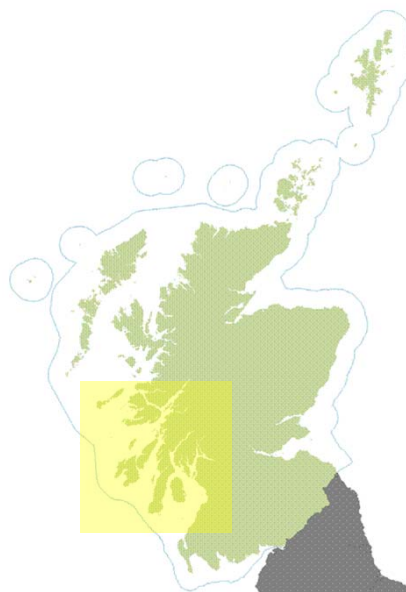


5. WEST

The West Region includes two Scoping Areas of Search.

The Scoping Areas of Search are:

- South West Islay
- Kintyre



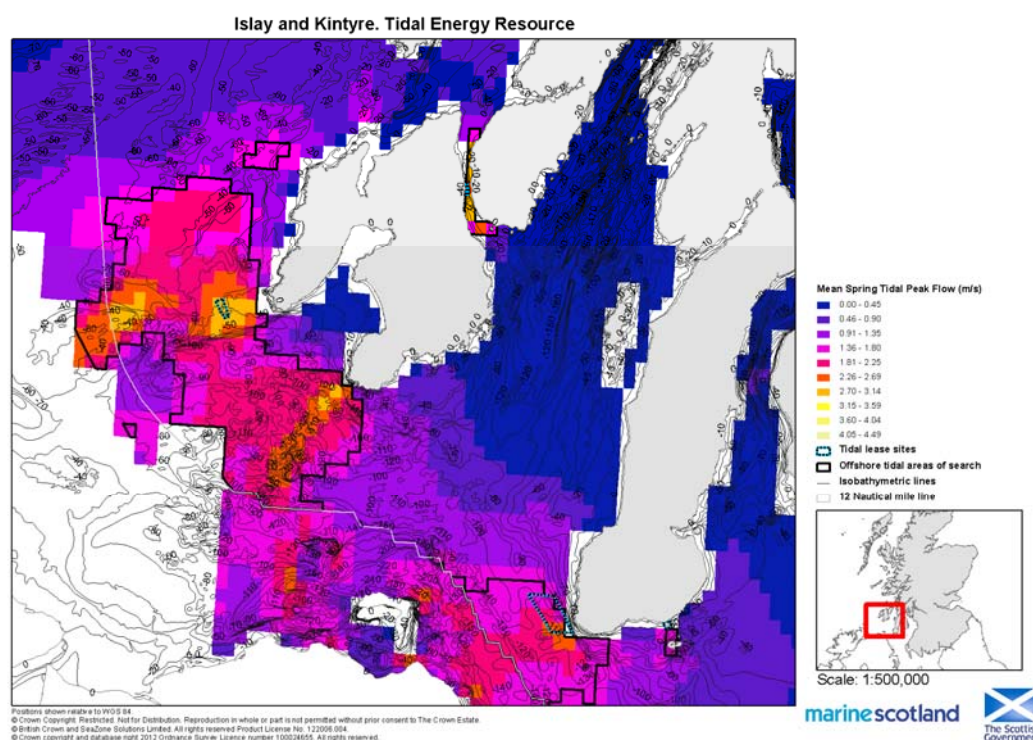
5.1 Resource

5.1.1 This scoping area of search is divided into five separate sections of different sizes that total 1139 km².

5.1.2 This area of search as a whole shows a mean annual power density of 1.13 kWatt m⁻². The mean neap power density is of 0.69 kWatt m⁻² and the mean spring power density is 4.45 kWatt m⁻². Mean peak spring flow shows an annual mean of 2 ms⁻¹ and can reach a maximum of 3.06 ms⁻¹. The mean tidal range rises from 1.7 m during neap tide to 3.2 m during spring tide.

5.1.3 Average annual power density is strongest at the west Islay-Jura site at 2.25 kWatt m⁻² (max: 3.66 kWatt m⁻²) and lowest is at the Kintyre site which has an annual mean power density of 0.76 kWatt m⁻² (max: 2.46 kWatt m⁻²).

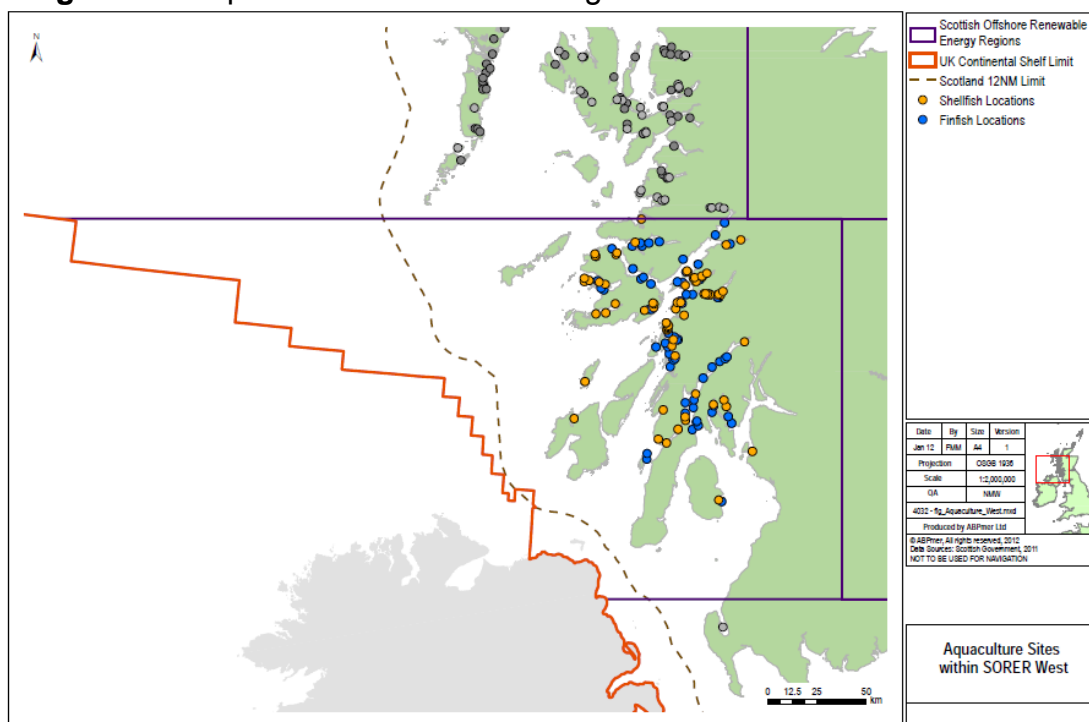
Fig.5.1 South West Islay & Kintyre (Area of Search) Tidal Energy Resource



5.2 Aquaculture

5.2.1 Marine aquaculture sites within the West Region are shown in Figure 5.2. There are 67 finfish and 72 shellfish sites. The figure reveals that aquaculture sites are widespread along the coastline within this region, with particular concentrations in Loch Fyne, the Firth of Lorn and around the Isle of Mull.

Fig.5.2 Aquaculture in the West Region

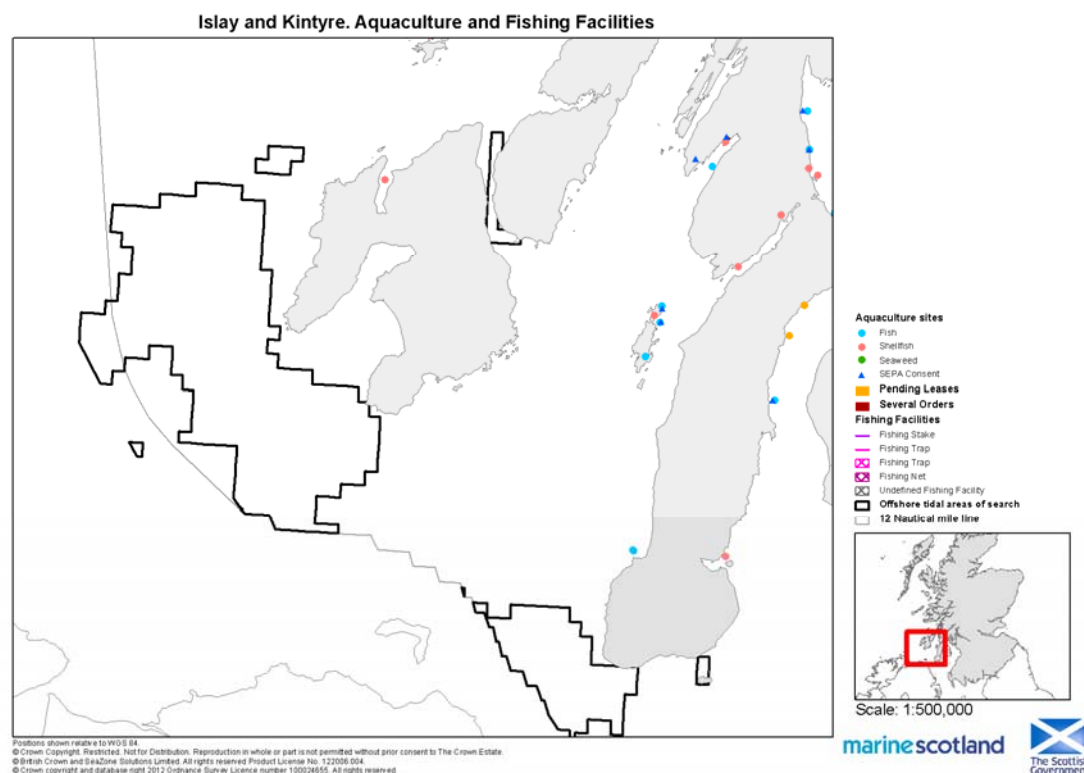


5.2.2 In 2010, there were 230 full-time and 39 part-time employees in the Marine Aquaculture industry in the West Region of Scotland.

Areas of Search

5.2.3 There are no aquaculture facilities within the areas of potential development. The surrounding area contains numerous finfish and shellfish aquaculture sites. In addition there are a number of potential applications for developments around the small isles (Rum and Eigg).

Fig.5.3 Aquaculture activities in South West Islay & Kintyre (Area of Search)



5.3 Aviation

5.3.1 Airports in this region include the major airports Glasgow and Glasgow Prestwick. In addition, there are minor airports at Campbeltown and on Coll, Colonsay, Tiree and Islay.

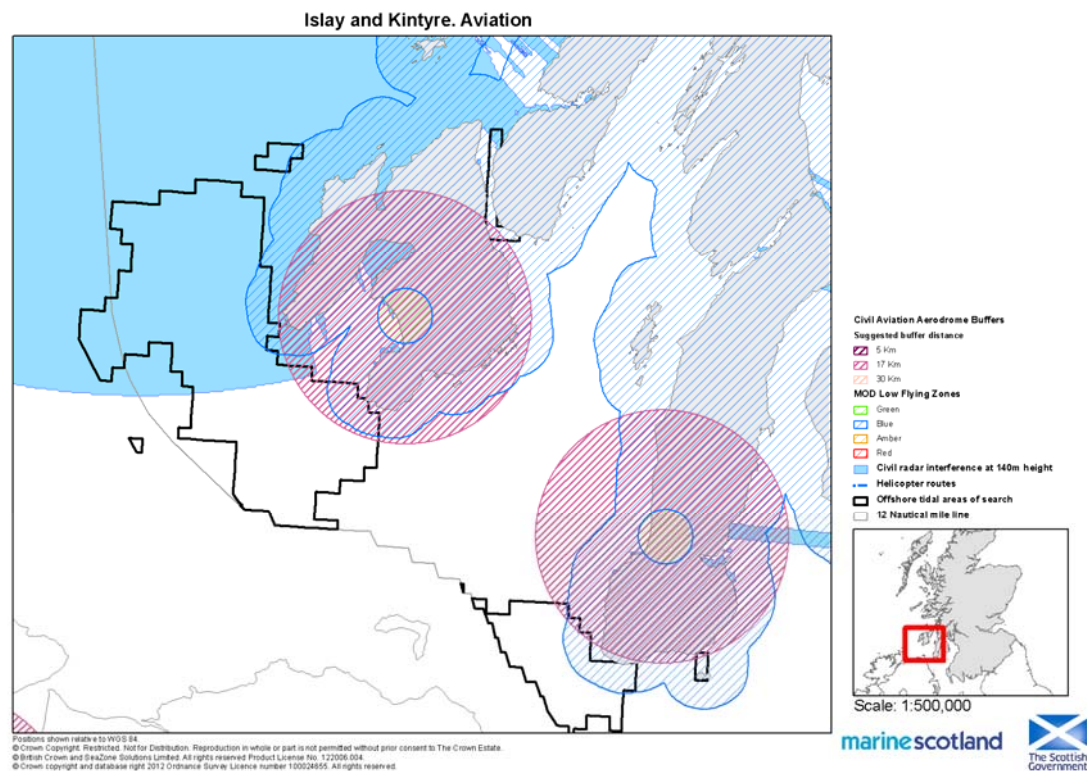
5.3.2 The principal airport on the West coast is Glasgow International that operates an extensive range of domestic flights as well as international flights to a wide range of European destinations with some long haul flights, in particular to the American Eastern seaboard and Caribbean (ABPmer, RPA and SQW, 2011). Glasgow Prestwick airport international traffic is limited to European destinations and is Scotland's most significant scheduled freight airport (Glasgow Prestwick Airport, 2008). The Highlands and Islands Airports Ltd. (HIAL) Campbeltown airport offers a twice daily scheduled service to Glasgow airport.

5.3.3 NATS provides air traffic control services to aircraft flying in UK airspace, and over the Eastern part of the North Atlantic from two locations, one of which is Prestwick in Ayrshire (SSE Renewables, 2010).

5.3.4 Tiree Airport is not serviced by on-site Air Traffic Control. The airspace above Tiree Airport is classified as 'uncontrolled airspace' (ScottishPower Renewables, 2010). The airspace around this airport is divided into airport avoidance surfaces with associated maximum height restrictions (Anderson, 2005 cited in ScottishPower Renewables, 2010). The NATS En Route (NERL) Tiree Radar Site is located on Ben Hynish. The site is used to

control the airspace in the East Atlantic (ScottishPower Renewables, 2010). Campbeltown does not have a civilian radar system (Anne Phillips, HIAL, pers.com. cited in ABPmer, RPA and SQW).

Fig.5.4 Aviation activities in South West Islay & Kintyre (Area of Search)



5.4 Bathymetry and Seabed

- 5.4.1 Depths around the areas of search in this section range from less than 10 m to over 130 m. The deepest part of this area of search is south west of the Kintyre peninsula where the depth can reach over 145 m in the western part of this area of search.
- 5.4.2 This search area and its components lies mostly on sandy gravel and gravelly sand according to the BGS data available in this region. This is echoed by the EUNIS classification which cites all the predicted habitats as coarse sediment either circalittoral or deep circalittoral in the south west of Kintyre parts of the area of search.
- 5.4.3 The sediment between west Islay and Jura is of the same type as the rest of the extents that make up this area of search coarse sediment like sandy gravel and gravelly sand.

Fig.5.5 South West Islay & Kintyre (Area of Search) Seabed Sediments

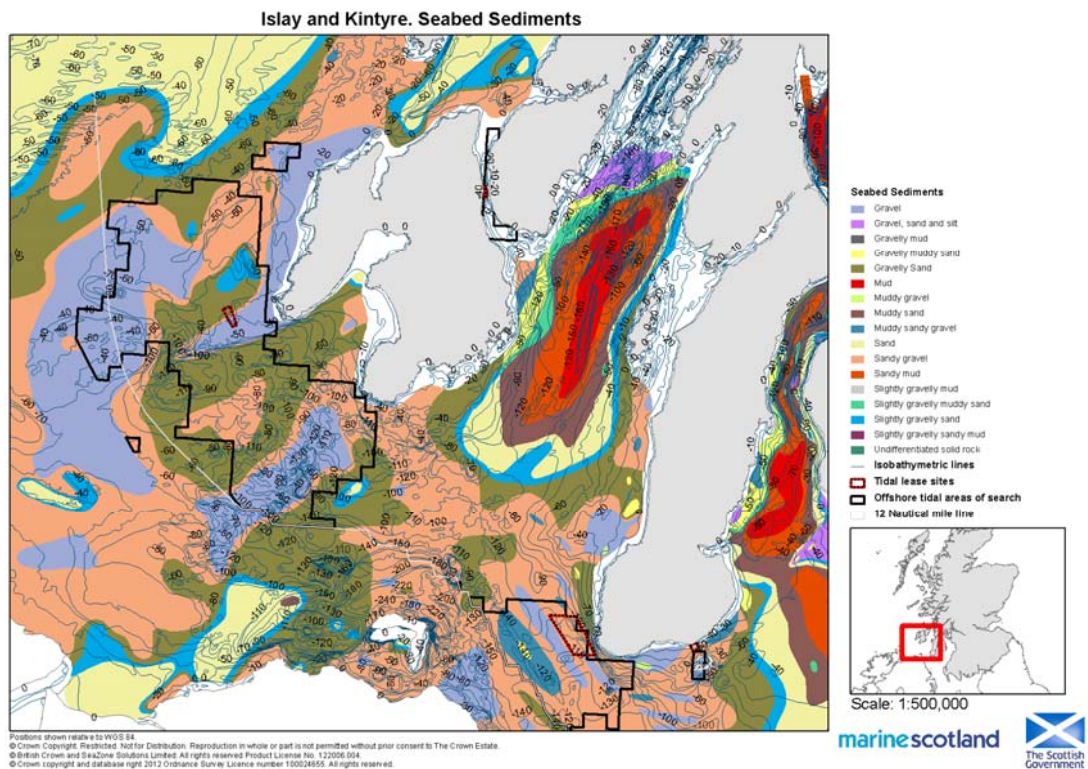
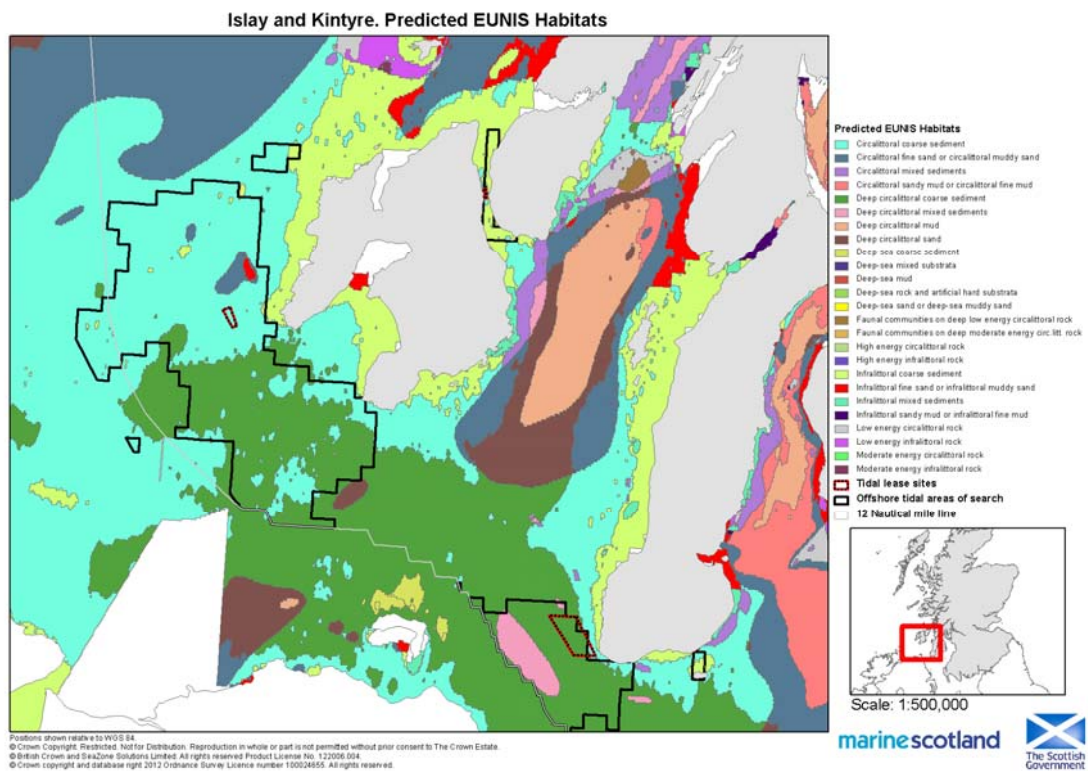


