the port. Opportunities for rail access should be safeguarded and where appropriate promoted and developed using Track Access Grants and Freight Facilities Grant.

SPP17: Planning for Transport

Policy S&T 8 Capital Dredging

A precautionary approach should be adopted to capital dredging operations within the Firth of Clyde to identify, minimise and mitigate against potential environmental impacts.

229. Although regulations apply to marine dredging for extraction of minerals, capital dredging activities are not currently regulated. It is the dumping of the dredged material that requires a licence. If dumped in a landfill, a waste transfer licence is required. Anyone wishing to deposit anything in the sea or under the seabed in UK waters requires a licence under Part II of the Food and Environment Protection Act 1985 (FEPA). The FEPA licensing system regulates the levels of chemicals being released and aims to ensure that dump sites are appropriate; a monitoring requirement may be included.

230. Maintenance dredging activities that do not necessitate the removal of materials such as seabed levelling and agitation dredging are also currently exempt from FEPA licensing, as the sediments are not raised from the surface of the water and therefore, in theory, no disposal occurs as concentrated relocation takes place. In recognition of the potential environmental impacts of both dredging and dredge spoil disposal, and to ensure compliance with the Water Framework Directive, the Marine (Scotland) Act requires that all forms of dredging which agitate the seabed should be licensed.

231. Maintenance dredging in the Clyde has not been deemed a major issue. SNH carried out an Appropriate Assessment of maintenance dredging adjacent to the SPA in the inner estuary. This demonstrated beyond reasonable scientific doubt that there would be no adverse effect on the redshank population, for which the SPA is designated.

Chemical Contamination

There is a long history of chemicals having been used and released into the Scottish environment, with industrial and sewage waste disposed of to river and sea with no treatment until the 1950s. Pollution from other industries such as lead mining, steelworks, gasworks and shipbuilding also remains, with significant levels of contaminants in estuary sediments. These chemicals can remain locked in sediments for a long time, but may be released by disturbance, from activities such as seabed dredging.

Dredging

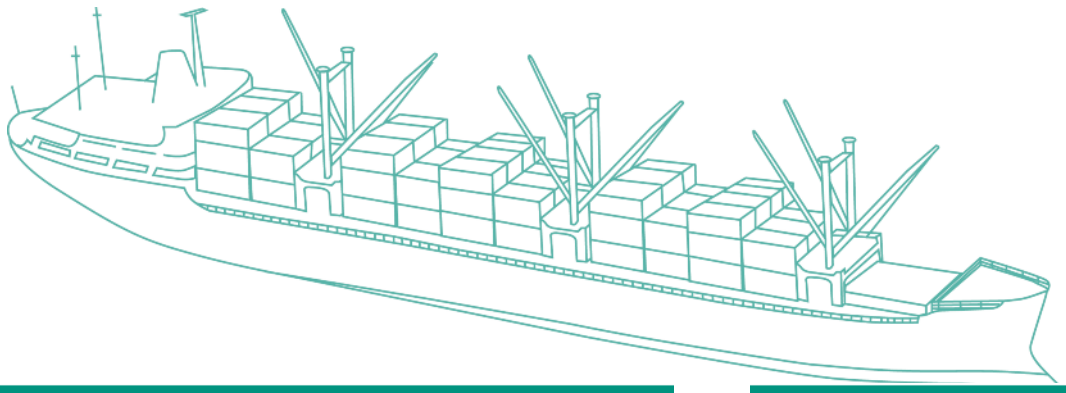
is the removal of material from the seabed. There are two categories of dredging: capital and maintenance.

Capital dredging

refers to the major works that include removal of material for construction of navigation or other infrastructure in areas not previously dredged, or where dredging hasn't taken place for 10 years.

Maintenance dredging

Is regular dredging to maintain navigation through the removal of sediment that has accumulated in a previously dredged area.



Environmental Impacts

232. The potential environmental impacts of the shipping and transport policies, as detailed in section 8 of the SEA Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: carbon emissions; efficient use of infra-structure
SEA			Communities Health		Infrastructure carbon
Mitigation and Enhancement	ENV10	S&T7 S&T8	COM1	S&T7 S&T8 ENV1 ENV3 ENV4 ENV7	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and bacteriological status of the water column

233. The assessment highlighted the desirability of higher level strategic analysis of the Scotland and UK wide implications for greenhouse gas emissions associated with alternative strategic approaches to the import, export and internal distribution of goods; in particular, the proposed development within NPF2, of an international container port at Hunterston.

234. Those policies (S&T 1, 2 and 3) relating to development of ports and ferry terminals and facilities are assessed as generating potentially negative impacts on marine wildlife, for example through increased risk of oil spills and collisions. Land claim and capital dredging associated with port infrastructure developments are also potentially detrimental to natural heritage and seabed or coastal morphology. There is potential for significant localised impacts, especially with respect to Hunterston and Portencross Coast SSSI. These should be examined within project level EIA and, if appropriate, options devised to implement compensatory measures for loss of habitats, species and recreational access.

235. Impacts on tranquillity depend upon balance between potential reduction of freight traffic on coastal roads, against any associated, localised increases in activity at ports within the Clyde. Public access to the shore or water may be restricted at some locations, with potentially detrimental impacts on health within affected communities. However, improved ferry services have potential to improve the viability of isolated communities, and better integration of ports with terrestrial transport systems would promote their efficient use.

Mariculture

236. Mariculture is the farming of marine species of fish, algae and molluscs, and within the Firth of Clyde comprises the production of Atlantic salmon, mussels, oysters and scallops. It is a major contributor to the Scottish economy and provides important rural employment opportunities. In terms of growth of the industry, mariculture provided 8% of global seafood in 1980. This had increased to 43% by 2004[2].

237. Finfish farming has a significant presence in the Clyde, particularly in Loch Fyne, but also with active salmon farming sites in Arran. There are also a number of inactive sites in Loch Long, Loch Riddon, Loch Striven and around the islands of Cumbrae. There has been a consolidation of finfish activities into fewer more efficient units. The use of the units for production and fallow periods is synchronised across an area which helps to maintain effective sea lice and disease control and management. Companies therefore require a number of sites across the Firth of Clyde since not all are used at the same time.

238. Shellfish farming enterprises are generally small-scale single owner businesses. There are five production sites in Loch Fyne, and one each in Loch Striven and Loch Riddon. There is also a mussell farm at Lamlash Bay, Arran.

239. The main constraint associated with both finfish and shellfish farming in the Firth of Clyde is site availability. Operational factors include exposure to adverse weather conditions, predation and distance to market, with associated transport costs. Water quality issues can also be a factor in site operation, in particular threats from nutrient enrichment and eutrophication caused by local pollutant sources such as domestic or urban drainage or agricultural run-off. Sites are usually located away from existing waste water treatment discharge.

[2] FAO, 2006. FAO Yearbook: Fishery Statistics: Aquaculture Production 2004. Vol 98/2, Food and Agriculture Organisation of the United Nations (FAO)

