



SCOTTISH EXECUTIVE

FABER MAUNSELL | AECOM



METOC

Note: This document is only a section of the Final Environmental Report

Scottish Marine Renewables SEA
Environmental Report Section C SEA Assessment: Chapter C16 Tourism & Recreation

Scottish Executive
March 2007

Table of Contents

C16	Tourism and Recreation	1
	C16.1 Introduction	1
	C16.2 Baseline Environment	1
	C16.3 Potential Environmental Effects	12
	C16.4 Sensitivity of Receptors	15
	C16.5 Significance of Effect	17
	C16.6 Likelihood of Occurrence	18
	C16.7 Mitigation Measures	19
	C16.8 Confidence and Data Gaps	20
	C16.9 Residual Effects	21
	C16.10 Summary	22

References	23
-------------------------	-----------

Tables

Table C16. 1: Most Popular Activities in Scotland Undertaken by Visitors	1
Table C16. 2: Rural Award Winning Beaches in 2006	3
Table C16. 3: Royal Yachting Association (RYA) Marinas and Yacht Havens	6
Table C16. 4: Sailing and Cruising Areas Identified by the RYA	6
Table C16. 5: SSAC Branches	8
Table C16. 6: BSAC Branches	9
Table C16. 7: PADI Branches	9
Table C16. 8: Some of the Bird Reserves in the Study Area	10
Table C16. 9: A Summary of Some of the Key Marine Wildlife Watching Areas	11
Table C16. 10: Summary of Potential Environmental Effects	15
Table C16. 11: Sensitivity of Participation in Tourist and Recreational Activities	16
Table C16. 12: Significance Assessment Criteria – Tourism and Recreation	17
Table C16. 13: Potential Significance of Effects - Tourism and Recreation	18
Table C16. 14: Standard Practice Mitigation Measures	19
Table C16. 15: Availability of Data	20
Table C16. 16: Potential and Residual Significance of Effects - Tourism and Recreation	21

Figures

Figure C16. 1: The Location of Identified EU Standard Scottish Bathing Waters	4
---	---

C16 Tourism and Recreation

C16.1 Introduction

This chapter provides an overview of key tourism and recreation activities within the study area and assesses the effects that that may result from the deployment of wave and tidal devices.

For the purpose of this assessment a distinction is made between potential direct effects on tourism and recreation activities (e.g. wave or tidal devices deployed in an area used for sailing) and indirect effects (e.g. how changes to seascape character may subsequently affect the popularity of tourism and recreation activities). At this strategic level there are considerable uncertainties associated with the latter issue as it deals with human responses to changes in environmental character and only very general comments can be made.

This chapter has been informed by other chapters of the Environmental Report, particularly C8 Birds, C9 Marine Mammals, C11 Marine and Coastal Historic Environment and C19 Seascape.

C16.2 Baseline Environment

Tourism is one of Scotland's largest business sectors with an estimated value of £4.2 billion per annum to the Scottish economy. In 2004, the tourism sector accounted for 8.8% of all employment in Scotland and in some regions much higher. With 82% of trips to Scotland being made by UK domestic residents, and 45% of these made by residents of Scotland, it is clear that Scotland's tourism industry is supported by Scottish people as well as those travelling from further a field (www.scotland.gov.uk).

Scotland's coastline and islands play an influential role in attracting tourists and recreational users to the country through the provision of stunning scenery, wildlife, cultural assets and a wide range of organisations providing a variety of sports and activities. The Tourism in Scotland Report, 2005 revealed the most popular activities undertaken by visitors. These are outlined in *Table C16.1* below.

Table C16. 1: Most Popular Activities in Scotland Undertaken by Visitors

Activity	Domestic (UK) Holiday Trips (%)	Overseas Holiday Trips(%)
Visiting castles, monuments, churches, etc	39	83
Walking and hiking	33	39
Visiting Museums, heritage centres, galleries, etc	29	58
Swimming	21	5
Field/Nature study	17	9
Watching performing arts	16	16
Golf	8	2
Visiting theme parks	8	6
Traditional regional music events	7	n/a

(Tourism in Scotland, 2005, www.scotland.gov.uk)

The majority of these activities, and others, are offered within the study area. For the purpose of this assessment the following categories have been used to summarise baseline information and predict impacts:

- Touring and Site Seeing
- Walking
- Sailing
- Golf
- Water sports (including surfing, kayaking and swimming)
- Diving
- Angling
- Bird & Wildlife Watching

A brief overview of each is provided below. Note that visits to, and the use of, beaches tends to fall within a number of categories and has not been treated separately. Further, it should be noted that it is not the purpose of this SEA to provide a detailed summary of all activities and facilities, but rather to provide sufficient information to assess, at a strategic level, the likely effects of wave and tidal power on tourism and recreation. Further information is provided in C8 Birds, C9 Marine Mammals, C11 Marine and Coastal Historic Environment and C19 Seascape.

C16.2.1 Touring and Site Seeing in Coastal Areas

As Table C16.1 shows touring the country and site seeing are the most popular activities visitors to Scotland undertake and many of these activities are linked with the coast. There are considerable overlaps between general touring and site seeing and this sub-section provides only a general overview of the coast and some of its attractions.

C16.2.1.1 Protected Coastline

Scotland's spectacular and dramatic coastline is one of its major qualities to which tourists are attracted. Its qualities are described in C19 Seascape.

Scotland's coastline is protected by a complex framework of statutory and non-statutory designations with boundaries overlapping at various points within the littoral, terrestrial and marine zones. Under the Coastal Protection Act (1949), a local council is the Coastal Protection Authority for its own local government area. (www.highland.gov.uk) In addition to coastal protection at local authority level, a national initiative involving Coastal and Marine National Parks is being introduced by the Scottish Executive. The first of these parks is hoped to be introduced in 2008. The proposals are currently in consultation regarding possible locations, designation and how the national parks might operate. (www.scotland.gov.uk)

Many designations affect the coast but do not specifically protect the coastline as is the case of with English Heritage Coasts. National Scenic Areas (NSAs) relate strongly to the coast as do heritage designations. Of the 40 NSAs in Scotland 26 include a coastal element. C19 provides further information on NSAs and other designations associated with the coast.

C16.2.1.2 Protected Beaches

The Seaside Awards are awarded by Keep Scotland Beautiful. Beaches are divided into two categories: Rural and Resort. The Seaside Award is presented only, where bathing water is of good quality in line with the EU Bathing Water Directive.

Resort Beaches actively encourage visitors by providing quality facilities and activities, and promoting nearby towns. They must meet 30 strict criteria to receive the award. No Resort Award Beaches lie within the study area.

Rural Beaches receive the award primarily on the basis of their overall cleanliness rather than facilities offered, as the qualifying beaches within this category are generally less developed and in quieter locations. They must meet 15 strict criteria.