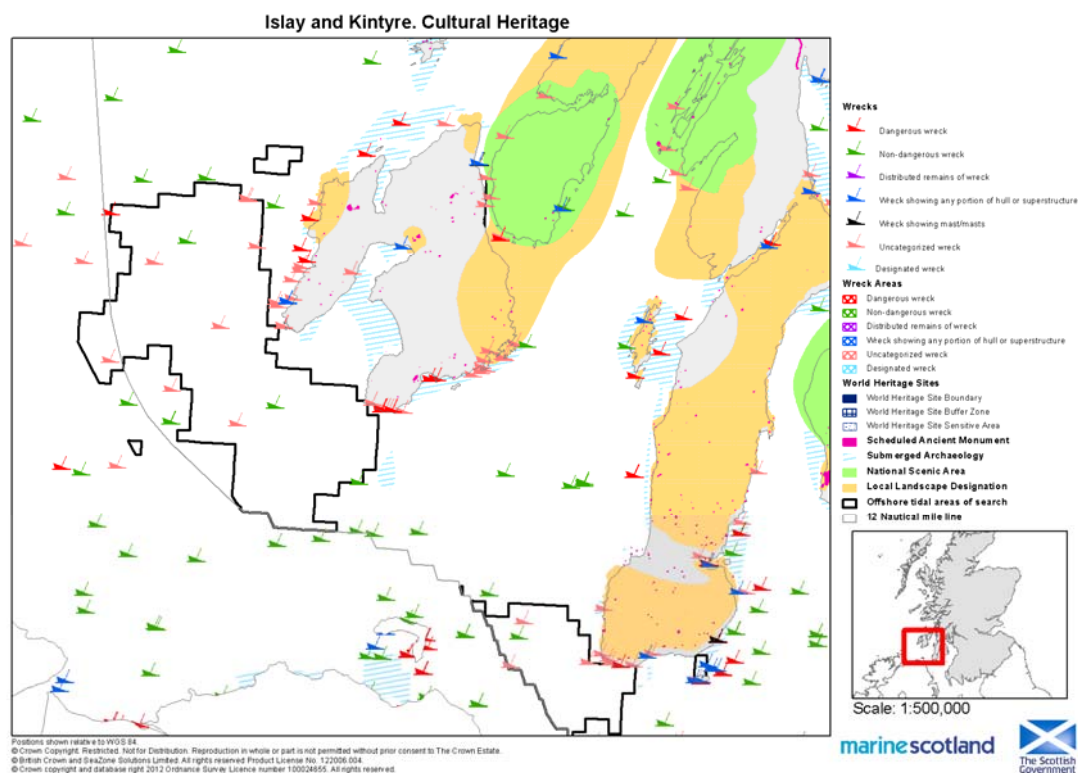
Fig.5.6 South West Islay & Kintyre (Area of Search) Seabed Seabed Predicted EUNIS Habitats



5.5 Cultural Heritage

- 5.5.1 The mapping (Figure.5.7) shows that the area is rich in wrecks and that extensive areas around the coast of the islands and mainland are likely to be rich in submerged archaeology.
- 5.5.2 To the south of Kintyre, Sanda Island, including St. Ninian's Chapel, a scheduled monument and Category B listed building lie within the area of search. The eastern end of the area of search may be of particular interest given that it lies close to the coast, where submerged archaeology is likely. Extensive archaeological investigation has also taken place along the southern coast of the Kintyre peninsula.
- 5.5.3 The areas south west of Islay is close to further coastal areas, where submerged archaeology is likely to exist. There are fewer wreck sites within the area of search, but significant clusters close to Islay's coast. There are further areas of interests south of the area of search where there are several wrecks and associated areas of archaeological interest. On Islay, there are numerous scheduled monuments and listed buildings on and close to the coast, including lighthouses (Port Ellen which is Category B listed), cairns, forts, chapels and the distinctive Islay distilleries and their associated buildings and piers, which are listed. Port Ellen and, further north, Portnahaven on Islay also include numerous buildings of historic interest.
- 5.5.4 The area that fills the gap between Islay and Jura has archaeological interest to its north and to its south but does not overlap with either extent. This area of search does overlap however, with a national scenic area and a local landscape designation, designated by the Islay, Jura and Colonsay Local Plan.

Fig.5.7 Key Cultural Heritage Assets in the South West Islay & Kintyre (Areas of Search)

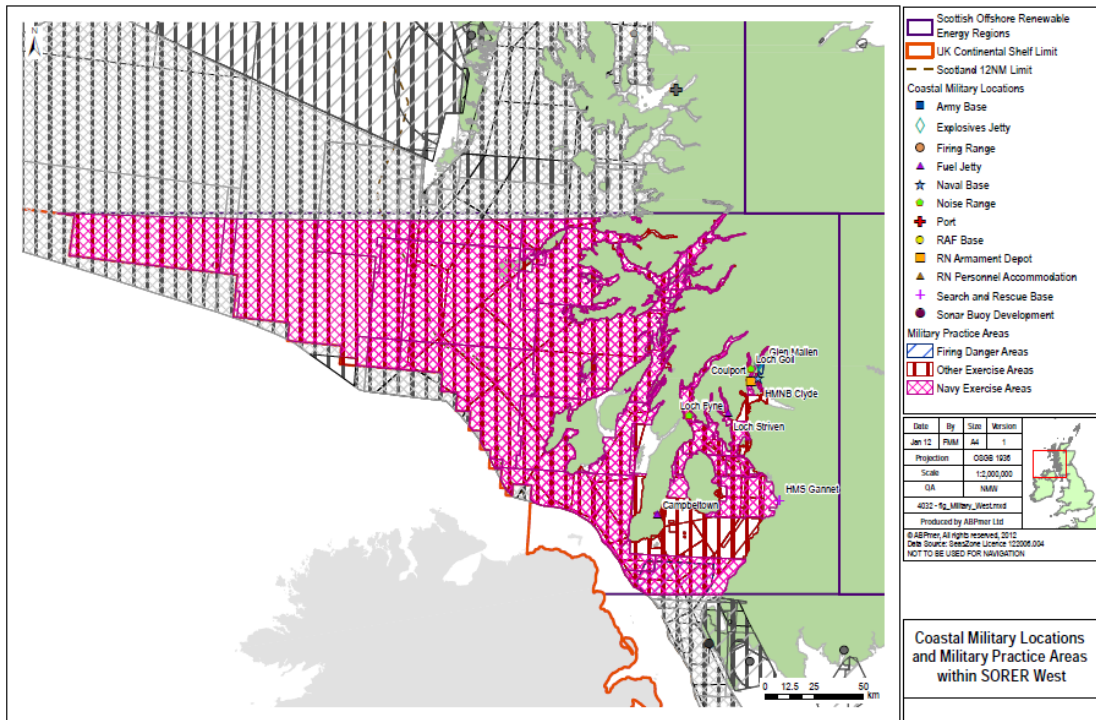


Defence

5.6.1 The coastal military locations which occur within this region are shown in Figure 5.8. Military interests in this region include:

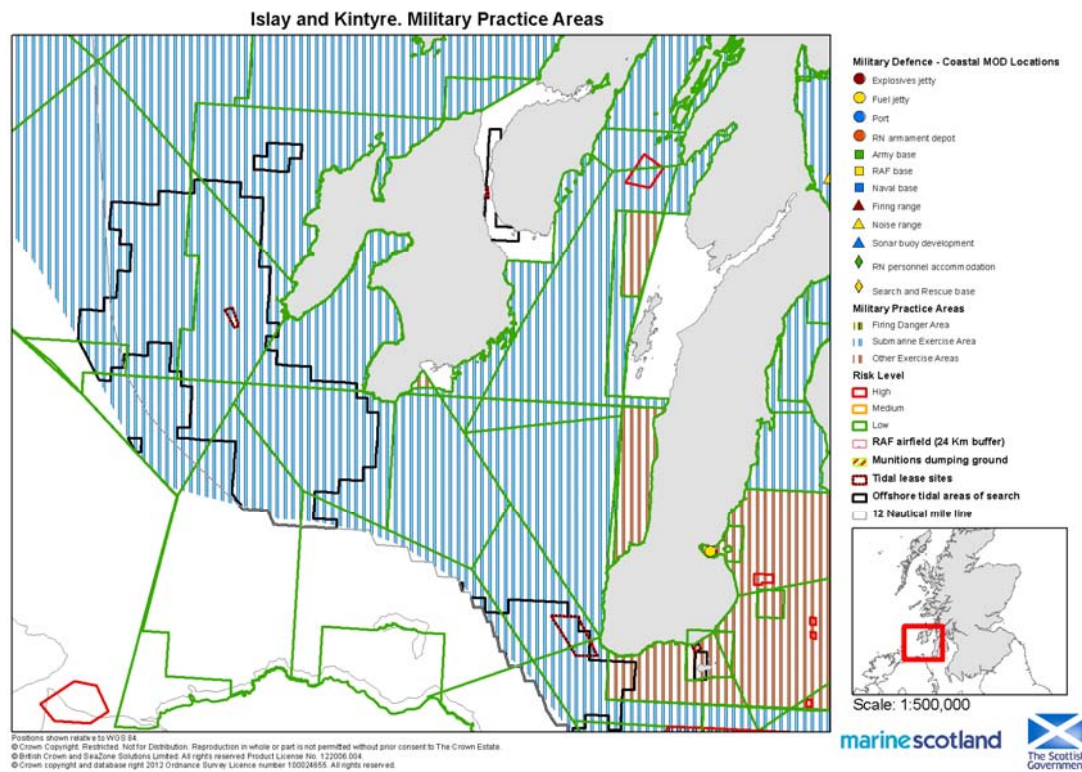
- HMNB Clyde located at Faslane;
- Loch Goil and Loch Fyne Noise Ranges, for measuring the radiated acoustic signatures of surface and subsurface vessels;
- Military fuel depots at Loch Striven (near Dunoon) and Campbeltown, which provide maritime fuelling facilities to visiting UK and NATO vessels;
- HMS Gannet, located at the North side of Glasgow Prestwick Airport which operates three Sea King helicopters in a Search and Rescue capacity. This is the only military air bases on the West coast (ABPmer, RPA and SQW, 2011); and
- A Royal Navy SXA, which covers most of the inshore and offshore waters within this SORER.

Fig.5.8 Defence activities in West Region



5.6.2 Figure.5.9 below show the known defence activities which take place within the current search areas for offshore wind energy in both.

Fig.5.9 Defence activities in the South West Islay & Kintyre (Areas of Search)



5.6.3 Baxter et al (2011) stated that out of the total MOD and Armed Forces personnel employed in Scotland in 2010, 25% were employed in Argyll and Bute. In addition, a further 1690 civilians (29% of the total employed in Scotland in 2010) were employed in Argyll and Bute and 1,049 civilians (18% of the total employed in Scotland) were employed in Glasgow (Baxter et al, 2011).

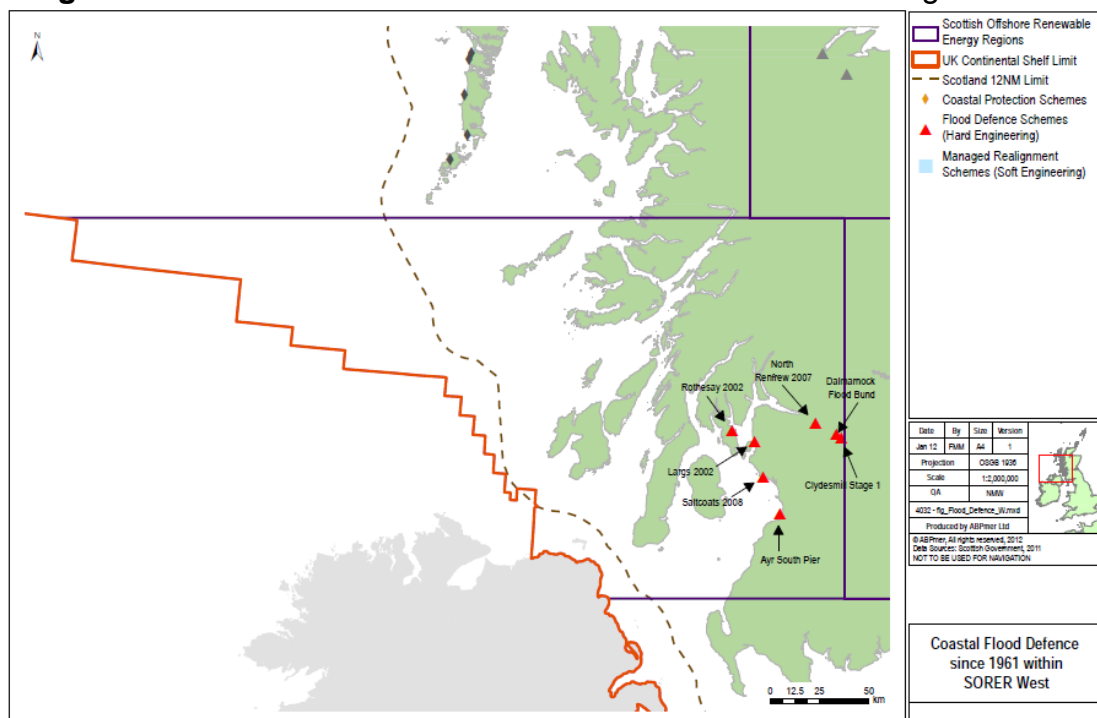
5.6.4 UKMMAS (2010) reported that HMNB Clyde, located at Falslane, is the largest single site employer in Scotland with a workforce of 6,500 drawn from the Royal Navy, MOD civilians, Babcock Naval Services (the MOD’s industrial partner at the base) and external contractors. It was also reported that a further 3,000 Scottish jobs are supported indirectly by HMNB Clyde and more than £250 million is spent in Scotland on wages and contracts awarded each year, directly to the base.

5.7 Environment

Coastal & Flood Protection

5.7.1 In this region there are seven hard engineered flood prevention schemes, located at Ayr, Saltcoats, Largs, Clydesmill, Dalmarnock, Rothesay and North Renfrew (Figure 5.10). All of these schemes were undertaken under the Flood Prevention (Scotland) Act 1961.

Fig.5.10 Coastal and Flood Defence Schemes in the West Region

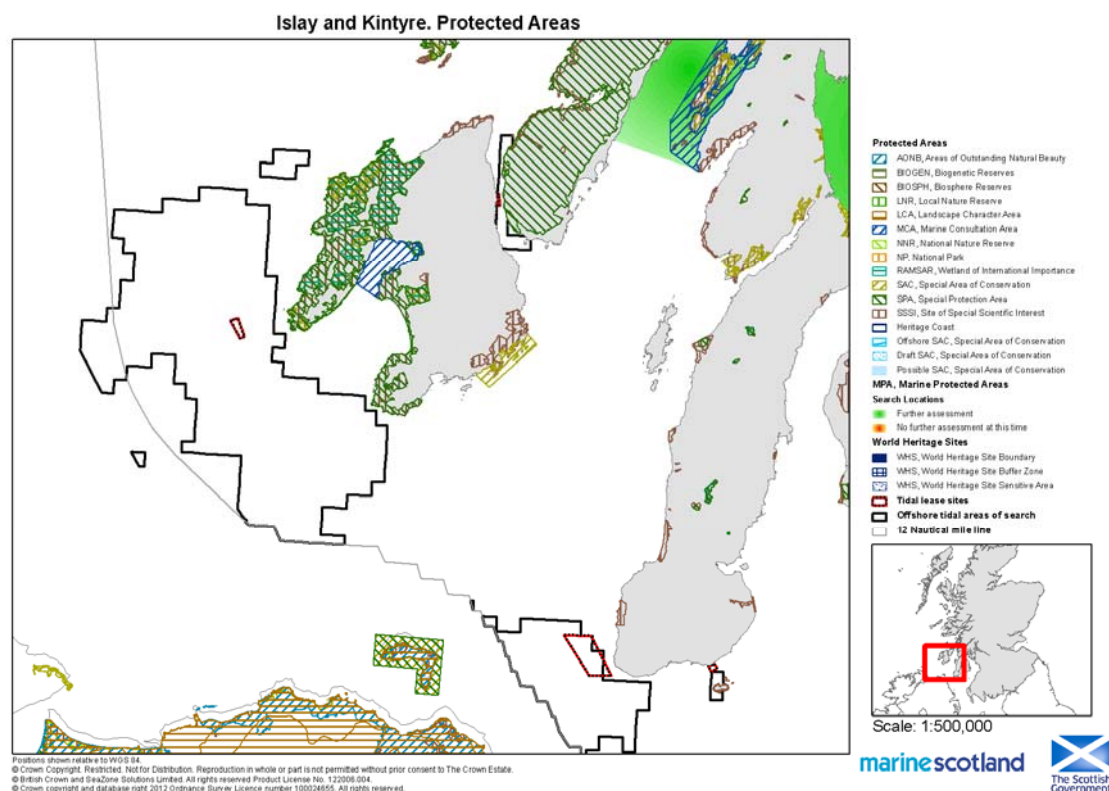


Designated Sites

5.7.2 This extensive region includes numerous designated sites:

- On the Ayrshire and Dumfries and Galloway Coast, key areas of interest include Loch Ryan, which is highlighted as a Marine Consultation Area, and some SSSIs designated along the coast.
- Ailsa Craig SPA and SSSI is recognised for its seabird assemblage. Of less direct relevance, to the north, the Arran Moors SPA and SSSI is protected for breeding Hen harrier.
- There are several SSSIs on or close to the Kintyre Coast including Sanda Islands which is protected for its bird interest. Sanda and Sheep Islands area also identified as particular significance for black guillemot, hence its inclusion within an MPA area of search (see below).
- The area of search to the south west of Islay, could interact with designations on the island, including the Oa SPA and SSSI (protected for Chough), and the Rinns of Islay SPA, SAC and SSSI (protected for a range of bird species and other features) although these sites are general dependent on land management activities, as opposed to offshore development. South East Islay Skerries SAC, protected for grey seal, may be of greater relevance.
- To the south of this area on the Northern Irish coast, Rathlin Island SAC is protected for its marine and coastal habitats, Red Bay SAC is an protected sea inlet, and the North Antrim Coast SAC is also a recognised coastal habitat.
- In terms of areas of search for MPA status, an area initially identified around Coll and Tiree has been replaced by an area extending from Skye to Mull, which is of interest for basking shark, and minke whale. In addition, the Clyde Sea Sill, extending from Kintyre to Loch Ryan, has been identified as a possible MPA, subject to further assessment, as a result of its value for black guillemot and persistent surface fronts.