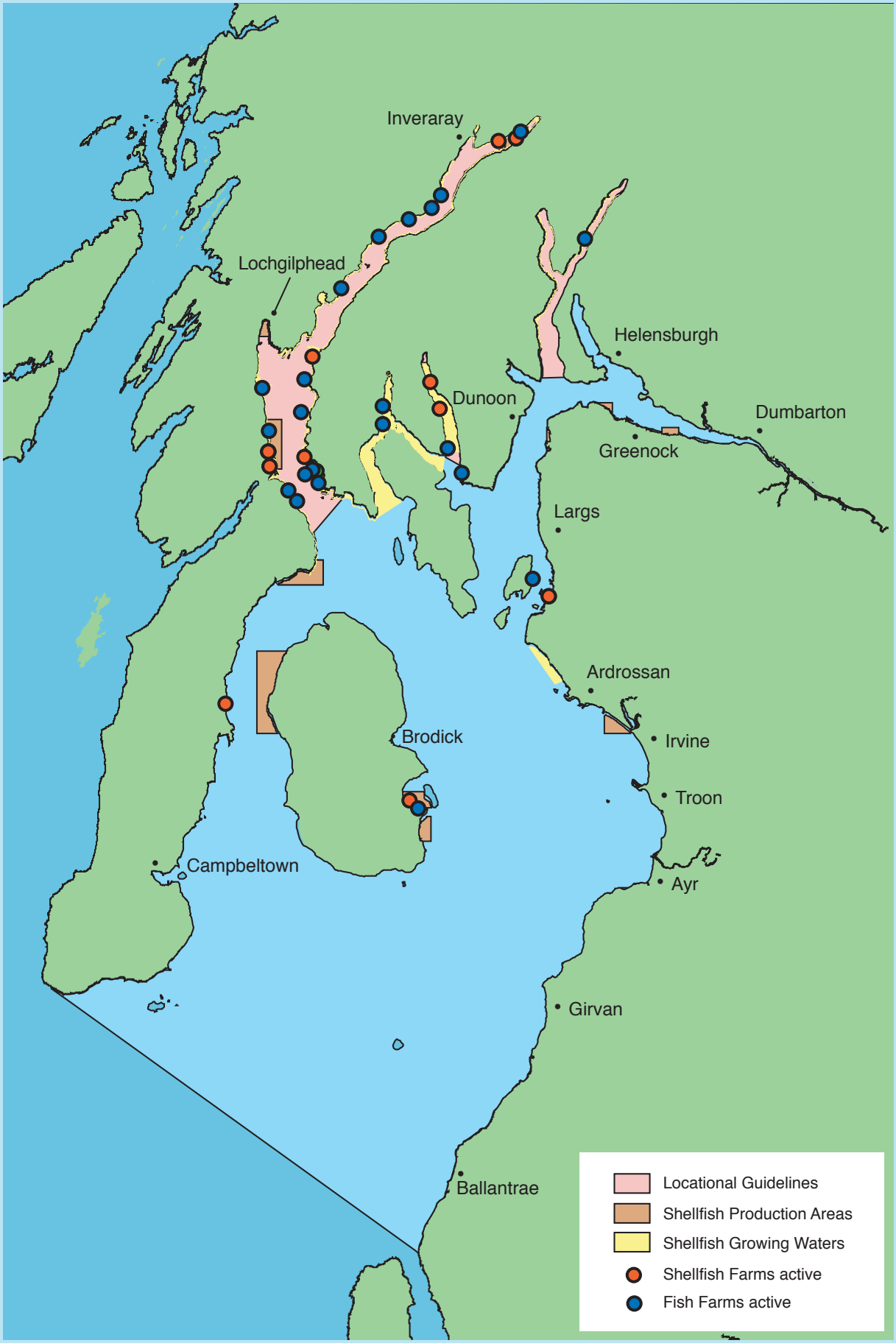


Diagram 21. Mariculture Designations and Sites

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Socioeconomic Data

240. The mariculture sector directly employs 265 people across 16 businesses that had a turnover of £28.3 million and a GVA of £14 million in 2005. The full impacts of recent trends and mergers in the fish farming industry may not yet have been fully realised. However, falling turnover coupled with rising GVA could suggest that the sector has become more competitive but at the same time more efficient. There is a recognised opportunity for shellfish farming to supplement income in rural locations.

Interactions with other Sectors

A key to the colour coding can be found in the fold out section at the start of the Plan.

Mariculture	Energy	Fishing	Mariculture	Recreation & Tourism	Shipping & Transport	Other
	Footprint Resource damage (noise)	Navigation & Safety	No issues identified	Navigation & Safety Footprint (moorings & anchorages)	Navigation & Safety	Navigation & Safety (naval craft)
	Infrastructure Services	Footprint Resource damage		Services Access Safety/ nuisance (power craft) Amenity Pollution (sewage from leisure craft) Resource damage	Safety (access to sheltered waters) Pollution (dredging, oil, ballast water) MAR1 MAR2 S&T6 S&T7 ENV7	Resource damage (noise from naval operations) Pollution (terrestrial origin)
Relevant Policies	MAR1 MAR2	MAR1 MAR2		MAR1 MAR2 MAR3 R&T5 R&T6 ENV8 ENV9	S1	MAR1 MAR2

241. Potential conflicts between mariculture and other sectors arise largely from three underlying concerns for the sector, namely: access to suitable locations, free of disturbance from other users, both at sea and on the coast; maintenance of high water quality, particularly at near shore sites with relatively low flushing rates; and, potential of noise and vibration from other activities to cause stress and ill health to caged fish.

242. Potential synergies were identified with development of marine renewables and coastal power stations and also with growth of marine leisure facilities, where accompanied by improved availability of specialist services such as marine engine repair.

243. There are perceived conflicts, with respect to potential impacts of salmon farming on biodiversity and amenity, and these may be controlled via the current consenting regime and subject to ongoing monitoring.

Mariculture Policy Objectives

The policy objective is to promote a strategic approach to growing the mariculture sector in the Firth of Clyde by minimising potential conflicts and providing industry and regulators with improved guidance and information to enable better decision making on the appropriate locations for developments.

244. There is significant potential for growth of the mariculture sector in the Firth of Clyde. This potential will depend, in particular, upon having an effective network of appropriate locations for developments. There is a need for the often negative perception that mariculture installations impact upon the seascape and landscape of an area to move towards these developments being viewed as part of a sustainable Scottish industry that is a natural part of our land and seascape.

245. The Town and Country Planning (Marine Fish Farming) (Scotland) Order 2007 gave local authorities responsibility for consenting marine fish farm planning applications. Therefore, mariculture policies in the Plan will require integration with terrestrial development plans and cooperation with planning authorities.

246. Due to the static nature of mariculture developments there can be competition for marine space with other activities. Through both a strategic approach to identifying locations and a continuation of pre-application consultation, conflicts should be minimised.

Policy MAR 1 Sustainable development of mariculture

The development of an integrated and co-ordinated strategy for mariculture within the Firth of Clyde incorporating environmental, seascape/landscape and navigation safety issues of both national and regional relevance, will ensure sustainable mariculture development at appropriate locations

247. There exists potential for mariculture to further develop in the Firth of Clyde; for instance, Loch Fyne, Loch Long, Loch Goil, Loch Striven and Loch Riddon are all Category 3 lochs in the FRS Locational Guidelines. The key to the sustainable development and potential growth of the industry in the Clyde is to identify suitable locations for mariculture development.

248. Two of the major factors determining the success of applications for mariculture development are safety of navigation and the visual impact of the surface equipment. There is, however, limited guidance available on how new mariculture developments might interact with the seascape and landscape of the Firth of Clyde. Mariculture, like all developments, has a visual impact on the surrounding area and it is thought that a landscape/seascape carrying capacity assessment for mariculture developments across the Firth of Clyde would provide guidance to both developers and local authorities.

249. There is limited information available on the socioeconomic benefits of mariculture within the Firth of Clyde. An evaluation of the regional socioeconomic impacts of mariculture in the Firth of Clyde, including downstream impacts, would provide empirical information and data to support evidence based planning and decision making.

250. Waste Water Treatment Works currently carry out treatment to improve water quality in line with existing regulatory requirements at various locations around the Firth of Clyde. Any integrated and coordinated spatial strategy for mariculture would require buffers to be established around existing Waste Water Treatment Works such that new mariculture sites are located in appropriate locations.

251. The Clyde is bounded by several Planning Authorities. An overall strategy for aquaculture in the Clyde would help the planning process deliver consistent decision making to ensure that the right developments are in the right locations without exceeding the carrying capacity of the Clyde as a whole. The identification of suitable areas for mariculture development has proved to be outwith the scope of the the Plan and would be a major piece of work. The major factors in assessing aquaculture developments are visual impacts and navigational issues. The loss of fishing grounds has also been a factor in determining applications historically. A mariculture strategy should be resource led and should identify preferred, and less preferred, areas for development, steering developers towards areas with fewer conflicts while still having the available resource to operate a sustainable business. The Strategy would also provide advice to minimise the impact of terrestrial developments, in particular the location of outfalls, on existing and future mariculture developments.

Policy MAR 2 Pre-application consultation

Developers should be encouraged to carry out pre-application consultation with regulators, planning authorities, communities, water companies and other marine users.

252. The aquaculture industry has a history of pre-application consultation. The aquaculture industry has a history of pre-application consultation, which should be encouraged and promoted to other sectors and activities. Pre-application consultation can speed up the process of consent and minimise the risk of costly applications. It can help identify potential constraints and opportunities at an early stage and provides an opportunity for conflicting issues to be addressed and resolved.

