

Integrated Coastal Zone Management Strategy



The States of Jersey

‘Making the Most of Jersey’s Coast’

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Integrated Coastal Zone Management Strategy

LODGED FOR STATES DEBATE ON 15TH JULY 2008

March 2008

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States of Jersey 2008

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Email : environmentenquiries@gov.je

Published by the Environment Department, Howard Davis Farm, Trinity
Printed on paper from sustainable sources

Preface

The coast and seas around Jersey are an integral part of Island life. It is therefore essential that the coast is protected and managed so that it can continue to be enjoyed by generations to come.

We know far more about the terrestrial parts of Jersey than we do the sea. Consequently, the system for protecting land is far more advanced. However, our coasts and seas are under increasing pressures such as calls for more reclamation, the likely advent of offshore windfarms, the impacts of climate change and an unprecedented growth in marine and coastal leisure activities. If we are to manage these pressures with any confidence, we need to redress this imbalance and improve our knowledge of the underwater world that surrounds us.

This Integrated Coastal Zone Management Strategy aims to bring together all parties that develop, manage or use the coast to ensure that the coast is sustainably managed in an integrated way.

The Strategy sets out a number of policies to achieve this integration under four distinct headings in Section 4. In short we need to protect our coasts and seas, we need to know more about them, we need to use our marine and coastal environment sensitively and everyone with an interest or responsibility needs to be involved to make it happen.

Section 5 sets out what can be expected from the implementation of the Strategy in terms of outputs and outcomes and Section 6 concludes with a summary of costs and benefits. A lot can be achieved by working within existing resources, but there are areas where we have obligations under international conventions, which require additional funding to be able to meet these responsibilities.

The benefit for Jersey in the long term will be a well managed, healthy coastal and marine environment that supports a thriving economy and which is a source of pride for the community.

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Foreword by Minister

Integrated coastal zone management - or ICZM, sounds very technical but the concept is really quite simple. It's about securing better management and informed decision-making on coastal issues so that our vital coastal and marine resources are managed sustainably.

Jersey's coastal and marine areas are subject to a range of pressures – which can lead to conflict between development, recreation and conservation interests. The implications of climate change are adding to these pressures. ICZM is about managing this situation in an integrated and informed way so that we engage effectively with all States Departments and the community in proposals which affect them and also secure an appropriate balance between all the demands on our coastal and marine areas.

Embedding the development related objectives and supporting actions in this Strategy within the Island Plan review will help us move even further down the ICZM road.

Some very good examples of ICZM principles are already being put into practice – for example; the majority of charter operators attended the WiSe (wildlife safe) operators course in March this year and the response from participants was overwhelmingly positive; we are midway through the process of finalising a management plan for Les Écréhous reef; and summary leaflets of the Jersey Code of Conduct for Marine Wildlife Watching were circulated at the first Jersey Boat Show. The full Code will be ready shortly on www.gov.je.

Community involvement is vital to delivering the objectives and supporting actions in this Strategy. ECO-ACTIVE provides one of the mechanisms for achieving this. Using this campaign, a dedicated programme will be developed to increase community understanding of the issues raised in the Strategy so that all Islanders have the opportunity to be involved in and proud of Jersey's world class marine and coastal environment.

Senator Freddie Cohen

Minister for Planning and Environment

1. Introduction

Integrated Coastal Zone Management is the process of making different policies and management practices in coastal areas work better together to ensure a co-ordinated and sustainable approach to the future management of Jersey's coastal zone. This Integrated Coastal Zone Management Strategy for Jersey will improve the way Jersey's coast is managed by:

- **Promoting integrated management** by encouraging bodies to work together and to consider management of the coastal zone as a whole.
- **Promoting a new approach to management** that will bring users and regulators together to discuss and resolve issues at an appropriate level.

In its current form, the Strategy does not impose any new duties on States Departments, public bodies, organisations or individuals. Instead it intends that all relevant bodies will use their existing powers better, in order to implement the actions listed in the Strategy and to which the various government departments have agreed.

The processes advocated within the plan are essentially a tool for conflict resolution as a result of the large number of often competing activities at the coast. Over time some conflicts will be resolved and additional, potentially unforeseen, issues will arise. The Outputs and Outcomes presented in Section 5.1 and the Indicators listed in Section 5.2 will be reported on and revised as necessary on an annual basis. The Strategy as a whole will be reviewed every five years.

1.1 The importance of Jersey's coastal zone and territorial waters

Jersey's coastline is 90km long at high water mark, not including the offshore reefs. The length of sea edge is an important influence on the Island's character and perceptions of character. On spring tides the difference between low and high tide can be as much as 12m. The south, south-east and west coast have a very shallow, gently sloping shore profile which means that a very large intertidal area is exposed at low tide and the Island almost doubles in size to about 200 square kilometres. By contrast the north and south west coasts are characterised by steep granite cliffs and coastal heath. Both the inland character of Jersey and its marine environment are very much influenced by the great variation in aspect and exposure of its coastal edges. (Countryside Character Appraisal, 1999)

Jersey's territorial waters stretch out to 12 nautical miles or to the median line between France and Guernsey and cover almost 2,000 square kilometres. This is a surface area of over seventeen times greater than its territorial land mass at high water of 117 square kilometres. Our coastal and marine areas are of outstanding scenic, historic and cultural value boosting Jersey's image both at home and abroad and feature regularly in tourism marketing material.

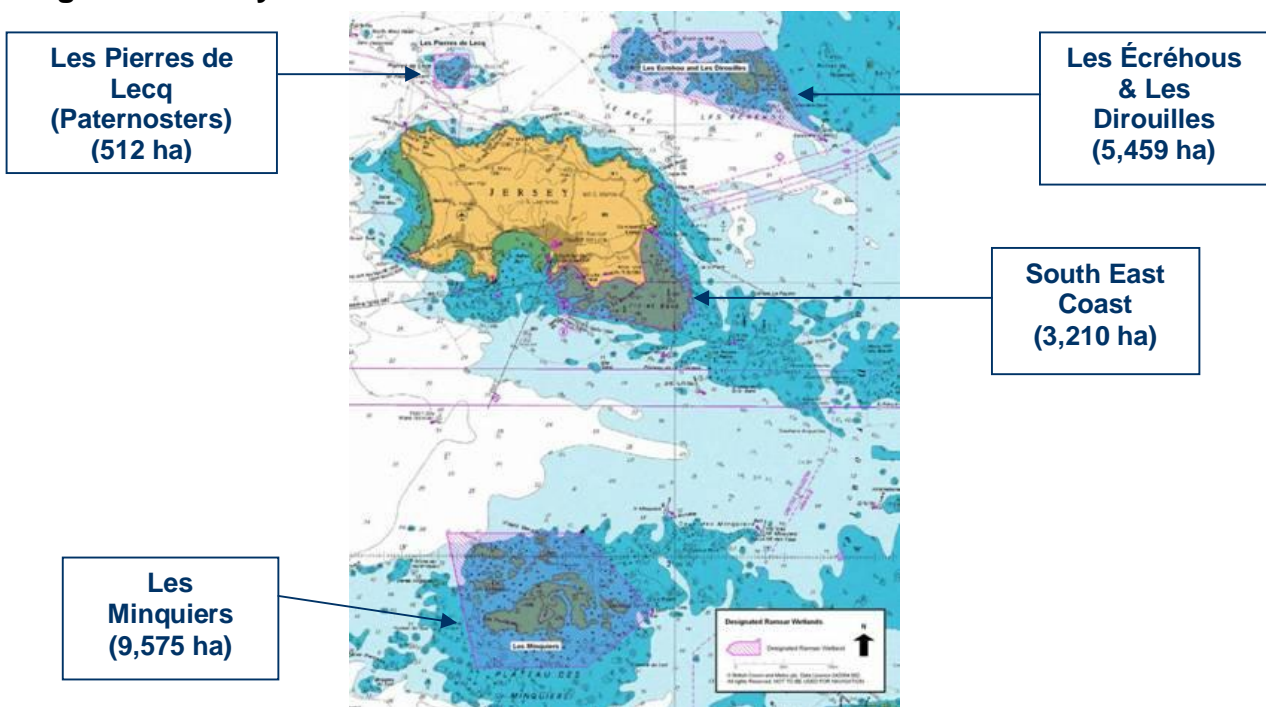
Jersey's coastal zone is an area of increasingly intense activity, where complex interactions take place between physical, biological, social, cultural and economic activities. A study carried out in 1995 (Kindleysides 1995) identified 38 intertidal biotopes locally compared to 87 in the entire UK. Jersey's location at the confluence of the cold and warm temperature marine biogeographical region together with the warming influence of the Gulf Stream results in important groups of animal and plants

associated with the warmer waters of southern Europe, as well as species associated with the cold, northern waters of the UK. (State of Jersey Report 2005)

The overall extent and character of the rocky reefs and intertidal sediment flats on the south east coast is found nowhere else in Europe (Kindleysides 1995). At low tide an extensive and biologically rich area of 3,210 hectares is exposed. The steep rocky coast, granite rocky platform and beach coast comprise the Jersey shoreline and are equally important, although better studied than the subtidal environment of predominantly tideswept sands and gravels. Large reef systems surround Les Écréhous and the Paternosters and extensive areas of shallow water with mixed sediment habitat stretch southeast from the Violet Bank. Of special interest is the submerged Plateau des Minquiers, an area of water shallower than 10m covering 100 square kilometres. (State of Jersey Report 2005)

The international importance of Jersey's coastal waters is recognised by the fact that almost 190 square kilometres of inter-tidal habitat, spread across Jersey's south-east coast and offshore reefs, are designated as wetlands of international importance under the Ramsar Convention¹.

