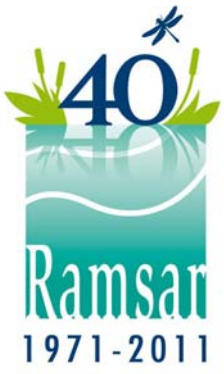
Jersey's South East Coast Ramsar Management Plan

February 2011



States of Jersey

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Foreword

Jersey is blessed with a rich and diverse coastal and marine environment and the Island's history, heritage and culture is often a story of our relationship with the sea.
Good stewardship of our coastal and marine environment is vital for the Island and future generations.

The south east coast of Jersey is a hugely important part of our coastal zone and was designated a Wetland of International Importance under the Ramsar Convention in 2000. This area provides habitat for many local species as well as migratory birds.

The South East coast supports a broad range of commercial and leisure activities including fishing, aquaculture and general recreational use.

The Management Plan for the South East coast has been prepared by the Ramsar Management Authority, a group consisting of stakeholders and Government. Many people made significant contributions to the development of the plan.

If Jersey is going to support the natural environment and be a resource for all the other interests it is vital management is responsible and integrated. It must be balanced.

This plan, not only contributes to our obligations under the Ramsar Convention, but also assists in the integrated management of the South East coast of Jersey.

Deputy Robert Duhamel
Assistant Minister for Planning and Environment
Chair – Ramsar Management Authority

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Executive Summary

Introduction
Under the Ramsar Convention, Jersey has an obligation to manage wetlands of International Importance. The Management Plan provides a framework to ensure wise use of the intertidal and inshore coastal zone of the south east coast of the Island.

Planning Process
The Minister for Planning and Environment established the Ramsar Management Authority to agree the Management Plan. This Authority is made up of a combination of Government, parish and non-governmental organisations, with meetings open to the public. A public consultation was also undertaken to inform the discussions of the Authority.

Background
The Ramsar principle of "wise use" of wetlands is the sustainable utilisation of wetlands for the benefit of humankind. "Wise use" embodies the concepts of sustainable use, which is in accord with the maintenance of ecological character and the resource requirements of future generations.

Significance of the South East Coast
The site, situated in Le Golfe Normano-Breton, comprises various habitats; reefs, boulder fields, mud, sandy and shingle shores not covered by water at low tide, combined with shallow tidal lagoons, seagrass beds and a constellation of outlying reefs. A tide range of 12 metres exposes extensive areas of reef at varying elevations, expansive rocky shores and a complex system of soft substrate gullies. The area also features a large, shallow, depositing, soft sediment bay, containing seagrass meadows, which provide important winter habitat for nationally important populations of waders and wildfowl. These factors, combined with Jersey's biogeographical position produce great biodiversity, a rich and diverse range of biotopes and some uncommon species assemblages. The area is used extensively by people, has economic significance and is an important recreational area.

Vision
By incorporating integrated natural resource management, the Ramsar Management Plan seeks to:

- conserve the environmental and ecological attributes of the reefs for the benefit of future generations;
- use the natural resources of the reefs in a sustainable manner that is compatible with the maintenance of the ecosystem functions;
- protect and restore natural habitats;
- restore viable populations of native species;
- increase community commitment and awareness;
- fulfil Jersey's obligations under the Ramsar Convention and other international agreements

Threats
The main environmental and ecological threats to attaining the vision are:-

- Habitat decline due to land reclamation, pollution and climate change
- Conflict of use from fishing, aquaculture and recreation
- Alien invasive species
- Limited jurisdiction

Objectives
The plan proposes four objectives to achieve the Vision; each has a number of strategies and action plans to achieve these objectives.

Objective 1
Integrated environmental management of the south east coast with monitoring of biotic indicators to ensure the sustainable, multiple use of the region; and monitoring of management performance against the plan objectives.

Objective 2
Protection of species and habitats and restoration of degraded habitats in the Ramsar area and their conservation for future generations.

Objective 3
Improved awareness among all key stakeholders, including the wider community, of the natural values of the South East coast Wetlands and Ramsar principles expressed in the Management Plan.

Objective 4
Ongoing funds and resources to achieve the objectives of the management plan.

Location Map

Figure 1. Extent of the South-East Coast Ramsar Site

Introduction

The south east corner of Jersey's coastline was declared a Wetland of International Importance in 2000 under the Ramsar Convention. This Management Plan will, in part, fulfil Jersey's obligations under the Convention by providing a framework for the wise use of the area (3,210 hectares). It aims to integrate the environmental management of the Ramsar area so that the ecological character of the area is conserved, in conjunction with the area's important social and economic functions.

The Plan includes a Vision for the area, analyses threats to attaining the Vision and proposes management objectives and actions.

Management Planning Process

As the competent authority under the UK government, the signatory to the Ramsar convention, Jersey has an obligation to prepare management plans for its Wetlands of International Importance. The Island's constitutional position, as a Crown Dependency, requires treaties such as this to be signed by the UK government on Jersey's behalf. As such, formal correspondence regarding the Convention is made through the relevant UK government department. Responsibility for implementation of the Convention, however, is devolved to the competent Jersey authorities. Regardless of the obligation there is a clear need for an integrated management plan for the area given its ecological, cultural and economic value and the current and potential pressures on the site.

The Ramsar Management process began in the late 1990s when a group of Government representatives and non-governmental organisations convened, under the chairmanship of Deputy M Dubras, the president of the then Planning and Environment Committee, to discuss and agree the Island's first Ramsar site. Jersey's south east coast was officially designated a Ramsar site in 2000. A similar group was re-established later which led to the designation of the offshore reefs as three more Ramsar sites in 2005. At this time management plans were not put in place for the sites.

At the beginning of 2010 the Department of Planning and Environment commenced the process to produce management plans which included the formation of a Ramsar Management Authority. In March 2010 the inaugural meeting of the Ramsar Management Authority was held. It was proposed and subsequently agreed, that the Authority be made up of a combination of government, parish and non-governmental organisations[1]. It was also agreed that meetings of the Ramsar Authority would be open to the public. Terms of reference for the Authority were also agreed[2].

A consultation paper was prepared by the Department based on Authority discussions to ascertain the views of members of the public with respect to management of the Ramsar sites in Jersey. This consultation was distributed directly to Authority members, Government Departments, established environmental forums, and marine and coastal stakeholders. The consultation was also launched on the

[1] See Appendix 1
[2] See Appendix 2

Government "have your say" consultation website together with press releases and advertisements in the local media.