Many of the rural award-winning beaches lie along particular stretches of the coastline such as, the North West coast between Loch Torridon and Gruniard Bay (the Inner Isles) and the coastal area to the West of Glasgow around the Firth of Clyde and the Sound of Bute. The locations of the rural award-winning beaches are listed in Table C16.2 below:

Table C16. 2: Rural Award Winning Beaches in 2006

Achmelvich Bay, Highlands	Strathy Bay, North Coast
Big Sand, Inner Isles	Lunderston Bay, Inverclyde
Firemore Beach, Inner Isles	Saltcoats South Beach, North Ayrshire
Gairloch Beach, Inner Isles	Newton Beach, Millport, North Ayrshire
Gruniard Bay, Inner Isles	Irvine Beach, North Ayrshire
Mellon Udrigle, Inner Isles	Machrihanish Beach, Argyll and Bute
Redpoint North Beach, Inner Isles	Ganavan Sands, Argyll and Bute
Sango Sands, North Coast	

There are no Blue Flag beaches located within the study area. However, there is one Marina with a Blue Flag award located at Kirkcudbright on the Solway Firth, Dumfries and Galloway. (www.keepsotlandbeautiful.org)

C16.2.1.3 Bathing Water Quality

The Scottish Environment Protection Agency (SEPA) is the responsible regulator and advisor to Scottish Parliament on bathing water quality. SEPA publishes bathing water quality results on its website, during the bathing season which runs between the 1st of June and 15th of September. The publication of this information may provide considerable incentive for tourists and local people to use these areas preferentially and therefore their location and water quality merit consideration.

20 of the 63 identified bathing waters (SEPA, 2006) lie within the study area. 2006 marked the first 100% achievement by EU recognised Scottish bathing waters of the basic European quality standards. 95% of the relevant identified bathing waters met the European mandatory standards and were therefore registered as being of 'good' quality. The remaining 5% that meet the EU guideline standards attained an 'excellent standard'.

The identified bathing waters for 2006 are mostly located along two key coastlines: The South West coastline between Girvan and Largs and the Dumfries and Galloway coastline from Carrick to Southerness. Figure C16.1 illustrates the distribution:

C16.2.2 *Walking and Cycling*

Walking is one of the most popular activities undertaken by visitors to Scotland from both the UK and overseas. Each year around 400,000 trips in Scotland made by British holidaymakers have walking as their main purpose (Visit Scotland, 2005). Visit Scotland hold details of over nine hundred walks throughout the country. Walks such as the West Highland Way, the Southern Upland Way and walks associated with the Munroes are major tourist attractions in their own right.

Many of Scotland's walks are located close to or on the coastline, or in upland areas that afford coastal views. Examples of coastal walks located within the study area include:

- St Ninians Cave in Dumfries and Galloway
- Ardnave Point and Port Charlotte, Islay
- The Isle of Kerrera
- Dunnet Head
- Rubha Reidh to Camas Mor

Scottish Ministers have suggested that the existing coastal paths around Scotland should be linked and vastly expanded to create a single round-Scotland trail, which would act as a major tourist attraction with the capacity to rival the West Highland Way and Southern Upland Way in attracting walkers. However, there are no firm proposals for this at present.

Cycling is a popular sport with holidaymakers in Scotland and a number of cycle routes provide coastal views.

- The North Sea Cycle Route (www.northsea-cycle.com) extends 6000km along the coastlines of eight countries surrounding the North Sea. The North Sea Cycle Route corresponds with Route 1 of the National Cycle Network, which is co-ordinated by Sustrans (www.sustrans.org.uk). The route offers some spectacular views along the cliff tops of the Pentland Firth from John O'Groats, Orkney and Shetland.
- The National Cycle Network in Scotland includes several other routes which take in some of the spectacular coastal scenery within the study area. Route 78 (Oban to Campbeltown) crosses the Kintyre peninsula, with views of the islands of Jura and Arran. The route is also proposed to be extended from Fort William to Inverness and from Invergarry to Skye, which will take cyclists north along the coast from Oban to Fort William and along parts of the coastline of the Isle of Skye.
- The southern part of Route 7 (Lochs and Glens South) runs along sections of the Solway coast, between the Scottish border at Gretna and Dumfries, and also takes in parts of the Ayrshire coast between Ayr and Irvine, with splendid views across to the island of Arran.
- Route 73 (Kilmarnock to Lochranza) runs along parts of the coast of the Isle of Arran and an extension from Newton Stewart to Cairnryan is also being developed, which will include coastal sections near Stranraer.

C16.2.3 *Sailing*

According to SailScotland (www.sailscotland.co.uk) there are 18 sailing schools operating within the study area; 16 of them are based within the study area. The Royal Yachting Association (RYA) identify 130 boating and sailing clubs in Scotland all of which may use the waters within the study area. Most likely to do this are the 50 clubs based on the West coast. There are 36 clubs based in inland areas who may use the west coast waters and there are 44 clubs based on the East coast, which is not considered in this study, who are least likely to use the waters in the study area. These clubs cover a range of activities which include yacht racing, yacht cruising, dinghy racing, dinghy cruising, personal watercraft, sports boating, power boating and motor boating (www.rya.org.uk). There are 14 RYA marinas/yacht havens within the study area. Their locations are listed in Table C16.3 below.

Table C16. 3: Royal Yachting Association (RYA) Marinas and Yacht Havens

Ardfern Yacht Centre (Argyll and Bute)	Tarbert Harbour (Argyll and Bute)
Campbelltown Loch Berthing (Argyll and Bute)	Clyde Marina (Ayrshire)
Craobh Marina (Argyll and Bute)	Kip Marina (Ayrshire)
Dunstaffnage Marina (Argyll and Bute)	Largs yacht Haven (Ayrshire)
Kilmelford Yacht Haven (Argyll and Bute)	Troon Yacht Haven (Ayrshire)
Melfort Pier and Harbour (Argyll and Bute)	Lossiemouth Marina (Grampian)
Oban Marina (Argyll and Bute)	Rhu Marina (Inverclyde)

(www.rya.org.uk)

As well as the RYA marinas/yacht havens in the study area there are also a large number of smaller local authority, private and club berths and anchorages.

The RYA UK Coastal Atlas of Recreational Boating identifies areas of sailing activity, both general and racing, and recreational cruising routes. This Atlas is the main source of information used for this SEA (it can be viewed at:

www.rya.org.uk/KnowledgeBase/environment/OffshoreEnergyDevelopments.htm.

A summary is provided in Table C16.4. Recreational boating is seasonal with highest activity occurring during the summer period. Within general sailing areas many craft will be undertaking "out and return activities". There are a substantial number of recreational cruising routes or point to point passages located around the Scottish coast.

Table C16. 4: Sailing and Cruising Areas Identified by the RYA

SEA Development Area	Sailing and Cruising Areas
The Northern Isles	The seas around Shetland are identified as a General Sailing Area. There are a number of cruising routes which are identified as having Light Recreational Use. Much of Orkney is identified as being a General Sailing Area, with the exception of the exposed south east coast. Cruising routes are mostly of Light Recreational Use.
Pentland Firth	The area is not identified as a General Sailing Area. Cruising routes pass through the Firth which are of Medium Recreational Use.
North Coast	The area is not identified as a General Sailing Area. Cruising routes across the North Coast are of Medium and Light Recreational Use.
Outer Isles	The Cruising Route to St Kilda is identified as Medium Recreational Use.
Western Isles	The main sailing area is within the Sound of Harris. Cruising Routes of Medium use follow the southern coast of the Outer Isles - the western coast is typically of Light Use.
Inner Isles	Much of the area hugging the north west coast is identified as a General Sailing Area including the Inner Sound and the Sound of Sleat. This is a popular sailing area and Cruising Routes are of Heavy and Medium Use.
Argyll and Bute	General Sailing Areas cover much of the Sounds, Lochs and Firths off the coast of Argyll and Bute. There are a number of important Cruising Routes which are identified as being of Heavy Recreational Use.
North Channel	General Sailing Areas hug the coast near the Mull of Galloway. A number of Cruising Routes pass through the North Channel heading north or towards Northern Ireland. These are typically of Medium Use.
Solway Firth	The Solway Firth is a General Sailing Area. It is criss-crossed by numerous Cruising Routes of both Medium and Light Use.