Fig.5.11 Designated sites in the South West Islay & Kintyre (Areas of Search)



Landscape Designations – Regional Overview

5.7.3 There is one National Scenic Area, North Arran within Ayrshire which has a strong coastal relationship. Within Argyll and Bute there are a further four coastal NSA, however these are in some instances closely enclosed by the surrounding landforms, limiting views with the areas of search identified within scoping. Local landscape designations also extend over much of the coastal area of South Ayrshire, and the peninsulas of Argyll and Bute.

- Argyll and Bute

5.7.4 **Kyles of Bute** NSA includes the northern edge of Bute and the surrounding slopes above Loch Ruel, towards Tighnabruaich in the west and Colintrave in the east. There is a strong sense of *drama of the Kyles*, and the sea is the focus of the views. The enclosing hills are covered in *verdant woodland*, and the slopes are *punctuated by rocky outcrops*. In places, *small fields* and pastures lie at the edge of the shore *between water and woodland*. Where present, human habitation is limited to the narrow coastal strip and this provides a *juxtaposition of human settlement and the wider undeveloped landscape of sea and hills*. It is a *peaceful landscape of constant movement and ever-changing vistas*. The head of Loch Ruel is noted as an example of one of the best the *gradual transitions of landscape from land to sea*.)

- 5.7.5 **Knapdale** NSA reaches from Loch Caolisphort in the south to the surrounds of Crinan in the north. It is a landscape of *distinctive ridges and loch-filled trenches*. It is also a landscape dominated by *skylines* which form strong linear features within the landscape. *Atlantic oak woodland extends over the ridges and hollows* of the landscape and adds a wild and natural dimension to views which also harmonises the scenery. The hills and woodlands make it an *ever-changing landscape of colour, sound and smell*. The sense of place and history makes it a *profoundly evocative, ancient place*. The roads to the coast are narrow and winding, making it a *long, slow journey to the sea*, but the coastal experience is remote, isolated and secluded. Distinctive local landscape features include the *dramatic juxtaposition of ridges and volcanic plugs rising from the flat expanse of Moine Mhor bog* and the *centre of parallel ridges and secret lochans*. In the south there are *dramatic sea views* and the landscape is dominated by the presence of the sea. The basin of the *Crinan Canal* also is a special feature of the coastal landscape experience, contributing to the uniqueness of the landscape.
- 5.7.6 **Jura** NSA extends over the southern area of Jura to the enclosing slopes above Loch Tarbert. The special qualities¹ of the landscape include the *distinctive peaks of the Paps of Jura*, which tower over the surrounding landscape and make a distinctive landmark. *Human settlement exists on the margins of the vast, featureless moorland terrain*. The *coastal scenery is varied* from the bays, beaches and headlands of the east coast, the steep north coast and the isolated and *inaccessible Loch Tarbert*, the short south coast with forestry plantations and the uninhabited and inaccessible *west coast with raised beaches*, ancient caves and sea cliffs. The landscape has little human impact and is noted for its *large tracts of wild land*, and herds of *red deer* are often visible. Although *close* to the mainland, the challenges of access to the island makes it seem more *remote*.
- 5.7.7 **Scarba, Lunga and the Garvellachs** includes the group of islands which stand to the west of Luing. They are *uninhabited, remote, wild islands* with no permanent habitation. Together the islands create a *seascape of distinctive and contrasting island groups*. Although now isolated and remote, the islands have a long history of human occupation and provide *solitude, sanctuary, reflection and retreat*. There is also *exceptional marine life* within the seas surrounding the islands. Location specific qualities include the stretches of water with the *notorious Corryvreckan and the Grey Dogs* where tidal conditions and underwater geology create spectacular sea conditions. The *pyramidal island of Scarba* has a distinctive profile, and the summit offers panoramic views to the Argyll and Irish coasts. *Lunga has an irregular shape*, and is *surrounded by attendant islands and reefs*, and the *low lying slate island of Belnahua* has a distinctive low, flat profile. At the outer edge of the island group, the *sloping and rocky Garvellachs* have exposed steep cliffs.

¹ <http://www.snh.gov.uk/docs/B699722.pdf>

- 5.7.8 **Loch na Keal**, Isle of Mull NSA includes the surrounding slopes above of Loch na Keal, and the islands within the bay which include Ulva, Gometra, Staffa and the Treshnish Isles. The special qualities include the *highly distinctive seaways and shores* surrounding the sea loch, and the influence of the islands. The changing character of the landscape from the inner sea loch to outer isles provides *a voyage from enclosed sea loch to the open Atlantic*. The high terraced hills provide a *dramatic coast of basalt terraces and cliffs*, with their distinctive stepped profile. The sea loch contains *views of an island-studded seascape* which includes *islands and islet groups of astonishingly varied character*. It is *a vast natural world, dwarfing human settlement*, which is sparse within the landscape. The distinctive character of the islands provide location specific qualities which include the *world famous Staffa and Fingal's Cave, the horizontal Treshnish Isles and the recognisable Dutchman's Cap*.
- 5.7.9 **Lynn of Lorn** NSA includes the coastal edge of Benderloch and Appin, the island of Lismore and surrounding small isles. Special qualities of the landscape include the island of Lismore which provides *a long-inhabited, fertile landscape* which provides a *green oasis*. The landscape is *strongly orientated in a northeast-southwest pattern* and there is a strong contrast between the *small scale, low-lying landscape within a vast highland backdrop*. The *coastline has a great variety and diversity*. The area is *strategic in its location and has a rich history*, and the area is also an important *place of retreat and seclusion*. *Castle Stalker, is one of Scotland's iconic romantic images* and stands on an islet at the entrance to Loch Laich.
- 5.7.10 Significant areas of Argyll and Bute are covered by the local landscape designation Area of Panoramic Quality set out in the Argyll and Bute Local Plan². Areas of Panoramic Quality include the southern tip of Kintyre, areas of north Kintyre, areas of Cowal and Rothesay, the shores of Loch Fyne, large parts of Islay, north Jura, all of Bute (excluding NSA) and extensive parts of the surrounding peninsulas, north of Knapdale and the coast of Lorn and large areas of western Mull. Although these areas are marked on the proposals maps, they do not have any supporting information on their justification or key characteristics.
- *Inverclyde*
- 5.7.11 The West Renfrew Hills Scenic Area is identified within the Inverclyde Local Plan (Adopted 2006)³, and includes areas with coastal views.
- *North Ayrshire*
- 5.7.12 **North Arran** NSA includes the whole of the northern area of Arran with its dramatic upland landscape. The special qualities of Arran include a mountain presence that dominates the Firth of Clyde and its surrounds.

² Argyll and Bute Local Plan (Adopted 2009) <http://www.argyll-bute.gov.uk/planning-and-environment/local-plan>

³ Inverclyde Local Plan (Adopted 2006) <http://www.inverclyde.gov.uk/planning-and-the-environment/planning/development-plan/adopted-inverclyde-local-plan-2005>

There is a striking contrast between the wild highland interior and the populated coastal strip. It provides a historical landscape in miniature with different periods of historic land use layered within the landscape. The high mountains form a dramatic, compact mountain area, and the distinctive coastline has a rich variety of forms. North Arran is also one of the most important geological areas in Britain with a variety of rocks from different geological periods. The accessibility and scenery make it an exceptional area for outdoor recreation and also provides the experience of highland and island wildlife close at hand.

- 5.7.13 The North Ayrshire Local Development Plan identifies Special Landscape Areas which includes the NSA in **North and Central Arran and Clyde Muirshiel Regional Park**⁴.

- *South Ayrshire*

- 5.7.14 There are no NSAs in South Ayrshire, however extensive areas of South Ayrshire are designated as 'Scenic Area' within the Proposed Local Development Plan⁵. This includes the majority of the coast from the southern boundary with Dumfries and Galloway, to just south of Ayr.

Marine mammals, Basking Sharks & Seals

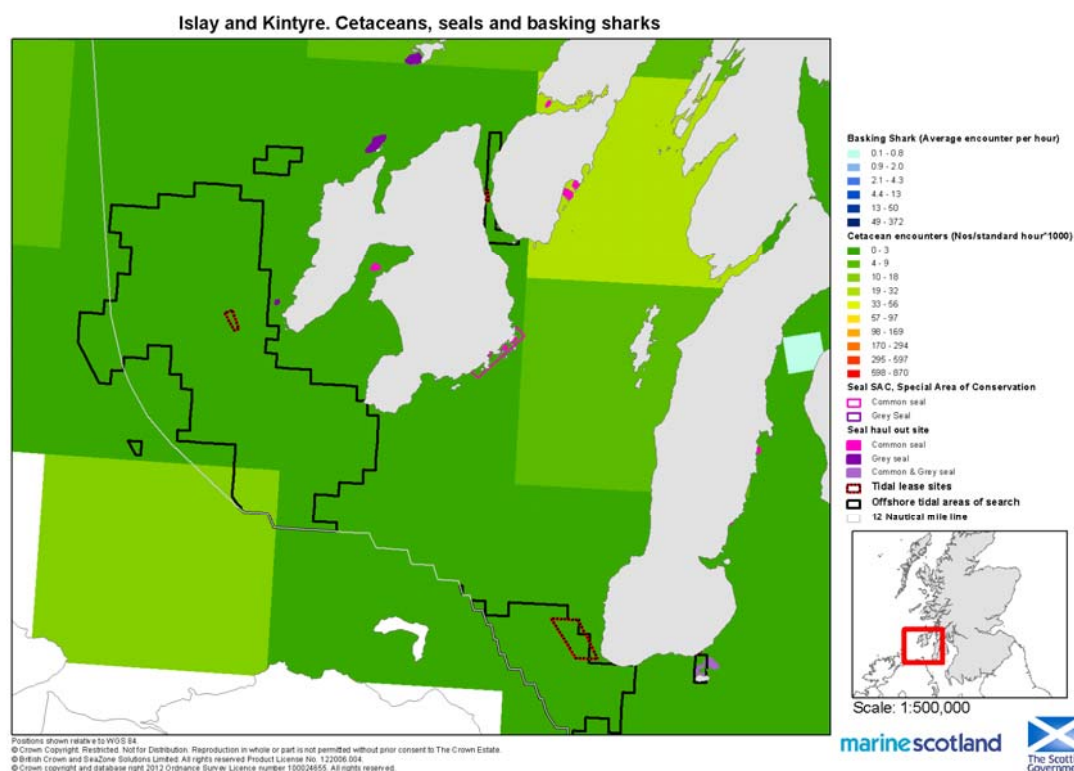
- 5.7.15 Cetacean species that occur in various levels of sighting abundance in and around these areas of search include harbour porpoise, minke whales, short beaked common dolphin, white beaked dolphin and orca. To a lesser extent, white sided dolphin and Risso's dolphin are also encountered (JNCC Cetacean Atlas,2003).
- 5.7.16 These tidal areas of serach lie south of the sea the area recognised as holding the most basking shark "hotspots" in Scotland. The highest density of basking sharks according to Speedie (2009) is in waters around Hyskeir, Canna and Coll, but even though there are none of these hotspots directly over the tidal areas of search there still are moderate to high numbers of enciounters recorded.
- 5.7.17 Other areas with high numbers of sightings per unit of observation effort includes the Clyde Sea which lies directly east of these areas of search increasing even more the opportunity of encounters within the tidal areas. Investigations are still required to clarify the nature of the interactions of basking sharks with renewable devices.
- 5.7.18 An SAC has been put at the south-east of Islay Skerries where common seals use the rugged coastline to haul-out, pup and moult, (JNCC).

⁴ North Ayrshire Proposed Local Development Plan Part 2 Detailed Plan Policies 2011 <http://www.north-ayrshire.gov.uk/Documents/CorporateServices/LegalProtective/LocalDevelopmentPlan/LDPPart2.pdf>

⁵ South Ayrshire Proposed Local Development Plan 2012 <http://www.south-ayrshire.gov.uk/documents/proposed%20ldp%20document2.pdf>

5.7.19 Seal haul-out sites have been identified in many locations around areas. In Oronsay, Jura and Islay there are collectively seven haul-out sites the three easternmost ones are for grey seals, the remainders for common seals. Further south there is a mixed haul-out site (common and grey seals) within the parts of the area of search south of the Kintyre peninsula. Three common seal sites can also be found on the east coast of the Kintyre peninsula and one on the southern tip of Arran.

Fig.5.12 Cetaceans, Seals and Basking Sharks in South West Islay & Kintyre (Area of Search)



Seabirds

5.7.20 Six SPAs have been established within close proximity of the tidal area of search in the west sector.

- North of Islay two SPAs have been designated, one at North Colonsay and the Western cliffs important for breeding seabirds, including gulls and auks. These feed outside the SPA in surrounding waters as well as further away. Chough is also a resident species, breeding on cliff areas and foraging widely. They depend on the diverse mix of habitats present within the site and their continued low-intensity agricultural management.
- Another SPA at Oronsay and South Colonsay has been established to protect chough and cornkrake populations.
- North east of the island of Islay between the westernmost part of the tidal area of search and the one between Islay and Jura, three more SPAs exist at Gruinart Flats, Bridgend Flats and at Laggan, these are

designated to protect passing populations of barnacle goose and Greenland white fronted goose.

- South of the Kintyre peninsula, another SPA protects nesting sites for a range of seabird species, notably one of the largest colonies of gannet in the world. Also lesser black backed gull, guillemot, kittiwake herring gull are some of the 65,000 seabirds that this site supports during breeding season.

- 5.7.21 The proportional seabird at sea densities, of diving species show moderate abundance within and in the vicinity of these areas of search. During the breeding season, the area south east of the Kintyre peninsula shows higher proportional densities due the presence razorbills, gannets and common guillemots amongst others. In the winter these diving seabirds can be seen in higher proportions closer to shore.
- 5.7.22 There are many IBAs around the areas of search in this the west region according to information available from RSPB.
- 5.7.23 The Colonsay and Oronsay IBA north of Islay hosts 11,000 pairs of breeding seabirds on a regular basis, and is also nationally important for breeding common guillemot (9050 pairs) and black legged kittiwake (5,650 pairs). Rarer species like the corncrake have also been recorded.
- 5.7.24 The IBA on the west of Islay supports breeding raptors and waders, and wintering geese which come from roosts in other Islay IBAs to feed in this area.
- 5.7.25 More IBAs have been established at Gigha Island, Machrihanish, the Arran Moors and Loch Ryan north of the Stranraer.
- 5.7.26 RSPB reserves can be found at Coll, Tiree, Oronsay, The Oa on the south of Islay, and Ailsa Craig.

Fig.5.13 Seabirds, Important Bird Areas and RSPB Reserves (Winter) in South West Islay & Kintyre (Area of Search)

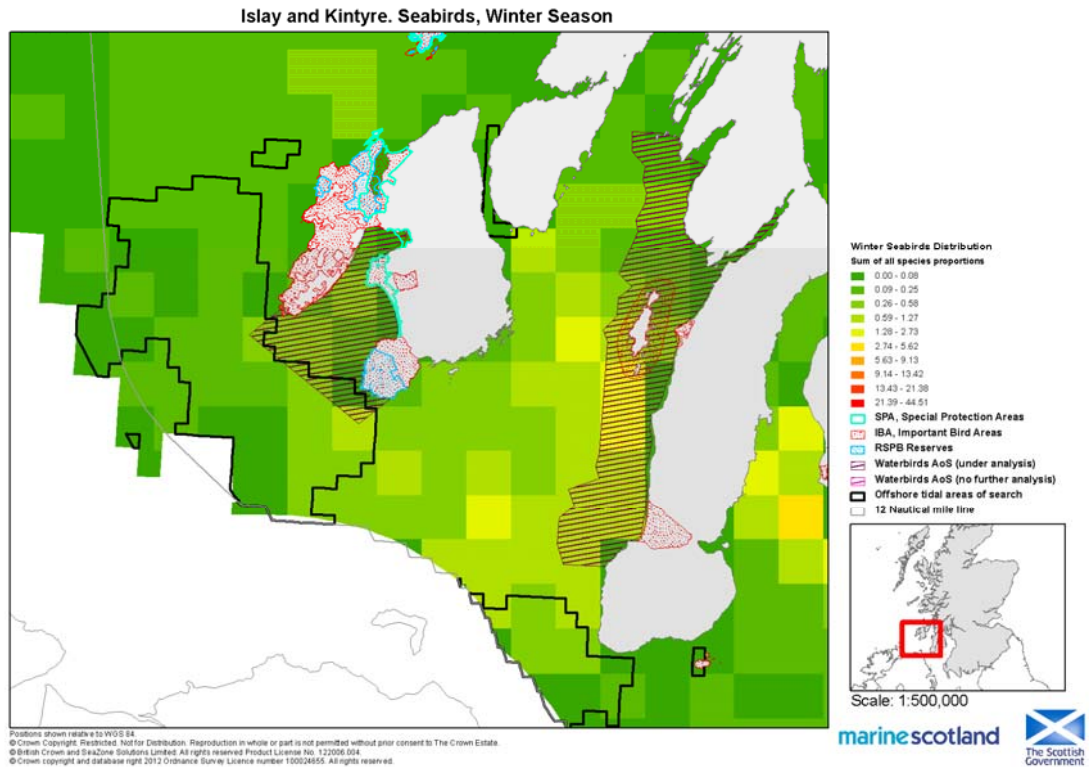
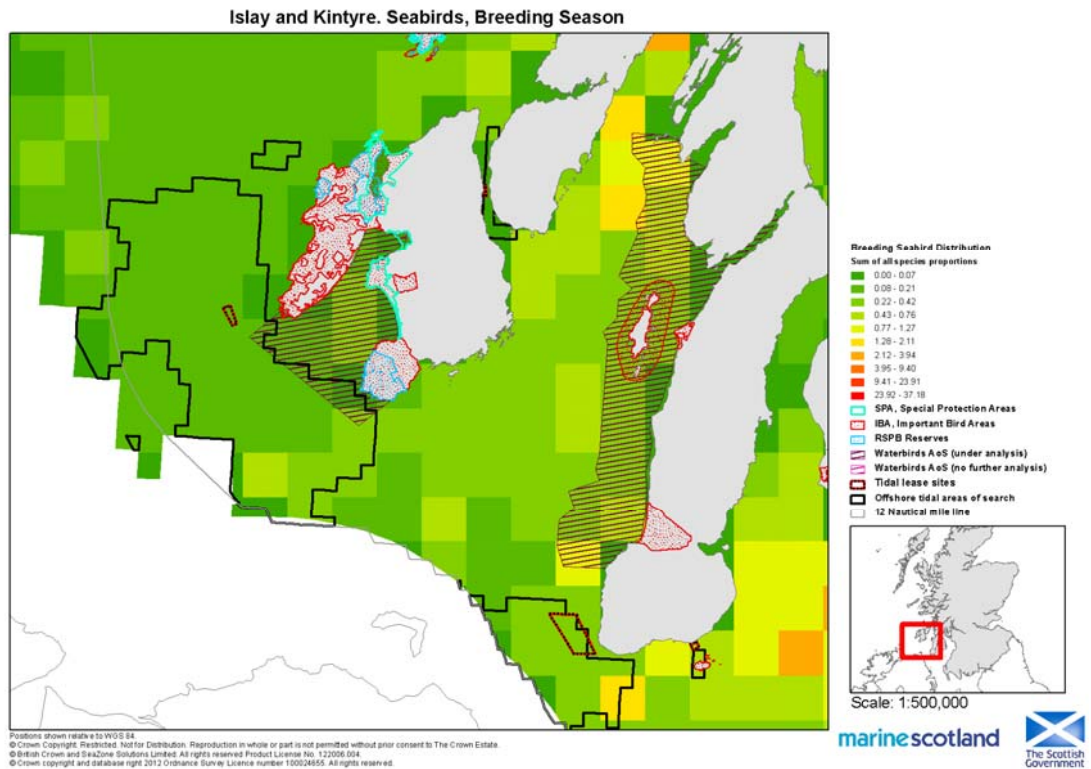


Fig.5.14 Seabirds, Important Bird Areas and RSPB Reserves (Breeding) in South West Islay & Kintyre (Area of Search)



5.8 Fishing

Commercial Fisheries Regional Overview

- 5.8.1 Landings caught by UK vessels within the West SORER had an average annual value of £44.2 million (11.6% of the Scottish total) and an average annual live weight of 44,100 tonnes (10.3% of the Scottish total) for the ten year period from 2001 to 2010.
- 5.8.2 The majority of the value and volume of landings from within the whole of the West SORER are shellfish, however, this differs markedly between inshore waters (within 12 nm from the coast) and offshore waters (greater than 12 nm from the coast). Nephrops accounted for 60% of the total catch value from inshore waters in 2010 whilst scallops and 'other shellfish' each accounted for 18% of the total catch value. Offshore, landings of mackerel accounted for 59% of the total catch value, 22% were whitefish and 13% were shellfish.
- 5.8.3 In 2010, nearly half the value of landings from inshore waters was taken by vessels 15m and over in length, whilst 25% was landed by vessels over 10m and under 15m and 27% was landed by vessels 10m and under. Offshore, 86% of the total value was taken by vessels 15m and over in length.
- 5.8.4 For inshore waters, 46% of the total catch value was caught by Nephrops trawl, 30% was caught by pots and 17% by dredges; whereas for offshore waters, 65% was caught by pelagic trawls and 13% by demersal trawls.
- 5.8.5 There are 524 fishermen employed on Scottish based vessels in the Campbeltown and Oban areas and a further 559 in Ayr. 990 of these are employed full-time and 93 are part-time. Approximately 17% of the Scottish total of employment in the catching sector is in the West SORER (Marine Scotland, 2011d). For much of this region, direct employment in the fishing sector accounts for between 2% and 5% of total employment (Baxter et al., 2011).