Policy MAR 3 Protecting Wild Fish Stocks

All finfish producers within the Firth of Clyde should be encouraged to sign up to and operate within the relevant Area Management Agreement.

253. The aquaculture industry is engaged in voluntary mechanisms such as the Tripartite Working Group and Area Management Agreements to minimise the impact on wild salmon and resolve negative interactions that are identified, including the relocation of cages. As part of the area management agreement in the Firth of Clyde, salmon cages have been removed from areas where the risks to wild salmonids were the greatest.

Tripartite Working Group

Established in 1999, the purpose of the Group, chaired by the Scottish Government, is to address problems common to salmon farming and wild salmon fisheries and to seek solutions for ensuring the maintenance of a healthy stock of wild fish whilst at the same time promoting a sustainable aquaculture industry.

Environmental Impacts

254. The potential environmental impacts of the mariculture policies, as detailed in section 8 of the SEA Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: efficient use of infra-structure
SEA					
Mitigation and Enhancement	ENV8		COM1	ENV1 ENV2 ENV3 ENV4 ENV6	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and

255. The development of a Mariculture Strategy for the Firth of Clyde would represent a strategic approach to planning and consents processes for new developments. As such, it is judged to be potentially beneficial to those aspects of the environment, such as nutrient loadings and designated sites/species, which are already considered within the licensing and planning regimes applied to this sector. The development of landscape/seascape carrying capacity assessment will also provide a basis for a coherent approach to management of mariculture development with respect to visual impacts. The policies can be enhanced through consideration within the Mariculture Strategy of features identified as of local importance to marine biodiversity and improved understanding of the sensitivities of such features to mariculture development.

256. Sustainable growth of the sector is also potentially beneficial to the viability of coastal communities, particularly within the sea lochs, and to the efficient use of infrastructure. Analysis of potentially competing interactions with other sectors, including valuation of intangibles, such as safeguard of tranquillity and wildlife, would help to ensure that mariculture development does not detract from the defining characteristics that make the Clyde attractive to other activities, especially recreation and tourism. This is of particular importance to ensuring long-term viability of coastal communities.

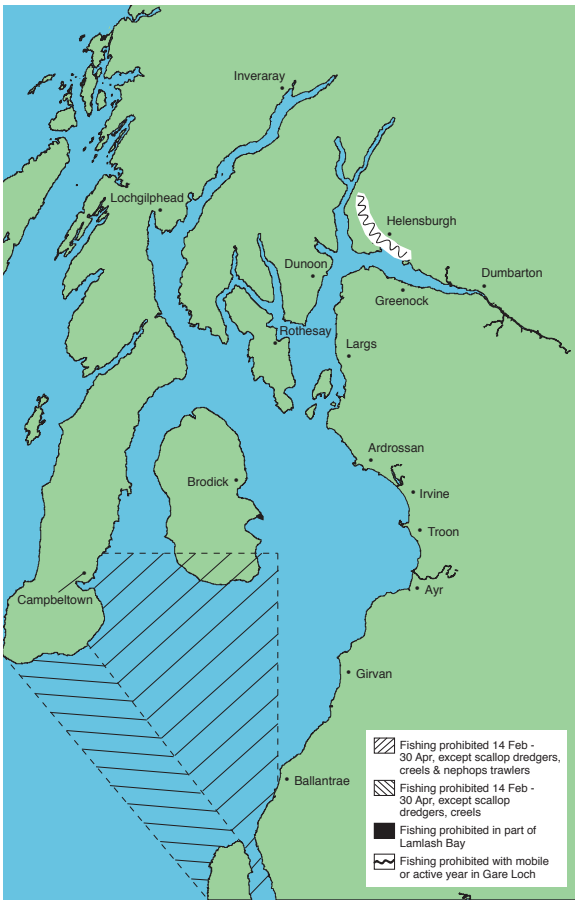
Fishing

Context

257. The fishing industry has had a major impact on the image and character of the Firth of Clyde and many of its coastal towns. It is a complex, traditional industry and holds great economic importance for many rural communities, as well as political influence.

258. The Firth of Clyde was renowned for the quality and size of its herring fishery. However, the stocks collapsed by the mid 1980s. Other fisheries for cod, hake, saithe and plaice have also been important from the 1960s, however, stocks have also declined such that these fisheries are also no longer viable. The majority of commercial activity within the Firth of Clyde is now focused upon the fishery for prawns, also known as Nephrops *(Nephrops norvegicus)* and langoustine, scampi or Dublin Bay Prawn. Scallops, and now rarely queen scallops, are also taken, mainly by dredging vessels. Scallops, and to a limited extent razor clams, are fished commercially.

259. Fishing takes place on grounds throughout the Clyde, but trawling and other forms of mobile fishing are prohibited in the Gare Loch. There is a seasonal closure in part of the Clyde designed to protect spawning herring. There is also an annually reviewed closure to whitefish trawl in the Outer Firth to protect cod spawning grounds. The statutory fishing restriction in part of Lamlash Bay entered into force in 2008.' The main landing ports are Campbeltown and Tarbert in Kintyre, and Troon on the Ayrshire coast. Smaller fishing ports include Carradale, Cumbraes, Girvan, Greenock, Largs and Rothesay. Some Northern Ireland registered vessels also fish within the Firth of Clyde. These boats land their catch either in the Firth of Clyde or Northern Ireland, depending on the market price at the harbour or the day of the week. In 1986, the ban on mobile gear fishing at weekends (imposed under the Inshore Fishing (Scotland) Act 1984) was reintroduced. There is also a voluntary agreement excluding trawl fishing in shallow waters in Upper Loch Fyne.



Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007002-SEPA)

Diagram 22. Statutory Fishing Restrictions in the Firth of Clyde

260. There is a general lack of investment in fishing harbour infrastructure. The deteriorating state of a number of harbours and their facilities, and the lack of modernisation, has a negative impact upon the efficiency of the inshore fleet. It is recognised that the "gentrification" of harbours, with the change in emphasis of some to marinas, has had some impact upon the inshore fisheries fleet, but this is generally well managed. The right of fishing vessels to use harbours is protected by the Fisheries Act 1705.

261. Although the fishing industry has generally been in decline in recent years, the potential for a significant, sustainable and viable future does exist. Local commercial fishing interests need to be given the appropriate support to achieve a sustainable approach to fishing.

Interactions with other Sectors

A key to the colour coding can be found in the fold out section at the

	Energy	Fishing	Mariculture	Recreation & Tourism	Shipping & Transport	Other
Fishing	Footprint (incl. subsea cables & pipelines) Pollution	Footprint Resource competition Equip. damage	Navigation & Safety Footprint Pollution FISH1	Navigation & Safety Resource competition (berthing space)	Navigation & Safety Pollution (dredge spoil) Equip. damage	Navigation & Safety (naval craft)
				Services Infrastructure	infrastructure Safety (wash)	Litter
				Footprint (moorings/ anchorages) Nuisance/ safety (power craft) Resource damage Equip. damage		
Relevant Policies	FISH1 ESC&P2	Clyde IFG	MAR1 MAR2	FISH1 FISH2 FISH4 R&T2 R&T6 ENV6 S1	FISH2 S&T6 S&T7 ENV7 S1	FISH4 ENV10

Socioeconomic Data

262. The inshore fishery has been in decline over the past 40 years. The economic and social importance to the Firth of Clyde has reduced significantly. Turnover has dropped by over 25% between 2000 and 2005. The reduction in turnover combined with a decrease in GVA suggests the sector is both less competitive and less efficient. While the fishing industry accounts for a small percentage of the workforce in the Firth of Clyde, it makes a significant contribution to rural economies where it tends to be concentrated. The Kintyre peninsula is the most dependent, with the fisheries sector accounting for around one in fifteen jobs. The impact from the loss of jobs in this area will be significant in relation to the small size of the local communities.

263. Potential conflicts between the fisheries and other sectors arise primarily from developments that might potentially restrict access to fishing grounds or impact upon stocks, for example through pollution. There are also ongoing conflicts within the sector between static and mobile gear fisheries over impacts on fished stocks and gear damage.

