MARINE- INTERTIDAL ZONE

INTRODUCTION

Jersey's coastline is 90 km long at high water mark. The Island has the third largest tidal range in the world and on spring tides the difference between low and high tide can be almost 12 m, which compares to only 2-5m experienced by English coasts. The Bailiwick of Jersey doubles its area between high and low water spring tides and the Countryside Character Appraisal has been extended to include the large intertidal area.

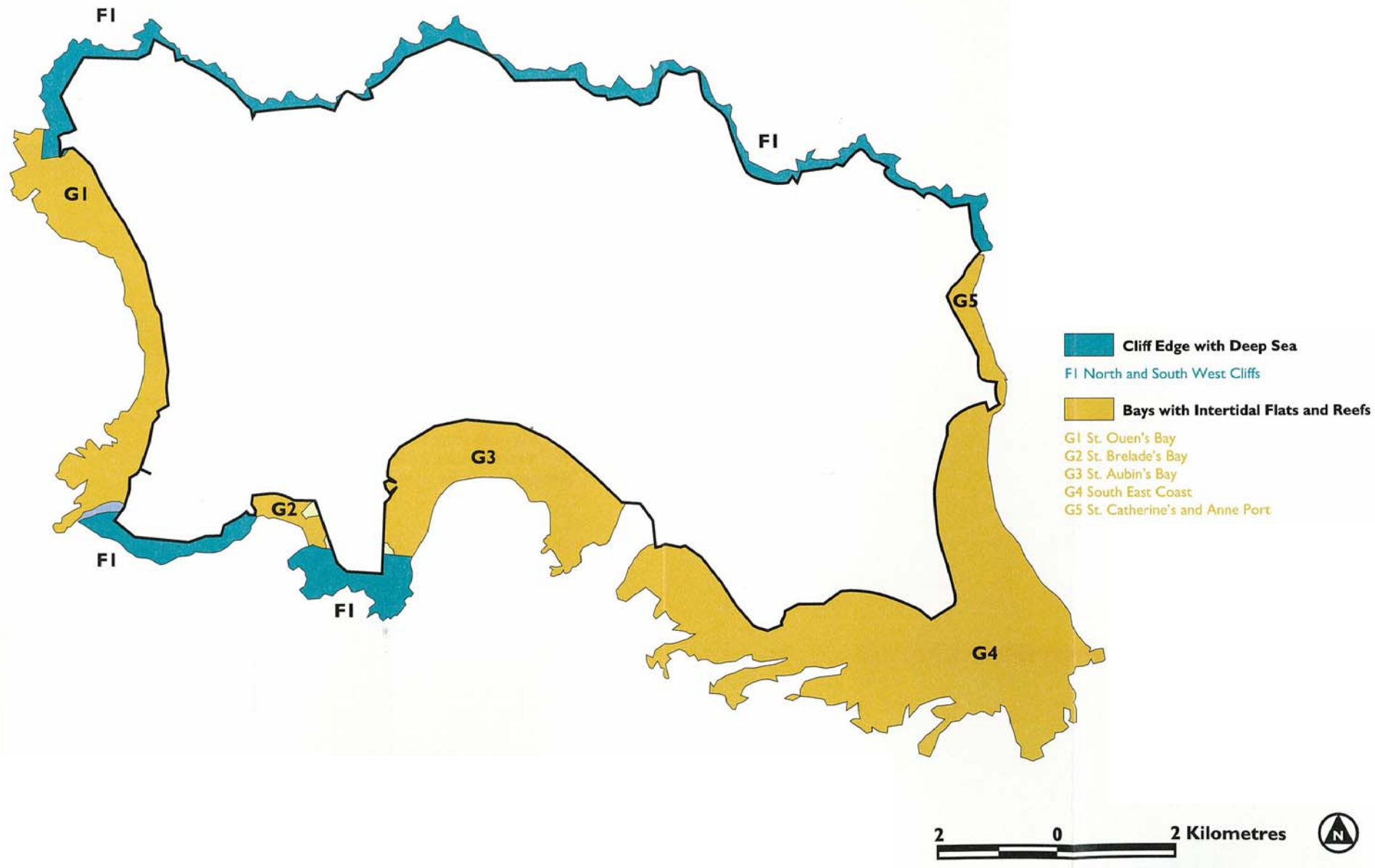
The intertidal zone of Jersey divides into two character types, based on the nature of the marine - terrestrial interface. The two fundamental types comprise those where:

- a steep, rocky cliff line is bounded by a deep sea with a relatively small intertidal area; and
- a low coastal edge and sandy foreshore with very shallow sloping shore profile and a large intertidal area.

Each Intertidal Character Type possesses distinct natural and cultural attributes and faces a common range of pressures with similar management needs. The cliff edge which forms Character Type F cannot be further subdivided into constituent character areas as the whole zone possesses very similar characteristics. For this reason it forms one character area. Character Type G is subdivided into five constituent character areas, based on recognised geographic localities (the Island's main bays). The character types and areas are i1ustrated on Figure 7.

CHARACTER TYPE		CHARACTER AREA	
F	**Cliff Edge with Deep Sea**	F	North and South-west Cliffs
G	**Bays with Intertidal Flats and Reefs**	G1	St. Ouen's Bay
		G2	St. Brelade's Bay
		G3	St. Aubin’s Bay
		G4	South-east Coast
		G5	St. Catherine's and Anne Port

Figure 7. INTERTIDAL CHARACTER TYPES AND CHARACTER AREAS



CHARACTER TYPE F:
CLIFF EDGE WITH DEEP SEA
and
TYPE G:
BAYS WITH INTERTIDAL FLATS AND REEFS

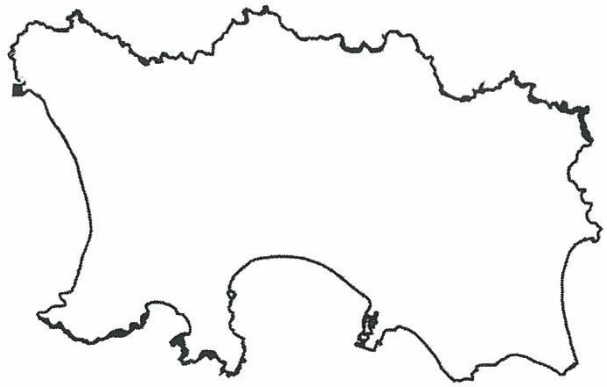
The spectacular coastal scenery of Jersey is one of the prime attractions for visitors to the Island

The littoral zone has been a vital resource for the Island's inhabitance since the Neolithic period. The stone paths and granite slipways found around Jersey's coastline were built to aid horse-drawn carriage of vraic.

The rocks and reefs of the south-east coast create a spectacular seascape.

INTERTIDAL TYPE F: CLIFF EDGE WITH DEEP SEA

LOCATION



This character type comprises the whole of the intertidal zone along the north coast running from L'Etacq in the north-west to St. Catherine's breakwater in the east and parts of the intertidal area adjoining the south-west headlands.

Substrate: The substrate is primarily hard igneous rocks which have not eroded and remain upstanding as high cliffs, with a deep sea and a very small intertidal area. Wave cut platforms along the cliff base are important geomorphological features and provide evidence of past sea level fluctuations. Along the north-east edge the Rozel Conglomerate creates a convoluted rocky shoreline with numerous coves, inlets and rock promontories. Significant areas of sandy shore are found at Portelet, Plernont and Grève de Lecq.

