



Department of the Environment

# State of Jersey Report 2005-2010





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### Foreword from the Minister

The Chief Minister, in his recent policy statement, asserted that: “The Environment Department must become the environmental conscience of our government and our community”.

As Minister responsible for the Department of the Environment, I am very willing to take up this role and am pleased to publish this comprehensive report on the progress made across a wide range of environmental areas over the last six years.

Since 2005, major strategies have been debated and agreed in respect of waste management, water resources legislation, transport, the rural economy and a new Island Plan and the Eco-Active campaign and brand is now well recognised.

Whilst good progress has been made, there is still much to do, and each section of this report includes details of policies that need to be developed and extended over the next five year period.

Environmental policies centre on the wise use of resources. Jersey has made an international commitment to the Kyoto protocol in respect of reducing “greenhouse gas” emissions. Achieving the target set by Kyoto will require substantial changes to the way that we use energy into the future and the policies developed within the forthcoming Energy Strategy must address this fundamental issue.

Our consumer society encourages us to discard items that are still useful in order to purchase the latest version. These “waste” items are not waste, but recoverable resources. The government must lead the way in encouraging the minimisation of waste wherever possible. Facilities and activities need to be expanded to ensure that individuals and businesses can easily play their part in recycling “waste” materials.

The recent dry spell has underlined the importance of careful water management. In addition to water metering, techniques such as rain water harvesting, grey water systems and Sustainable Urban Drainage Systems (SUDS) will need to be incorporated into future water use strategies.

The challenges over the next five years are substantial. We will continue to monitor our progress and will set increasingly stringent targets during this time.

#### **Robert Duhamel**

Minister for Planning and the Environment  
Department of the Environment  
December 2011





## Executive Summary



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### How this report is structured

Welcome to the second edition of the State of Jersey Report 2011 which provides an update on the first State of Jersey Environment Report which was published in January 2005. This report covers the 6 year period from 2005 to the end of 2010.

This report is published under the Eco-Active banner, as part of the Department of the Environment's commitment to providing environmental information to the community. This report will be available as a download on the [www.gov.je](http://www.gov.je) website and a limited number of copies will be made available in libraries. Further information about the Eco-Active campaign can be found in the final chapter of the report and on [www.gov.je](http://www.gov.je).

The 2005 Report was Jersey's first environmental benchmark report. It examined the state of Jersey's environment and identified environmental priority areas that would be monitored using a set of environmental indicators. The priority areas identified were:

- Energy and Climate;
- Fresh and Marine Waters;
- Waste;
- Transport;
- Natural Environment.

The indicators have been refined over the reporting period and this report presents an update on the environmental performance in each of the areas listed above.

We have used a traffic lights system; red, amber or green (RAG), to give a quick view of how each indicator is performing; red meaning static or a declining trend; amber meaning static or slight change; green representing increasing trends or good performance. The RAG table on the following pages gives a snapshot of the indicators divided into the different theme areas.

The report is divided into five chapters. Each chapter is structured in the same way.

- Introduction;
- Update on indicators;
- Report back on the progress made between 2005 - 2010;
- Priority actions for the next period 2011-2015.

The next State of Jersey report will present the progress made in the five environmental priority areas which will continue to be monitored using the indicators in this report. The report will cover the period 2011 to 2015 and will be published in 2016.



## The indicators at a glance

This table provides an overview of the trend for each of the indicators over the period, 2005 – 2010. The table reports progress using a traffic light; red, amber, green to give an overview of progress for each indicator. The symbols alongside the indicator show the trend that has been reported.

Full details of each indicator are included in the relevant chapter of the report and they provide much more information on the way the data has been collected and interpreted.

Ref:	Indicator description	RAG	
<b>Energy &amp; Climate Change</b>			
E1	The energy consumption of hydrocarbons by end final user		
E2	Greenhouse Gas Emissions		
E3a	Weather indexes - Length of growing season and average air temperature	N/A	
E3b	Weather indexes - Heavy Rainfall	N/A	
E3c	Weather indexes - Cold and Warm Spell Durations	N/A	
E3d	Weather indexes - Seasonal Rainfall Patterns	N/A	
E3e	Weather indexes - Sea Temperature	N/A	
<b>Fresh Waters</b>			
FW1a	The volume of drinking water supplied by Jersey Water per annum		
FW1b	Depth of the water table at measured sites		
FW2a	Frequency of burst water mains		
FW2b	Percentage of water connections metered		
FW3a	Chemical quality of groundwater		
FW3b	Chemical quality of surface water		
FW3c	Biological water quality of surface waters		
FW3d	Number and type of reported pollution incidents		
FW3e	Number of prosecutions and outcomes under the Water Pollution Law. Levels of compliance with conditions set on discharge permits/certificates		
FW3f	Fertilizer application rates		





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Marine waters			
MW1a	Levels of compliance with EC Bathing Water Directive		
MW1b	Radioactivity in the Marine Environment		
MW1c	Toxic algal testing		
MW1d	Heavy metal concentration in shellfish and algae		
MW2a	Dolphin species diversity, distribution and abundance		
MW2b	Status of indicator species - Whelks		
MW2b	Status of indicator species - Ormers		
MW2b	Status of indicator species - Lobsters		
MW3a	Number and status of RAMSAR sites		
MW3b	Biotope quality of the inter-tidal zone including Ramsar site	N/A	
Waste			
WR1a	Total non-inert waste reused/recycled and composted per annum		
WR1b	Tonnes of solid waste arisings (non-inert) per capita per annum		
WR2a	Recycling – total percentage of recyclables collected per annum		
WR2b	Number of States of Jersey recycling facilities available to the public		
WR3	Total liquid waste (sewage) processed per annum	N/A	
WR4a	Annual CRS spend on waste reduction		
WR4b	Chemical quality of key polluted sites		
Transport			
T1a	Annual traffic flow at 5 major sites		
T1b	Volume of road traffic by type of vehicle		
T2	Annual atmospheric pollutant monitoring: e.g. nitrous oxides, volatile organic compounds, ground level ozone, particulates, radioactive substances		



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Natural Environment			
NE1a	Area of new habitat created under Countryside Renewal Scheme		
NE1b	Area of farmed land under environmental stewardship schemes		
NE1c	Status of butterfly indicator species across key habitat types	N/A	
NE2	Total area farmed	N/A	
NE3	Length of new footpaths created under the Countryside Renewal Scheme		
NE4a	The Conservation of Wildlife (Jersey) Law 2000		
NE4b	The development of Biodiversity Action Plans for protected species		
NE5a	Birds - Status of 12 species of garden birds		
NE5b	Birds - Numbers of wading birds		
NE5c	Birds - Numbers of breeding birds		
NE5d	Birds - Number of site protections of selected nesting birds through planning process (as measured by inclusion of recommendations on permit)		
NE5e	Bats - Number of roosts protected through the development control process		
NE5f	Bats - Bat species diversity and abundance at key foraging sites	N/A	
NE6	Incidence of crop pests and diseases		
<p>  - indicator static or stable                 - improving trend                 - worsening trend   - performance good/ as expected                 - performance poor/ not compliant         </p>			



## Summary of Environmental Performance 2005 - 2010

The information from the indicators provides a valuable resource for identifying trends and challenges for the environment in Jersey. The indicators will continue to be monitored over the coming 5 years to provide information on trends and an update on environmental performance.

### 1. Energy and Climate

The consumption of energy has a profound effect on quality of life, the economy and social equity. Jersey's population, like most of the developed world, is dependent on hydrocarbon fossil fuels to support industrialised economies and food production. Greenhouse gases (GHGs) are produced when energy is extracted from hydrocarbon sources and the overwhelming evidence is that these GHGs are causing the climate to change in a way that will most likely have significant and detrimental effects on global ecosystems and human habitation of the planet.

Jersey is a signatory to the Kyoto Protocol signalling to the international community that it wishes to take action and reduce the Island's emissions of GHGs. Critically the local consumption of hydrocarbon energy must be reduced alongside other longer term options like switching to renewably generated energy. The benefits of a reduction in imported hydrocarbon energy are threefold and centre on security of supply, affordability and sustainability.

Jersey is preparing an Energy White Paper which will propose internationally acceptable emissions reduction targets. The EU members have set a reduction target for 2050 of 80% lower than 1990 levels.

Current local emissions trends on their own will not lead to sufficient reductions in GHGs to achieve the EU targets and far more radical steps need to be taken if the Island is to achieve the substantial emissions reductions that other jurisdictions are signed up to. These are likely to include switching to utility-scale renewably generated energy alongside technological advances for example increased numbers of electric vehicles so reducing the amount of emissions arising from road fuel.

Analysis of meteorological data has shown that the Island's weather appears to be displaying patterns consistent with global patterns of climate change, particularly the marked warming trend over the last 30 years.

### 2. Waste - High Levels of Waste Production.

Excessive waste generation represents a misuse of resources. It causes pollution and carries a financial cost for its treatment. Locally total non-inert waste generated increased year on year until 2008 when changes to the global economy affected this growth trend. As the economy



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recovers and the number of local households increases, there is predicted to be a rise in solid waste, which will need to be addressed

In 2010 108,158 tonnes of inert material was received and used in the filling of the La Collette reclamation site and 60,229 tonnes of material was separated and reused as secondary aggregates. This figure is fairly typical of previous years but varies depending on the activity in the construction and earth moving market.

Initial efforts to encourage recycling have been implemented and have shown that the people of Jersey do support the 'reduce, reuse and recycle' programme. The Solid Waste Strategy set a recycling target of 32% by 2009 which was achieved in that year. However, a recycling rate of 31% was recorded in 2010. Recycling rates in Jersey are comparatively low in comparison with other jurisdictions and Jersey must continue to increase the range of facilities available for domestic and commercial recycling.

### 3. Fresh and marine waters

The average annual quantity of water available per person (approximately 440 m<sup>3</sup> water) makes Jersey one of the driest places in the UK. On average, 97% of the Island's public water supply is from surface water sources which are largely derived, and thus reliant, upon a high groundwater level.

The Water Pollution (Jersey) Law 2000 has successfully been used to tackle the reduction of point source pollution. The total number of reported pollution incidents peaked at around 160 incidents per year during the three years after the Law was introduced. Thereafter the number gradually reduced to around 100 incidents per year (2004-2010).

However, data shows that Jersey still has elevated levels of nitrate in streams and groundwater compared to many other places, and certainly higher than most places in Europe. Although not the sole source, agricultural sources in the Island are significant, because agriculture accounts for over 50% of the land coverage. A large scale project with the Department of the Environment and the agricultural industry is underway to tackle this issue.

Jersey's 800 square miles of territorial waters support not only unique and varied ecosystems such as those attracting international recognition e.g. designation as Ramsar sites, but that also support a vibrant fisheries and aquaculture industry.

Continued and significant steps are being taken to balance environmental and economic success with the adoption of the Coastal Zone Management Strategy in 2009 alongside the Granville Bay Treaty. This Treaty acts as a mechanism to conserve and enhance the local fishing industry on a regional scale involving negotiation with the neighbouring French administrations.



Despite considerable progress in the last few years there are some major issues that need to be addressed in the short and medium term. These are;

- protecting over-exploited fish stocks and marine biodiversity,
- mitigating any potential effects of maritime renewable energy projects,
- climate change and maintaining existing fisheries, and
- treaties, Memoranda of Understanding and international agreements.

#### 4. Transport

In recognition of the challenges associated with transport, the Sustainable Transport Policy (STP) was formally adopted by the States in 2010. Road transport accounts for over one third of final energy consumption in Jersey and is the key contributor to air pollution. Nitrogen Dioxide (NO<sub>2</sub>) and particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) from road transport emissions present the greatest challenge to Jersey in terms of improving air quality.

The draft Air Quality Action Plan developed by the Environment Department in 2010 -2011 identifies the need, as a minimum, for the protection of human health, to monitor both Nitrogen Dioxide and particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) pollutants.

Implementation of the recommendations within the STP will improve air quality both by reducing the amount of road traffic and by increasing the number of

low emission vehicles. The STP sets an overall target of reducing peak hour traffic levels to and from St Helier by 15% by 2015. The electric car market is moving towards the commercial production of all-electric vehicles and it is likely that these innovations will reduce the impact of personal car use where it is unavoidable.

Vehicle Emissions Duty (VED) was introduced in September 2010 to encourage the purchase of low emission new vehicles. European legislation also requires new models of vehicles to be extremely fuel efficient. The States of Jersey car fleet has moved substantially to low emission / high efficiency small petrol or diesel cars in the last 2 years reducing emissions as well as making efficiency savings. This is an example of environmental practice making good business sense.

#### 5. Natural Environment

Jersey protects its natural environment in various ways, but the Island Plan 2011 is the main document which addresses the tension between the protection of biodiversity, habitats and the character of the coast and countryside and the pressure for new development.

The Island Plan, approved by the States in June 2011, is based on a set of strategic principles which promote a more sustainable pattern of development in the Island that ensures the optimal use of already developed land whilst meeting the Island's development needs and reducing the need to travel.



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This should help to ensure that the development pressure on the Island's most sensitive coast and countryside locations is reduced and that there is a strong policy regime to ensure the protection of these environments and their inherent biodiversity.

It also responds to the strong public concern expressed in recent years about the loss of greenfield land to meet, for example, the Island's housing needs, which was a feature of the 2002 Island Plan resulting in the development of agricultural land on the edge of the Built-up Area to deliver new homes. Increasing concern has also been expressed about the erosion of the quality of the Island's most sensitive landscapes and, in particular, those around our headlands and bays, through the approval of new development schemes to replace existing buildings and complexes, manifest in public events such as the 'Line in the Sand' campaign, organised by the National Trust for Jersey.

The new Island Plan 2011 contains a raft of new and enhanced policies to protect the natural environment, including the designation of a new

Coastal National Park and the Marine Zone, which are both subject to the strongest presumption against new and inappropriate development. The Plan also includes new policies to protect and enhance biodiversity and habitats throughout the Island, together with proposals for the designation of wildlife corridors to complement the eleven ecological sites of special interest (SSI) already designated.

The planning process provides a transparent process for evaluating potential harm to the natural environment and biodiversity, and the requirement for environmental impact assessment, now enshrined in the Planning and Building (Jersey) Law 2002, further helps to ensure that adverse impacts of development are recognised and where possible mitigation measures are provided to address potential damage.

Over 500 hectares of the Island are managed for nature conservation by the Department of the Environment, of which 360 hectares have been designated as ecological SSIs.



### Environmental Challenges identified for 2011 - 2015

This section provides a summary of the environmental challenges for 2011-2015 that are identified in the report. Further details for each of these challenge areas are included in the full report.

#### Energy and climate

Jersey must indicate to the international community that it is committed to playing its part in global actions to reduce greenhouse gas emissions.

In order to address this we must:

- i) Agree targets for the reduction in energy use and in greenhouse gas emissions within the framework of an Energy Policy whose aim is to deliver secure, affordable and sustainable energy;
- ii) Continue and expand key existing workstreams that support the carbon and energy reduction targets i.e.
  - Considering ways in which The Energy Efficiency Service can be applied to the able to pay sector;
  - Delivering the legislative and commercial framework for the long-term exploitation of renewable energy e.g. tidal and off-shore wind power;
  - Continuing to deliver more energy efficient buildings and a reduction in energy use through the application and enhancement of

- planning policy and building bye-laws; and
- Moving to a low carbon economy where green skills contribute to economic diversity.

- iii) Future proofing - developing strategies to ensure climate resilience is incorporated into policy and decision-making.

#### Water – fresh and marine

##### Fresh water

- Ensuring security of potable supply - Working with Jersey Water to enable them to deliver wholesome water in a sustainable way,
- Managing water resources- Continue to manage and develop our understanding of Jersey's water resources to enable us to protect that resource, particularly during periods of drought, for the benefit of the Island as a whole,
- Applying a more holistic way of working - Ensure that we are delivering an integrated and holistic approach to the protection of our aquatic environment by more thematic working, for example applying the principles of the Water Framework Directive,
- Responding to identified key pressures - Continue to develop and deliver strategies to mitigate identified pressures



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within the fresh (and marine) water environment,

- Encouraging stakeholder involvement and responsibility - Investigate ways to communicate with stakeholders and promote public engagement in water quality and water resources issues.

### Marine Waters

- Continue to ensure compliance with legislation and conventions (e.g. OSPAR, ASCOBANS)
- Implementation of management plans for all Ramsar sites,
- Development of Marine Spatial Plan,
- Establish network of Marine Protected Areas (MPAs).

### Waste and recycling

- Develop a new Liquid Waste strategy to include replacement or renewal of the Bellozanne liquid waste treatment plant
- Review and revise the Solid Waste Strategy
- Continue to abide by internationally agreed standards in future waste management planning.
- Continued improvement in recycling rates
- Set waste minimisation targets as part of the Solid Waste Strategy Review.

### Transport

Progress in this area over the last 5 years has been focused on the development and adoption of the sustainable transport policy (STP) and the introduction of vehicles emissions duty (VED) to fund sustainable transport initiatives.