C16.2.4 *Golf*

There are over 540 golf courses in Scotland and 5 of the 8 Open Championship venues are Scottish, including Royal Troon in Ayrshire. Participation in golf in Scotland runs at twice the UK average. On average, golfers spend twice that of other visitors to Scotland and for every £1 spent of a green fee, a further £5 is spent elsewhere in the Scottish economy (www.visitscotland.com). Golf Tourism is worth in the region of £300m to the Scottish economy. Spending by overseas visitors is estimated at £66m with £46m of this by US visitors (2002 figures).

Many of Scotland's golf courses are coastal and 'links' courses. They tend to be located in coastal areas, on sandy soil which 'links' the beaches to the arable land further inland. With the exception of south-west Scotland, most golf courses tend to be located on the east coast and are not within the study area. Within the study area the majority of coastal links golf courses and other seaside courses are in Ayrshire and Dumfries and Galloway.

C16.2.5 *Water Sports*

Water sports and activities are popular pastimes with tourists and Scottish Nationals alike. Sports such as sailing, windsurfing, surfing, waterskiing, power boating, kayaking, canoeing and SCUBA diving could be directly impacted upon by the installation of wave or tidal devices, particularly in the terms of safety and access. Many of these water sport activities are informal in that they are not constrained by particular facilities, sites or clubs. According to SNH, '*there is no area of the coast without informal recreation use*' (pers.comm SNH).

In terms of formal water sports, there are 6 centres within the study area listed as providing general water sports and outdoor activities. An official SportScotland centre is located on the Isle of Cumbrae, Ayrshire which specialises in water sports (www.sportscotland.org.uk). In addition 35 windsurfing clubs and 9 Team15 windsurfing Clubs are also likely to use the waters within the study area (www.rya.org.uk).

C16.2.5.1 Kayaking and Canoeing

There are 7 clubs which are specifically devoted to sea kayaking based within or using the study area. These are in Weem (Perthshire), Glasgow, Orkney, Pentland Firth (based Thurso), Shetland and two clubs in Oban (www.seekayak.com national database and www.seekayakscotland.com). Kayaking is an informal recreation activity and can take place throughout the study area.

There are 58 canoeing clubs within the study area. All clubs are likely to use marine waters, regardless of where they are based with varying degrees of frequency due to the fact that sea touring is a very popular form of canoe sport in Scotland at present (pers.comm.SCA). There are 26 clubs in Strathclyde, Argyll and Bute, 4 based in the Central Region, 2 in Dumfries and Galloway, 13 in the Highlands, 13 in Grampian and Speyside. These clubs offer a range of canoe and kayaking activities (Scottish Canoe Association (SCA) (www.canoescotland.com). This figure may not be exclusive as clubs in other parts of Scotland and Northern England may also use the area depending on willingness to travel (pers.comm SCA).

C16.2.5.2 Open Water Swimming

Open Water Swimming is regulated by the ASA (Amateur Swimming Association). There are no official clubs devoted to the sport registered as operating within Scotland however some inland and sea lochs are popular locations for open water swimming. No open water events or races are listed for 2007. (www.britishswimming.org.uk, www.scottishswimming.com)

There is one swimming tour operator in the study area. Swimtrek operate an 'island hopping' tour of the Inner Hebrides between Islay, Jura, Scarba, Luing and Craobh Haven (www.swimtrek.com).

C16.2.5.3 Beach Sports

Areas which are popular with surfers include Machrihanish, Lewis and Tiree on the west coast. (www.visitscotland.com). There are 3 British Surfing Association affiliated clubs in Scotland. One is based at Banff within the study area and two are based outside the study area at the University of Aberdeen and Strathclyde however both clubs may use the waters within the study area (www.britsurf.co.uk). There are no other official organisations listed for beach-based sports such as kite Surfing (www.kitesurfing.org, The British Kite Surfing Association).

C16.2.6 *Diving*

The main attractions for divers are the wildlife and the physical characteristics of the location including shipwrecks, caves, drop-offs or the flow of the water. Despite harsher conditions in the winter months when some sites may be inaccessible, recreational diving does occur year round. There are three main organizations which conduct dives along the west coast of Scotland, the Scottish Sub-Aqua Club (SSAC), the British Sub-Aqua Club (BSAC) and the Professional Association of Diving Instructors (PADI) however qualified divers are not restricted by club locations.

Due to the fragmentation of the west coast, divers come from all over the world to experience the variety of sites. Some of the most popular areas to dive include Bo Fascadale, two miles north of the Ardnamurchan peninsula, towards Eigg, Rum and Muck, the Summer Isles, Scapa Flow and St Kilda, considered by BSAC as the 'Jewel in the Crown of UK diving'. Oban is considered 'the gateway to some of the best diving in Northern Europe' by BSAC with easy access to a variety of wrecks in the Sound of Mull including the Breda and the SS Thesis.

The Scottish Sub-Aqua Club (SSAC), formed in 1953, undertakes a comprehensive training schedule dedicated to teaching safe diving in the seas around Scotland. SSAC has 66 branches located in Scotland; 44 are located in or around the study area as follows:

Table C16. 5: SSAC Branches

Areas	SSAC Branches
South West Scotland	Eastwood, Reivers, Arran, Ek Pro Divers, Stranraer, Auchenharvie, Glasgow, Academy, Strathclyde University, Ayr, Glasgow South, West Coast Divers (Glasgow), Bellshill, Greenfaulds, West End Divers (Glasgow), Campbeltown, Hamilton, Central Scotland, Inverclyde (Greenock), Clyde, Irvine, Clydebank, Johnstone, Coatbridge, Kelvin, Cumbernauld, Kilmarnock, Cumnock & Doon Valley, Larkhall, Dumbarton, Neptune (Monkton), Dumfries & Galloway, Oban Dunoon, Paisley
North West Scotland	Mallaig, Minch Active Divers, Skye, Ullapool
Northern Isles	Orkney and Shetland

(www.scotsac.com)

The British Sub-Aqua Club (BSAC) also has 31 branches located in Scotland; 10 are located within or around the study area. BSAC branches conduct diver training, including training in open water, as well as arranging diving trips and holidays to both inland and coastal sites. The relevant BSAC branches are as listed in Table C16.6 below:

Table C16. 6: BSAC Branches

Area	BSAC Branch
North Coast	Caithness Diving Club (Thurso) The Far North SAC (Wick)
Northern Isles	Zetland SAC (Shetland)
Argyll and Bute	Dalriada Diving (Oban) Loch Lomond BSAC (Alexandria) Caledonian Divers (Ayr) Kyle Divers (Ayrshire) Thistle Divers (Kirkintilloch) Fyne Divers (Kilmarnock)
North Channel	Newton Stewart SAC

(www.bsac.org)

The Professional Association of Diving Instructors (PADI) have 10 listed centres in Scotland, 3 of which are located in or around the study area. Dive shops and smaller schools also offer PADI training and trips within the study area.

Table C16. 7: PADI Branches

Area	PADI Centre
Northern Isles	Scapa Scuba (Stromness, Orkney)
Argyll and Bute	Professional Diving Academy (Dunoon) C & C Marine Services (Largs)

(www.padi.co.uk)

C16.2.7

Angling

Scotland offers high quality sea angling, ranging from offshore and inshore boat fishing, to rocks, beach, estuary, and pier angling. Sea angling in Scotland is governed by the Scottish Federation of Sea Anglers (SFSA), whose marine fish records list over 90 different species caught by rod and line. The federation is formed by many individual members and an extensive list of affiliated angling clubs (www.fishsea.co.uk).