Landform and Shoreline: The shoreline is backed by an intricate rocky landform extending out at ledges, headlands and cut back to form small bays and inlets. Extending from the cliff base are rock platforms creating a narrow steeply sloping intertidal area. In addition to the rock platforms this coastline also includes small sandy bays such as at Grève de Lecq and pebble gravel beaches at Bouley Bay and Bonne Nuit Bay. On the south-west coast the cliffs embrace the small sandy bay at Portelet. The deep underwater topography means that the intertidal area is very small, rarely more than 10 metres width.

Aspect/Exposure and Tides: The whole cliff edge coastline has an exposed aspect.

Marine Biodiversity: The area contains a unique range of habitats including rock platforms and rock pools, supporting distinctive communities of plants and animals, adapted to the exposure and large tidal range. There is very little information on these communities as the area has difficult access and there have been few detailed studies (with the exception of Portelet Bay). The area of rocky shoreline at Fliquet, just north of St. Catherine's Breakwater and the sandy bay at Portelet on the south-west coast, have been identified as having a very high marine diversity and perhaps worthy of further protection. Portelet Bay has been the site of considerable marine biological fieldwork. Work carried out by the University of Portsmouth in the late 1980s identified 422 species in the Bay. Shallow sub-littoral Zostera beds, a habitat of great conservation importance, can also be found.

CULTURAL INFLUENCES

Past Use: There is very little information on past uses of this area, although fishing paths dropping over the cliff edges have been identified. The more accessible areas would also have been used for the collection of vraic and fishing. Solid granite piers have been built in the more sheltered bays to create harbours and the remains of old (Medieval) granite slipways can also be identified.

Buildings and Landmarks: These are not a feature of these exposed rocky coasts where a natural defence is created by the steep cliffs.

Coastal Defence Issues: There are no significant coastal defence issues, although there is some localised cliff erosion.

Current Use and Management: Difficulty in access means that this coastline is mainly appreciated in the views from the adjacent cliff top heathland. In the more sheltered bays, tourist development has occurred and at Bouley Bay a diving school uses the deep inshore waters. The coves at Rozel, Bouley Bay, Bonne Nuit Bay, and Grève de Lecq provide sheltered anchorage.

ESSENTIAL FEATURES

- steep or sheer cliffedge comprised of hard upstanding rocks, punctuated by rocky inlets and coves and occasional small sandy bays and pebble beaches;
- sharp marine - terrestrial interface with a deep clear sea, often a distinctive turquoise or aquamarine blue. Of great importance is the view from the heathland character area on the cliff top;
- very small intertidal area with rarely more than 10m between mean highwater and mean low water;
- contains distinctive rocky, shore communities which are not found on the less exposed coasts, although as yet very little is known about the biodiversity of this zone as it has been little studied;
- virtually no evidence of past use or management, apart from occasional fishing paths leading over the cliffs into the coves;
- distinctive granite piers and slipways extend from the main coves and harbours.

F: CLIFF EDGE WITH DEEP SEA
EVALUATION OF ENVIRONMENTAL FEATURES, ATTRIBUTES AND SERVICES

ATTRIBUTES AND SERVICES	REASON WHY IMPORTANT	SCALE OF IMPORTANCE	TREND/THREAT	RECREAT -ABLE
FEATURE: INTRICATE ROCKY COASTLINE/STEEP CLIFFS				
Sharp marine – terrestrial interface with a deep clear sea	Local character	Island-wide	No threats	No
Important view from north coast paths (recreation and tourism)	Local economy	Island-wide	No threats	No
Cliff base features e.g. wave cut platforms	Geodiversity	Channel Islands	No threats	No
FEATURE: NARROW SLOPING ROCKY SHORE				
Microhabitats – rock platforms and rockpools supporting distinctive rocky shore communities adapted to exposure and tides	biodiversity	At least Channel Islands, possibly greater importance	Very little data at present. Marine pollution would pose a major threat	No
Archaeological potential	Cultural history	Unknown	Currently unknown	No

EVALUATION

The steep cliff edges along the north and south-west coastline create a sharp marine terrestrial interface. This can be particularly appreciated from the cliff top heathlands, where the deep, clear sea is an important feature in the view and helps reinforce an illusion of space and remoteness, which are rare qualities on Jersey. The cliff edge is particularly important, in that, in the absence of sea walls and development they are the only area on the Island where the land- sea transition remains wholly 'natural'. To date, very little is known about the collective environmental capital of the area in terms of its biodiversity or archaeology although its potential is very high. All the environmental features of the area are considered to be non-recreatable and must be protected and conserved. There are few threats to the character of the area. In the past, rubbish dumping over the cliff edge has been a problem although this has largely ceased. At Ronez the large coastal granite quarry has removed part of the headland and has created a major visual intrusion.

MANAGEMENT PRIORITIES

- Preparation of an Integrated Marine Management Plan is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole. To ensure comprehensive and sustainable management of the resource, the plan will need to address archaeological, marine biodiversity, recreation and economic interests.
- Further biological survey and monitoring of the intertidal zone is required to build up a full information base for the area.

LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

The whole area is defined as a Marine Protection Zone. The cliff edges and associated intertidal areas must have the highest level of protection with a presumption against all forms of development. Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located. The cliff edges must remain a remote, isolated area.

INTERTIDAL TYPE G:
BAYS WITH INTERTIDAL FLATS AND REEFS

LOCATION

CHARACTER AREAS

- G1. St. Ouen's Bay
- G2. St. Brelade's Bay
- G3. St. Aubin's Bay
- G4. South-east Coast
- G5. St. Catherine's and Anne Port

NATURAL INFLUENCES

The shallow shoreline gradients and the very large intertidal range that can extend for well over 2kms between mean high water mark and mean low water mark are the main distinguishing features of this intertidal character type. It typically includes sweeping sandy bays such as St. Brelade's Bay and St. Aubin's Bay, plus large areas of intertidal rocks and reefs exposed at St. Ouen's Bay and around the south-east coast. The combination of the large tidal range, shallow shore gradients and presence of intertidal rocks and reefs combine to create a seascape which is unique in Europe and possibly the world.

These extensive intertidal areas are Internationally important for wildlife with very high habitat and species diversity. They support an Internationally important population of turnstones and Nationally important populations of sanderling, Brent goose, ringed plover and grey plover. At least 8000 waders winter on the shoreline each year and the whole area is identified as an Important Bird Area. Several species at the northern end of their range, which are rare or absent from the British Isles such as the Ormer can be found in these areas and the extensive shallows provide a productive nursery area for the juvenile stages of many important commercial and non-commercial fish and crustacea.

Intertidal 'peat' deposits can be identified in a number of areas around Jersey's present coast and these have the potential to yield very important information about past sea level fluctuations and environmental change.

CULTURAL INFLUENCES

The resources of these accessible intertidal flats have been used for many centuries by humans, dating to the first occupation of the adjacent coastal plains in the Neolithic period (and at times of lower sea levels occupation of the intertidal areas themselves). There are important extant archaeological remains with in this character type, for example at Green Island. Generally, the intertidal areas have not, to date, been subject to detailed archaeological survey. They have very high archaeological

potential. A notable historic feature, found throughout the area, are the granite slipways that lead up from the beaches, which were constructed to assist the horsedrawn haulage of vraic from the beaches.

