

3. EAST

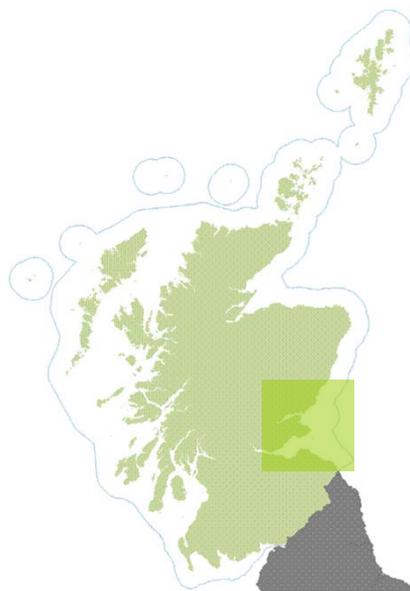
3.1 The East Region includes three Plan Options and one Scoping Area of Search.

The Plan Options are:

- Forth Array;
- Inch Cape; and
- Neart na Gaoithe.

The Scoping Area of Search is:

- E1 (Firth of Forth).



3.1 Resource

3.1.1 This region predominantly displays a moderate amount of wind power potential. The relatively shallow and consistent water depth of 40-70 m, however, make this an attractive location for harvesting wind energy. Wind energy available within the offshore wind area of search at this location has an annual mean power density of 0.9 kWm^{-2} . The mean wind speed within the offshore wind area of search E1 can reach up to 9 ms^{-1} .

3.1.2 The mean power densities recorded in summer are of 0.45 kWm^{-2} from mean annual wind speeds of 7.4 ms^{-1} smaller in contrast to the winter power densities of 1.5 kWm^{-2} from speeds of 11.5 ms^{-1} .

3.1.3 Two offshore wind proposals have already been put forward in area E1, Inch Cape and Neart na Gaoithe with another larger development outwith the 12 nm limit, the Forth Array.

3.1.4 Area E1 covers a large extent at 2694 Km^2 . The north and south peaks of this search area show higher wind resource at the easternmost limits, up to 0.9 kWm^{-2} from an annual mean windspeed of 8.5 ms^{-1} and lesser resource towards the shore at 0.5 kWm^{-2} from mean wind speeds of 7 ms^{-1} . The north peak of E1 has a slightly higher mean resource than the southern part. Generally the resource decreases in power and speed as the area approaches the shore.

Figure 3.1 Firth of Forth Wind Energy Resource (Annual Mean Power)

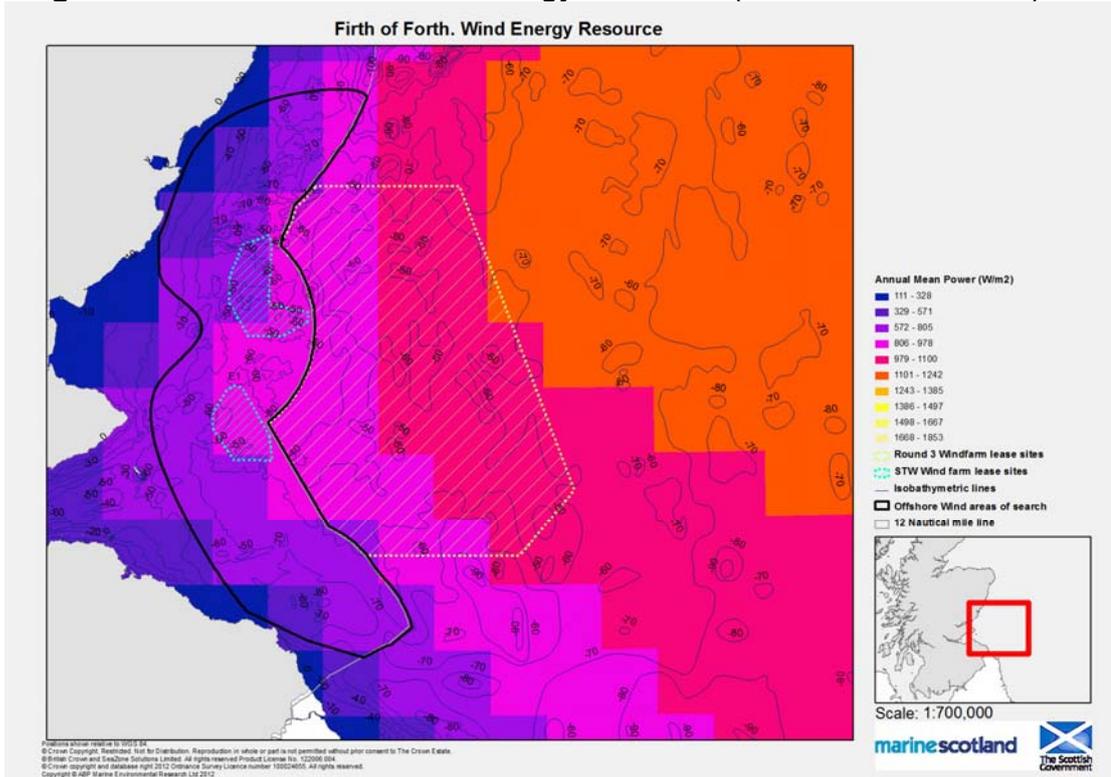
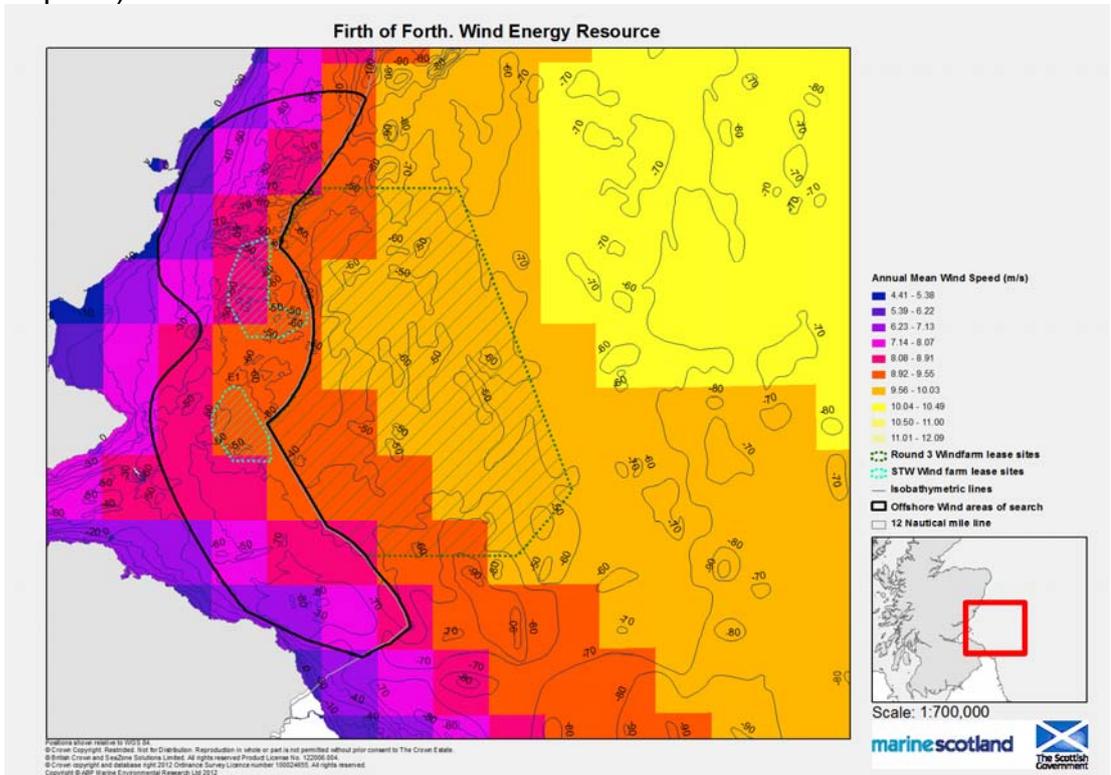


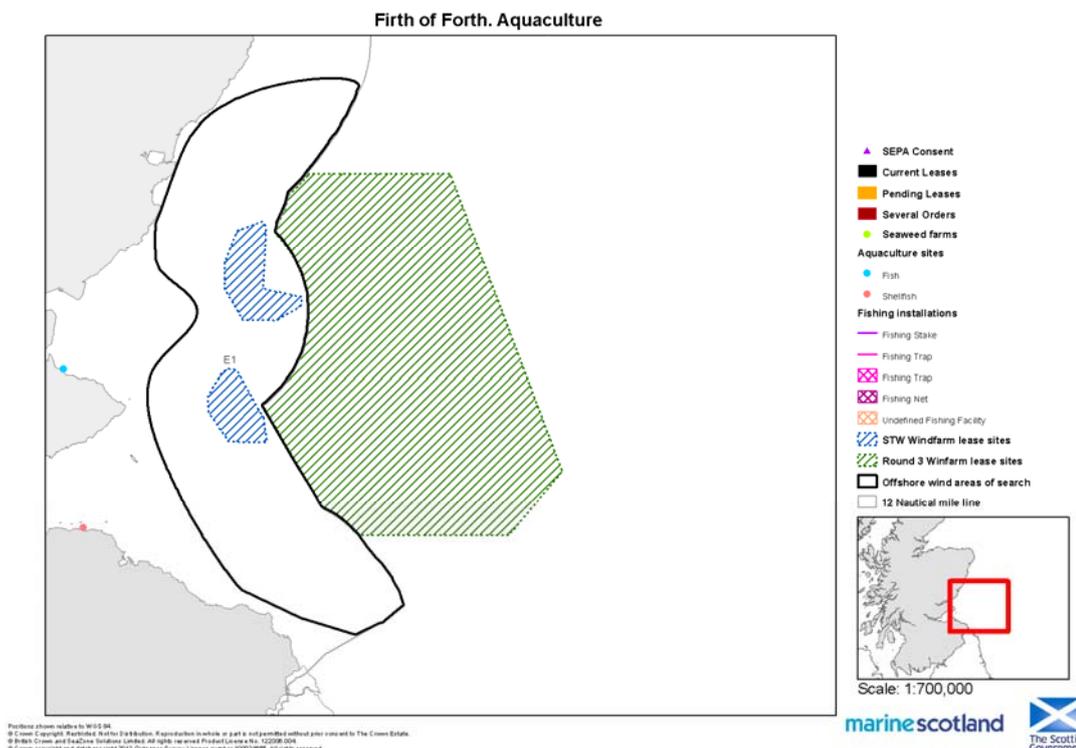
Figure 3.2 Firth of Forth Wind Energy Resource (Annual Mean Wind Speed)



3.2 Aquaculture

3.2.1 There are no aquaculture facilities within the area of potential development or the wider surrounding area with the exception of a lobster hatchery in North Berwick. There is a presumption against marine finfish and shellfish aquaculture development on Scotland’s north and east coasts.

Figure 3.3 Aquaculture activities in the Firth of Forth Region



3.3 Aviation

3.3.1 Airports in this region include the ‘major’ airport Edinburgh and the ‘minor’ airport Dundee. Edinburgh airport is Scotland’s busiest airport, handling 9 million passengers per annum (mppa), broadly similar to the combined throughput of Glasgow and Aberdeen. Of this figure, 4.9 million are domestic passengers travelling to/from other UK destinations including the Scottish Islands. An extensive network of European flights operates from Edinburgh and additionally a small number of services to the Eastern seaboard of America (ABPmer, RPA and SQW, 2011).

3.3.2 There are no existing promulgated helicopter routes local to the Forth where the short term offshore wind farms (OWF) options are concentrated (Marine Scotland, 2010c).

3.3.3 Information on the location of NERL infrastructure systems (radar) in this region includes the following:

| Radar | Easting | Northing | Range (nm) | Bearing (True) (°) |
|-------|---------|----------|------------|--------------------|
| | | | | |

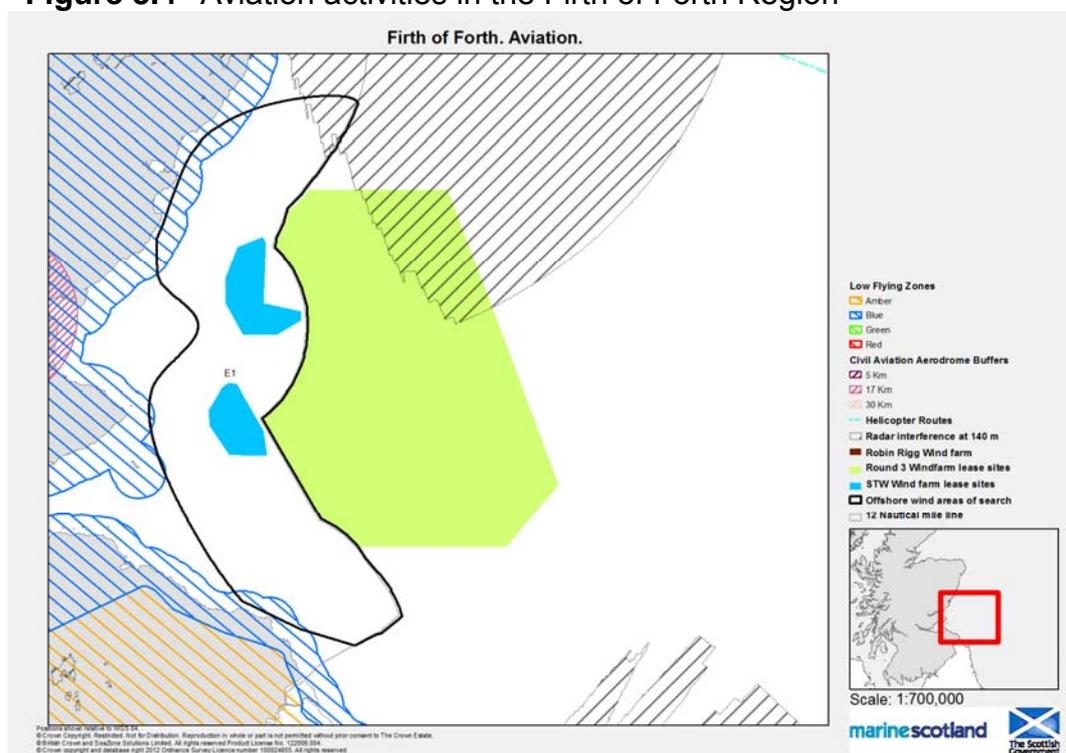
| | | | | |
|----------------------|--------|--------|-------|-------|
| Claxby Radar | 512440 | 396150 | 196.9 | 340.5 |
| Great Dun Fell Radar | 371030 | 532210 | 110.7 | 2.8 |
| Lowther Hill Radar | 289020 | 610710 | 84.8 | 35.1 |
| Perwinnes Radar | 392190 | 813510 | 41.7 | 187.1 |
| Tiree Radar | 96820 | 740140 | 154.3 | 86.6 |

3.3.4 In 2008, Edinburgh airport supported 7,710 jobs across Scotland with 3,530 people directly employed at the airport, 1,520 people employed within the city and the remainder being employed indirectly through supply chains and associated service providers. The airport contributed £146.2 million to the Scottish GVA, of which £118.4million was in the city region alone (Edinburgh Airport, 2011).

3.3.5 York Aviation (2009) estimated that if the airport was able to develop as per its Master Plan, the number of jobs supported in the Edinburgh City region would increase to about 12,790 FTEs and to about 16,040 FTEs in Scotland in 2030. It was estimated that the airport would make a corresponding contribution to GVA of about £702.3 million on the Edinburgh City region and £867.2 million of GVA per annum in Scotland as a whole (York Aviation, 2009).

3.3.6 Figure 3.4 shows the known aviation activities in relation to the Firth of Forth Search Area.

Figure 3.4 Aviation activities in the Firth of Forth Region



Bathymetry and Seabed

- 3.4.7 Depths in this area of search range from 30-80 m and the average depth over the whole area is around 60 m. The water is deeper at the north and south parts of this area, the depth is more consistent around the middle of the area where it varies between 50-60 m. The parts of E1 closer to shore are shallower than the offshore ones.
- 3.4.8 British Geological survey (BGS) data shows the seabed within the area of search at site E1 is mainly composed of sand interspersed with different proportions of gravelly sand mixed with sandy mud in the areas closer to the shore both north and south. This agrees with the EUNIS classification of the area which also shows predominantly sand with some fine and muddy sand towards the north east and south east parts close to the shore. A local fishery for nephrops exists around these muddy zones.