Scotland provides a varied and popular boat fishing experience giving anglers the opportunity to catch a variety of species including some of the largest fish caught by line in the British Isles. The seas around Mull on the west coast are home to giant skate and the Pentland Firth offers fishing for some predatory fish species including Porbeagle sharks and Halibut. Other popular catches include cod, whiting, spurdogs, wrasse, mackerel, pollack and coalfish. The south-western shores of Scotland are popular for shore angling. In the summer months, dogfish, pollack and wrasse are landed from around the Isle-of-Whithorn whilst the waters of Loch Ryan produce a wide array of species. Orkney is becoming one of the premiere locations for cod fishing and one of the few UK locations along with Oban to offer tag and release fishing for the common skate, now listed as critically endangered on the International Union for the Conservation of Nature's (IUCN) Red List. Other popular species include the conger eel, halibut, ling, tope, flounder, plaice and wrasse.

C16.2.8 *Bird and Wildlife Watching*

C16.2.8.1 Bird Watching

Information on birds is provided in C8 Birds. The Scottish coastline provides essential breeding, and wintering grounds for many species. As such bird watching is a year round activity. Late spring and summer provide bird watchers opportunities to view some of the largest breeding colonies of seabirds in Europe as well as smaller populations of other species. In winter, coastal areas provide habitat for large populations wintering birds including waders, ducks and geese. Migration during spring and autumn are amongst the most popular seasons for bird tours as these season provide the best opportunities to see rare species. Vagrant species may not have particular conservation value but are of considerable interest to some bird watchers.

Bird watching is typically an independent activity but special bird watching trips are provided in parts of the study area. These offer visitors the opportunity to view species that spend very little time on shore, therefore would not normally be seen, and an opportunity to see individuals such as the rare white-tailed sea eagle hunting for fish off the Argyle coast.

In addition to the areas identified in Chapter C8 Birds there are a number of bird reserves and visitor centres which have purpose-built facilities. Table C16.8 identifies some of the bird reserves in the study area that provide facilities for bird watchers. The information is taken largely from the RSPB (www.rspb.org.uk) and Where to Watch Birds: Scotland (Madders, 2002).

Table C16. 8: Some of the Bird Reserves in the Study Area

SEA Development Area	
The Northern Isles	There are 13 RSPB reserves in the Orkney Islands. There is good birding all year round. There are large colonies of breeding seabirds, including fulmars, puffins, guillemots, razorbills and kittiwakes. here are 3 inland RSPB reserves in Shetland which provide sheltered homes for seabirds when required. Fair Isle, owned by the National Trust, is also a key spot for bird watching. It is particularly known for rare migrants.
Western Isles	North Uist is home to a RSPB reserve for wading birds and waterfowl.
Inner Isles	The Handa Island Sea Cliffs off the North West coast are home to one of the largest seabird colonies in North West Europe including Kittiwakes, Guillemots, Great Skaus, Puffins and Razorbills. The Isle of Eigg also provides an area of great interest being home to 68 species of seabird. The Isle of Mull is well known for its populations of Golden Eagles and Sea Eagles
Argyll and Bute	Two RSPB reserves on Islay provide breeding and besting areas for many seabird species. The sea cliffs at The Oa reserve are also home to the Golden Eagle. Coll has a coastal RSPB reserve which houses many native seabirds and geese as well as migrating species.
North Channel	The Mull of Galloway RSPB reserve provides coastal habitat and key nesting areas for seabirds.
Solway Firth	There are many mud flats and estuarine habitats where wading bird and waterfowl can be observed. The Caerlaverock Wildlife and Wetland Trust site is best known for geese. Mereshead is leased from the Crown Estate by the RSPB.

C16.2.9 *Marine Wildlife Watching*

Statistics produced by the Scottish Tourist Board (1998) revealed that 40% of visitors considered wildlife to be one of Scotland's most likeable features. A survey asking visitors to name their favourite wildlife attraction rated whales and dolphins first, seabirds second, seals third and otters in seventh. This illustrates the importance of marine wildlife as an asset to tourism industry in Scotland (Woods-Ballard et al, 2003).

A wide variety of different species can be observed around the Scottish coastline and islands. Over the past 20 years the tourism industry in Scotland has seen increasing development in wildlife watching tours and activities. There are now over 40 official operators offering boat tours where visitors can view a variety of the 20 different species of cetacean, basking sharks and seals.

The true number of operators is unknown as most are small businesses or individuals and the industry's structure is unconsolidated. There are a number of guidelines regarding management of the industry in the UK but none are mandatory and, operators, for the most part, remain unregulated. Tour operators and employees are frequently found to be local people with extensive local knowledge and experience who have a background in fishing or sailing (Woods-Ballard et al, 2003).

The Scottish Marine Wildlife Operators Association (SMWOA) was set up by a group of Scottish marine wildlife operators in 1998 in order to introduce visitors to the marine wildlife of Scotland in an environmentally sustainable way. The operators are the only ones in Scotland who have voluntarily adopted a "code of conduct" to take care of, and respect, the marine environment and its inhabitants. SMWOA currently has 20 members, all of which are located on the west coast of Scotland. There are operators on the Isle of Lewis, the Isle of Harris, Gairloch, Ullapool, Skye, Lochalsh, Lochaber, Argyll and the Mull of Kintyre.

The industry is located in areas where sightings are most predictable and therefore, operators focus on areas such as known breeding grounds and migratory routes in order to deliver the desired service to their customers. The most popular areas with tourists and operators include the Shetland Isles, the Inner and Outer Hebrides, the Orkney Islands and the Kyle of Lochalsh (www.visitscotland.com). Table C16.9 summarises some of the key locations in which marine wildlife sightings are relatively predictable and therefore touring companies are likely to operate.

Table C16. 9: A Summary of Some of the Key Marine Wildlife Watching Areas

SEA Development Area	Wildlife Watching Areas
The Northern Isles	Large, widespread, significant populations of Grey Seal and Common Seal make this area a prime location for seal watching. Minke Whales are most commonly sighted around the Shetland and Orkney Islands but Humpback, Fin, Killer, Pilot and Sperm whales can all be seen, and occasionally Northern Bottlenose and Sei whales are also spotted. Tour operators in the Shetland Isles give access to three species of dolphin as well as sightings of the common porpoise. The Northern Isles are a very popular destinations for marine wildlife watching.
Pentland Firth	A few Grey Seals and Common Seals can be observed. All native and some vagrant dolphin species can be observed as well as sightings of various Cetaceans however sightings are not predictable.
North Coast	A few small colonies of Grey Seals and Common Seals can be seen. Regular sightings of Cetacean species are recorded. Dolphin sightings particularly, are common around Cape Wrath.
Outer Isles	All of the remote islands contain significant populations of Grey and Common Seals. North Rona is home to a large breeding population. St Kilda is designated as an SAC for the conservation of Bottlenose Dolphins and Harbour Porpoises.
Western Isles	As home to a large number of Grey Seals and Common Seals this area is a popular location in which to observe Seals. Minke Whales are the most commonly sighted species however sightings of various types of cetacean including Killer Whales and Bottlenose Dolphins make the Western Isles a key area for wildlife watching.
Inner Isles	Significant populations of Grey and Common Seals are distributed across all of the islands with breeding areas on the North coast of Skye providing an important touring area. Minke Whales are the main species observed by marine wildlife watchers around the Inner Hebrides. Sightings of other Ceteceans are less predicatable however relatively frequent which make this area a popular wildlife watching destination. Basking Sharks are regularly sighted 5 Kilometres Southwest of Canna (Inner Isles). This location is popular with tour operators as it is believed to be a courting or breeding ground.
Argyll and Bute	Argyll and Bute contain significant numbers of both grey and common seals. Coll and Tiree, Islay, and the Treshnish Isles appear to be particularly important as breeding areas. The Treshnish Isles and the Firth of Lorn are key areas to see the harbour porpoise. Basking Sharks can be sighted, particularly in the key locations of the Gunna Sound (Argyll and Bute), the Islands of Coll and Tiree (Argyll and Bute). These areas are believed to be breeding or courting areas and are popular with operators due to the predictability of sightings.
North Channel	Dolphin populations frequent the waters around the Mull of Galloway and sightings are fairly predictable.
Solway Firth	The Solway regularly supports a variety of marine mammals including small numbers of grey and common seals, common and bottlenose dolphins, and harbour porpoise. The Firth is also home to Basking Sharks.