The challenges ahead are;

- To implement the STP,
- Implementation of the Island Plan to ensure that spatial planning supports the objective of reducing the need for car dependency,
- Ensure that the target revenue from VED is achieved (by reviewing the rate of VED) and to continue to reinvest a proportion of that money in transport programmes

The key actions are:

- i. Implementation of Sustainable Transport Policy target areas:
  - Bus service improvements,
  - Walking and cycling infrastructure improvements,
  - Workplace and school travel plans,
  - public awareness campaigns
  - Reviewing car parking provision.
- ii. Implementation of Island plan policies;
  - To ensure that development is located where it reduces the need to travel and/or provides a greater choice of more sustainable travel options;
  - To deliver sustainable transport infrastructure to support and encourage walking, cycling and bus use through direct provision as part of development proposals, travel planning and/ or planning obligations;
  - Including a proposal to revise supplementary planning guidance which sets out parking standards expected in





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- new development, to bring about less car use.,
- iii. Implement air quality monitoring programme to continue to monitor emissions from vehicles;
- Review current air quality monitoring programme,
  - Continue to make air quality information publicly available.

### Natural Environment

The island's terrestrial biodiversity continues to suffer from encroaching development and inadequate statutory protection.

In order to address this we must:-

- Strengthen and enforce legislation for the protection of species and their habitats by reviewing the Conservation of Wildlife Law,
- Continue to support and promote agri-environmental initiatives,
- Ensure that new Island Plan policies for the protection and enhancement of the natural environment and biodiversity are given appropriate weight in decision-making,
- Continue with long term monitoring (implement a long term monitoring strategy/framework).

### Strategies for Sustainability

Strategies for environmental sustainability cannot be looked at in isolation. They must recognise and create a synergy between the environment, economy and social needs. The strategies that will be developed over the coming 5 years

to address the challenges that have been highlighted in the State of Jersey report include the following:-

- Energy Policy, including a renewable energy component;
- A low-carbon economy including inward investment and Cleantech opportunities and a 'green workforce,
- Improved energy efficiency for all sectors,
- Compliance with Multi-lateral Environmental Agreements to raise Jersey's international reputation as an environmentally responsible jurisdictions,
- Increased diversification and growth in the rural sector alongside the protection of our natural spaces for example, the Coastal National Park,
- Developing and maintaining a regulatory regime in line with best practice and global commitments to ensure a healthy local population and environmental quality,
- Climate Resilience to ensure resilience is incorporated into policy and decision making in recognition of a changing climate,
- Implementation of the new Island Plan to deliver a more sustainable pattern of development in the Island that ensures the optimal use of already developed land whilst meeting the Island's development needs and reducing the need to travel.



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Energy and Climate



This first chapter examines the interlinked areas of energy use and climate.

The consumption of energy has a profound effect on quality of life, the economy and social equity. Jersey's population, like most of the developed world, is dependent on hydrocarbon fossil fuels to support industrialised economies and food production. Greenhouse gases (GHGs) are produced when energy is extracted from hydrocarbon sources and the overwhelming evidence is that these GHGs are causing the climate to change in a way that will most likely have significant and detrimental effects on global ecosystems and human habitation of the planet.

Jersey is a signatory to the Kyoto Protocol signalling to the international community that it wishes to take action and reduce the Island's emissions of GHGs. One important way to achieve this is to reduce the local consumption of hydrocarbon energy alongside other longer term options like switching to renewably generated energy.

The benefits of a reduction in imported hydrocarbon energy are threefold and centre on security of

supply, affordability and sustainability:

- There will be an increase in **energy security** since nearly all of Jersey's energy is imported making the Island susceptible to interruptions in global energy supplies and the international price volatility associated most strongly with hydrocarbon fuels;
- For individuals, and in particular socio-economically vulnerable individuals, it is important that energy use can be managed and reduced to ensure that their **energy demand** remains affordable especially against a backdrop of rising global energy prices;
- Using less energy reduces the **environmental impacts** of that energy source;

Thus broadly we would aim to see a reduction in overall energy demand over time with an accompanying reduction in GHGs. In this chapter alongside energy and GHG trends, we look at locally recorded weather patterns which act as indicators for global climatic trends.





**1.1 The Indicators**

**1.1.1 Energy use**

Nearly two-thirds of all energy used in Jersey is a kind of hydrocarbon petroleum product with petrol and diesel accounting for a quarter of final energy demand. The remainder is electricity, the vast majority of which is also imported

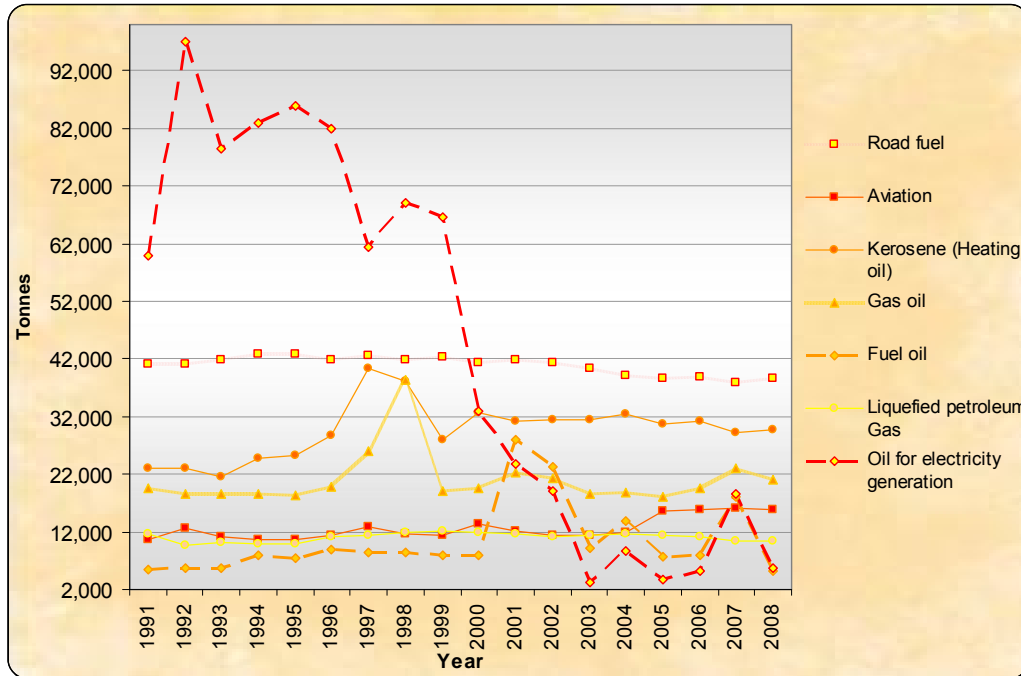
via subsea connections from France where it is generated from nuclear and hydro sources, a small amount of on-island generation occurs at the la Collette plant from heavy fuel oil but this is below 10% of total use.

**Indicator E1 – Energy Consumption**

Indicator	RAG Status	RAG Comment
E1 The energy consumption of hydrocarbons by end users	 <b>AMBER</b> 	<p>Green – A clear and consistent decline in the consumption of hydrocarbon products</p> <p>Amber – static or slight declines in energy consumption</p> <p>Red – A clear and consistent increase in the consumption of hydrocarbon products</p>

Graph 1.1 shows a long term trend of final energy consumption of petroleum products. A very clear decline can be seen in the amount of oil imported for electricity generation which has occurred because on-island generation has been largely displaced by imported electricity from France; the use of electricity is discussed further in the next indicator. The consumption of

liquified petroleum gas (LPG) and kerosene (heating oil) have remained fairly static in the last decade whilst road fuel consumption has declined slightly due to the production of more efficient vehicles. Patterns in aviation fuel consumption and frequency of flights are less clear to interpret since planes refuel both on and off-island.



Source: Source Jersey Energy Trends (SoJ - Statistics Unit)

**Graph 1.1:** Final energy consumption of petroleum products (NB Validated data is not yet available for 2009 onwards but the current trend is expected to be maintained).

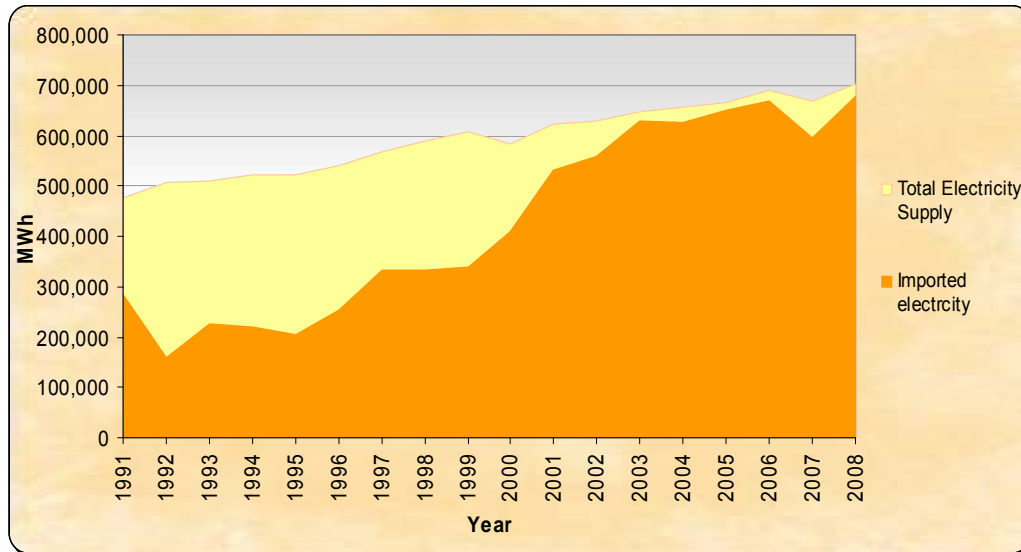
The above indicator tells us about consumption of petroleum products and consequent effects on Jersey’s GHG emissions. However it does not account for non-hydrocarbon energy use i.e. imported electricity.

The most dramatic change within the electricity sector has been the growth in imported supply. Throughout most of the 1990’s imports accounted for between 40% and 60% of public electricity supply, by 2008 imported electricity accounted for 96% of the total.

Imported electricity is ‘low carbon’ because it is sourced from nuclear and hydro generation rather than from the combustion of hydrocarbons. Although the environmental impacts of imported electricity are arguably far less than hydrocarbons, the issues of

affordability and security of supply associated with this imported energy still apply. However security and resilience issues will be further mitigated with the connection of the 3<sup>rd</sup> interconnector between Jersey and France and the overall stability of this method of importation. Jersey Electricity PLC (JE) signed a new 10 year with Electricite de France (EDF) which, according to JE, will be significant in maintaining reliable and affordable supplies to 2023.

Following international carbon accounting practice, the (albeit a small) amount of carbon associated with electricity produced in France is accounted for by the French national GHG inventory not Jersey’s since inventories are production not consumption based.



Source Jersey in Figures

**Graph 1.2:** Jersey's total electricity supply and imports. (NB Validated data is not yet available for 2009 onwards although the current trend is expected to be maintained)

Graph 1.2 shows how overall electricity demand has grown steadily over the last two decades. The increase is equivalent to an average of about 2% per year over

the period 1991 to 2008. Total consumption in 2008, at 652,000 MWh, was some 44% higher than in 1991.



## 1.1.2 Greenhouse gas emissions

Jersey reports its carbon emission to AEA which is the agency that collates the UK's carbon emission data. AEA then categorize it into 'source' and 'sink' categories according to the International Panel on Climate Changes Guidelines for National Greenhouse Gas Inventories data. In 2009 this data was disaggregated from total emissions and made available to Jersey providing the most accurate and detailed information to date

(including hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs)) information. Previously the States of Jersey Statistics Unit made provisional carbon estimates based on the carbon emitted from imported energy and published these annually in the Jersey Energy Trends Report. Now the data is categorized into the different sources and converted into carbon equivalents for more easy comparison.



## Indicator E2 – Trends in greenhouse gasses

Indicator	RAG Status	RAG Comment
E2 - Greenhouse Gas Emissions	 <b>AMBER</b> 	<p>Green – A clear and consistent decline in GHG emissions</p> <p>Amber – static or slight declines in GHG emissions</p> <p>Red – A clear and consistent increase in GHG emissions</p>

Between the Kyoto baseline year of 1990 and 2009, the Island achieved a 28% fall in overall emissions (from 612,056 to 438,751 t/CO<sub>2</sub> eq see Graph 1.3). This appears to be good progress since many countries have set targets of a 20% reduction by 2020 and the Island has already exceeded this.

But this impressive reduction in carbon dioxide emissions is mostly attributable to the one-off switch from the production of electricity on-island to imported electricity via two sub-sea cables to the French mainland in the 1990s and early 2000s (See Graph 1.2). However, the savings arising from this switch have already been ‘banked’ and any further savings will need to be made as a result of our reduced energy use and more sustainable fuel choices. Thus the reduction in GHG emissions to date is a less sustainable way to reduce emissions since they cannot be repeated. For this reason the indicator is only awarded an amber status.

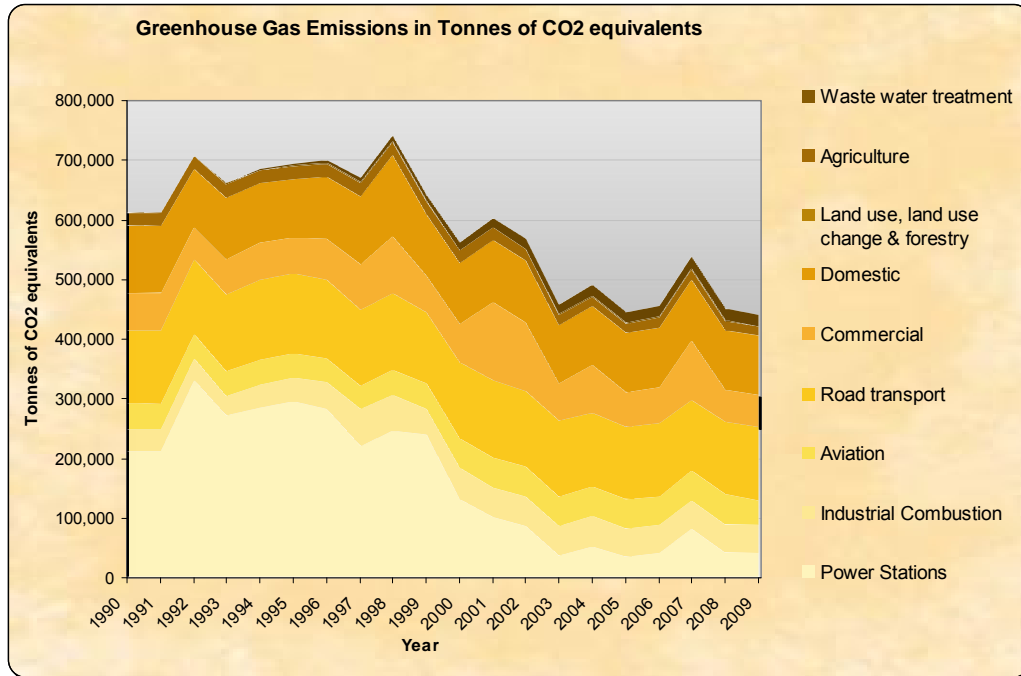
An Energy White Paper is currently in preparation which will propose emissions reduction targets. The EU members have set a reduction

target for 2050 of 80% lower than 1990 levels. For Jersey to achieve this target will require a reduction in emissions to approximately 122,000 tonnes CO<sub>2</sub> equivalents per annum.

Given that total emissions in 2009 were approximately 438,000 t/CO<sub>2</sub> the Island will have to reduce its annual emissions by some 316,000 t/CO<sub>2</sub> over the next 40 years. Current emissions trends on their own will not be sufficient to lead to this outcome and far more radical steps need to be taken if the Island is to achieve the substantial emissions reductions that other jurisdictions are signed up to.

These are likely to include switching to utility-scale renewably generated energy alongside technological advances for example large proportions of the road vehicle fleet becoming electrically powered so reducing the amount of emissions arising from road fuel. In addition, the next replacement of the EfW at the end of its design life will need to be with a technology of a lower carbon footprint.





Source: AEA on behalf of the Department of the Environment

**Graph 1.3:** Jersey's Greenhouse Gas Emissions (NB verified data for 2010 is not yet available but current trends are expected to be maintained)

### 1.1.3 Trends in the weather

Weather is a description of the state of the atmosphere at any one moment in time, be it wet or dry, clear or cloudy, hot or cold, calm or stormy. Climate on the other hand is the statistics of these atmospheric states to give what is called the periodic norm against which we can compare the present. For instance, is it warmer, colder, wetter or drier etc? To establish the climatic norm a long record is needed, generally from a number of weather stations across the region of interest. In the case of Jersey we are fortunate to have records representative of the Island's climate stretching back to 1894 from the Maison St Louis Observatory situated near Highlands College.

In 2004 the World Meteorological Organisation (WMO) established a set of 27 climate indices based on the measurements of the daily extremes of air temperature and daily precipitation amount. The datasets are analysed in a number of ways to establish if there are any trends or relationships between them. For example;

- whether the average diurnal variation between the maximum and minimum air temperature is changing,
- How the 95<sup>th</sup> percentile of precipitation total changes,
- How many nights in a year the minimum temperature is above a certain value and so on.