During the nineteenth century, sea walls were constructed behind the beaches and have been reinforced and infilled so that the seawall network now bounds the majority of this character type. This has had a significant impact on natural coastal dynamics and severed connections between the terrestrial and intertidal areas. It has also allowed extensive development to take place on the low-lying coastal plains.

Today the wide, sandy beaches provide one of the Island's most important tourist assets and in summer are used by many thousands of people every day. The beaches and intertidal flats are used extensively for fishing. Activities include raking for sand eels, digging for bait, setting ground lines and sea angling. In the sandy gullies among the intertidal reefs, setting nets is a common practice, while ormering and searching for crustacea among the rocks is a traditional Channel Island pastime. The more sheltered waters off the east coast have also been identified as a suitable location for the relatively new activity of shellfish farming.

Character Areas: The marine type sub-divides into five distinct geographic character areas, each of which has common geomorphological, physical, natural and cultural attributes. These are St. Ouen's Bay, St. Aubin Bay, St. Brelade's Bay, the South-east Coast, St Catherine's Bay and Anne Port.

G: BAYS WITH SANDY FORESHORE AND INTERTIDAL REEFS EVALUATION OF ENVIRONMENTAL FEATURES, ATTRIBUTES AND SERVICES

ATTRIBUTES AND SERVICES	REASON WHY IMPORTANT	SCALE OF IMPORTANCE	TREND/THREAT	RECREAT -ABLE
FEATURE: INTERTIDAL SEDIMENT FLATS (MUDFLATS & SAND)				
Extensive intertidal habitats – e.g. for shorebirds, including turnstones, plus many species rare or absent from the British Isles.	Biodiversity	International. The whole area is part of Jersey shoreline IBA. The south east coast and Grouville Bay meets Ramsar criteria	Marine pollution and land reclamation. Approx. 50 ha of intertidal land have been reclaimed to date at St. Helier harbour. The area of intertidal flats in Western Europe has been more than halved since the fifteenth century (Tubbs, 1983)	No
Wide sandy beaches (surfing and recreation)	Local economy	Island-wide	No threats	No
Archaeological potential	Cultural history	Currently unknown, but very high potential.	Unknown	No
FEATURE: INTERTIDAL PEAT DEPOSITS				
Potential to provide important information about the sea level	Archaeology	Channel Islands	No threats	No

ATTRIBUTES AND SERVICES	REASON WHY IMPORTANT	SCALE OF IMPORTANCE	TREND/THREAT	RECREAT-ABLE
FEATURE: INTERTIDAL ROCKS AND REEFS				
Green Island - surviving remnants of soft rock glacial loess cover	Geodiversity	International	Erosion	No
Productive nursery area for fish and crustacea	Local economy	Channel Islands	Marine pollution, reclamation, overfishing	No
Green Island, prehistoric cemetery	Cultural history	Channel Islands	Erosion	No
Unique habitat, very rich marine flora and fauna	Biodiversity	International	Marine pollution, reclamation	No
Combined with the macro tidal range the reefs and rocks create a remarkable seascape	Local character	Island-wide (unique to Jersey)	Reclamation	No
FEATURE: COASTAL TOWERS (eighteenth century fortifications and true Martello Towers)				
Distinctive vernacular architecture	Cultural history	Island-wide	No threat	No
Important features in the seascape, and the view from the land	Local character	Island-wide	No threat	No
FEATURE: SHELTERED BAYS AND COVES				
Harbours	Local character/ local economy	Island- wide	No threat	No, not practically
Nursery area for shellfish farming	Local economy	Channel Islands	Threatened by pollution, land reclamation and erosion	No
FEATURE: WILDERNESS AND REMOTENESS				
Open space, sense of risk/danger	Local character	Island-wide	Land reclamation/ marinas	No

EVALUATION

The sandy bays and intertidal flats include a collection of environmental features which are of great importance in creating the character and perception of Jersey, as a whole. They are particularly valued in terms of biodiversity, with their importance recognised at the International level. The beaches and coastline are also the Island's prime tourist asset. The combination of the shallow, sloping topography, and large tidal range combined with the rocks and reefs create a unique seascape which is without any exact comparison in the world. The area, exposed at low tide, is Jersey's last wilderness.

None of the environmental features are re-creatable and they are very vulnerable. Important areas of intertidal habitat have already been lost to land reclamation and this is a continuing threat. Other threats include marine pollution arising from contamination and terrestrial run off of nutrient rich waters, creeping commercialism associated with recreational use of the area and marina developments.

MANAGEMENT PRIORITIES

- **Preparation of an Integrated Marine Management Plan** is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole. To ensure comprehensive and sustainable management of the resource, the plan will need to address archaeological, marine biodiversity, recreation and economic interests.
- **Further biological survey and monitoring** of the intertidal zone is required to build up a full information base for the area.
- **A full survey of the intertidal archaeology** is a long term objective. Jersey's extensive intertidal areas (sands, silts and peats) have a very high archaeological potential and may hold much information about the Island's past.

LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

The whole area is defined as a Marine Protection Zone. The bays with their extensive areas of intertidal flats and reefs contain a very significant part of the Island's key environmental capital. It is recommended that they should have the absolute highest level of protection with a presumption against all forms of development. There is no capacity for change apart from sustainable management of renewable natural resources. Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located. It is recognised that some of the Island's sheltered sandy bays are important for commercial fish farming. Monitoring will be required to ensure that fish farming activities do not have a detrimental effect on environmental quality. It is recommended that any such proposals within the marine zone should be subject to a full environmental impact assessment.

CHARACTER AREA G1: ST. OUEN'S BAY

LOCATION	
	On the west Atlantic coast, comprising the intertidal zone between Le Grand Etacquerel in the north and La Corbiere in the south.

NATURAL INFLUENCES

Substrate, Intertidal Reefs and Rocks: In this part of the Island the underlying soft, sedimentary rocks of the Jersey Shale formation have been eroded by the constant buffeting of the Atlantic waves to create the gentle curve of St. Ouen's Bay. In the north of the bay, rocks of the Jersey Shale Formation are exposed on the intertidal reefs while in the south a granite rock platform is exposed. The centre of the bay contains large areas of sand and pebbles, with some patches of gravel. Lowering of the beach profile, arising from construction of the sea wall, has revealed the underlying peat deposits and a submerged fossil forest of Late Pleistocene and Holocene Age in the intertidal area. These have the potential to yield significant palaeo-environmental data providing information on Jersey's past landscapes and climatic/sea level changes.

Landform and Shoreline: The bay forms a smooth arc containing a wide, gently sloping sandy shoreline. It is over 6 km in length comprising almost the whole of the west coast of the Island. As well as the sandy bay the area also includes small rocky inlets at Le Pulec, Le Petit Port and Le Grouet. The two rocky prominences at Le Grand Etacquerel in the north and La Corbière in the south are very conspicuous landmarks, visually containing and defining the character area.

The shallow sloping beach creates a large intertidal area extending to approximately 500 m between mean high water mark and mean low water mark on the sands in the centre of the bay and up to 2 km on the intertidal reefs and rocks to the north and south.

Aspect/Exposure and Tides: The west coast of the Island lies open and exposed to the full force of the Atlantic with high energy waves breaking more or less parallel to the coastline. There is very little upper beach, the shore being almost completely submerged at most high tides when the waves break against the sea wall. The fetch is unlimited, with seas often being very high and rough.

Marine Biodiversity: The intertidal is the most exposed of all coasts and consequently has different biomes and species composition to the more sheltered south and east coast. It forms part of the Jersey Shoreline Important Bird Area and includes important winter wader roosts in the sheltered bays at L'Etacq and Le Petit Port.