(www.visitscotland.com)

These listing are not inclusive of all key areas. This data is difficult to obtain in full primarily due to the fact that operator's locations are usually based on very specific local knowledge of marine wildlife and the environment which may not be very well documented. Information regarding marine mammals within the considered area is presented in greater detail in Chapter C9: Marine Mammals.

C16.3 Potential Environmental Effects

The marine environment, landscape and resources play an important role in many tourism and recreation activities in Scotland. Therefore, any impact on the coastal or marine environment through the installation, operation or maintenance of marine renewable energy devices could potentially have an effect on the tourism industry and recreation. The potential effects are discussed below.

C16.3.1 Potential Effects of Installation

C16.3.1.1 Noise

Noise generated during the installation of the marine devices will potentially have direct and indirect effects on recreation and tourism, although the effects will only be short term. The main sources of construction noise include:

- Vessels
- Piling
- Movement of machinery/device components
- Installation of machinery/device components
- Cable trenching
- Installation of onshore grid connection

The main direct effects of installation noise is related to general disturbance that will be experienced by visitors to key coastal attractions/locations e.g. beaches and coastal paths, and participants in key coastal and marine recreational activities e.g. golf, sailing, swimming and water sports. Installation noise may have adverse effects on the breeding, feeding and migratory patterns of marine wildlife and seabirds, leading to their displacement or avoidance of areas. This could potentially have an indirect effect on the marine wildlife watching industry and bird watchers. The effect of noise on marine wildlife is discussed in more detail in C8: Birds Chapter, C9: Marine Mammals and C17: Noise.

C16.3.1.2 Transportation

There will be a requirement, as part of the installation process, for the transportation of the various components of the marine devices. This will include the movement of device components from the point of production to a port or coastal location for transfer onto deployment vessels. The main effects associated with the transportation of large pieces of machinery include congestion caused by large, slow moving vehicles, increased noise, vibration, air pollution and general environmental disturbance. Due to the predicted size of the marine devices, most will require deployment from harbours that can accommodate vessels with sufficient loading capacity for device deployment. In most cases, access routes to these harbours have been designed to accommodate the movement of large vehicles. There is also potential that the marine vessels could disrupt sailing routes, fishing activities and other water sports.

C16.3.1.3 Landscape, Seascape and Visual Amenity

The effects on landscape, seascape and visual amenity are discussed in Chapter C19. The landscape, seascape and views around the Scottish coastline are intrinsic to the area's ability to attract tourists and visitors. Installation activities (including onshore connections which are discussed in more detail in Chapter C21) may temporarily affect the general attractiveness of certain areas which could potentially affect visitor's perceptions and enjoyment of an area.

C16.3.1.4 Access Restrictions

In the interests of efficiency and safety, installation activities may involve some restriction of public access to areas where construction is underway. Depending on location, this may affect sailing activities, diving, open water swimming, water sports and wildlife watching.

C16.3.1.5 Water Quality

The effects of the deployment of marine devices on water quality are discussed in Chapter C4. In terms of the installation of devices there are a number of potential sources of water pollution including:

- Release of contaminated materials during piling, drilling or grouting
- Vessel fuels – spillage
- Leakage of device lubricants, hydraulic oils
- Antifoulants

Any water pollution arising from the installation of devices could potentially affect bathing water quality and local beaches.

C16.3.2 *Potential Operational Effects*

C16.3.2.1 Noise

The effects of marine devices on noise are discussed in Chapter C17. In terms of the operation of the marine devices, the majority of the effects of noise will be on the marine environment, although shoreline devices generate noise which could potentially affect land based receptors.

As with installation noise, operational noise may have an adverse effect on the breeding, feeding and migratory patterns of marine wildlife and seabirds, leading to their displacement or avoidance of areas. This will potentially have an indirect effect on the marine wildlife watching industry and bird watchers. The effect of noise on marine wildlife is discussed in more detail in C8 Birds, C9 Marine Mammals and C17 Noise.

C16.3.2.2 Landscape, Seascape and Visual Amenity

The effects on landscape, seascape and visual amenity are discussed in Chapter C19. The landscape, seascape and views around the Scottish coastline are intrinsic to the area's ability to attract tourists and visitors. The presence of marine devices in certain locations may affect the people's perceptions and enjoyment of an area.

C16.3.2.3 Safety and Collision Risk

The effect of marine devices in terms of safety and collision risk is discussed in Chapter C15 in relation to shipping and navigation, Chapter C9 with respect to marine mammals and Chapter 8: Birds. Submerged, partially submerged and sub-aerial devices all present a potential hazard to other users of the marine environment as collisions could cause damage to vessels and danger to the health and safety of people in the area. Increased risk of collision with structures at sea could act as a deterrent to recreational sailors or water sports enthusiasts.

C16.3.2.4 Access Restrictions

In order to avoid potential collisions, areas in which devices are located may require access restrictions to be imposed. Such restrictions may have a negative effect should they prevent access to specific sites or areas of coastline which are of special interest. The Royal Yachting Association (RYA) has identified a number of potential effects associated with renewable energy projects including loss of cruising routes, being 'squeezed' into commercial navigation routes and effects on sailing and racing areas (RYA's Position on Offshore Energy Developments, December 2005). Informal activities such as kayaking may also be affected in similar ways.

C16.3.2.5 Disturbance to Wildlife

As mentioned previously in terms of noise and vibration, the operation of marine devices may lead to the disturbance and potential displacement of marine wildlife or seabird. Other factors potentially affecting marine mammals and birds include: habitat loss; disturbance, disruption or loss of food sources and feeding areas; physical severance or obstruction of migratory routes; population pressures if certain species are forced into smaller areas or predator habitats. The displacement of marine wildlife or birds could have negative effects on marine wildlife watching operators and bird watchers. The effects of marine devices on marine mammals and birds are discussed in detail in Chapters C8: Birds and C9: Marine Mammals.

C16.3.2.6 Energy Extraction and Effects on Coastal Areas and Beaches

The potential implication of energy extraction on recreation and tourism are associated with how energy extraction affects coastal processes and how these effect local beaches. The effects of energy extraction (wave energy and tidal stream energy) are discussed in Chapter C3 (Marine and Coastal Processes) with regard to marine processes.

C16.3.2.7 Creation of Tourist Attractions

There is potential that the marine devices themselves could have positive effect on recreation and tourism by becoming key tourist attractions. With increased awareness of climate change and the opportunities for gaining first hand experience of the evolution of new technologies, the attraction of marine devices which are accessible (and visible) could be potentially high in the short-term. Interest is likely to decrease as wave and tidal power become more commonplace.