For the purposes of this report, four indicators have been chosen that reflect climate



## Energy and Climate

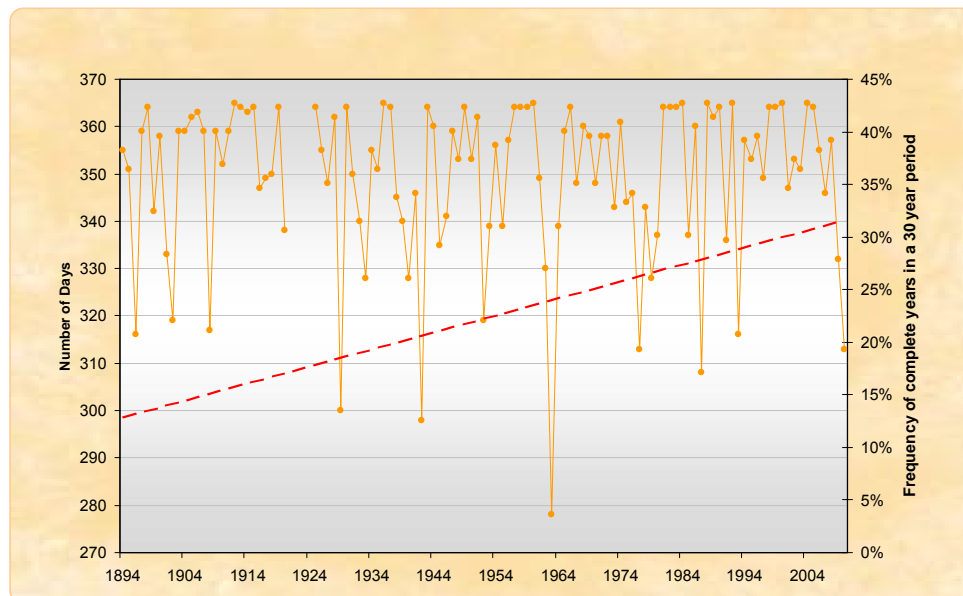
change impacts of direct relevance to the Island;

These weather indexes are:

- The length of the growing season and average mean temperature - the number of days between the first period of 6 consecutive days over which the mean temperature is greater than 5 °C and the first period after the 1<sup>st</sup> July of 6 consecutive days over which the mean temperature is less than 5 °C.
- The number of very heavy rainfall days - the number of days in the year when the precipitation total is greater than or equal to 25 mm.
- Warm spell duration - the number of days, with at least 6 consecutive days, when the maximum air temperature is greater than the 90<sup>th</sup> percentile. (21.5 °C)
- Cold spell duration - the number of days, with at least 6 consecutive days, when the minimum air temperature is less than the 10<sup>th</sup> percentile. (2.9 °C).

### Indicator E3 – Weather Indexes

Indicator	RAG Status	RAG Comment
E3a Length of growing season and average air temperature	N/A	See text for further comment



Source States of Jersey Meteorological Department

**Graph 1.4:** Growing Season Length with the red trend line showing the increasing frequency of the growing season extending over the complete year.

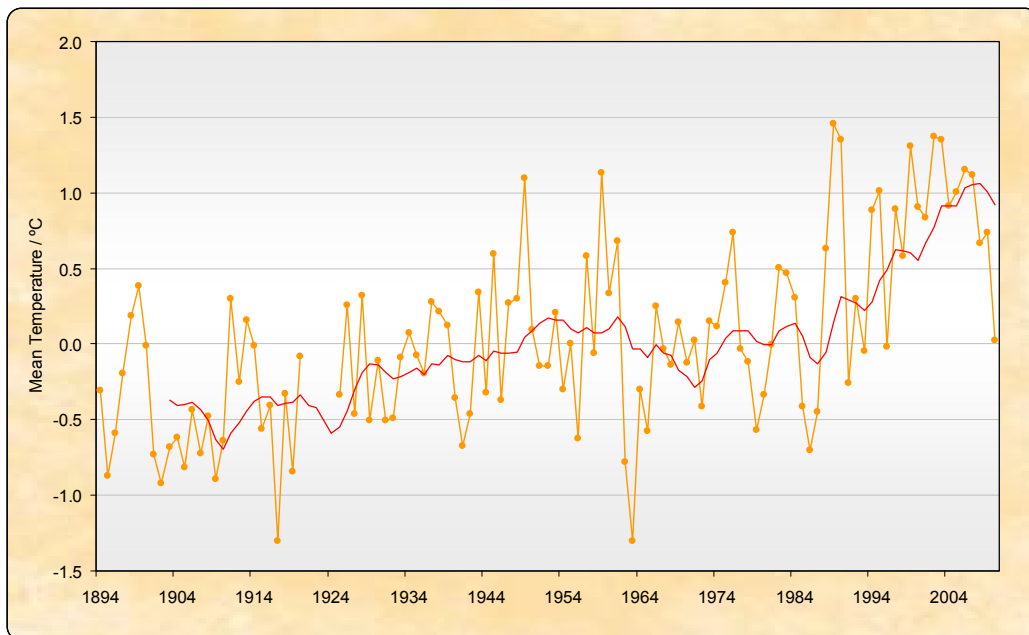


## Energy and Climate

With any of these indices we will see a large year to year variation, but it is the trend taken over a number of years that is more important and tells us something about how the climate is changing. For example Graph 1.4 shows that Jersey's generally mild climate allows for, on average, a long growing season, around 350 days. There doesn't appear on first inspection to be much of a trend due to average length being close to the maximum of 365 days.

If we look closely and examine the number of years in any 30 year period in which the growing season has lasted the whole year, we see a different picture with longer growing seasons becoming more frequent. An indication of the general warming trend can be seen in the annual mean temperature

anomalies is shown in Graph 1.5. There is a large degree of year to year variation with, for example, a large variance, minus 1.3 °C, in the anomaly in 1917 and 1963. To gain an overall impression of the trend a 10 year running mean has been plotted smoothing out the year to year variation. The resulting line does indeed show a rising trend though not consistent over the whole period. A slow increasing trend is noted from 1903 to 1980 during which six years show an anomaly equal to or greater than 0.5 °C above the 1961 - 1990 period average. From 1980 onwards, a dramatic increase is seen with nineteen years between 1981 and 2010, significantly (+0.5 °C) above the 1961 - 1990 period average. The graph clearly identifies an average rise in mean temperature.

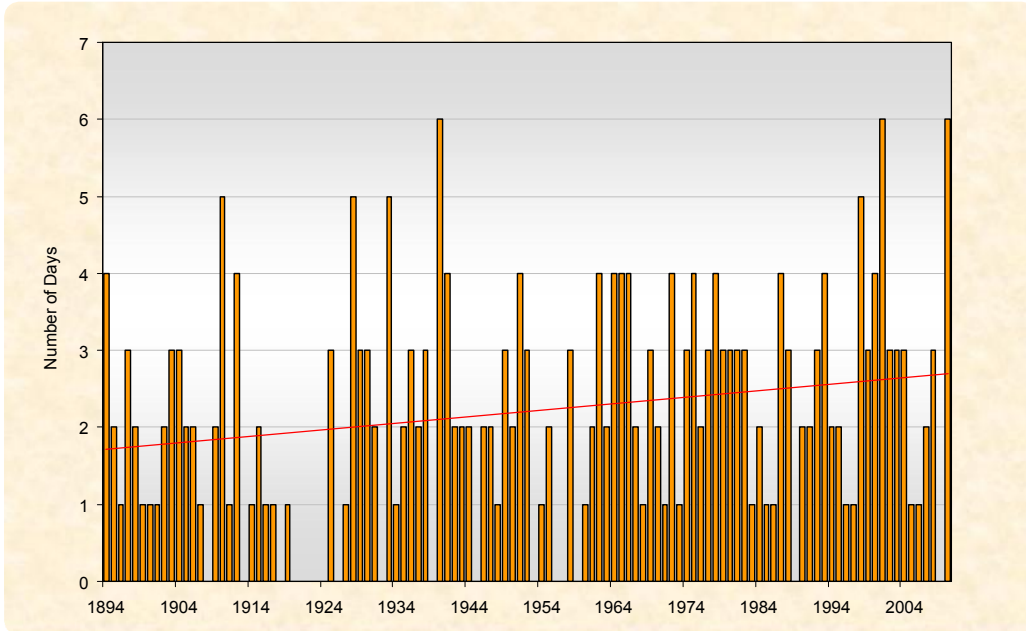


Source: States of Jersey Meteorological Department

**Graph 1.5:** Jersey Air temperature anomalies compared to the 1961 - 1990 30 year period average of 11.5 °C and a red trend line showing the rolling 10 year average.



Indicator	RAG Status	RAG Comment
E3b Heavy Rainfall	N/A	See text for further comment



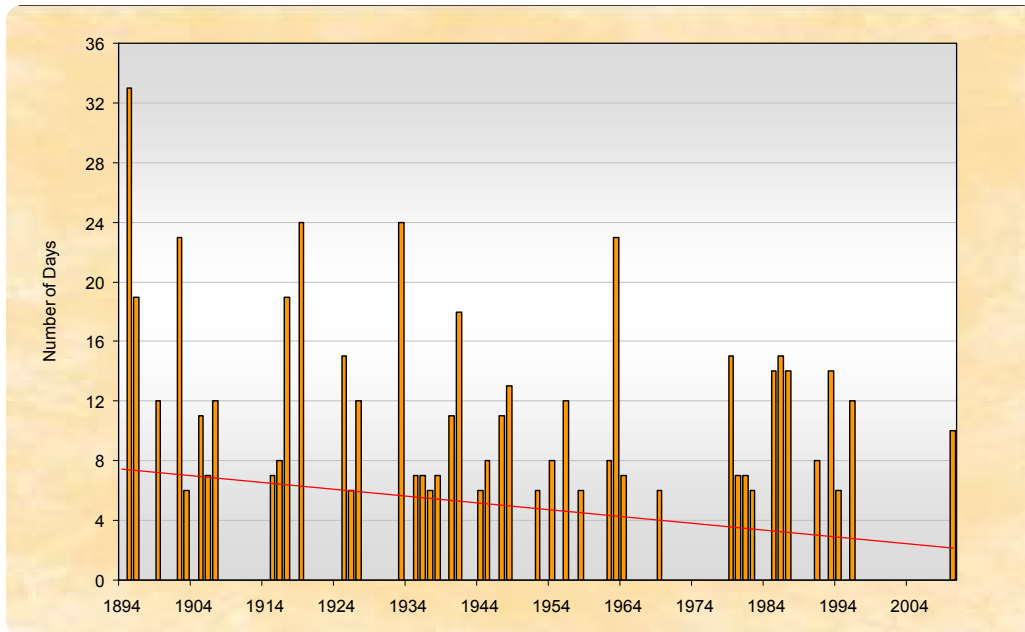
Source: States of Jersey Meteorological Department

**Graph 1.6:** Number of very heavy rainfall (greater than or equal to 25 mm) days per year with a red linear trendline.

Climate Change scientists predict an increase in storminess as the global mean surface temperature and hence energy input to the atmosphere increases. What though defines storminess? Is it the strength of the wind or the amount or intensity of rainfall? For this exercise we have taken the intensity of rainfall and defined a

stormy day as one in which the rainfall is 25 mm or more. The resulting plot, shown in Graph 1.6 again shows significant variability from year to year, but this time the trend line does show a small increasing trend with evidence we are starting to see an increasing number of days with higher rainfall totals.

Indicator	RAG Status	RAG Comment
E3c Cold and Warm Spell Durations	N/A	See text for further comment

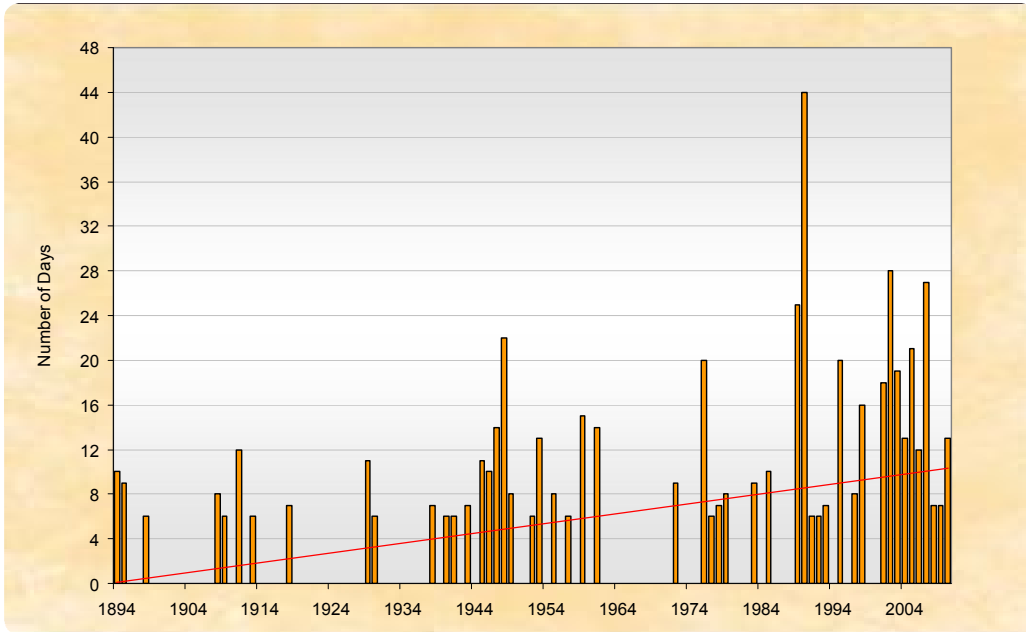


Source: States of Jersey Meteorological Department

**Graph 1.7:** Cold Spell Duration – Annual count of days with at least 6 consecutive days or more with air temperatures less than 2.9 °C

If we take all the daily minimum air temperatures recorded and rank them we can find the value for which 10% of the data lie below - the 10<sup>th</sup> percentile. For Jersey at the Maison St. Louis Observatory this is 2.9°C. It is reasonable then to assume temperatures below 2.9°C could be termed cold. Using percentiles in this way we can compare cold spells to other localities, as we are looking at the lowest 10% of cold days in both cases. Energy usage, particularly for heating, increases in cold weather and becomes significant if

the cold weather is prolonged - a cold spell. In this instance we have defined 6 days as the minimum duration for a cold spell and have plotted the duration of cold spells in each year. 1895 was a particularly cold year with 33 days accredited to two cold spells in January and February the second of which persisted for 26 consecutive days with minimum temperatures below freezing. Graph 1.7 shows a distinct decline in the duration of cold spells with no cold spells recorded in the years between 1996 and 2010.



Source: States of Jersey Meteorological Department

**Graph 1.8:** Warm Spell Duration - 6 days or more with air temperatures greater than 21.5 °C with a red linear trend line

Similarly if we rank all the maximum air temperatures we can find the value above which the highest 10 % of the data fall - this time the 90<sup>th</sup> percentile, in Jersey's case 21.5 °C. Again by choosing percentiles we can compare warm

spells with other localities. Fig 1.8 clearly shows an increase in the duration of warm spells with every year since 2001 recording at least one warm spell.

**Indicator 3 – Weather Indexes**

Indicator	RAG Status	RAG Comment
E3d Seasonal Rainfall Patterns	N/A	See text for further comment

Local rainfall shows an increase in winter rainfall through the 20th century, while summer rainfall has decreased. The variability of the running mean (red line) since 1894 compared with the linear trend (straight orange line) is relatively small, without the large variation since the 1970s we noted in the temperature record. Of interest, is

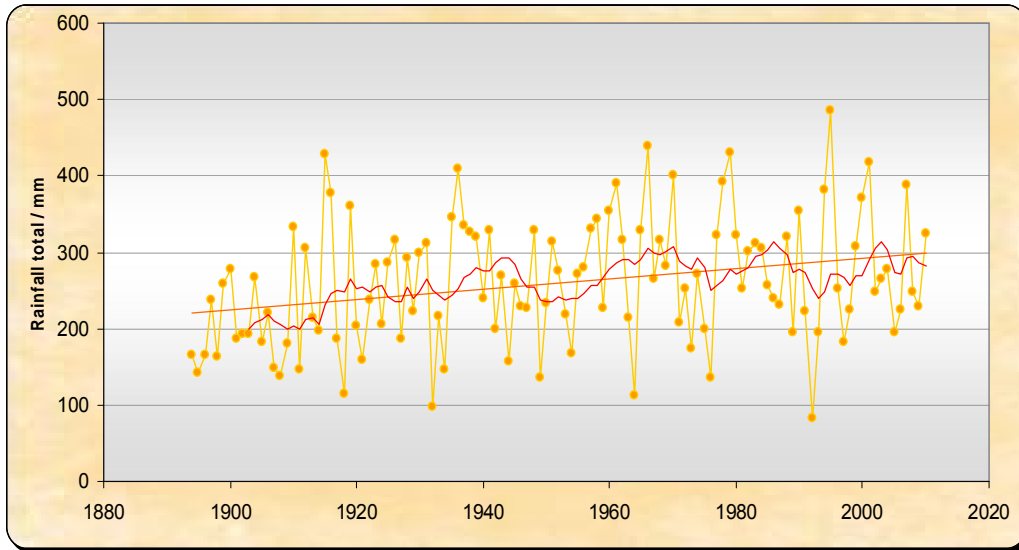
that winter precipitation (Graph 1.9) has increased more than summer precipitation has decreased (Graph 1.10).