264. Conflicts with fisheries arise mainly from concern about damage to natural and historic heritage interests through trawling or dredging of the seabed and potential depletion of target or non-target stocks.

265. Current management of potential collision risks between fishing and other, including naval, vessels is generally effective with both statutory and voluntary mechanism in place. Continued affordable access for fishing boats to ports, harbours, jetties and slipways is identified as important.

Fishing Policy Objectives

Protecting important habitats and species from fishing operations that may be damaging to them
This in part will be achieved through:

- Safeguarding important fishing grounds from development
- Providing appropriate infrastructure
- Protecting important habitats and species from fishing operations that may be damaging to them

Policy FISH 1 Competition for space

Account should be taken of local fishing interests/fishing grounds when developing and determining development proposals. The fishing industry should be encouraged to develop guidance on the economic and stock management impacts associated with displacement of fishing activity and where possible identify areas where development could proceed with minimal or no impact on fishing. Pre-application consultation should be encouraged with fishing representatives for new developments.

266. The redevelopment of existing harbours and waterfronts has acted as an important catalyst to the regeneration of the Clyde coast. Traditional industries and coastal communities should benefit from this redevelopment.

A Sustainable Framework for Scottish Sea Fisheries

This document, published in 2005 by the Scottish Government, aims to have "a Scottish sea fishing industry that is sustainable and profitable and supports strong local communities, managed effectively as an integrated part of coherent policies for the marine environment.

267. Traditional marine activities are experiencing increased competition for space from relatively new industries, such as mariculture. Developments associated with these new industries, as well as an increase in recreational activity, has resulted in sectors being displaced in some areas, including the loss of fishing grounds. The sensitive placement of other activities should be considered to ensure that new developments do not undermine the long-term viability of the fishing sector within the Firth of Clyde. A balanced approach should be encouraged with decisions based upon an overview of the social, economic and environmental costs and benefits.

Policy FISH 2 Infrastructure

To safeguard the local fishing industry a strategic plan should be developed to deliver and maintain appropriate infrastructure and facilities in light of the Clyde IFG Management Plan.

268. The industry and supply chain require the provision of the appropriate infrastructure and facilities to enable it to provide the high value quality product that the market demands. The Clyde Fisheries Development Project highlighted the importance of temperature control in the quality of Nephrops. It also noted that there are difficulties in getting ice at certain ports. Icing the catch is crucial to retaining catch quality and is a requirement of the Seafish Responsible Fishing Scheme.

269. Opportunities exist to increase the commercial value of fishing in the Firth of Clyde, without increasing quantities of stock removed. Infrastructure requirements should enable opportunities to maximise the value of the product and ensure the Clyde fisheries are competitive from boat to throat. In addition, there are a variety of shortcomings at fishing ports and harbours throughout the Clyde, including lack of ice facilities and poor storage and handling facilities. Additional problems arise with respect to poor road infrastructure, which affects access to markets. These limitations must be addressed for the fishing sector within the Firth of Clyde to meet its potential.

270. There is a need to reassess the roles of existing harbours and landings, taking into consideration strategic improvements in light of the Clyde IFG Management Plan, as well as changing market demands. Harbours are able to accommodate a number of marine sectors with marinas and ferries often sharing facilities with the fishing industry.

Policy FISH 3 Roads

Measures should be encouraged to improve the key road infrastructure to enable rapid transhipment to markets and processors, with priority given to works that maintain and upgrade the A82 and A83.

271. The Transport and Shipping Sectoral plan highlights the capacity constraints on the terrestrial transport network and how this creates a competitive disadvantage for businesses that rely upon them in the Firth of Clyde.

272. The road infrastructure from ports within the Firth of Clyde is critically important as the majority of the catch is transported unprocessed by road to processing plants within the Central Belt, Fraserburgh and Annan. There is also an increasing volume of catch transported in specialist lorries to markets in Scotland, England and the Continent. The key transport issues for the fishing sector are the condition and capacity constraints of the A82 and A83.

Key Infrastructure

Key Ports

Campbeltown

Tarbert

Troon

Important Landings

Carradale

Cumbraes

Girvan

Greenock

Largs

Rothesay

Key Roads

A82

A83

BSI PAS 72:2006: Responsible fishing: Specifications of good practice for fishing vessels

This British Standard's Institution's Publicly Available Specification is the foundation for the Responsible Fishing Scheme. It states:

Unless they are being retained for the live market, fish shall either be:
1.chilled, iced or frozen at sea. Chilling, icing and freezing shall be done as soon as practicable after catching; or
2.landed within 4 hours of being caught

When the catch has been landed it shall be transferred to a place of storage that will maintain the product at a chilled temperature. If the place of storage not refrigerated, adequate ice shall be used on the product to ensure it maintains a temperature of <5 ¡C.

European Fisheries Fund

273. The new European Fisheries Fund is designed to help modernise and secure the sustainability and international competitiveness of the fishing industry. The European Fisheries Fund replaces the Financial Instrument for Fisheries Guidance (FIFG) grant programme which ran between 2000 and 2006. EFF is programmed to run until 2013. Eligible applicants will include individuals, companies, trade and public bodies that have a direct interest in commercial fisheries.

Company	Location	Project	FIFG (£)
Argyll & Bute Council	Carradale Harbour	Phase 1 of improvements to the harbour infrastructure to provide safer and more sheltered berthing	225,000
Tarbert (Loch Fyne) Harbour Authority	Tarbert Harbour	Improvements to landing and other facilities	18,800
Loch Fyne Oysters Ltd	Cairndow	Installation of second kiln for the production of organic oysters	121,492
MacMillan Foods	Campbeltown	Installation of a new smoking kiln for traditionally smoked kipper production	17,232
Scotprime Seafoods Ltd	Ayr	Construction of an extension to the existing premises at Ayr, to house a new tunnel freezer and cold store	107,591

Table 4. Projects within the Clyde that have benefited from the FIFG

Policy FISH 4 Protecting Habitats and Species

The fishing industry should be encouraged to protect habitats and species that are sensitive to fishing activity.

274. Fishing impacts on the marine environment in three basic ways: removing target fish from the sea; removing non-target species; and gear interacting with the seabed or other features. There is a need to map the location and intensity of fisheries activity in the Firth of Clyde in order to identify fished and non-fished areas and make recommendations regarding the most appropriate methods for assessing the ecological effects of fishing activity.

275. The effects of different fishing activities on the marine environment are not fully understood. While there is good location information for inshore fishing activity, within the Clyde, the effect and distribution of its impacts must be better understood in order to plan a reduction in those impacts which materially prejudice the marine environment. A wide ranging investigation and evaluation of the impacts of fishing activity, including creeling, diving, seabed trawling and dredging, upon species, habitats and ecosystem services within the Firth of Clyde is required to underpin sustainable management.

276. By protecting habitats that act as spawning grounds, provide refuge for juveniles or provide food, the fishing industry can help to improve recruitment levels to and maintenance of adult fish stocks

Policy FISH 5 Voluntary Approaches

The fishing industry should be supported in developing and implementing collaborative and cooperative approaches to managing the Clyde fisheries in consultation with relevant stakeholders, which include: voluntary measures to protect marine habitats and species; the Fishing for Litter scheme; and adoption of appropriate certification standards.

277. There is a history of the fishermen within the Firth of Clyde employing voluntary measures to preserve and enhance the ecological status, condition and biodiversity of the marine environment. The fishermen within the Clyde respect a voluntary ban on trawling in areas of Upper Loch Fyne and Loch Shira. This was primarily put in place for conservation of salmonid stocks, however, there are spin-off benefits for other benthic biodiversity interests such as the Fireworks anemone *Pachycerianthus multiplicatus*. The Clyde Fishermen's Association has worked with the Argyll Fisheries Trust, the District Salmon Fisheries Board, and Argyll and Bute Council on this initiative. For several years, there has also been a voluntary restriction on scallop dredging in the Sound of Arisaig SAC which forms part of the SAC Management Plan.

278. Members of the Clyde fleet, both static and mobile, have put themselves through the process for Marine Stewardship Council (MSC) accreditation for the Nephrops fishery. The MSC's fishery certification programme and seafood eco-label recognise and reward sustainable fishing. The Fishing for Litter project enables rubbish that is trawled up as part of normal fishing activity to be disposed of on land. The project provides large hardwearing bags so the waste can be easily collected and deposited on the quayside. Tarbert and Troon harbours and six fishing boats are currently involved in the project within the Firth of Clyde.