CULTURAL INFLUENCES

Past Use: The submerged forest revealed on exceptionally low tides in St Ouen's bay illustrates the former western extent of the coastal plain. This area has yielded Neolithic flints and pottery and the resources of this area have long been utilised by humans. Historically, and even today, the foreshore and rocky bays at Le Pulec and Le Petit Port were used for the collection of vraic as fertiliser for the light sandy soil on the adjacent plain. Slipways and trackways carved out of the rock through the intertidal area can still be discerned.

Buildings and Landmarks: La Rocco Tower, standing on the edge of the reef in the southern parts of the bay is a prominent and distinctive feature and conforms in style to the earlier Jersey Towers. In the extreme south-west La Corbière lighthouse is another important visual reference point.

Coastal Defence Issues: Sea walls were originally constructed in the nineteenth century, and further reinforced during the German Occupation. The walls stabilised the coastline but in doing so have severed the dunes from the beach and their natural source of sand replenishment. The level of the beach has consequently lowered, and in the middle of the bay there is now a drop of up to 5m at the sea wall between the dune surface and the beach surface. Erosion has also increased as a result of scour below the sea wall and large scale extraction of sand from the beaches during the Second World War. Emphasis has, to date, been placed on strengthening the sea walls, although alternative approaches are now being considered including managed retreat in limited areas, replenishment of sand or creating a new upper beach of shingle.

Current Use and Management: The bay is one of the Island's main tourist and recreation resources, and through its sheer size can accommodate very large numbers without appearing overcrowded. The westerly aspect and exposure to Atlantic rollers mean that it is the Island's prime surfing beach , while the sandy bays and channels between the intertidal rocks are also well utilised for fishing. The bay is also an important nursery area for commercial fisheries and crustacea which are harvested in offshore waters.

ESSENTIAL CHARACTER

- underlying soft sedimentary rocks have been eroded by the Atlantic waves to produce the wide sweeping curve of St. Ouen's Bay which forms virtually the whole of the west coast of the Island;
- includes the wide sandy bay, and the rocky inlets at Le Pulec, Le Petit Port and Le Grouet;
- in the north and south of the bay the Jersey Shales and granites exposed on the intertidal reefs create a dramatic and distinctive seascape;
- west facing and exposed to the full force of the Atlantic with waves breaking almost parallel to the coastline and seas frequently very high and rough providing excellent conditions for surfing;

- the coast supports distinctive marine communities, adapted to the exposed conditions. It supports a rich bird population and includes important winter wader roosts in the sheltered rocky bays;
- a submerged fossil forest of late Pleistocene and Holocene age is exposed at very low tides. The intertidal area and submerged peat deposits have very high archaeological potential;
- distinctive visual reference points are provided by La Corbière lighthouse and La Rocco Tower;
- the virtually undeveloped coastal edge is particularly important in engendering a sense of remoteness. The wide open expanses of sand revealed at low tide create one of the largest areas of 'open space' on the Island.

SUMMARY OF ENVIRONMENTAL FEATURES

CHARACTER TYPE	**CHARACTER AREA**
G: Bays with Intertidal flats	**G1: St. Ouen's Bay**
Intertidal Flats	The wide beach is one of the most extensive areas of intertidal flats.
Peat Deposits	The submerged forest peat deposits are a very important archaeological resource.
Rocks and Reefs	The rocks and reefs of Jersey Shale in the north and granite platform in the south create a spectacular seascape and are an important habitat.
Coastal Towers	The offshore tower at La Rocco is an important visual reference point.
Sheltered Bays and Coves	Rocky bays can be found at Petit Port and Le Pulec.
Wilderness and Remoteness	The virtually undeveloped 'coastal edge' makes this area particularly valued for the sense of remoteness and wilderness. The wide open expanses of sand revealed at low tide create one of the largest areas of 'open space' on the Island.

EVALUATION

Integrity of Character: The intertidal area of St. Ouen's Bay is one of the few are as on the Island where a landscape/seascape can be experienced on a vast scale. It is extremely important in being the only large intertidal area backed by a virtually undeveloped coastal edge and this is especially valuable in

engendering a sense of remoteness and wildness. It is the only intertidal area, on the Island which faces directly westwards and lies exposed and open to the full force of the Atlantic. The distinctive and unique local character and wild, rugged seascape of St. Ouen's Bay should be conserved and enhanced.

Key Environmental Capital

The intertidal area of St. Ouen's Bay represents an important part of the Island's total environmental capital. Key features are:

- Varied intertidal habitats and very high marine biodiversity.
- Part of the Jersey Shoreline Important Bird Area, including important winter wader roosts.
- The whole intertidal area has a very high archaeological potential, while the submerged peat deposits represent an important palaeo-environmental resource.

Threats

- Any future proposals for extraction from the off shore shell banks around Corblere could have a major effect on St. Ouen's Bay, increasing erosion etc.
- Further large scale development (hotels etc) along the coastal edge (in the adjacent terrestrial character area) will have an effect on the sense of remoteness. Developments should be encouraged to re-Iocate away from the extreme coastal edge.
- An insensitive 'engineered' approach to coastal defence involving reinforced sea walls, boulder ramparts etc. will result in the loss of the natural,' wild' remote character.

MANAGEMENT PRIORITIES

- **Preparation of an Integrated Marine Management Plan** is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole.
- **Designation as a Ramsar Wetland of International Importance should be considered** although the south-east coastline will take priority.
- **Further biological survey and monitoring** of the intertidal zone is required to build up a full information base for the area.
- **A full survey of the intertidal archaeology** is a long term objective.
- **A sensitive approach to coastal defence is required.**

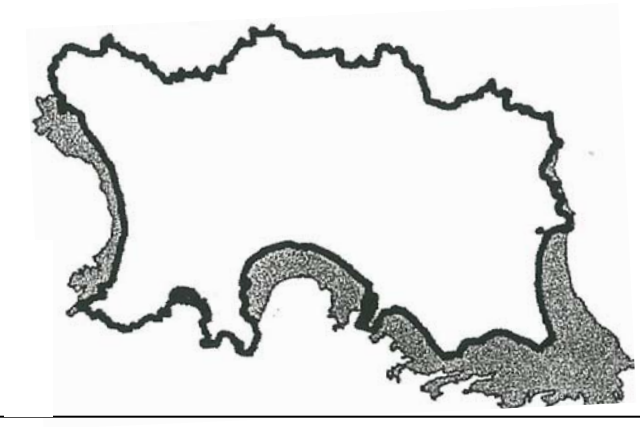
LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

The whole area is defined as a Marine Protection Zone. It is recommended that the St. Ouen's Bay Intertidal area should have the highest level of protection with a presumption against all forms of development.

Capacity: There is no capacity to accept any development within St. Ouen's Bay. Even minor structures such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located. This must remain a remote area.

CHARACTER AREA G2: ST. BRELADE'S BAY

LOCATION	On the south-west coast. contained between the promontory headlands and steep cliffs of La Moye and Portelet.



NATURAL INFLUENCES

Substrate: A sandy bay, enclosed by the granite cliffs of the south-west headlands. The rocks exposed in the centre and mouth of the bay are conspicuous and distinctive features. A small area of peat exists within the intertidal area.

Landform and Shoreline: A small curving sandy bay, less than 2 km wide containing two beaches, separated by the rocky promontory of Le Grouin.