Figure 3.5 Firth of Forth Seabed Sediments

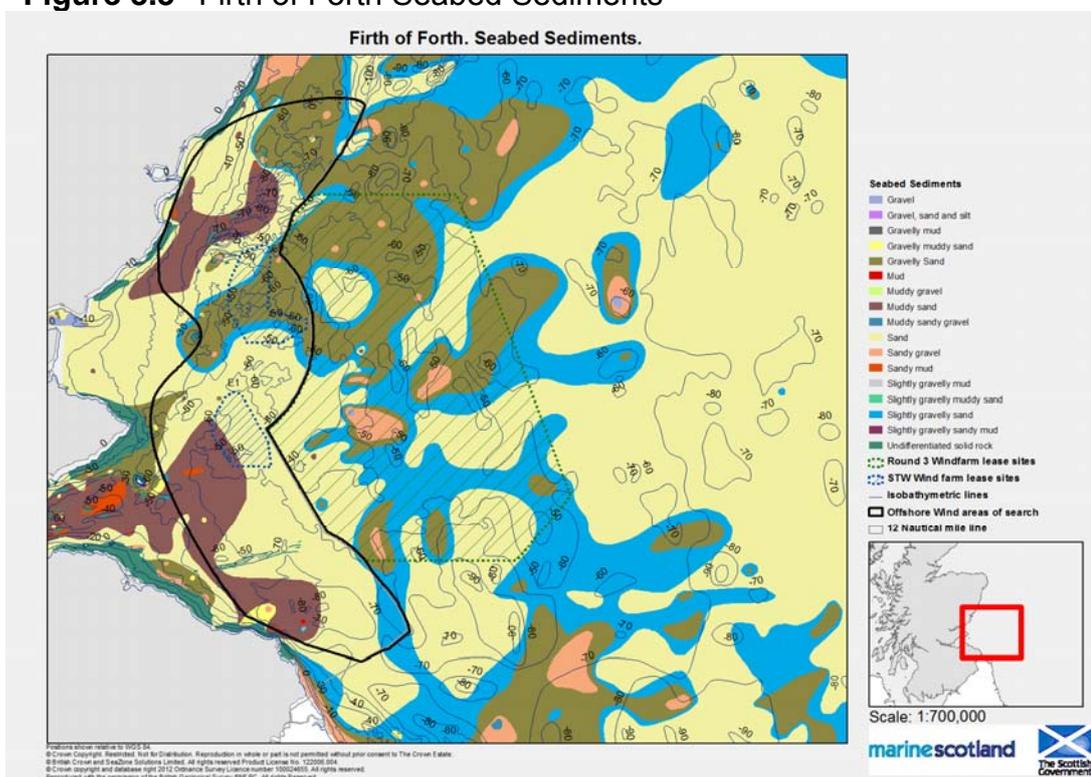
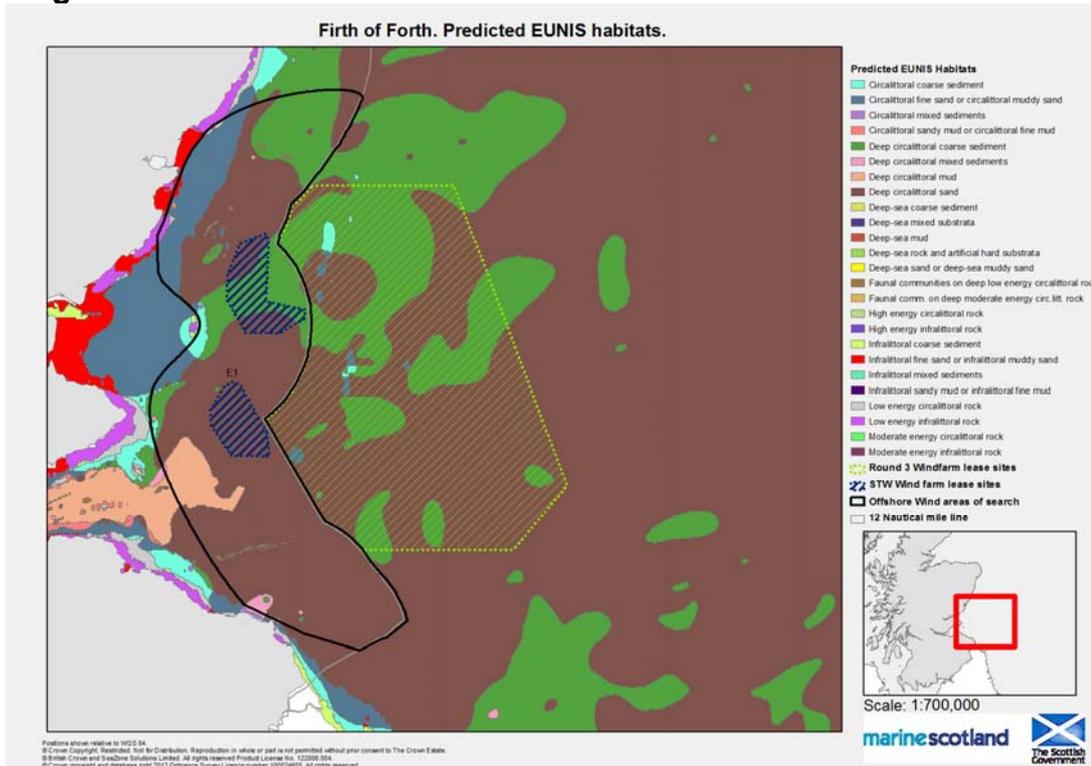


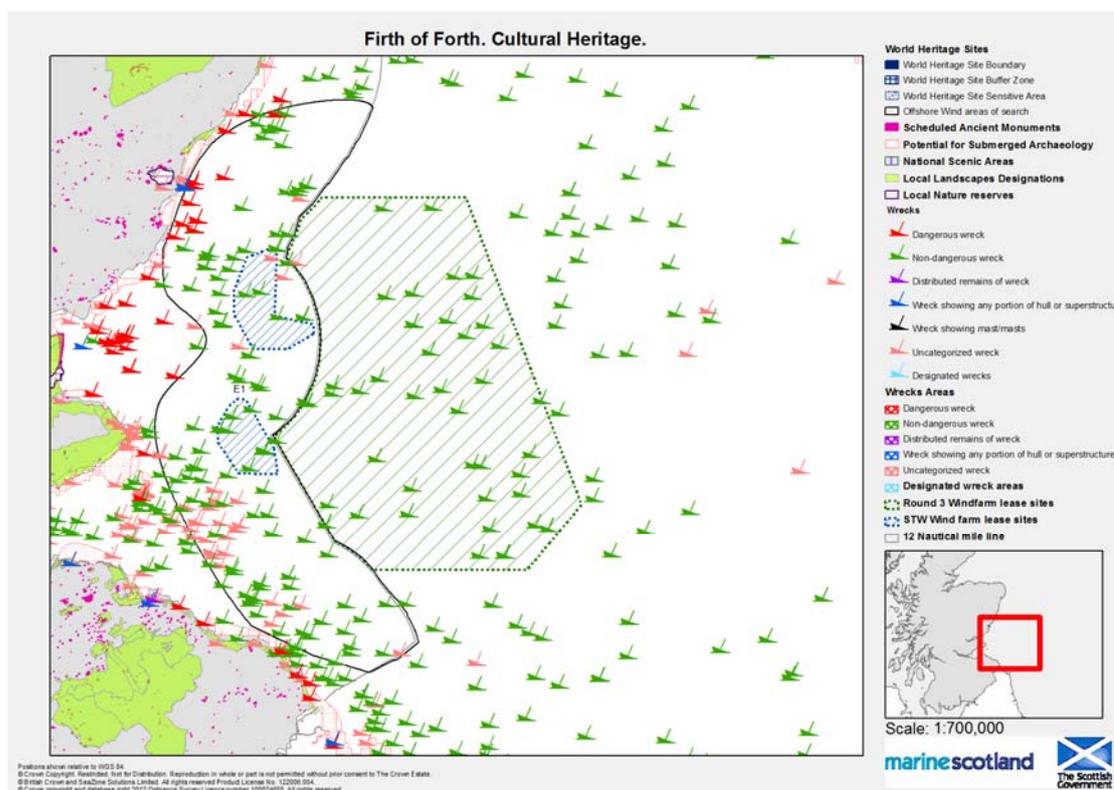
Figure 3.6 Firth of Forth Seabed Predicted EUNIS Habitats



3.5 Cultural Heritage

3.5.1 The area has a high concentration of wreck sites, the majority of which are classed as non-dangerous, but with a number of dangerous sites close to the coast and a few uncategorised sites. There are two designated wrecks in the region: 'The Blessing of Burntisland' and 'HMS Campania' are both located close to Burntisland Harbour.

Figure 3.7 Key cultural heritage assets in the East Region



- 3.5.2 Areas close to much of the coast within the region are identified as being likely to have submerged archaeology, and some overlap with small parts of the area of search.
- 3.5.3 Onshore there are numerous scheduled monuments on the coast and further inland. PASTMAP shows numerous records for sites and listed buildings in this Region. Offshore this includes Bell Rock Lighthouse, a Category A listed building.
- 3.5.4 Angus Council noted the importance of Angus How, and noted that surveys should address the matter of relict landscapes. There are numerous further sites and values along the coast and within settlements which are of cultural heritage value, such as listed beacons and chapels.
- 3.5.5 On the Fife Coast, Tentsmuir Coastal Defences cover an extensive area. St Andrews Links and Cambo are included in the Inventory of Gardens and Designed Landscapes and there is a dense concentration of designated historic sites within St. Andrews and other Fife coastal towns. To the south of Fife Ness, Crail Airfield is a scheduled monument.
- 3.5.6 In the Firth of Forth the Isle of May includes a Category C listed lighthouse. Further south, in East Lothian key sites of potential interest include North Berwick Law (a scheduled monument), Tantallon Castle (a scheduled monument and Category A listed building), Eyemouth Fort (a scheduled monument) and Tynninghame, Broxmouth Park and Dunglass, which are included in the Inventory of Gardens and Designed Landscapes. St. Abb's

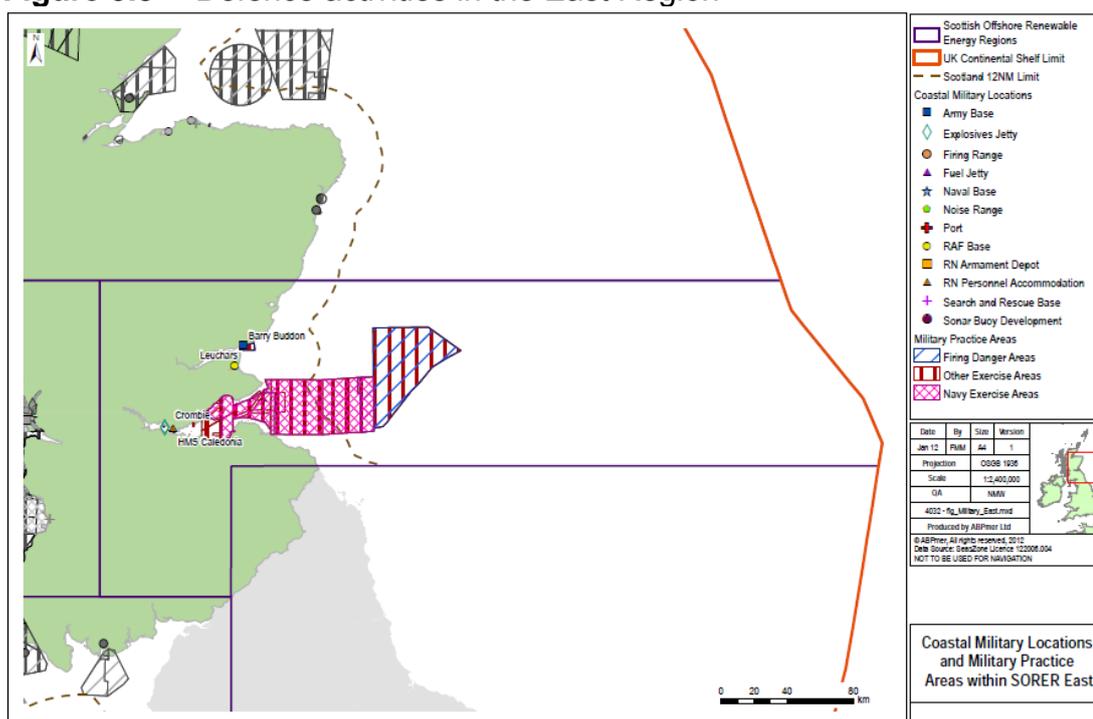
Head also has an important cluster of buildings and sites, including St. Abb’s Head lighthouse itself (a Category B listed building) and St. Abb’s Head and St. Ebba’s Chapel (a scheduled monument). Coastal settlements such as Berwick upon Tweed and Dunbar also have numerous buildings and sites of historic interest.

Defence

3.6.7 The coastal military locations which occur within this region are shown in Figure 3.8. Military interests in this region include:

- Barry Buddon Army Base;
- Leuchars RAF Base (see text below);
- HMS Caledonia Royal Navy Defence Equipment and Support (DE&S) site;
- Defence Munitions Centre (DMC) Crombie;
- A Royal Navy SXA covering inshore and offshore waters East of the Firth of Forth; and
- A ‘firing danger’ and ‘other’ exercise area in offshore waters to the East of the Royal Navy SXA.

Figure 3.8 Defence activities in the East Region

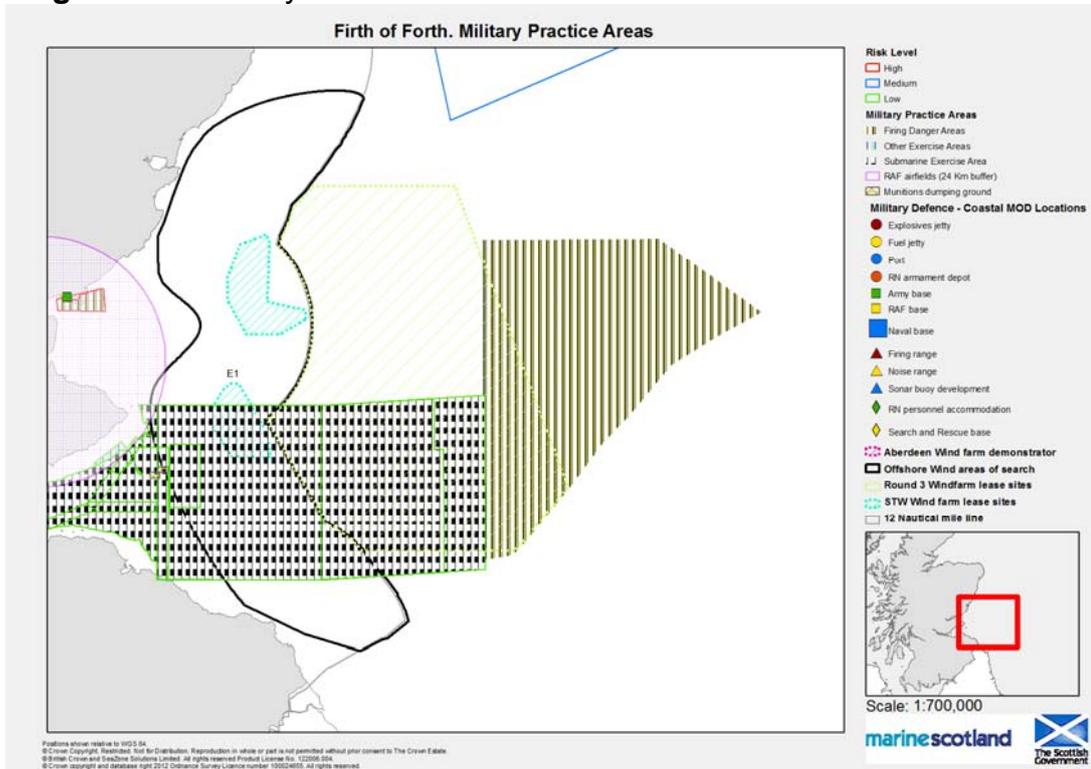


3.6.8 With respect to military aviation, RAF Leuchars is currently a Forward Operating Base for the new fleet of Typhoons, and as such will become a training facility for low flying aircraft.

3.6.9 Military radar installations in this region include: RAF Leuchars Primary Surveillance Radar (PSR) and RAF Leuchars Precision Approach Radar (PAR) (Mainstream Renewable Power, 2009).

3.6.10 Figure 3.9 below show the known defence activities which take place within the current search area for offshore wind energy in East Region.