C16.3.3 *Summary of Potential Effects on Tourism and Recreation*

Table C16.10 provides a summary of the potential key effects on recreation and tourism activities. A distinction is made between effects which directly impact on facilities or resources and indirect effects i.e. those which affect the environment which in turn effects people's responses to tourism and recreation e.g. if noise effects birds this may impact on bird watching.

Table C16. 10: Summary of Potential Environmental Effects

Effect	Development Type	Direct/ Indirect	Duration	Extent
Installation Effects				
Noise Generation	Wave and Tidal	Indirect	Short term	Unknown
Transportation	Wave and Tidal	Direct	Temporary	Array area, access routes (marine and land)
Effect on Seascape	Wave and Tidal	Indirect	Temporary	Arrays likely to visible within 5 to 10km depending on the device type and seascape character.
Safety and Collision Risk	Wave and Tidal	Direct	Temporary	Array area
Access Restrictions	Wave and Tidal	Direct	Temporary	Zone around array area. Section of coastline
Reductions in Water Quality	Wave and Tidal	Indirect	Temporary – Permanent	Unknown
Operation Effects				
Generation of Noise	Wave and Tidal	Indirect	Permanent	Unknown
Effect on Seascape	Wave and Tidal	Indirect	Permanent	Arrays likely to visible within 5 to 10km depending on the device type and seascape character.
Safety and Collision Risk	Wave and Tidal	Direct	Temporary	Array area
Access Restrictions	Wave and Tidal	Direct	Temporary	Zone around array are
Disturbance to Wildlife	Wave and Tidal	Indirect	Permanent	Unknown
Energy Extraction	Wave and Tidal	Indirect	Permanent	Unknown
Creation of Tourist Attraction (positive effect)	Wave and Tidal	Direct	Permanent	Unknown

C16.4

Sensitivity of Receptors

For the purpose of this strategic assessment of effects on tourism and recreation the term 'sensitivity' is related to a possible change in the numbers of people participating in an activity and/or the enjoyment derived from an activity. Table C16.11 below provides an indication of the sensitivity of key recreation and tourism activities to each of the main effects identified in Table C16.10 above. It is based on solely on the judgement of the assessors and it is recognised that there is uncertainty associated with predictions of how people's responses to wave and tidal power will influence their participation in these activities. .

Table C16. 11: Sensitivity of Participation in Tourist and Recreational Activities

Receptor	Noise Generation	Transportation	Effect on Seascape	Safety / Collision Risk	Access Restrictions	Reductions in Water Quality	Disturbance to Wildlife	Energy Extraction	Creation of Tourist Attraction
Site Seeing /Touring	Low	Low	Low (uncertain)	Low	Low	NA	Low	Low	Low
Recreational Sailing	Low	Low	Low	Medium	Medium	Low	Low	Low	Low
Golf	Low	NA	Low	NA	NA	NA	Low	Low	NA
Water sports (including canoeing, kayaking and open sea swimming)	Low	Low	Low	Medium	Medium	Low	Low	Low	Low
Diving	Low	Low	Low	Medium	Medium	Medium	Medium	Low	Low
Angling	Medium	Medium	Low	Medium	Medium	Medium	Medium	Low	Low
Walking/ Cycling	Low	NA	Low (uncertain)	NA	Low	NA	Low	Low	Low
Bird/ Wildlife Watching	High	Medium	Low	Low	Low	Medium	High	Low	Low

NA: Not Applicable

The rationale for the scores assigned in the above table is as follows:

- **Site seeing/touring** – many of the effects associated with wave and tidal devices take place at sea and will not impact on site seeing and touring. While it is recognised that tourists are likely to be very concerned over effects on seascape and wildlife, participation in site seeing and touring as an activity is not considered to be sensitive to the presence of an array of wave or tidal devices. The uncertainties with this judgement are noted and the potential cumulative effects of a number of arrays are dealt with in Section D.
- **Recreational sailing** – medium scores are assigned as sailing enthusiasts are likely to be sensitive to possible restriction on access to areas of the sea occupied by wave and tidal devices and the risk of collisions. While it is recognised that sailors are likely to be very concerned over effects on seascape and wildlife, overall participation in sailing is not considered to be sensitive to seascape effects associated with wave and tidal devices in coastal areas. The uncertainties with this judgement are noted.
- **Golf** – many of the effects associated with wave and tidal devices take place at sea and will not impact on golf. While it is recognised that golfers are likely to be concerned over effects on seascape, overall participation in golfing is not considered to be sensitive to the presence of wave and tidal devices in coastal areas.
- **Water sports** (including canoeing, kayaking and open sea swimming) - Medium scores are assigned as water sports enthusiasts are likely to be sensitive to possible restriction on access to areas of the sea occupied by wave and tidal devices and the risk of collisions.
- **Diving** - medium scores are assigned as diving enthusiasts are likely to be sensitive to possible restriction on access to areas of the sea occupied by wave and tidal devices and the risk of collisions. They are also likely to be sensitive to reductions in water quality and disturbance to wildlife.
- **Angling** – angling may take place at sea, within sea lochs or from onshore. Medium scores are assigned to angling as fish may be disturbed by certain activities which in turn would affect angling, and because of the possible restriction on access to areas of the sea/coastline occupied by devices.

- **Walking/cycling** - many of the effects associated with wave and tidal devices take place at sea and will not impact on walking or cycling. While it is recognised that walkers and cyclists are likely to be very concerned over effects on seascape and wildlife, overall participation in is not considered to be sensitive to the presence of wave and tidal devices in coastal areas. The uncertainties with this judgement are noted.
- **Bird / wildlife watching** – medium to high scores are assigned to activities which would affect wildlife. People's involvement in these activities is likely to be sensitive to disturbance to wildlife.

C16.5 Significance of Effect

The assessment of effect significance has been undertaken based on the criteria below. These have been developed specifically for the SEA and take into account the information available to inform the assessment of significance. Due to the strategic nature of this assessment it has not been possible to quantify the magnitude of effects.

Table C16. 12: Significance Assessment Criteria – Tourism and Recreation

Significance	Assessment Criteria
Major	Results in loss of an attribute(s) in its entirety or significant loss of the quality or integrity of an attribute(s) which would have a long term or lasting, damaging effects on the tourist industry and recreation. This would imply a substantial reduction in the number of people participating in an activity and have resultant effects on local business.
Moderate	Results in loss of part of an attribute(s) or loss of the quality or integrity of an attribute(s) which would have an adverse effect on the tourist industry and recreation. This would imply a reduction in the number of people participating in an activity and resultant effects on local business.
Minor	Results in a slight adverse change to an attribute(s) or the quality or integrity of an attribute(s). These impacts are normally temporary or reversible and are unlikely to have effects on local businesses.
Negligible	No loss of, or change in quality of, effect on tourism or recreation facilities. No loss of people participating in a tourism or recreational activity.

C16.5.1 *Results of Potential Effect Significance without Mitigation*

Table C16.13 below provides a summary of the results of the assessment of POTENTIAL effect significance. Potential effect significance is a measure of the level of significance that the effect would have on a receptor WITHOUT mitigation. The results from this part of the assessment were then used to inform the assessment of RESIDUAL effect significance which measures the significance of an effect assuming the successful implementation of standard practice mitigation. Where potential effect significance varies for each of the receptors identified, the highest level of potential effect significance has been attributed.