Aspect/Exposure and Tides: This south facing bay on the south-west coast receives Atlantic ocean swell, although the headland of La Corbière affords some shelter from the full force of westerly winds and waves. At low tide a wide sandy beach, of up to 500m is uncovered, while at high tide a thin band of dry beach remains along the upper edge.

Marine Biodiversity: The area forms part of the Jersey Shoreline Important Bird Area (IBA). Marine biodiversity is very high.

CULTURAL INFLUENCES

Past Use: There is no evidence of past use within this area, although all areas of intertidal flats are a potentially important archaeological resource.

Coast al Defence Issues: A sea wall has been constructed around the western beach, while to the east at L'Ouaisné, the dunes are still partially in continuity with the shoreline. In common, with most beaches on the Island the bay is suffering from erosion and sand levels are dropping. Beach replenishment is a future option for the bay, and may be required to ensure the bay continues to function as a recreation amenity and tourist resource.

Current Use and Management: The attractive bay is very intensively used for recreation and is a popular bathing beach, particularly as a dry beach remains even at high tide. Jet skiing has recently been banned from the bay as it is considered to be too intrusive within such a confined area.

ESSENTIAL CHARACTER

- a small south facing sandy bay contained and enclosed by the steep granite cliffs of the south-west headlands;
- the bay includes two sandy beaches separated by the rocky promontory of Le Grouin. The western beach is backed by coastal development while the beach to the east the beach is in continuity with the dunes at L'Ouaisné;
- sheltered from the prevailing westerly winds and waves by La Corbière head land;
- an attractive bay popular for recreation and tourist use;
- high marine biodiversity, particularly important for birds forming part of the Jersey Shoreline IBA.

SUMMARY OF ENVIRONMENTAL FEATURES

CHARACTER TYPE	**CHARACTER AREA**
G: Bays with Intertidal Flats and Reefs	G2: St. Brelade's Bay
Intertidal Flats	A sandy beach is exposed between MHW (Mean High Watermark) and MLW (Mean Low Watermark).
Peat Deposits	Characteristic.
Rocks and Reefs	Isolated rocks in the centre of the bay are distinctive.
Coastal Towers	None within the intertidal area.
Sheltered Bays and Coves	This an attractive sheltered bay, with a small jetty.
Wilderness and Remoteness	Not a characteristic of this area which is overlooked by development on the steep slopes behind the bay.

EVALUATION

Integrity of Character: The small sweep of St. Brelade's Bay echoes the wider bay of St. Aubin to the east. It is a very attractive area surrounded and enclosed by the undeveloped cliffs and headlands. This enclosure contrasts and distinguishes it from with the wider open bays of St. Ouen and the Royal Bay of Grouville. It should be conserved and enhanced.

Key Environmental Capital

- High marine biodiversity.
- Of great importance for birds forming part of the Jersey Shoreline Important Bird Area.

Threats

- Intensive/noisy watersports.
- Marina development/tourist infrastructure.
- Insensitively engineered coastal defence work to combat erosion.
- Cleansing of seaweed from the strand line as an aesthetic measure is a concern and may also contribute to erosion as the buffer between the sand and tides is removed.

MANAGEMENT PRIORITIES

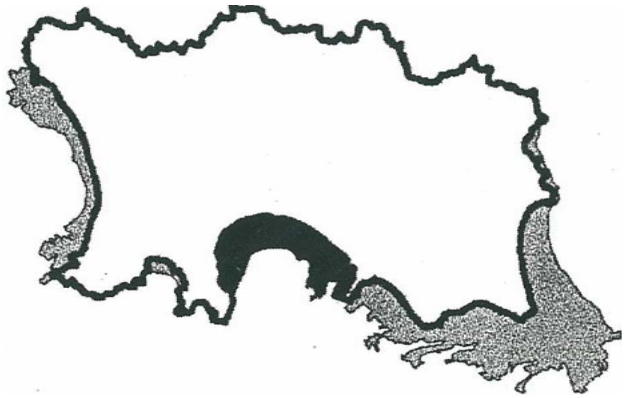
- Preparation of an Integrated Marine Management Plan is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole.
- A reduction in the frequency and extent of beach cleansing (removal of seaweed) would be beneficial.
- Further biological survey and monitoring of the intertidal zone is required to build up a full information base for the area.
- A full survey of the intertidal archaeology is a long term objective.
- A sensitive approach to sea defences is required.

LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

The whole area is defined as a Marine Protection Zone. It is recommended that the St. Brelade's Bay Intertidal area should have the highest level of protection with a presumption against all forms of development. There is no capacity for change apart from sustainable management of renewable natural resources.

Capacity: Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located.

CHARACTER AREA G3: ST.AUBIN'S BAY

LOCATION	
	The wide sweep of St. Aubin's bay' is bounded by Noirmont Point on the west and Elizabeth Castle and La Collette promontory on the east.

NATURAL INFLUENCES

Substrate: The bay has been cut from the soft sedimentary rocks of the Jersey Shale; the beach is formed of silt, sand and shingle. The landform is very distinctive forming a sweeping curve along the south coast of the Island.

Landform and Shoreline: This wide bay stretches for about 3km from St. Aubin to St. Helier. It has a very shallow, gently sloping shore profile and more than 4km² of sand is revealed between mean high water and mean low water.

Aspect/Exposure and Tides: The bay is sheltered by Noirmont headland and is not exposed to Atlantic swell.

Marine Biodiversity: Very high marine biodiversity:

- Forms part of the Jersey Shoreline Important Bird Area (IBA). The whole bay is an important feeding site and important winter wader roosts occur at St. Aubin's Fort, Elizabeth Castle and La Collette.
- Zostera beds - are a priority habitat and of great importance for wintering birds.

CULTURAL INFLUENCES

Past Use: The area includes Hermitage Rock, where St. Helier is reputed to have lived as a hermit in the sixth century. The whole intertidal area has very high archaeological potential.

Buildings and Landmarks: St. Aubin's Fort and Elizabeth Castle which, both stand on tidal islets, have guarded and protected the bay since their construction in the Tudor period. They are very distinctive in the view out to sea and under their protection the harbour and town of St. Aubin and St. Helier have become established.

Coastal Defence Issues: A sea wall extends along the entire length of the bay. Erosion and loss of sand is a problem, although not as acute as some of the more exposed beaches on the Island.

Current Use and Management: The sheltered waters make the bay a haven for watersports and activities include, among others, jet skiing, water skiing, power boating, yacht races and wind surfing. Like other sandy beaches it is also used for fishing, particularly as it is in close proximity to the main centres of population. Activities include setting nets, digging for bait, setting ground lines, sea angling. The sheltered bay is also a very important nursery area for commercial fisheries.

ESSENTIAL CHARACTER

- a wide sweeping south facing bay, cut from the soft sedimentary rocks of the Jersey Shale and enclosed by Noirmont Point in the west and Elizabeth Castle/La Collette in the east;
- a very extensive sandy beach is revealed at low tide;
- sheltered from the prevailing westerly winds and waves by the south-west headlands;
- exceptionally high marine biodiversity. Forms part of the Jersey Shoreline IBA with important winter wader roosts and feeding areas at St. Aubin's Fort, Elizabeth Castle and La Collette. Includes Zostera beds which are a priority habitat of great importance for wintering birds;
- includes Hermitage Rock where St. Helier is reputed to have lived as a hermit in the sixth century. St. Aubin's Fort and Elizabeth Castle are distinctive features in the view out to sea;
- the bay is intensively used for a variety of watersports, while the beach is also very popular and forms an important recreational resource.