Figure 1: Jersey's Ramsar Sites



The seas around Jersey are very productive. This is reflected in the economic importance of fishing and aquaculture. The fishing industry plays a significant role in Island life and the maintenance of the marine habitat is important to safeguard nursery grounds and feeding areas for commercial species. Whilst on a different scale to the finance industry our marine and coastal areas support approximately 180

¹ The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. It is the only global environmental treaty that deals with a particular ecosystem. The Convention's 158 member countries cover all geographic regions of the planet.

fishing and aquaculture related jobs. The first hand landed value of the industry was just under £6 million in 2007.

Table 1: Landings by weight and value of Jersey registered fishing boats (2007)

Sector	2007 Landings in kg	2007 first hand landed value
Shellfish	1,592,126	£4,023,297
Wetfish	117,600	£328,064
Aquaculture	791,495	£1,083,226
UK Landings		£490,532
Total	2,501,221	£5,925,119

*excluding UK landings

Other key industries drawing on marine and coastal resources around our shores include shipping, tourism and recreation. In 2007 almost 785,000 passengers and almost 530,000 tonnes of freight and fuel passed through Jersey ports. Marine wildlife tourism supports an increasing number of jobs and provides additional activities for local residents and tourists alike.

Jersey is also rich in coastal and marine sites of cultural, archaeological and historical significance including one of the most important Palaeolithic sites in the British Isles at La Cotte de St Brelade; peat beds and remains of a Neolithic forest sealed beneath inter-tidal sands; and a rich density and diversity of coastal fortifications with excellent examples of Tudor, Napoleonic and Second World War structures.

1.2 Pressures and threats

The abundant natural wealth and spectacular scenery of the coast have provided livelihoods for generations of communities in Jersey. Ports and harbours, fisheries, aquaculture, agriculture, mineral extraction, industry, housing development, tourism and power generation all compete for space and coastal resources. Added to that is the threat of reclamation for both waste disposal and creating additional land resources. Jersey's coast is also extremely accessible, which means that a huge range of outdoor recreational activities also take place - surfing, kite-surfing, sailing, diving, angling, water-skiing and walking are more popular than ever.

Global climate change is also adding a new intensity to the pressures faced by our coastline. The coastline can adjust to changes if enough space to retreat to is available but often human interests are not compatible with such change. With rising sea levels, and increased storminess and higher temperatures predicted, the challenge will be to manage coastal activities in a sustainable way whilst ensuring the health of coastal ecosystems and mitigating against the worst effects of climate change.

Our coast and territorial waters provide a multitude of vital resources and offer significant economic benefits through fisheries, transport and tourism. However, the planning and regulation of coastal activities provides challenges as there is the added dimension of integration between land and sea and between different sectors of activity.

This strategy aims to provide a single coherent set of policies to manage Jersey's marine and coastal environment for the first time.

2. Principles underlying the Strategy

2.1 EU Principles of ICZM

In 2002, following a 5 year Demonstration Programme, the European Parliament and the European Council of Ministers recommended that Member States follow eight principles in formulating national strategies for ICZM and any subsequent measures based on these strategies.

These principles are:

- a broad overall perspective.
- a long-term perspective.
- adaptive management.
- be locally specific.
- work with natural processes and respecting the carrying capacity of ecosystems.
- involve all stakeholders.
- support and involvement of all relevant administrative bodies
- use a combination of instruments.

These principles are the foundation on which UK and French ICZM initiatives are likely to be built and against which success will be measured. Whilst not in the EU, there are clear policy directions within the States of Jersey's Strategic Plan (Strategic Aim 7) for Jersey to work closely with neighbouring authorities. As a result Jersey is taking an active role within the British Irish Council (Environment) Group on ICZM and is also actively seeking to work more closely with French counterparts on marine environmental issues, see Objective 4 – Working with Stakeholders. This Strategy is also built and will be tested against these principles.

2.2 Precautionary principle

In common with many other countries, our baseline knowledge of Jersey's coastal and marine habitats and species lags woefully behind that of its terrestrial counterparts. This Strategy therefore advocates the precautionary principle, which effectively means sensibly erring on the side of caution where scientific evidence or the balance of evidence is not conclusive.

It is considered that the application of the principle should lead to action that is proportionate to the required level of protection. It should also be consistent with other forms of action and be targeted to the risk.

The introduction of policies such as the requirement for Strategic Environmental Assessment or Sustainability Assessment of all new plans and strategies, especially those that impact on the marine and coastal environment, will help to ensure that this approach is followed.

2.3 Spatial planning and the Island Plan Review

Under the Planning and Building (Jersey) Law 2002 the definition of land is as follows:

“land” means a corporeal hereditament, and includes –
(a) a building;

- (b) land covered with water including sea water within the outermost limits of the territorial sea of the Island; and
- (c) in relation to the acquisition of land by the States under Article 119, an interest in land or water and a servitude or right in, on or over land or water;

The Island Plan 2002 provided for a Marine Protection Zone (Policy M1) extending from the Mean High Water Mark (MHW) to the territorial limits.

The Jersey Island Plan 2002 contains a number of policies that either directly or indirectly impact upon the marine and coastal environment. These policies are currently being reconsidered as part of the Island Plan Review. Policy C1 proposes marine and coastal policies and directions that need to be considered within the Island Plan Review.

2.4 Ecosystem approach

The ecosystem approach is not a formula for managing ecosystems but rather a framework for making ecologically sound decisions, recognising that people and cultural diversity are an integral part of many natural ecosystems. It recognises that people depend on healthy ecosystems and that there are limits to how much the environment can sustain in terms of social and economic benefits. If these limits are exceeded, the integrity of the system breaks down and it becomes less stable and less productive. This can severely affect our quality of life. This approach reflects the States of Jersey Strategic Plan 2006 – 2011, which recognises the importance of a healthy environment to underpin the high quality of life enjoyed in Jersey.

3. International and EU policies and legislation

3.1 Multi-lateral environmental agreements

The inclusion of ICZM as one of the principal recommendations of Agenda 21, at the United Nations Conference on Environment and Development (the Earth Summit, Rio de Janeiro, 1992) gave the concept both international prominence and political legitimacy.

Jersey is signatory to a number of multi-lateral environmental agreements (MEAs) that are of relevance to our coastal and marine area. These conventions address issues such as biodiversity, marine pollution, fishing, maritime safety and archaeology.

Commitment 5.2 of the States Strategic Plan 2006-2011 is 'Continued development of the Island's international constitutional position and international profile', that is indicated by 'compliance with relevant and reasonable international treaties'. To achieve this, 5.2.8 states that the States will 'Over the period 2007-2010, meet, where possible, international standards set through the extension of international treaties and conventions.'

Other international conventions of significance include:

- RAMSAR Convention on Wetlands of International Importance (1971 / 1976)
- ASCOBANS Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (1991 / 2002)
- Bonn Convention on the Conservation of Migratory Species (1979 / 1985)
- Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979 / 2002)
- United Nations International Convention on the Law of the Sea (1982 / 1997)
- International Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR) (1992 / 2000)
- UN Framework Convention on Climate Change (1992) and Kyoto Protocol (1997 / 2006)
- Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) (1991 / 1997)
- The Granada Convention for the Protection of the Architectural Heritage of Europe (1985)

Jersey is also working towards the following:

- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) (1990)
- Aarhus Convention on access to information, public participation in decision making and access to justice in environmental matters (1998)

A review of MEAs in 2003, which was updated in 2007, revealed that Jersey is currently not meeting many of its obligations under the coastal and marine MEAs, and in particular under Ramsar. The adoption and implementation of this Strategy is an essential step forward in redressing this position and thereby meeting the States Strategic Plan commitment.

3.2 Relevant EU Legislation and Policies

While no EU legislative measures apply directly in Jersey, there are various sectoral EU policies and Directives that have an immediate impact on the coastal zone, which also have some relevance in Jersey such as:

- Common Fisheries Policy (CFP)
- Bathing Water Directive
- Shellfish Waters Directive
- Water Framework Directive

Further cross-sector legislation includes:

- Strategic Environmental Assessment Directive
- Environmental Impact Assessment Directive

In most cases, measures are already in place to meet these requirements. However, where this is not the case, for example, Strategic Environmental Assessment, appropriate policies are being examined to fill this gap.

4. Strategy Objectives, Key Aims and Desired Outcomes

Policies within the Strategy are divided below under four sub-headings. Policies cover economic, social and environmental aspects of the coastal zone. The Strategy introduces measures that will:

- A. Protect and conserve** the wildlife, habitats, geodiversity and cultural heritage of Jersey's coast and sea, their supporting ecological processes and overall resilience.
- B. Increase understanding** of marine and coastal environments, their natural processes, the impact that human activities have upon them, how to minimise those that have an adverse effect and improve the quality of decision-making.
- C. Promote and encourage sensitive use** of natural resources to ensure long-term environmental, social and economic benefits.
- D. Work with stakeholders** to promote awareness, understanding and appreciation of the value of marine and coastal environments and seek wider involvement in adapting to change and in developing new policies.