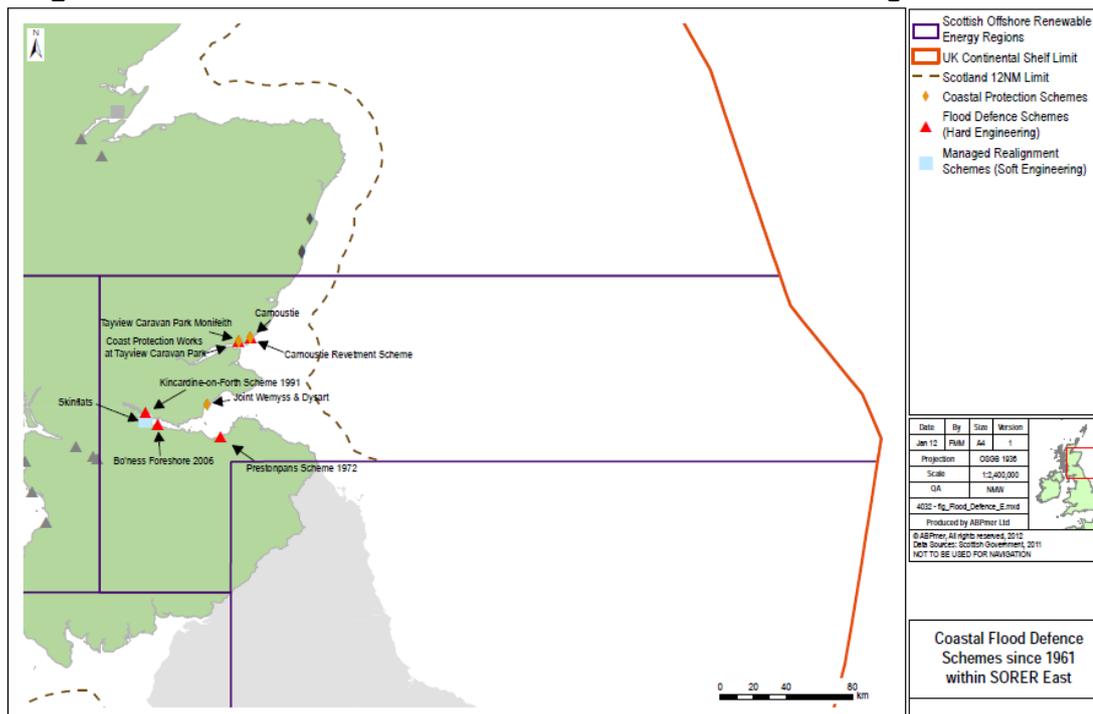
Figure 3.9 Military Practice Areas and Area of Search E1



3.7 Environment

Coastal and Flood Defence

3.7.1 There are five flood defence schemes, three coast defence schemes and a managed realignment scheme in this region (Figure 3.10).

Figure 3.10 Coastal and Flood Defence Schemes in East Region

3.7.2 Within the East Lothian Area of the East Region, a Shoreline Management Plan is also in place. The Plan sets out a strategy for managing the East Lothian Coast, taking account of natural processes, and human and other environmental influences and needs.

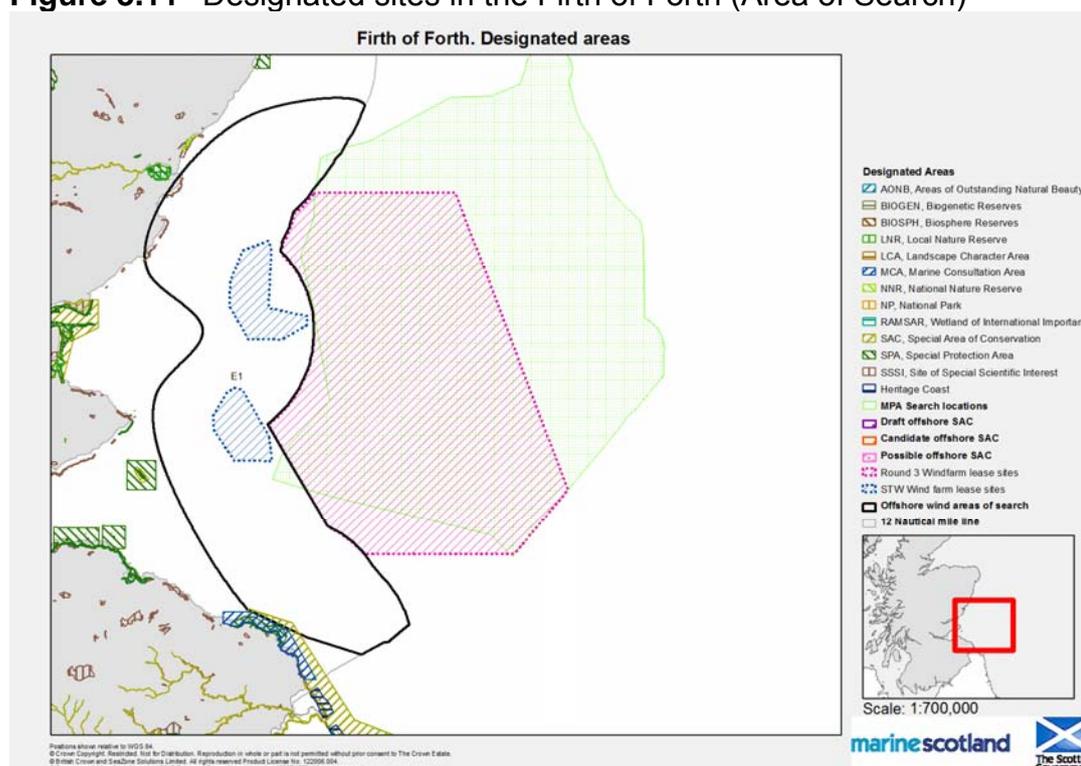
Designated Sites

3.7.3 The area of search identified in the East Region extends from the Angus coast southwards, past the Tay and Forth Estuaries to the East Lothian coast in the south. Key designated sites of interest include:

- SPAs located around the coast supporting a wide range of bird species. This includes Montrose Basin, the Firth of Tay and Eden Estuary, the Forth Islands, the Firth of Forth and St. Abb's Head to Hardcastle SPAs.
- SACs are also designated for a range of habitats and species, including the South River Esk SAC (which flows into the Montrose Basin and is protected for Atlantic salmon and Freshwater pearl mussel), the Firth of Tay and Eden Estuary SAC (protected for its coastal habitats and supporting common seals), Barry links SAC (protected for its dune features) and the Berwickshire and North Northumberland Coast SAC, (designated for its coastal habitats and support for grey seals).
- Numerous coastal SSSIs located across the region, which are protected for a range of features, including geology, habitats and species. Many overlap with European designations, whilst others do not.

- Further designations at the international, national and local level may also be of relevance, despite their location some distance from the site. For example, activities and development in the Firth of Forth has the potential to impact on fish species for which the River Teith SAC has been designated.
- To the east of the area of search, overlapping partly with the Round 3 windfarm lease site, an extensive area has been identified as an area of search for MPA status. The Firth of Forth Banks complex is being considered for MPA status, to support offshore subtidal sands and gravels, ocean quahog, and shelf banks and mounds.

Figure 3.11 Designated sites in the Firth of Forth (Area of Search)



Landscape Designations within Region

3.7.4 There are no NSAs which relate to the east coast. However local landscape designations are found around the coast of Fife, adjacent to the inner Forth Estuary and the Berwickshire coast. The areas of search identified at scoping extend down the coast and development proposals within the offshore areas of search identified at scoping, would need to take into account potential impacts on the special qualities of these areas.

- Angus and Dundee

3.7.5 There are no local landscape designations which relate to the coast within Angus or Dundee.

- Fife

3.7.6 A review of local landscape designations was carried out for Fife Council, published in 2009¹ which made recommendations on candidate Special Landscape Areas (cSLA) to replace the previous AGLV. It is anticipated that these will be incorporated into the emerging local development plan. The characteristics of the cSLA with a coastal association are summarised below:

- **Cullaloe Hills and Coast** includes the rounded interlocking hills and gently rolling coastal hills towards the coastal edge. Coastal views from the area and along the coastal edge are noted, including views across the Firth of Forth. The **East Neuk** includes the coastal edge from Crail to Elie. The open farmland complements the extensive seaward views from the coast, although toward Elie and Kincriag the coastal edge is more varied and intricate. **Ferryhills** is noted as a prominent local hill, important in providing setting for the Forth Bridges and settlements of North Queensferry and Inverkeithing. This landscape is likely to be subject to change as a result of the construction of the second Forth crossing. The **Upper Forth Coastal Braes** are located in the vicinity of Culross, Torryburn, Crombie, Limekilns and Charlestown. The coastal braes have a strong association with the setting of the settlements, but also provide backdrop to the firth landscape;
- The **Forth Islands** includes Inchcolm, Inchkeith and the Isle of May. The islands all have a distinctive profile combining built and natural features and play a role within views across the Firth of Forth;
- **Letham Hill** is noted as important in providing setting to Dalgety Bay and Inverkeithing, but also in views from the Forth Road Bridge;
- **St Andrews to Fife Ness** includes the coastal farmland which has expansive seaward views which contribute a particular quality and character to the landscape;
- **St Andrews Links** is also noted for its extensive seaward views and visual association with St Andrews, and cultural links with the development of golf at St Andrews;
- The **Tay Coast** incorporates the coastal edge and rolling hills to the hinterland. The Firth of Tay provides an important setting to the landscapes, where views focus on the water, mudflats and islands;
- **Tentsmuir Coast** includes the forest, dunes and shore is also noted for association with the sea and expansive seaward views which contributes to the experience of remoteness in the coastal landscape; and
- **Wemyss Coast** landscape has strong cultural associations from the policy influence of Wemyss Castle and the model village of Coaltown of Wemyss, and the coastal edge is strongly influenced by the Firth of Forth.

¹ Fife Local Landscape Designation Review Final Main Report prepared for Fife Council (2009) by Land Use Consultants in association with Carol Anderson and the Small Town and Rural Development Group
http://admin.1fife.org.uk/uploadfiles/publications/c64_CD38LocalLandscDesReview_09.pdf

- Edinburgh

3.7.7 The City of Edinburgh Council has approved 22 candidate Special Landscape Areas (cSLA) to be considered for designation when the Local Development Plan is prepared². Coastal views are an element of many of the cSLAs, however the **Southern Forth Coast** is the only cSLA which adjoins the coast. This cSLA extends from South Queensferry to Silverknowes and extends seaward to include the sands and rocky outcrops within the intertidal zone, and the Forth Islands of Cramond, Inchmickery, Inch Garvie and Cow and Calves. Landward, the area encompasses the policies of Dalmeny and the undeveloped farmland towards Laurieston Castle. Views across the Firth of Forth to the Fife coast are an important element of the landscape experience, and the area is also important for informal recreation.

- East Lothian

3.7.8 The Areas of Great Landscape Value (AGLV) identified in the East Lothian local plan 2008 were first identified in the 1970s. The local plan's AGLVs are identified on the Proposals Map and are supported by policy NH4: Areas of Great Landscape Value. The AGLV include the coastal areas of Cocklaw Hill and coastline to Torness, Dunbar coastline (Torness – Dunbar), Bass rock, Forth Islands, Coastline – Longniddry to North Berwick³. Areas of higher ground designated as AGLV such as Berwick Law also have a strong association with seaward views. East Lothian has not yet undertaken a review of its AGLV, therefore no information is available on the landscape qualities of these areas.

- Scottish Borders

3.7.9 Scottish Borders Council undertook a review of local landscape designations the results of which are presented in Supplementary Planning Guidance⁴. One of the proposed Special Landscape Areas (SLA) is the **Berwickshire Coast** which covers the coastal edge of the Scottish Borders Council area from the East Lothian boundary in the north to the English border in the South. It is a narrow coastal strip which covers the rocky coastline of cliffs and bays, and contrasting seas, and the coast is also important for recreation. The landscape is also noted for its long views to Fife from Coldingham Moor.

3.7.10 Feedback from consultees has highlighted concentrations of designated sites around the coast. West Lothian Council, for example, notes that its

² Land Use Consultants (2010) Review of local landscape designations The City of Edinburgh Council http://www.edinburgh.gov.uk/download/downloads/id/1951/review_of_local_landscape_designations

³ ASH Consulting Group 1998. The Lothians landscape character assessment .

Scottish Natural Heritage Review No 91 <http://www.snh.org.uk/publications/on-line/LCA/lothians.pdf>

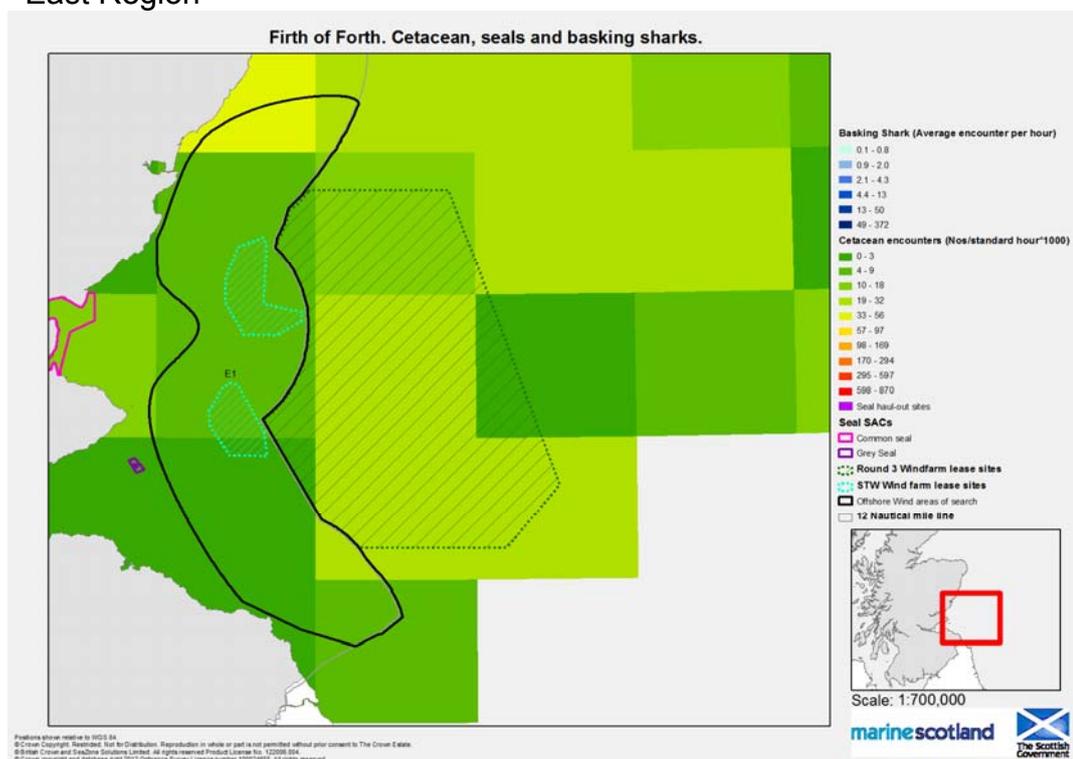
⁴ Scottish Borders Council Supplementary Planning Guidance Draft Local Landscape Designations August 2011 <http://www.dpea.scotland.gov.uk/Documents/qJ14030/J200244.pdf>

short (6 km) shoreline is covered in its entirety by environmental and historic designations, including part of the Firth of Forth SPA. It also highlighted the Hopetoun House GDL, which is located close to the coast.

Marine Mammals, Basking Sharks and Seals

- 3.7.11 The area covered by E1 is of relatively low overall importance for marine mammals. Cetaceans likely to be present are harbour porpoise, white beaked dolphin and minke whale, in pods or as individuals.
- 3.7.12 There have been very few sightings of basking sharks in this area of search, which is not considered to be important for this species
- 3.7.13 A large SAC that covers the entirety of the Firth of Tay has been designated for common seals towards the central part of E1. Around 600 adults haul-out at the site to rest, pup and moult, representing around 2% of the UK population of this species.
- 3.7.14 Another SAC has been designated for grey seals towards the south-west of the central part of E1 at the Isle of May. This protects the largest breeding colony of grey seals on the East of Scotland.
- 3.7.15 The current draft of the seal haul-out distribution shows a haul-out site west of E1 well within the Firth of Forth at the Kinghorn Rocks. This site has been established for common seals that haul-out on the sandbanks at this location, (JNCC).