Table C16. 13: Potential Significance of Effects - Tourism and Recreation

Potential Effect on recreation and tourism	Device Characteristics	Development Phase	Key Tourist Industries and Recreational Activities	Potential significance of Effect WITHOUT Mitigation *	Likely Impact Extent
Noise Generation During Construction	Wave and Tidal	CD, CC	Bird watching wildlife watching	Moderate	Unknown
Noise Generation During Operation	Wave and Tidal	OD, OC	Bird / wildlife watching	Minor	Unknown
Transportation	Wave and Tidal	CD, CC OD, OC	Recreational sailing Diving Water sports activities	Minor	Array area, access routes (marine and land)
Changes to Seascape	Wave and Tidal	CD OD	Walking/cycling Site seeing/touring Golfing Recreational sailing and water sports	Minor	Arrays likely to visible within 5 to 10km depending on the device type and seascape character
Safety and Collision Risk	Wave and Tidal	CD, CC, OD	Recreational sailing Water sports Diving	Moderate	Array area
Access Restrictions	Wave and Tidal	CC, CC, OD	Recreational sailing Water sports Diving	Moderate	Zone around array area
Water Quality	Wave and Tidal	CD, CC, OD	Wildlife watching diving Water sports	Minor	Unknown
Disturbance to Wildlife	Wave and Tidal	CD, CC OD, OC	Bird watching wildlife watching	Moderate	Unknown
Energy Extraction and Effects on Coastlines/Beaches	Wave and Tidal	OD	Site seeing/touring Water sports Walking	Minor	Unknown
Creation of Tourist Attraction	Wave and Tidal	OD	General	Minor <i>Beneficial</i>	Unknown

*Adverse unless otherwise stated

CD = Construction/decommissioning – devices

CC = Construction/decommissioning - cables

OD = Operation – devices

OC = Operation – cables

C16.6

Likelihood of Occurrence

Likelihood of occurrence is an evaluation of the probability that the identified potential effects (Table C16.13) will actually occur. A distinction is made between effects which directly impact on facilities or resources and those which may have indirect effects i.e. people's responses to tourism and recreation activities as a result of effects on the environment.

With respect to *direct* effects there is generally a high likelihood that during the lifetime of a wave or tidal energy array that the impact would occur. For example, the coverage of sailing areas and cruising routes around the Western Seaboard of Scotland is extensive (UK Coastal Atlas of Recreational Boating, RYA 2005). Consequently the likelihood of wave or tidal devices being located on, or in close proximity to a cruise route is high. There is therefore a potential risk of collision or interference with sailing activities during the lifetime of the wave or tidal farm.

For *indirect* effects the likelihood of effects is less certain as described below.

With respect to seascape effects are highly likely. The significance of these effects is dependent upon device design and location in relation to sensitive receptors and landscape character and value. It is recognised that seascape quality is important to tourism and recreation. However, it is uncertain as to the actual influence that changes in the perceived quality of seascape would have on the popularity of tourism and recreational activities. Overall it is considered that the likelihood of an array located in a coastal area reducing the number of visitors to that area is low. However, this may change should a large number of arrays be concentrated in a particular area (Section D discusses potential cumulative impacts).

The likelihood of noise being generated during construction and operation is high, however, impacts on marine wildlife and birds is uncertain and varies by species, season and device characteristic. Correspondingly, there are uncertainties over the subsequent effects of noise disturbance on bird watching and wildlife excursions. Taking into account the information proved in Chapters C8 Birds, C9 Marine Mammals and C17 Noise it is considered that effects on wildlife/bird watching from construction noise is medium but effects during the operation of the devices is low.

General disturbance to wildlife watching could come as a result of one or more activities including noise, access restriction and vessel movements during construction and operation. Over the lifetime of the wave or tidal array it is considered that the likelihood of effects on wildlife/bird watching occurring is medium.

Based on information in Chapter C3 Marine and Coastal Processes, the likelihood that energy extraction affecting local beaches, in terms of changes to the coastal processes (e.g. sand deposition) and increased littering/debris deposition, is low.

C16.7 Mitigation Measures

Table C16.14 below identified standard practice mitigation measures that could be implemented to help to avoid or reduce any significant adverse effects that the deployment of wave and tidal devices may have on recreation and tourism.

For the purpose of this assessment, it is assumed that the tourism and recreational areas of greatest activity/ highest value will be avoided by adjusting the location of arrays. It can reasonably be assumed that developers would avoid conflicts with important tourism and recreation facilities/areas, particularly where these areas are also afforded protection by virtue of their ecological or heritage value.

Table C16. 14: Standard Practice Mitigation Measures

Potential Effect	Mitigation
Noise Disturbance	<ul style="list-style-type: none"> ▪ Complete construction, where possible, outside of peak tourist seasons (June to September) to minimise disruption to visitors and local people. ▪ Avoid areas containing sensitive receptors e.g. major tourist attractions, key bird watching areas <p>See Chapter C17 of the Environmental Report for more detailed mitigation measures associated with noise, as well as C8 Birds and C9 Marine Mammals</p>
Transportation	<ul style="list-style-type: none"> ▪ Undertake a Transport Impact Assessment (TIA) at the project specific stage to minimise impacts of device transportation on local road networks ▪ Avoid popular cruising routes or areas used for water sports and diving ▪ Minimise congestion by transporting materials to and from deployment/landing sites during peak times for traffic to tourist areas e.g. Bank Holidays, Half-Term Holidays
Seascape	<ul style="list-style-type: none"> ▪ Design of devices and arrays to reduce their visibility and seascape effects e.g. reduce height above the surface or fully submerge device. ▪ Follow 'Holford Rules' with respect to onshore grid connections ▪ Complete construction, where possible, outside of peak tourist seasons to minimise disruption to visitors and local people. <p>See Chapter C19 of the Environmental Report for more detailed mitigation measures associated with seascape</p>

Potential Effect	Mitigation
Safety and Collision Risk	<ul style="list-style-type: none"> ▪ Avoid popular cruising routes, diving areas and key water sport locations ▪ Incorporate suitable safety features such as lighting, netting and buoys into the device design. Incorporate the RYA's recommendations within respect to safety as set out in the RYA's Position Statement on Offshore Energy Developments. ▪ Provide suitable information for the public regarding safety ▪ Restrict access to construction sites ▪ Observe good practice during construction, removal and maintenance <p>See Chapter C15 Shipping and Navigation of the Environmental Report for more detailed mitigation measures associated with safety and collision risk</p>
Access Restriction	<ul style="list-style-type: none"> ▪ For shoreline devices avoid coastal paths and informal recreational routes. ▪ Complete construction, where possible, outside of peak tourist seasons (June to September) to minimise disruption to visitors and local people. ▪ Identify and avoid popular routes for sailing or other water sports such as kayaking. ▪ Where possible, facilitate safe access through arrays for sailing or other water sports.
Water and Sediment Quality	<ul style="list-style-type: none"> ▪ Avoid areas of known contamination (marine) ▪ Avoid sensitive coastlines and key tourist attractions e.g. protected beaches ▪ Reduce the risk of spillages through effective device design, maintenance and observation of health and safety regulations ▪ Use non toxic chemicals in design and construction where possible. ▪ Minimise the use of antifoulants, sacrificial anodes and toxic cements <p>See Chapter C4 of the Environmental Report for more detailed mitigation measures associated with seabed contamination and water quality</p>
Disturbance to Wildlife	See Chapters C5, C8 and C9 of the Environmental Report for more detailed mitigation measures associated with protected sites and species, birds and marine mammals
Energy Extraction	See Chapters C3 of the Environmental Report for more information associated with marine and coastal processes.

C16.8 Confidence and Data Gaps

C16.8.1 Baseline Information

Given the scale of the study area, and the strategic nature of this study, it was not practical to collect all information on tourism and recreational facilities and activities. For the purpose of the study the level of information collected is considered to be sufficient to allow for only broad conclusions to be made over the likely effects on tourism and recreation. Table C16.15 provides an overview of the data available.