SUMMARY OF ENVIRONMENTAL FEATURES

CHARACTER TYPE	**CHARACTER AREA**
G: Bays with Intertidal Flats and Reefs	**G3: St. Aubin's Bay**
Intertidal Flats	More than 4 km² of sand and shingle exposed between MHW and MLW.
Peat Deposits	Not known.
Rocks and Reefs	Offshore rocks and reefs are important features in the seascape.
Coastal Towers	Tudor fortifications.

Sheltered Bays and Coves	There are harbours at St. Aubin and St. Helier.
Wilderness and Remoteness	At low tide there is a sense of remoteness, which is particularly important in this location close to the densely developed south coast.

EVALUATION

Integrity of Character: The wide open sweep of St. Aubin's Bay forms part of the distinctive south coast of Jersey. The extensive areas of sand uncovered at low tide provide a very important area of 'open space' in close proximity to the developed coastal plain and urban areas of St. Helier and St. Aubin. It should be conserved and enhanced.

Key Environmental Capital

- Exceptionally high marine biodiversity. Importance for birds forming part of the Jersey Shoreline
- Important Bird Area and containing important winter wader roosts. The whole bay is an important feeding area for birds.
- Zostera beds which are identified as a priority habitat in the Island's Draft Biodiversity Report and are of great importance for wintering birds.
- Sixteenth century fortifications at St. Aubin's Fort and Elizabeth Fort.

Threats

- Eutrophication with water from sewage treatment works. The bay also receives run off from the main southward draining streams of the Island and accumulated agricultural pollution.
- Land reclamation leading to losses of Internationally important, non-recreatable marine habitat and archaeological resources. Further coastal reclamation projects have been proposed, for example the creation of a car park at St. Aubin on an area which is one of the two main feeding sites for light bellied Brent Geese.
- Unknown future effect of potential leaching and pollution by materials used for infilling on coastal reclamation sites, ego leaching of heavy metals from incinerator ash.
- Closure of important 'seascape gap' between the shoreline and Elizabeth Castle which at one time stood out in the centre of the Bay.
- Land reclamation leading to change in tidal patterns resulting in increased erosion.

- Heavy recreational use with disturbance to marine habitats.
- Cleansing of seaweed from the strand line as an aesthetic measure is a concern and may also contribute to erosion as the buffer between the sand and tides is removed.

MANAGEMENT PRIORITIES

- **Preparation of an Integrated Marine Management Plan** is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole. For St. Aubin's Bay an important component will be time and space zoning of recreation activities.
- **A reduction in the frequency and extent of beach cleansing** (removal of seaweed) would be beneficial.
- **Further biological survey and monitoring** of the intertidal zone is required to build up a full information base for the area.
- **A full survey of the intertidal archaeology** is a long term objective.

LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

The whole area is defined as a Marine Protection Zone. It is recommended that the St. Aubin's Bay Intertidal area should have the highest level of protection with a presumption against all forms of development. There is no capacity for change apart from sustainable management of renewable natural resources.

Capacity: Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located.

CHARACTER AREA G4: SOUTH-EAST COAST

LOCATION

The South-East Coast comprises the area between the east sides of La Collette and encompasses the Royal Bay of Grouville with a boundary to the north formed by the harbour at Gorey. Visually t he area divides into two distinct parts comprising the wide sandy bay at Grouville and intertidal reefs and rocks around the south-east coast. The whole length of coast and intertidal zone is exceptionally rich in terms of marine biodiversity and for this reason has been identified as a single character area.

NATURAL INFLUENCES

Substrate, Intertidal Reefs and Rocks: Outcrops of the south-east igneous complex rocks comprising granites, diorites and gabbros form an extensive area of rock ledges, reefs and islets and create a magnificent seascape when exposed at low tide . They have been carved by the wind and tides into a series of reefs and rock platforms intersected by sand gullies and gutters creating a wild, ragged edge to this part of the Island. To the north the wide sandy beach and intertidal silts at the Royal Bay of Grouville provide an important contrast. The rocks and reefs are also of considerable geological interest. At La Motte (Green Island) which lies offshore from Le Croc headland, a succession of late Pleistocene deposits and loess is preserved. These are the surviving remnants of the material which would have once joined the Island to the land and extended seaward perhaps as far as Icho Tower. The site is considered to be of International importance and is a proposed geological SSI.

Landform and Shoreline: The coastal edge extends around the promontory at La Rocque and incorporates the gently curving east facing bay at Grouville. The very shallow shore and seabed profile combined with the massive rise and fall of tides create a wide intertidal area, which extends to as much as 4 km between mean high water and mean low water, revealing the dramatic rocks and reefs to the south and a wide sandy beach at the Royal Bay of Grouville.

Aspect/Exposure and Tides: This south-east facing coast is the least exposed on the Island, and is subject to low energy waves with a fetch limited to the relatively short stretch across the Bay of St. Malo. At mean high water the tide reaches virtually to the sea wall with only a very narrow strip of dry upper beach remaining.

Marine Biodiversity: The entire area supports exceptionally rich marine life and is a candidate Ramsar Site (a wetland site of international importance under the Ramsar Convention, 1971). The importance of this area can not be overestimated. Some key elements of marine biodiversity are listed below:

- the area is one of the largest reef systems in Europe (it is possibly the largest reef system)

- the shallow gradient of the shoreline combined with the great tidal range creates a very large intertidal area and a wide range of habitats. The shelter allows a very high diversity and abundance of sand dwelling animals to exist, compared to the more exposed shorelines. The many species of invertebrate and huge strands create an extremely important feeding area for birds;
- the whole area forms part of the Jersey Shoreline Important Bird Area (IBA). Nationally important populations of Brent geese and light-bellied Brent geese winter here. A large number of waders winter on the shoreline including sanderling, grey plover and an internationally important number of turnstone. Breeding waders include oystercatcher and ringed plover. The rock on which Icho Tower stands off the coast has a significant high tide wader roost;
- Zostera meadows which have established in the stable sheltered water s of Grouville Bay are of great importance for wintering birds, particularly Brent geese;
- The rocks, reefs and sandy gullies contain a wide range of microhabitats providing niches for specialised flora and fauna;
- The area is a rich feeding and breeding ground for many local fish species;
- Offshore waters are important in a regional context for the Bottle-nosed dolphin, one of only three distinct populations of these animals in the British Isles. Although this species is not confined to the intertidal zone it can commonly be seen from the south-east coast of Jersey.

CULTURAL INFLUENCES

Past Use: It is likely that the abundant natural resources of these shallow intertidal areas have long been used by humans and the whole area has high archaeological value. An area of particular importance is Grouville Bay, which may have been utilised in association with the centre of Neolithic culture at Mont Orgeuil. At La Motte (Green Island) a cist cemetery of probably prehistoric date, a Neolithic cairn of possibly ritual function, and a number of Neolithic middens survive. The site is unique in Jersey having several components which include ritual and domestic elements and also preserves important environmental evidence relating to past changes in sea level. It is a proposed SSI (of both Archaeological and Geological Interest). The sheltered intertidal areas have a history of use for fishing and the collection of vraic. Grooved granite slipways and channels cut out of the rocks, possibly dating to the Medieval period, are a characteristic feature. The oyster beds in the sheltered waters in the Bay of Grouville have also been used by local fishermen for centuries and became the centre for a major industry in the mid nineteenth century, employing more than 2,000 men.