Figure 3.12 Marine Mammals (Cetaceans), Seals and Basking Sharks in East Region



Seabirds

- 3.7.16 From the ESAS data both the breeding and winter populations show a higher level of relative density towards the coast with some overlap into E1 during the breeding season. The collective maps for the breeding season (Figure 3.14) and winter season (Figure 3.13) are mainly populated by gannets, common guillemots, puffins and black legged kittiwakes.
- 3.7.17 SPAs in the vicinity of E1 have been established from St Abb's Head to the cliffs of Fowlsheugh. The various SPAs at and around this area of search have been established to protect waterbirds, waders, sea-duck and geese as well as seabirds like puffins and gannets. During breeding season species protected by these SPAs include arctic and common tern as well as gannets and guillemot with rarer species such as golden plover and red-throated diver also present. Overwintering species include pink-footed goose, cormorant, greylag goose and bar-tailed godwit.
- 3.7.18 The Firth of Forth SPA as well as being of ecological importance includes the Isle of May and Bass Rock which provide a regular annual ornithological attraction for visitors who come to experience the large aggregations of breeding or overwintering birds like gannets, puffins and shags. Montrose Basin holds around 82,100 wintering and 28,600 passage waterbirds on a regular basis. It is also nationally important for many wintering species and for some summer moulting species (RSPB).
- 3.7.19 Important Bird Areas (IBA) have been declared due east of E1 and also in adjacent coastal areas towards the north at the Montrose Basin which was created to protect large numbers of overwintering waterbird (RSPB). These IBAs cover large areas of intertidal flats and inshore waters, in addition to saltmarsh and sand-dune systems, maritime grassland, heath and fen (www.birdlife.org).

Figure 3.13 Seabirds, Important Bird Areas and RSPB Reserves in East Region (Winter Season)

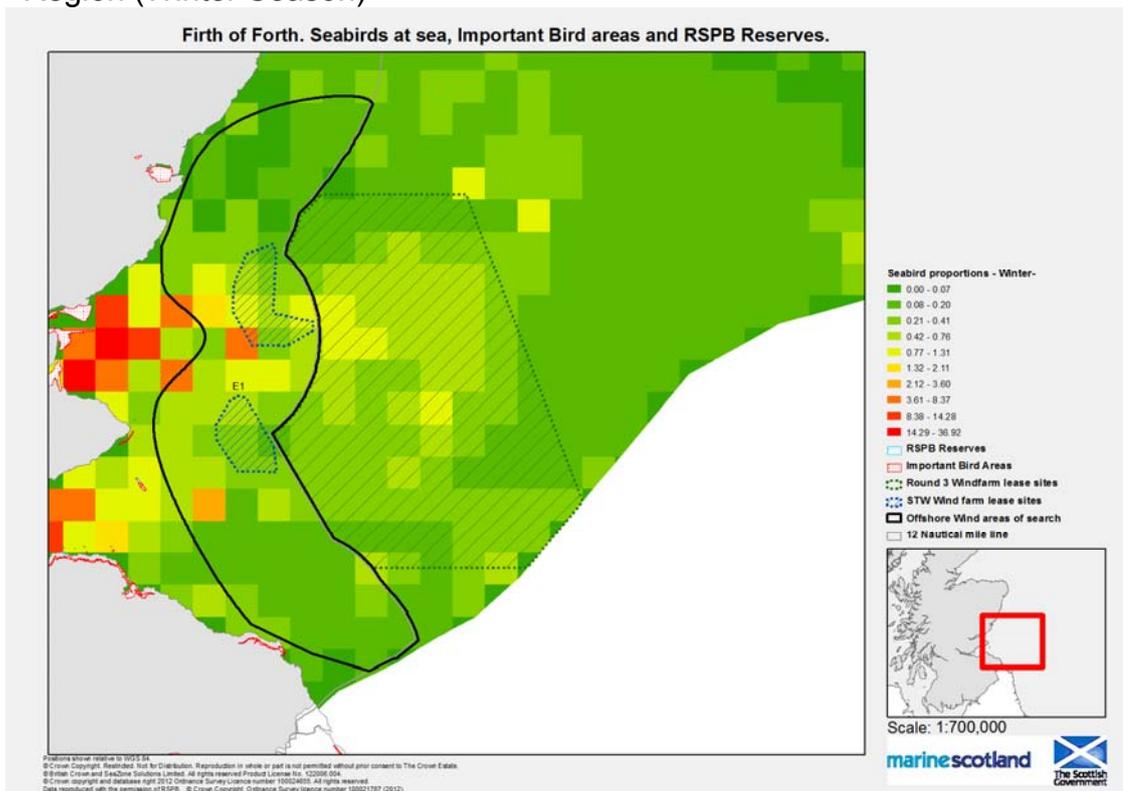
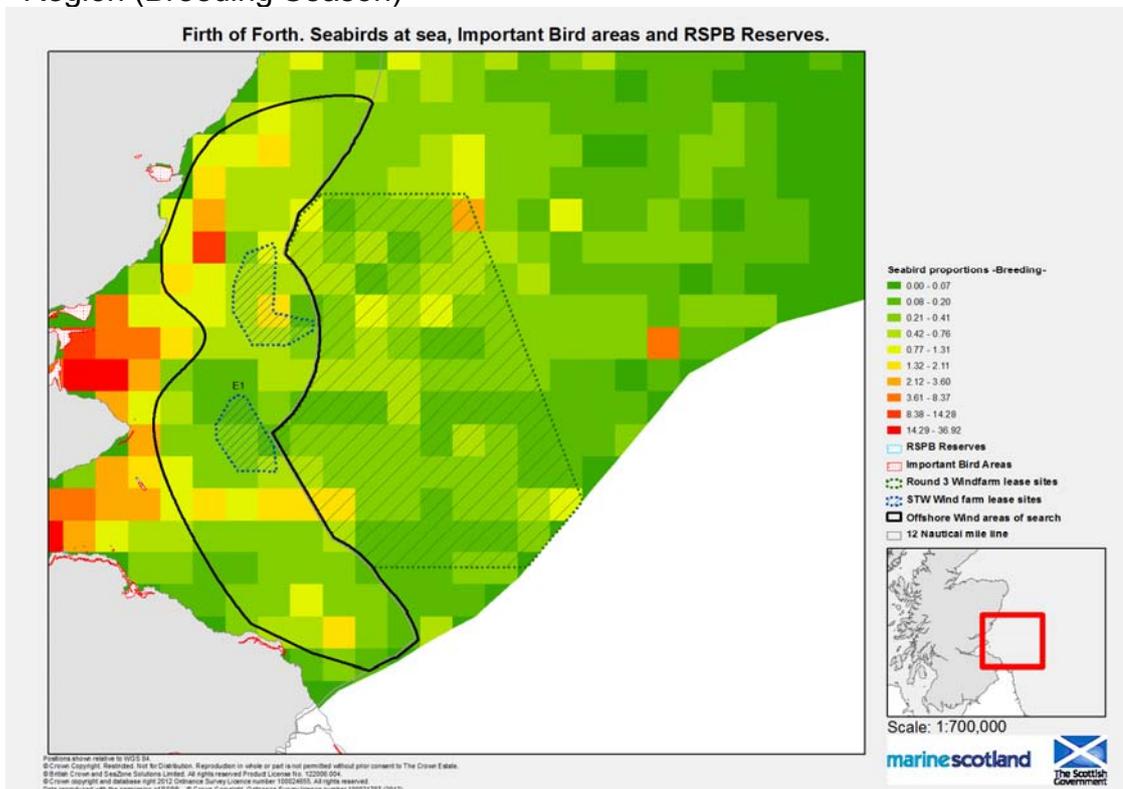


Figure 3.14 Seabirds, Important Bird Areas and RSPB Reserves in East Region (Breeding Season)



3.8 Fishing

Commercial Fisheries Regional Overview

- 3.8.1 Landings caught by UK vessels within the East Region had an average annual value of £23.9 million (6.2% of the Scottish total) and an average annual live weight of 15,600 tonnes (3.6% of the Scottish total) for the ten year period from 2001 to 2010.
- 3.8.2 In 2010, 50% of the value of landings from inshore waters were taken by vessels 10m and under in length, compared with 35% landed by vessels over 10m and under 15m and 15% landed by vessels 15m and over. Offshore, 76% of the value of landings was taken by vessels 15m and over in length. For inshore waters, 58% of the total catch value was taken by Nephrops trawls and 32% by pots; whereas for offshore waters, 42% was taken by Nephrops trawls and 26% by demersal trawls.
- 3.8.3 The Socio-Economic Baseline Review for Offshore Renewable Energy highlights the overflight (surveillance) sightings by vessel type and nationality in the region from 2006 to 2010. The East Region has the least amount of fishing activity by sightings at 1% of the national total. Demersal trawlers operate within the Firth of Forth while other gear types are seen working within the 12 nm limit and other trawls are predominant in the offshore area.

Areas of Search Interactions

- 3.8.4 Area of search E1 covers spawning sites for sandeel, plaice, lemon sole whiting, herring, cod and nephrops. The collected spawning times for these species cover, in various degrees of intensity, from January to December, hence any interactions should be investigated individually to ascertain spatial and temporal availability.
- 3.8.5 The number of overlaps is moderate. More overlaps means more species need to be considered in any one spatial extent.
- 3.8.6 Nursery sites overlap in E1 for cod, lemon sole, nephrops, saithe, sandeel and whiting.

Figure 3.15 Fishing Intensity in the East Region (Scallop Dredge, Demersal – Mobile Gear, and Nephrops – Mobile Gear)

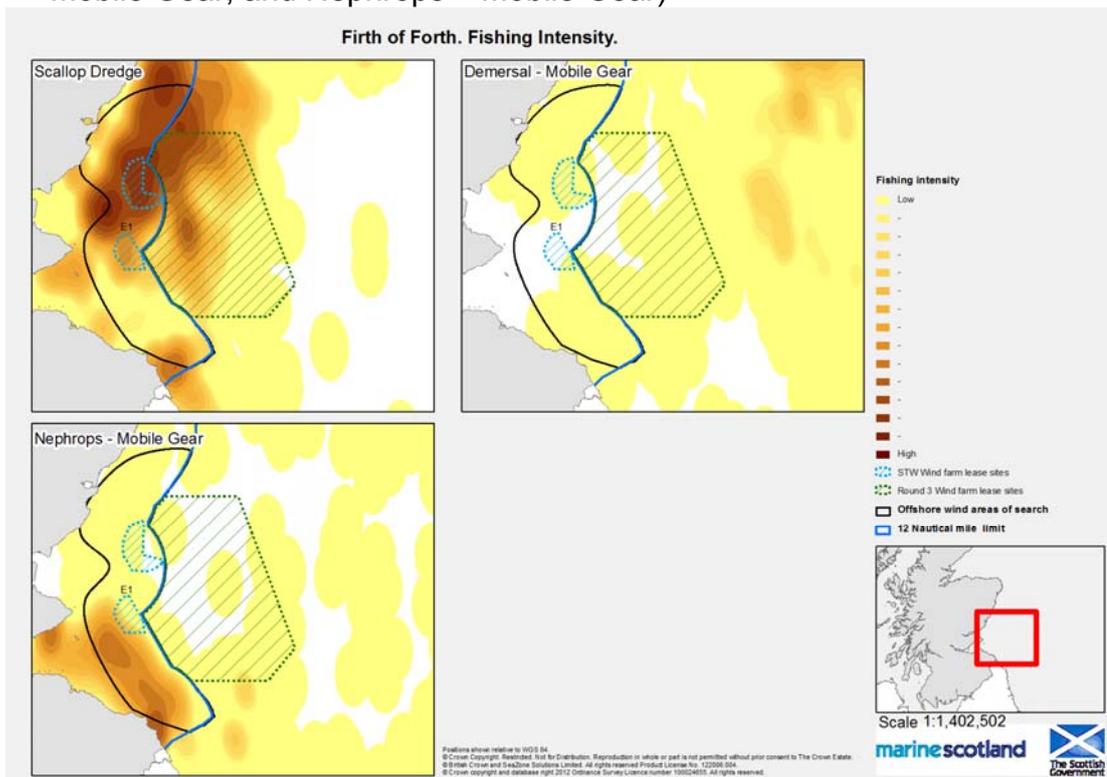


Figure 3.16 Fishing Intensity in the East Region (Pelagic, Demersal – Static Gear, Nephrops - Creels)

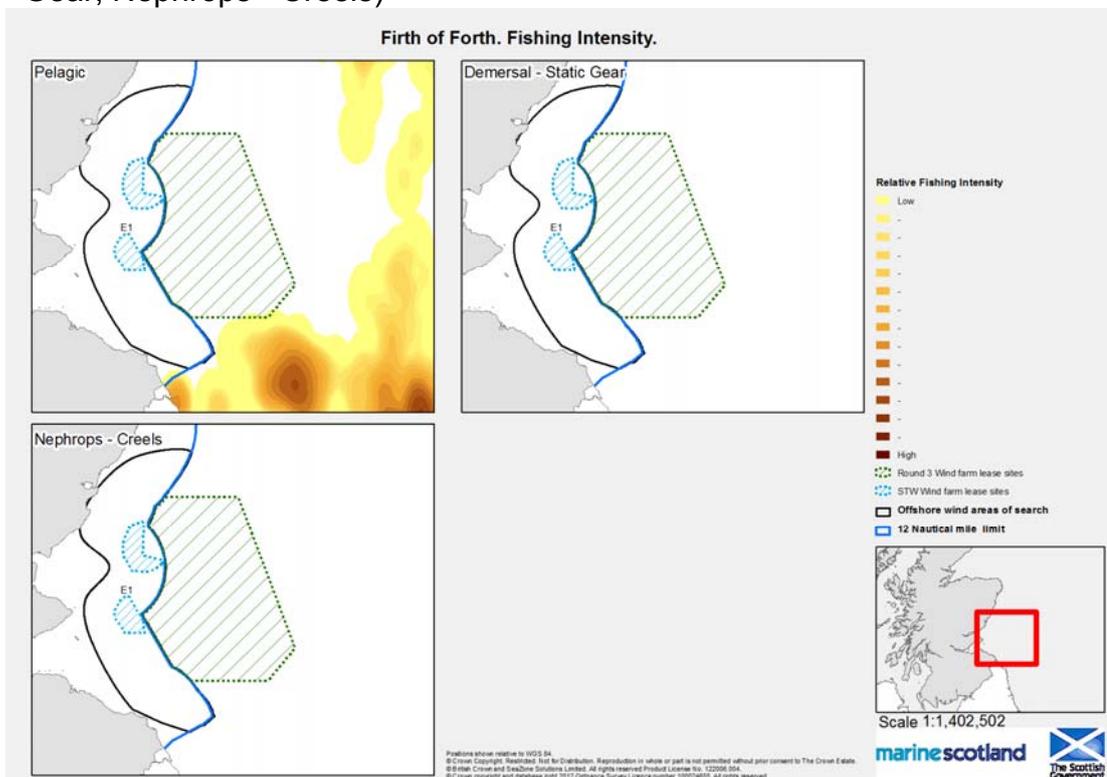
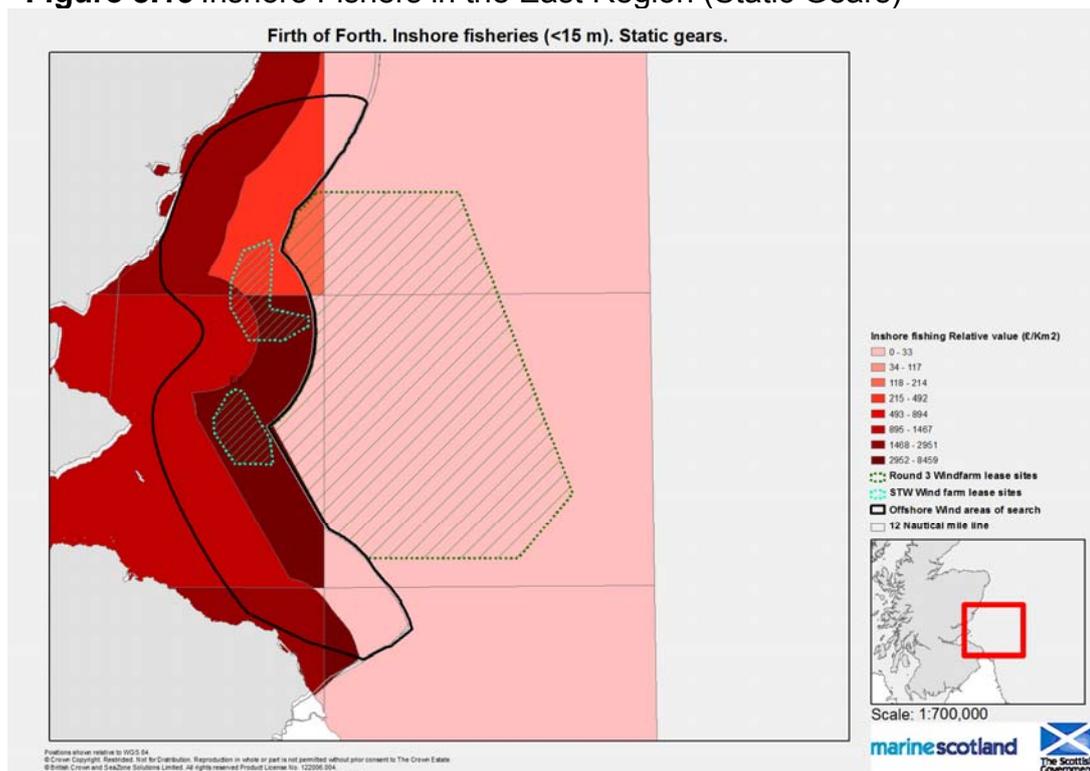


Figure 3.19 Inshore Fishers in the East Region (Static Gears)



3.8.7 This is one of the smaller regions for fisheries in the UK and employs the smallest number of fishermen compared with the five other SORERs, however, it is very important to many of the people who live there. The East SORER is covered by the administrative ports of Eyemouth and Pittenween. There are 356 fishermen employed on Scottish based vessels in these districts; 268 of these are employed full-time and 88 are part-time. There are 225 active vessels registered in these districts, 181 of which are 10m and under in length.