Aim A: Protect and Conserve Coastal and Marine Wildlife, Habitats, Geodiversity and Cultural Heritage

Protect and conserve the wildlife, habitats, geodiversity and cultural heritage of Jersey's coast and sea, their supporting ecological processes and overall resilience.

A1. Develop a Marine Biodiversity Action Plan with targets for marine and coastal habitats and species.

Jersey's Biodiversity Action Plan 2000 refers to marine and coastal species but does not identify specific marine and coastal habitats. The development of this plan is required to fulfil obligations under a number of Multilateral Environmental Agreements and must therefore be completed by 2010 to meet the Strategic Plan Aim 5.2.8. The implementation of any resulting Species Action Plans and Habitat Action Plans should be co-ordinated through the Biodiversity Partnership (see Aim D1iii). This will require additional marine ecology resources within the Environment Department to fill the current gap (see Section 6).

Consultation with key stakeholders and the co-operation and sharing of knowledge between professionals, amateurs and volunteer groups will be fundamental to the success of the long term implementation of the marine BAP. It will also be important to co-ordinate with French counterparts along the Normandy and Brittany coast to share understanding and knowledge of coastal habitats and species. See also Aim D1iii, D4 and D5.

A2. Reduce inputs of nutrients and hazardous chemicals and materials from land-based sources to improve the water quality of marine and coastal waters.

In addition to the Water Pollution (Jersey) Law 2000, a number of initiatives are in place to improve inputs from the land to the sea.

- Memorandum of Understanding between Planning and Environment and Jersey Harbours in relation to water pollution issues.
- Rural Strategy (2005) advocates sound management practices.
- Countryside Renewal Scheme encourages effective adoption of Nutrient Management Strategies.
- The Water Code provides statutory guidance to farmers and growers to avoid causing water pollution.

The following initiatives are also in progress:

Work has been undertaken by the Environmental Protection section of the Planning and Environment Department to research and identify proposed Water Quality Objectives (WQOs) and Water Catchment Management Areas (WCMAs) for the Island. Following this work a project group involving Environment Division staff working together with industry personnel is to be established by the end of June 2008. An expected output of this group will be a detailed and timed action plan to

establish WQOs and WCMAs that take into account the Island's obligations under the EU Water Framework Directive and its changing land-use patterns.

A3. Reduce inputs of nutrients and hazardous chemicals and materials from boat-based sources to improve the water quality of marine and coastal waters.

A number of immediate actions are required in partnership with Jersey Harbours and other stakeholders:

- A3i. Finalise **Marine Pollution Advisory Group (MPAG)** Strategy to ensure effective regulation under future OPRC (Oil Pollution Preparedness Response and Co-operation) and MAROL legislation, including an assessment of the risks to Jersey's marine and coastal environment posed by shipping.
- A3ii. Examine ways to encourage use of reception facilities in ports, harbours and marinas for pumping out and for litter in order to discourage recreational water craft from emptying their waste into the sea. The introduction of a programme such as **The Green Blue**, an environmental awareness initiative by the British Marine Federation and the Royal Yachting Association, is to be explored for Jersey. This will also contribute to A3.
- A3iii. Work with the countries of the British Irish Council (BIC) Environment Sub-Group to examine the feasibility and potential cost of extending the '**Fishing For Litter**' (FFL) initiative to Jersey. FFL invites fishermen to participate in a voluntary scheme to help reduce marine litter through both collection and helping to change attitudes.

A4. Reduce the impact of fishing activities on non-target species and habitats by introducing fishing management techniques and technical measures that are more selective and/or are less damaging to the seabed.

The Fisheries and Marine Resources Section of the Environment Department have an ongoing programme to monitor gear technologies and techniques to encourage the use of more selective and less damaging management techniques and technical measures where appropriate. This ongoing programme will be essential in order to fulfil requirements under C3, the potential adoption of an international certification system that recognises well-managed fisheries. Specific attention will be given to the impact of fishing activities within the Ramsar sites (under C2) and also within any further marine protected areas (under A6). Greater public awareness is also required of the many extensive protective measures that already exist to protect non-target species and habitats.

The Fisheries and Marine Resources Panel (formerly the Sea Fisheries Advisory Panel) comprising both amateur and professional members, provides a local mechanism to address fishermen's concerns about over exploitation, neighbourhood agreements with the French and local conservation issues.

The Panel plays an active and integral part in developing and introducing new fisheries management techniques and technical measures. The diverse membership of the Panel encourages this holistic approach to management.

A5. Identify the potential threats to Jersey's coastal zone posed by climate change and consider appropriate actions for safety, well-being and economic interests of coastal communities.

A number of initiatives are in place to tackle this issue, for example:

- **Marine Climate Change Impacts Programme (MCCIP)**
Jersey is a sponsoring partner of the MCCIP, which is a partnership between scientists, government, its agencies and NGOs. The principal aim is to develop a long-term multi-disciplinary approach to understanding and communicating the implications of climate change in our seas. For more information see www.mccip.org.uk/arc.
- **Climate Change, Jersey: Effects on Coastal Defences**
In 2007, a study was commissioned by the Transport and Technical Services Department to examine the impact of climate change on Jersey's coastal defence structures. The report (HR Wallingford, 2007) concluded that adaptation measures would be required in the longer term and stressed the importance of the early development of a framework for decision making based on criteria which would be used to decide how best to invest public funding to reduce the threats to the community of flooding and erosion. It stated that there needed to be a discussion and agreement on the relative weighting to be given to protecting 'public' and 'privately owned' assets, to preserving or enhancing the natural environment, to preserving assets of cultural or historical importance and to the wider socio-economic character of Jersey, which is strongly influenced by its beaches and coastline. This framework would need to be developed with full stakeholder involvement.
- **'Climate Change in Jersey, Your Questions Answered'**
In 2008 a report is being produced to set out what we currently know about Jersey and climate change. This will provide the foundation on which to set further policy on climate change adaptation and mitigation measures.
- **Development of Climate Change Adaptation Measures**
Climate Change Adaptation Measures are to be developed at the end of 2008 following approval of the Energy White Paper by the States of Jersey. The Environment Department will lead on this initiative in consultation with other stakeholders.

Furthermore, as stated in C1, the revised Island Plan will include policies to ensure that climate change issues are taken into account in the determination of planning applications.

A6. Develop a fully representative network of marine and coastal protected areas that:

- **takes account of all marine and coastal habitats and species, not just those that are threatened, rare or declining;**
- **includes areas for sustainable use and areas closed to all extractive uses, so that plants and animals can recover free from the threat of exploitation; and**
- **is ecologically meaningful, with the network delivering overall benefits, as well as through each protected area.**

A review is required of all designated and proposed protected areas to ensure that Jersey's network of marine and coastal protected areas covers the points above. This

could include areas protected at different levels, for example, No Take Zones, marine SSIs or even a marine national park. **This will need to be done based on sound scientific evidence and with full and extensive consultation with stakeholders.**

A7. Identify and designate a network of coastal and maritime geological sites that is geologically meaningful and represents Jersey's full geodiversity.

A network of 21 proposed sites of geological interest (geological SSIs) was put forward in 2007. The majority of these are coastal sites. Three sites are to be designated as geological SSIs in 2008 with the remainder to be designated as soon as possible thereafter. As part of the programme to develop this network it will also be very important to raise awareness of the importance of geodiversity.

A8. Identify and designate coastal and maritime heritage sites

The Valetta European Convention on the Protection of Archaeological Heritage was extended to Jersey in September 2002. Cultural heritage assets are listed as Sites of Special Interest and/or included on the Register of Buildings and Sites of Architectural, Archaeological and Historic Importance in Jersey (the Register). Inclusion of a cultural asset on the Register is intended to preserve its contribution to the cultural heritage and amenity of Jersey, and to ensure that it is a material consideration in the planning process.

Whilst many of the Island's coastal heritage assets are identified and known, knowledge of marine sites is limited. A frequently cited assumption is that due to Jersey's dynamic tidal environment very little underwater cultural heritage will have remained intact, however, it is important to expand knowledge of the Island's marine archaeology and to ensure that which does remain is identified and designated accordingly.

The potential to engage the local diving community in building up the knowledge base of our underwater cultural heritage needs to be explored. See Aim D: Working with Stakeholders for more details.

A9. Identify the potential threats to Jersey's marine and coastal habitats and species and also Jersey's disease-free status posed by the introduction of alien species and put in place measures to minimise these threats where possible.

Alien species can act as vectors for new diseases, alter ecosystem processes, change biodiversity, disrupt cultural landscapes, reduce the value of land and water for human activities and cause other socio-economic consequences for man. In Jersey, for example, as well as the potential alterations to marine biodiversity, a major economic consideration is the threat to 'disease-free status' for aquaculture. Identified pathways include ballast water in ships and the importation of seed for aquaculture.

Increased awareness of the impact of alien species on Jersey's marine and coastal habitats and species is vital to ensure that the threats posed by this issue is minimised.