Environmental Impacts

279. The potential environmental impacts of the fisheries policies, as detailed in section 8 of the SEA Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: carbon emissions; efficient use of infra-structure
SEA					Infrastructure carbon
Mitigation and Enhancement	ENV10		COM1 HER1	ENV1 ENV2 ENV3 ENV4 ENV6	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and bacteriological status of the water column

280. The principle impacts identified included potential long-term benefits to the safeguard or enhancement of seabed habitats, species and morphology. Areas subject to voluntary restrictions on fishing effort should be systematically monitored against comparable control areas to improve understanding of fisheries impacts and possible approaches to management within the Clyde. Such measures could also generate some incidental benefits for historic heritage, provided that any harbour improvement works are sympathetic to their historic heritage. A strategic approach to the management of displacement of fishing activity by other interests is also potentially beneficial provided that avoidance of fishing grounds does not displace other types of developments or activities into areas that are more environmentally sensitive to them (cf policy ENV 4).

281. More generally, the long-term viability of a number of coastal communities, together with maintenance of cultural traditions, is to a greater or lesser extent dependent upon the presence of a sustainable inshore fisheries sector. The proposed development of a strategic infrastructure plan should assist the efficient use of existing ports and harbours. However, potential impacts of the policies, in particular road improvements and any restrictions on fished areas, on greenhouse gas emissions are unclear at this level.

Energy and Subsea Infrastructre

Context

282. The importance of clean and sustainable energy from renewable sources will continue to increase as a result of global imperatives to tackle climate change and the need to ensure secure and diverse energy supplies. The Scottish Government has a target to generate 50% of Scotland's electricity from renewables by 2020, with an interim target of 31% by 2011. The 2011 target equals 5,000 megawatts in installed capacity. A wide range of technologies will be required to meet these targets. Onshore wind and hydro will make the major contribution over the next few years, but marine renewable technologies such as wave power, tidal stream and offshore wind will become increasingly important.

283. Coastal locations are also important for conventional power stations. On the Clyde, Hunterston (nuclear) and Inverkip (oil) power stations like many in Scotland, such as Longanet (coal) and Peterhead (gas), are located on the coast to enable the use of sea water in the cooling process, which reduces the need for cooling towers. Hunterston power station accounts for over 11% of Scotland's electricity generating capacity. It is scheduled for decommissioning in 2016. The removal of this generating capacity from the grid highlights the need for developing new sources of power generation. Inverkip was never fully operational as it was uneconomic to run and was used only as a backup supply. It ceased fully in 1999 and is planned to be demolished in 2009.

284. At present Scotland is a net exporter of electricity to England and Ireland. The Moyle Interconnector links the electricity grids of Northern Ireland and Scotland through submarine cables running between Ballycronan More in Islandmagee, County Antrim and Auchencrosh in Ayrshire. Over 1.5% of the electricity generated in Scotland is currently exported to Ireland each year. There are also numerous other submarine cables that crisscross the seabed of the Firth of Clyde. These provide electricity and vital telecommunication links to the islands and remote rural areas.

285. The Clyde also contains nationally important infrastructure for the distribution of fossil fuels. Finnart Ocean Terminal is linked by a 58 mile pipeline to the oil refinery in Grangemouth enabling it to be supplied by alternative sources of crude oil other than from the North Sea. Hunterston Deep Water Port supplies imported coal to power stations in Scotland and England. Rothesay Dock, in the inner estuary, is part of a network of independent sea-fed terminals through which petroleum products made in the UK and overseas can be distributed. Such terminals are important to national supply and price competition.

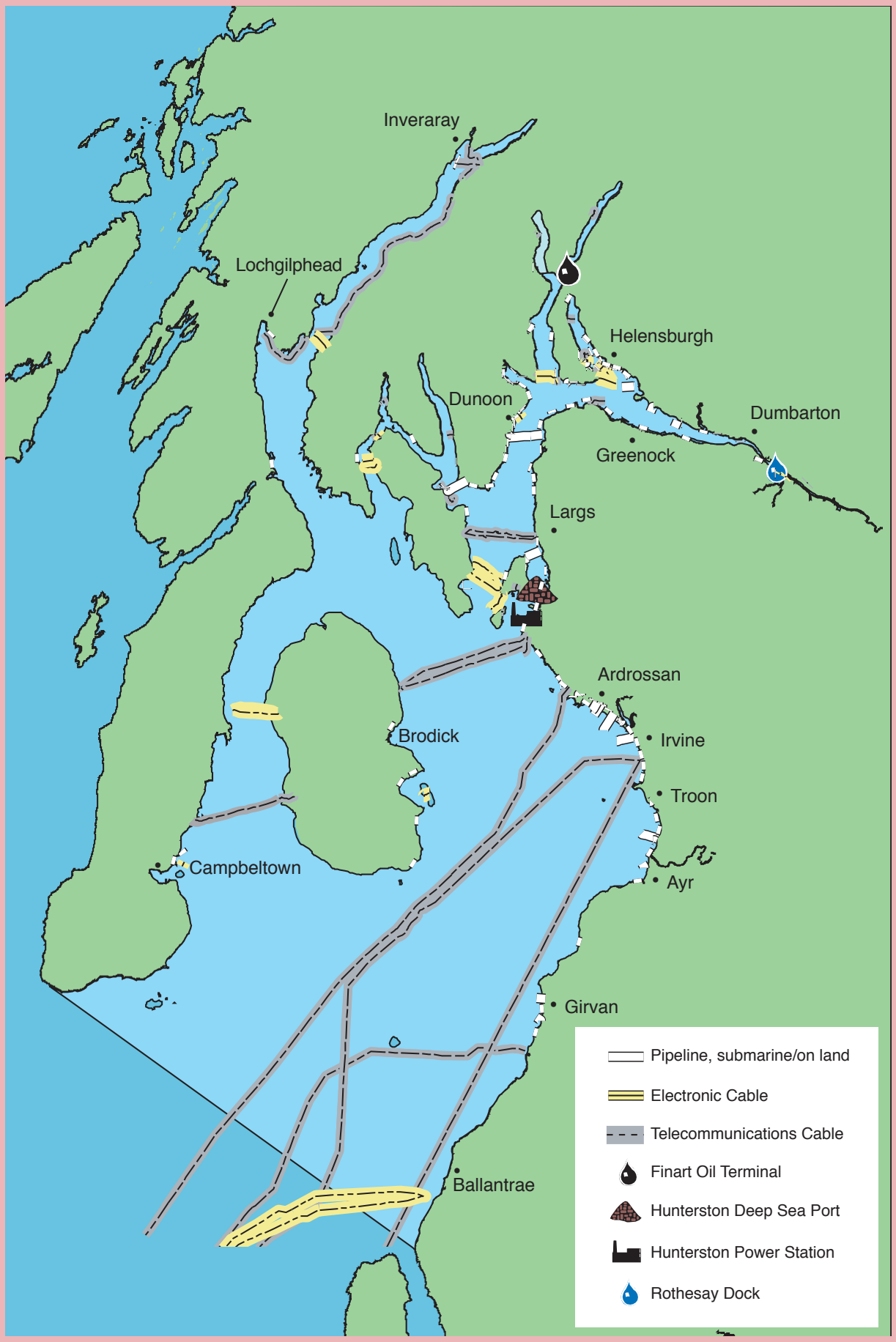


Diagram 23. Energy, Subsea Cable and Pipeline Infrastructure in the Firth of Clyde

Based upon Ordnance Survey Data with the permission of the Controller of HMSO (GD03135G0005) and Seazone Hydrospatial Data (022007.002-SEPA)

Socioeconomic Data

286. The sector is concentrated on the generation and distribution of electricity. There are currently no marine renewable energy installations within the Firth of Clyde and generation is currently focused at Hunterston nuclear power plant.