Area of Search Interactions

- 5.8.6 The collective area formed by the tidal search areas in this sector could present interactions to varying degrees with the scallop, mobile whitefish, mobile nephrops and to a lesser degree pelagic fisheries.
- 5.8.7 Mobile nephrops fishing is prevalent all down this part of the west coast with an especially high concentration of activity around the Clyde.
- 5.8.8 Whitefish vessels work in these area but the subsequent value that overlaps with the areas of search is low compared to other fisheries.
- 5.8.9 Scallop fisheries interacts the most in the region of these areas of search.

- 5.8.10 Demersal (whitefish) fishing only overlaps with the tidal area of search at the Kintyre peninsula.
- 5.8.11 For the mobile nephrops fishery the area of search that overlaps the most is that at Kintyre.
- 5.8.12 The data available at the time for inshore fishing activity done by vessels less than 15 m in length shows that for both mobile and static fishing the relative value is higher at the 6 NM band directly west of Islay that runs through the tidal area of search at that location. Values are of course relatively high for both mobile and static gear inshore vessels within the Clyde due to the nephrops fishery. It is not presumed that these tidal areas of search will greatly interact with vessels that prosecute this fishery.

Fig.5.15 Fishing Intensity in the South West Islay & Kintyre (Area of Search) (Scallop Dredge, Demersal – Mobile Gear, and Nephrops – Mobile Gear)

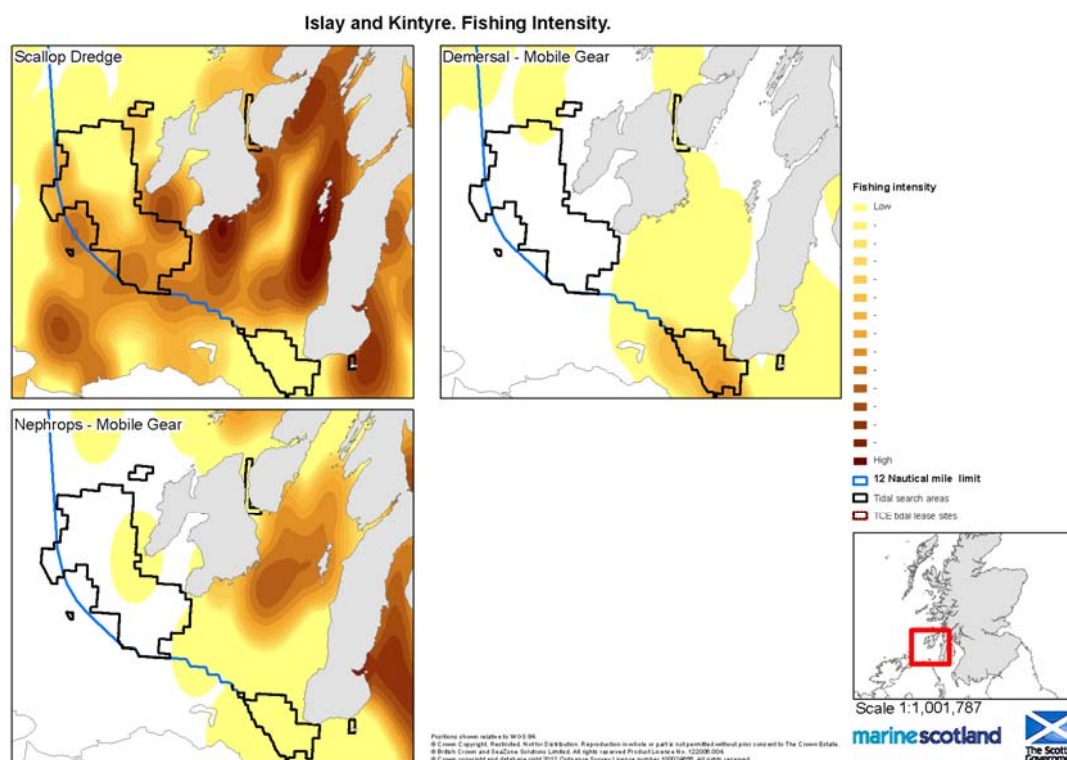


Fig.5.16 Fishing Intensity in the South West Islay & Kintyre (Area of Search) (Pelagic, Demersal – Static Gear, Nephrops - Creels)

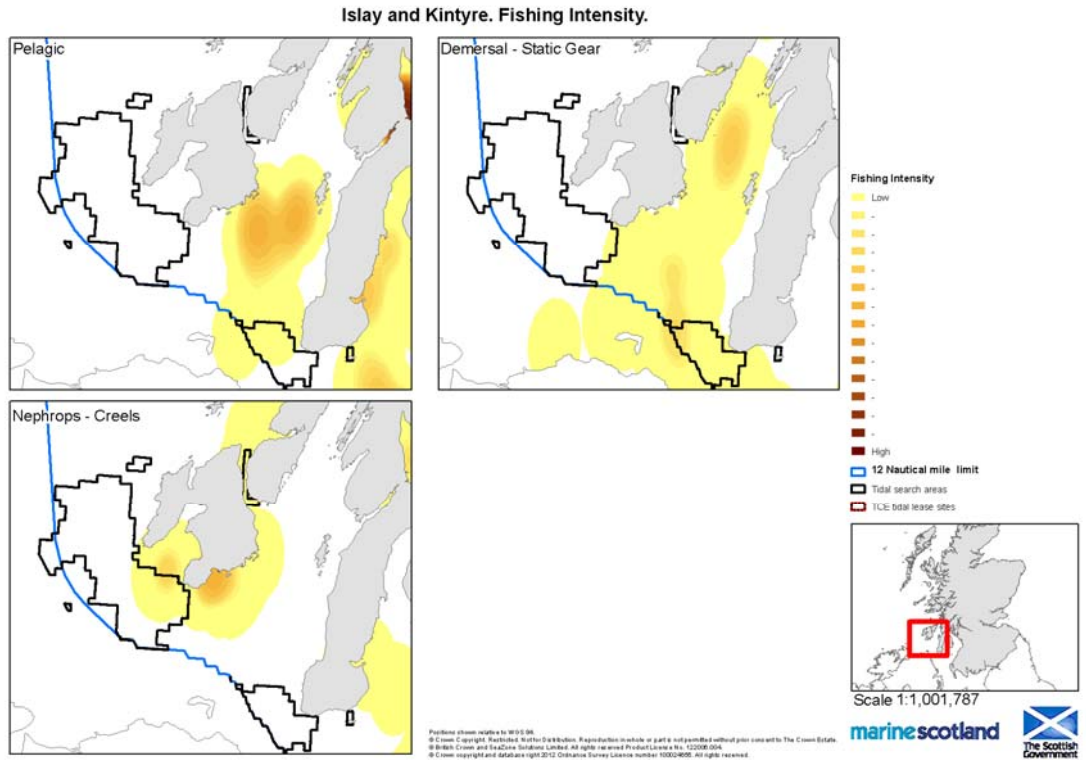


Fig.5.17 Fishing Intensity in the South West Islay & Kintyre (Area of Search) (Brown Crab – Creels, Lobster – Creels, Squid)

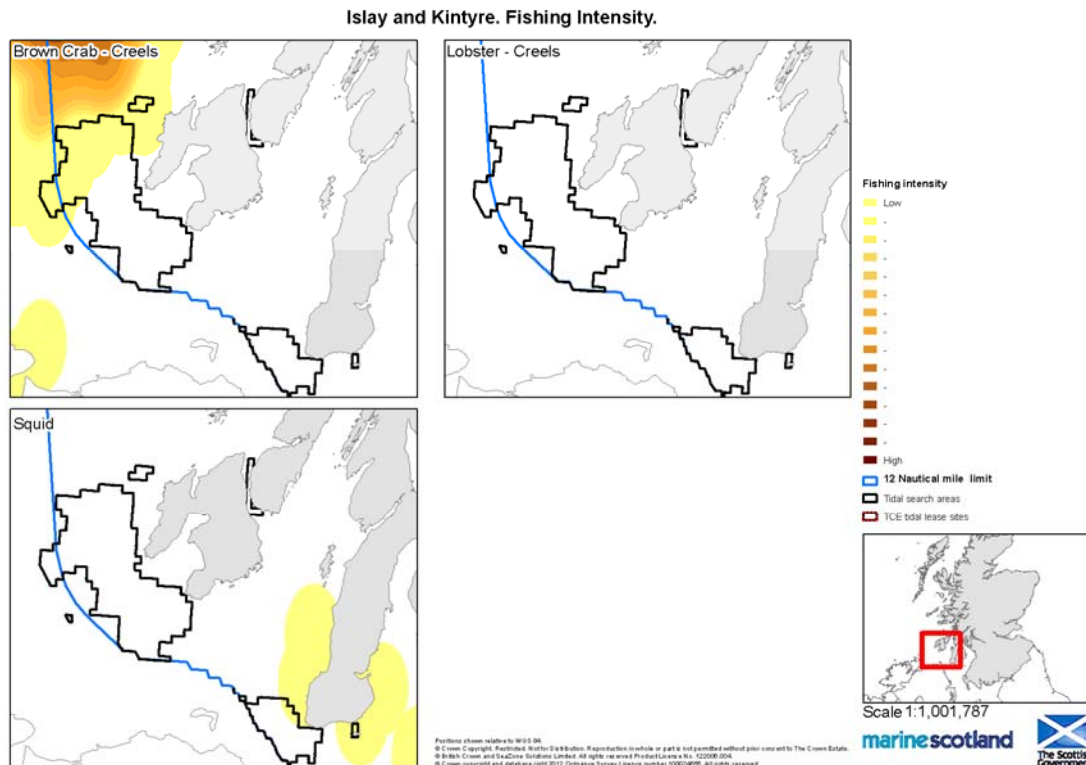


Fig.5.18 Inshore Fisheries in the South West Islay & Kintyre (Area of Search) (Mobile Gears)

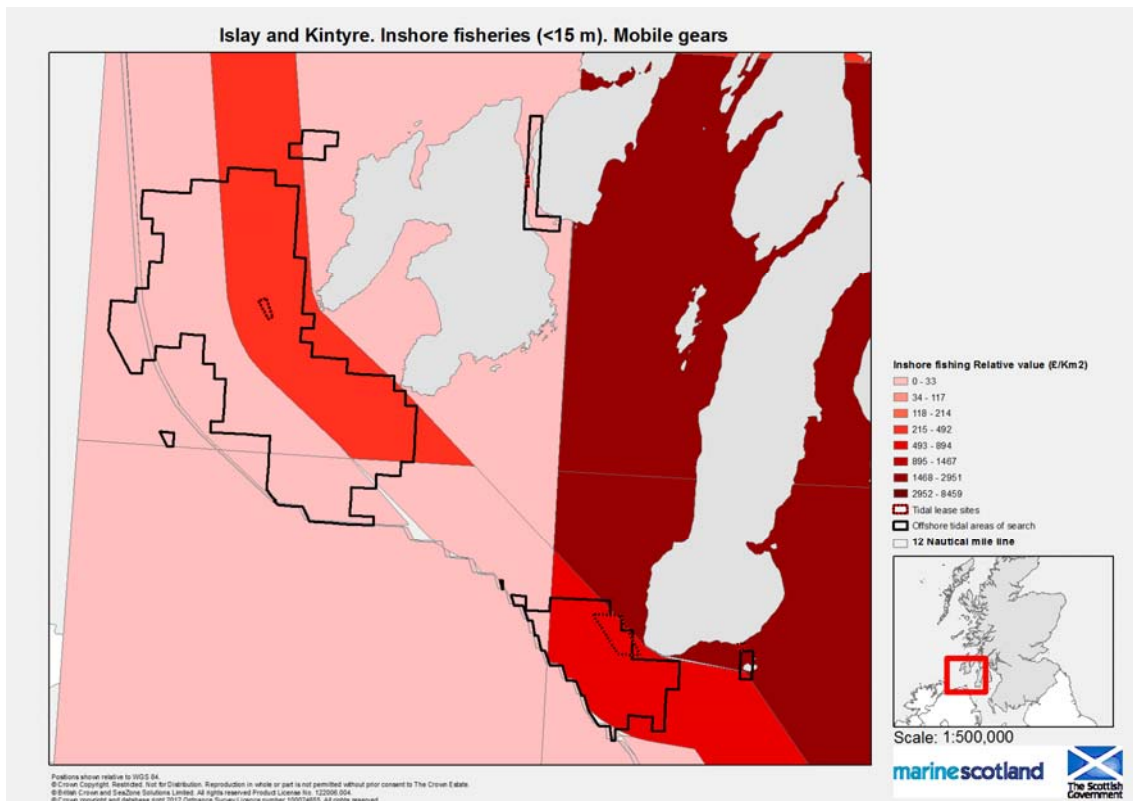
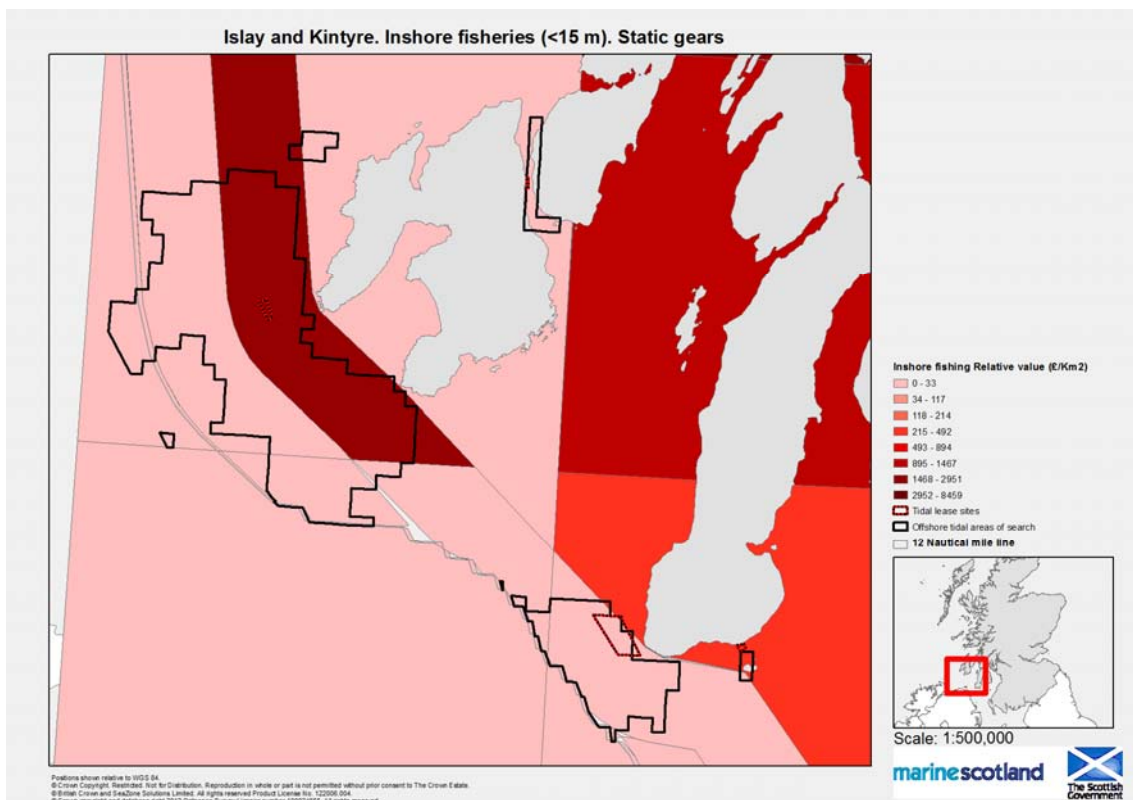


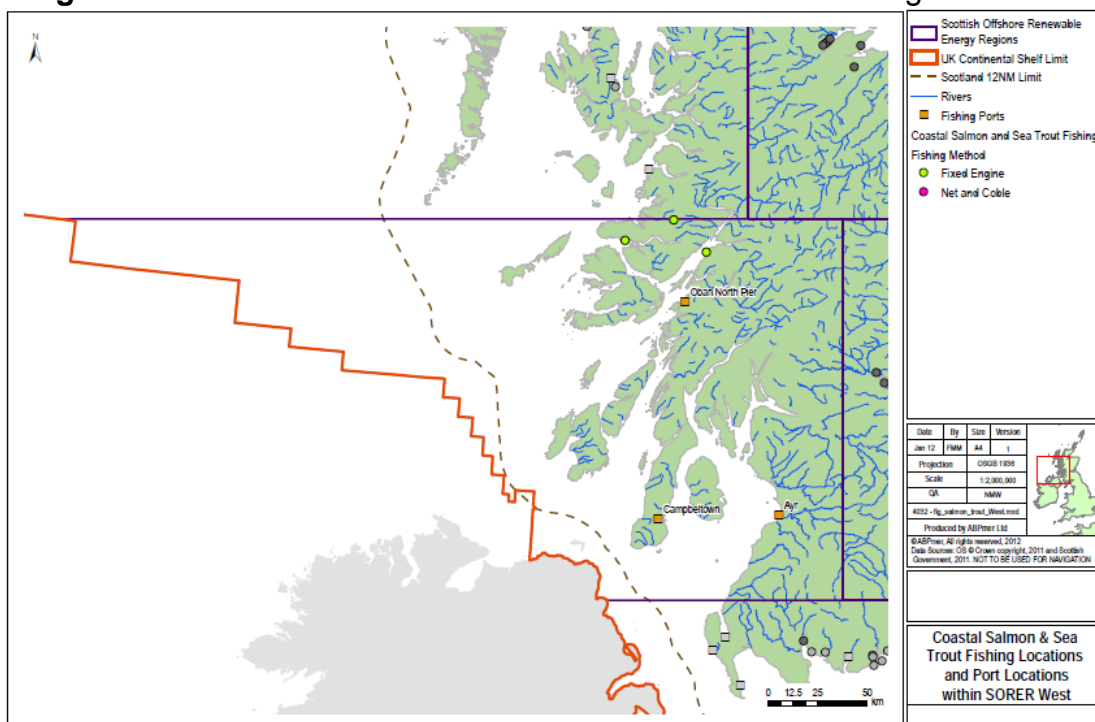
Fig.5.19 Inshore Fisheries in the South West Islay & Kintyre (Area of Search) (Static Gears)



Wild Salmon & Sea Trout

- 5.8.14 There are three fixed engine netting sites in the North of the West SORER, but no net and coble sites (see Figure 5.20).
- 5.8.15 The main rod and line fishing rivers in this region are the Stinchar (salmon), Girvan, Doon (salmon), Ayr (salmon), Irvine, Clyde, Eachaig (sea trout), Add, Fyne, Awe (salmon), Orchy (salmon) and Aline. (Gray J., 2009).