However, as water is in greatest demand in the summer this does not necessarily mean there is more 'useful' water on the Island



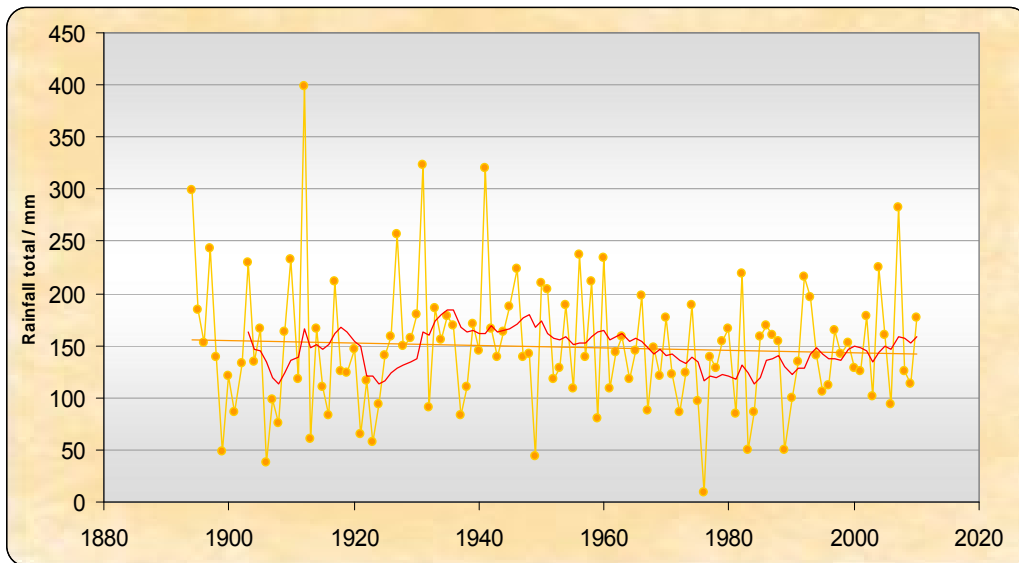
although winter rainfall can charge

the water table for the summer.



Source: States of Jersey Meteorological Department

**Graph 1.9:** Jersey winter rainfall totals with a red 10 year running mean and a linear trend line in orange



Source: States of Jersey Meteorological Department

**Graph 1.10:** Jersey summer rainfall totals with a red 10 year running mean and a linear trend line in orange line

**Indicator 3 – Weather Indexes**

Indicator	RAG Status	RAG Comment
E3e Sea Temperature	N/A	See text for further comment

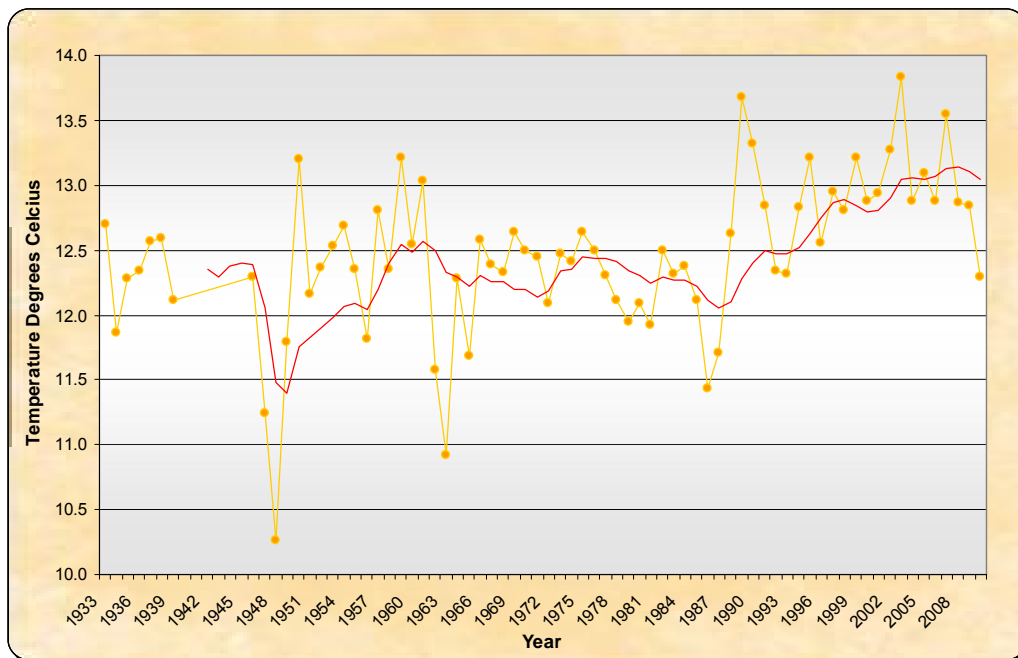


## Energy and Climate

Sea temperature has been recorded at St Helier Harbour since 1933, with a gap during the Occupation. The red trend line in graph 1.11 shows a clear warming of sea temperature. It is noticeable that the 20 year running mean (orange line) shows relatively little change in sea temperature until 1989. Indeed, the 1970's and early 1980's appear to be slightly cooler than the 1950's. If the last 10 to 15 years are considered alone, there is a clear warming trend with 8 of the 10 warmest years on record occurring since 1989. Taking two respective averages highlights how

much the mean sea temperature has increased over the observation period. Considering the short time series available, it appears reasonable to take a twenty year average, which shows the St Helier mean sea temperature has increased from an average of 12.2°C between 1946 and 1965 to an average of 13°C between 1988 and 2007.

There has been a clear increase in the long term sea temperature measured at St Helier. Temperatures appear to have risen sharply since the late 1980s.



Source: States of Jersey Meteorological Department

**Graph 1.11:** Jersey Annual mean Sea Temperatures with a red 10 year running mean

From the analysis of this set of indicators, the evidence shows that the Jersey climate has been changing over the period of the Maison St. Louis record, with an increase in warmth and winter rainfall. Variability is considerable from year to year, but it is the long

term change which may have important consequences for the environment, planning and society in general. The long-term changes are highlighted in the trends that are shown on the graphs. Which are in line with the global pattern of climate change, particularly the





marked warming trend over the last 30 years. Scientific consensus is that much of this warming is the result of human activity - the main debate has moved on and now

concerns what proportion is due to human activity and what should be done about it.

### **1.2 Update on 2005 environmental priority and key actions**

#### **Energy and Climate (State of Jersey Report 2005)**

Jersey has a high reliance on private cars for local transport and a dependence on fossil fuels for industrial and domestic uses which contributes to local emissions of greenhouse gases.

In order to address this we must:-

- i. Reduce our dependence on fossil fuels and the use of the private car for short journeys and introduce energy efficiency measures which will decrease the Island's contribution to climate change and its effects.
- ii. Further consider the potential for renewable energy.
- iii. Prepare for the local effects of global climate change: different rainfall regimes, rising sea levels, increased stormy weather and the impacts of this on our sea defences and flood prevention systems

The indicators have shown that the Island's weather appears to be displaying patterns consistent with global patterns of climate change. Furthermore Jersey's energy consumption of hydrocarbons has not significantly declined in the last five years and consequently the only large reduction in GHG emissions since 1990 is as a result of a one-off decision to import electricity rather than generate it on Island from hydrocarbons.

During 2007 to 2008 an Energy Policy Green Paper was developed and consulted upon. It recommended a number of options that described the fiscal, legislative and policy measures to achieve a goal of secure, affordable and sustainable energy. The measures

proposed fall into the following categories:

- Doing more with less – reducing energy use;
- Adopting sustainable energy solutions;
- Ensuring a secure and resilient energy supply;
- Preparing for the future and global climate change.

To help prioritise actions a bespoke energy use hierarchy was proposed, the first step of which was to reduce energy demand. Whilst work on a White Paper is still ongoing, a number of key workstreams have been progressed in the areas of energy efficiency and renewable energy



corresponding with the first two key areas of action identified in the 2005 report. Preparations for climate change are integrated into many infrastructure projects and

will be formalised with a Climate Change Adaptation Strategy that will follow on from the Energy White Paper.

### 1.2.1 Introducing energy efficiency measures

The Energy Efficiency Service (EES) was officially launched by the Minister for Planning and Environment in April 2009. It was funded by an annual budget of £1 million from the States of Jersey, as well as a generous seed donation of £500,000 from the Jersey Electricity Company. The scheme has initially provided grant funded energy efficiency improvement measures to socioeconomically vulnerable Islanders in their homes (the Home Energy Scheme) and in their places of care (The Community Buildings Programme for charities and not-for-profit organisations).

The first 2 years of the Home Energy Scheme has been successful.. A 100% grant funded turnkey service is delivered to eligible applicants and offers the following services:

- loft insulation;
- cavity wall insulation;
- hot water tank and pipe insulation;
- heating controls;
- draft proofing;
- low energy lamps;
- energy advice and information and heating system reviews and upgrades.

The programme is now endorsed by the leading UK organisation in this area, the Energy Saving Trust

The lifetime of the different interventions fitted in the scheme's first 2 years is of the order of 20 years depending on what was carried out. Over this period, 60 million kilowatt hours (kWh) of energy will be saved and 13,500 tonnes of carbon dioxide emissions will be avoided (this is equivalent to nearly 14% of all domestic emissions in 2009). There will also be a saving of £4 million in energy bills. This means that for every pound paid out by the programme there is a saving of £5.40 for the consumer.

In 2011 the building bye-law requirements relating to the energy performance of buildings were strengthened by the introduction of mandatory energy targets for all newly constructed buildings. Those targets seek to achieve a 23.5% improvement in the energy performance of non-domestic building and 20% improvement for dwellings.

Changes have also been made to the bye-laws making it a requirement for all newly constructed dwellings to have a copy of the calculated energy rating displayed in the dwelling at completion of the work, to increase awareness of energy use.



### 1.2.2 Exploring the potential for renewable energy

The Energy Policy Green Paper identified the potential for the exploitation of renewable energy on a large enough scale to displace fossil fuel imports in the long-term. This led to the Minister for Planning and Environment appointing a Tidal Power Commission in 2008 to advise him on the potential for offshore tidal energy.

The Commission, chaired by the Constable of Grouville, identified that there is substantial potential for the generation of renewable energy. However, at present the available technology to harness wind, wave or tidal power produces energy is more expensive than conventionally generated electricity. Many of these technologies, particularly tidal stream technologies, are at an early stage of development and so may be some years away from being commercially viable.

Nevertheless it was recommended that the island should be in a position to deploy renewable energy installations at the appropriate time in the future when the economics and technologies are right. Given the long lead in times for such large projects there

are some early key actions that are being undertaken.

In 2011 the Commission was re-mandated into a Renewable Energy Commission with a wider remit and key areas of work include:

- Formalising cross jurisdictional working both across the Channel Islands and the British-Irish regions,
- Exploring financial mechanisms to fund future projects,
- Putting in place the legislative frameworks to regulate the environmental aspects of energy extraction and the consenting and leasing regime.
- Progress has been made in the Island Plan 2011, which provides a spatial planning framework in respect of offshore renewable energy projects;
- Formalising the ownership of the sea bed with the Crown,
- Examining the potential for offshore wind energy which is a far more mature technology than tidal stream which initial investigations have focussed on.

### 1.2.3 Preparing for the effects of climate change

There is an inevitable degree of climate change that will affect Jersey and we will need to be prepared for this. Regardless of the success of global measures to mitigate emissions and because of atmospheric inertia and the volume of greenhouse gas emissions

already released, there will be a continued degree of climate change. The importance of accurate records of the past and present weather cannot be over emphasised if we are to continue to monitor and better understand atmospheric processes and our



## Energy and Climate

climate. The Jersey Meteorological Department is committed to the collecting of high quality meteorological information and in partnership with the United Kingdom Meteorological Office contributing these to larger data sets for use in climate modelling.

Much work has already been done to ensure that the Island is prepared for the impacts that a changing climate may bring. For instance there has been a major review of the Island's coastal defences taking into account the predicted sea level rise over this century. Some of Jersey's coastal defences will need to be improved to provide adequate protection from coastal flooding. The States of Jersey Transport and Technical Services Department has a long term programme of coastal defence improvements to ensure that adequate protection is maintained in vulnerable areas.

Whilst there are examples of how the impacts of a changing climates are being considered, such as Jersey Water's 25 year Plan and the Island Plan 2011, the lack of a co-ordinated response and Climate Change Adaptation Strategy for Jersey will need addressing over the next five years.



### 1.3 The environmental priorities and key actions for 2011-2015

#### Energy and Climate – The next 5 years

Jersey must indicate to the international community that it is committed to playing its part in global actions to reduce greenhouse gas emissions:

In order to address this we must:

- i) Agree targets for the reduction in energy use and in greenhouse gas emissions within the framework of an Energy Policy whose aim is to deliver secure, affordable and sustainable energy;
- ii) Continue and expand key existing workstreams that support the carbon and energy reduction targets i.e.
  - Considering ways in which the Energy Efficiency Service can be applied to the able to pay sector
  - Delivering the legislative and commercial framework for the long-term exploitation of renewable energy e.g. tidal and off-shore wind power;
  - Continuing to deliver more energy efficient buildings and a reduction in energy use through the application and enhancement of planning policy and building bye-laws;
  - Moving to a low carbon economy where green skills contribute to economic diversity.
- iii) Future proofing - developing strategies to ensure that climate resilience is incorporated into policy and decision making.

#### 1.3.1 An Energy Policy

Much work has been done on an energy policy over the last 5 years and a draft White Paper will be available for consultation in early 2012. The aim of the policy will be to achieve secure, affordable and sustainable energy supplies against a backdrop of global rising prices and increasing global energy insecurity. The policy will recommend long term carbon

reduction targets to guide policy decisions and fulfil Jersey's obligations under the Kyoto Protocol which the island became a signatory to in 2005. This means adopting a carbon reduction target in line with the rest of the EU of an 80% reduction on 1990 levels by 2050.

Although this is an ambitious target, this can be achieved if



Jersey makes good progress in energy efficiency in existing and new buildings as well as the micro-generation of renewables at the domestic scale alongside a long-term aim of generating utility scale renewable energy from our natural resources.

There are also proposals to move the onus to the energy industry to ensure sufficient resilience management alongside

investigating the need for proportional regulation of the energy industry. There is a need to explore energy affordability issues, both at the current time and looking to the future. An examination will be required on who should pay for 'affordable' energy whilst also ensuring that secure supplies are available to underpin economic growth

### 1.3.2 Developing workstreams that support carbon and energy reductions

As we have discussed key workstreams are already underway that underpin an energy policy and

a journey towards a low carbon economy:

### 1.3.3 Expanding the Energy Efficiency Service

The work of the EES to date has focussed on assisting the socio-economically vulnerable. Whilst they will remain the core group, if the whole Island is to reach a target of reduced energy use and emissions an extension of the work of the service into the able-to-pay sector is required. This is because the adoption of energy efficiency measures are a well documented 'market failure' that often require incentives to encourage take-up.

Incentives for the able-to-pay sector need not be 100% grants and a turnkey service in the same way that is critical for the socio-economically vulnerable. Awareness and advice programmes, partial incentives and

grants are key to encouraging the uptake of measures that improve the energy efficiency of the majority of the building stock.

Furthermore, if the move towards micro generation of renewables at the domestic scale is to be realised this could be enabled by support from an expanded EES. Measures are likely to include low-interest loans for the capital costs of installation. As the renewable energy industry continues to mature and the cost of technologies fall, the journey towards the domestic, decentralised generation of renewable power will become easier.

### 1.3.4 Renewable energy

The work of the Renewable Energy Commission has established that the potential for Jersey to use its

natural energy resources (e.g. tidal, wind, solar, biomass) is great. The current ongoing workstreams are



## Energy and Climate

researching preparations that should be made to increase the security of local energy supplies, bring about economic opportunities and reduce carbon emissions.

The Island Plan 2011 has set a spatial planning framework for utility scale installations. When the ongoing discussions about the leasing arrangements with the Crown in respect of the seabed are concluded, the production of a Marine Spatial Plan (see Chapter 2) will assist with identifying the most favourable sites for offshore

installations and help guide developers towards potential projects.

It is important that the Channel Islands work together where possible for matters of mutual interest in respect of the deployment of renewables and the export of energy to the UK or European Grid. Considerable work is being carried out by Jersey and the Bailiwick of Guernsey through the British Irish Council to ensure that the interests of the Channel Islands are being addressed.

### 1.3.5 Creating a low carbon economy

Jersey has the opportunity to transform itself into a low carbon economy with the potential for economic growth and on-island technology trials/projects as a result. This might include positioning Jersey as a leading jurisdiction for investment in low carbon technology or 'Cleantech' leading to perhaps for example the development of infrastructure and regulatory and legislative framework to develop an electric vehicles sector.

A low carbon Jersey presents attractive conditions for wider economic and environmental diversification. In partnership with the private sector, a bespoke green economy could underpin a workforce with the skills and knowledge to support and maximise the opportunity for development of environmentally beneficial goods and services. These might include the retro and refit of energy efficiency measures in the built environment e.g. smart metering, the installation of renewable energy devices, eco-

design and development of new low carbon industries



### 1.3.6 Planning and building bye-laws

The regulation of development, through the system of planning and building control, can influence the location and form of new buildings and land use, and help to deliver a reduction in energy use and an enhancement of environmental performance. Requirements relating to conservation of fuel and power in building have existed in the building bye-laws for many years and these have been shown to be a major driver in terms of improving building standards. The spatial strategy of the new Island Plan seeks to ensure that most of the Island's development needs are met from within the existing Built-up Area which should reduce the need to travel and provide greater opportunity for people to make many of their journeys, which might otherwise have been made by private car, on foot, by bike or bus.

The planning system can also encourage the incorporation of resource efficient design solutions into the fabric and appearance of new buildings and work is ongoing to explore the potential for the introduction of a Code for

Sustainable Homes specific to the Island.