Buildings and Landmarks: The Jersey Round Towers on the coastal edge and the offshore towers at Icho Tower and Seymour Tower are very important visual marks within the seascape. The granite pier at Gorey, built in 1820, is another impressive landmark.

Coastal Defence Issues: Coastal erosion is a major concern on this densely developed low lying coastline. Problems have arisen as a result of the natural decline of sediment supply from offshore sources and large scale sand extraction during the Second World War. The effects include lowering of beach levels at Fauvic and upper beach erosion along the important tourist beach at Grouville, resulting in increasing exposure and damage to the sea wall. Management until recently has focused on strengthening of the sea wall. Alternative approaches merit investigation.

Current Use and Management: The rocks and sand gullies are extremely productive for low water fishing and this is an important recreational activity, involving raking for sand eels, digging for bait, angling, collecting shell fish, setting nets and ormering. This area is also important to commercial fishing interests. The sheltered waters along the south-east coast are the most productive, in Jersey, for commercial bivalve culture (oysters and clams). Concessions for shellfish farms currently cover 42.75 ha. In addition, the whole intertidal area from La Collette to Les Elavees and the offshore sandbanks at Banc du Chateau are an important nursery area for the juvenile stages of many important commercial and non commercial fish and crustacea. The beaches in the area are also an extremely important recreation resource and provide an area of 'wild' open space accessible to people living in the town.

ESSENTIAL CHARACTER

- visually the area divides into two distinct parts comprising the wide sandy bay at the Royal Bay of Grouville to the north and the intertidal reefs and rocks to the south;
- the very shallow sloping shore profile combined with the large rise and fall of the tides creates a very extensive intertidal area extending to as much as 32km² between MHW and MLW;
- the rock ledges, reefs and islets composed of outcrops of granites, diorites and gabbro form a spectacular seascape and create a wild, ragged edge to the south-east part of Jersey;
- the succession of soft rock deposits at Green Island (La Motte) are of International importance and provide evidence of past environmental changes in the locality. They are a proposed geological SSI;
- the reef system and the sheltered intertidal areas support an exceptionally rich marine biodiversity. It is of International importance, a candidate Ramsar Site and an Important Bird Area;
- the abundant natural resources are likely to have long been used by humans and the area has high archaeological potential; the Jersey Round towers on the coastal edge are distinctive landmarks and the offshore towers at Icho Tower and Seymour Tower are important features of the seascape; the beaches are an important recreation resource and provide an accessible area of 'wild' open space close to the Town.

SUMMARY OF ENVIRONMENTAL FEATURES	
CHARACTER TYPE	**CHARACTER AREA**
G: Bays with Intertidal Flats and Reefs	**G4: South-east Coast**
Intertidal Flats	The sandy flats and gullies are exceptionally important marine habitats and feeding areas for birds and meet the criteria for designation under the Ramsar convention. The sandy beaches are an important area for recreation in close proximity to the town.
Peat Deposits	None known.
Rocks and Reefs	The intertidal rocks and reefs create a remarkable and unique seascape. The intervening sandy gutters are particularly important for low water fishing. The diversity of microhabitats supports a diverse range of species and are of exceptionally high nature conservation value.
Coastal Towers	The distinctive silhouettes of the coastal towers at Icho Tower and Seymour Tower are important visual reference points within the seascape.
Sheltered Bays and Coves	The sheltered waters are important as the nursery grounds for juvenile commercial fish and crustacea which are harvested in offshore waters as well as being important for inshore fish farming (oysters and clams). They also provide an important recreational beach. The harbour at Gorey is the Island's second port of entry.
Wilderness and Remoteness	Within the maze of reefs and rocks, revealed at low tide a very real sense of remoteness, wilderness and awareness of risk/danger can be experienced.

EVALUATION

Integrity of Character: The intertidal area of the south-east coast is outstanding. The combination of the large rise and fall of the tides, with the very shallow sloping shore gradient and the constellation of reefs and rocks combine to create a seascape that is unique in Europe and possibly

the world. Despite proximity to the developed coastal edge the area is one where a sense of remoteness and risk can be experienced. In many senses the south-east intertidal area is the Island's last remaining wilderness. It should have the highest level of protection.

Key Environmental Capital

The entire area is of International importance in terms of marine biodiversity and represents a major part of the Island's key environmental capital.

Threats

- Any further dredging from offshore sandbanks and shell deposits (e.g. Banc du Chateau) for coastal reclamation projects will have a major effect: contributing to coastal erosion; resulting in the loss of important nursery areas for fish;
- and disturbing the marine ecosystem. Further coastal reclamation including the past proposals at Havre de Pas for a marina and housing would lead to loss of internationally important, non-recreatable marine habitat.
- Any coastal reclamation is likely to have far reaching effects on the remaining areas of marine habitat as a result of changes in the dynamics of natural coastal processes, potential leaching and pollution by materials used as infill (e.g. leaching of heavy metals from incinerator ash used to fill reclamation sites).
- The construction of insensitively engineered coastal defence works will continue to have an adverse landscape impact and disrupt natural processes. A 'softer' approach which works with natural processes is required.
- Further intensification/concentration of aquaculture activities may have a detrimental effect on marine environmental quality.
- Any development, even small scale proposals will have an effect on the special qualities of wilderness and remoteness.
- The area is currently subject to a legal dispute over foreshore property rights, the result of which may bring about new threats to the area.

MANAGEMENT PRIORITIES

- **The protection of this Internationally important marine area is an urgent priority.** The whole area should be designated as a Ramsar Wetland of International Importance.
- **Preparation of an Integrated Marine Management Plan** is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole.
- **Public awareness of the importance of the area and it s unique environmental value should be raised.** It should be promoted by identifying it as Jersey's Marine National Park or Marine Nature Reserve and appropriate education and interpretation provided.

- **Further biological survey and monitoring** of the intertidal zone is required to build up a full information base for the area.
- **A full survey of the intertidal archaeology** is a long term objective.
- **A more flexible 'softer' approach to coastal defence** which does not wholly rely on the use of artificial engineered structures and works with natural processes is required.
- **Environmental impact assessment and monitoring of the effects of fish farming** should be undertaken to ensure that these activities do not have a detrimental effect on the quality of the marine environment.
- **A reduction in the frequency and extent of beach cleansing to remove seaweed** from the strandline would be beneficial.

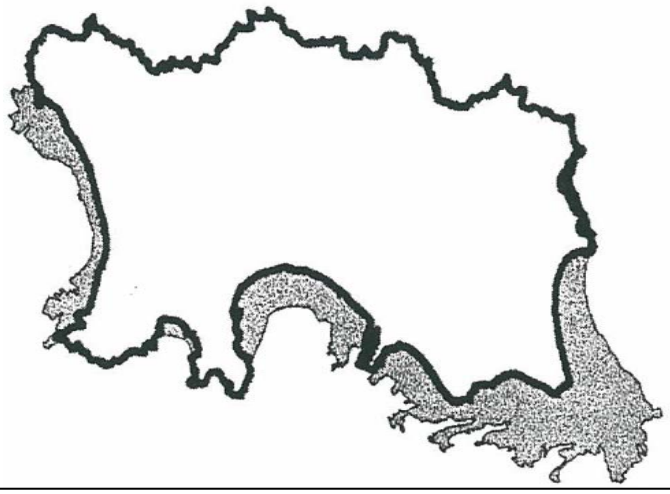
LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

Capacity: The whole area is defined as a Marine Protection Zone. It is recommended that the south-east coastline and intertidal area should have the highest level of protection with a presumption against all forms of development. There is no capacity for change, apart from sustainable management of renewable natural resources.