All the responses from the consultation were consolidated and presented to the Authority for consideration as part of their discussions in formulating the management plan.

The Department of Planning and Environmental provided technical, scientific and administrative support to the Management Authority throughout the planning process.

The Minister of Planning and Environment also established a Ramsar Management Authority – technical subgroup to address specific developments that had the potential to impact on the Ramsar site. This group provided significantly improved communication between the Ramsar Authority, regulators and those involved in development on or adjacent to the site.

Background

Ramsar and Wise Use

In February 1971, at the town of Ramsar in Iran, delegates from 18 countries and observers from a number of other countries and non-government organisations met because of concerns at the worldwide loss of waterbirds and their wetland habitats. The result was the first international nature conservation treaty. This was the Convention on Wetlands of International Importance especially as Waterfowl Habitat commonly known as the Ramsar Convention after the name of the town where it was negotiated[3]. Australia became the first signatory to the Convention in December 1975 and was the first country to propose a Wetland of International Importance, the Coburg Peninsula in the Northern Territory.
Contracting parties to the Ramsar Convention are obliged to nominate wetlands that comply with the Convention's criteria for Wetlands of International Importance. The south east coast was designated as a Wetland of International Importance in 2000. Once wetlands have been designated, the nominating countries are required to prepare management plans for the wetlands which will promote their wise use and the conservation of their ecological character.

Wise Use

The concept of wise use is central to developing an integrated planning process for Wetlands of International Importance. According to the Ramsar the definition is:-

"*Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development*." (Ramsar, 2005)

Sustainable utilisation' of a wetland is defined as:

"*Human use of a wetland so that it may yield the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations"* and;

'natural properties of a wetland' are defined as:

those physical, biological or chemical components, such as soil, water, plants, animals and nutrients and the interactions between them"

It is evident that the concept of wise use is both compatible with and very similar to the principles of ecologically sustainable development and the conservation of biological diversity. Wise use embodies the concepts of sustainable use, which is in accord with the maintenance of ecological character and the resource requirements of future generations.

Ecological Character

Ecological character is defined by the Ramsar Convention as:-

"Ecological character is the sum of the biological, physical, and chemical components of the wetland ecosystem, and their interactions, which maintain the wetland and its products, functions, and attributes. Change in ecological character is the impairment or imbalance in any biological, physical, or chemical components of the wetland ecosystem, or in their interactions, which maintain the wetland and its products, functions and attributes." (Ramsar, 1999)

These concepts are central to the application of this management plan.

Management Context

The management of the south east coast Ramsar site has been considered in the context of a number of planning and policy initiatives that impact on the coastal zone of Jersey. This context includes Multilateral Environmental Agreements (MEAs) and local legislation and policy.

Significance of south east coast

Ecological Character

The site is located on the south and east coasts of the Channel Island of Jersey, which is situated in Le Golfe Normano-Breton, 22.4 km west of Normandy (France), 48 km north of Brittany (France) and 136 km south of Weymouth (England).
The site comprises various habitats; reefs, boulder fields, mud, sandy and shingle shores not covered by water at low tide, combined with shallow tidal lagoons, seagrass beds and a constellation of outlying reefs. A maximum spring tide range of 12 metres exposes in excess of 17.5 sq km of wave-cut rock platforms, extensive areas of reef at varying elevations, expansive rocky shores and a complex system of soft substrate gullies. The area also features a large, shallow, depositing, soft sediment bay, containing seagrass meadows, which provide important winter habitat for nationally important populations of waders and wildfowl. These factors, combined with Jersey's biogeographical position produce great biodiversity, a rich and diverse range of biotopes and some uncommon species assemblages.

The site has the one of the largest tidal ranges in the world that can exceed 12 metres, a shallow sloping shore profile, a wide range of substrata and wave exposure. Its shallow waters are relatively warm due to the influence of the Gulf Stream and surrounding oceanographic conditions. These factors combine to produce a site considered to have great ecological value due to the diverse range of habitats, communities and species found in a comparatively small area. Within the site, the Violet Bank is one of the largest igneous intertidal reef sites in Europe, comprising approximately 8 sq km of rocky shore exposed at low water on spring tides divided by an extensive network of gullies and separated in places by mud and sand flats. Grouville Bay is a large shallow bay containing mudflats and sandflats that are exposed at low water and contain *Zostera* seagrass beds.

The extensive rocky shores found within the site are identified as being of priority for conservation at an international level due to the rarity and perceived threat to this type of habitat and its associated faunal and floral communities. The extensive mudflats and sandflats found in the site are likewise considered of significant value at a European level. *Zostera* beds found in the embayed shallow waters are of great importance to a wide range of vulnerable species in their early life stages (Jackson, 2003). Adjacent to the Baie de Mont St Michel (62,000 ha designated in 1994), the site represents the last vestiges of a former land bridge to continental Europe and plays a major role in the continued ecological functioning of the Golfe Normano-Breton with many species of wintering shorebirds visiting the area during annual migration passages. One of the largest breeding groups of bottlenose dolphins (*Tursiops truncates)* in the British Isles is regularly sighted within the boundaries of the site.

Jersey is situated in Le Golfe Normano-Breton between England and France, on the convergence of Boreal (cold temperate) and Lusitanean (warm temperate) marine biogeographical regions. Overlap of these regions promotes increased species richness and allows species to exist at the northern or southern limits of their distributions. This enables the site to support some species which are rare or absent from British coasts as they are normally associated with the warmer waters of

southern Europe, e.g. ormer (*Haliotis tuberculata)*, as well as species that are normally associated with the colder northern waters of the United Kingdom, e.g. beadlet anemone *Actinia equina*. The overlap of the Boreal and Lusitanean biogeographical regions, produces many limit-of-range populations. It has been hypothesised that such limit-of-range populations contain genetic characteristics that have arisen though adaptation to local, more extreme environmental conditions than core populations.

The Baie de St Malo experiences huge movements of water diurnally with a relatively closed anticlockwise current around Jersey. This factor, when combined with the warming influence of the Gulf Stream and the physical characteristics of the site assists in enhancing the local recruitment and subsequent offshore migration of many animals that have planktonic, early life stages, especially commercially important Crustacea (eg. crabs and lobsters). The large areas of rocky shore are important to many species, providing shelter, protection and food for both larval and adult stages. Similarly the rich infaunal communities of the sand and mudflats are important for their range of mollusc and worm species. These areas are important nurseries for a wide variety of organisms. *Zostera* beds and wide, shallow gullies dividing the rocky platforms also provide critical habitat for many other forms and stages of life, as do the extensive and diverse algal communities found within the site.