In 2011 the building bye-law requirements relating to Conservation of Fuel and Power were strengthened to include mandatory requirements calling for the annual energy performance of all new buildings to be calculated, and for that performance not to exceed prescribed targets. Those targets need to be kept under review and reduced gradually with the aim of moving towards zero carbon buildings.

In addition, to the initiative of introducing energy performance targets for buildings the scope of controlled building work was extended in 2011 to ensure that whenever improvements to existing buildings are proposed, or where the use of a building materially changes, that measures to improve the energy performance of that building are incorporated. It is anticipated this will have a significant impact on improving the energy performance of the existing building stock in future years and as such is something that should be continued and improved upon.

### 1.3.7 Future Proofing

The impacts of climate change are likely to be widespread and complex. The physical effects, for example on the rural economy, are relatively straightforward to understand. However, the biggest challenge will be in preparing for a changed global economy and world

population inhabiting a very different physical environment than that which we see today.

Accepting and understanding what a very different long term future looks like is difficult. Nevertheless, there is a requirement for economic, social and





## Energy and Climate

environmental decision making in terms of both mitigating the impacts of climate change and adapting current practices in preparation for a changing climate.

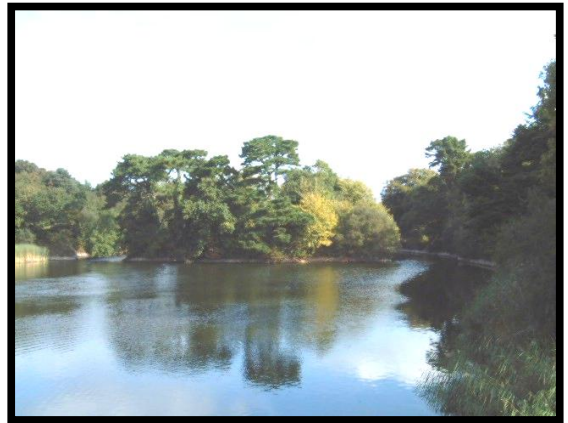
It is anticipated that much of the ongoing work described in 1.1.3 needs to be rationalised, extended and further understood which is best dealt with under a Climate Change Adaptation Strategy which will follow on from an agreed Energy Policy.



## Energy and Climate



Marine and Fresh Waters





This chapter provides information on the quality and the monitoring of Jersey's freshwater (including surface streams and groundwater) and marine water resource. It provides information about the quantity and management of the important fresh water resource in Jersey.

Jersey prides itself as being a healthy place to live. Clean streams and coastal waters play a vital role. As well as for our health, clean waters are vital for the myriad of plants and animals that live along streams and the coast and our enjoyment of the unique countryside, beaches and foreshore environment in Jersey.

The water resources in Jersey are all interconnected. Rainfall replenishes a shallow groundwater resource that in turn forms springs and streams. These are either diverted into reservoirs for drinking water or flow onto our beaches and into the sea.

All stages in the 'on-island' water cycle must therefore be protected.

Pollution can be split into two sources:

- **Point source pollution:** pollution emitted from a single and identifiable source (for example, a leaking heating oil tank in the garden, a leaking septic tank, a drum containing chemicals dumped in the stream).

- **Diffuse source pollution:** pollution that derives from a wider area (for example; slurry/animal waste spread to land, fertilizer spread onto a field).

All potential sources of pollution can be minimised by people being responsible and adopting good practice e.g., a simple weekly inspection of domestic oil tanks or spreading slurry correctly in dry weather and away from sloping fields near a stream.

In a small, busy island where minor pollution events can have severe impacts, prevention is definitely better than cure. Pollution prevention advice and education therefore forms a key work area in the Department of the Environment.



## 2.1 The Indicators

### 2.1.1 Drinking Water supply

Almost all of the island’s drinking water supply comes from rainfall that flows into streams that are diverted into reservoirs. The high demand for water, and the erratic nature of seasonal rainfall, has required Jersey Water to capture and utilise most of the island streams and maximise the available reservoir storage (buffer) capacity. This includes pumping water between reservoirs to ensure that all are ‘topped up’ during times of water scarcity.

Jersey Water also operates a desalination plant to maintain supply during particularly dry periods.

A key challenge for Jersey Water is how to ensure an adequate water supply for the future needs of an increasing population given the uncertainties of climate change.



In 2010 Jersey Water published a 25 year Water Resources Management Plan. This plan projected the water needs in Jersey for the next 25 years, identified pressures and recommended safeguard actions to achieve water security.

The plan recognised two main areas of intervention:

- **Managing demand** (water metering, leakage reduction etc),
- **Maximising supply** (repair and possible extension of Val de la Mare Reservoir etc.)

The Department helps ensure that the water supply to reservoirs is maximised by reducing potential polluting events and ensuring proper management of the groundwater/stream resource. The Department of the Environment works closely with Jersey Water.

#### Indicator FW1a The volume of treated drinking water supplied by Jersey Water per annum

Indicator	RAG Status	Red RAG Comment
FW1a The volume of drinking water supplied by Jersey Water per annum	 <b>GREEN</b> 	<p>Red - the supply of water is insufficient for the needs of the island.</p> <p>Amber – N/A</p> <p>Green – the supply of water is sufficient for the needs of the island.</p>



	2003	2004	2005	2006	2007	2008	2009	2010
<b>Quantity of drinking water supplied (million litres)</b>	7,301	7,305	7,291	7,484	7,182	7,402	7,252	7,219

The table above provides data which shows that the annual volume of drinking water supplied by Jersey Water to its customers has remained stable during the past five years. The variation in annual demand is dependant on the levels of summer rainfall and its effect on water demand during this period (for example dry summers cause increased demand from garden watering).

The annual volume of water abstracted from water resources is proportional to the volumes of treated water supplied each year. The abstraction rates are within those permitted under licensing arrangements under the Water Resources (Jersey) Law 2007, which came into force in 2009. The majority (97%) of water abstracted is from surface water resources, the remaining volumes being derived from five boreholes located in the sand aquifer in St Ouen's Bay.

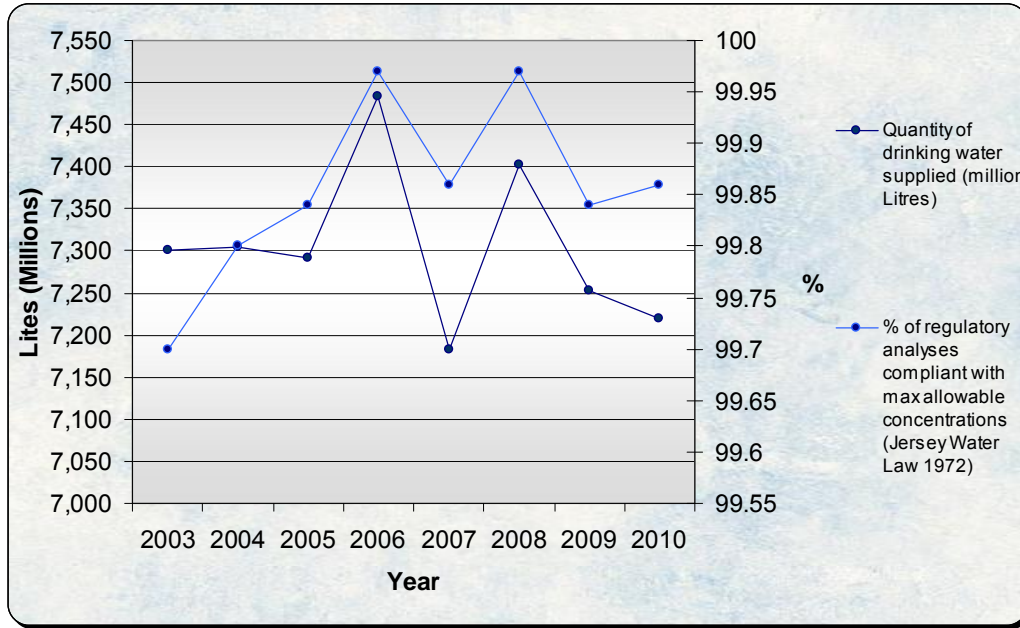
The stable position of the water demand has been due to demand management measures, including;

- pressure management,
- water main renewal programme, and the
- rapid increase in the number of water meters.

Jersey Water commenced a universal metering programme in May 2010 and data to-date indicates a significant reduction in demand due to a change in customer water usage behaviour.

The quality of drinking water supplied by Jersey Water continues to be of a high standard. The quality parameters are set out in the Water (Jersey) Law 1972. These are identical to the drinking water quality regulations in England & Wales. As shown in Graph 2.1, the overall water quality compliance level is typically greater than 99.8%, which is comparable with performance levels reported by water supply companies in England & Wales.



As a consequence of high levels of nitrate in streams and groundwater Jersey Water currently has a derogation under the Water (Jersey) Law, 1972 which allows 33% of samples in any one year to exceed the 50 mg/l limit in the mains drinking water supply (but be no greater than 70 mg/l). However, there are currently measures being implemented through the Diffuse Pollution Project to tackle catchment losses of nitrogen. This project aims to ensure that the Island's water supply achieves compliance with the 50mg/l limit for nitrate in the future.



Source: Jersey Water (Note: axis do not start at zero)

**Graph 2.1** Drinking Water Supply and Quality (percentage compliance with legal standards as defined under the Water Jersey Law (1972))

### Indicator FW1b The water table depth at measured sites

Indicator	RAG Status	RAG Comment
FW1b Depth of the water table at measured sites	 <b>GREEN</b> 	<p>Red – Water table across the island not stable</p> <p>Amber – N/A</p> <p>Green - Water table across the island remains stable.</p>

The Water Resources (Jersey) Law 2007 came into force in 2009 and provides for the protection, management and regulation of the Island’s water resources. The Law also promotes the conservation of animals and plants and their habitats that rely on that resource.

The Law requires that all large abstractions (more than 15 cubic metres per 24 hour period) from surface water and groundwater be licensed and smaller abstractions

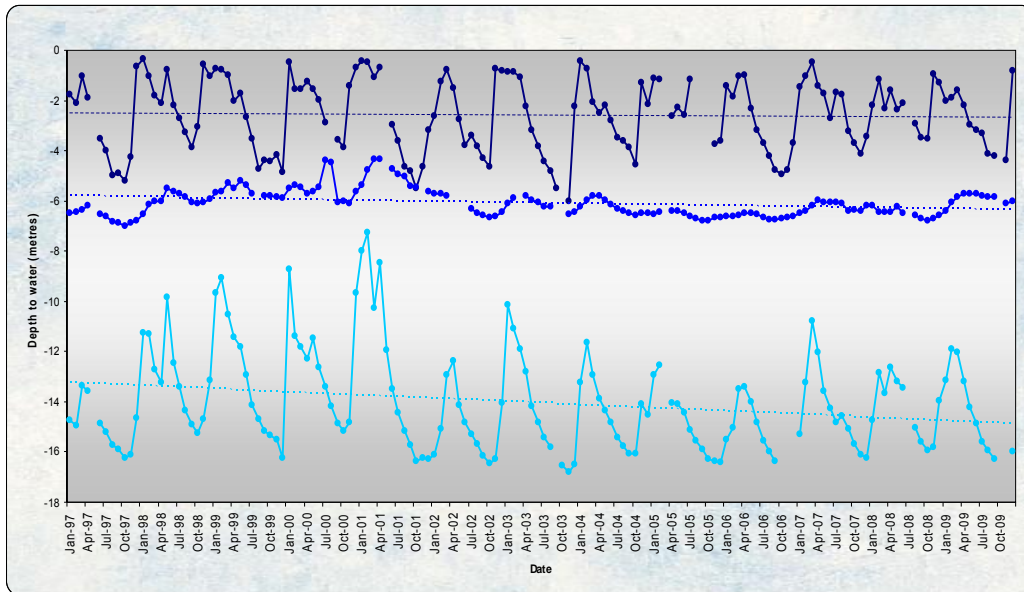
from groundwater to be registered. This enables the Department of the Environment to record the location and quantity of water abstractions. The information is used to initially estimate the annual water balance for the Island. The water balance takes into account annual recharge (the recovery of groundwater levels through rainfall) and abstraction rates. This provides an assessment of the stresses upon the Island’s water resources. Thus a more informed allocation of the Island’s



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water resources for the benefit of the whole community and the environment is possible. This ensures that sufficient water will be available for drinking, as well as for industry, agriculture and recreation; of particular importance during periods of drought.

Furthermore, the Law and information derived from data collected under the Law, will allow for a long-term integrated and sustainable approach to be adopted for the management of the Island's water resources in line with the approach adopted in the European Union and many other countries world-wide.



Source: States of Jersey Department of the Environment

**Graph 2.2:** Groundwater level hydrographs from three boreholes between 1997 and 2010 (royal blue- west (St Ouen's Bay, dark blue- centre (St John), light blue- east (La Hougue Bie).

Graph 2.2, above, shows that the island aquifer is recharged from rainfall during the winter months. This results in peak water table levels between January-March. The level then declines in the spring and summer, reaching a minimum level in the autumn.







## 2.1.2 Fresh water management

This section provides information on how the water supply network in Jersey is maintained and how demand for water is managed; principally through the introduction

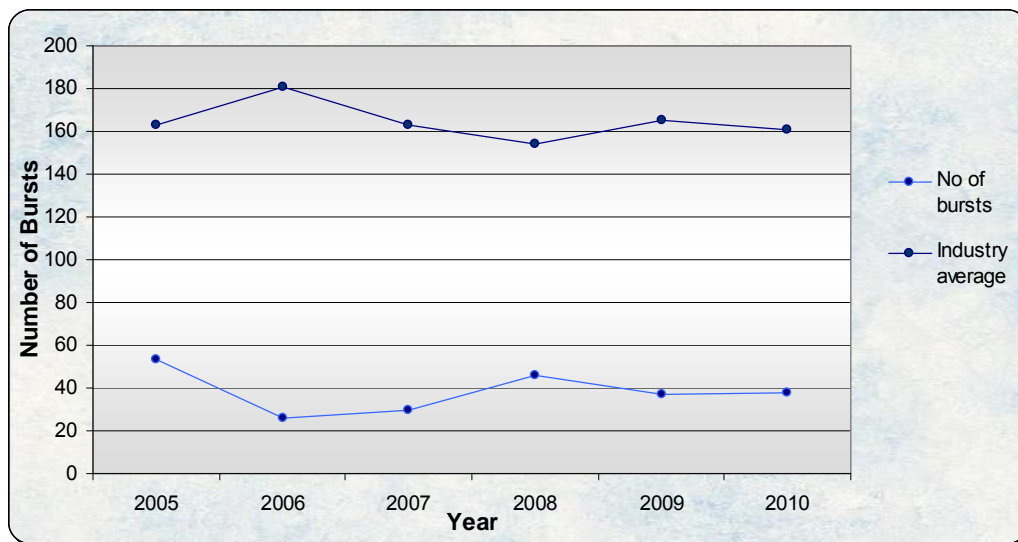
of water metering for households, replacement of existing pipes and importance given to the identification of leaks.

### Indicator FW2a Frequency of burst water mains

Indicator	RAG Status	RAG Comment
FW2a Frequency of burst water mains	 <b>GREEN</b> 	Red – frequency above UK average Amber – frequency same as UK average Green – frequency below UK average

Jersey has the lowest burst water main frequency in the British Isles. The industry average in England & Wales during the last five years varied between 181 and 161, compared to 53 and 26 in Jersey. The rate of burst water mains is measured as number per 1,000 km length of water mains. As Jersey Water does not have 1,000 km of water mains graph 2.3 has been adjusted up to represent 1,000 km to enable direct comparisons to be made.

This rate of pipe bursts can be attributed to many factors, such as the age and nature of the water main, but a major factor is the ground condition. In Jersey, ground conditions are generally of very stable hard rock and shale formations. This is in contrast to many of parts of the UK, where the predominance of clay strata and associated temperature related ground movement means that burst water mains are more likely to occur.



Source: Jersey Water

**Graph 2.3:** Annual number of burst water mains in Jersey compared to the industry average for England and Wales



### Indicator FW2b Percentage of water connections metered

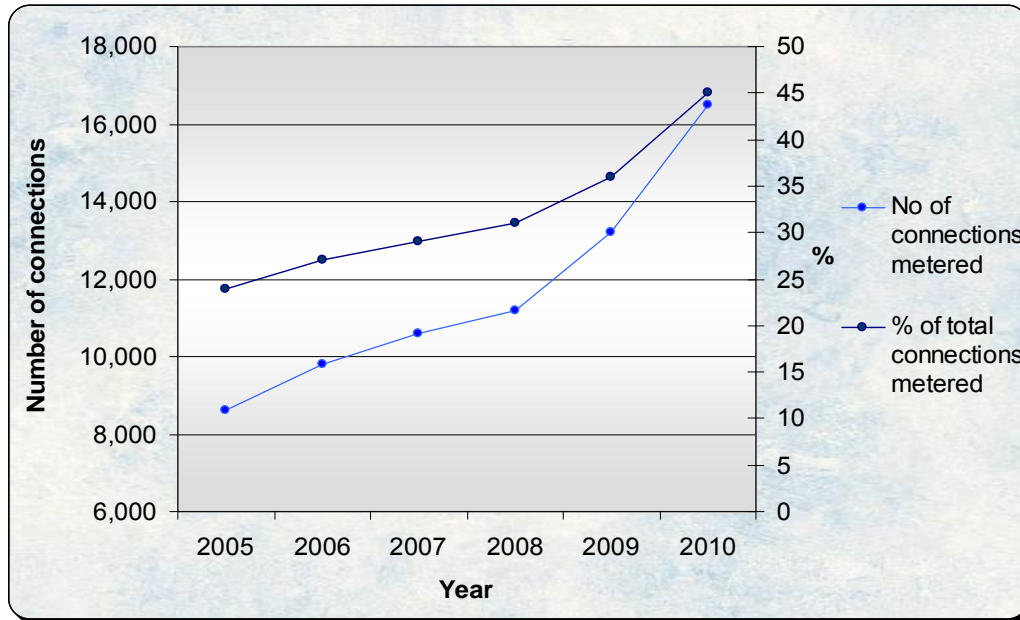
A major objective for reducing water demand detailed in the Water Resource Management Plan for the next 25 years is to install meters on all water connections within a 5 year period. In May 2010, a universal metering programme commenced, that together with the other previously mentioned metering initiatives, has resulted in a significant increase in metered connections.