Guidance: Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located. It is recognised that the Agriculture and Fisheries Committee have requested that special consideration should be given to fishing and fish farming and that the latter is a growing activity within these sheltered east coast waters. Monitoring will be required to ensure that fish farming activities do not have a detrimental effect on environmental quality. It is recommended that any such proposals within the marine zone should be subject to a full environmental impact assessment.

CHARACTER AREA G5:
ST. CATHERINE'S BAY AND ANNE PORT

LOCATION



This character area covers the intertidal zone on the east coast of the Island between Gorey harbour in the south and St. Catherine's Breakwater in the north.

NATURAL INFLUENCES

Substrate, Intertidal Reefs and Rocks: A narrow rocky ledge of volcanic rocks occurs along the southern part of the coastline. To the north in St. Catherine's Bay the Rozel Conglomerates outcrop and extend on the sea floor at least as far as the outlying rocky islet, lies Le Fara. At low tide a band of soft sediment is uncovered forming beaches of shingle, gravel, sand and silt.

Landform and Shoreline: The shore profile slopes more steeply, in comparison to that of the south and south-east coasts, and the intertidal area is relatively narrow, generally less than 300m wide. The area embraces the long curving beach of St. Catherine's and the smaller sheltered coves of Archirondel , Le Havre de Fer and Anne Port.

Aspect/Exposure and Tides: This east facing coast is one of the least exposed areas on the Island, except when winds blow from the north-east. It is generally subject to low energy waves with a fetch limited to the relatively short stretch across the Bay of St. Malo. At mean high water the tide reaches to the rocky outcrops along the coastline and very few areas of upper beach remain. Marine Biodiversity: Marine biodiversity is high and the area forms part of the Jersey Shoreline Important Bi rd Area (IBA). St. Catherine's Bay also supports an important range of algal species. The sheltered waters within the bay allow an extensive area of Zostera to survive which provides an important habitat for many marine organisms and wintering birds.

CULTURAL INFLUENCES

Past Use: There is no evidence of past use within this area although like all the intertidal areas in Jersey, it has high archaeological potential. Buildings and Landmarks: The impressive breakwater at St. Catherine's was constructed on the orders of the British Government in the 1840s to create a "harbour of refuge". The north-east coast of Jersey was intended to be a launch point for an invasion

of the Cotent in and the scheme originally involved two massive arms, one from Archirondel and the other from Verclut, to create a harbour large enough to accommodate a large fleet of ships. The northern arm was completed but the whole venture was abandoned when the bay was found to be too shallow.

The States consistently refused to pay for the breakwater which had been forced on them by Britain and eventually accepted it as a gift in 1873. Locally distinctive features include the eighteenth and nineteenth century coastal towers along the shoreline. The red and white striped Archirondel Tower, which lies on a small rocky promontory in the bay is a particularly prominent landmark.

Coastal Defence Issues: A sea wall extends around part of the coast, although defences are not required along the rocky edge. Coastal erosion and lowering of beach levels is a concern. At Anne Port the beach has recently been artificially replenished and rock armouring undertaken where the sea has partially undermined the land supporting the coastal road.

Current Use and Management: Sheltered anchorage can be found at St. Catherine's Breakwater and the cove of Anne Port. The beaches are generally quieter and less intensively used than those of the south and south-east coast, but nevertheless provides an important recreational tourist resource. The breakwater is used by anglers and the whole area is important for low water fishing while the sheltered waters provide a base for St. Catherine's sailing club.

ESSENTIAL CHARACTER

- the intertidal zone on the sheltered east coast embraces the long curving sand/shingle beach of St. Catherine's and the smaller sheltered coves of Archirondel, Le Havre de Fer and Anne Port; a steeper shore profile creates a relatively narrow intertidal area compared to that of the south and west coasts;
- the rocky coastal edge of volcanic rocks and conglomerates are a characteristic feature of the area;
- the impressive breakwater at St. Catherine's is a locally distinctive feature as are the three Jersey Coastal Towers;
- the undeveloped rural coastal edge and the sheltered bays and coves create an attractive, scenic coastline forming a transition between the dramatic cliffs to the north and the reefs and rocks to the south.

SUMMARY OF ENVIRONMENTAL FEATURES

CHARACTER TYPE:	CHARACTER AREA
G: Bays with Intertidal Flats and Reefs	**G5: St. Catherine's and Anne Port**
Intertidal Flats	The intertidal flats are less extensive in area than those to the south-east. They are, nevertheless important in terms of marine biodiversity, particularly for birds (wintering shorebirds and waders). The beaches are also an important recreation resource.
Peat Deposits	None known.
Rocks and Reefs	The coast is bounded by a low rocky edge of volcanic rocks in the south and conglomerates in the north.
Coastal Towers	The Jersey Round Towers (St. Catherine's Tower, Victoria Tower and Archirondel Tower) are important landmarks.
Sheltered Bays and Coves	The sheltered coves provide safe anchorage and are an important recreation resource.
Wilderness and Remoteness	The less extensive intertidal area, means that these qualities are not especially characteristic.

EVALUATION

Integrity of Character: The shoreline and intertidal areas of the east coast at St. Catherine's and Anne Port create a scenic coastline, very different to the exposed west facing coast of St. Ouen, The low rocky coastal edge and sandy beaches form an important transition area between the dramatic reefs and rocks to the south and the high rugged cliffs along the northern coastline. It is these subtle differences which are important in creating the distinctive character of the Island as a whole. It should be conserved and enhanced.

Key Environmental Capital

The **entire** area is important in terms of marine biodiversity and represents an important part of the Island's key environmental capital.

Threats

- Further dredging from offshore sandbanks and shell deposits for aggregates.

- The construction of insensitively engineered coastal defence works including rock armouring which are poorly designed in aesthetic terms will continue to have an adverse landscape impact and disrupt natural processes.
- Coastal reclamation, including proposals for the development of marina facilities alongside St. Catherine's breakwater.
- Unauthorised disposal of waste into the sea.

MANAGEMENT PRIORITIES

- **Preparation of an Integrated Marine Management Plan** is a priority. One of the Environmental Services Unit's key functions is to develop an integrated coastal zone management strategy for the Island as a whole.
- **Inclusion as part of the proposed South-East Coast Ramsar Wetland of International Importance** should be considered.
- **A more sympathetic approach to coastal defence** which does not wholly rely on the use of artificial engineered structures and works with natural processes is required. The use of geotextiles and bioengineering, for example, is preferable to heavily engineered rock armouring.
- **Further biological survey and monitoring** of the intertidal zone is required to build up a full information base for the area.
- **A full survey of the intertidal archaeology** is a long term objective.

LEVELS OF PROTECTION AND CAPACITY TO ACCEPT CHANGE

Capacity: The whole area is defined as a Marine Protection Zone. It is recommended that the coastline and intertidal area of St. Catherine's and Anne Port should have the highest level of protection with a presumption against all forms of development. There is no capacity for change, apart from sustainable management of renewable natural resources.

Guidance: Even minor developments such as temporary beach kiosks, navigation aids, signs etc, will need to be sensitively designed and located. It is recognised that the sheltered east coast waters are potentially important for fish farming and it is recommended that any such proposals should be subject to a full environmental impact assessment.