Fish Processing Activities

3.8.8 The main local centres of demersal fish processing are at Arbroath and Eyemouth. Arbroath is famous for the Arbroath Smokie (haddock smoked in a traditional way within an 8km radius of Arbroath) which has received official protection by the EU’s Protected Geographical Indication (PGI) scheme. This scheme promotes and protects names of quality agricultural products and foodstuffs that are closely linked to the geographical area. The scheme helps producers to obtain a premium price for quality products according to tradition in a specified location. With good market recognition the product can create value, increase demand, avoid use of cheaper or lower quality raw materials, secure local jobs and so contribute to the local economy.

3.8.9 To remain competitive, some Arbroath fish processors have diversified into smoking salmon and trout as well as haddock using the same equipment

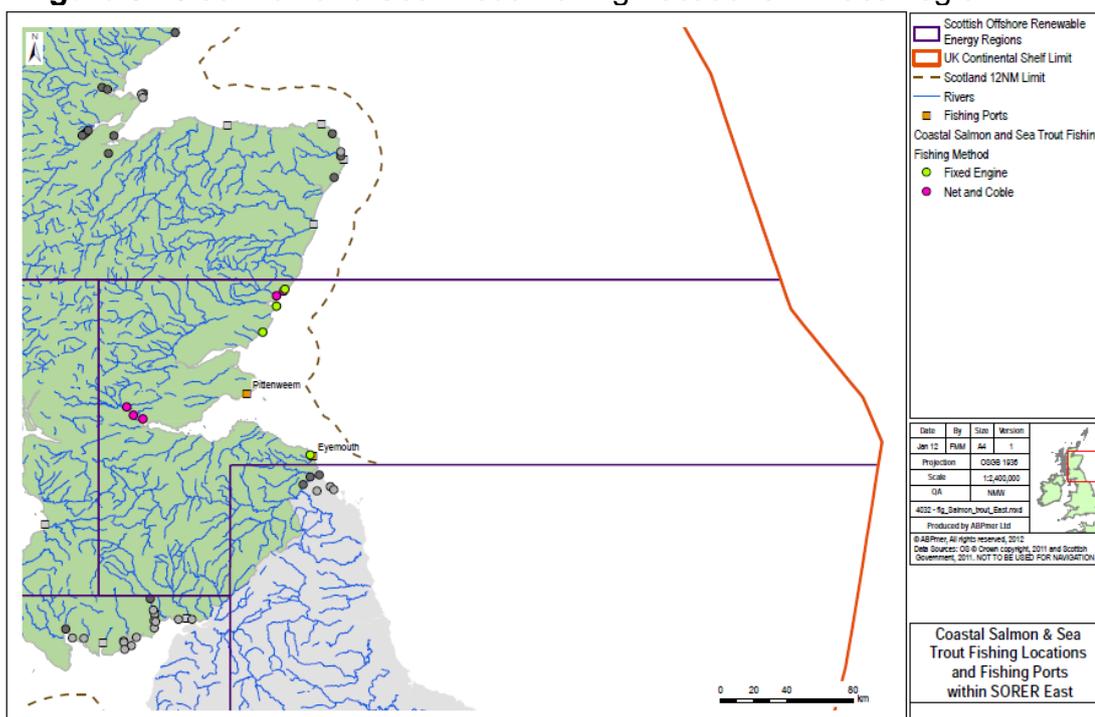
and skills. The largest processing company in the Arbroath area employs around 90 people.

- 3.8.10 The ONS (2011) and Employment Survey statistics for processing activities in the East Region estimated that there are around 1,070 full-time and 155 part-time staff in the processing and preserving of fish, crustaceans and molluscs

Wild Salmon and Sea Trout

- 3.8.11 There are four fixed engine (three in the North and one in the South of the region) and five net and coble netting sites (two in the North and three along the upper reaches of the Firth of Forth) in the East SORER.
- 3.8.12 The main rod and line fishing rivers in this region are the North Esk (salmon), South Esk (salmon and sea trout), Tummel (salmon), Tay (the largest of Scotland’s salmon rivers), Earn (salmon and sea trout), Alan (salmon and sea trout), Teith and Forth (one of the best salmon rivers in Central Scotland), Tyne - East Lothian (sea trout), Whiteadder (salmon and sea trout), Tweed (salmon and sea trout) Teviot (salmon and sea trout), Ettrick and Yarrow (salmon) (Gray J., 2009).

Figure 3.20 Salmon and Sea Trout Fishing Locations in East Region



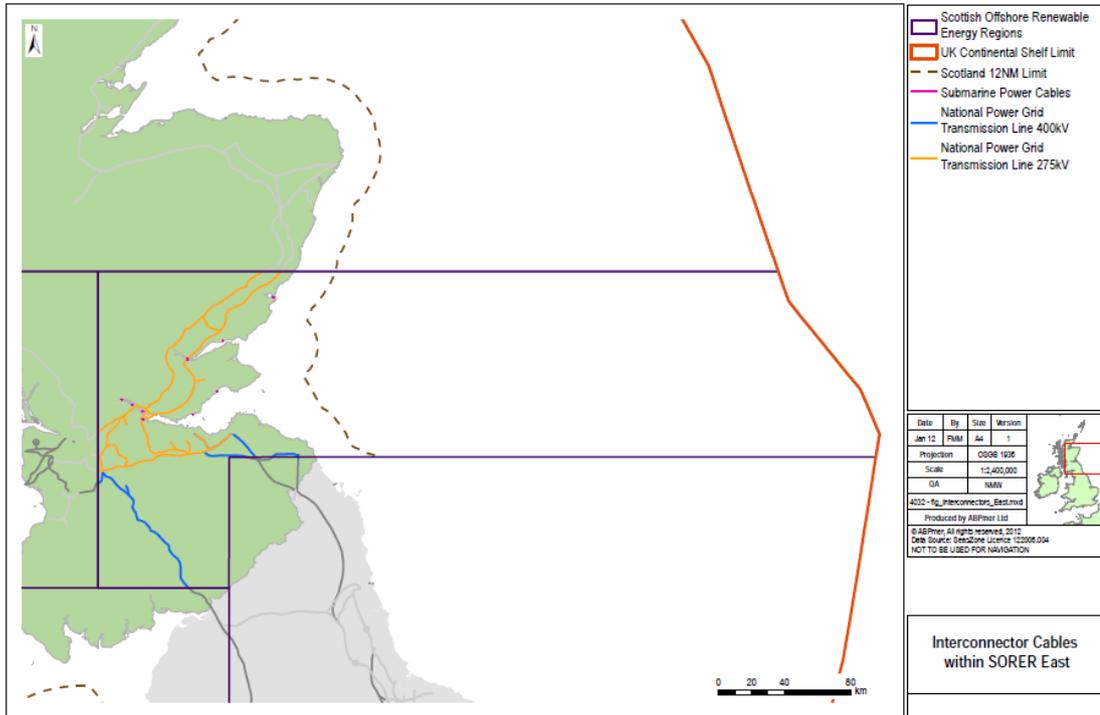
3.9 Infrastructure and Grid Provision

Existing

- 3.9.1 The major power stations located within the East region include Torness, Cockenzie and Longannet.

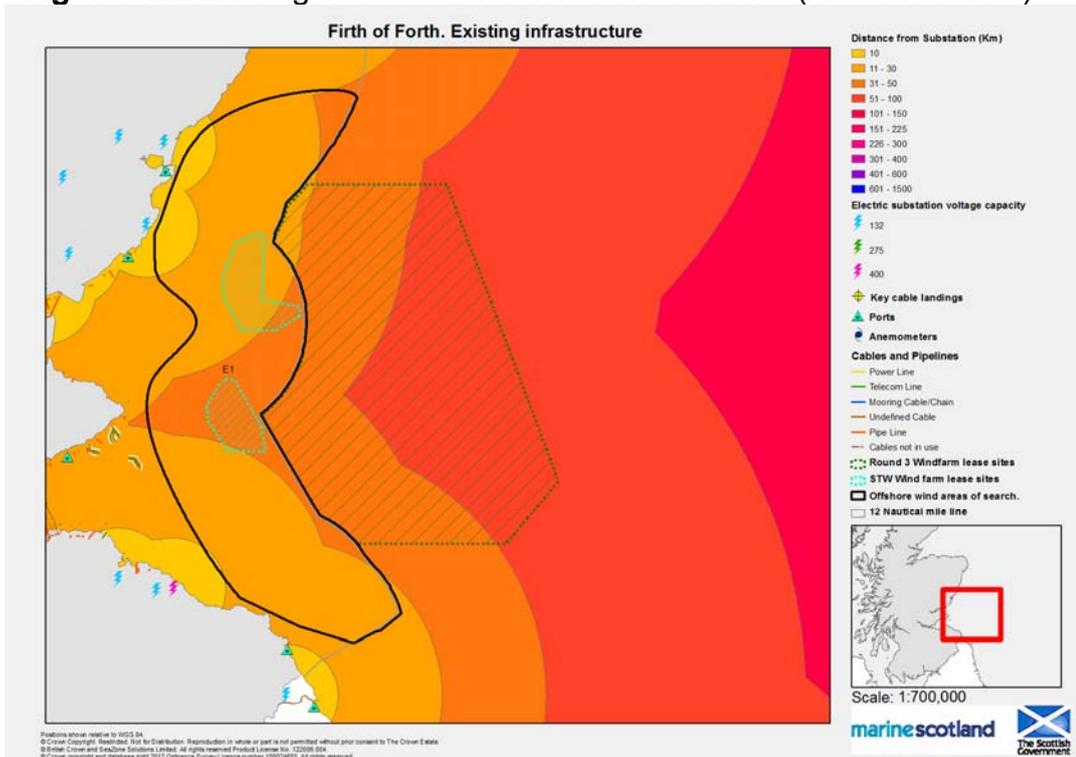
3.9.2 Several domestic power cables exist in this region, connecting mainland areas within this region.

Figure 3.21 Interconnector cables in the East Region



3.9.3 The existing infrastructure for electricity grid substations along with an indication of sub-station voltage capacity is outlined in Figure 3.22 (below):

Figure 3.22 Existing infrastructure in the Firth of Forth (Area of Search)



Future

3.9.4 The potential infrastructure and grid provision with in the East Region is:

- Possible connection to Torness in East Lothian;
- Possible connection to a substation at Tealing near Arbroath;
- Opportunity to connect with HVDC link from Torness to Lackenby Head; and
- Opportunity to connect out to Peterhead to Hawthorn Pit eastern bootstrap.

3.9.5 Table 3.1 (below) provides an indication of the current stage of the planning for the potential infrastructure projects:

Table 3.1 Current stage of planning for potential infrastructure projects (East region)

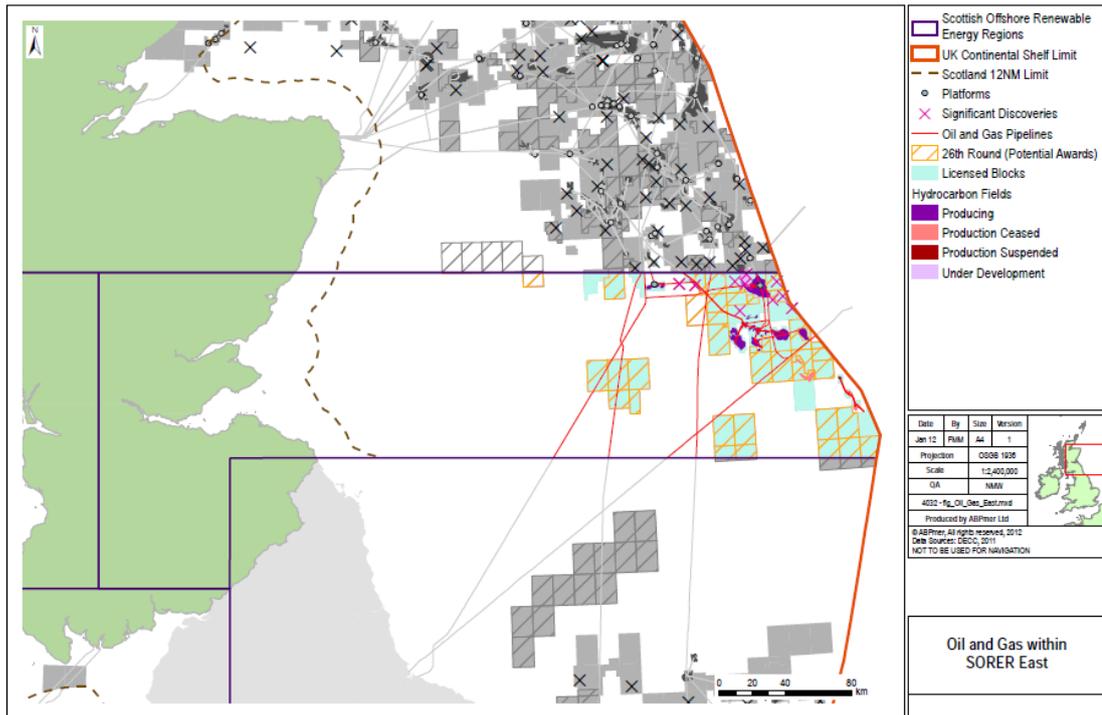
| Potential Project | Current stage of planning |
|--|---|
| Onshore connection to Torness / Cockenzie / Branxton | Would be assessed as part of project EIA. Covered in DECC SEA (National Grid Study) |
| Onshore connection to Tealing / Arbroath | Covered in DECC SEA (National Grid Study) |
| Torness to Lackenby HVDC cable | Not covered in NPF2 or its SEA Covered in ENSG but not subjected to SEA Included in EGPS as reference but not subjected to SEA. SPT project – current stage in not clear at present. |
| Peterhead to Hawthorn Pit (eastern bootstrap) | See previous |

3.10 Oil and Gas

3.10.1 In this region, Oil and Gas activity is concentrated in offshore waters. Oil and Gas pipelines within this region connect to terminals in England. There are 16 producing hydrocarbon fields in this region (14 producing oil and two condensate) (DECC website), see Figure 3.23.