The number of existing water connections having a meter installed increased rapidly between

2005 and 2010. Since 2004, all new water connections were metered. Since 2009, all existing connections were fitted with a meter when a change of account holder took place. The number of connections having a metered connection in Jersey is shown in graph 2.4

As well as changes to water usage behaviour, metering also facilitates the identification of leakage on privately owned pipe work. Without a meter such leaks would continue unnoticed.

Indicator	RAG Status	RAG Comment
FW2b Percentage of water connections metered	 <b>GREEN</b> 	<p>Red – Meter programme delayed</p> <p>Amber – meter programme below target</p> <p>Green – meter programme on target</p>



Source: Jersey Water

**Graph 2.4:** Number and percentage households having a metered connection in Jersey

### 2.1.3 Fresh water quality



#### Indicator FW3a Chemical quality of groundwater

Since 1990, the Department of the Environment has monitored approximately 50 groundwater sites across Jersey on a six monthly basis.

The purpose of the monitoring programme is to collect baseline data of the quality of Jersey groundwater to determine the background levels. This enables the detection of long and short-term trends and helps identify the impact

caused by contamination or pollution incidents.

The analysis of pH and conductivity are carried out in the field, whilst other parameters such as nitrate levels are analysed by the States of Jersey Official Analyst. Water samples for pesticide and microbiological analysis are collected at selected sites. Twenty-four of the original sites are still monitored providing a data set spanning 20 years.

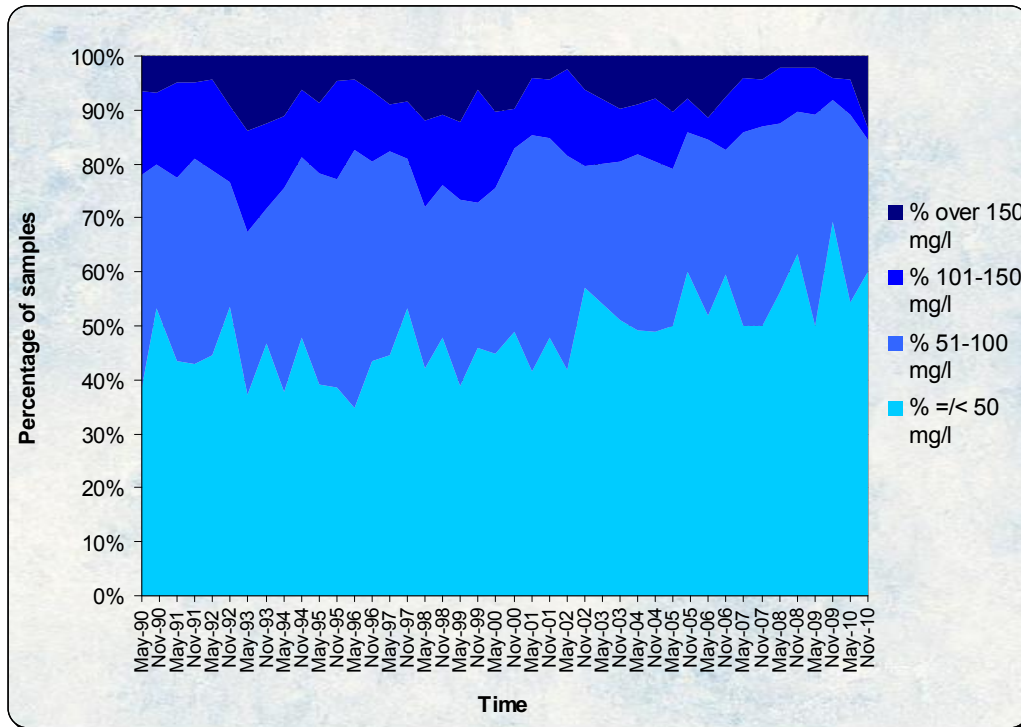
Indicator	RAG Status	RAG Comment
FW3a Chemical quality of groundwater	 <b>GREEN</b> 	Red - Declining chemical quality
		Amber - Chemical quality unchanged
		Green - Improving chemical quality



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Many of our daily activities have the potential to cause pollution e.g. leakage of oil from vehicles or domestic heating oil tanks, leaking private sewerage systems or leaks and spills from the main sewerage network. Groundwater can also be contaminated by careless spreading of slurry or green waste

to land or the incorrect use of pesticides or fertilisers. The chemical quality of Jersey's groundwater is improving, as can be seen from graph 2.5 below. By 2010, over half (61%) of groundwater sites have a nitrate level below the EU standard of 50 mg/l, compared to some 42% ten years ago.

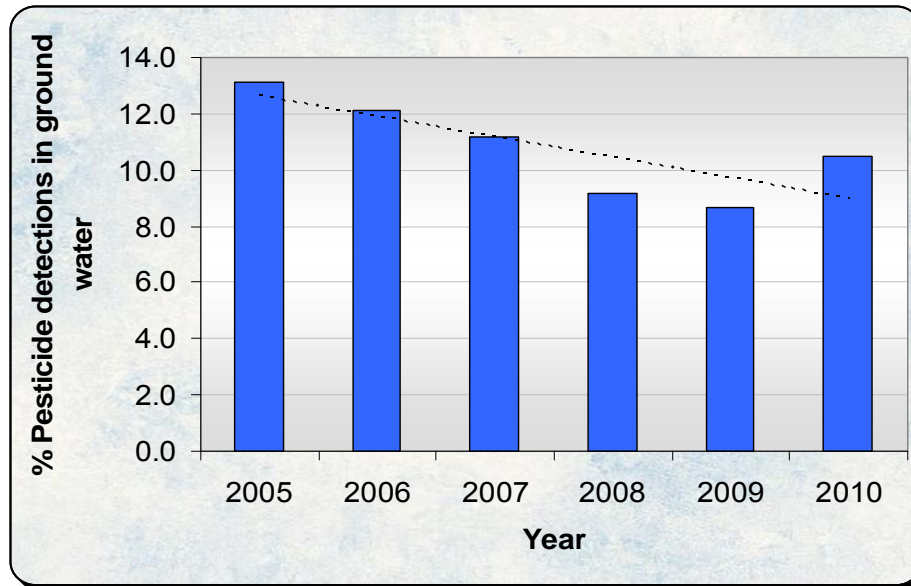


Source: States of Jersey Department of the Environment

**Graph 2.5:** Nitrate levels groundwater between 1990 and 2010.

Graph 2.6 shows that the number of pesticide detections within groundwater has decreased by 4%

from 2005 to 2009, which indicates a slight improvement in groundwater quality.



Source: States of Jersey Department of the Environment

**Graph 2.6:** Percentage of pesticide detections in groundwater between 2005 and 2010 (black line indicates a declining trend)

The Department of the Environment monitors 12 surface water (stream) sites each quarter in Jersey. Field data including pH, conductivity, dissolved oxygen and temperature are measured using field meters and test kits. Chemical analysis for parameters such as nitrate, phosphate, potassium and microbiology are undertaken by the States Official Analyst laboratory.

The surface water monitoring programme aims to:



- provide baseline quality data in order to characterise the status of the Islands surface

water resource at catchment scale,

- assess long-term trends and impacts from diffuse pollution and pollution incidents,
- assess the background water quality entering the marine environment through outfalls,
- assess surface water suitability as a habitat for aquatic life and the formulation of water quality objectives, and to
- determine whether water quality objectives are met under the Water Framework Directive (WFD) in order to achieve a good surface water chemical status.

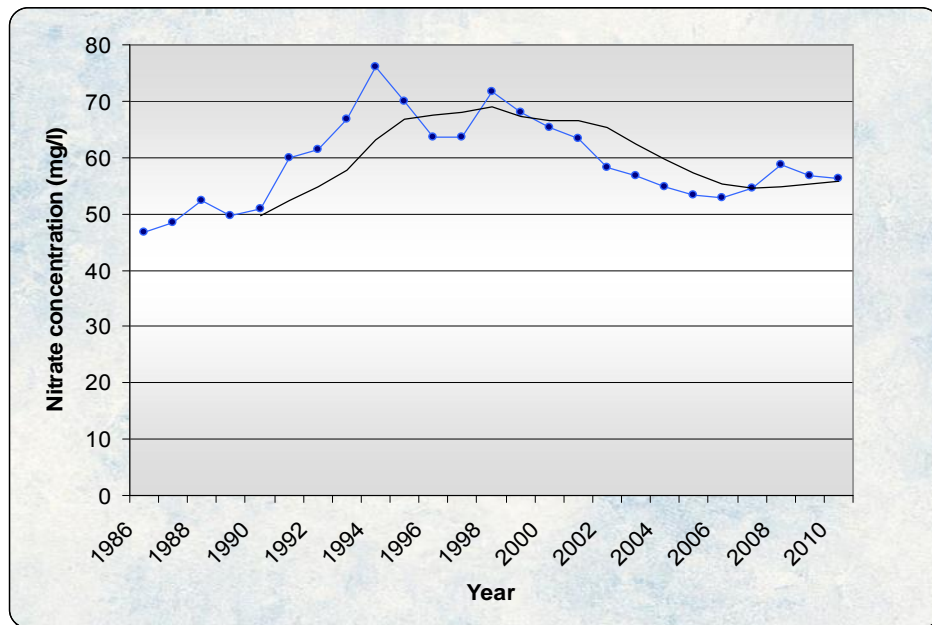


## Indicator FW3b Chemical quality of surface water

Indicator	RAG Status	RAG Comment
FW3b Chemical quality of surface water	 <b>GREEN</b> 	Red - Declining chemical quality Amber - Chemical quality unchanged Green - Improving chemical quality

Over the past 10 years, the chemical quality of Jersey's surface water streams has improved with the mean nitrate levels reducing

from 65.4 mg/l to 56.2 mg/l (2000 – 2010) as shown in graph 2.8, below.

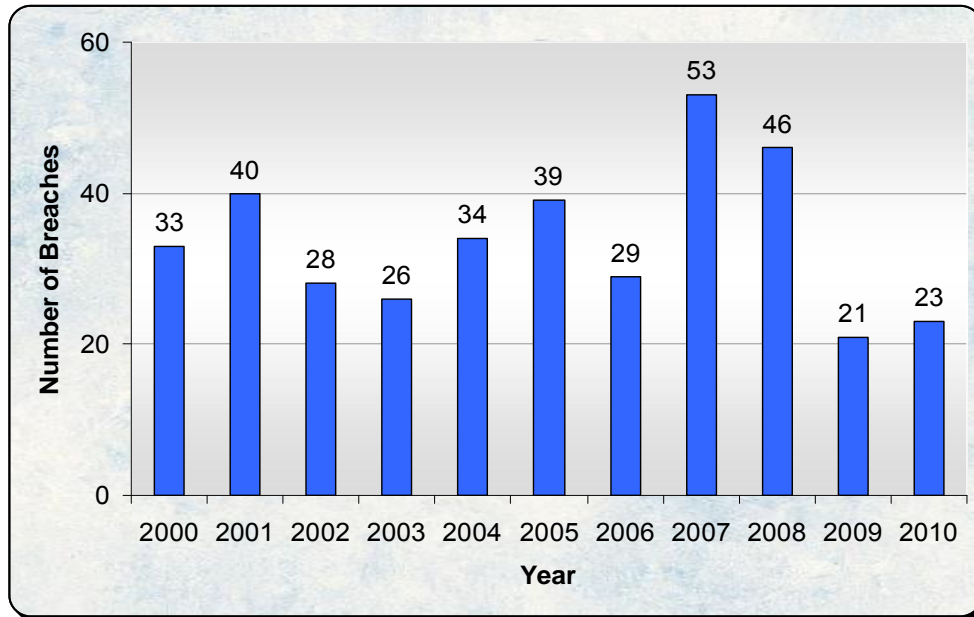


Source: Jersey Water

**Graph 2.8:** Annual mean nitrate concentration in surface water (graph includes the trend using a five year rolling average)

The number of pesticide breaches recorded by Jersey Water in surface waters varied during the past ten years. It peaked at 53

breaches in 2007 and has since reduced to 23 in 2010 as shown in graph 2.9.



Source: States of Jersey Department of the Environment



**Graph 2.9:** Number of pesticide breaches in surface water between 2000 and 2010

### Indicator FW3c Biological Water quality of surface waters

As well as monitoring chemical and bacteriological determinants, the Department of the Environment further monitor biological water quality. Biological water quality is measured by assessing the types and abundance of the insects that have part of their life cycle in water.

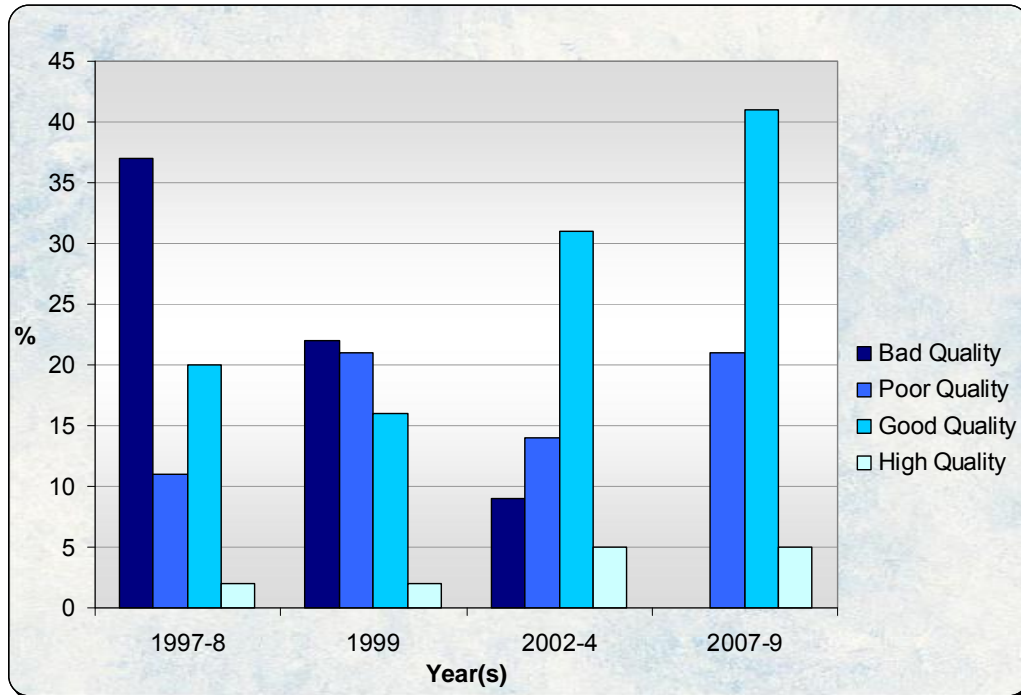
Biological monitoring is a good indicator of long-term water quality

because some macro-invertebrates are more tolerant of pollution than others. A wide range of families of high scoring animals indicates good or high water quality, whilst lower scoring animals indicate poor quality. The *Demoiselle* (damselfly) is an example of a high scoring insect and used as a biodiversity action plan species in Jersey (See Chapter 5).

Indicator	RAG Status	RAG Comment
FW3c Biological quality of surface waters	 <b>GREEN</b> 	Red -Declining biological quality  Amber - Biological quality unchanged  Green - Improving biological quality

The biological quality of Jersey's streams is improving, with just under half (47%) of the Island's



streams now having good or high biological water quality, compared to 22% ten years ago.



Source: States of Jersey Department of the Environment

**Graph 2.10:** The proportion of streams achieving bad/poor quality compared to good/high quality as classified by macro-invertebrates

### Indicator FW3d Number and type of reported pollution incidents

Indicator	RAG Status	RAG Comment
FW3d Number and type of reported pollution incidents	 <b>GREEN</b> 	<p>Red - Increasing number of incidences</p> <p>Amber - No change in number of incidents</p> <p>Green - Decreasing number of incidences</p>

The Water Pollution (Jersey) Law 2000 has successfully been used to tackle point source pollution within Jersey.

Graph 2.11 shows that since 2005, the number of reported pollution incidents has gradually reduced from an average of 160 incidents in 2000-2002 to around 100 incidents per year (2004-2010).