Table C16. 15: Availability of Data

Baseline Topic	Level of Data Available
General	The data collected is categorised discreetly and does not take into account any relationships between the activities although some key areas of tourism and recreation facilities can be identified from the data.
Award Beaches	High level of data available
Bathing Water Quality	High level of data available
Protected Coastline	Information on designated areas is readily available. However, the location of the proposed Marine National Park is currently unknown.
Sailing and Yachting	The data collected only takes into account the information held by one source, the RYA. Only general information is available on sailing activity.
Water sports Diving Canoeing and Kayaking Open Water Swimming	The location of clubs and organisations gives an indication of the main areas they are most likely to use. Other organisations from elsewhere travelling to the Scottish coast were not accounted for. Prime locations may alter seasonally depending on the favourability of conditions.
Beach Sports and Surfing	Prime locations may alter seasonally depending on the favourability of conditions.
Walking	Popular walking routes and destinations are well known but cover an extensive area. The numbers using particular routes is not known.
Golf Courses	The location of golf courses is readily available.
Marine Wildlife Tours and Fishing	These industries are not closely regulated and the areas of operation is based on distributive patterns of marine wildlife. The key areas are likely to alter on a seasonal basis subject to factors such as migration and breeding.
Bird Watching	The information collection accounts only for key areas where bird watchers are likely to be focused however this is primarily an independent activity and other areas may be used which are less well documented.

Generally, information on fixed, formal recreational facilities is readily available. However, information on informal and unregulated activities is less well known e.g. the location of wildlife watching activities and informal water sports is uncertain. It will be necessary for those promoting individual projects to undertake more detailed data collection to establish the effects of their developments on tourism and recreation.

C16.8.2 Confidence in Prediction of Significance

With respect to indirect effects the key knowledge gap is the relationship between a change in the environment and the resultant effect on the tourism and recreation i.e. the number of people participating in an activity. For this reason the confidence which is attached to the assessment is for most indirect effects is Low. Generally, a score of Medium has been assigned to direct effects.

C16.9 Residual Effects

Table C16.16 below, identifies the likely residual effects on recreation and tourism taking into account the mitigation measures identified above. The level of confidence in this assessment is also provided.

Table C16. 16: Potential and Residual Significance of Effects - Tourism and Recreation

Potential Effect on recreation and tourism	Device Characteristics	Development Phase	Key Tourist Industries and Recreational Activities	Potential significance of Effect WITHOUT Mitigation	Likelihood of Occurrence	Industry Good Practice Mitigation *	Residual Significance of Effect WITH Mitigation**	Confidence
Noise Generation During Construction	Wave and Tidal	CD, CC	Bird / Wildlife Watching	Moderate	Medium	See Table C16.12	Moderate	Medium
Noise Generation During Operation	Wave and Tidal	OD, OC	Bird / Wildlife Watching	Minor	Low	See Table C16.12	Minor	Low
Transportation	Wave and Tidal	CD, CC, OD, OC	Sailing Diving Water sports Activities	Minor	Medium	See Table C16.12	Minor	Medium
Changes to Seascapes	Wave and Tidal	CD, OD	Walking Golfing Sailing Site Seeing	Minor	Low	See Table C16.12	Minor	Low
Safety and Collision Risk	Wave and Tidal	CD, CC, OD	Sailing Water sports Activities Diving	Moderate	Medium	See Table C16.12	Minor	Medium
Access Restrictions	Wave and Tidal	CC, CC, OD	Sailing Water sports Activities Diving	Moderate	Medium	See Table C16.12	Minor	Medium
Water Quality	Wave and Tidal	CD, CC, OD	Bird/ Wildlife Watching Diving Water sports Activities	Minor	Low	See Table C16.12	Negligible	Medium
Disturbance to Wildlife	Wave and Tidal	CD, CC, OD, OC	Bird /Wildlife Watching	Moderate	Medium	See Table C16.12	Minor	Low
Energy Extraction and Effects on Coastlines/Beaches	Wave and Tidal	OD	General Tourist Industry	Minor	Low	See Table C16.12	Negligible	Low

Potential Effect on recreation and tourism	Device Characteristics	Development Phase	Key Tourist Industries and Recreational Activities	Potential significance of Effect WITHOUT Mitigation	Likelihood of Occurrence	Industry Good Practice Mitigation *	Residual Significance of Effect WITH Mitigation**	Confidence
Creation of Tourist Attraction	Wave and Tidal	OD	General Tourist Industry	Minor Beneficial	Medium	See Table C16.12	Minor Beneficial	Medium

* For the purpose of this assessment, it is assumed that the areas of greatest activity/ highest value will be avoided by adjusting the location of arrays.

**Adverse unless otherwise stated

CD = Construction/decommissioning – devices

CC = Construction/decommissioning - cables

OD = Operation – devices

OC = Operation – cables

C16.10 Summary

C16.10.1 General

Tourism and recreation are important to the socio-economic well being of the SEA Study Area. A number of formal and informal activities are associated with coastal areas and could potentially be affected by wave and tidal power. For the purpose of this assessment a distinction has been made between potential direct physical effects on tourism and recreation activities (e.g. exclusion from an area used for sailing) and indirect effects (e.g. how changes seascape character may subsequently affect the popularity of tourism and recreation activities such as walking and site seeing). It is reiterated that at this strategic level there are uncertainties associated with the latter issue as it deals with human responses to changes in environmental character.

With respect to *direct* effects, key issues include collision risk and access issues for some water sports and recreational sailing. The significance of potential effects is Moderate adverse (without mitigation) but in most instances is reduced to Minor with mitigation.

With respect to *indirect* effects, key issues include effects on seascape and effects of noise and other disturbance to bird/wildlife watching. The significance of potential effects is moderate adverse (without mitigation) but in most instances is reduced to Minor with mitigation. The exception is construction noise effects on wildlife for which mitigation measures are limited in their effectiveness (see C9 Marine Mammals). It is acknowledged that those involved in site seeing, sailing, wildlife tours and other activities may be concerned over effects on seascape but it is considered unlikely that this would discourage those individuals from participating in an activity. Due to a lack of evidence to support this conclusion the confidence attached to this conclusion is Low.

References

Madders, Where to Watch Birds: Scotland, 4th Edition, Helm, 2002

Scottish Environment Protection Agency, Bathing Water Quality Report, 2006

Scottish Natural Heritage (SNH), personal communication on recreational activities taking place in Scotland's coastal areas, 2006 and 2007

Woods-Ballard, A.J., Parsons, E.C.M., Hughes, A.J., Velandar, K.A., Ladle, R.J., Warburton, C.A., The Sustainability of Whale Watching in Scotland, The Journal of Sustainable Tourism, Vol.11, No.1, 2003

The following Web-Sites

www.keepsotlandbeautiful.org

www.highland.gov.uk

www.visitscotland.com

www.rspb.org.uk

www.fishsea.co.uk

www.rya.org.uk

www.sportscotland.org.uk

www.sailscotland.co.uk

www.canoescotland.com

www.seekayak.com

www.seakayakscotland.com

www.scotsac.com

www.bsac.org

www.britishswimming.org.uk

www.scottishswimming.com

www.swimtrek.com

www.britsurf.co.uk

www.kitesurfing.org

www.scottishsport.co.uk

www.scotclimb.org.uk

<http://golf.visitscotland.com>

www.scottishgolfcourses.com

www.northsea-cycle.com

www.sustrans.org.uk