Fig.5.20 Wild Salmon & Sea Trout activities in the West Region

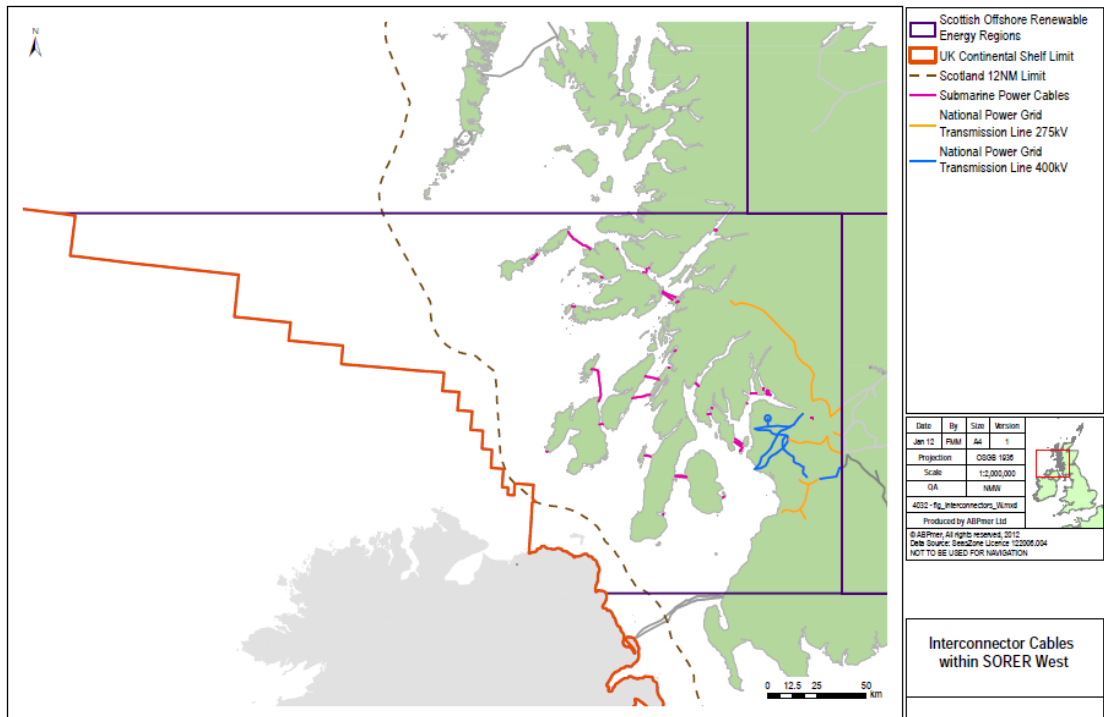


5.9 Infrastructure & Grid Provision

Existing

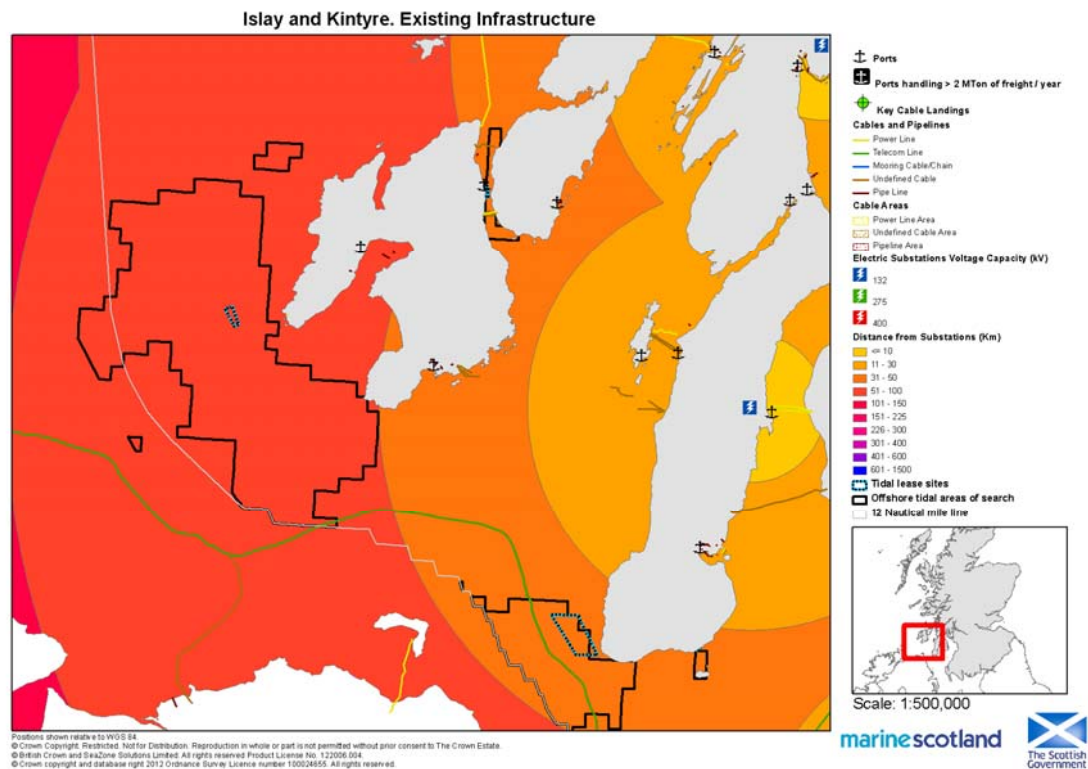
- 5.9.1 Hunterston B nuclear power station is located within this region, south of Largs in Ayrshire. The power station started generating in 1976, and is expected to be decommissioned in 2016. It has a net electrical output of 890MW. Also within the region is Cruachan pumped storage power station.
- 5.9.2 Numerous domestic subsea power cables exist within inshore waters in this region, connecting areas of the mainland on the West coast and connecting the mainland to islands off the West coast. See Fig.5.21

Fig.5.21 Interconnector cables in the West Region



5.9.3 Fig 5.22 below provides an indication of the existing infrastructure for power connectivity within the South West Islay & Kintyre (Area of Search).

Fig.5.22 Existing Infrastructure in the South West Islay & Kintyre (Area of Search)



5.9.4 Employment in the electricity sector in the West Region can be estimated through looking at statistics from the ONS (2011) Business Register and Employment Survey. Figures for 2009 and 2010 for full and part time work under several relevant codes are given in Table 94. Electrical installation has the greatest number of jobs out of the categories considered, whilst construction of utility projects for electricity and telecommunications has the least. It is likely that there are more jobs in the wider energy generation sector, for example, in relation to surveying, manufacture of components, etc. However, these codes are not included here to avoid overestimation of employment. Since both offshore wind and tidal generation are proposed, it is probable that this region will continue to see people employed in a range of roles in the energy sector. Indeed, employment may even increase.

Future

5.9.5 The potential infrastructure and grid provision activities within the North West Region are:

- Possible link to ISLES project
- Connect to SPT link – Western HVDC Hunterston to North Wales
- Connect via Kintyre to Hunterston

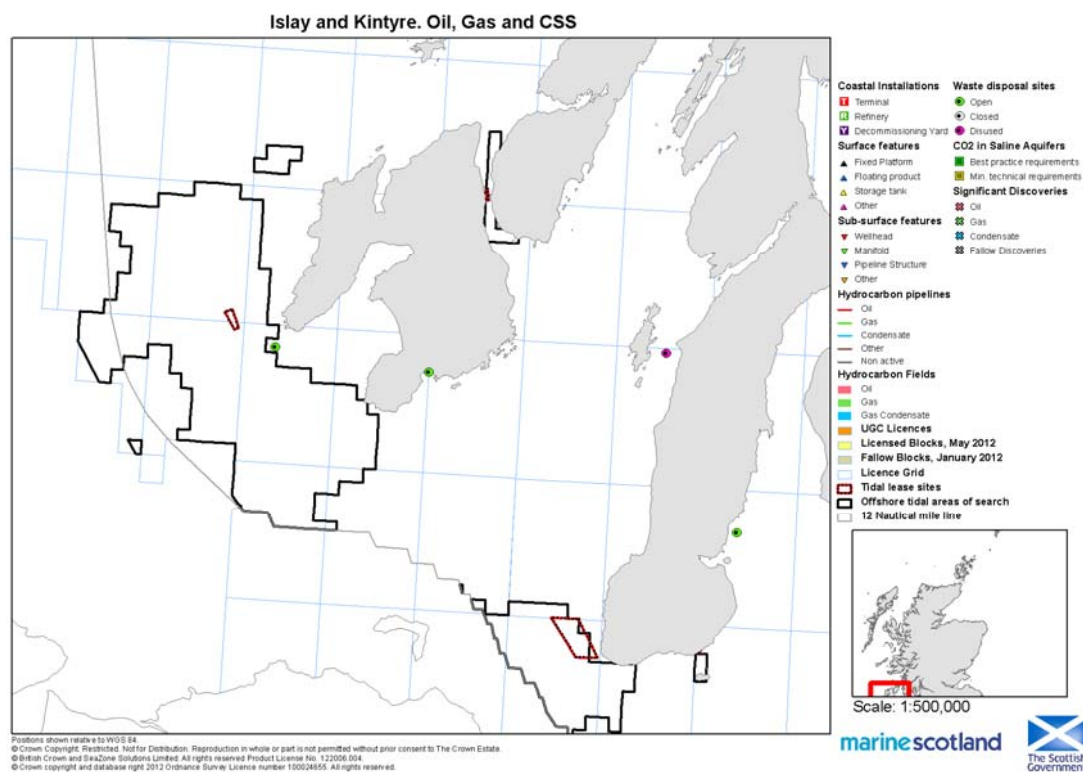
Table.5.1 Current Stage of Planning for potential Infrastructure projects (West region)

ISLES Project	See previous
SPT link Hunterston to North Wales	See previous
Kintyre to Hunterston	<p>Assessed as a candidate national development in NPF2 and covered in principle in SEA. Included in ENSG but not subjected to environmental assessment Referred to in EGPS but not subjected to SEA.</p> <p>The project has been subject to a full environmental assessment which explored potential route corridor options. The preferred route is an overhead transmission line rebuild between Carradale substation and Cour Bay and a sub-sea cable route from Cour Bay to Portencross (Ayrshire), with an underground cable route from Portencross to Hunterston substation.</p>

5.10 Oil & Gas

5.10.1 There are no oil and gas related activities currently taking place within this Region.

Fig.5.23 Oil and Gas activities in the South West Islay & Kintyre (Area of Search)



5.11 Planning Issues

The following sections contain the key issues applicable to tidal energy arising from the request for information in relation the the Offshore Wind Scoping Areas of Search (Marine Scotland, January 2012).

Ayrshire

5.11.1 In relation to offshore renewable energy, the **Ayrshire Joint Planning Unit** highlighted coastal ports, including Hunterston which is safeguarded as a major transshipment hub in the second National Planning Framework. Local ports at Ayr, Troon and Ardrossan are also major national and international and exit points to the transport network and thus important to the wider regional economy. Approaches to these ports should be safeguarded. The Joint Planning Unit therefore stated that future growth in coastal traffic should be recognised and scoped into the guidance.

5.11.2 In addition to natural heritage designations outlined above, the response also highlighted the importance of the historic environment in defining sense of place and distinctiveness. It therefore felt that the historic environment

should be taken into account within the development of the RLG, including consideration of nationally significant designed landscapes around Culzean and Brodick. Cultural heritage issues have also been considered further under the relevant section above.

- 5.11.3 The response noted that tourism makes a significant contribution to the economy of Ayrshire and has significant potential for growth particularly sailing and golf, and planning therefore safeguards key assets from inappropriate development. In Ayrshire this includes internationally recognised golf courses, major sailing and recreational locations, designated sensitive landscapes, and isolated and undeveloped coastal shorelines and local communities sensitive to change. Key resources identified were: golf courses at Troon, Prestwick and Turnberry, Clyde Muirshiel Regional Park, regionally significant coastal sensitive landscape areas identified within the development plan and national Scottish Trail Routes (Arran and Ayrshire Coastal Trails).
- 5.11.4 Finally, the Joint Unit highlighted the need to avoid interference with electronic communication media, including television, radio and micro wave links.
- 5.11.5 Providing a more local perspective, **North Ayrshire Council** provided references to a range of relevant policies within the North Ayrshire, and Isle of Arran Local Plans. It also outlined the importance of strategic level Supplementary Planning Guidance produced by the joint structure planning unit (2009) and proposed LDP policies (April 2011). Key policies relate to development proposals at Hunterston, including recognition within the National Renewables Infrastructure Plan, as a location for improved grid connections, as a test site for wind, and development of a multifuel power station (to be determined by Scottish Ministers following refusal by the Council). The latter development will include a sub-sea CO₂ pipeline. The response also reflected issues raised by the Joint Planning Unit relating to radar constraints, recreational interests (sailing) and fishing interests and noted that these are relevant to west coast areas identified in the scoping study. It also emphasised the need to take into account environmental and heritage protection policies, acknowledging that these should be increasingly taken into account as the areas are refined.

Renfrewshire

- 5.11.6 Renfrewshire Council also responded to the consultation, noting its links to the coast via the Rivers Cart and Clyde. It emphasised the opportunities for economic development in key locations to support the renewables sector and secure associated investment.

Argyll and Bute

- 5.11.7 The Argyll and Bute Proposed LDP is currently being prepared. The Main Issues Report has been subjected to public consultation.

5.11.8 The MIR notes the significant potential for offshore wind farms, tidal and wave energy. The Council is of the view that it is well placed to take advantage of these resources, and that it has been involved in taking forward wave and tidal opportunities with Scottish Power Renewables. Reference is made to the areas for offshore wind development identified by the Crown Estate at Islay and Tiree and the Council highlights associated opportunities for manufacturing, maintenance, operations, research and supply side services. As a result, it anticipates a supportive framework to realise these opportunities within the Proposed Plan. ‘Spheres of Influence’ and Key Ports are identified for future investment opportunities arising from these developments. The LDP is expected to play a role in safeguarding land for development and identifying community land and infrastructure improvements. Campbeltown / Machrihanish is a national priority for investment, and work in partnership with the Crown Estate will be taken forward on Tiree with the community to develop a masterplan that may be issued as Supplementary Guidance.

5.12 Ports and Harbours

5.12.1 The N-RIP Stage 2 report identified Machrihanish / Campbeltown as a Phase 1 site for further manufacturing and operation / maintenance and Hunterston as a Phase 1 site with opportunity for integrated manufacturing.

5.12.2 The existing site at **Machrihanish** airport is already being utilised. Improvement works are complete at **Campbeltown** to provide a new deep water quay and there are nearby sites available which could be used as a laydown area to support future operations and maintenance works. Transport improvements are complete to upgrade road links between Machrihanish and Campbeltown.

5.12.3 **Hunterston** is the preferred location for the establishment of a Test Centre of national significance for offshore wind turbines, and has development opportunities for fabrication to support the wave and tidal sectors. The N-RIP Stage 2 report anticipated that, in addition to use of the existing site, there would be land reclamation, construction of a new deep water quay and possible use of additional land.

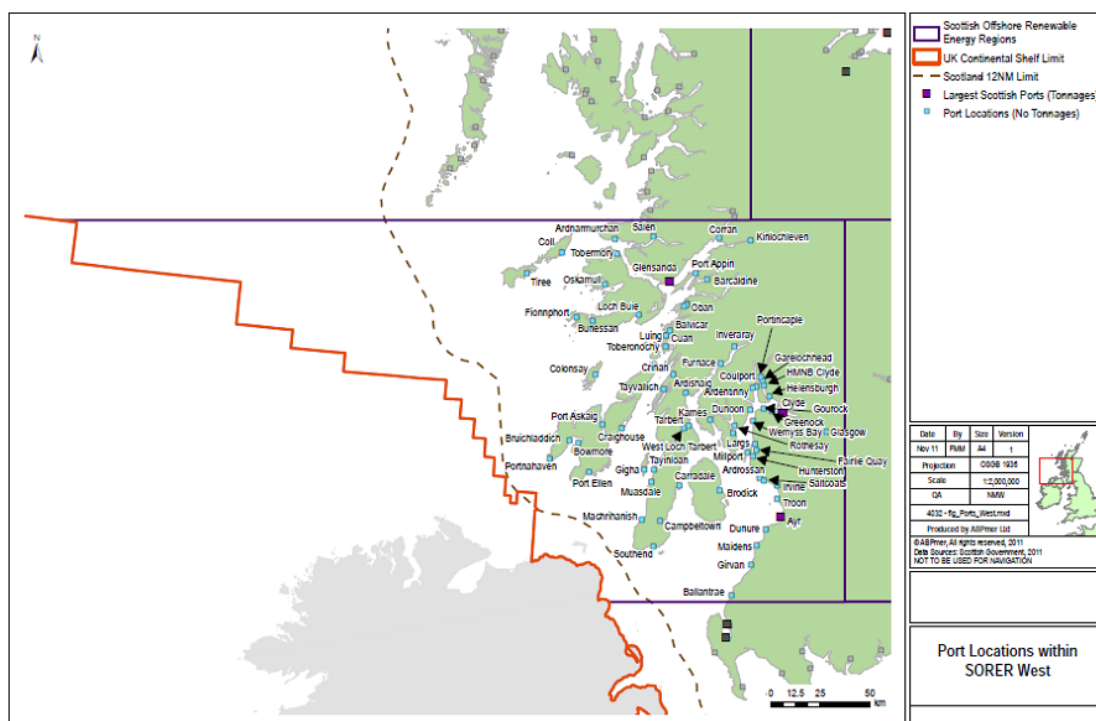
5.12.4 North Ayrshire Council set out key development proposed at Hunterston in its response to the scoping consultation, noting the proposal for a multifuel power station which is designated as a National Development within the second National Planning Framework. The Ayrshire Joint Planning Unit noted the multiple uses of the site and its importance as a transshipment hub.