Aim B: Increase Understanding of Jersey's Marine and Coastal Environments

Increase understanding of marine and coastal environments, their natural processes, the impact that human activities have upon them, how to minimise those that have an adverse effect and improve the quality of decision-making.

Seabed habitats and the communities of species that occupy them are an essential component of the marine ecosystem. A greater understanding of the distribution, extent and status or quality of marine habitats is required to facilitate the protection of threatened and rare habitats and, more generally, the assessment of the state of the marine environment.

Such information is also needed to improve spatial and strategic planning of human activities, in particular to promote the wiser use of habitats where there are competing demands (e.g. fishing, sand and gravel extraction, wind energy generation, nature conservation). As such, information on marine habitats needs to play a major role in the ecosystem-based approach to management of the marine environment that is now widely advocated at national and international levels (Defra 2002; North Sea Conference 2002).

Our understanding of Jersey's marine and coastal habitats and species lags far behind its terrestrial equivalent. Better use needs to be made of existing data and, given resource constraints, a strategic approach must be taken to collecting new data. Information systems are required to make up this gap and provide spatial and temporal information on the distribution of biodiversity, natural features and human activity.

It is proposed that two different systems are required to improve knowledge and access to information about Jersey's marine and coastal environment, as described in B1 and B3 below. Both of these initiatives assist with the States commitment to work towards extension to Jersey of the Aarhus Convention on Public Access to Environmental Information.

There are resource implications for implementing all of the policies within this aim. It is only likely to be possible to fulfil any of these with an increase in the marine ecology capacity within the Planning and Environment to co-ordinate the projects.

B1. Draw together a Marine and Coastal Database to make better use of existing data and information

It is clear that a considerable amount of data and information exists but it is scattered across different systems and paper documents. This needs to be brought together in a meaningful and publicly accessible format. The proposed database will draw together a list of existing documents, including latest legislation. Rather than trying to store all of the documents in one location, it will act as a meta-database, i.e. provide a signpost to all known material held on marine and coastal areas of Jersey. This will ensure that awareness is raised of publicly-funded research and information is made freely available to maximise the value of the States of Jersey's investment.

This project was scoped and started in 2005, but stopped due to lack of manpower resources. It is planned that when available, the database will be accessible via Jersey Archive's homepage <http://jerseyheritagetrust.jeron.je/archive.html>. The Environment Department will look at how the information is to be displayed and where a link to Jersey Archive, along with an explanatory note, will go on the Environment Department's website. All documents are to be referenced using the Dewey decimal system.

Two clear messages emerged about the database from the consultation that will be important to bear in mind when setting up this project: firstly, stakeholders should be involved and informed in setting up the database and secondly, it must be kept up-to-date with ongoing research.

B2. Develop marine habitat classification for Jersey as a tool to aid the management and conservation of marine habitats

Examples of marine habitat classification exist, for example the one in use in the UK is one of the most comprehensive marine benthic classification systems currently in use, and has been developed through the analysis of empirical data sets, the review of other classifications and scientific literature, and in collaboration with a wide range of marine scientists and conservation managers. It is fully compatible with and contributes to the European EUNIS habitat classification system.

This system has also been developed as a tool to aid the management and conservation of marine habitats. It provides an ecologically-based classification of seashore and seabed features in a way which is meaningful both to detailed scientific application and to the much broader requirements for management of the marine environment. The classification is also relevant to the habitat requirements of more mobile species, such as fish and marine mammals.

Such a project for Jersey is likely to be costly, but this is an essential foundation for developing marine spatial planning. We should therefore explore the most cost effective way of developing a marine habitat classification system for Jersey and develop a plan of action to implement it.

B3. Develop a Marine and Coastal Atlas for Jersey to improve marine and coastal spatial information

This facility is needed to locate, obtain and digitally collate marine and coastal information along the Jersey coast and for the Marine Protection Zone. Using the Jersey Digital Map, the Atlas would provide a resource to the public and private sector to enable accurate assessment for coastal and marine management in Jersey, based on sound scientific information and data. As well as making accessible the information from B2, it would also make the most of knowledge gained by people and organisations that have an interest in the coast and sea. This project is an essential component to effectively introduce marine spatial planning. The system would need to be updated on a regular basis to reflect the dynamic nature of the marine and coastal environment.

The Project could be divided into three different phases:

- **Phase 1:** where useful coastal and marine data would be identified and put into a format, which could be viewed eventually through a website. Information on the data would also be provided. The States of Jersey already holds a great deal of data and this will be the initial source of information. Data from other organisations would then be encouraged to enable more information to be disseminated.
- **Phase 2:** would look at providing the information and data through the States of Jersey website. There would be links to other relevant sites that hold useful data.
- **Phase 3** would be an investigation into the publication of a Marine and Coastal Atlas for Jersey, building on the Snapshot of the Environment Report - this would likely to be contracted out and would require significant funding and links to both policies B1 and B2.

B4. Co-ordinate information and data requirements to focus requests for student research projects

In developing this Strategy, existing datasets and reports were identified, which will be included within the Marine and Coastal Database and Marine and Coastal Atlas. In addition, a number of areas were identified for future research, for example:

- Review of recreational activities and impacts on marine wildlife.
- An oral history database of sea/coast users' experiences.

Numerous approaches are made to the Planning and Environment Department every year by students seeking advice on the direction to take for research projects. Using the information gathered under Policies B1 to B3, described above, it is planned to develop a list of 'live' topics that will help students at all levels focus on research topics that will be of future use to the Department. This list will be available online via the Department's website. The results of the studies will then also be available via the Marine and Coastal Database, and where appropriate, the Marine and Coastal Atlas.

B5. Investigate the feasibility and potential costs of setting up a marine research laboratory for use by visiting schools and universities

Jersey's dynamic and varied marine and coastal environment provides an excellent outdoor classroom for university level research projects. Coupled with the intention to develop a suite of marine protected areas, the provision of a marine laboratory has the potential to be extremely beneficial for Jersey. As a centre of excellence for marine research it would have the added value benefit of attracting researchers to study Jersey's marine and coastal environment, which may prove to be a cost-effective way of funding future research.

Aim C: Promote and Encourage Sensitive Use of Natural Resources

Promote and encourage sensitive use of natural resources to ensure long-term environmental, social and economic benefits.

C1. Ensure policies within the Island Plan Review reflect the principles of the ICZM Strategy

Jersey's planning law extends to the limits of our territorial waters. This means that there is no invisible barrier between land and sea in relation to development control. However, as Jersey is very heavily influenced by the UK's Town and Country Planning System, which stops at the Mean Low Water Mark (MLWM), this advantage is not always fully realised as planning professionals do not have experience in dealing in the marine environment. Additional expertise is required when dealing with planning applications below the MLWM. In a number of cases parallel systems are in operation, for example a FEPA licence is required for some activities and a shellfish licence as well as planning permission required for shellfish concessions.

The Island Plan 2002 was forward thinking at its time and comprehensively covered many aspects of the marine and coastal environment. At present much of the undeveloped coast, including the terrestrial parts of the offshore reefs, is classified as Zone of Outstanding Character – the highest level of protection currently available in planning policy terms, aside from the legal and policy protection afforded by designation as a Site of Special Interest. The remainder of the less developed area and its hinterland is classified as Green Zone with the remaining undeveloped parts of the built up area being classified as 'Shoreline Zone'.

In all of these areas there is a general presumption against new development largely based on the objective of protecting the visual character and amenity of the environment. If the coastline is to be managed in a sustainable way, it is important that future development proposals are considered against a planning policy regime that is based on a set of broader principles, which need to be considered within the context of the Island Plan Review, including:

- i. Protect the undeveloped coast.** Only developments requiring a coastal location should be favourably considered in the coastal zone. It will also be important to monitor changes in the undeveloped coast (see Section 5).
- ii. Maintaining and enhancing the Marine Protection Zone:** The Marine Protection Zone, as identified within Policy M1 within the Island Plan 2002 should remain. This policy reflects the precautionary principle. As we do not yet have enough information about the habitats and species along our shores and sub-tidal areas to zone this area into smaller more sensitive and less sensitive units according to habitat type, there may be a need to enhance this policy to ensure that the impact of development which does require a coastal location and which may be considered favourably in the MPZ, is sufficiently mitigated so as not to cause undue harm to this sensitive environment.
- iii. Discouraging reclamation:** On the basis of the application of the precautionary principle, further reclamation should be discouraged. The 2002 Island Plan

proposal to reclaim land at St Aubin should be reviewed against this context, as part of the Island Plan Review. In cases where there is felt to be an over-riding national interest, reclamation should only be considered after a full investigation of all possible options. Incursion into the South East Coast Ramsar site could only take place following reference back to the UK Government and the Ramsar committee.

- iv. Responding to climate change:** there is a need to ensure that planning policy recognises the potential threats to Jersey's coastal zone posed by climate change and for the Island Plan to make provision for future development accordingly.
- v. Recognising and protecting seascape character:** As a small island, Jersey's character is significantly influenced by the visual relationship of the sea and the land, and the view and perception of it from the sea and from low-lying coastal areas, including bays, beaches and the coastal plains of St Ouen, St Clement and Grouville, are significant. The Countryside Character Appraisal (LUC 1999) was a key document in refining the zones upon which the Island Plan 2002 is based and included an assessment of the character of the Island's coastal areas.