Graph 2.12 shows that between 2005 and 2010, oil incidents (pollution mainly resulting from leaks in domestic oil tanks and pipe work) accounted for around half of the total number of incidents. As a result of this high proportion, an oil care group was established. This was a partnership between Environmental Protection and oil



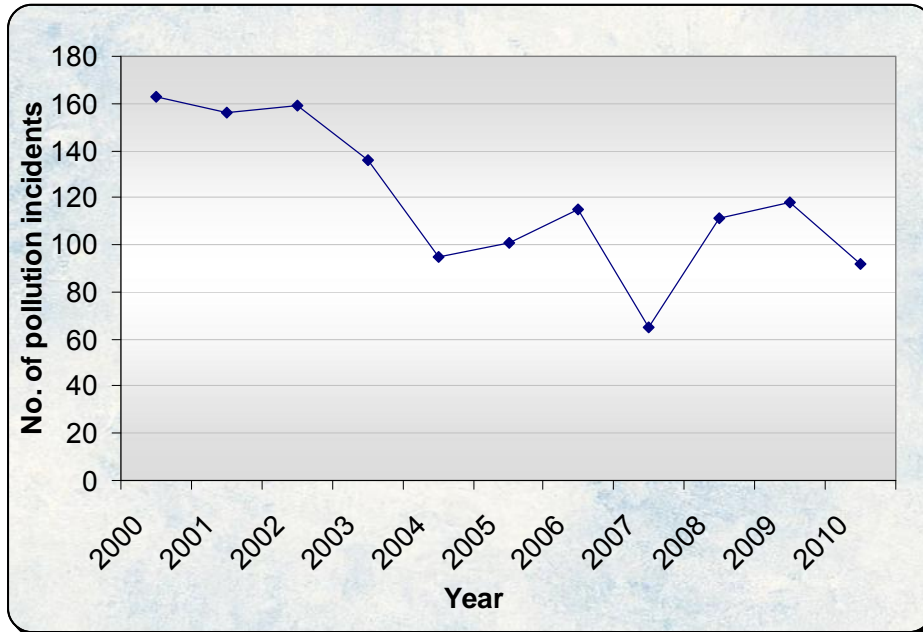


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distribution companies and heating engineers to coordinate relevant. The number of oil incidents that were classed as 'preventable' has recently reduced. It is thought that

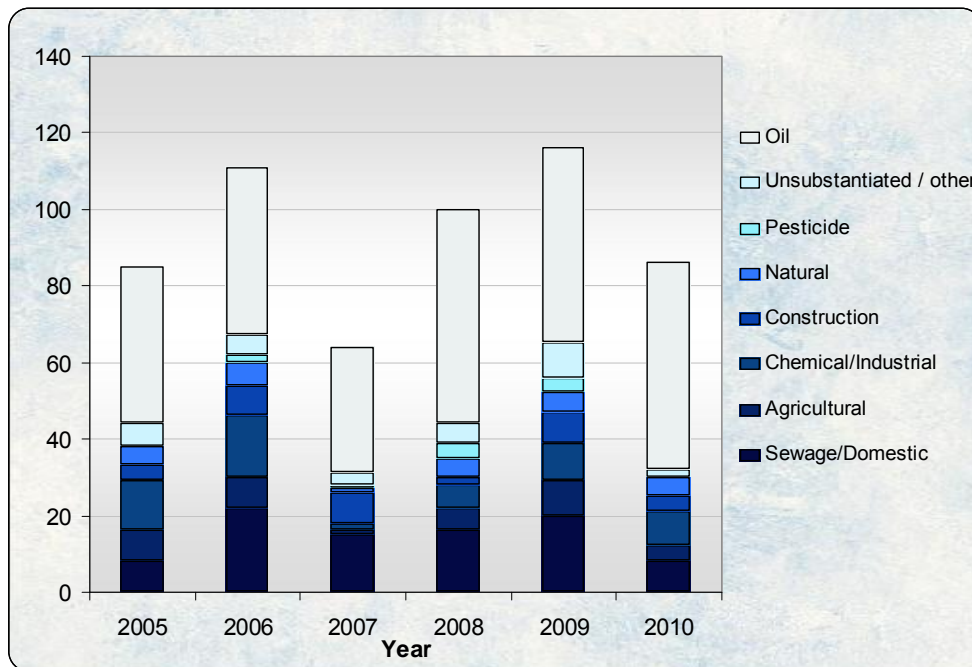
pollution prevention work.

this may be due to the work of the campaign that was run through the oil care group.



Source: States of Jersey Department of the Environment

**Graph 2.11:** Total number of pollution incidents (2000-2010)



Source: States of Jersey Department of the Environment

**Graph 2.12:** Number of pollution incidents by type (2005-2010)



## Indicator FW3e Water Pollution Law - compliance



The Department of the Environment recognises that securing compliance with the various laws and using enforcement powers including prosecution is an important part of protecting the Island's environment.

Enforcement refers to the use of appropriate statutory powers to safeguard the Island's natural environment and resources.

The Department of the Environment achieves this by:

- Ensuring that preventative or remedial action is taken expeditiously to protect the natural environment.
- Securing compliance within the regulatory regime.
- Providing, through the Courts, appropriate sanctions for criminal offences.

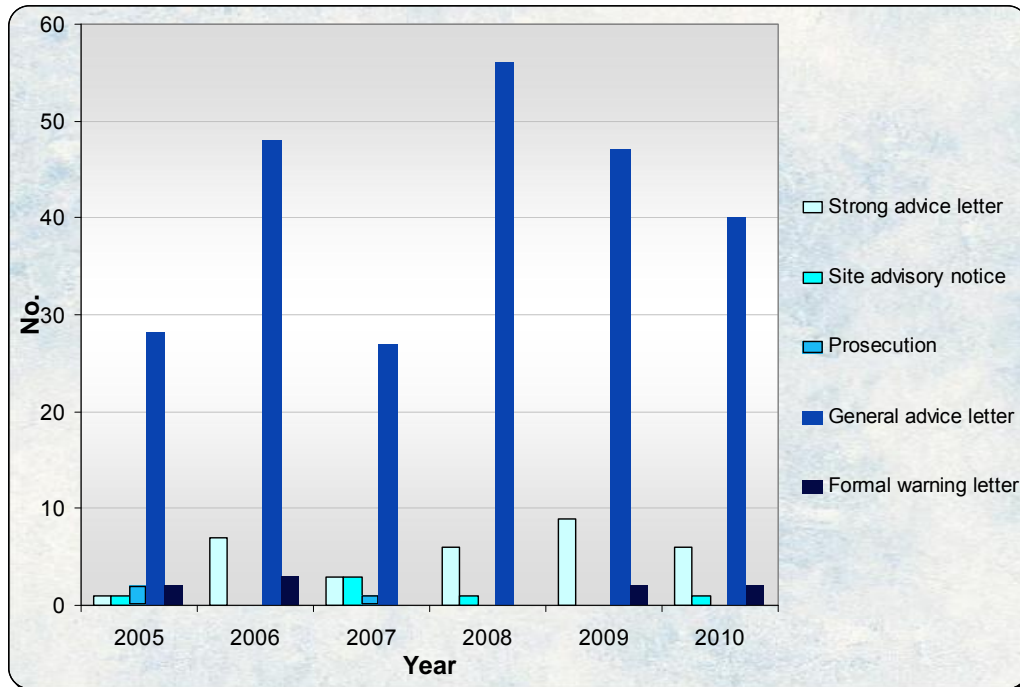
The Department of the Environment works closely with external stakeholders such as the States of Jersey Fire and Rescue Service, Transport and Technical Services, Jersey Water, Jersey Harbours etc.

Indicator	RAG Status	RAG Comment
FW3e Number of prosecutions and outcomes under the Water Pollution Law. Levels of compliance with conditions set on discharge permits/ certificates	 <b>GREEN</b> 	Red – No systems in place  Amber – Regulatory systems under development  Green – Regulatory Systems in place

Since the enforcement provisions of the Water Pollution (Jersey) Law 2000 came into force in November 2000, there have been twelve successful prosecution cases. Three of these cases involved the prosecution of States Departments.

Of the twelve prosecution cases, eight involved the pollution of surface waters or groundwater by

oil, with associated fines ranging from £250-£2500. Two of these prosecutions involved the pollution of surface waters or groundwater by sewage, with associated fines ranging from £1,500-£5,000. The remaining two prosecutions involved the pollution of surface waters or groundwater by slurry, with associated fines of £200.





Source: States of Jersey Department of the Environment

**Graph 2.13:** Enforcement action in response to pollution incidents, 2005-2010

### Indicator FW3f Fertilizer application rates

Diffuse pollution of fresh waters from nitrates can occur when fertilizers are applied to land in excess of crop requirements or without adhering to best practice

guidelines. The correct application of fertilizers may lead to an increased area of land being treated per tonne of fertilizer applied.

Indicator	RAG Status	RAG Comment
FW3f Fertilizer application rates	 <b>GREEN</b> 	<p>Red – Decreased area treated by tonne of fertilizer</p> <p>Amber – Stable area treated by tonne of fertilizer</p> <p>Green – Increase in area (by vergee) treated per tonne of fertilizer</p>

Graph 2.14 provides a three-year rolling average taken between 2003 and 2010 which shows that since 2005 there has been a pronounced increase in the area of land treated per tonne of fertiliser.

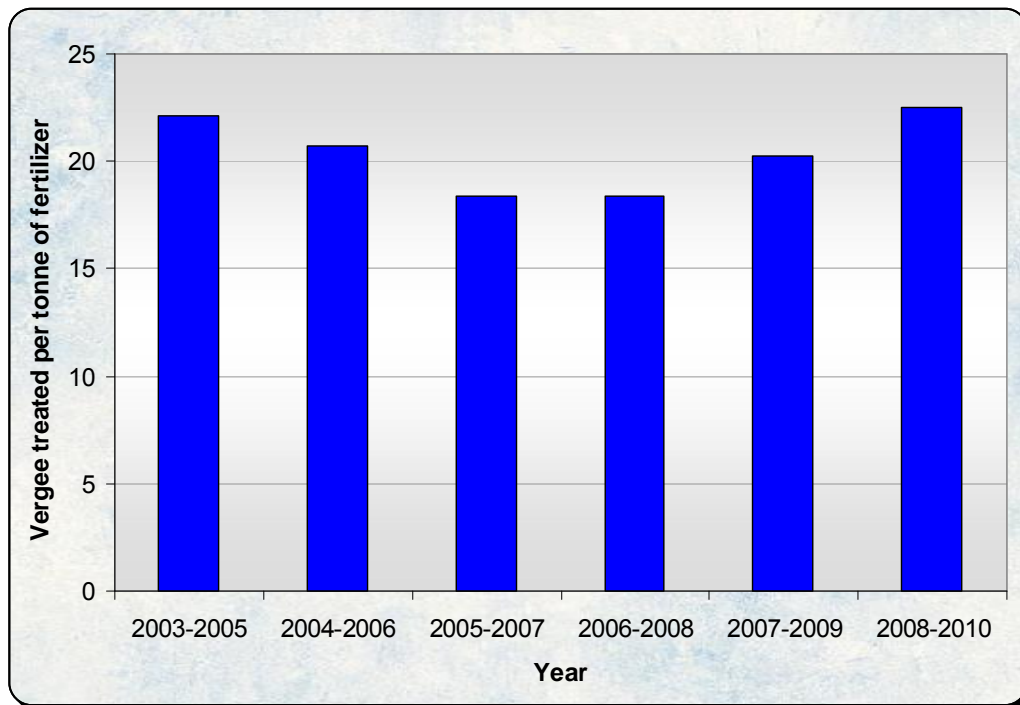
This is a positive sign showing that fertilizer application is being well targeted and over time this will hopefully lead to reduced inputs to land and reduced levels of diffuse pollution.



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These improvements can be related to a number of factors including the investment in slurry storage facilities through the Countryside Renewal Scheme. This has allowed better use of the fertiliser content of organic manures in the crop rotation. In addition, increasing efficiency within the agricultural industry, driven by customer assurance

scheme requirements and costs, has led to a careful examination of farm inputs. The ongoing work between the industry and the Department through the Diffuse Pollution Project should result in more efficient use of resources and minimise pollution risks. This will hopefully result in further improvements as assessed by this indicator.



Source: States of Jersey Department of the Environment

**Graph 2.14** Application rates of fertilizer on agricultural land

### 2.1.4 Marine Water Quality

Jersey prides itself on its clean and unpolluted coastal waters. The designation of the internationally



recognised Ramsar sites around the coast are a testament to this.

#### Indicator MW1a EC Bathing Water Directive Compliance

The Department of the Environment monitors 16 of the most popular bathing water beaches around Jersey. At each beach, the bathing water quality is

sampled weekly between mid-May to the end of September. Monitoring and analysis of samples conforms to a strict protocol that is replicated throughout Europe.

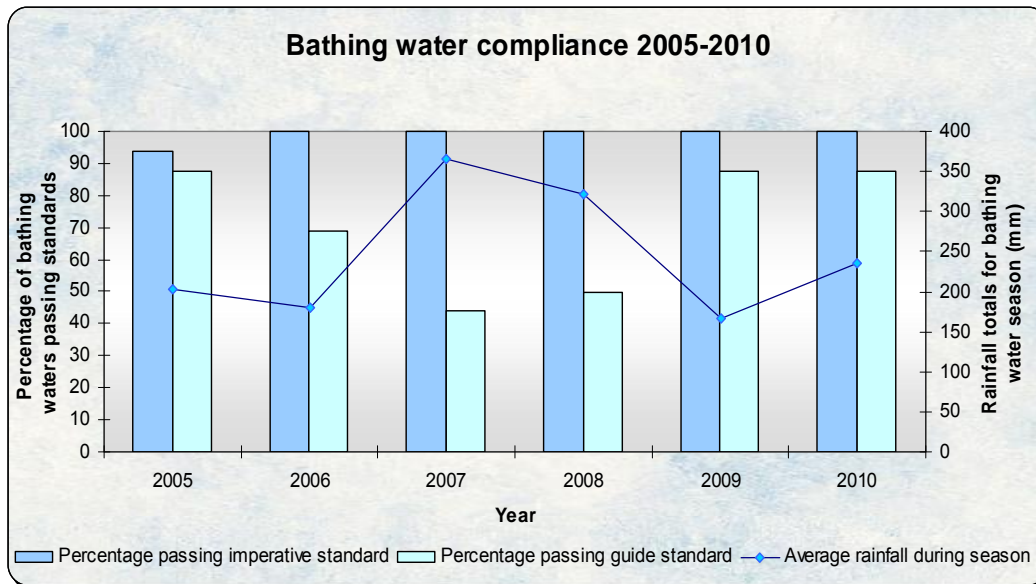


Indicator	RAG Status	RAG Comment
MW1a Levels of compliance with EC Bathing Water Directive	 <b>GREEN</b> 	<p>Red – <i>imperative</i> failure</p> <p>Amber – less than 75% of waters above <i>guide</i> standard and all pass <i>imperative</i> standard</p> <p>Green – 75% of waters above Guide standard and all pass <i>imperative</i> standard</p>

The water quality at Jersey's local beaches is generally high. Since 2006, 100% of Jersey's bathing waters have passed the 1976 European Bathing Water Directive *imperative* standard.

Compliance of Jersey's bathing waters with European Bathing

Water Directive *guide* standard (twenty times more stringent than the *imperative* standard) has varied. The wetter summers of 2007 and 2008 showed lower levels of *guide* compliance compared with the drier summers of 2009 and 2010, see graph 2.15 below.




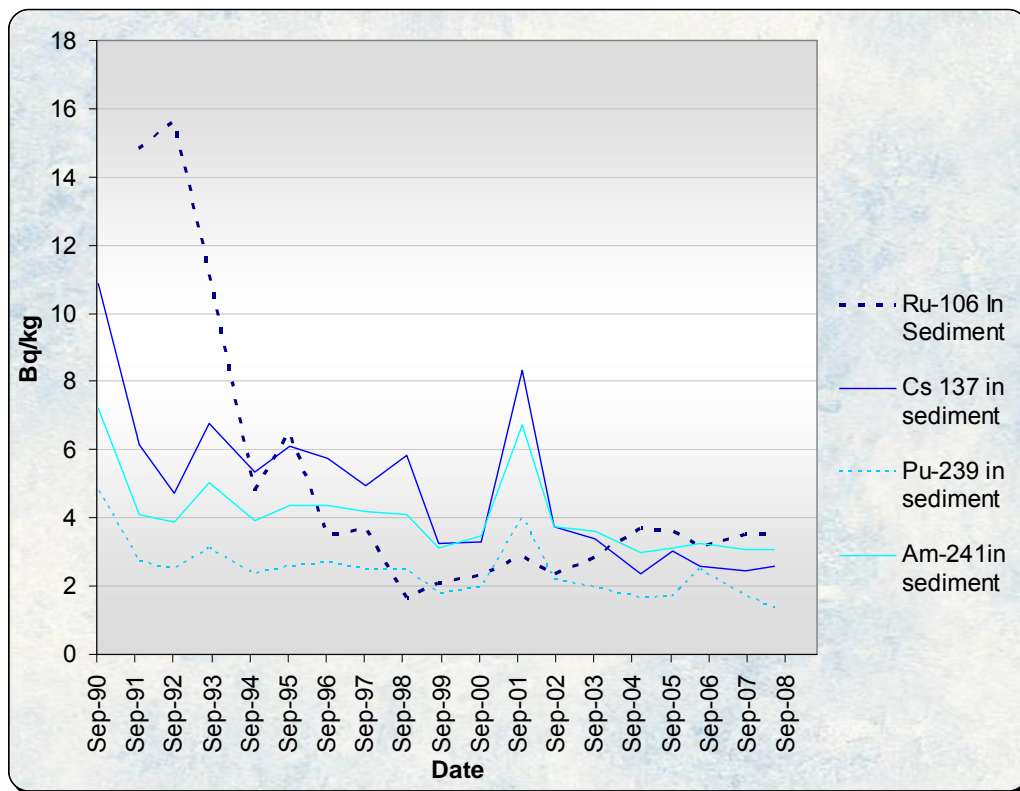
Source: States of Jersey Department of the Environment

**Graph 2.15:** Bathing water compliance between 2005 and 2010



## Indicator MW1b Radioactivity in the marine environment

Indicator	RAG Status	RAG Comment
MW1b Radioactivity in the Marine Environment	 <b>GREEN</b>	Red - Increasing trend in radionuclides. Amber - static trend in radionuclides, Green - Decreasing trend in radionuclides, <i>In reference to the CEFAS draft report.</i>



Source: *Marine Radioactivity in the Channel islands 1990-2009 (Hughes et al 2006).*

**Graph 2.16:** Trends in 4 radionuclides in Jersey's Marine Sediments since 1990. [Note an unrepresented outlying point for Ru-106 in 1990 of 86 Bq/kg]

Graph 2.16 provides data for Jersey showing the trends of 4 radionuclide concentrations in marine sediments for caesium-137 (Cs-137), ruthenium-106 (Ru-106), plutonium- 239+240 (Pu – 239) and

americium-241 (Am-241) over the period, 1990-2009.