5.12.5 Other ports within Ayrshire raised by the Joint Planning Unit included **Ayr**, **Troon** (ferry service to Larne) and **Ardrossan** (ferry service to Arran). These were noted as major national and international exit points to the transport network and therefore important to the regional economy. As a result, safeguarding of approaches to these ports and consideration of future growth in coastal traffic was recommended. Ayr and Troon were considered as medium term options within the N-RIP.

5.12.6 Other key ports and harbours within the region include:

- **Greenock** – the main container port for Glasgow and a port of call for cruise ships;
- **Oban** – a key fishing harbour; and central hub for ferry services to the Inner and Outer Hebrides. Nearby, **Barcaldine** is the home of the Marine Resource Centre, a commercial development campus for marine resources;
- **Dunoon** – with two harbours accommodating a passenger and vehicle ferry service from Gourock; and
- **Rothsay** – serving the Wemyss Bay - Rothsay ferry, a key fishing harbour and recreational boating destination.

Figure 5.24 Ports and Harbours in the West Region



5.12.7 In addition there are numerous smaller harbours and marinas supporting commercial and recreational fishing activities, yachting and recreation throughout this region. This includes key ports on the numerous islands across the region, which are essential for servicing lifeline ferry services.

Table 5.2 Ports and Harbours in the West Region

Port	Operator	Type
Ardentinny	Ardentinny Hotel - landing pontoon only	Private
Ardnamurchan		unknown
Ardrishaig	British Waterways Scotland	Other
Ardrossan	Clydeport	Private
Ardyne	Lighthouse Caledonia	Private
Ayr	Associated British Ports	Private
Ballantrae		Local Authority
Balvicar		unknown
Barcaldine	Marine Resource Centre Ltd	Private
Bowmore	Bowmore Harbour Association	Private
Brodick		Other
Bruichladdich		Local Authority
Bunessan		Local Authority
Campbeltown	Argyll and Bute Council	Local Authority
Carradale		Local Authority
Coll		Private
Colonsay		Private
Corran	Highland Harbours	Local Authority
Coulport		MOD
Craighouse		Local Authority
Crinan		Private
Cuan		Local Authority
Dunoon	Argyll and Bute Council	Local Authority
Dunure		Local Authority
Fairlie Quay	Holt Leisure Group	Private

Fionnphort	Caledonian MacBrayne	Local Authority
Furnace		unknown
Garelochhead	Ministry of Defence??	unknown
Gigha		Local Authority
Girvan	South Ayrshire Council	Local Authority
Glasgow	Clydeport	Private
Gourock	Caledonian MacBrayne	Private
Greenock	Clydeport	Private
Glensanda		Private
Helensburgh		Local Authority
HMNB Clyde	MOD	MOD
Hunterston	Clydeport	Private
Inveraray		Private
Irvine	Irvine Harbour Co	Private
Kames		unknown
Kinlochleven	Alcan	Private
Largs	Caledonian MacBrayne	Private
Loch Buie	Now a complete ruin	unknown
Luing		Local Authority
Machrihanish		unknown
Maidens		Local Authority
Millport	Caledonian MacBrayne	Other
Muasdale		unknown
Oban NLB Base	Northern Lighthouse Company	Private
Oban North Pier	Argyll and Bute Council	Local Authority
Oban Railway Pier	Caledonian MacBrayne	Other
Oskamull	The Howard family	Private
Port Appin	Argyll and Bute Council	Local Authority
Port Askaig	Argyll and Bute Council	Local Authority
Port Ellen	Caledonian MacBrayne	Other
Portincaple		unknown
Portnahaven		unknown
Rothesay	Argyll and Bute Council	Local Authority
Salen	Mark and Jan Drury	Private
Saltcoats		Private
Southend		unknown
Tarbert	Tarbert (Loch Fyne) Harbour Trust	Trust
Tayinloan		Local Authority
Tayvallich		Private
Tiree		Private
Tobermory		Private
Toberonochy		Private
Troon	Associated British Ports	Private
Wemyss Bay	Caledonian MacBrayne	Other
West Loch Tarbert		Local Authority

5.12.8 In 2009 there were 7,000 people in full time employment in these sectors, which had reduced to 6,500 people by 2010. There are also over 2,000 people who are in part-time employment. Over 53% of these are employed in building and repairing of ships or boats, this industry is focused on the Clyde (EKOS, 2008). There is no available data on the value of this industry to the economy of the region. This information identifies the employment in industries associated with ports and harbours, and should not be interpreted as direct employees of ports and harbours (although some may be working in this capacity) but as associated industries, often established on port estates.

5.13 Recreation

Recreational Angling

- 5.13.1 The Scottish Sea Angling Conservation Network's (SSACN) Offshore Wind SEA consultation response stated that Loch Etive and Sunart and Clyde are regions that are used extensively for sea angling. Although the Firth of Clyde has relatively poor fish stocks and is not capable of supporting regular sea angling charter activity, the local population size means there are reasonable numbers of local shore anglers who rely heavily on seasonal fish stocks such as mackerel. Own boat and charter boat angling is popular at other locations on the West coast of Scotland where there are a number of excellent sheltered lochs enabling safe comfortable fishing (Radford et al, 2009).
- 5.13.2 Radford et al (2009) estimated the sea angling activity and economic value in eight regions of Scotland. Two of these regions, Argyll and Lochaber and Glasgow and West, fall roughly within the West Region, but also incorporates the Southern part of the North West Region, hence the values may result in a slight overestimate of economic contribution.
- 5.13.3 The total estimated regional sea angling activity and expenditure within these two regions is £22.6m in Argyll and Lochaber and £24.1m in Glasgow and West with approximately 525 people employed in each area. Compared to other regions in the Radford et al (2009) study, Glasgow and the West had the greatest number of adult resident sea anglers (23,548) and the greatest number of angler days (269,783).

Table.5.3 Estimated Regional Sea Angling Activity and Expenditure in West Region

Region	No. Resident Sea Anglers	Annual Sea Angler Days Spent in Region	% of total Activity Undertaken on the Shore	Total Annual Sea Angler Expenditure (£M)	% of total Expenditure Spent on Shore Angling	Number of Jobs Supported
Argyll and Lochaber	5825	252615	47%	22.6	40%	524
Glasgow and West	23548	269783	38%	24.1	36%	523

(Source: Radford et al, 2009)

- 5.13.4 The Firth of Lorne and the Sound of Mull has become the centre for common skate angling contributing over £15 million per year to the local economy. Lochs Sunart and Etive attract vast numbers of shore and boat anglers seeking spurdog, and this fishery is estimated to be worth £15 million per year (Scottish Sea Angling Conservation Network, 2008). The SSACN hold a spurdog tagging event in this area and estimate that the event held in November 2010 was worth £28,000 to the local economy (Scottish Sea Angling Conservation Network, 2010b).

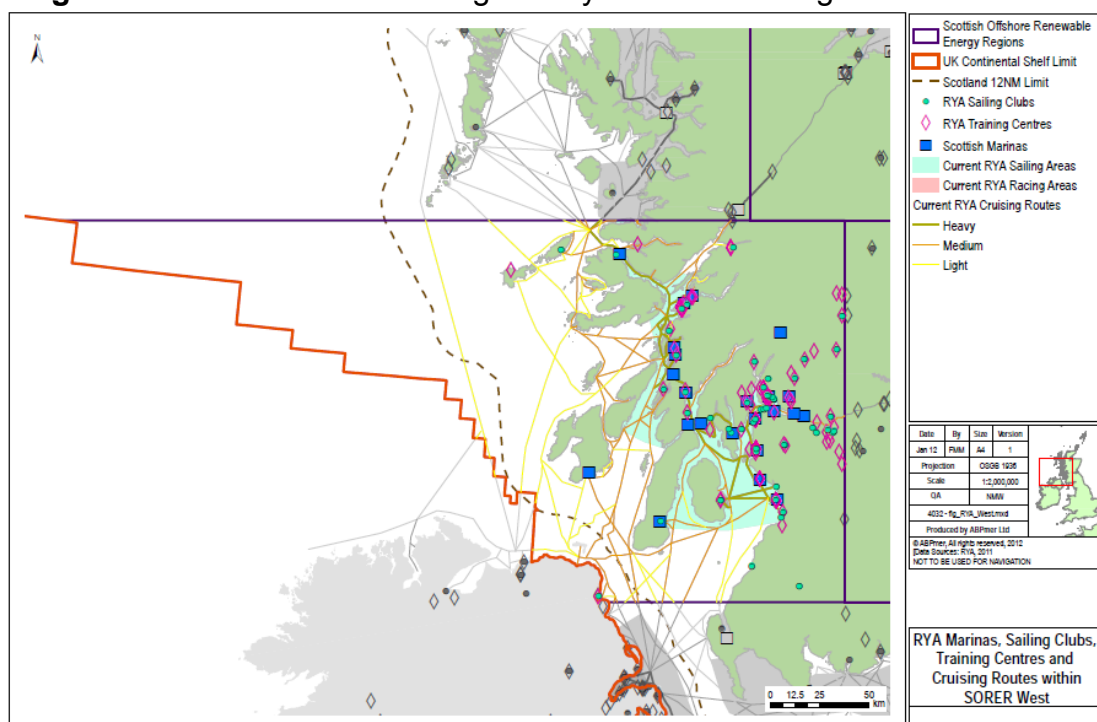
Recreational Boating

- 5.13.5 The West of Scotland is an internationally important yachting destination (RYA Scotland consultation response). Baxter et al (2011) describes the

distribution of sailing as being concentrated along the West coast (comprising parts of the West and North West Region) where the RYA Atlas of recreational boating indicates there are heavy recreational cruising routes 40 and several 200+ berth marinas.

- 5.13.6 Sailing activity in the West Region is shown in Figure 5.25. The figure highlights that recreational use is most concentrated near the West coast within the sounds of the Inner Hebrides. Heavy recreational use is made of the Sound of Mull, the Firth of Lorne, the North of the Sound of Jura and the Crinan Canal. Heavy use is also made of cruising routes in the Sound of Luing, Seil Sound, Shuna Sound and Loch Melfort and of a route from the Crinan Canal, South through Loch Fyne and the Firth of Clyde via the Kyles of Bute and South of the Isle of Bute. Heavy usage cruising routes also exist between Arran and the mainland (Baxter et al., 2011). Light and medium usage cruising routes connect these heavy routes with the Inner and Outer Hebrides (note the latter falls within the North West Region).

Figure 5.25 Recreational boating activity in the West Region



- 5.13.7 Light usage cruising routes are present off Tiree and a 'light' route from the Firth of Lorne to the coast of Tiree North of Hynish. Another 'light' route exists from near Kintra on Mull through the Gunna Sound (Scottish Power Renewables, 2010). A light usage route passes off Islay and medium usage routes exist off the Kintyre coast and around the Mull of Kintyre. It should be noted that the RYA UK Recreational Boating Atlas highlights the fact that many lightly used routes are the only routes available and therefore have considerable local importance.

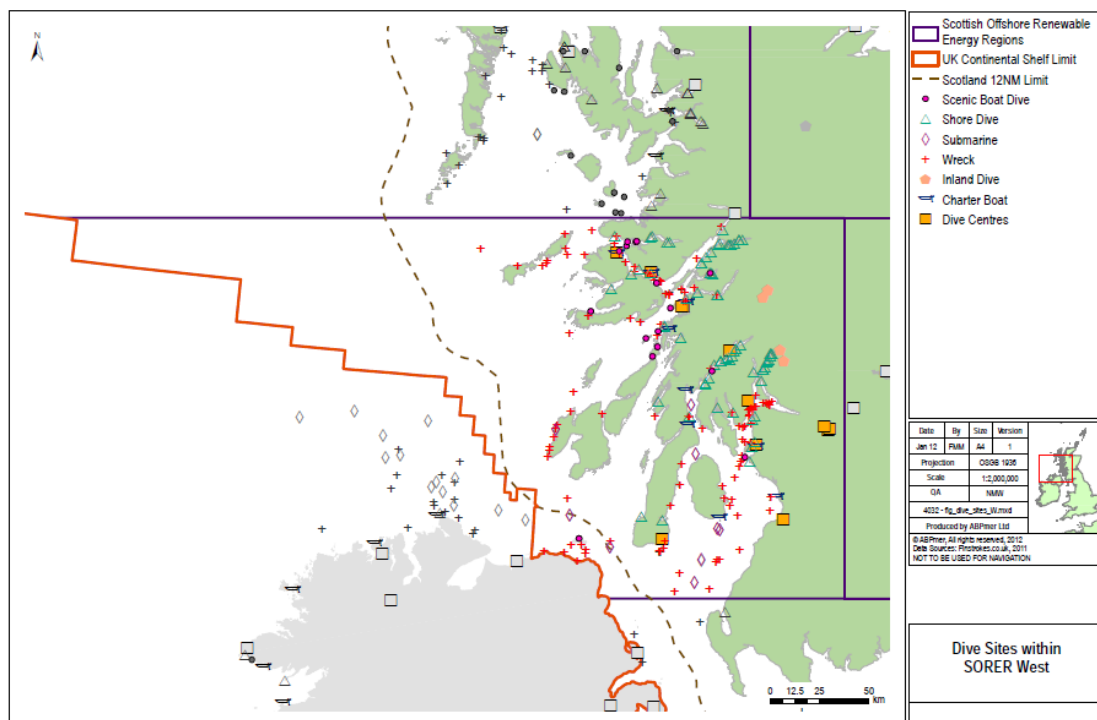
- 5.13.8 The Clyde and Irish Sea Area has an estimated GVA of around £44 million pounds. This area has around 3,333 pontoons and 2,038 moorings. The

West Coast of Scotland has a GVA of around £39 million with 1,030 pontoons and 2,637 moorings.

Scuba Diving

- 5.13.9 The West Region is a popular scuba diving area. Dive spots are widespread through this region with a particularly high numbers of sites through the Firth of Clyde, Sound of Mull and Loch Linnhe.

Figure 5.26 Recreational diving activities in the West Region



Sea Kayaking and Small Boating

- 5.13.10 Dinghy sailing is a popular activity in the sheltered lochs and bays of the West Region with a high density of coastal dinghy sailing clubs found in the Firth of Clyde and Clyde River (Figure 5.27). Sea kayaking is undertaken throughout the West Region with popular locations including the Firth of Lorn, Gulf of Corryvreckan, Sound of Jura and upper Firth of Clyde (Land Use Consultants, 2007) (Figure 5.28).

Figure 5.27 Dinghy Sailing Clubs in the West Region

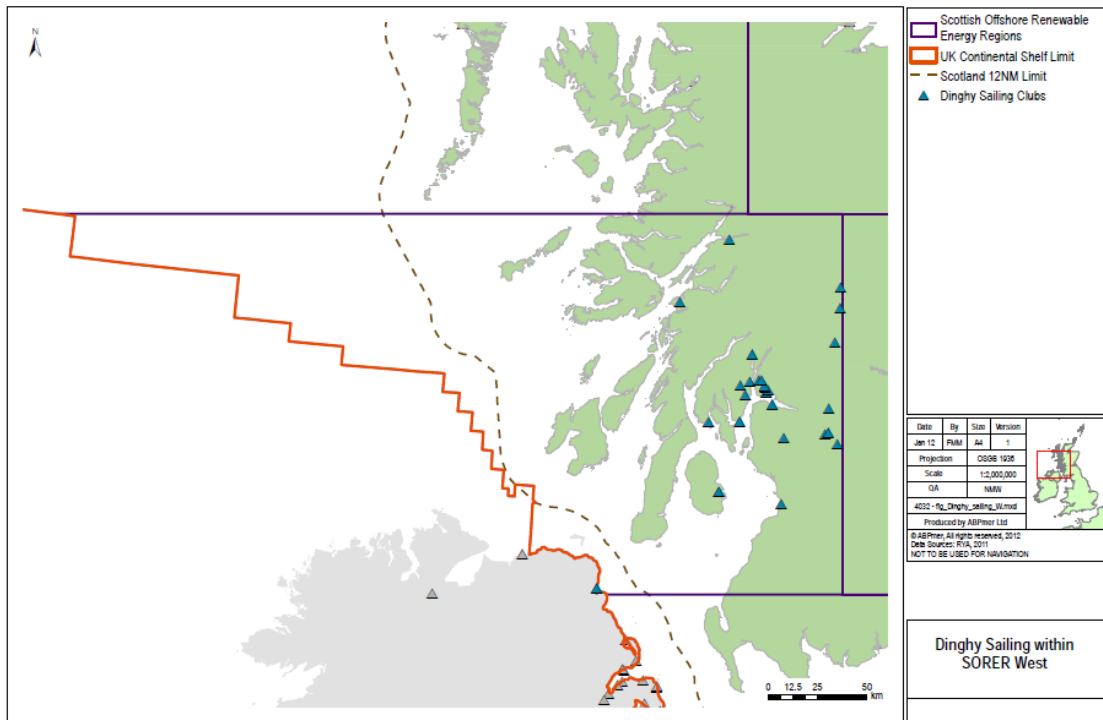
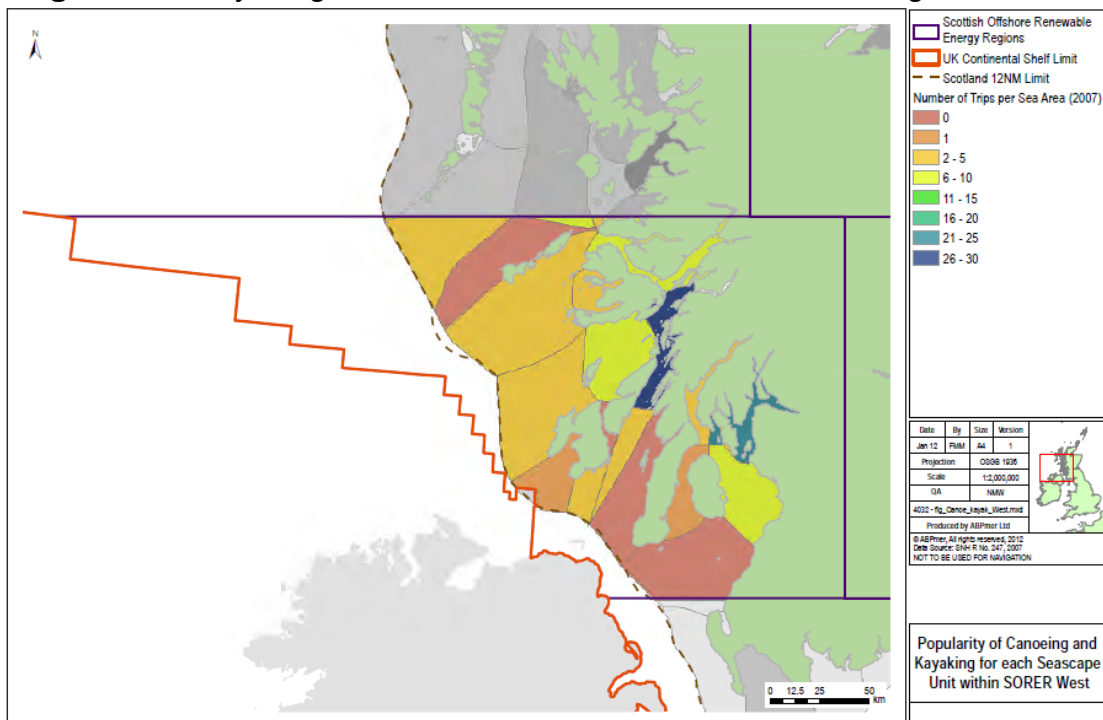


Figure 5.28 Kayaking and Small Boat Activities in the West Region



Surfing and Wind Surfing

5.13.11 The West coast of Scotland and the Hebrides are exposed to swell waves generated in the Atlantic Ocean and offer a range of West to North facing beach and reef breaks along the coasts of the Mull of Kintyre, Isles of Islay

and Tiree (SAS, 2009). Some of these spots are considered to be of very high quality, although the remoteness of the locations means that they are uncrowded most of the time (SAS, 2009). A large number of windsurfing locations are also present in this region. The SAS (2009) report maps 17 surfing locations on Tiree, Islay and Kintyre and the Windsurf magazine ‘beach guide’ maps 21 locations along the Ayrshire coast and on Tiree, Islay and Kintyre.