Interactions with other Sectors

A key to the colour coding can be found in the fold out section at the start of

	Energy	Fishing	Mariculture	Recreation & Tourism	Shipping & Transport	Other
Energy	Infrastructure (e.g. cables)	Footprint (incl. subsea cables & pipelines) Resource damage	Footprint Pollution (incl. noise)	Navigation Access (divers) Amenity	Navigation Safety (access to sheltered waters)	Naval radar
			Infrastructure Services	Infrastructure (micro-generation) Resource benefits (reef)	Infrastructure	
Relevant Policies	ESC&P1	FISH1 ESC&P2	MAR1 MAR2	ENV8	S1 S&T1 S&T4 ESC&P3	

287. The interactions study only considered renewables that could potentially be located in the sea. The renewable energy sector itself is aware of potential conflicts with other activities, in particular with respect to access and navigation and potential aesthetic impacts on seascapes and landscapes. Potentially damaging effects on biodiversity, including fish stocks, were also identified, either directly through development footprints, or through indirect effects such as alteration to current flows. However, it is perceived such conflicts as being manageable through consultation and application of existing consents procedures.

288. There is potential for synergies with other activities, either through incorporation of generation capacity into structures such as ports, marinas and fish farms or, through sharing of technologies and facilities, such as work vessels for servicing offshore structures. There are also potentially benefits to some marine species and habitats, including fish stocks, through the creation of artificial structures, which would provide them some protection from other activities.

Energy and subsea infrastructure policy objectives

The policy objectives are to ensure that the operations of critical energy infrastructure and waste water treatment facilities around the Clyde are safeguarded and to promote local development of marine renewables, in support of national targets, where technically and environmentally appropriate.

Policy E&SI 1 Renewable Energy

Proposals for the generation and utilisation of renewable energy within the Firth of Clyde should be supported and encouraged in appropriate locations.

289. Scotland leads the world in the development of wave and tidal power devices. Increasing the amount of electricity generated from renewable energy sources will make an important contribution to achieving Scottish Government commitments to reduce greenhouse gas emissions. These commitments must be met with encouragement and support at the local level to enable the sector to grow in appropriate locations

290. The potential for renewable power generation within the Firth of Clyde is relatively limited. The Clyde is more sheltered, with lower wind speeds and wave heights, than the waters around the outer coastlines of Scotland and there is only limited potential for tidal power generation. The Scottish Government commissioned a Strategic Environmental Assessment (SEA) for the development of wave and tidal stream devices off the west and north coasts of Scotland. This identified that there are currently limited opportunities for developing marine renewables within the Firth of Clyde. Only three small areas either side of the seaward boundary of the Clyde were identified for the potential development of tidal technology. The estimations of installed capacity (in MW) for these sites are:

- Mull of Kintyre 7MW
- Sanda Sound 8MW
- Mull of Galloway 109MW (only part in the Plan area

292. There is the potential for coastal towns around the Clyde to develop into servicing hubs for the marine renewable industry, by providing lifeline links, engineering support and servicing facilities for these and other offshore renewable sites

293. Within Ayrshire, and Argyll and Bute, there are many sites identified for onshore wind generation. Costs for generating offshore wind in the Firth of Clyde are currently prohibitive in comparison to these terrestrial locations and the offshore resource is much less than in many other locations around Scotland. Consequently there would appear to be little demand for offshore wind generation in the Firth of Clyde

Wave and Tidal Energy Support Scheme

The Scottish Ministers' Wave and Tidal Energy Support Scheme forms part of a suite of measures designed to accelerate the development of a wide range of renewable energy technologies. It had funding of £8 million for 2008.

Policy E&SI 2 Land based power stations

Consideration should be given to the impact that new marine developments would have on the ability of power stations to abstract water from the Firth of Clyde for cooling purposes.

294. The Hunterston Clean Coal Power Station is included in NPF2 as a National Development. Hunterston and its open coastal location with nearby deep waters provide a potential location for continued power generation. The ability to bring coal in large ocean-going vessels direct to the site as well as the open coastal location for sea water in the cooling process makes the area suitable in this respect for possible future power generation.

Policy E&SI 3 Waste Water Treatment Works

Important coastal and subsea waste water treatment infrastructure should be protected. Marine developments that may conflict with existing infrastructure should be avoided.

295. Scottish Water is responsible for the collection, management, treatment and safe return to the environment of domestic and trade effluent and surface water drainage. Their investment in Waste Water Treatment Works is based on a number of factors including regulatory requirements and the status of the receiving waters for the final effluent or discharge. Due to the requirement to discharge, many Works are situated in a coastal location discharging to the marine environment.

296. Areas sensitive to discharge include estuaries and coastal waters with a high level of nitrates, bathing waters and shellfish growing waters. It is therefore important to establish buffer zones around existing Waste Water Treatment Works when considering the location of new marine developments or activities. This is both to ensure optimum water quality for these developments or activities and to enable water treatment to be carried out in a cost-effective manner.

Environmental Impacts

297. The potential environmental impacts of the energy policies, as detailed in section 8 of the SEA Environment Report, are summarised below.

A key to the colour coding can be found in the fold out section at the start of the Plan.

	Amenity[1]	Water Quality[2]	Health, Communities and Heritage	Biodiversity, Fauna and Flora	Other: carbon emissions
SEA					
Mitigation and Enhancement	ENV8		COM1	ENV1 ENV2 ENV3 ENV4 ENV5	

Notes:

1 Amenity encompasses litter, tranquillity, landscape and seascape

2 Water Quality includes substrate morphology as well as the chemical and

298. With respect to renewables, a Scottish wide SEA in relation to the development of renewable energy capacity (www.seaenergyscotland.co.uk/) concluded that most effects from tidal renewable devices could be reduced to minor or negligible significance with implementation of appropriate mitigation measures. The exceptions include: displacement of fishing activity, displaced/ increased shipping density; effects of noise on marine birds and marine mammals; and reductions in safety of navigation. Significant unknown effects relate to collisions risks for birds, mammals and fish, and displacement of foraging birds. In the context of the Firth of Clyde, there could be particular issues with respect to potential impacts on birds, as both Sanda and the Mull of Galloway are locally or regionally important seabird colonies.

Implementation

299. The SSMEI Clyde Pilot itself has no statutory power to implement the Firth of Clyde Marine Spatial Plan. However, the original project proposal[3] requires the Clyde Pilot to consider the voluntary implementation of the Plan through an integrated stakeholder-regulated partnership. The requirement is phrased "To deliver the ideals of ecosystem based management and sustainable development by developing an effective and integrated stakeholder-regulator partnership for the marine and coastal areas of the Firth of Clyde".

300. In the Marine (Scotland) Act, Scottish Scottish Marine Regions[4] (SMRs) will be the means by which marine planning takes place at the level of the Firth of Clyde:

301. Each SMR will have a board comprising representatives from the main stakeholder interests in the area. As far as possible, existing structures and partnerships will be building blocks. Local Coastal Partnerships, Inshore Fisheries Groups and RBMP Area Advisory Groups may be included. Marine Scotland will seek to agree the appointment of the Board with local stakeholders[4] resulting in streamlined local decision making. In all cases a partnership approach will be required to draw together the wide range of local activities in order to deliver a meaningful Plan. Marine Scotland will designate a lead partner, taking account of the views of the board. In some instances it may be appropriate for local authorities to become the lead partner in an SMR.

302. It is important to have a stakeholder-regulator partnership in place until the establishment of an SMR covering the Clyde. Maintaining such a partnership would allow for the successful and informed implementation of the Plan as well as for a smooth transfer of it into an SMR, without loss of consistency or knowledge.

Firth of Clyde Forum

303. During the process of developing the Plan, the Firth of Clyde Forum Core Group (FoCFCG) has provided this stakeholder-regulator partnership and acted as the SSMEI Clyde Pilot Steering Group. The FoCFCG contains within its membership representatives of almost all bodies currently involved in planning within the Clyde Plan Area. It is proposed that the FoCFCG be the foundation of the stakeholder-regulator partnership which implements the Plan at this time. The benefits of delivering the Plan through such a stakeholder-regulator partnership are:

1. The Plan, not having statutory underpinning, could only be implemented with the consent of those intended to be affected - the Stakeholders.
2. The Plan, not having statutory underpinning, could more easily be ignored by Regulators if there were not interested stakeholders, having a direct connection with those Regulators and able to hold them to account.
3. A great deal of experience exists, and has been in existence for many years, in situ, of marine spatial and temporal planning, using a partnership and persuasive approach.
4. The Plan production process has been an impressive demonstration of cooperative working between regulators and stakeholders, who will, in turn, form part of the Implementation Body.