The extensive areas of shallow water and huge number of intertidal pools found within the site provide habitat for many species of fish. To date 107 species of fish have been recorded from the site and adjacent waters. The enormous water exchanges and consequent strong tidal streams combined with high and low energy wave conditions and substrate variability mean a wide diversity of species and life history stages are present. The biogeographic location of the site allied with the surrounding oceanographic circulation and physical features serve to enhance species variety and abundance. The site contributes much to the continued viability of the Golfe Normano Breton ecosystem, which undoubtedly plays a major role in the functioning of English Channel fisheries and biodiversity.

On the south coast, several headlands of varying elevation extend into the residual inshore anticlockwise current, creating sheltered areas on their leeward side. Here, recruitment of planktonic larvae onto extensive areas of rocky shore and water-filled soft sediment gullies occurs. Many species of fish take advantage of elevated summer water temperatures to feed and grow on the rich food supply in these fertile, shallow waters before making an Autumn migration to spawn in offshore waters. Conversely, other species are absent in summer but present in winter for similar reasons. A range of small fish species spend their entire life within the site. Adjacent to the site is a sandbank known as the Banc du Chateau where large rafts of seabirds and the bottlenose dolphins often feed on a plentiful supply of sand-eels (*Ammodytes* sp.) and other pelagic fish.

Fauna and Flora

The flora and fauna is characterised by limit of range species at the northern and southern margins of their distributions that are not present on shores either to the

north or south respectively. To date 710 species have been recorded in the site, a number which is being added to annually as new species are recorded.

Phylum	Nos of Species
Ciliophora	3
Porifera (Sponges)	6
Cnidaria (Anemones; Corals; etc.)	18
Platyhelminthes (Flatworms)	2
Acoelomorpha	1
Nemertea (Ribbon Worms)	4
Entoprocta	1
Sipuncula (Peanut Worms)	2
Annelida (Segmented Worms)	64
Chelicerata (Sea Spiders)	9
Myriapoda (Centipedes)	1
Lower Crustacea (Barnacles; etc.)	14
Higher Crustacea (Crabs, etc.)	137
Mollusca (Sea Snails; Clams; etc.)	159
Bryozoa	14
Echinodermata (Stafish; Sea Urchins; etc.)	11
Chordata: Tunicata (Sea Squirts)	9
Chordata: Pisces (Fish)	45
Chordata: Reptilia (Turtles; etc.)	1
Chordata: Mammalia (Dolphins; etc.)	5
Brown Seaweeds	51
Gracilicutes (Cyanobacteria)	4
Red Seaweeds	106
Green Seaweeds	22
Angiosperm Plants	14
Ascomycota (Lichens)	7
TOTAL No. of Species	**710**

(taken from Chambers, 2010)

Birds

Despite Jersey's small size, the Island is home to a diverse variety of wetland birds and waders and is an important habitat for migratory species as well as breeding colonies of endangered species. The British Isles, including Jersey, acts as a major stop off for migrating birds and as a sanctuary for species displaced from other areas. Over 300 species of birds have been recorded in Jersey (Societe Jersiaise, 2010), many of which are listed as threatened (Eaton et al., 2009) including auk, gull and tern species. Important coastal and marine species found locally include the Brent Goose (*Branta bernicla*), pale (ssp. *hrota*) and dark (ssp. *bernicula*) bellied (the third subspecies Black Brant (ssp. nigricans) is very rare), the Razorbill (*Alca torda*), Little Egret (*Egretta garzetta*), Atlantic puffin (*Fratercula arctica*) and Northern Fulmar (*Fulmarus glacialis*). Specific species found in the South east coast Ramsar site include Bar tailed godwit (*Limosa lapponica*), turnstone (*Arenaria interpres*),

redshank (*Tringa totanus*), grey and ringed plover (*Pluvialis sqatarola* and *Charadrius hiaticula*), oystercatcher (*Haematopus ostralegus*) and curlew (*Numenius arquata*). Biodiversity Action Plans exist for the Brent Goose, Atlantic Puffin and the European Shag (*Phalacrocorax aristotelis*).

The Brent Goose (*Branta bernicla*)

This small species of goose is famous for its vast annual migrations from summer breeding grounds in the arctic tundra to winter feeding ground in Northern Europe and Jersey receives an annual influx of this species. All three subspecies (pale bellied, dark bellied and Brant) are visitors to the Island. The birds use this time to replenish energy reserves and therefore spend considerable time feeding predominantly on coastal grasses and algae, mainly seagrass and green seaweeds, *ulva spp*., although the dark bellied geese have always included terrestrial grasses in their diet. This tendency to include terrestrial grasses has been increasingly observed across the bird's range. Whilst the reason for this is not clear, the decline in abundance and quality of normal food resources may be a significant factor. Recent years has shown a gradual increase in global population, a trend also reflected in Jersey.

Invasive Species

Invasive species have had an impact on the ecosystem of the south east coast of Jersey. Several invasive species have been introduced intentionally as aquaculture species. The exact mode of introduction for other species is not known.

Taxon	Common name	Scientific name	Introduction route
Phaeophuceae	Japweed	*Sargassum muticum*	Unintentional
Ascidiacea	Stalked Sea Squirt	*Styela clava*	Unintentional
Bryozoan	Pacific bryozoan	*Watersipora subtorquata*	Unintentional
Mollusc	Manila Clam	*Venerupis philippinarum*	Intentional
Mollusc	Pacific Oyster	*Crassostrea gigas*	Intentional
Mollusc	Blue mussel	*Mytilus edulis*	Intentional
Mollusc	Slipper Limpet	*Crepidula fornicata*	Unintentional
Crustacea	Asian Shore Crab	*Hemigraspus sanguineus*	Unintentional
Crustacea	Australian Barnacle	*Eliminius modestus*	Unintentional

Resource Use

Fishing within the site, is of great cultural, social and traditional importance to the population of Jersey. The site supports an important commercial fishery for various shellfish and wetfish species including lobster, brown crab and bass. As of the end of 2009 the commercial fleet of Jersey comprised 164 licensed fishing vessels. From Jersey's territorial waters the fleet landed 1250 tonnes of fish worth £4.3M in 2009 (Fisheries and Marine Resources, 2010). It has been estimated that recreational angling spend in the Island is between £0.9M pa (Hawkins, 2003) to £5 million pa (P.Gosselin, pers. comms.)