Figure 5.29 Surfing and Windsurfing locations in the West Region

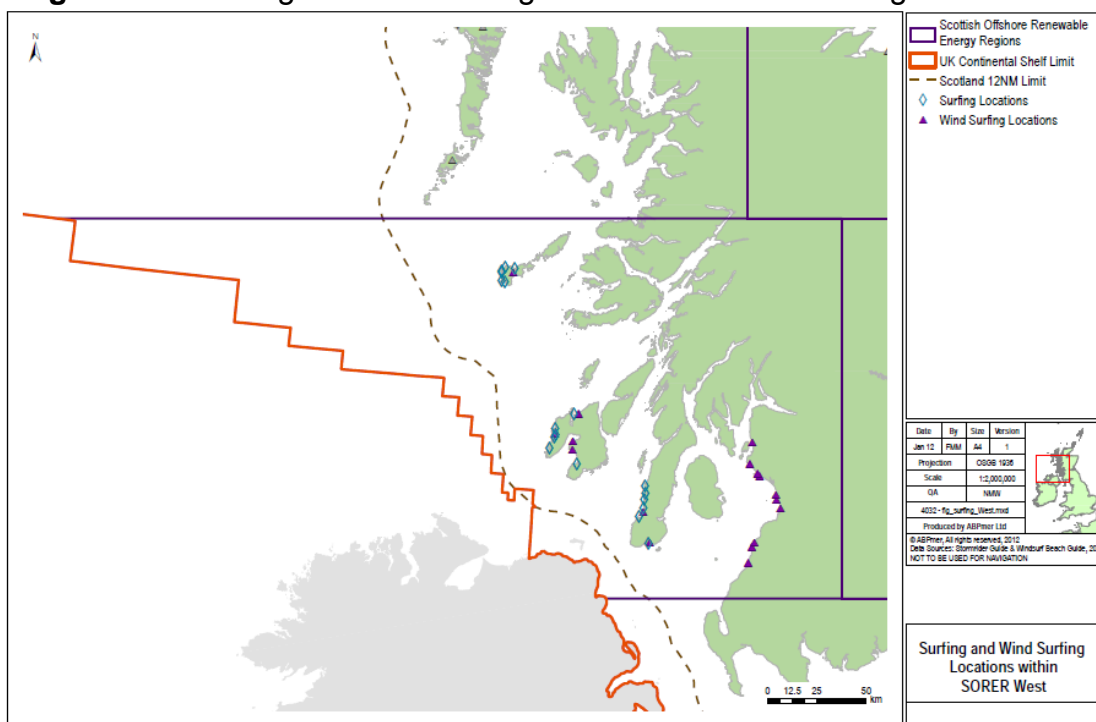


Table.5.4 Key Surfing and Windsurfing Locations in the West Region

West Coast Location	Surf Location	Windsurf Locations
Ayrshire coast		Girvan
		Turnberry
		Maidens
		Prestwick
		Troon beach (North and South)
		Ardrossan
		Helensburgh
		Largs
		Sailcoats

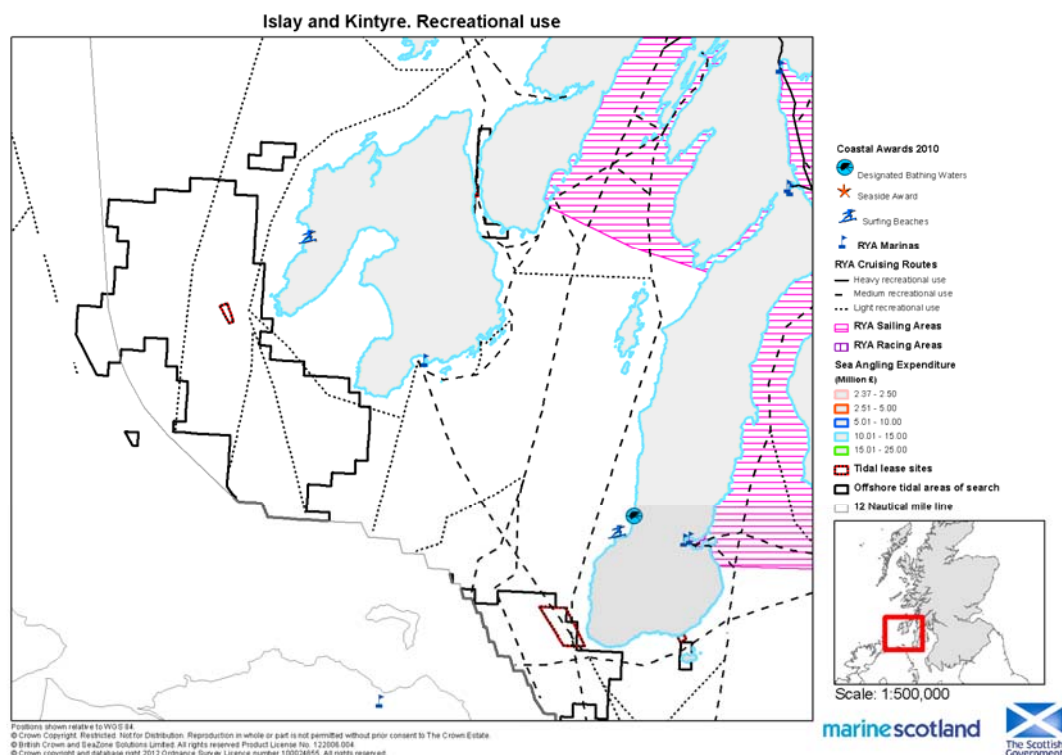
Tiree	Balephetrish	Crossapol
	Balevullin Bay	Gott Bay
	The Hough	Balevullin Bay
	The Maze	The Maze
	Port Bharrapol	The Green
	Balephuill	The loch
Islay	Ardnave Bay	Loch Indaal
	Saligo Bay	Tragh baile aonghais
	Machir Bay	Machir Bay
	Laggan Bay	Laggan Bay
	Lossit Bay	
Kintyre	Caravans	Southend
	Macrihanish	Macrihanish
	Middle Beach	
	Westport	
	Graveyards	
	Dunaverty	

(Source: Based on SAS, 2009 and the Windsurf Magazine 'beach guide' 2011)

5.13.12 Tiree has a niche in outdoor activities. The Scottish Government's analysis of the responses to its Offshore Wind Draft Plan and SEA stated that 60 to 70% of the islands tourism is based on water sports such as surfing and kite surfing. In particular the island is a very important area for windsurfing. The UK's national windsurfing championship, the Tiree International Wave Classic, which is held annually in October, is of significance both for the sport and the local economy (UKMMAS, 2010).

Areas of Search

5.13.13 Figure 5.30 below identify the recreational activities taking place in the South West Islay & Kintyre (Area of Search).

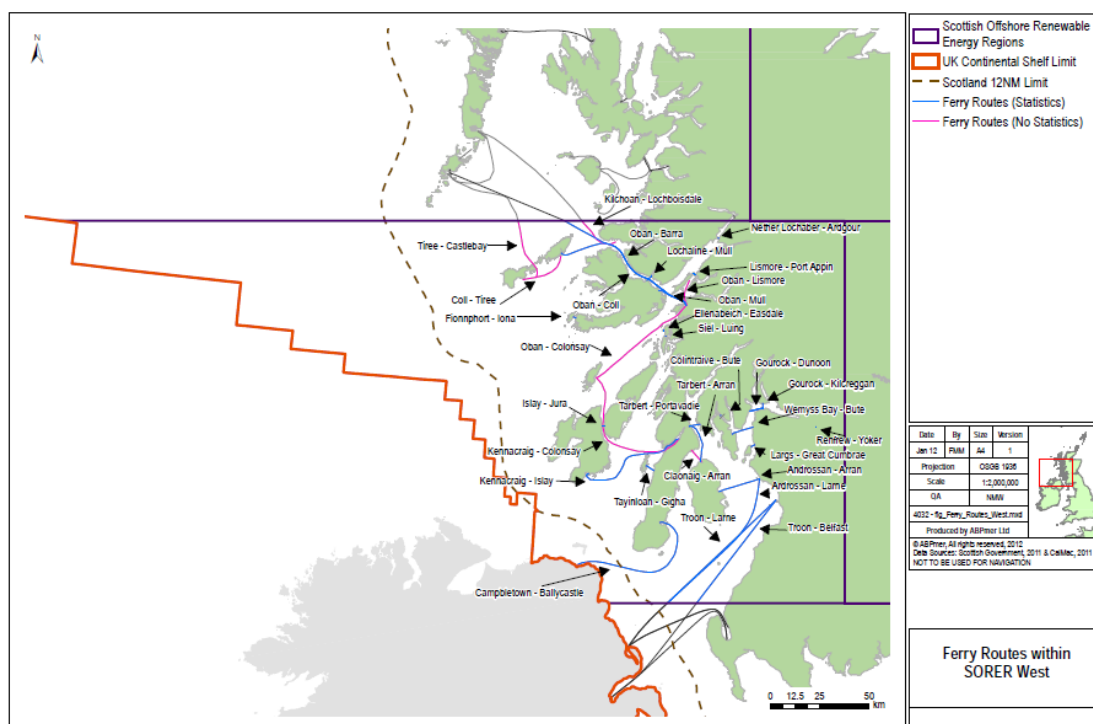
Fig.5.30 Recreational activity in the South West Islay & Kintyre (Area of Search)

Shipping

- 5.14.1 The Firth of Clyde is a deep water route, which is generally unobstructed from a navigation perspective as it is a high and rocky coast with some sandy beaches on its Eastern shore. The Firth has a number of rocky islands rising steeply from deep waters which include: Arran, Sanda and Pladda on its North and West edge and Ailsa Craig in the middle of an otherwise clear channel. Traffic of all size and types (passenger, cargo, leisure and Government) navigate this area in significant quantity, either departing or arriving at local ports or as through traffic transiting to Ireland. Fishing occurs throughout the area. There are a substantial number of leisure users who sail in the Firth of Clyde, and further North into the Western Isles (GLA, 2010).
- 5.14.2 The Western Isles presents an almost uninterrupted succession of deep indentations, fronted by bold rocky cliffs and headlands forming islands, narrows and sea lochs. From a shipping perspective drying rocks and reefs are frequent, often with deep navigable waters immediately adjacent. The Mull of Kintyre to Ardnamurchan coast line is no exception exposed directly to the Atlantic Ocean and the full force of winter gales the coast is frequently obscured by low cloud and driving rain. Strong tidal streams, and eddies can be experienced in narrows and inshore making navigation difficult and unpredictable (GLA, 2010).

- 5.14.3 Further offshore, larger vessels (which remain within the Traffic Separation Scheme) transit to and from the North Channel and keep to the South West of Skerryvore before turning North to the Minch or heading Northwest for the deep water route. Smaller coastal vessels often choose to pass through the sound of Islay and to the East of Coll and Tiree. (GLA, 2010).
- 5.14.4 In addition, other ports provide important inter-island connectivity supporting both economic activity and jobs, such as Oban which is a hub for ferry traffic and supports fishing, a small numbers of general bulk cargo transhipments, fish farm support (feed and smolt) and frequent seasonal cruise vessel traffic along with a substantial number of leisure craft. Corpach handles bulk timber and quarry products while Fort William at the South end of the Caledonian Canal which sees significant leisure traffic. Throughout the area, particularly on the islands, there are a number of smaller ferry and coaster berths, fishing harbours and leisure craft moorings and marinas (GLA, 2010). A quarry terminal at Glensanda operates large bulk carriers with 130 to 270 arrivals per year.
- 5.14.5 Local life line ferries operate Kennacraig to Port Ellen and Port Askaig; Oban to Colonsay, Port Askaig, Craignure, Lismore, Coll, Tiree, Barra & South Uist; across the Sound of Mull and to Iona and Gigha. There are further council operated ferries at Corran, Lismore, Luings, Easdale, Fort William and Jura. Figure 5.31 demonstrate the complex interconnection between islands in this region, with 33 separate routes.

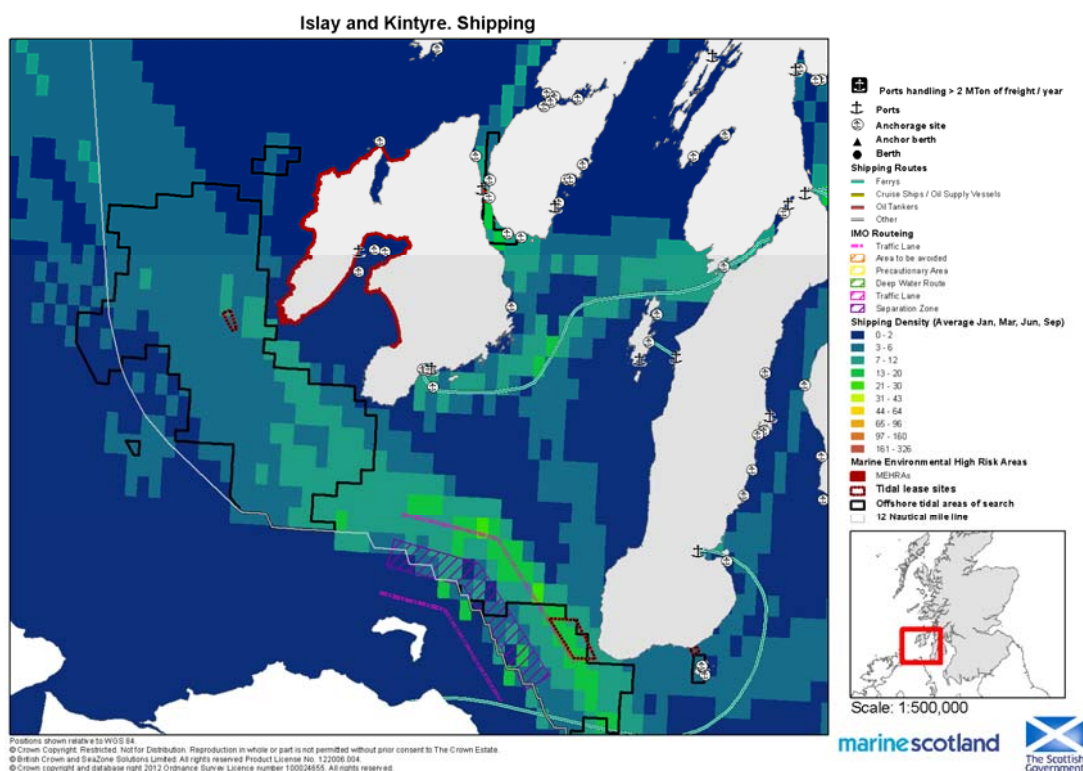
Fig.5.31 Ferry Routes in the West Region



Areas of Search

- 5.14.6 In Islay there is the only MEHRA in this region. Islay qualifies for this level of protection due to its vulnerable seabird population and its fish and shellfish fisheries.
- 5.14.7 The tidal area of search south west of Kintyre is crossed by the Campbeltown-Ballycastle ferry route, and the westbound/eastbound IMO traffic separation zone.
- 5.14.8 This separation zone is required to deal with the high level of maritime traffic directly southwest of the southern tip of the kintyre peninsula, up to 50 vessels a week.
- 5.14.9 The area directly south of the Kintyre peninsula is crossed by some high volumes of maritime traffic including four busy ferry routes: Troon/Ardrossan-Larne, Troon-Belfast, Cairnryan-Larne and Campbeltown-Ballycastle to the north.
- 5.14.10 Cargo and tanker shipping density is of the order of 14 vessel movements per week at the highest density south of Kintyre.
- 5.14.11 This area of search is located directly in the route that leads to the port of the Clyde. This port receives up to 15000+ vessels per annum.

Fig.5.32 Shipping activity in the South West Islay & Kintyre (Area of Search)



5.15 Social Considerations

- 5.15.1 The total population in West Region is 1.67 million. The population of the West is slightly greater in the 10-14 to 20-24 age bands, but is lower than the national average for ages greater than 45-59, before increasing to greater than the national average again between 60-89. The overall average age in the West Region is 39 years old (the same as the national average).
- 5.15.2 There has been a continual decline in the number of children in the region by 14.4%, from 265,000 in 1996 to 227,000 in 2010, and a continual increase in the number of people of pensionable age (by 5.8%, from 251,000 in 1996 to 266,000 in 2010). The number of people of working age has changed only slightly over the total period (increasing by 0.6%, from 821,000 in 1996 to 826,000 in 2010). However, the working age population has fluctuated over the period, decreasing between 1996 and 2000 and 2004 and 2008, and increasing between 2000 to 2004, and 2008 to 2010.
- 5.15.3 Median weekly gross income for full-time employees in the West region was £348.00 in 2001. By 2010, this had risen to £487.59, an increase of £139.59. Taking account of average inflation of 3.1% per year, this is an increase of 3.2% between 2001 and 2010. This is slightly higher than the national average (£478.39).
- 5.15.4 The greatest number of jobs are associated with human health and social work activities (17% of the total for 2010) and wholesale and retail trade at 15%. Other industry sectors accounting for more than 10% of jobs are in administrative and support service activities at 10%. Agriculture, forestry and fishing makes up 0.2% of all jobs, while accommodation and food service activities account for around 7%. Jobs in arts, entertainment and recreation make up almost 3% of all jobs in the West.
- 5.15.5 Crofting is an important part of some communities in the West Region, with crofting taking part in Argyll, Bute and Tiree. There are 534 crofts in Argyll and Bute with 18,425 households in crofting communities. Tiree has 275 crofts with 399 households. Crofting makes up similar proportions of overall income and income from crofting activities; 34.5% and £7,110 in Argyll and Bute, 34.83% and £7,500 in Tiree.
- 5.15.6 The local authority with the highest population that rated their health as good or very good was Argyll and Bute (89.4% in 2001/2002 increasing to 90.4% in 2007/2008). The lowest proportion of the population rating their health as good or very good was in Glasgow City (80.2% in 2001/2002 and 83.6% in 2007/2008).
- 5.15.7 There are 241 SIMD coastal datazones in the West Region (14% of all datazones). The coastal zones are less likely to be in the 10% most deprived for education, skills and training (7% compared with 11%), employment (11% compared with 14%), income (11% compared with 15%) and housing (9% compared with 16%). Coastal datazones are also less

likely to be in the 10% most affluent datazones for these key indicators, and for health. The average ranking for coastal datazones is higher for four of the five indicators suggesting coastal datazones are more affluent overall, but is slightly lower for housing. The data show that coastal datazones are more likely to be deprived than affluent overall, and across the individual indicators in the West. Overall, the average ranking of coastal datazones suggests that they are less deprived than non-coastal datazones. This indicates that there are some coastal datazones that are much more deprived.