Seascape character is made up of physical characteristics of hinterland, coast and sea plus a range of perceptual responses to the seascape, as well as visual aspects. Seascapes are highly sensitive and are at risk of having their key characteristics fundamentally altered by inappropriate or insensitive development. It is, therefore, important that any policy framework in the new Island Plan that seeks to identify and protect the character of Island's coast, should require explicit consideration of the impact of development upon 'seascape'.

The Island Plan Review should take the opportunity to review the existing planning policy framework for the protection of the Island's character to ensure that appropriate and explicit consideration is required relative to any assessment of development proposals upon the seascape and the character of the coast. In so doing, consideration should be given to the sensitivity of each of the Island's existing character areas in terms of how vulnerable or robust seascape character is to change.

- vi. Maintaining and promoting access to the coast:** the planning policy regime should seek to protect and maintain existing public access to the coast and, where it is relevant and appropriate to do so, provision for new public access should be encouraged as an integral part of development proposals.
- vii. Strategic Environmental Assessment / Sustainability Assessment:** The requirement for Environmental Impact Assessment (EIA) of development proposals likely to have a significant environmental impact is now well established in Jersey. There is now a requirement for a policy to ensure that all plans and programmes are subjected to the same rigorous assessment. This should ensure that environmental, social and economic issues are considered together at a strategic level before a plan or programme is approved.
- viii. Aquaculture Management Strategy:** Intertidal aquaculture concessions cover almost 63 hectares on the south-east and eastern coasts. A large proportion of the concessions lie within the South-East Coast Ramsar site. These concessions also have the majority of activity and land-based facilities associated with them.

Concerns have been raised about the rapid expansion of these concessions, both in terms of physical presence within the intertidal zone and the increase in associated activity, and the resulting impact on the features for which the Ramsar site was designated.

The capacity of this sensitive intertidal environment to accommodate further economic activity without undue harm to the character of this part of the coast and its role as an important area for wading birds presents issues for land-use planning and the management of fish-farming activity. Work is required to better understand the ability of this area to accept further change the outcome of which should be considered in the context of the planning policy and fishing licensing regimes.

C2. Develop Management Plans for all Ramsar sites and future protected areas

At present, 186 km² of the south-east coast and offshore reefs are designated as wetlands of international importance under the Ramsar Convention. Local protection of these areas is an obligation of the Convention. This is being met through the development of management plans for each of the Ramsar sites. In some areas, local designation as SSI is also being explored. These actions are being undertaken in full consultation with all stakeholders and are described further in the following section.

Timescales for developing Ramsar Management Plans are as follows:

- Les Écréhous and Les Dirouilles : Q1 – Q3 2008
- Les Minquiers : Q3 – Q4 2008
- Les Pierres de Lecq : Q1 – Q2 2009
- South-East Coast : 2009

As further coastal and marine sites are designated to fulfil Policy A6, management plans will be required to ensure protection.

C3. Encourage better returns for Jersey caught marine species by investigating the possibility of supporting the adoption of an internationally recognised certification programme, which promotes well-managed fisheries.

Consumers are increasingly concerned about where their food comes from and the journey it takes to reach their plate. Jersey is well placed to benefit from the marketing advantages of consumer's preferences for a well-managed fishery. In the future it looks likely that certification from a recognised body will be a prerequisite in the markets that Jersey currently exports to in the UK and mainland Europe. Internationally recognised schemes, such as the one offered by the Marine Stewardship Council, offer an environmental standard for sustainable and well-managed fisheries using product labels to reward environmentally responsible fishery management and practices.

The adoption of such a scheme by the Jersey fishing industry will enable consumers concerned about overfishing and its environmental and social consequences to choose Jersey seafood products, which have been independently assessed against agreed standards and labelled to prove it.

Clearly, financial and manpower resources are required to adopt such a scheme. As such the economic, social and environmental costs and benefits of the available schemes should be weighed up before adoption and commitment from the fishing industry secured.

Aim D: Work with Stakeholders

Work with stakeholders to promote awareness, understanding and appreciation of the value of marine and coastal environments and seek wider involvement in adapting to change and in developing new policies.

This Strategy will only succeed with the involvement of stakeholders in its implementation, development and future revisions. The term 'stakeholder' covers a wide range of meanings, but fundamentally means anyone with an interest in a particular issue, including elected representatives, government departments, schools, non-governmental organisations, clubs, societies, commercial businesses, property owners, participants in an activity or any individual be they professional or untrained, expert or amateur.

The following specific activities and policies are put forward to improve current stakeholder involvement in the full range of coastal and marine issues. It is recognised that this list will change over time as different issues come to the fore. It will be important, therefore, to revise this list each time the Strategy itself is reviewed.

D1. Ensure that effective co-ordination arrangements are in place across the States of Jersey and other interests with a role in the coastal zone to facilitate the ICZM process in Jersey.

The consultation paper asked whether a Coastal Forum should be set up to ensure delivery of the ICZM Strategy. The response was mixed. Some were supportive, others felt that the same result could be achieved by better co-ordinating the existing groups dealing with issues in the coastal zone. It has been concluded therefore that the most appropriate approach, at this stage, is to develop smaller fora to work on specific issues at a more localised level. A current example of this is in drawing up the Les Écréhous Management Plan, see Policy C2. **There is, however, an ongoing commitment to involve stakeholders in the delivery of this Strategy.**

D2. Through ECO-ACTIVE, promote greater community involvement in and understanding of marine and coastal issues

ECO-ACTIVE is a campaign which provides accurate, States endorsed information to empower Islanders to make more environmentally conscious decisions. Using this campaign, a dedicated programme will be developed to increase community understanding of marine and coastal issues. The following examples will be the first focus:

D2i. Use the Environmental Visitor Centres, Discovery Pier, Kempt Tower and the Maritime Museum to raise awareness of current marine and coastal issues

Discovery Pier is a marine environmental visitor centre located at the end of Gorey Pier. Open daily from 1st May – 30th September, it provides a wealth of information about Jersey's marine and coastal environment.

Kempt Tower, located in St Ouen's Bay, is an environmental visitor centre open daily from 1st May – 30th September. It covers a broad spectrum of environmental issues, some of which relate to the marine environment, for example, offshore wind energy and recreation within St Ouen's Bay.

The **Maritime Museum** in St Helier, open from Easter until the end of October, is another invaluable source of information focusing on Jersey's maritime heritage and the experiences of Islanders, both contemporary and historic (www.jerseyheritagetrust.org)

All centres provide excellent opportunities to raise awareness of marine and coastal issues and are updated regularly with new initiatives in place each year.

D2ii. Revise the Marine Mammal Sightings Database to include basking sharks and other marine wildlife and increase sightings reported

A comprehensive marine mammal sightings database exists but reported sightings have diminished considerably in recent years. The ECO-ACTIVE campaign will be used to encourage boat users to increase the number of reports of marine mammal sightings. It will be important to co-ordinate with local organisations such as Marine Section of the Société Jersiaise and also wider programmes such as those run by the Seawatch Foundation. This will include participation in the European wide marine mammal photo identification programme Euroflukes. The ongoing success of the database will depend on regular reporting back to contributors to show how valued their sightings are in both the local and wider efforts to protect marine mammals.

D2iii. Encourage the involvement of local marine life experts and enthusiasts and local divers within the Biodiversity Partnership to improve knowledge of our intertidal and marine habitats and species.

The Jersey Biodiversity Partnership was set up in 2006 for the purpose of implementing Jersey's Biodiversity Action Plans (BAP), covering 51 species and 1 habitat in Jersey. These were formed following Jersey's signature to the Convention on Biological Diversity (1992) and the subsequent need for action to conserve biodiversity at a local level. Jersey Biodiversity Partnership is an informal partnership of more than 50 organisations and individuals committed to preserving and enhancing biodiversity in Jersey. Partners support the Jersey Biodiversity Partnership in a variety of ways; with time, expertise, funding or other resources.

Action Plans are already in place for the basking shark and sea grass with three more to be launched in July 2008 for the Brent goose, ormer and puffin. However, at present organisations with an interest in marine and coastal habitats and species are under-represented within the partnership.

The development of the Marine Biodiversity Action Plan (see Policy 1.1) and the appointment of a Marine Ecologist will help to redress this imbalance.

D2iv. Explore the possible involvement of local divers to improve knowledge of our underwater cultural heritage

Knowledge of Jersey's underwater cultural heritage is presently limited and that which is known is not well recorded. To develop a better understanding of the Island's marine archaeological sites, local divers and other key stakeholders should be engaged and encouraged to work with Jersey Heritage and the Planning and Environment Department.

D3. Ensure growth in marine leisure is sustainable

Recent years have seen a growth in activity in marine and coastal leisure, both by tourists and local residents. An increase in boat ownership in general, and in fast RIBs (rigid inflatable boats) in particular², mean that sensitive areas such as Les Écréhous and Les Minquiers have become accessible to more and more people. It is essential that awareness is raised and mechanisms are put in place to ensure that conflicts are minimised both between different users of the marine environment and also to ensure that the coastal habitats and the species that inhabit them are not compromised.