The site is used extensively for recreational fishing activities of many types including angling and low water fishing. Bait digging also occurs in several locations. Intertidal netting and groundlines are employed in the area, set predominately by amateurs.

Aquaculture production is also an important industry within the Ramsar site. Currently all intertidal shellfish farming that occurs in Jersey does so within the boundaries of the site. Species farmed are predominately pacific oyster and mussel, with limited clam and ormer also occurring. Oysters are farmed on low trestle tables and mussels either on similar tables or using the "bouchot" pole methods employed in France. Over 1000 tonnes of oysters and mussels were produced in 2009 with a value of £1.7M (Fisheries and Marine Resources, 2010).

To the north of the site lies Gorey Harbour, a small port used principally for recreational boating. To the west of the site lies St Helier harbour, Jersey's principal port with associated facilities and shoreline development. Small vessels are also moored at locations along the coast particularly at Le Hocq and La Rocque harbour.

Cultural and Archaeological value

There are several important historic buildings within the site (the towers at Icho and Seymour) as well as at the boundaries (e.g Le Mont Orgueil, Fort Henry and Fort William). The small harbours along the coast are important cultural and historical sites, built as a result of the native oyster fishery that flourished at the early part of the 19th century. There are a significant number of other archaeologically important structures and features within the Ramsar site. This includes evidence of the Island's ship building history, particularly at Harve de Pas, prehistoric peat beds at Greve d'Azette and Le Hocq and evidence of the ice age in the form of a mammoth tooth found at La Rocque.

La Motte, also known as Green Island, is designated as an archaeological Site of Special Interest (SSI) for a number of Neolithic, Iron Age and early Medieval features. The site also contains various cart tracks cut through the rock, know as Charrieres du Vraic, to aid the collection of seaweed for use on agricultural land.

Another important cultural facet involves low water fishing on big spring tides, in particular low water fishing for the ormer (*Haliotis tuberculata)*. The ormer and it's fishery in Jersey is of huge cultural significance and the exploitation of this species is carefully managed. There is no commercial fishery and the recreational fishery has strict harvest controls with minimum sizes and permitted days.

The Ormer, *Haliotis tuberculata*

"tis much bigger than an oyster and like that, good, either fresh or pickled, but infinitely more pleasant to the gusto, so that an epicure would think his pallat in paradise if he might but always gormandise on such delitious ambrosia."

Anonymous, 1673.

The ormer evokes an emotive response from Jersey people, as it is a subject close to many hearts. It is no exaggeration to say that for many people ormering is part of Jersey life and long hours are spent, by young and old alike, searching for and gathering this delicacy. Undoubtedly it is part of the Island's heritage, ranking alongside the Jersey cow and the Jersey Royal Potato. Ormers can live for over 15 years and be up to 155mm in length.
Although the ormer is not a commercially exploited species, it is very important both biologically and socially to Jersey. (Fisheries & Marine Resources, 2008)

Economic Value

There are several distinct facets that should be looked at when consideration is given to an assessment of economic value. There are clearly the extractive uses which have an economic value including commercial and recreational fishing and aquaculture. There are also other recreational pursuits that use the site but do not consume resources such as recreational and tourism activities such as boating, walking, wildlife watching, and the nature walks known locally as "moon walks". There are also a number of other activities that occur which are difficult to put a value on. Seaweed washed to the top of the beach is gathered by growers, both commercial and amateur, for application to arable land and gardens as a fertiliser and field dressing. Off-Island marketing of the famous Jersey Royal potato refers to the use of seaweed enhancing the flavour of very important crop.
There is also the scenic value to residents who live adjacent to the site and it is of importance to those who simply value protecting a site and conserving natural resources for future generations. Whilst many of these values may be difficult to quantify there is an inherent value and therefore should be considered.

Catch from a day's fishing at Le Hocq circa 1934

Vision

By incorporating integrated natural resource management, the Ramsar Management Plan seeks to:

- conserve the environmental and ecological attributes of the reefs for the benefit of future generations;

- use the natural resources of the reefs in a sustainable manner that is compatible with the maintenance of the ecosystem functions;

- protect and restore natural habitats;

- restore viable populations of native species;

- increase community commitment and awareness;

- fulfil Jersey's obligations under the Ramsar Convention and other international agreements

Seagrass Meadows

Threats

Habitat Decline

Land Reclamation (Hydrographic change)

Land reclamation can have a significant effect of the marine habitat, both directly and indirectly. Clearly there is smothering and permanent removal of any habitat at the area of reclamation. There are also potential indirect threats from this activity. Reclamation may cause a change in the hydrography in the vicinity of the site. This in turn may alter the speed of the current resulting in scouring or deposition of sediment and alteration in grain size of the sediment. This will have an affect on the benthic community, resulting in simplification of the community structure, dominance by a reduced number of species and a reduction of biodiversity (PML Applications, 2009). Physical presence of and activities on the reclamation site can also impact on the surrounding habitats by the leaching of soluble material used during the infill process. Once the reclamation site is complete the ultimate use of the created land can also be viewed as a potential threat to the marine habitat if that use is inappropriate or poorly managed.

Pollution

Discharge from land

The topography of Jersey slopes from north to south. This results in the majority of land run off entering the sea on the south coast, including the Ramsar site. The catchment area draining into the Ramsar site would equate to approximately 18% of the land mass of the Island. Infrastructure in place to ensure no untreated sewage is discharged into coastal waters. However, during storm events potential exists for the system to back up and overflow causing discharge. In addition to that within the foul sewer system, surface water run off in general from land can also enter the Ramsar site through storm drains that discharge into coastal waters.
Discharge from activities on land, particularly at La Collette, remains a potential threat to the site. The Energy from Waste plant situated next to the site has the potential to impact as has other activities, either through construction or land use. Appropriate monitoring of this site is a vital consideration in the formulation of the monitoring strategy.

Discharge from sea

Polluting discharges from vessels are a potential threat to the site. Activities ranging from pumping of heads or bilges to discarding litter can have significant impact on the overall well being of a site.