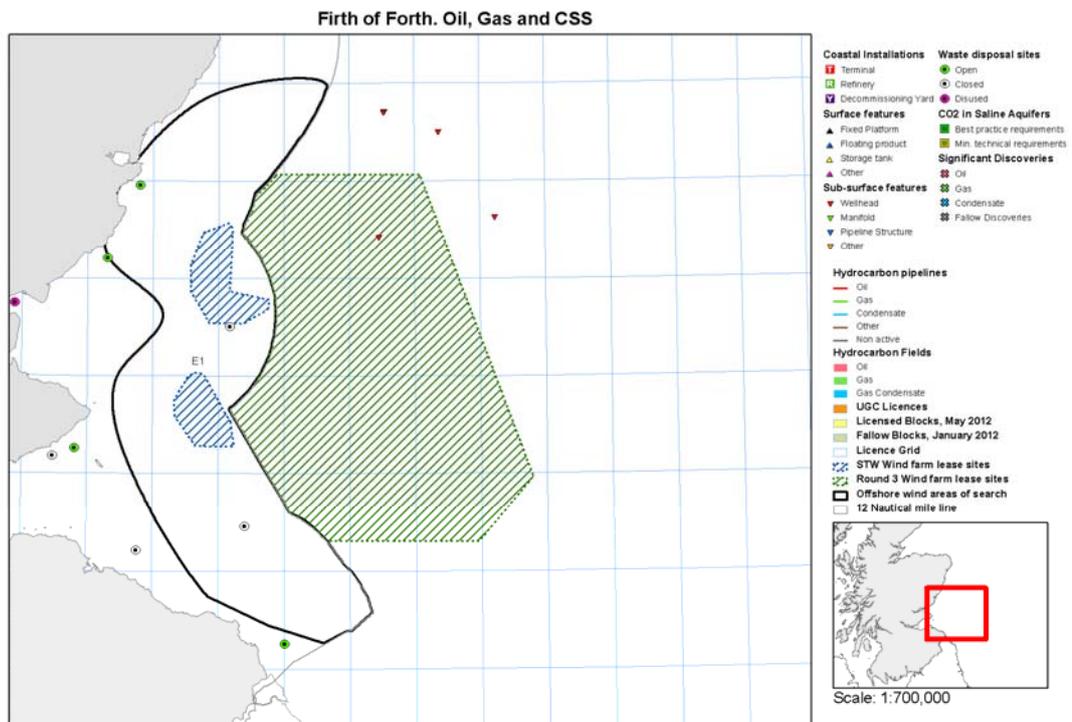
3.10.2 An indication of the level of employment provided by the Oil and Gas sector in this region is obtained from the Oil and Gas UK, 2011 suggesting that between 10,000-25,000 people are employed in this sector. However, it must be noted that the West Aberdeenshire and Kincardine Parliamentary Constituency spans part of the Northeast and East SORERs and hence this level of employment cannot be considered to occur entirely within the East SORER.

Figure 3.23 Oil and Gas activities in the East Region



3.10.3 There is currently no known oil and gas activities taking place within the Firth of Forth Area of Search. See Figure 3.24 (below)

Figure 3.24 Oil and Gas activities in relation to the Firth of Forth (Area of Search)



3.11 Planning Issues

Tayplan

- 3.11.1 The Tayplan area Strategic Development Plan is expected to be adopted soon. It notes the aspirations for offshore renewable energy and supply chain in the region, particular at Dundee and Montrose Ports, linking with the Fife Energy park at Methil. It emphasises the importance of protecting these ports and improving access to them as key parts of the east coast offshore energy infrastructure.
- 3.11.2 The SDP also notes the need for increased renewable energy generation within the region and explains the role of planning in ensuring that development is taken forward in the most appropriate locations. At the same time it highlights the importance of the coast as a resource that will require flood risk management to address the impacts of climate change, and protection in areas classed as undeveloped.

Angus

- 3.11.3 The Angus Local Plan Review sets land use planning context for the area. It is accompanied by an Implementation Guide for Renewable Energy Proposals. The Angus Council Shoreline Management Plan defines coastal zones and character, and the Tayside Landscape Character Assessment provides further insights into landscape characteristics.
- 3.11.4 In the initial consultation, Angus Council noted that the interrelationship between offshore and onshore proposals will be crucial. The Council maintains a database of applications (provided) and large coastal turbines, and suggested that this should be considered in relation to onshore development to assess cumulative impacts.

Dundee

- 3.11.5 In its response to the initial consultation, Dundee City Council provided information on planning issues. Much of this related to ports (see Section 3.13) as they are recognised as a key investment area within policy including the National Renewables Infrastructure Plan. The Dundee Local development Plan (LDP) is currently in preparation, and consultation to date shows that consultees to date are very supportive of planning which supports investment in offshore renewables. Three Strategic Development Areas have been identified within Dundee to support this: the Western Gateway, Linlathen and Dundee Centre and Port. The Plan will also provides scope for additional sites that may be required to support this type of development, and this is further backed by planned transport infrastructure improvements within the Strategic Transport Projects Review.
- 3.11.6 The Dundee LDP also includes policies which seek to protect the environment, including natural heritage designations, flood risk etc.

Fife

- 3.11.7 The Fife Structure Plan 2006-2026 sets a policy framework against which proposals for offshore wind energy will be assessed. It includes requirements for landscape capacity assessment, visual impact assessment and consideration of noise and construction effects on residential amenity. It also includes aspirations for economic development and diversification, including offshore engineering with the allocation of land at Methil to establish the Fife Energy Park.

Edinburgh

- 3.11.8 The City of Edinburgh LDP is currently being development. The Main issues Report (MIR) recognises Leith Docks as a strategic development area and sets out future options including housing led regeneration, or redesignation for port related industry. In terms of protective policy, the Edinburgh Skyline Study (2008) identified key viewpoints including some from the city towards the sea.
- 3.11.9 In its response to the scoping consultation, the City of Edinburgh Council recognised that Leith has been identified as a port within the National Renewables Infrastructure Plan (N-RIP), and as a result has agreed a Memorandum of Understanding to explore the potential for new industrial uses and other port related activities including tourism at the Port of Leith. The potential investment and employment from renewables, and the concentration of offshore wind development around the Forth and Tay Estuaries is also recognised, as a key opportunity. The need for infrastructure improvements and appropriate business investment support was also raised. The Council noted that the LDP will include policies which are relevant to the interface between terrestrial and marine planning

East Lothian

- 3.11.10 The East Lothian LDP is currently being developed to replace the 2008 Local Plan. An MIR is expected to be published later in 2012. In its response to the scoping consultation, East Lothian Council noted that it is liaising with Mainstream Renewable Power on opportunities for operation and maintenance, and community benefits arising from their proposal for offshore wind energy development. This includes a focus on Torness, where the cable is expected to come onshore.

Scottish Borders

- 3.11.11 Scottish Borders Council produced an MIR earlier this year. It notes the importance of renewable energy and explains that to date the main thrust of activity in the area has been on offshore wind. However, it also notes the growing attention to offshore wind energy and takes into account the potential impacts of all types of renewable energy development on landscape, biodiversity, air quality, water quality and soils. The MIR makes reference to its 2011 Wind Energy Strategy which provides a spatial

framework for onshore wind. Its MIR suggests that this could be the continuing policy within the area, but also offers consultees the alternative of suggesting that the landscape is already at saturation point for onshore wind, and therefore that applications should be approved on a 'by exception' basis. Consultation on this is ongoing.

3.12 Ports and Harbours

3.12.1 Forth Ports run a group of regionally based ports in the central belt of Scotland and Tayside; namely Grangemouth, Rosyth, Fife Ports, Leith, Kirkcaldy and Dundee. Grangemouth is Scotland's largest container port, serving both the Glasgow and Edinburgh Metropolitan Regions, and hosts the Grangemouth Oil Refinery with around nine million tonnes of cargo passing through the port each year. The Port of Rosyth has runs a passenger and freight ferry service for the route to Zeebrugge. The Fife ports supply facilities for bulk handling, particularly timber. Leith handles cruise vessels, naval vessels and bulk materials including coal and cement. In 2009, the Forth alone handled 36.7 million tonnes of cargo, by far the majority being for the Oil and Gas sector, and mostly through the marine terminals at Hound Point and Braefoot. The Port of Kirkcaldy recently reopened for the importation of wheat directly to a quayside tenant. The port of Dundee (in the Firth of Tay) handles oils for the Nynas refinery, agricultural cargos, Oil and Gas support and forest products.

3.12.2 The key ports of interest to the renewables sector in this region are Dundee Port, Port of Leith and Fife Energy Park at Methil. The N-RIP Stage 2 report identified them as key locations for development. the Ports of Leith and Dundee have also been designated as Enterprise Areas ('Low Carbon / Renewables East').

3.12.3 The **Port of Leith** is the largest enclosed deepwater port in Scotland, dealing with general cargo and cruise liners. The N-RIP Stage 2 report identifies the Port of Leith as a strong location for large-scale manufacturing, installation activities and operations and maintenance for the renewables industry.

3.12.4 As noted under 'Planning' issues, the land has been considered for housing led regeneration and industrial development. A Memorandum of Understanding has been developed to explore the potential for new industrial uses and other port related activities including tourism at the Port of Leith. The City of Edinburgh Council response to the scoping consultation noted that masterplanning is being undertaken and that Tax Incremental Funding is being considered for infrastructure developments. A Protocol has been established for Enterprise Areas to facilitate planning, including through local processing agreements (which have yet to be defined).

3.12.5 **Dundee Port** is a key priority for the local authority and other partners. Phase 1 of N-RIP identified it for distributed manufacturing, operation and maintenance related activities. The local planning framework recognises this, and links development of the Port itself with further strategic sites at the

Western Gateway and Linlathen. It expects that the port will play a significant role in supporting renewable energy development and investment, given the suitability of its facilities..

3.12.? In addition to these ports, other ports and harbours either have aspirations for renewable related growth and investment, or support activity that could be affected by offshore wind, wave and tidal developments:

- The Fife Energy Park in **Methil** was identified as a key priority in the Stage 2 Report, to support manufacturing and supply chain activities for offshore wind, with potential for development to support wave and tidal energy.
- **Montrose** Port was explored within N-RIP as a medium term site to support distributed manufacturing and operation / maintenance. The Montrose Port Authority have developed plans for development of the port, and investment in new facilities and enhancements to port and storage infrastructure.
- **Grangemouth** is Scotland’s largest container port. Along with Rosyth, Grangemouth was identified as a medium term site to support offshore renewables in the N-RIP.
- **Rosyth** comprises Port Babcock Rosyth and the Port of Rosyth. The former is a former naval yard, currently specialising in ship building (naval vessels), and is currently the subject of a Public Local Inquiry for an application to build a container terminal. The latter supports general cargo.
- **Burntisland Port**, which benefits from deepwater access, accommodates Burntisland Fabrications Limited (Bifab) and Briggs Marine. The site was identified as a medium term site within N-RIP.

Figure 3.25 Ports and Harbours in the East Region

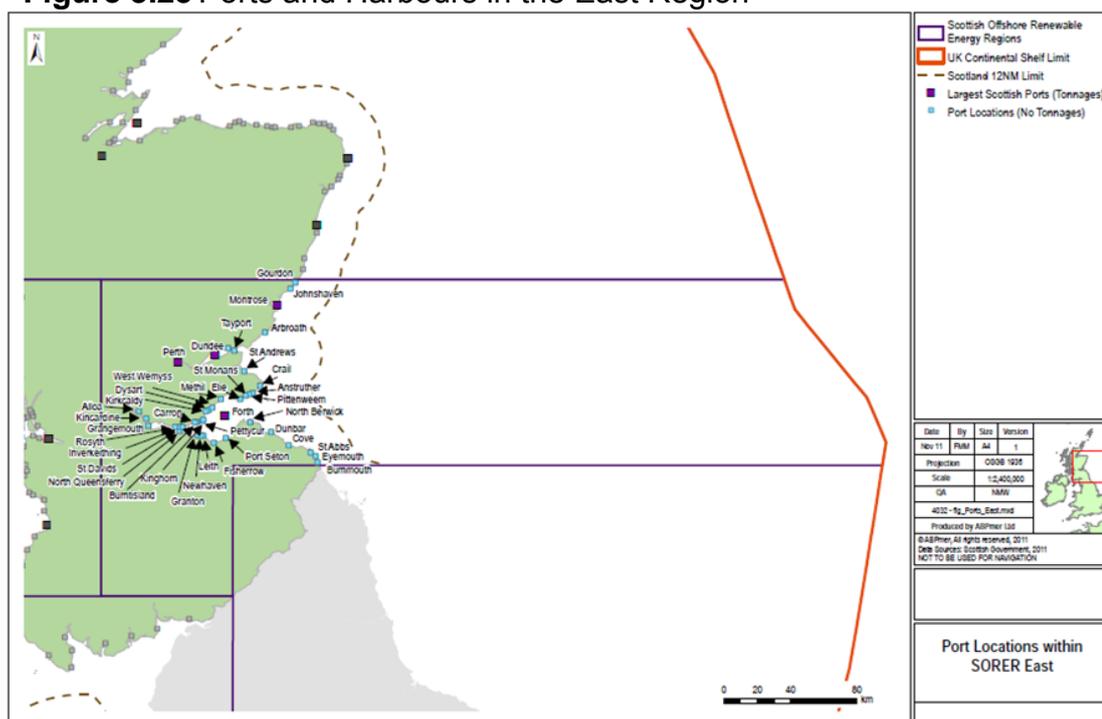


Table.3.3 Ports and Harbours in the East Region

| Port | Operator | Type |
|-------------------|---|-----------------|
| Anstruther | Fife Council Harbours | Local Authority |
| Arbroath | Angus Council | Local Authority |
| Burmouth | | Trust |
| Burntisland | Forth Ports | Private |
| Carron | | Private |
| Cove | | Private |
| Crail | | Local Authority |
| Dunbar | | Trust |
| Dundee | Forth Ports | Private |
| Dysart | | Local Authority |
| Elie | | Private |
| Eyemouth | Eyemouth Harbour Trust | Trust |
| Fisherrow | | Local Authority |
| Gourdon | Aberdeenshire Harbours | Local Authority |
| Grangemouth | Forth Ports | Private |
| Granton | Forth Ports | Private |
| Inverkeithing | Forth Ports (Inverkeithing Port services) | Private |
| Johnshaven | Aberdeenshire Harbours | Local Authority |
| Kincardine | | unknown |
| Kinghorn | Kinghorn sailing club | Private |
| Kirkcaldy | | Private |
| Leith | Forth Ports | Private |
| Methil | Forth Ports | Private |
| Montrose | Montrose Port Authority | Trust |
| Newhaven | | Private |
| North Berwick | East Lothian Council(setting up trust) | Trust |
| North Queensferry | Fife Council Harbours | Local Authority |
| Perth | Perth and Kinross Harbour | Local Authority |
| Pettycur | Fife Council Harbours | Local Authority |
| Pittenweem | Fife Council Harbours | Local Authority |
| Port Seton | Port Seton Harbour Commissioners | Trust |
| Rosyth | Forth Ports | Private |
| St Abbs | | Trust |
| St Andrews | St Andrews Harbour Trust | Trust |
| St Davids | | unknown |
| St Monans | Fife Council Harbours | Local Authority |
| Tayport | | Private |
| West Wemyss | | Private |

(Source: Marine Scotland, 2011a)

3.12.7 Information on employment in industries associated with ports and harbours (either directly employed or indirectly) shows that in 2009 there were around 3,000 people in full time employment in these sectors, which had reduced to around 2,800 people by 2010. This workforce is focused around the larger port areas of the Firth of Forth and the Firth of Tay.

3.13 Recreation

Recreational Angling

3.13.1 Sea Angling is undertaken along much of the East Region such as the Firth of Tay and East Lothian coast.

3.13.2 Radford et al (2009) estimated the sea angling activity and economic value in eight regions of Scotland. Two of these regions, Edinburgh, Fife and North East fall within the East Region. As the areas in Radford et al (2009) do not align with the SORERs the values should only be taken as indicative values for comparison between areas.