Action is already underway on the following initiatives:

D3i. Encourage all charter vessel operators to become accredited under the WiSe Scheme

The WiSe (Wildlife Safe) scheme is aimed at operators of small to medium sized commercial passenger carrying vessels. It is not only targeted at operators who offer dedicated marine wildlife viewing trips, but also at those operators who simply view marine wildlife on an opportunistic basis.

The WiSe scheme is the first and only programme in the UK to offer Training and Accreditation to boat operators interested in the development of sustainable marine ecotourism. Now recognised as the national standard for this type of activity, the Planning and Environment Department and Jersey Tourism welcomed the opportunity to introduce the scheme in Jersey in March 2008. Twelve local operators took part in the course and are now able to offer WiSe accredited tours.

Further courses may be run in the future, depending on demand.

D3ii. Develop a Jersey Marine and Coastal Wildlife Watching Conduct, setting out recommendations, advice and information relating to commercial and leisure activities involving the watching of marine and coastal wildlife.

A Marine and Coastal Wildlife Watching Code has been developed through the winter of 2007/08 in consultation with a wide range of stakeholders including local scientists and wildlife watching tourist guides to educate users on the importance of protecting Jersey's marine environment and the species that live there.

² Number of RIBs registered in Jersey increased from 83 in 2005 to 101 in 2007.

The Code will contain information on:

- Activities which are likely to disturb marine wildlife;
- Circumstances in which marine and coastal wildlife may be approached;
- The manner in which marine and coastal wildlife may best be viewed with minimum disturbance.

This comprehensive code complements the WiSe Scheme and also draws on extensive research of existing guidance. It provides an opportunity to draw together, in one place, locally-relevant information relating to best practice on watching all species of marine and coastal wildlife in and around Jersey. It will be launched at the beginning of May 2008.

It will be essential to keep under review whether the combination of these two initiatives with the development of management plans for the Ramsar areas will deliver sustainable growth in marine leisure.

D4. Work with schools to generate greater understanding of the value of marine and coastal environment

An ongoing education programme is required to improve school pupils' understanding of the value of the marine and coastal environment. Currently there is no Schools Environmental Education Officer. It is planned to rectify this situation as soon as possible using revenue raised through environmental taxes.

As an interim measure, in the absence of a full-time Schools Environmental Education Officer, self-guided teacher packs have been commissioned by the Environment Department's Education and Awareness Officer for use by schools around the coast and also at the Planning and Environment Department's environmental interpretation centres Discovery Pier and Kempt Tower. These packs will be launched ready for Summer Term 2008.

Local school groups are encouraged to continue to use the centres for free during term time and free admission to both centres is offered for local school children during school holidays.

D5. Develop closer links with French counterparts to improve knowledge and sustainable use of the Bay of Mont St Michel

Due to its proximity Jersey has always had and still has a significant relationship with France with regard to fisheries. Northern France has estuarine waters supporting juvenile bass, which play a significant role in Jersey's fishing industry. French fishing effort in Jersey's territorial waters is prominent, with a large number of French vessels fishing in Jersey waters. Relations are generally amicable due to regular meetings of the Joint Management Committee of the Granville Bay Treaty, liaison with Ifremer and the Affaires Maritime (the scientists and policy makers of the French Sea Fisheries Department respectively), and negotiated legislation which has developed to benefit fisheries bodies on both sides of the water.

There are other areas where it is important to develop better links with France as stakeholders in Jersey's marine and coastal environment, for example:

- **Sharing Jersey's territorial waters for recreation.** A current example is the development of the Les Écréhous Management Plan. This plan will not succeed unless French visitors to the reef are involved in its development and implementation. Similarly, the introduction of measures to reduce marine pollution from recreational boat-owners will require liaison with French authorities and visitors.
- **Sharing knowledge about Jersey's marine species and ecosystems.** Mechanisms already exist through the Normandy and Brittany Working Groups that are co-ordinated by the Economic Development Department. However, individual bi-lateral relations need to be pursued for specific issues, such as co-ordinating knowledge of marine mammals within the Bay of Mont St Michel and beyond.
- **Development of Renewable Energy Schemes**
- **Nuclear issues**

D6. Develop closer links with other Channel Islands to improve knowledge and sustainable use of the Channel Island marine and coastal environment.

In common with policy 4.4, closer links need to be developed with Guernsey, Sark, Herm and Alderney in relation to marine and coastal issues. Clear areas of co-ordination include approaches to Ramsar site management and the recording of marine species.

D7. Participate in the British Irish Council (BIC) Environment Sub-Group on ICZM to exchange information and experience and develop joint initiatives with BIC member states.

The BIC was created under the Agreement reached in the Multi-Party Negotiations in Belfast in 1998 to promote positive, practical relationships among its Members, which are the British and Irish Governments, the devolved administrations of Northern Ireland, Scotland and Wales, and Jersey, Guernsey and the Isle of Man.

Jersey is an active participant in the BIC Environment Group and is due to host the next Ministerial Meeting in 2009. The ICZM Sub-Group has focused to date on exchanging information and experience on the development of each of the country strategies. Future joint initiatives include Fishing for Litter (FFL) as proposed in A3iii.

5. Delivery mechanisms and measuring progress

5.1 Delivery mechanisms

This Strategy is a non-statutory document that aims to improve co-ordination of both statutory and non-statutory activities within the coastal zone. The Planning and Environment Department will be the main driver behind the delivery of the Strategy, but the success of its implementation will depend upon effective co-operation and communication between those involved in delivering the objectives.

Many of the objectives set out within this document will take time to implement. There are some 'quick-wins' that can be achieved in 2008, but essentially ICZM is a long-term process, and it will be necessary to assess in years to come both the how effective the Strategy is and also the health of the coastal zone - economically, socially and environmentally. This will be achieved by measuring outputs and outcomes, reporting against a set of agreed indicators and periodic review of the Strategy, as outlined below. Lead organisations and partners are identified alongside each of the outputs and outcomes.

5.2 Outputs and Outcomes

The policy options described above have been brought together in a list of outputs and outcomes from which Ministers will be able to keep an eye on the key elements that will help secure the long term sustainability of our coasts and seas.

Table 2: Outputs

Date	Expected Output
2008	<ul style="list-style-type: none"> • ICZM strategy adopted by States of Jersey / COM / Minister for Planning and Environment • Concept of marine spatial planning developed through the Island Plan Review. • Strategic Environmental Assessment of East of Albert and Elizabeth Terminal relocation completed. • Management Plans for Les Écréhous and Les Minquiers agreed by stakeholders. • Marine and Coastal Wildlife Watching Code published. • WiSe Scheme for marine charter operators' accreditation extended to Jersey. • Aquaculture Management Plan developed. • Three geological SSIs designated.
2009	<ul style="list-style-type: none"> • Development of Climate Change Adaptation Measures • Management Plans for SE Coast and Les Pierres de Lecq Ramsar sites developed. • Application of SEA to all development strategies, programmes and plans becomes policy in Jersey through the adoption of the revised Island Plan • Network of SSI sites extended into the marine environment. • Launch project to establish network of marine protected areas. • Part II of FEPA amended to comply with WFD requirements on coastal engineering and building works.

	<ul style="list-style-type: none"> Action Plan produced to establish Water Quality Objectives and Water Catchment Management Areas that take into account the necessary actions to meet the Water Framework Directive related objectives and changing land use patterns.
2010	<ul style="list-style-type: none"> Marine Biodiversity Action Plan produced Network of marine protected areas established Marine classification system completed for all Ramsar sites
2012	<ul style="list-style-type: none"> Marine habitat classification system developed and implemented Species Action Plans developed and implemented for all key marine and coastal species. Register of Buildings and Sites of Architectural, Archaeological and Historic Importance in Jersey to include underwater cultural heritage.
2015	<ul style="list-style-type: none"> Development of sustainability strategies for Jersey's key fish stocks.
2030	<ul style="list-style-type: none"> Where decline in priority species and habitats continues, reasons should be understood and measures in place to minimise losses

Table 3: Outcomes

Date	Expected Outcome
2008	<ul style="list-style-type: none"> Improved management the coastal and marine environments in Les Écréhous and Les Minquiers Ramsar areas with additional benefits to visitors to the reef. Support for eco-tourism. Marine spatial planning integrated within the revised Island Plan. Set up Jersey Coastal Forum.
2010	<ul style="list-style-type: none"> All obligations under MEAs that Jersey is signed up to are met. Increased number and proportion of habitats and species protected. On track for reduction in carbon dioxide emissions levels of circa 52% below 1990 levels by 2030. Greater community awareness of marine and coastal issues.
2012	<ul style="list-style-type: none"> More underwater cultural heritage assets identified and protected.
2015	<ul style="list-style-type: none"> Biodiversity maintained. Water Framework Directive related requirements for good ecological status achieved for coastal waters.
2020	<ul style="list-style-type: none"> Discharges, emissions and losses of hazardous substances reduced to close to zero for man made synthetics
2030	<ul style="list-style-type: none"> Carbon neutrality achieved Loss of priority species' habitats halted 52% reduction in carbon emissions on 1990 levels. Many priority species and habitats increasing More people feel a sense of responsibility for, and stewardship of, biodiversity and understand and enjoy the social, economic and

	environmental benefits of a biologically diverse coastal and marine environment
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5.3 Indicators

40 indicators have been developed across 12 perspectives within the State of Jersey Report 2005, which uses the Pressure-State-Response (PSR) model. 17 of these relate to the marine environment and are listed below. This list has been cross-referenced with the set of indicators established by an EU ICZM Expert Group, for sustainable development of the coastal zone. These indicators have been used to enhance the list within the State of Jersey Report and also reflect policies, outputs and outcomes within the ICZM Strategy. Additional indicators are marked in italics.