Climate Change

Climate change is affecting the marine environment. Recent data shows temperatures increasing and changing distributions of species (MCCIP, 2010). This change in species distribution could have a significant effect in Jersey due to the fact that the southern limit of some species occurs in local waters. Climate change is also affecting seabird populations and their breeding success and increasing

temperatures may have the potential to increase the geographical range of some harmful algal bloom and other disease species. Significant mortalities of marine species, namely ormer, *Haliotis tuberculata* and oyster, *Crassostrea gigas*, have occurred in recent years, with evidence suggesting increasing temperature playing an important part.

Conflict of Use

Fisheries

Fishing, both commercial and recreational, occurs throughout the site with many types of metier employed and species exploited. Potential exists for over exploitation of a species and subsequent ramifications, if appropriate management is not in place to prevent this. The use of an inappropriate metier in general or at a particular location can also present a threat to overall ecological character of the site. Disturbance caused during these activities has the potential to negatively impact on certain species particularly if it occurs during specific times of the year (e.g. during the bird's breeding season or when migrating birds stop over for rest or feeding).

Aquaculture

Aquaculture, specifically shellfish cultivation, which occurs in the site has potential to disturb certain species (such as birds) in the same way as fishing activity simply by the presence of people working. The cultivation requires a significant amount of vehicle movement to and from the location of the farm in the site. Unregulated expansion of the industry or expansion into ecologically sensitive sites would also represent a potential threat to the overall quality of the site.

Recreational use

Recreational use, either on the water or intertidal zone as the tide retreats can disturb species sensitive to a particular activity or degrade a fragile habitat. Recreational activities can also result in competition for space at certain times of the year or certain locations. Although acknowledged that it is also a commercial activity, the movement and removal of seaweed for a recreational purpose or use have the potential to impact on the site. Appropriate management should be in place for this activity.

Alien Invasive Species

Alien invasive species represent a significant threat to the overall ecological character of the site. Established invasive species have already had a significant visual and ecological impact (e.g. slipper limpet *Crepidula fornicata* , Japweed *Sargassum muticum)*
Invasive species can have an effect in various ways, for example, as a predator removing prey species that have no evolved defence mechanism or as a competitor, out competing the natural species by growing or reproducing faster or utilising a resource more effectively and/or efficiently. Invasive species can become established

either intentionally (i.e. deliberate import and release) or unintentionally (e.g. ballast water). Climate change may well increase or exacerbate the problem by facilitating establishment of invasive species as the temperature regime changes.

Limited Jurisdiction

Limited jurisdiction remains an issue as many environmental impacts that affect or have the potential to effect arise from outside of the site and outside Jersey's territorial waters. An example of this would be some aspect of fisheries management, particularly management of pelagic fish stocks, where ultimate authority rests with the UK or EU.

Matrix of Exposed Rock and Sandy Gullies -Part of the South east Coast Ramsar site

Objectives and Strategies

The plan proposes four objectives to achieve the Vision for the site; each has a number of strategies designed to achieve the objectives. The objectives are of three kinds:
1) measures which facilitate change
2) measures which protect the habitats that remain and
3) measures which reverse current processes of environmental degradation.

Each objective also has an action plan which sets out how each objective will be achieved.

Objective 1

Integrated environmental management of the south east coast with monitoring of biotic indicators to ensure the sustainable, multiple use of the region; and monitoring of management performance against the plan objectives.

1. Ensure regular Ramsar Management Authority meetings.

2. Establish monitoring mechanisms to guide review of the management plan to ensure effective implementation and fulfilment of Ramsar objectives.

3. Establish monitoring strategy to include biological, chemical and physical parameters.

4. Establish monitoring strategy for key habitats and species.

5. Establish programme of biological habitat monitoring with NGOs.

6. Ensure that legislation, strategies and policies that affect the area are consistent with the Ramsar principles of wise use and the maintenance of ecological character.

Action Plan and Time Frame

1.1	RMA - Plan and hold RMA meetings	Ongoing
1.2 **1.3** **1.4**	RMA - Publish monitoring strategy for the Ramsar site	2011 Q3
1.5	SJ – Plan and survey set of permanent transects	2011 Q4
1.6	P&E - Review current legislation, strategies and policies	2011 Q4

Objective 2

Protection of species and habitats and restoration of degraded habitats in the Ramsar area and their conservation for future generations.

1. Establish Ramsar Management Authority Technical Subgroup to assess plans and projects that have potential to impact the site.

2. Establish detailed habitat map and database.

3. Ensure no new intentional imports of any non-local species.

4. Seek to reduce and remove all polluting discharges into the site.

5. Ensure appropriate fisheries management is in place based on sustainability of species and the precautionary principle.

6. Establish mechanism to protect vulnerable species and habitats

Action Plan and Time Frame

2.1	RMA-TS – Meet when required to discuss project/plans.	Ongoing
2.3.1	Jersey Harbours – up to date with ballast water legislation and risk assessment of ballast water discharge locally.	As required
2.3.2	FMRP - Aquaculture imports of non native controlled	Ongoing
2.4.1	P&E – Continue to work with farmers to improve farm management practices and the Diffuse Pollution Project	2015
2.4.2	TTS – Separate storm drains from foul sewer to reduce potential for accidental discharge during storm events	Ongoing
2.4.3	JEC – Continue research into use and type of biocide employed to ensure environmental best practice	Ongoing
2.5	FMRP – Continue to manage exploited species	Ongoing
2.6.1	JAA – Plan vehicle routes to service aquaculture interests	Aquaculture Strategy
2.6.2	P&E – Publish Seaweed/Strandline Habitat Action Plan	2012 Q1

Objective 3

Improved awareness among all key stakeholders, including the wider community, of the natural values of the South East coast Wetlands and Ramsar principles expressed in the Management Plan.