[3] Cappell R., 2005. Scottish Sustainable Marine Environment Initiative: SSMEI Clyde Pilot Project Proposal – Final Report. Scottish Executive.
[4] Scottish Government 2008. Sustainable Seas for All: A Consultation on Scotland's First Marine Bill.

Model Implementation Body

304. During this phase of the Pilot Project an opportunity exists to develop a Model Implementation Body that could be replicated in other parts of Scotland. The FoCFCG structure is flexible enough to enable new members to join and subgroups to be established. Membership of the implementation body will be agreed through discussion between the FOCFCG and Marine Scotland. This is advantageous as within the Clyde a number of bodies that carry out some form of marine planning currently exist. These groups, such as the Clyde Moorings Committee (CMC) and the Royal Navy/Fishing Industry Group, could be incorporated into any such model.

305. The CMC provides another good example of a stakeholder-regulator partnership within the Firth of Clyde. Its principal duty is the provision of advice to the Crown Estate in relation to the granting of lease permission to a class of vessel moorings in parts of the Firth. This group is of particular interest as its advice is also nearly always accepted by Scottish Government with respect to application of section 34 of the Coast Protection Act 1949.

306. The whole FoCFCG cannot sit to consider every issue. However, a committee structure, that has a measure of subsidiarity, can take advantage of the existing mechanisms in the Clyde, such as the CMC or the Royal Navy/Fishing Industry Group to tackle many of the issues amongst the parties concerned directly.

307. It must be highlighted that administrative and financial support will be required for the FoCFCG and its members, through a dedicated implementation team. The team members will provide the functions to enable the stakeholder-regulator partnership to implement the Plan. They will provide support to the subsidiary groups and co-ordinate the delivery of actions that are assigned to the FoCFCG.

Existing Statutory process

308. It is anticipated that Councils and regulatory authorities will have regard to the Plan in the determination of development applications or consents. Planning authorities should consider incorporating the Plan, or parts thereof, as supplementary planning guidance and for it to be a material consideration in the planning consent process. The initial implementation of this Plan will test the effectiveness of this approach.

309. Many policies within the Plan have implications that extend above the Mean High Water Springs. These polices will therefore require integration with terrestrial development plans and cooperation with planning authorities. It is anticipated that planning authorities will have regard to the Plan and relate the policies and general proposals of the Plan to particular areas within their planning authority boundary.

Monitoring

310. Monitoring of the Plan is essential in order to see how the Plan is achieving the aims and objectives as well as delivering the policies set out. Monitoring also ensures that the Plan continues to be relevant and responsive to changing circumstances for example climate change policy. Ongoing review of statutory development plans and consultation with stakeholders will indicate how well this Plan has been integrated and how useful and user-friendly the Plan is. This process assists in identifying what amendments to the Plan may be necessary for future revisions.

311. A relevant body will be required to carry out the monitoring. This could be Marine Scotland, the proposed Scottish Marine Region Board or the Stakeholder-Regulator Partnership[4].

312. Any environmental monitoring should integrate with SEPA monitoring under River Basin Management Planning and future development of marine Good Environmental Status monitoring as required under the EC Marine Strategy Framework Directive

Reviewing

313. Review involves making amendments to the policies and proposals contained in the Plan that reflect changes that have occurred and ensures that the Plan is kept up to date and remains relevant. National planning guidance recommends that terrestrial Development Plans should be kept up-to-date and reviewed on no more than a five-year cycle.

314. The publication of the Plan comes at a time when there are major developments in marine and coastal planning in Scotland. The Marine (Scotland) Act has only recently received Royal Assent and throughout the next year or so Marine Scotland will be consulting on the structure of Scottish Marine Regions and developing the National Marine Plan and other guidance for marine planning. The implementation of this Plan and associated Action Plan will serve to take the Firth of Clyde closer towards the ultimate goal of regional statutory marine planning in the future.

Year

2010	2010 - 2012	2012	2012-2014	2014
Marine (Scotland) Act enters into force Review Point for the Plan	Development of National Marine Plan Public consultations on Scottish Marine Regions	Review point of the Plan	Development of Regional Marine Plan (RMP)	The Plan adapted to be the RMP, if suitable

Event

Proposed Action Plan

316. It is critical to the Plan's success that its policy aspirations are translated into a clearly prioritised action plan that identifies the important areas of activity within the Firth of Clyde for planning authorities, regulators and stakeholders. A preliminary five-year action plan, covering the period 2009 to 2014, detailing what should be delivered by whom and when, is set out.

317. Consideration will have to be given to the resources required to deliver the policies within the Plan. Potential partners for each project will be assessed in more detail as projects begin so as to ensure appropriate representation from relevant parties. **Inclusion in this preliminary action plan does not guarantee that policies will be delivered or that funding will be available.**

Proposal	Policy	Proposal	Details	Potential Partners	Target Delivery
1	ENV1	Develop a strategy for the coordinated gathering and recording of data in the Firth of Clyde	• This should build upon work of the SSMEI Clyde Pilot in bringing together all existing data and information. • It should prioritise areas where further survey work is required.	FoCF SNH SEPA Marine Scotland	2011
2	ENV2	Identify and map locations of internationally, nationally and locally important species, habitats and sensitivities	• This should build upon work of the Review of Biodiversity and add data which could not be included due to time constraints in the original project. • New locations should be included.	SNH Marine Scotland	2011
3	ENV2	Map areas where particular activities could impact upon sensitive species and habitats	• Through mapping known locations of species and habitats, with locations of activities and sensitivity/pressure information, potential conflicts can be identified.	FoCF Marine Scotland SNH Marine Users	2012
4	ENV3	Identify important areas for mobile species	• Data collated on mobile species should be analysed to identify areas which are important spatially and/or temporally for mobile species.	FoCF SNH Marine Scotland	2012
5	ENV4	Develop a suite of pressure/sensitivity indicators	• Some species and habitats are particularly sensitive to the effects of certain activities.	SNH FRS SEPA	2011
6	ENV4	Map areas where marine based activities take place	• Through mapping areas where activities take place these can be overlain with the location of known species and habitats to identify areas where conflicts may arise.	FoCF	2011

Proposal	Policy	Proposal	Details	Potential Partners	Target Delivery
7	ENV5	Develop a guiding framework for non-native species mitigation	• This will identify sensitive and vulnerable species and habitats to non-native invasive species and develop an action plan to protect and restore them.	FoCF SNH	2012
8	ENV10	Carry out a seascape/landscape analysis of the Firth of Clyde	• There is limited guidance available on the impacts of new developments on seascapes. The outcome of the analysis should be distributed to developers and planning authorities.	SNH Planning Authorities	2011
9	ENV11	Develop a coordinated marine litter strategy for the Firth of Clyde	• It should encourage agencies and local authorities to work collaboratively to tackle marine litter • This should also establish a monitoring network.	FoCF SNH SEPA Local Authorities Marine Scotland Scottish Water representatives from other marine litter initiatives	2014
10	ENV11	Establish a monitoring network for marine litter and debris	• This would enable the identification of priority areas and the main sources of marine litter and debris.	FoCF SNH SEPA Local Authorities Marine Scotland Scottish Water representatives from other marine litter initiatives	2013