Table 3.3 Estimated Regional Sea Angling Activity and Expenditure in East Region

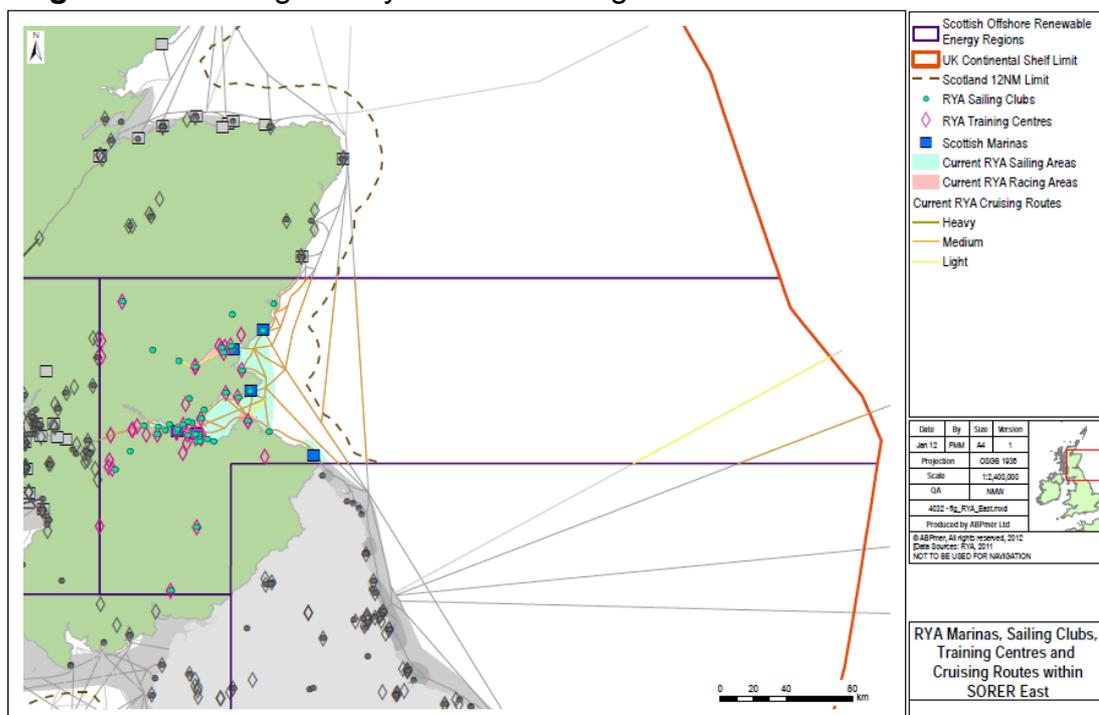
| Region | No. Resident Sea Anglers | Annual Sea Angler Days Spent in Region | % of Total Activity Undertaken on the Shore | Total Annual Sea Angler Expenditure (£M) | % of Expenditure Spent on Shore Angling | Number of Jobs Supported |
|------------------------------|--------------------------|--|---|--|---|--------------------------|
| Edinburgh, Fife & South East | 20455 | 250868 | 50% | 26.9 | 51% | 504 |
| North East Scotland | 8904 | 234307 | 55% | 15.5 | 57% | 343 |

(Source: Radford *et al*, 2009)

Recreational Boating

3.13.3 Sailing activity in the East Region is shown in Figure 3.26. Sailing and racing areas occur in the Firth of Tay and Firth of Forth and along the Southern section of coastline in this region. Recreational use is centred on the Firth of Forth, Firth of Tay and St Andrew’s Bay (Baxter et al., 2011), with moderate use cruising routes extending up and down the coastline from these areas.

Figure 3.26 Sailing activity in the East Region



3.13.4 An indicative estimate of the economic impact of sailing in the East Region is provided between Peterhead, Fife Ness and Berwick with an estimated value

of £7.9m (Scottish Enterprise, 2010). These locations offer up to 480 moorings and around 1,070 pontoons.

Scuba Diving

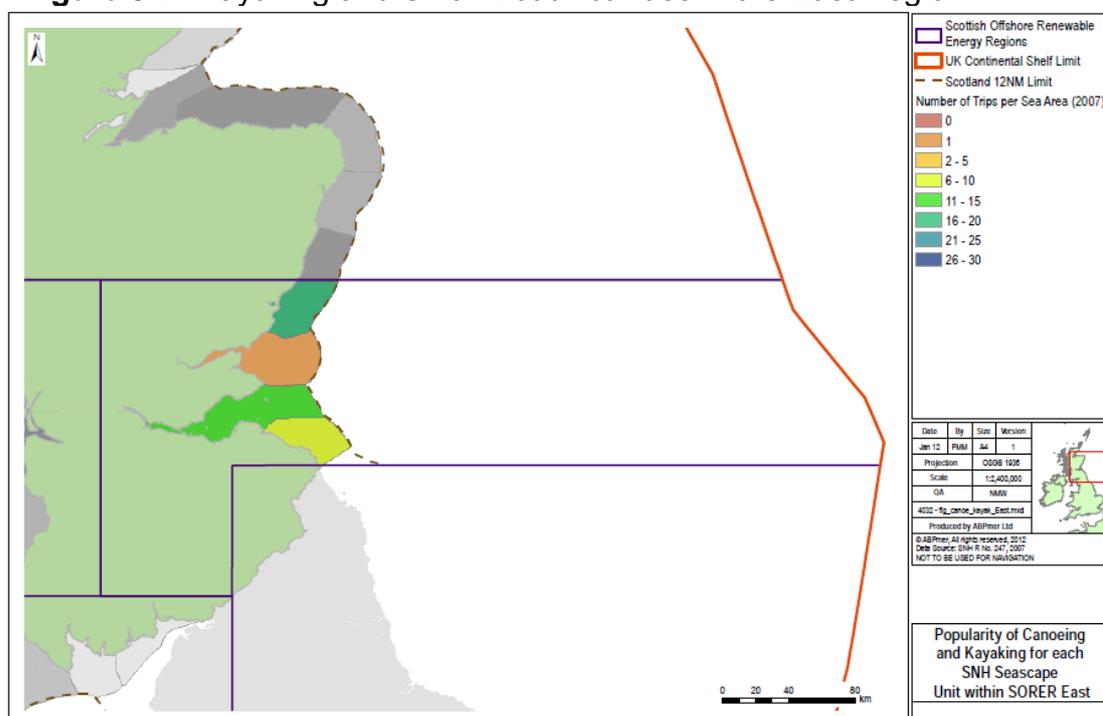
3.13.5 A large number of dive sites are found in the Southeast Region with particularly high densities of sites near St Andrews, Firth of Forth and the Berwickshire coast. In particular, the voluntary Marine Reserve of St. Abbs Head and Eyemouth is one of Scotland's most popular dive locations attracting thousands of people each year (Baxter et al. 2011). This area of Scotland is highly populated and this is reflected in a large number of clubs (42) and dive centres (11) operating.

3.13.6 Data collected by the Scottish Enterprise Borders (SEB) in 2007 estimated that 25,000 divers visited St Abbs/Eyemouth and contributed £3.7 million GVA to the local economy. The SEB data suggests that the activity supports 81.7 FTEs in the Scottish Borders area and has a GVA of £1.5 million per annum (Scottish Enterprise Borders, 2008).

Sea Kayaking and Small sail boat activities

3.13.7 Coastal Dinghy sailing is popular in the East Region with a high density of clubs found around the Firth of Tay and inner Firth of Forth (Figure 3.27). The Firth of Forth is also a popular location for Sea kayaking (Land Use Consultants, 2007).

Figure 3.27 Kayaking and Small Boat Activities in the East Region



Surfing and Windsurfing

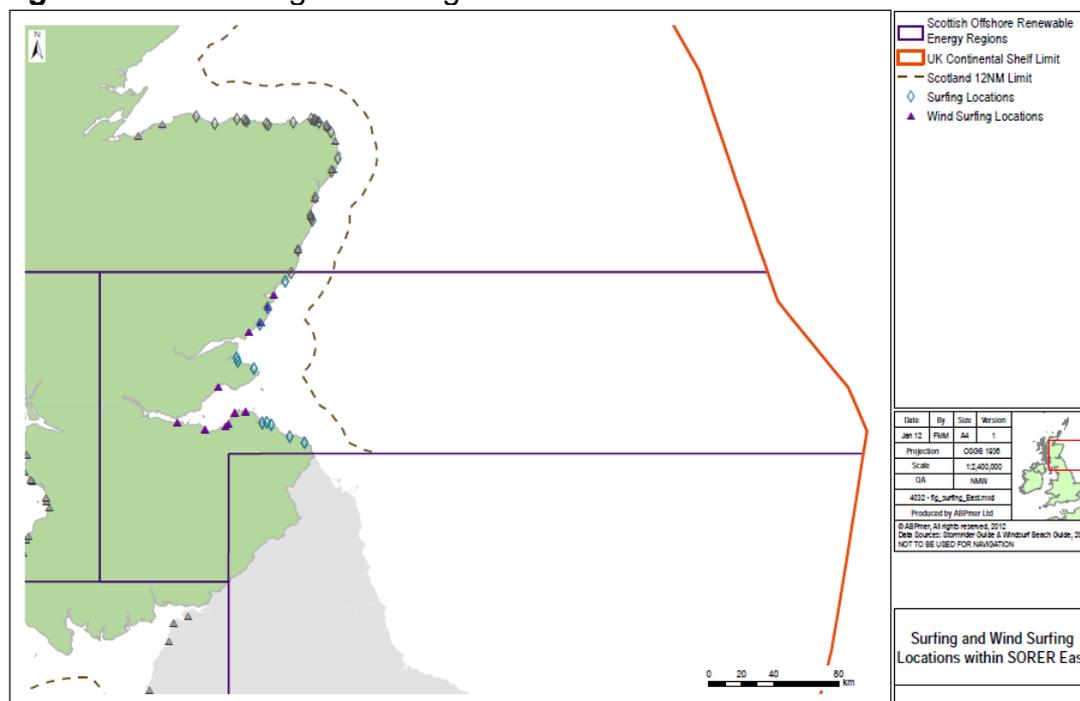
3.13.8 Key surfing and windsurfing locations in the East Region are identified in Table 3.2 from SAS (2009) describes how Scotland’s East coast receives swells from the North and North East and consistent offshore winds, although it also receive swells from the East and South East. Figure 3.28 (below) shows the surf beach locations in this region. The Surfers Against Sewage (SAS, 2009) report shows about 10 surfing locations within the East Region. Along the Southern part of the East coast of Scotland the higher population densities and more accessible surfing breaks lead to more intense use of locations such as Pease Bay (SAS, 2009).

Table 3.4 Surfing and Windsurfing Locations (East region)

| General Location | Surf Location | Windsurfing Location |
|---------------------------|-----------------|----------------------|
| South East Scottish Coast | Johnshaven | Montrose |
| | Lunan Bay | Lunan Bay |
| | Arbroath | Arbroath |
| | St Andrews West | Carnoustie |
| | St Andrews East | Largo Bay |
| | Kingsbarns | Queensferry |
| | Dunbar | Portobello |
| | White Sands | Longniddry bents |
| | Pease Bay | Gosford sands |
| | Coldingham Bay | Gullane |
| | | North Berwick |
| | | Sinclair's Bay |

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

Figure 3.28 East Region Surfing Locations

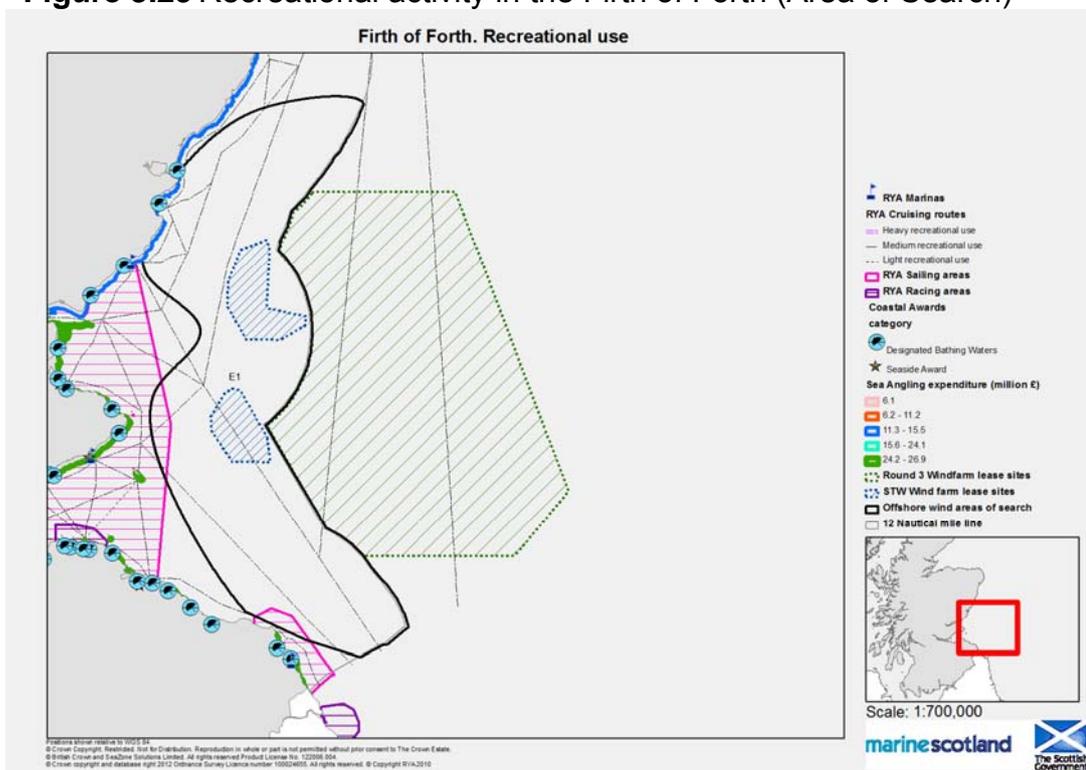


Area of Search

3.13.9 There are a number of recreational activities taking place in the East Region and also within the Firth of Forth (Area of Search). Activities boating,

cruising and sea angling and predominantly take place in inshore areas (see Figure 3.29).

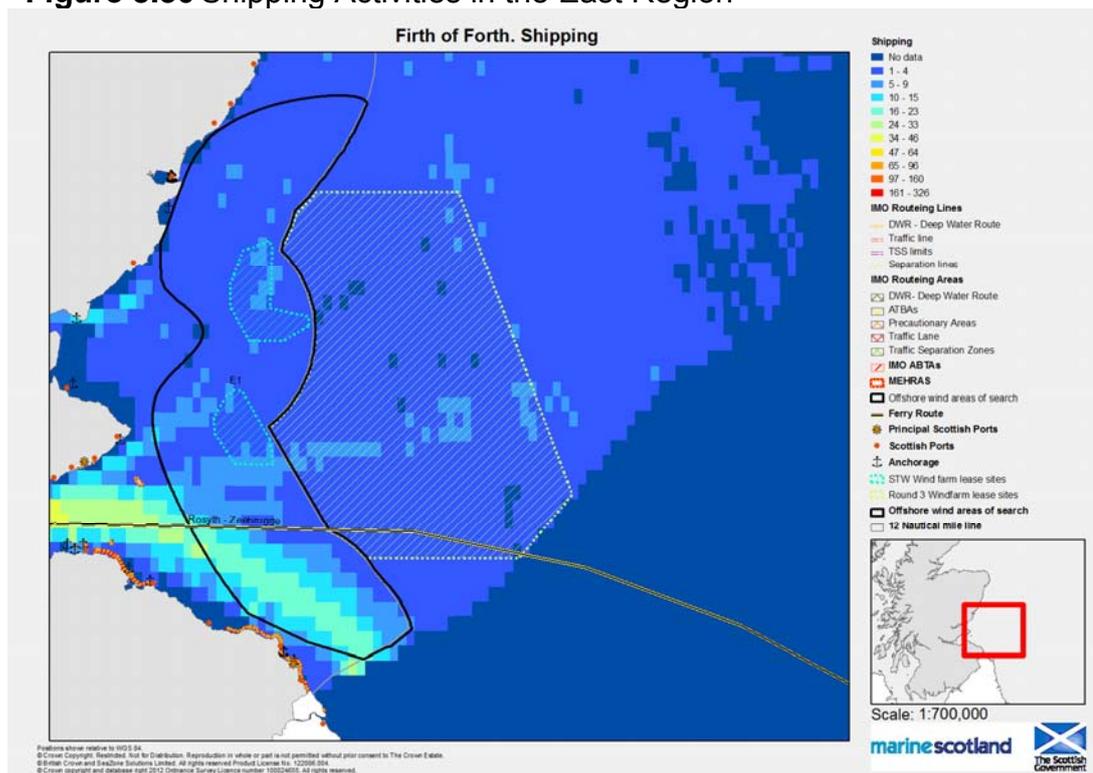
Figure 3.29 Recreational activity in the Firth of Forth (Area of Search)



3.14 Shipping

- 3.14.1 The southern tip of the area of search in this region overlaps with the route of the Rosyth-Zeebrugge Frieght Route.
- 3.14.2 The estimated shipping density varies (>300 tonne vessels) from 5-150 per week in the whole area (January 2010 data, MCA AIS data) with the higher concentrations showing around approaches to the Firth of Forth and the Firth of Tay ports. Both of the ports in these firths process more than two million tonnes of freight a year, and are among the 11 most active ports in Scotland.
- 3.14.3 Marine Environmental High Risk Areas (MEHRAs) have been established in the stretch of coast south of the firth from North Berwick to Dunbar, including Bass Rock and near-by islands. From north of St Abb's head to Berwick-upon-tweed, north of the firth at the Isle of May and the coast between St Monans and Anstruther.
- 3.14.4 These MEHRAs have been established due to high concentrations of vulnerable seabirds and a range of fishing and amenity/economic activity. Also statutory designations on wildlife, landscape and geology grounds contribute to these areas of protection.