1. Better communication – improved website, communication networks, blogs, social networking etc.

2. Develop schools programme to integrate into local curriculum to promote Ramsar values.

3. Ensure obligations under Ramsar 'Communication Education Participation Awareness' (CEPA) programme are fulfilled.

4. Develop interpretation for on-site.

5. Develop information and interpretation material for tourism.

6. Organise periodic forums for discussions.

7. Publish Code of Conduct for users of the site.

8. Provide WiSe training for commercial operators.

9. Ensure representation on national and International Ramsar forum.

Action Plan and Time Frame

3.1 **3.3**	P&E - Review IT support for Ramsar and CEPA programme	2011 Q2
3.2	P&E / ESC - Produce schools programme	2011 Q4
3.4 **3.5**	RMA – Publish interpretation material for the site	Ongoing
3.7	RMA – Review existing code of conduct and amend if required to encompass all issues relating to Ramsar	2011 Q4
3.8	P&E – Organsise WiSe courses as required	Ongoing
3.9	P&E - Attend Ramsar and N2K forum and steering group meetings in UK	Ongoing

Objective 4

Ongoing funds and resources to achieve the objectives of the management plan.

1. Prepare a funding and sponsorship plan which identifies key funding opportunities and obtains firm commitments from key Government Departments and other organisations for ongoing support for the South east coast Ramsar site.

Action Plan and Time Frame

4.1	RMA – Produce funding plan	2011 Q4

Objective Responsibility – Lead Organisation

RMA	RMA-TS	P&E	SJ	TTS	FMRP	JH	JEC	JAA
1.1	2.1	1.6	1.5	2.4.2	2.3.2	2.3.1	2.4.3	2.6.1
1.2		2.4.1			2.5			
1.3		2.6.2						
1.4		3.1						
3.4		3.2						
3.5		3.8						
4.1		3.9						

Key

RMA	Ramsar Management Authority
RMA-TS	Ramsar Management Authority – Technical Subgroup
P&E	Department of Planning & Environment
FMRP	Fisheries and Marine Resources Panel
TTS	Transport and Technical Services
JH	Jersey Harbours
JAA	Jersey Aquaculture Association
SJ	Societe Jersiaise
JEC	Jersey Electricity Co.

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Appendices

Appendix 1 Ramsar Management Authority Membership (as of February 2011)

R. Duhamel	Chair, Assistant Minister, P&E
A. Scate	Chief Officer, P&E
A. Tulley	DEFRA
B. Bree	RSPB
C. Le Boutillier	Greve de Lecq Boat Owners
C. Le Masurier	Jersey Aquaculture Association
D. Houseago	Director, EMRE, P&E
D. Murphy	Connetable, Grouville
D. Cabeldu	SOS
D. de Carteret	Jersey Tourism, EDD
D. Thompson	Jersey Fishermens Association
E. Gavey	Les Ecrehous Residents Association
G. Morel	Marine and Coastal Officer, P&E
I. Syvret	Jersey Inshore Fishermens Association
J. Moss	ESC
J. Clarke	Société Jersiaise
J. Le Gresley	Les Minquiers Residents Association
J. Rogers	Chief Officer, TTS
L. Norman	Connetable, St Clement
M. Samson	Greve de Lecq Boat Owners
M. Taylor	Fisheries and Marine Resources Panel
P. Gosselin	Jersey Recreational Fishing Association
P. Lawrence	Jersey Harbours
P. Lewin	Receiver General
S. Yates	Connetable, St Martin
S. Crowcroft	Connetable, St Helier
S. Hardy	National Trust
T. du Feu	Environmental Protection, P&E
W. Peggie	Director of Environment, P&E

Appendix 2. Ramsar Management Authority Terms of Reference

1.0 Background.

Jersey has four areas of our coastal waters and reefs designated under the Ramsar Convention after approval by the States of Jersey. The south-east coast or Violet Reef was designated in 2000 and the offshore reefs of Les Miniquiers, Les Ecréhous, the Dirouilles and the Pierres de Lecq were designated in 2005. The Ramsar Convention provides a framework for the conservation and wise use of wetlands and their resources. The Convention requires management plans for each site to be developed by the stakeholders. The Management Plan primarily identifies the objectives for the site and sets out the management measures required. A Management Authority needs to be established to implement the process.

2.0 Description of the Management Authority

The group is known as the Jersey Ramsar Management Authority (hereafter referred to as 'the Authority'.)
The membership shall:
(i) Include a broad range of representative interests to provide a balance of viewpoints and expertise to enable informed debate;

(ii) Bring a range of experience to the Authority in matters relating to conservation, use and management of Jersey's marine environment, and in particular the Ramsar sites; and

(iii) Remain manageable in size in order to ensure that the Authority may function effectively.

Proposals from likely interested parties wishing to join the Authority should be made to the secretariat prior to a meeting and will be subject to agreement by consensus from the members of the Authority. Interested parties may also choose to be copied into the correspondence of the Authority, rather than becoming attending members. Substitutes are allowed on the Authority. To ensure that business is progressed effectively at meetings, members should be aware that any substitute that they appoint should be authorised to speak with authority on their behalf and have the ability to take decisions on issues under consideration.

Before appointment to the Authority, members will be asked to confirm:

(i) their support of the Authority and its purpose, and a willingness to attend meetings; and
(ii) a willingness to work within the Vision and Objectives of the Authority.

3.0 Vision and Objectives

To produce and implement the Management Plans for Jersey's Ramsar Sites

Objectives

- To provide a strategic and inclusive approach to the development and publication of Ramsar Management Plans Jersey which will provide a range of benefits for multiple users and the natural, historic and cultural marine environment compatible with the established principles of the Ramsar Convention;

- To promote and foster an informed debate, and disseminate information, about the role of Ramsar sites in the management of the marine environment around Jersey;

- To seek ways of establishing consensus amongst stakeholders;

- To support the delivery of projects which are relevant to the purpose of the Authority;

- To ensure compliance with relevant local, national and international legislation, policies and best practice.

4.0 Administration of the Management Authority

4.1. The Authority

The Authority will consist of at least one representative from each of those organisations specified in the Appendix. Where appropriate, multiple representations will be agreed by the Authority. A member may send a substitute if necessary.

4.2. Secretariat

The Fisheries and Marine Resources section of the Planning and Environment Department will provide the Secretariat for the Authority. Administrative duties such as meeting organisation, minute taking and the drafting and circulation of papers will be undertaken by the section.

4.3. Meeting Frequency

The Authority will meet four times annually or as appropriate. Meetings will be open to the public. Agendas and minutes will also be made publicly available via the States of Jersey website and on request to Fisheries and Marine Resources.