Proposal	Policy	Proposal	Details	Potential Partners	Target Delivery
11	R&T1	Socioeconomic review of marine recreation and tourism	• Carry out a study to ascertain the total economic worth of the Firth of Clyde marine based recreation and tourism industry with an assessment of its potential worth. • Details are required for micro-data such as visitor numbers, what they do and their spending patterns. • This review will provide an evidence base for the development of the coordinated strategy on recreation and tourism.	BMF Visit Scotland Enterprise Companies Local Authorities	2010
12	R&T2	Shoreside access and infrastructure audit	• Identify and evaluate the condition of existing shoreside infrastructure and suitability of access points.	FoCF Local Authorities Marine Recreation Users	2012
13	R&T2	Capacity analysis for marine recreation activities	• This will highlight areas where current recreation activity takes place, the facilities currently available and the potential to increase the use of areas through wider promotion or improved infrastructure and facilities. • It will also identify areas where recreational activity currently doesn't take place, but could be accommodated.	FoCF Local Authorities Marine Recreation Users	2012
14	R&T2	Develop a coordinated strategy for shoreside infrastructure improvements and maintenance	• The knowledge gained through proposals 14 and 15 would enable a targeted approach to providing marine infrastructure requirements as well as identify future development opportunities and maintenance requirements.	FoCF Local Authorities	2013
15	R&T3	Implement the Sail Clyde Strategy	• The infrastructure and facilities required to expand the sailing experience in the Firth of Clyde have been identified in the Clyde Sail Strategy. Through the delivery of these it is anticipated that the number of boats in the Clyde could double in 10 years.	Clyde Sail Partnership Local Authorities Enterprise Companies	
16	R&T4	Investigate Recreational Water Quality Standard	• The quality of water is an important resource for attracting marine recreation and tourism. • This standard would identify areas where no ill effects would be anticipated if recreational users ingested water.	SEPA Scottish Water	2012
17	R&T5	Develop voluntary codes of conduct for marine leisure activities	• The codes of conduct should be developed to minimise damaging impacts and conflicts between other users. • Priority should be given to developing codes of conduct for sailing and cruising.	FoCF Harbour Masters RYA SBMIF	2012

Proposal	Policy	Proposal	Details	Potential Partners	Target Delivery
18	R&T6	Develop an Integrated marketing strategy for the Firth of Clyde	• The generic marketing of Scotland's marine resource and the Clyde in particular needs to be developed.	Visit Scotland Sportscotland Event Scotland Local Authorities Scottish Enterprise Local Authorities Industry	2013
19	R&T7	Increase provision for marine based recreation in schools	• The first opportunity many people have of various sports is as part of the physical education provision at school. • The UK often succeeds in marine based sports. There is a continual need however, to find new participants.	Local Authorities Sportscotland RYA	2013
20	MAR1	Carry out a seascape / landscape capacity study	• There is limited guidance currently available on how mariculture developments interact with the seascape and landscape.		2011
21	MAR1	Socioeconomic review	• There is limited information available on the socio-economic benefit of mariculture in the Clyde. • This study should ascertain the total economic worth of the mariculture sector within the Firth of Clyde as well as an assessment of its potential worth.		2011
22	MAR1	Develop an integrated mariculture strategy	• This would be resource led, identifying areas preferred and less preferred for development. • It would also provide guidance to minimise the impact of terrestrial developments on existing and future mariculture developments.	FoCF	2013
23	FISH1	Map fishing grounds which are sensitive to other marine activities	• Identify areas where development or activities would have a detrimental impact on fishing grounds.	Clyde IFG SNH FRS FoCF	2011
24	FISH2	Carry out an audit of existing infrastructure	• Identify and evaluate the condition of existing infrastructure and facilities.	Clyde IFG	2012
25	FISH2	Develop a strategic plan to deliver new and improve existing infrastructure	• In light of the Clyde IFG Management Plan and the audit of infrastructure a strategic plan should deliver infrastructure requirements that will ensure the Clyde Fisheries is competitive.	Clyde IFG Local Authorities Ports Transport Scotland	2013
26	FISH4	Map fishing activity and intensity in the Firth of Clyde	• There is a need to map the location and intensity of fisheries activity in order to make the recommendations regarding the most appropriate methods of assessing the ecological effects of fishing activity.	Clyde IFG FRS SNH	2011
27	FISH4	Carry out a study on the impacts of fishing to the marine environment	• The effects of different fishing activities throughout the Clyde are not fully understood.	SNH FRS SEPA Clyde IFG	2012

Appendix 1 – Supporting Documents

There are a number of documents that support the Plan. A summary of these are listed below and can be found on the website at www.clydeforum.org/SSMEI

Report name	Description
Ecosystem Approach - SSMEI Clyde Pilot Steering Group Discussion Paper:1	The Firth of Clyde Marine Spatial Plan has adopted the ecosystem approach to sustainable development. This paper outlines the key elements of the ecosystem approach and describes how it has been applied to the development of the Plan.
How can the Ecosystem Approach be applied to Scottish (Regional) Marine Plannng - Key Findings	A Summery of findings from an MSc dissertation project for Strathclyde University
Landscape/Seascape Assessment: Firth of Clyde	This report identifies strategic landscape/seascape zones within the Clyde.
Review of Biodiversity for Marine Spatial Planning within the Firth of Clyde	This report brings together the existing marine biodiversity knowledge on the Firth of Clyde and identifies areas of biodiversity interest and gaps in current knowledge.
Sectoral Interactions in the Firth of Clyde	This report describes the interactions among key sectors utilising the marine environment of the Firth of Clyde and includes an interactions matrix of activities.
Socioeconomic Review	The Socioeconomic Review presents a range of socioeconomic analysis of the Firth of Clyde including: a high level socioeconomic overview; a detailed review of the key marine related sectors; and a review of the key coastal settlements
State of the Clyde Report	This is a summary of existing environmental information. It describes the current status and, where known, trends in status, of some specific environmental components of the Firth.
Strategic Environmental Assessment: Environment Report and Post adoption statement	The purpose of this Environment Report is to describe a Strategic Environmental Assessment (SEA) undertaken as an integral part of the process of developing a Marine Spatial Plan for the Firth of Clyde (the Plan). This SEA process and the production of this report are in compliance with the requirements of the Environmental Assessment (Scotland) Act 2005. A non-technical summary is also available.
Habitats Appraisal and Appropriate Assessment	An appraisal of the likely effects of the Plan on European Natura 2000 designated sites including Appropriate Assessment where likely effects were identified.
The Process of Developing a Seabed Habitat Map for The Firth of Clyde	This report describes the process involved in developing a seabed habitat map for the Firth of Clyde.
Sectoral Workshop Reports	There are reports available on the outcomes of each of the sectoral workshops held for: Conservation and Biodiversity; Fishing; Mariculture; Recreation and Tourism; Shipping and Transport. These identify the key drivers and establish the strategic position of the sectors.
Summary of Local and Structure Plan Policies	This report details the relevant policies from the adjacent development plans that affect the Firth and marine activities.
Consultation Report	Report on the responses to the public consultation received from businesses, local authorities, regulators, community groups and individuals.

Appendix 2 – Organisations Involved in Developing the Plan

SSMEI Clyde Pilot Steering Group

Argyll & Bute Council
Ayrshire Joint Planning Steering Group
British Marine Industries Federation, Scotland
Caledonian Maritime Assets Limited
CalMac Ferries Ltd
Clyde Fisheries Development Project
Clyde Fisherman's Association
Clydeport Harbour Master
Clydeport Operations Limited
Economic, Planning & Environmental Services
Firth of Clyde Forum
Glasgow and Clyde Valley Structure Plan Joint Committee
Glasgow City Council
Historic Scotland
HMNB Clyde
Lighthouse Caledonia Ltd
Marine Scotland-Science and Strategy divisions
Queen's Harbour Master Clyde
Royal Society for the Protection of Birds
Royal Yachting Association Scotland
Scottish Coastal Forum
Scottish Creelers and Divers (SCAD)
Scottish Enterprise
SEPA
SNH
Strathclyde Passenger Transport
The Crown Estate
University Marine Biological Station

Sectoral Interaction Questionnaires and Sectoral Workshops

Association of Scottish Shellfish Growers
British Chamber of Shipping
British Kitesurfing Association
British Marine Federation, Scotland
British Sub-Aqua Club
Caledonian Maritime Assets Limited
CalMac Ferries Ltd
Clyde Fishermen's Association
Clyde River Foundation
Clyde Yacht Clubs Association
Clydeport
Historic Scotland
Keep Scotland Beautiful
Maritime and Coastguard Agency
Marine Conservation Society
Ministry of Defence
Royal Scottish Motor Yacht Club
Royal Society for the Protection of Birds
Queen's Harbour Master Clyde
Scottish Canoe Association
Scottish Creelers and Divers
Scottish Executive
Scottish Federation of Sea Anglers
Scottish Renewables Forum
Scottish Salmon Producers Organisation
Scottish Sub-Aqua Club
Scottish Surfing Federation
Scottish Water
SEPA
SNH
Stirling Marine
Strathclyde Partnership for Transport
Troon Yacht Haven
West of Scotland Archaeological Services