Figure 3.30 Shipping Activities in the East Region



3.15 Social Considerations

- 3.15.1 The total population in East Region is 2.44 million. The population of the East is slightly greater in the 20-24 to 30-34 age bands, but is lower than the national average for ages greater than 60. The overall average age in East Region is 39 years old which is the same as the national average.
- 3.15.2 The number of people of working age population has increased from 1.8 million in 1996 to 1.9 million in 2010 (an overall increase of 5.5%). Over the same period, the number of children has declined by 8.6% from 581,000 in 1996 to 531,000 in 2010. The number of people of pensionable age increased by 13.9%, from 519,000 to 591,000 in the same time period.
- 3.15.3 The greatest number of jobs are associated with human health and social work activities, 17% of the total for 2010 and wholesale and retail, at 16%. Other industry sectors accounting for around 10% of jobs are education at 9%. Agriculture, forestry and fishing makes up just 0.2%. Accommodation and food services activities make up 7.2% while arts, entertainment and recreation account for 3% of all jobs in the East.
- 3.15.4 Median gross weekly income for full-time employees in the East region was £334.61 in 2001. By 2010, this figure was £468.01, representing an increase of £133.40. This is equivalent to an increase of almost 40%, although when inflation is taken into account the increase (in real terms) reduces to just 8%.

- 3.15.5 When asked how they rated their health, the local authority area with the highest percentage of people who said it was either good or very good was the City of Edinburgh (90.7%). By 2007/2008, the highest percentage was 91.2% (Perth and Kinross) while the lowest was 83% (Falkirk).
- 3.15.6 There are 263 SIMD coastal datazones, making up just 7% of all datazones. Coastal datazones are slightly more likely to be in the 10% most affluent for education, skills and training, and employment, and health, but slightly less likely for income. The average index of deprivation is lower across all the indicators, however, for the coastal datazones suggesting that they are slightly more deprived than non-coastal datazones. Much of the change, however, is likely to be in the middle range (neither affluent nor deprived) since coastal zones in the East Region are much less likely to be in the 10% most deprived areas, with this reduced from 12% to 6% for education, skills and training; from 10% to 6% for employment; from 10% to 5% for income, from 10% to 8% for housing and from 9% to 5% for health.
- 3.15.7 In terms of the population within the east region with no qualifications, the range was between 9% and 24% in 2004, and between 7.5% and 20% in 2010. The area within the region offering the greatest proportion of job-related training in 2004 was City of Edinburgh (34.5%). The minimum drive time to a college of Further or Higher Education in the East Region is an average of around 55 minutes (Scottish Borders) to a maximum of 100 minutes. The average is around 93 minutes.
- 3.15.8 House prices in the East Region vary from a mean of £223,788 in City of Edinburgh (45% higher than the national average) to £116,916 in North Lanarkshire (24% below the national average). Five local authorities (four of which have coastal frontages) have mean house sale prices that are greater than the national average (City of Edinburgh, East Lothian, Midlothian, Perth and Kinross and Scottish Borders). Mean house sale prices in Perth and Kinross and Scottish Borders are very similar, at around £175,000 to £177,000. Some of the lowest mean house sale prices are found in Falkirk and Dundee City, Clackmannanshire and Fife which are around 9% to 13% below the national average respectively. Prices are also slightly lower than the national average in Angus and West Lothian. Edinburgh is the least affordable place in Scotland, with 29% of disposable earnings being spent on mortgage payments.
- 3.15.9 The data shows that the East Region has some of the shortest drive times to key services, even in more isolated communities drive times do not exceed 38 minutes (for petrol stations).
- 3.15.10 When asked to rate the perception of their neighbourhood, the highest proportion rating it as good or very good in 2007/2008 was in East Lothian (67.8%) and the lowest in Clackmannanshire (40%). The change across eight of the 13 local authorities in the East Region has been a general decline.

3.15.11 Average electricity consumption (per household) in the East Region was 5.2 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 earner is 60+ (HIH) are much more likely to be in fuel poverty than the whole population in 2007/2009. At 41.4%, though, 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% (Angus) and the lowest being 26.6% (Clackmannanshire). Across the whole population, the highest percentage is in Scottish Borders (37.6%) and the lowest in Clackmannanshire (13.9%).

Future Trends

3.15.12 Table 3.5 summarises the statistics and trends for the region 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.3.5 Summary of future trends in East 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 |
| Working age population | ↑ | → | ↑ | → | Recent trends suggest increase in the number of people of working age |
| Income | ↑ | ↑ | ↑ | ↑ | Recent trends suggest increase in median weekly income over time, but the magnitude is variable across the region |
| Health | ↑ | → | ↕ | ↕ | Recent trends suggest uncertainty due to regional differences |
| Perception that neighbourhood is a very good place to live | ↕ | ↕ | ↓ | ↓ | Regional trends suggest decrease in 8 of 13 local authorities |
| Affordability of housing | ↑ | → | ↑ | → | Suggestion that affordability has increased recently, but this may not be sustained. There is variability across the region, although many areas are less affordable on average |
| Housing quality | ↑ | ↑ | ↑ | ↑ | Housing quality, as measured by percentage of housing failing the SHQS, is improving and is already above the average for Scotland, |

- Rosyth;
- Burntisland;
- Grangemouth; and
- Montrose.

East Coast Renewables

- 3.16.5 The East Coast Renewables (ECR) Group consists of ten Local Authorities across the East Coast who have joined forces to create a strategic alliance. This regional partnership focuses on a number of strategic priorities, from supply chain development and skills, to research and development (R&D) and knowledge transfer.
- 3.16.6 ECR work in partnership with Scottish Enterprise and Scottish Development International to develop the renewable energy sector and promote the region as a location for investment.
- 3.16.7 More information on the work of this partnership can be found at: www.eastcoastrenewables.com.

Angus Council

- 3.16.8 The ‘Angus: A Gateway to Offshore Wind’ brochure provides an overview of the potential to utilise supply chain facilities within the Angus area. More information can be found at: www.angusahead.com.
- 3.16.9 Angus Council also hold a comprehensive list of the supply chain companies operating within this region. This covers companies who specialise in a variety of marine, engineering, manufacturing and other related activities for offshore wind farm development. Developers should seek to engage with the Economic Development Department at Angus Council at the early stages of development.
- 3.16.10 As part of Energy Training East, Angus college offers a comprehensive range of training and support services specifically relating to the development of offshore wind farms. This covers apprenticeship level and nationally accredited technician skills programmes, bespoke technical courses. More information can be found at www.dundeerenewables.com/trainingmatrix.

City of Edinburgh Council

- 3.16.11 The City of Edinburgh is traditionally viewed as an attractive city in which to locate because of its skilled workforce; a strong academic research base and record in commercialisation and technology transfer; good communications and high quality environment.

Dundee City Council

- 3.16.12 Dundee Renewables is a strategic partnership incorporating the public, private and academic sectors in order to work together to build a renewable energy industry for the city of Dundee and the East Coast of Scotland. More information can be found at www.dundeerenewables.com.
- 3.16.13 Dundee Energy Park identifies and brings together dedicated sites for the potential development of offshore renewable energy construction and manufacturing facilities. Information of the sites, their status in terms of strategic planning, and the related services and facilities on offer is provided at dundeerenewables.com.
- 3.16.14 The Universities and Colleges of Tayside have formed an alliance - creating a unique combination of training, and research and development expertise to support the offshore renewable energy industry. As part of **Energy Training East**, the University of Dundee, the University of Abertay and Dundee College offers a comprehensive range of training and support services. This covers apprenticeship level and nationally accredited technician skills programmes, bespoke technical courses and graduate and post-graduate level teaching and research, as well as opportunities for knowledge transfer partnerships. More information can be found at: dundeerenewables.com/trainingmatrix.

East Lothian Council

- 3.16.15 Dunbar Harbour has the potential to be used for quick access operations and maintenance for potential developments in the East Region.
- 3.16.16 East Lothain Council are part of the ERDF-funded rural renewables project focussing on the potential of micro-generation for local businesses. There is potential for a small local supply chain to develop which could transferable services for develop e.g. bespoke components for the offshore wind industry.

Fife Council

- 3.16.17 Energy Park Fife, which contains Methil Docks (N-RIP Stage 2 Report), is situated within the Fife Council area. The site is prioritised for the development of offshore wind supply chain, operations and maintenance activities. A number of Reports have been produced in relation to the site including an Access Options Review, Planning Report, Land Reclamation Report, Bathymetry and Dredging Reports for the Dock in addition to the broader Masterplan Strategy, Fife Renewables Innovation Centre, and Tax Incremental Financing Reports for the site as a whole. Further information is available through contacting Invest in Fife Renewables at www.investinfiferenewables.co.uk.
- 3.16.18 Invest in Fife Renewables have produced *Offshore Wind Operations and Maintenance*. This Report provides an overview of ports and harbours which could potentially host operations and maintenance activities for offshore

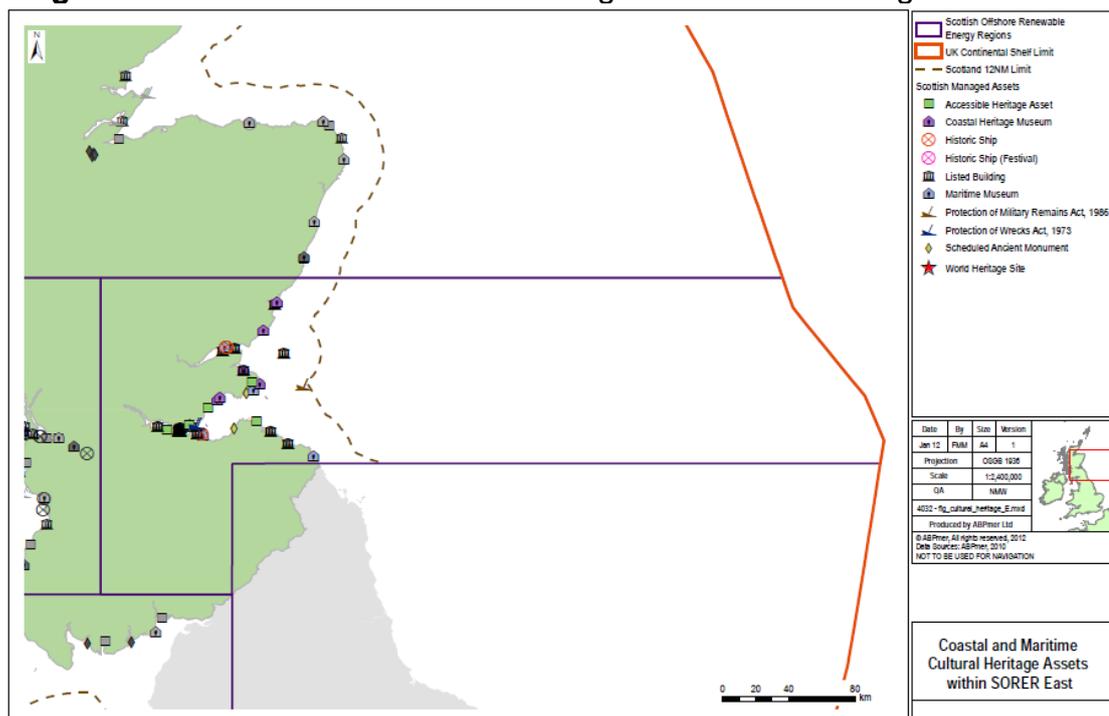
wind developments. Additional information is provided on the educational facilities which provide courses relation of offshore renewable energy. Further information can be found at www.investinfiferenewables.co.uk.

3.16.19 Fife Council have commissioned a *Study of Helicopter Landing Sites*. The report looks at five potential sites for Operations and Maintenance (O&M) support to the wind turbine farms in the Firth of Forth estuary with a specific requirement to evaluate the sites' ability to accommodate a helicopter operation. Further information can be found at www.investinfiferenewables.co.uk.

3.16.20 Invest in Fife Renewables have been working with industry experts to develop local supply chain intelligence and support activities for local companies looking to enter the offshore wind market. A company directory has now been established on the IIF Renewables website and the first in a series of regional supply chain workshops has also taken place. A Renewables Helpline has also been established to enable local companies who have the potential to enter the offshore renewables industry to gain expert advice on routes to relevant support and funding.

3.17 Tourism

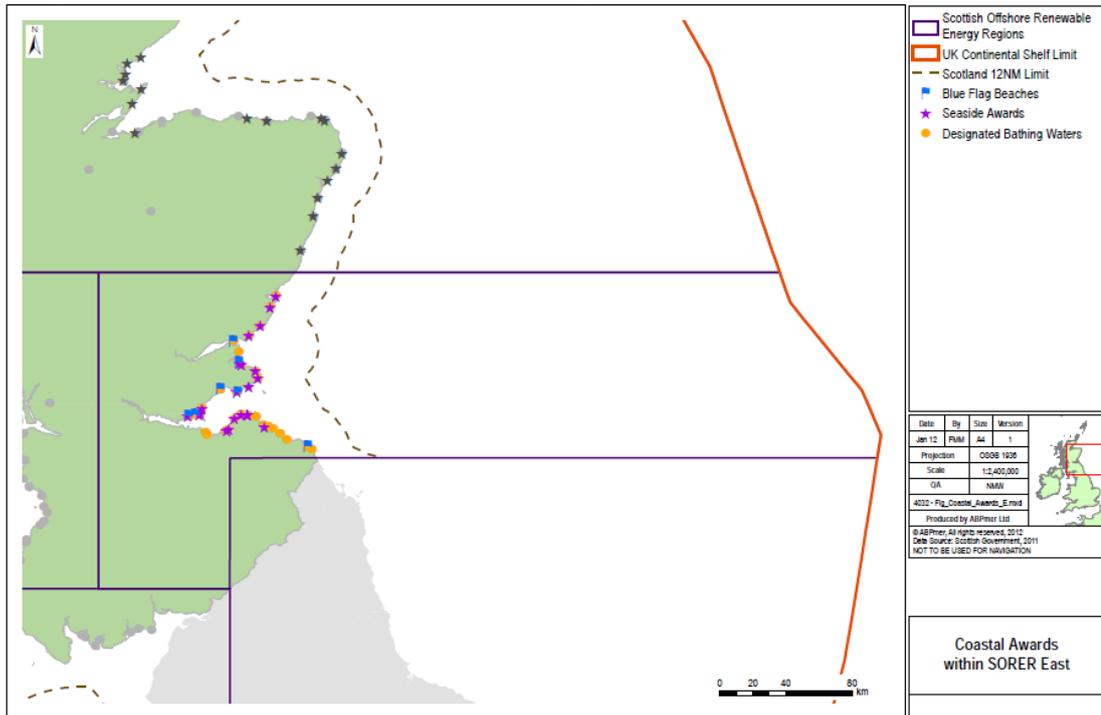
3.17.1 Tourist sites in East Scotland include accommodation and camping facilities, general tourist attractions, historic/heritage attractions, natural heritage attractions, transport and travel related facilities. Although sites are scattered throughout the region, there is a high density of sites along the coast, particularly in the Firth of Forth. This would be expected, given the proximity to Edinburgh. As shown in Figure 3.31, the Firth of Forth also has several cultural and maritime heritage assets, including a historic ship, sites designated under the Protection of Wrecks Act, a maritime museum and several listed buildings.

Figure 3.31 Cultural and Maritime Heritage Assets in East Region

3.17.2 Surfing is a popular activity in the East and commonly occurs along the coast from Edinburgh to Coldingham Bay, where northwesterly and southern swells help to create consistent surf breaks (Baxter et al, 2011). The presence of Blue Flag Beaches, designated bathing waters and areas with seaside awards (see Figure 3.32) are therefore likely to be particularly important. A visual comparison between the maps of coastal award sites in all the regions indicates that East Scotland has one of the highest concentrations of these sites. In addition, the East Region is the only region that has Blue Flag Beaches, namely:

- Aberdour Silver Sands, Fife;
- Burntisland, Fife;
- Coldingham Bay, Scottish Borders;
- Elie Woodhaven (Ruby Bay), Fife;
- Leven East Beach, Fife;
- St Andrews East Sands, Fife; and
- St Andrews West Sands, Fife.

Figure 3.32 Coastal Awards in East Region



3.17.3 Thus, beach users are likely to be an important group for this region when considering the development of offshore renewables.

3.17.4 There are also three areas designated as Marine Special Areas of Conservation, namely: Firth of Tay and Eden Estuary, Isle of May and part of Berwickshire, and Northumberland SAC. These SACs may well attract visitors for marine and coastal wildlife tourism.