4.4 Responsibility of the Authority members

- To work together to deliver the objectives of the Authority;
- To update other members on relevant developments regularly;

- To report back from the meetings to their members/management/colleagues;
- To act as a point of contact and feedback on the Authority for organisations and interested parties within their sector to ensure the widest possible stakeholder engagement;
- To provide expertise and guidance in their particular field;
- To use only suitably experienced and briefed staff and representatives;
- To operate within the confines of all relevant legislation;
- To attend Authority meetings

5.0 Other Circumstances

5.1. Dealing with External Bodies

Formal contact with the external bodies concerning the work of the Authority will be conducted through the Chair of the Authority. Authority members will provide details to the Secretariat of any other contact with the media related to Ramsar Management Plans.

5.2 Review of the Management Authority arrangements

Authority members will be given the opportunity to review the effectiveness and remit of this Terms of Reference document on an annual basis

Appendix 3 Ramsar Management Authority Technical Subgroup Membership

R. Duhamel	Chair, Assistant Minister, P&E
A. Scate	Chief Officer, P&E
B. Bree	RSPB
C. Le Masurier	Jersey Aquaculture Association
D. Thompson	Jersey Fishermens Association
G. Morel	Marine and Coastal Officer, P&E
J. Moss	ESC
J. Rogers	Chief Officer, TTS
L. Luke	SOS
M. Jackson	Minister, TTS
N. Jouault	Société Jersiaise
P. Gosselin	Jersey Recreational Fishing Association
S. Bossy	Fisheries and Marine Resources, P&E
S. Crowcroft	Connetable, St Helier
S. Braithwaite	ESC
T. du Feu	Environmental Protection, P&E
W. Peggie	Director of Environment, P&E

Appendix 4. Multilateral Environmental Agreement (MEAs)and Local Management Context

MEA	
Description	History
Convention on Biological Diversity (CBD)	
The Convention on Biological Diversity is concerned with the conservation of species and habitats.	The convention was concluded and signed by the UK in June 1992. Extension to Jersey occurred at the same time as the UK ratified the agreement (June 1994) with the convention in force by September of the same year.
Bonn Convention on the conservation of migratory species of wild animals	
The Bonn Convention on the Conservation of Migratory Species of Wild Animals aims to conserve terrestrial, marine and avian migratory species throughout their range. Parties to CMS work together to conserve migratory species and their habitats by providing strict protection for the endangered migratory species listed in Appendix I of the Convention, participating with further multilateral Agreements for the conservation and management of migratory species listed in Appendix II and by undertaking co-operative research activities.	The convention was concluded in June 1979 and signed by the UK at the time of completion. Again, ratification was extended to Jersey at the same time as the UK's in July 1985 with the convention coming into force in October 1985.
African-Eurasian Waterbird Agreement (AEWA)	
An affiliated instrument of Appendix II of the Bonn Convention. The AEWA covers 172 species of birds ecologically dependent on wetlands for at least part of their annual cycle. Jersey is an important migratory refuge to at least 50 species of ducks, waders, terns, gulls and geese listed.	The agreement was concluded and signed by the UK in June 1995. Extension to Jersey was completed in March 1999 with the agreement in force by November of the same year.
Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)	
The aims of this Convention are to conserve wild flora and fauna and their natural habitats, especially those species and habitats whose conservation requires the co-operation of several States, and to promote such co-operation. Particular emphasis is given to endangered and vulnerable species, including endangered and vulnerable migratory species.	The UK signed this convention upon it's conclusion in September 1979 with ratification granted and enforcement in place by May 1982. The convention was extended to Jersey in October of 2002.
Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ACSOBANS)	
An affiliated instrument of Appendix II of the Bonn Convention. The ASCOBANS agreement aims to achieve and maintain a	The ASCOBANS agreement has been signed by 10 countries, concluded in 1991 it entered into force in 1994. The agreement was only extended to Jersey however in

favourable conservation status of cetaceans by encouraging contracting parties to undertake conservation, research and management measures. 5 ASCOBANS listed species are recorded within Jersey territorial waters.	September of 2002.
International Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR)	
OSPAR is an amalgamation of the Oslo Convention on dumping at sea and Paris Convention on pollution of the marine environment from land based sources, The convention addresses all sources of pollution of the marine environment and takes into account the 'precautionary principle' and the 'polluter pays' principle. This includes the latest update to the agreement, Annex V, concerned with the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area. It is also concerned with drawing up programmes and measures for the control of human activities (covered in Appendix 3 of the Annex).	The OSPAR convention is the amalgamation and extension of two previous conventions. The Oslo Convention for prevention of dumping from ships and aircraft written in December 1972 was extended to Jersey in March of 1976. Unfortunately, it is unclear whether the Paris agreement on pollution from land-based courses was ever ratified by Jersey. The increased requirements of the 1992 joint convention meant Jersey did not achieve ratification as quickly as was hoped. Annexes I-IV were extended to Jersey in November of 2000 after the passing of the Water Pollution Law (Jersey) 2000.

Island Management Context[4]

Description	History
Planning and Building Law 2002 (+ EIA Order)	
Within this zone there is a presumption against all development except those which are essential for navigation, access to water, fishing and fish farming and coastal defence.	The marine protection zone was identified within the Island Plan 2002. The Island Plan currently under public examination includes the marine protection zone
Fisheries Law 1994 (and regulations)	
This Law makes provisions for the regulation of sea fishing and the conservation of sea fish, regulation of mariculture, licensing of fishing vessels and associated powers	The current law came into force in 1994. Regulations are made and amended as required.
Food and Environment Protection Act 1985 Order 1987	
This legislation makes provision for controlling the deposit of substances and articles in the sea or under the seabed.	The order came into force in 1987 and was administered by the then Harbours and Airport Committee. Responsibility

[4] see www.jerseylaw.je for full text of legislation

	was transferred in 2004 and rests with the Department for Planning and Environment.
Conservation of Wildlife Law 2000	
The Law relates to the conservation of wild animals, and birds and wild plants in Jersey, and related	The law came into force in 2000 and fulfils a number of obligations under the CBD, Bonn and Bern Convention
Water Pollution Law 2000	
The Law regulates the control and prevention of pollution in Jersey Waters and implements the provisions of the OSPAR Convention	
Sea Beaches (Removal of Sand and Stone) (Jersey) Law 1963	
Regulates the removal of sand, stone, gravel, shingle or loam from beaches and the territorial sea.	
Policing of Beaches (Jersey) Regulations 1959	
Regulates activities that occur on beaches. This includes activities involving horses, dogs and vehicles.	
Boats and Surf-riding (Control)(Jersey) Regulations 1969	
Regulates the registration of vessels and conditions imposed on vessel activity including those vessels available for hire.	This legislation is in the process of being updated by the relevant authorities
Loi (1894) sur la Coupe et la Pêche des Vraics	
Regulates the cutting and fishing for seaweed on the beaches	This is an old piece of legislation that control seaweed collection when large amounts were taken as a field dressing and fertiliser. This is no longer the case and requires updating.
Biodiversity Action Plans[5]	
Action Plans set out the current status, threats and a framework management plan for important locally threatened species. Current relevant BAPs are Zostera, ormer, Brent goose and Shag (in prep.)	The first biodiversity action plan was published in 2005 and a number are added on an annual basis.