Table 4: Marine and coastal sustainability indicators from State of Jersey Report 2005 and EU ICZM Expert Group

Monitoring climate change (Perspective 1)		
2.	Trends in greenhouse gases & substances that deplete the ozone layer	<ul style="list-style-type: none"> • CO₂ emissions by end users (industry, domestic, transport, services) • Total consumption of CFCs
3.	Weather indexes	<ul style="list-style-type: none"> • Average temperature, rainfall patterns, frequency of severe storms • Sea temperature, wave height • <i>Sea level relative to land [check with Tony]</i>
4.	Phenological observations	<ul style="list-style-type: none"> • Annual recording of the first date of key biological events
5.	Policy response to pollutant levels	<ul style="list-style-type: none"> • Compliance with key international standards e.g. Kyoto, Vienna and Montreal protocols and accepted industry guidelines
8.	Sea defences	<ul style="list-style-type: none"> • Change in length / height of sea defences (<i>including length of protected and defended coastline, length of dynamic coastline, are and volume of sand nourishment</i>)
	Natural, human and economic assets 'at risk'³	<ul style="list-style-type: none"> • <i>Number of people living within 'at risk' zone</i> • <i>Area of protected sites within 'at risk' zone</i> • <i>Value of economic assets within 'at risk' zone</i>
Monitoring Jersey's position in contributing to global biodiversity (Perspective 3)		
13.	Status of marine mammals	<ul style="list-style-type: none"> • Cetacean by-catch • Marine mammals species diversity, distribution and abundance
14.	Status of migratory birds	<ul style="list-style-type: none"> • Bird indexes at key sites • Number of site protections through planning process • <i>Number of Red List coastal area species</i>
16.	Changes in land cover	<ul style="list-style-type: none"> • % Land use change • Area of new development on green / brown zone • Number of developments in protected zones under the Island Plan 2002 e.g. marine protection zone, zone of outstanding character, green zone • <i>Area of coastal land converted from non-developed to developed land use.</i>
17.	Land use planning	<ul style="list-style-type: none"> • Number of successful outcomes of environmental mitigation suggested through consultation on planning applications • % protected area of total area by ecosystem • Area of new habitat created under Countryside Renewal Scheme
18.	Protection of valuable features	<ul style="list-style-type: none"> • Number of protected sites (SSIs / Ramsar sites/other designations) in coastal areas or within marine protection zone • <i>Rate of loss of, or damage to, protected areas</i>

³ 'At Risk' zone needs to be established for Jersey

		<ul style="list-style-type: none"> • Status and trend of habitats and species specified through the Marine Biodiversity Action Plan
	Pressure for coastal and marine recreation	<ul style="list-style-type: none"> • Number of berths and moorings for recreational boating
Monitoring contaminated land (Perspective 5)		
19.	Area of land fill sites, mineral workings & quarries	<ul style="list-style-type: none"> • [In marine and coastal locations]
Monitoring marine water quality (Perspective 7)		
26.	Terrestrial inputs to marine waters	<ul style="list-style-type: none"> • Outfall water quality (microbiology and chemical quality) • Radioactivity in the marine environment • Levels of compliance with EC Bathing Water Directive • Success of Jersey Harbours pollution reporting system
		<ul style="list-style-type: none"> • Volume of litter collected per given length of shoreline • Volume of accidental oil spills
Monitoring the biodiversity of Jersey's natural and semi-natural habitats (Perspective 9)		
30.	Success of measures to sustain biodiversity	<ul style="list-style-type: none"> • % of sites owned by States / managed by States for nature conservation • % of owned sites under management that are monitored • % of owned, monitored and managed sites in favourable condition • Success of management techniques, % of passed sites according to objectives set for desired condition
31.	Habitat quality of inter-tidal zone	<ul style="list-style-type: none"> • Biotope quality of the inter-tidal zone including Ramsar site • Index of over-wintering wading birds including Ramsar site • Heavy metal concentrations in shellfish and algae • Quality and extent of seagrass beds
Monitoring the conservation status of key biological populations (Perspective 11)		
34.	Biodiversity status	<ul style="list-style-type: none"> • Scarce and threatened native species (as % of whole) • Protection of species by legislation • Protected species as % of threatened species • Status of non-indigenous invasive pests and diseases
35.	Status of target species	<ul style="list-style-type: none"> • Status of priority Species Action Plan species • Status of indicator species
Monitoring the quality of life for Islanders (Perspective 12)		
39.	Access to the Countryside	<ul style="list-style-type: none"> • Length of new / maintained [coastal] footpaths
Monitoring the marine and coastal economy		
	Volume of port traffic	<ul style="list-style-type: none"> • Number of incoming and outgoing boat passengers • Total volume of seagoing freight
	Patterns of sectoral employment	<ul style="list-style-type: none"> • Full time, part time and seasonal employment in marine and coastal related jobs per sector
	Value of fish landings	<ul style="list-style-type: none"> • Value of landings by species • Number and value of sales of local marine products with local quality labels.
	Visitor centre numbers	<ul style="list-style-type: none"> • Number of visitors to Discovery Pier and Kempt Tower.

5.4 Review

In the long term, the success of the Strategy will depend on its ability to respond to new challenges and accommodate change. It will therefore need to be reviewed regularly. Targets should be set each year by updating the outputs and outcomes table with a complete review every three to five years.

6. Manpower and resource implications

Delivery of this Strategy in some key areas will merely mean more co-ordination in the way in which States Departments and other organisations interact and work together. However, there are a number of significant areas where refocusing of resources are required.

The primary manpower consideration is the need to boost the marine ecology capacity within the Environment Division with the appointment of a Marine and Coastal Projects Officer (MCPO). This will be achieved by internal restructuring. The resource requirements for the development and implementation of a marine habitats classification system and the Marine and Coastal Atlas will be further refined once the marine ecology capacity within the Environment Division has been strengthened and it is clearer how much of this work can be achieved 'in-house'.

The Aquaculture Management Strategy will be completed in 2008 as part of the Island Plan Review. The results of this study will be incorporated within the revised Island Plan.

The appointment of a Schools Environmental Education Officer is being considered more widely and may be funded through revenue raised from Environmental Taxes.

If found to be appropriate, assistance with resources to adopt an internationally recognised certification programme for a well-managed fishery will be sought from the Economic Development Department. This is currently estimated to be in the region of a one off cost of £20,000 to set up, with recurrent annual membership costs of £3-£5k.

6.2 Cost Benefit Analysis of Proposed Policies and Expenditure

Policy Ref	Policy	Costs	Benefits
Aim A: Protect and Conserve Coastal and Marine Wildlife, Habitats, Geodiversity and Cultural Heritage			
A1.	Develop a Marine Biodiversity Action Plan with targets for coastal habitats and species by end of 2010	See above re appointment of MCPO. Can be undertaken by MCPO	<ul style="list-style-type: none"> • Bring protection of marine habitats and species to equivalent of terrestrial • Meet MEAs obligations
A2.	Reduce inputs of nutrients and hazardous chemicals and materials from land-based sources to improve the water quality of marine and coastal waters	Ongoing within existing resources	<ul style="list-style-type: none"> • Unpolluted coastal waters • Supports tourism by ensuring clean bathing waters
A3.	Reduce inputs of nutrients and hazardous chemicals and materials from boat-based sources to improve the water quality of marine and coastal waters	Ongoing within existing resources.	<ul style="list-style-type: none"> • Unpolluted coastal waters • Supports tourism by ensuring clean bathing waters • Identifies Jersey as a responsible place for recreational boating
A4.	Reduce the impact of fishing activities on non-target species and habitats	Ongoing within existing resources.	<ul style="list-style-type: none"> • Protection of Jersey's coastal and marine habitats and species for future generations. • Jersey perceived as a well-managed fishery, which will facilitate adoption of internationally recognised certification programme.
A5.	Identify the potential threats to Jersey's coastal zone posed by climate change	Ongoing within existing resources.	<ul style="list-style-type: none"> • Jersey has in place strategies to mitigate and adapt to impacts of climate change over the long term.
A6.	Develop a fully representative network of marine and coastal protected areas.	Can be undertaken by MCPO	<ul style="list-style-type: none"> • Protection of Jersey's coastal and marine habitats and species for future generations • Meet obligations under marine and coastal MEAs to protect habitats and species

Policy Ref	Policy	Costs	Benefits
A7.	Identify and designate a network of coastal geological sites that is geologically meaningful and represents Jersey's full geodiversity	Ongoing within existing resources.	<ul style="list-style-type: none"> • Protection of Jersey's coastal geological sites for future generations
A8.	Identify and designate coastal and maritime heritage sites	Additional (voluntary?) resources required.	<ul style="list-style-type: none"> • Protection of Jersey's coastal and maritime heritage sites for future generations. • Meets obligations under Valetta Convention.
A9.	Identify the potential threats to Jersey's marine and coastal habitats and species and also Jersey's disease-free status posed by the introduction of alien species and put in place measures to minimise these threats where possible.	Ongoing within existing resources.	<ul style="list-style-type: none"> • Protection of Jersey's coastal and marine habitats and species for future generations
Aim B: Increase Understanding of Jersey's Marine and Coastal Environments			
B1.	Draw together a Marine and Coastal Database to make better use of existing data and information	Requires appointment of MCPO.	<ul style="list-style-type: none"> • Existing data and information used to best advantage in protection of marine and coastal environment. • Facilitates public access to environmental information, thereby fulfilling requirements under Aarhus Convention. • Facilitates strategic assessment of how and where to direct future research.
B2.	Develop marine habitat classification for Jersey as a tool to aid the management and conservation of marine habitats	Requires appointment of MCPO. Additional resources likely to be required to complete classification. Will be clearer once MCPO is appointed.	<ul style="list-style-type: none"> • Brings understanding of marine and coastal habitats to equivalent of terrestrial. • Underpins management of marine and coastal resources for future generations.