- 5.15.8 In terms of the population with no qualifications, the range is between 8.1% and 22% in 2004, and between 7.6% and 21% in 2010, showing very little overall change. The area with the highest proportion of the population with no qualifications is Glasgow City in both 2004 and 2010. The areas offering the greatest proportion of job-related training in 2004 were inland local authorities such as East Dunbartonshire and East Ayrshire in 2010. The area offering the lowest rates of job-related training in 2010 was Argyll and Bute.
- 5.15.9 The minimum drive time to a college of Further or Higher Education in the West Region is an average of 13.4 minutes (Argyll and Bute). This is considerably shorter than the average for the West as a whole (88 minutes) and significantly less than the maximum of 100 minutes in Glasgow City, Inverclyde, and Renfrewshire amongst other local authority areas).
- 5.15.10 House prices vary considerably between local authorities in the West Region. Two coastal local authorities have mean house sale prices that are greater than the national average (Argyll and Bute and South Ayrshire). North Ayrshire has some of the lowest mean house sale prices. Prices are also lower than the national average in Renfrewshire, Inverclyde and Glasgow City. The variation in mean house prices makes it difficult to compare house prices and average earnings, although North Ayrshire was recorded as having the second lowest percentage of disposable income spent on mortgage payments in the UK in 2011 at 17.8%. Of the ten most affordable local areas in Scotland, six are in the West Region, including the coastal local authorities of North Ayrshire, Inverclyde and South Ayrshire. For first-time buyers, the West Region is one of the areas with the lowest average age and lowest house price to earnings ratio. The lowest house price to earnings ratios in were in North Ayrshire (2.8) and South Ayrshire and Inverclyde (2.9).
- 5.15.11 When asked to rate the perception of their neighbourhood, the highest proportion rating it as good or very good in 2007/2008 was in Argyll and Bute (72.5%) and the lowest in Glasgow City (35.9%). The change across nine of the eleven local authorities in the West Region has been an increase. The largest overall increase is in Argyll and Bute (+16.7% between 1999/2000 and 2007/2008). Considering other coastal authorities, smaller increases have been seen in Renfrewshire (+4.1%), Inverclyde (+3.5%) and Glasgow City (1.7%). East Ayrshire showed a reduction (-

0.4%) in the perception of neighbourhood as being very good or good between 1999/2000 and 2007/2008.

5.15.12 The average electricity consumption (per household) in the West Region was 5.0 MWh in 2009 (compared with an overall estimated average per household for Scotland of 5.7 MWh). A reduction in MWh consumed per household was seen in all local authorities, although the change is small. Those households where the highest income (HIH) earner is 60+ are more likely to be in fuel poverty than the whole population in 2007/2009. At 41.1%, this is lower than the national average of 45.9% for this group. The percentage of HIH 60+ in fuel poverty has also increased over time. There is considerable variation across the region, with the highest percentage of HIH 60+ being in fuel poverty at 56% (Argyll and Bute) and the lowest being 31.8% (West Dunbartonshire). However Argyll and Bute does show an overall decrease of 1.6%.

Future Trends

5.15.13 Table 5.5 summarises the statistics and trends discussed above to give an indication of the likely future changes by indicator, comparing national with local trends (where data are available). There is much greater uncertainty over trends for the time period of 30 to 50 years and, in both cases, it is assumed that future trends follow recent and historic trends.

Table.5.5 Summary of future trends in West Region

Indicator	National		Regional		Evidence for Trend
	10-20 years	30-50 years	10-20 years	30-50 years	
Average age	↑	↑	↑	→	Estimate of proportion of the population that is of pensionable age between 2001 and 2010, change may be small for this region
Working age population	↑	→	→	→	Recent trends suggest no real change in the number of people of working age
Income	↑	↑	↑	↑	Recent trends suggest increase in median weekly income over time
Health	↑	→	↑	↑	Recent trends suggest increase in perception of health
Perception that neighbourhood is a very good place to live	↓	↓	↑	↑	Regional trends suggest increase in 9 of 11 local authorities
Affordability of housing	↑	→	↑	→	Suggestion that affordability has increased recently, but this may not be sustained. Large variability across the region, although the West Region includes some of the most affordable housing in the UK
Housing quality	↑	↑	↑	↑	Housing quality, as measured by percentage of housing failing the SHQS, is improving, although the

- Troon, Ayrshire*.

*N-RIP Phase 2 Ports

- 5.16.5 The West Region contains supply chain companies which could facilitate in the engineering of major components for wave and tidal structures, vessel service and maintenance and device operations and maintenance. Further information can be found at www.sdi.co.uk
- 5.16.6 In terms of education facilities, the West Coast of Scotland is home to the University of Strathclyde. The University's Institute for Energy and Environment is one of the largest electrical power engineering and energy technology university research groups in Europe. The Department of Naval Architecture and Marine Engineering also provides marine technology expertise, and offers specialist BEng and MEng degrees.
- 5.16.7 The University of Glasgow School of Engineering brings together the expertise of the Departments of Aerospace Engineering, Civil Engineering, Electronics and Electrical Engineering and Mechanical Engineering, with testing facilities and expertise in aerospace R&D and fluid mechanics. Courses relating to the development of offshore renewable energy are also provided by the Glasgow Caledonian University and the University of the West of Scotland.
- 5.16.8 In addition, there are a range of courses provided by a number of colleges in the West Region in related offshore energy disciplines including fabrication, welding and inspection, engineering systems, construction management and maritime skills.
- 5.16.9 Further information on all of the above supply chain activities is available in *Scottish Offshore Renewables Development Sites: West Coast Cluster* Scottish Development International (www.sdi.co.uk).

Argyll and Bute Council

- 5.16.10 There is a strong ambition in Argyll and Bute to create the environment for a substantial business sector to service offshore wind – encouraging business growth in areas of strengths, such as manufacturing and marine services, benefitting sustainable economic growth for Argyll and Bute.
- 5.16.11 The 'Lorn Arc' project is an ambitious £20 million proposal to extend Oban's North Pier and construct road infrastructure in Dunbeg / Dunstaffnage. The proposal covers Oban, Dunstaffnage, Dunbeg, North Connel and Barcaldine. Argyll and Bute Council has been given approval by the Scottish Government to develop the proposal under the Tax Incremental Finance (TIF) scheme.
- 5.16.12 These proposals intend to stimulate private sector investment across the Lorn area: the North Pier extension will be a catalyst for the growth of the offshore renewables industry, marine tourism (including cruise ship market)

and aquaculture; the road infrastructure will allow development of industries relating to the improved harbour facilities and other key investments at Dunbeg/Dunstaffnage, such as the European Marine Science Park.

Glasgow City Council

- 5.16.13 Glasgow has significant experience of large scale nautical engineering and manufacturing due the history of shipbuilding within the City and broader region. In relation to wave and tidal energy, two major developers, SSE and ScottishPower Renewables have based their Centres of Excellence in Glasgow. SSE's Centre also houses Mitsubishi, Siemens and Atkins. A number of the other firms working within offshore renewable energy and engineering are also based or have offices in Glasgow.
- 5.16.14 SSE, Scottish Power and Weir have launched a collaborative research programme with the University of Strathclyde, and the University of Strathclyde is building an £89million Technology and Innovation Centre.

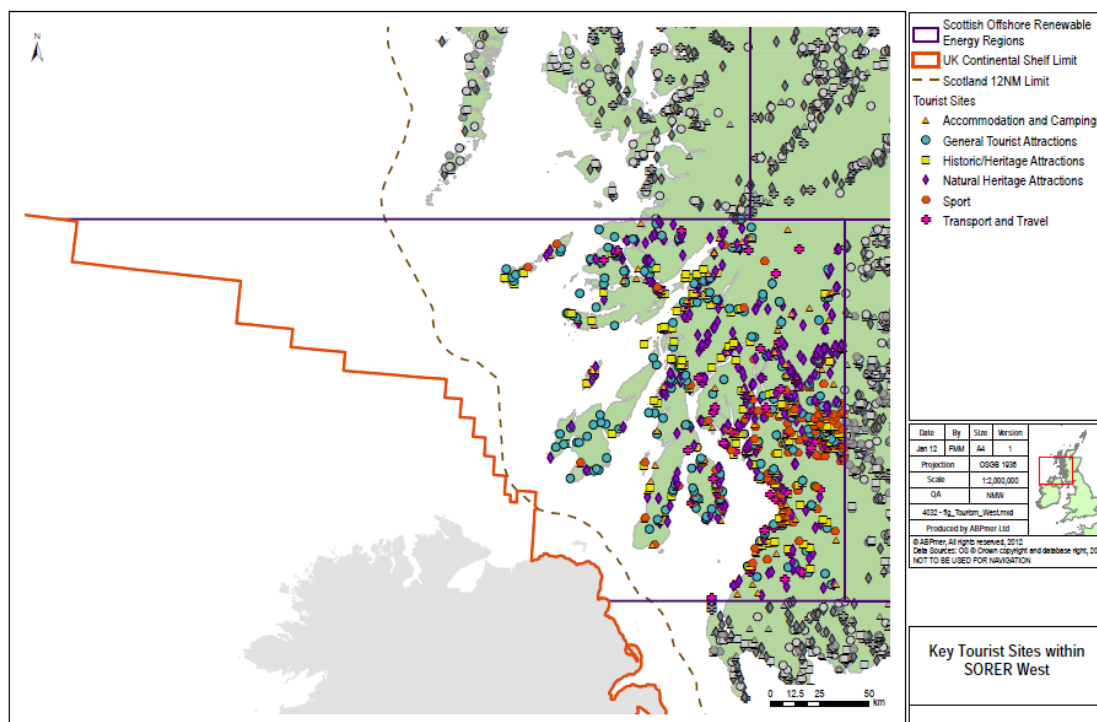
Renfrewshire Council

- 5.16.15 The centre of the Council's involvement with offshore renewable energy is, in this respect, Westway Industrial and Business Park, Renfrew. Here there is a dock facility, shortly to be upgraded, that has been, and will be, used by engineering companies located in the Park, notably Steel Engineering. Following a successful trial, last year, by Steel Engineering, plans to refurbish the dock and improve navigability along the Cart, are well advanced, thereby allowing easy access to offshore sites along the West Coast of Scotland and beyond.
- 5.16.16 Westway lies approximately 7 miles west of Glasgow City Centre, close to Glasgow airport, on the east bank of the White Cart. It currently provides approximately 130,000 m². of industrial and business space with the construction of a further 34,000 m² of space at Masterplan stage. The main occupier, Steel Engineering, is committed to renewables, including offshore wind, wave and tidal power.

5.17 Tourism

- 5.17.1 The West Region has a range of tourism sites, with historic / heritage attractions scattered throughout the region. (See Figure 5.33)

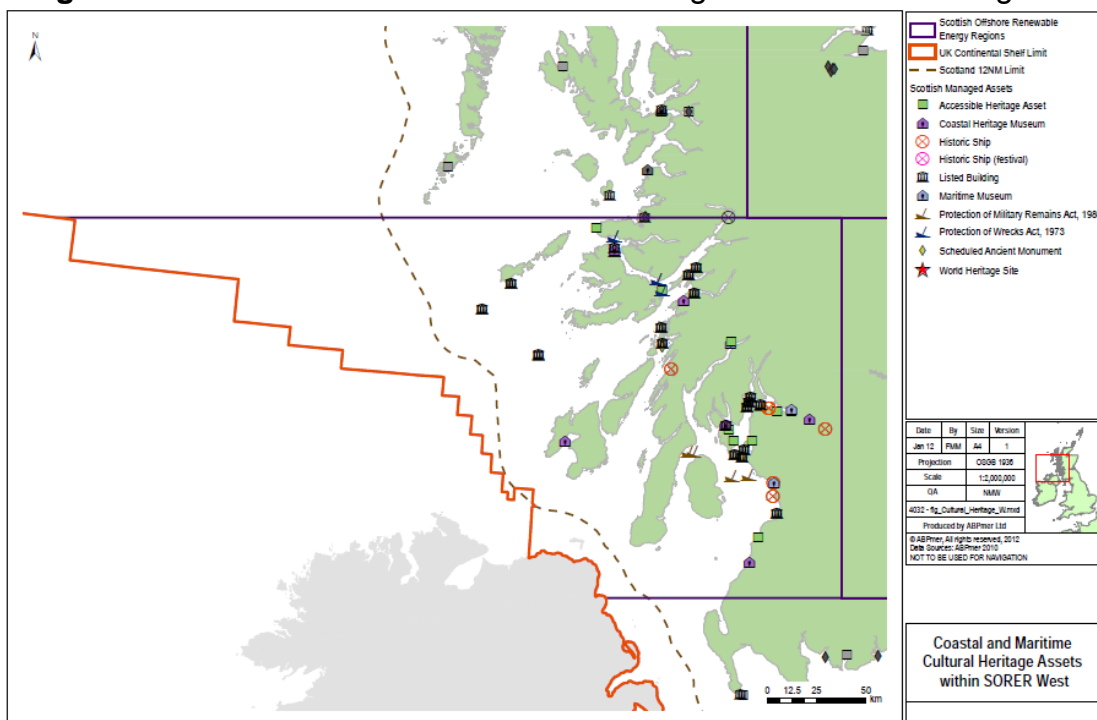
Figure 5.33 Key tourist sites in the West Region



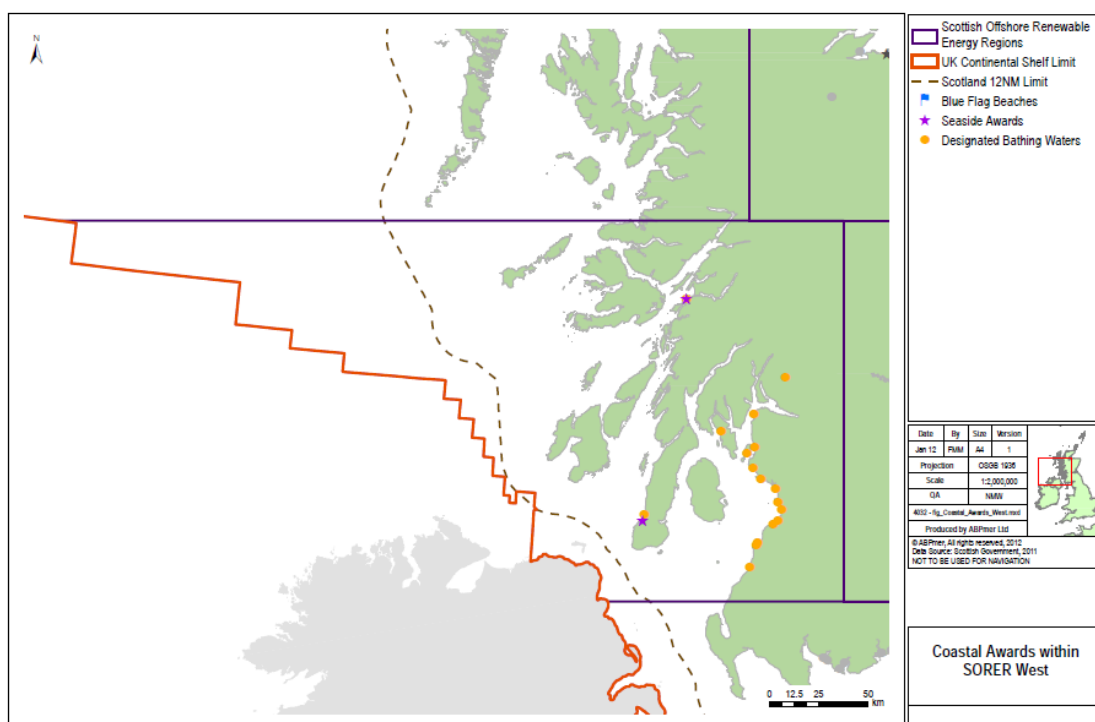
- 5.17.2 The Island of Coll in the Inner Hebrides has been established as a basking shark hotspot (Speedie et al, 2009), whilst the Isle of Mull was the first to establish cetacean watching in 1989 and is the location of the Hebridean Whale and Dolphin Trust Visitors Centre. It is of note that wildlife tourism has increased, even in times of recession (Scottish Government, 2010).
- 5.17.3 Marine and coastal tourism in particular is very important for Argyll and the Isles and this region has valuable marine and coastal resources. There are 6 Marine Special Areas of Conservation, which are protected under the EU Habitats Directive. These areas cover reefs, saltmarsh and mudflats and seal hotspots (Benfield and McConnell, 2007). A survey found that the main reasons for visiting the area were scenery (89%) and wildlife (56%), with 73% of people expressing that the marine and coastal environment had been a very important factor when choosing to visit the area (Benfield and McConnell, 2007). The most popular marine and coastal activity in this area was coastal walks, followed by beach visits and wildlife watching boat trips; all three of these activities have the potential to be affected by offshore renewables projects. The most popular areas visited were Oban, followed by Mull, Tiree, Coll and Staffa (Benfield and McConnell, 2007).

5.17.4 Many tourism sites are located in coastal areas, for example, around the coastline of the Isle of Arran. There are also a considerable number of historic/heritage attractions along the coast near Oban. Indeed, Figure 5.34 indicates that the region has many coastal listed buildings, as well as several historic ships and locations designated under the Protection of Military Remains Act and the Protection of Wrecks Act.

Figure 5.34 Cultural and Maritime Heritage Assets in West Region



5.17.5 West Scotland also has a number of designated bathing waters along the West coast of the Firth of Clyde (see Figure 5.35). Other locations with this designation include Machrihanish and Ganavan Sands (both Argyll and Bute), which additionally have seaside awards. Estimates of the numbers visiting the region can be based on information from Visit Scotland.

Figure 5.35 Coastal awards in the West Region

5.17.6 Data from VisitScotland for 2009 indicate that:

- UK residents made 2.13 million trips to Greater Glasgow and Clyde, staying for 6.06 million nights and spending £4689 million. For the same year, overseas visitors made approximately 0.78 million trips, stayed for 5.08 million nights and spent around £222 million;
- UK residents made around 0.89 million trips, stayed 3.1 million nights and spent around £155 million in Ayrshire and Arran. In the same year, overseas visitors made approximately 130,000 trips, stayed for 780,000 nights and spent £46 million (VisitScotland, 2010); and
- UK residents made around 1.57 million trips, stayed for 6.0 million nights and spent around £325 million in Argyll, Loch Lomond, Stirling and Forth Valley. Overseas visitors made around 290,000 trips, stayed for 1.26 million nights and spent around £325 million.

5.17.7 The West Region is therefore important for both UK and international tourism. Given the number of attractions along the coast, much of this tourism is likely to be related to marine and coastal areas.

5.17.8 For employment, Benfield and McConnell (2007) give figures of 17,902 people employed in tourism related jobs in the Argyll and Isles region, whilst 334 people had jobs specifically related to the marine and coastal sector (these figures were from 2001, and must be taken as indicative only). Given upwards trends, these figures may now be higher.