[5] see www.gov.je for Biodiversity Action Plans

Appendix 5. The Archaeology of the South-East coast Ramsar Site

This report details the known archaeology of the Ramsar Site from the mean high water mark to the limit of the protected area. It is hoped to include all the evidence of human activity and their environment from the earliest human habitation up to the immediate past and will include information from published reports and relevant unpublished reports, random finds, fixed features, Marine and industrial archaeology, cartographic and substantial anecdotal evidence and legend. Information relates to built structures, deposited features, wrecks, artefacts stratigraphy and environmental evidence. Working from west to east the known features are listed for each location along the coast.

The Dog's Nest
Navigation mark, Late 20thC
The wreck of the Diamont c 1943

La Collette
Diving Boards 19thC
Havre des Pas, Peer [pier] in Col. Legge's report. 1679, *Le Havre des Pas. Ph Ahier BSJ 1968 p 324*

Harve des Pas
Ship Building; Havre des Pas, 19thC
Ship-building in Jersey A Podger BSJ 1962 p. 229
Havre des Pas Pool and Tower *The Official Opening of the pool. May22nd 1895 by his Excellency Major Gen E. Hopwood CB Lieut Governor Jersey. "Jersey Swimming Club 135 Years in Pictures" J. Fage 2000* 19th C
Havre des Pas Bathing Pool Lido 1930s art deco style, refurbished 2001. 20th C
Evidence of Havre des Pas Ship-building SJ Archaeology Report of Allix's Yard 19thC

Le Dicq
Roches des Proscrit. (plaque)
Shipbuilding JPN II 19th.C

Grève d'Azette,
Peat beds*"Past Landscapes of Jersey", Jones, Keen, Birnie, & Waton P. 73*
Prehistoric
Grève D'Azettte Menhir Listed AS 37, Southeast of Le Dicq Slipway St. Clement (in St. Saviour on map JPN II) www.*prehistoricjersey.net* Neolithic
Brick Sea-water wells for Victoria Baths Hotel 19th C (photos)
Clay beds below lighthouse Prehistoric

La Motte (Green Island)
La Motte Archaeological Listed Site SSI
Archaeological Researches at La Motte, Ed Toulmin Nicholle & J Sinel BSJ 1912 p 241
Note on the relative ages of the two Neolithic Horizons of La Motte G R Warton BSJ 1913 p. 301

Remarks on the Excavation at La Motte. A Dunlop BSJ 1913 p 295
Les Coquilles de "La Motte" E Duprey BSJ 1887 p 221
LA MOTTE – GREEN ISLAND J T Renouf BSJ 2000 p595
La Motte *The Cist Gave Cemetry of La Motte (Green Island) Jersey: Prehistoric or Medieval . M Patton BSJ 2002 p.252*

Icho Island
Neolithic site. *Excavation on Icho Island – July 1929 -NVL Rybot BSJ 1930 p.226*
KITCHEN MIDDEN – ICHO TOWER, HJ Baal BSJ 1920 p 162
Icho Shown on Popinjay's Plate as Conical Rock with cross marked *Le hyge hoge* 16th. C
Icho Tower Martello type Round Tower and ruined huts.19th. C

Le Hocq

Le Hocq Landing Stages 17th C

Nourrices 18th C (dated)
Peat Beds Prehistoric

Le Hocq, Fresh water well into peat. (R. Waterhouse) 19th.C
Barrel-well in Harves des Fountaine, *fresh water spring, shown on JPN II 1869*
Slipway reused coping.

Le Bourg
Le Bourg enigmatic stone marked "G"

La Rocque
La Rocque Harbour including 2nd.WW strong-point.

Platte Rocque Site of French Landing 6th. Jan 1781
2nd WW strong point on La Rocque pier
Ice age stratigraphy of clay, silt, and estuarine evidence of a larger land mass in the area between La Rocque and the Violet Passage. Work by Dr. A. Hill (pers. com) on-going, see *www.jerseygeologytrail net* on find of a Mammoth tooth between La Rocque and Seymour Tower.
On-going work by Dr. Martin Bates.(University of Lampeter) & Dr. Paul Chambers Soc.Jer)
Low Level Beach near Seymour Tower – Grouville Bay, Eugène Duprey BSJ 1919 p.126
Seymour Tower, including gun batteries and landing stages
M. Lees papers *Notes in comprehensive review of Archive of defences Soc J. Library, J* Arch, WO,
Seigniorial Perscherie marker rocks marked "P" for Payn of Le Pre Manor
La Pêcherie à vraic et à poisson proche La Varison A Le McGugan, BSJ 1989 p. 179
Excucursion Locale Septembre 1906; Jugement du Corps de la Cour (1635-1747) 28 April 1747; E Toulmin Nicolle BSJ 1907 p 2
La Rocque Stone (unknown period) see www.prehistoricjersey.net

Grouville Bay
Amphora (Roman Find)(in SJ collection)

Pottery finds in Grouville Bay
"The Golden Chair" Legendary *The most wonderful and strange finding of a chayre of gold. Akihiro Yamada BSJ 1983 p.348*
Strange finding of a Chaire of Gold. Pamphlet 1595 BSJ 1936 p 33
Ship Building in Grouville Bay *Ship-building in Jersey A Podger BSJ 1962 p. 229 (19th C)*

Gorey Harbour

Paved Oyster Beds,1838 on JPN II 18th - 19th C

Throughout Site

Various Slipways and out-falls. "Groyne" on JPN II
Charrieres du Vriac (various) Tracks cut for carts through the rocks.
Flint tools. SJ Collection (finds)
Stone tools SJ Collection (finds)

Appendix 5 Important Ecological and Bird Zones