Policy Ref	Policy	Costs	Benefits
B3.	Develop a Marine and Coastal Atlas for Jersey to improve marine and coastal spatial information	Requires appointment of MCPO with ongoing input from existing resources. Additional resources likely to be required to develop and maintain Atlas. Will be clearer once MCPO is appointed.	<ul style="list-style-type: none"> • Brings understanding of marine and coastal habitats to equivalent of terrestrial. • Underpins management of marine and coastal resources for future generations. • Facilitates public access to environmental information, thereby fulfilling requirements under Aarhus Convention.
B4.	Co-ordinate information and data requirements to focus requests for student research projects	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Provides invaluable research at no/low cost to the States of Jersey. • Assists local students in making informed choices on research projects.
B5.	Investigate the feasibility and potential costs of setting up a marine research laboratory for use by visiting schools and universities.	Cost of feasibility study. External funding to be sought.	<ul style="list-style-type: none"> • Jersey could become a centre of excellence for marine research. • Added value benefit of attracting researchers to study Jersey's marine and coastal environment.
Aim C: Promote and Encourage Sensitive Use of Natural Resources			
C1.	Ensure policies within the Island Plan Review reflect the principles of the ICZM Strategy	Aquaculture Management Strategy to be completed as part of Island Plan Review. Ongoing input from existing resources.	<ul style="list-style-type: none"> • Integration of ICZM plan within the Island Plan Review ensures inclusion of policies to manage marine and coastal environment sustainably for future generations.
C2.	Develop Management Plans for all Ramsar sites and future protected areas	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Ensures wise use of Ramsar areas. • Stakeholders included within management plan process. • Protection of fragile resources. • Reduced impact through increasing visitor awareness of appropriate behaviour.

Policy Ref	Policy	Costs	Benefits
			<ul style="list-style-type: none"> • Decreased need for enforcement/rescue. • Increased community understanding and support for management decisions. • Greater community ownership of the Ramsar site • Greater community involvement in conservation activities. • Meeting obligations of MEAs. • Benefits Jersey's international reputation as responsible jurisdiction that takes MEA obligations seriously.
C3.	Encourage better returns for Jersey caught marine species by investigating the possibility of supporting the adoption of an internationally recognised certification programme, which promotes well managed fisheries.	£20k one-off start up costs, plus £3-£5k recurrent annual costs and £10k every 5 years for renewal. Ongoing input from existing resources. Funding to be sought from EDD.	<ul style="list-style-type: none"> • Increase in returns for Jersey fish produce due to recognition of well-managed fishery. • Supports economic diversity. • Benefits Jersey's international reputation as a responsible jurisdiction that takes management of fisheries seriously.
Aim D: Work with Stakeholders			
D1.	Ensure that effective co-ordination arrangements are in place across the States of Jersey and other interests with a role in the coastal zone to facilitate the ICZM process in Jersey.	Requires appointment of MCPO with ongoing input from existing resources across all States Departments.	<ul style="list-style-type: none"> • Co-ordinated approach to marine and coastal issues.
D2.	Through ECO-ACTIVE, promote greater community understanding of marine and coastal issues.	Ongoing within existing resources.	<ul style="list-style-type: none"> • Protection of fragile resources. • Reduced impact through increasing visitor awareness of appropriate behaviour. • Decreased need for enforcement/ rescue. • Increased community understanding and support for management decisions.

Policy Ref	Policy	Costs	Benefits
D2i.	Use the Environmental Visitor Centres, Discovery Pier, Kempt Tower and the Maritime Museum to raise awareness of current marine and coastal issues.	Ongoing within existing resources.	<ul style="list-style-type: none"> • Greater community ownership of the marine and coastal environment. • Greater community involvement in conservation activities. • Meets obligations for awareness raising under various MEAs.
D2ii	Revise the Marine Mammal Sightings Database to include basking sharks and other marine wildlife and increase sightings reported.	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Protection of fragile resources. • Reduced impact through increasing visitor awareness of appropriate behaviour. • Decreased need for enforcement/ rescue. • Increased community understanding and support for management decisions. • Greater community ownership of the marine and coastal environment. • Greater community involvement in conservation activities. • Meets obligations for awareness raising under various MEAs.
			<ul style="list-style-type: none"> • Reduced impact through increasing boat users' awareness of appropriate behaviour. • Increased community understanding and support for management decisions. • Greater community ownership of the marine species. • Greater community involvement in conservation activities. • Meets obligations under ASCOBANS •

Policy Ref	Policy	Costs	Benefits
D2iii.	Encourage the involvement of local marine life experts and enthusiasts and local divers within the Biodiversity Partnership to improve knowledge of our intertidal and marine habitats and species.	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Increased community understanding and support for management decisions. • Greater community ownership of marine and coastal habitats and species. • Greater community involvement in conservation activities. • Meets obligations under various MEAs
D2iv	Explore the possible involvement of local divers to improve knowledge of our underwater cultural heritage	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Increased community understanding and support for management decisions. • Greater community ownership of underwater cultural heritage. • Greater community involvement in heritage conservation activities. • Meets obligations under Valetta Convention.
D3	Ensure growth in marine leisure is sustainable.	Requires appointment of MCPO with ongoing input from existing resources.	<ul style="list-style-type: none"> • Increased community understanding and support for management decisions. • Greater community involvement in marine conservation activities. • Supports economic diversity. • Supports and promotes sustainable tourism. • Meets obligations under various MEAs.
D3i	Encourage all charter vessel operators to become accredited under the WiSe Scheme	Ongoing within existing resources.	<ul style="list-style-type: none"> • Increased community understanding and support for management decisions. • Greater community involvement in marine wildlife conservation activities. • Supports and promotes sustainable tourism.

Policy Ref	Policy	Costs	Benefits
			<ul style="list-style-type: none"> • Supports economic diversity. • Meets obligations under various MEAs.
D3ii	Develop a Marine and Coastal Code of Conduct	Ongoing within existing resources.	<ul style="list-style-type: none"> • Protection of fragile resources. • Reduced impact through increasing visitor awareness of appropriate behaviour. • Decreased need for enforcement/ rescue. • Increased community understanding and support for management decisions. • Greater community ownership of the marine and coastal environment. • Meets obligations for awareness raising under various MEAs.
D4	Work with schools to generate greater understanding of the value of marine and coastal environment	Requires appointment of Schools Environmental Education Officer with ongoing input from existing resources.	<ul style="list-style-type: none"> • Protection of fragile resources. • Reduced impact through increasing school pupils' awareness of appropriate behaviour. • Increased school pupils' understanding and support for management decisions. • Greater ownership of the marine and coastal environment by schools. • Greater schools involvement in conservation activities. • Meets obligations for awareness raising under various MEAs.
D5	Develop closer links with France to improve knowledge and sustainable use of the Channel Island marine and coastal environment.	Ongoing through existing mechanism. Would be further improved with appointment of MCPO with specific responsibility.	<ul style="list-style-type: none"> • Improved knowledge and understanding of Jersey's marine and coastal environment in the context of the Baie of Mont St Michel. • Improved recognition of impact of maritime

Policy Ref	Policy	Costs	Benefits
D6			<p>neighbours on each other.</p> <ul style="list-style-type: none"> • Potential for cost-effective research. • Improved relations with France, especially in relation to use of offshore reefs for recreation.
	Develop closer links with other Channel Islands to improve knowledge and sustainable use of the Channel Island marine and coastal environment.	Ongoing through existing mechanism. Would be further improved with appointment of MCPO with specific responsibility.	<ul style="list-style-type: none"> • Improved knowledge and understanding of Jersey's marine and coastal environment in the context of the Channel Islands. • Improved recognition of impact of maritime neighbours on each other. • Potential for cost-effective research.
D7	Participate in the British Irish Council (BIC) Environment Sub-Group on ICZM to exchange information and experience and develop joint initiatives with BIC member states.	Ongoing through existing mechanism. Would be further improved with appointment of MCPO with specific responsibility.	<ul style="list-style-type: none"> • Improved knowledge and understanding of Jersey's marine and coastal environment in the context of the wider British Isles and Ireland. • Improved recognition of impact of maritime neighbours on each other. • Potential for cost-effective research.