Although there are some variances, the trend is for radionuclides to decrease which generally reflects the changes and reductions in



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liquid discharges from La Hague, France, especially from the early 1990s. This stable to decreasing trend can be easily seen from 2002 onwards.

Overall, low concentrations of radionuclides were detected in the marine environment around all the Channel Islands. There was evidence of routine releases from the nuclear industry in some samples for ruthenium-106 in all substrates (in the early 1990's). These were most likely due to discharges from the nuclear fuel reprocessing plant at La Hague, France.

Apportioning the other radionuclides to the possible different sources, including weapon test fallout, is difficult in view of the very low concentrations detected. There was no detectable effect in Channel Islands waters of any

releases of radioactivity from historical disposals of radioactive waste in the Hurd Deep, a natural trough in the western English Channel.

The information for this section is sourced from Marine Radioactivity in the Channel islands 1990-2009 (Hughes et al 2006). An assessment was undertaken of the dose to people who consume high rates of fish and shellfish. In 2009 these groups were estimated to receive less than 0.005 mSv, which is less than 0.5 per cent of the dose limit for members of the public. The assessment concluded a contribution from external exposure. It was concluded that the concentrations of artificial radionuclides in the marine environment of the Channel Islands and the effects of discharges from local sources, continue to be of negligible radiological significance.

### Indicator MW1c Toxic algal testing



The Department of the Environment undertake a monthly monitoring program of both sea water and shellfish samples to test for the presence of toxins associated with algal blooms.

These blooms are uncommon events, where plankton rapidly reproduce due to an abnormal change in the environment. This population explosion can be triggered by unusual weather or pollution events. Some species of plankton in these blooms can

produce toxins, which can be harmful to both humans and marine organisms.

The monthly monitoring program is part of an early warning system that partners with the Plymouth Marine Laboratories and the UK Government's Centre for Environment, Fisheries and Aquaculture Science (CEFAS). Trigger point for action is set by UK standards. To date toxins have not been detected or are below trigger point at sample sites.





Indicator	RAG Status	RAG Comment
MW1c Toxic algal testing	 <b>GREEN</b> 	<p>Red - Toxins detected /above trigger point</p> <p>Amber – N/A</p> <p>Green - Toxins not detected / below trigger point</p>

### Indicator MW1d Heavy metal concentration in shellfish and algae

The Department of the Environment undertake a maximum of quarterly sampling of six trace metals in three benthic bio-monitors that exhibit differing feeding patterns; the common limpet (browser), the slipper limpet (filter feeder) and serrated seaweed.

Samples have been collected from five sites along the south and south-east coast of Jersey since 1993 (Corbiere to Les Ecréhous). The long-term data set is valuable for highlighting potential pollution of the marine environment.

Indicator	RAG Status	RAG Comment
MW1d Heavy metal concentration in shellfish and algae	 <b>GREEN</b> 	<p>Red - Heavy metals exceeding those at a remote offshore site (Les Minquiers)</p> <p>Amber – N/A</p> <p>Green - Heavy metals not exceeding those at a remote offshore site (Les Minquiers)</p>

Results show that between 2005 and 2010 the highest level of zinc and copper were recorded at the West of Albert and Elizabeth Castle sampling sites. The proximity of south coast land drainage and the marina suggest these as potential sources (for example road run-off, zinc anodes on boats). The concentration of lead was highest in Havre des Pas site, whilst levels of cadmium, arsenic and chromium

were equally spread between sampling sites (Corbiere to Les Ecréhous).

Levels of arsenic in all biota has steadily increased between 2005 and 2010 (common limpet; 11-18 mg/kg, slipper limpet 9-16 mg/kg and *Fucus* 36-68 mg/kg). Levels of arsenic and all other metals analysed were similar to the offshore site at Les Minquiers.





Comparing the concentration of trace metals between Jersey and elsewhere indicates that the level of arsenic in marine biota is less than that recorded from similar studies in Weymouth and that levels of cadmium, copper, zinc and lead in the common limpets do not exceed values cited for elsewhere (UK and neighbouring France).

The table below provides information on reported trace metals levels in soft parts (mgkg<sup>-1</sup>, dry weight) of the common limpet and *Fucus serratus* in UK and European seawaters. The mean and maximum concentration at La Collette, Jersey (2005-2010) is included for comparison.

Common limpet ( <i>Patella vulgata</i> )							
Location	Arsenic	Cadmium	Chromium	Copper	Lead	Zinc	
	As	Cd	Cr	Cu	Pb	Zn	Source
<b>Jersey mean</b>	<b>12.9</b>	<b>4.9</b>	<b>2.1</b>	<b>4.9</b>	<b>4.5</b>	<b>96.2</b>	States of Jersey
<b>La Collette max</b>	<b>17.5</b>	<b>8.2</b>	<b>3.9</b>	<b>8.2</b>	<b>4.8</b>	<b>151.8</b>	
Goury France		2.7-7.5	0.2-2.4	3.0-6.6	0.9-3.7	40-91	Miramand & Bentley, 1991
Portland, Weymouth	19-24	2.2-3.7	<1-2.9	9.7-19	1.1-2.1	63-72	Langston et al. 2003
Looe estuary, Devon		3.3-21.5	0.5-2.6	10-27	5.1-38	83-224	Bryan & Hummerstone, 1977
<i>Fucus serratus</i>							
<b>Jersey mean</b>	<b>61.0</b>	<b>1.1</b>	<b>0.9</b>	<b>2.9</b>	<b>2.3</b>	<b>51.6</b>	States of Jersey
<b>La Collette max</b>	<b>103.0</b>	<b>2.3</b>	<b>1.6</b>	<b>4.8</b>	<b>6.3</b>	<b>91.8</b>	
Goury France		0.5-1.9	0.1-0.8	0.8-2.0	0.2-2.0	32-100	Miramand & Bentley, 1991
Irish Sea		1.1-1.4		3.2-10.1	2.1-4.0	80-171	Preston et al. 1972

Bryan, G.W., Langston, W.J. & L.G. Hummerstone. 1980. The use of biological indicators of heavy metal contamination in estuaries with specific reference to an assessment of the biological availability of metals in estuarine sediments from south-west Britain. *J. Mar. Biol. Assoc. Occ. pap.* 1: 1-73.



Langston, W.J, Chesman, B.S., Burt, G.R., Hawkins, S.J., Readman, J., & P.Worsfold, 2003. Site characteristic of the south west European marine sites. Chesil and The Fleet. *Mar. Biol. Assoc. Occ. Pap* 11: 168p.

Miramand, P & Bentley, D. 1991. Heavy metal concentrations in two biological indicators (*Patella vulgata* and *Fucus serratus*) collected near the French nuclear fuel reprocessing plant at La Hague. *The Science of the Total Environment*, 111: 135-149

Preston, A. Jefferies, D.F, Dutton, J.W.R, Harvey, B.R & A.K. Steele. 1972. British Isles coastal waters: The concentration of selected heavy metals in sea water, suspended matter and biological indicators- a pilot survey. *Environ. Pollut.* 3: 68-82.



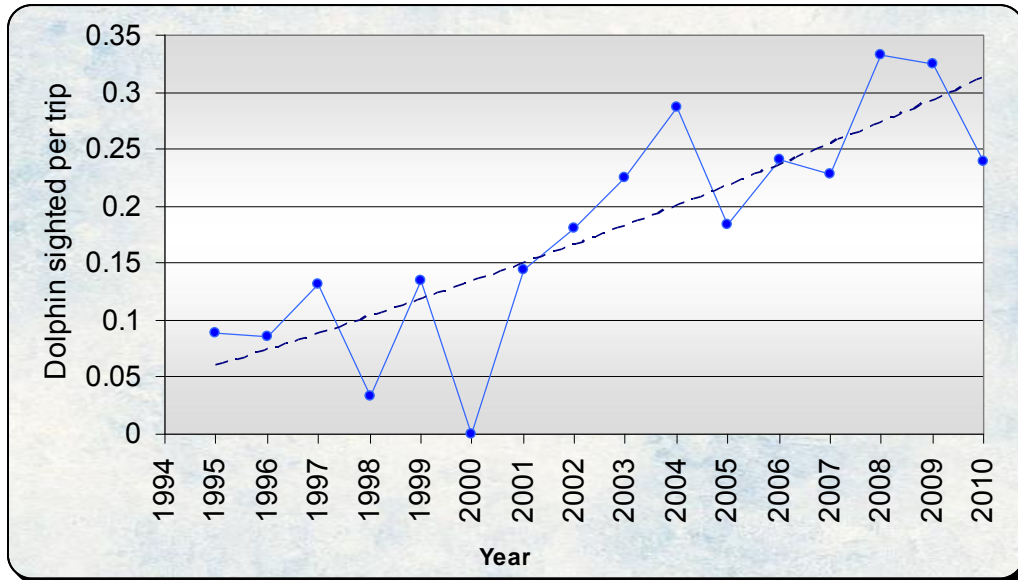
## Indicator MW2a Dolphin species diversity, distribution and abundance

Indicator	RAG Status	RAG Comment
MW2a Dolphin species diversity, distribution and abundance	 <b>GREEN</b> 	<p>Red – Observations note severe decline in population status</p> <p>Amber – Observations note minimal decline in population status</p> <p>Green – Observations confirm population maintained at current ‘good’ levels</p>

The fisheries protection vessel monitors cetacean presence and activity. Data collected includes date, location, species, pod size, age cohort and activity. Dolphins were sighted on 22 separate occasions in 2010. This was a decrease on 2009’s figures, but still higher than most previous years and above the 10 year average (Graph. 2.20). All sightings were identified as bottlenose dolphins. Most sightings occurred to the east of the Island ranging from Les Ecréhous in the north to Les Minquiers in the south. In total 183 adult dolphins and 17 Juveniles were observed. This is a slight

increase in the total number of dolphins seen in 2009 (173) and 2008 (125). Juveniles represented 9% of sightings in 2010, compared to 10% in 2009 and just 3% in 2008. Overall, the drop in occasions dolphins were sighted, but increase in total number of individual dolphins seen, suggests an increase in the observation of groups or pods over individuals.

The pattern and frequency of patrols remained relatively unchanged in 2010, with days at sea were slightly more than 2009, due to time spent under refit in 2009.









Source: States of Jersey Department of the Environment

**Graph 2.20** Dolphin Sightings in Jersey’s waters.

Data on grey seals is harder to interpret in a meaningful way since sightings are based on haul outs. For example in 2010 Grey seals were only sighted on 4 separate occasions, twice at Les Ecréhous

and twice at Les Minquiers but this is unlikely to mean that only 4 seals are present. Anecdotal evidence suggests increase in successful breeding given increased reports of small white pups.

**Indicator MW2b Marine Water Indicator Species**

Indicator	RAG Status	RAG Comment
MW2b Marine water indicator species		
Whelks	 <b>RED</b> 	Green – above reference point Amber – At reference point Red – below reference point
Ormers	 <b>AMBER</b> 	
Lobsters	 <b>GREEN</b> 	



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Reference points for commercial exploited stock are established by research projects designed and undertaken by Departmental

scientists in collaboration with French and UK colleagues. These programmes have been subject to independent peer review.

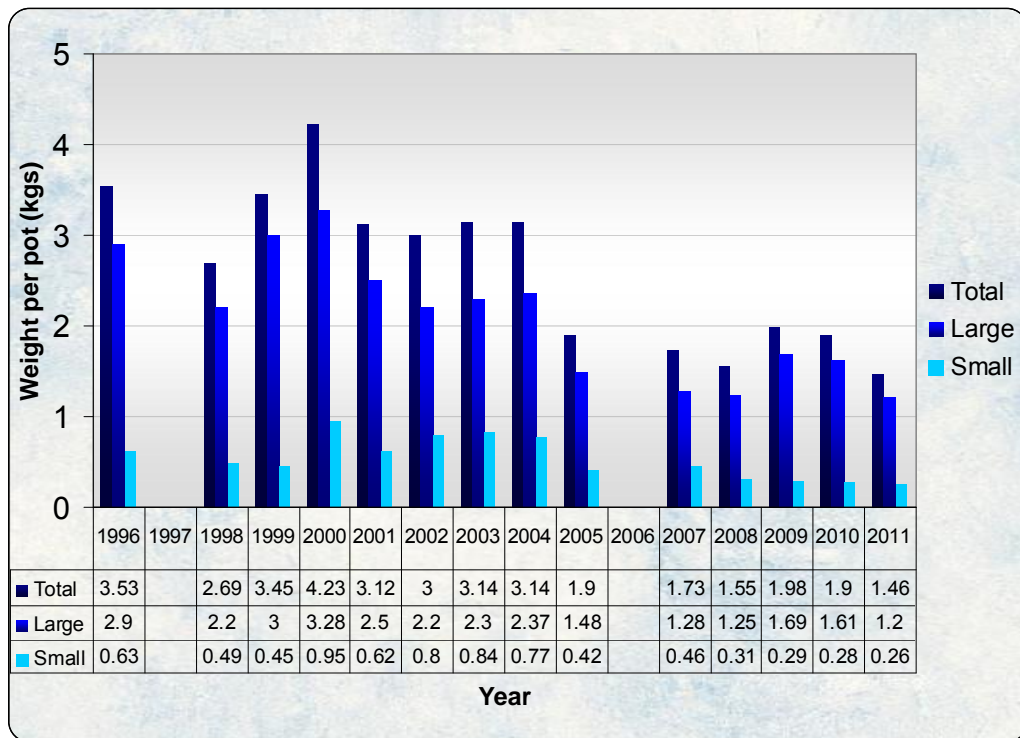
### Whelks

The annual study of whelk (*Buccinum undatum*) catch per unit effort (CPUE) was conducted in February 2010. The same study sites and methodology were used as in preceding years.

observed with respect to the large fraction of the catch with a CPUE of 1.61 kgs in 2010 compared with a CPUE of 1.69 kgs in 2009.

Overall, the CPUE in 2010 was 1.89 kgs per pot (Graph. 2.22). This was a decrease on the CPUE recorded in 2009 (1.98kgs) but still the second highest CPUE since 2004. The same trend was

The CPUE for the smaller fraction of the catch was the lowest on record at 0.28 kgs. Overall there is still a trend of decline in the stock, with no significant improvement on catches from the last fourteen years.



Source: States of Jersey Department of the Environment

**Graph 2.22:** Whelk Trial data 1996-2011.

### Ormers

The numbers of ormers found in the 2010 survey were very similar

to those found in the 2009 survey at both island sites, see data table



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below. At St. Catherine's Breakwater there was no evidence of any mortality. Ormers of all sizes were observed by the dive team and all appeared healthy. The overall impression of the area status was good. There is still an amount of discarded or lost fishing tackle and general rubbish on the boulder rock foundation of the breakwater and, although unlikely to impact on the ormer stock, could have a detrimental effect on other species.

The numbers of ormers found at the St. Brelade's Bay site were similar to 2009. There was again no evidence of mass mortality. Ormers and shells were found in a variety of sizes. Previously, there has been concern that the area had been used for illegal ormer diving, however the dive team did not find any evidence of up-turned rocks or disturbance. The conditions were clear, with no sedimentation issues.

The Les Minquiers site yielded a similar number of ormers as in 2009. Again there was good evidence of a variety of size classes and little evidence of overturned rocks. New sites were assessed in 2009 and 2010 in an attempt to find more representative sites, however none of these new sites yielded as many ormers as the traditional monitoring location.

Similar numbers of ormers were found this survey as last year. No mortality was seen at either site and the stock found would appear to be healthy. To the best of our knowledge no mortalities of ormers were reported in France for 2010. Whilst stocks are slightly down on some previous surveys, numbers found were still significant. This would seem to be endorsed by the information received from fishermen. There was no other evidence to suggest that there was a decline in stock.

It must be remembered that this survey represents a snapshot indication of the state of the stock and not an absolute assessment.

Research into ormer population numbers could benefit from a supplementary study using volunteer low water fisherman. Volunteers could be supplied with plastic calipers and waterproof notebooks and when finding ormers during their usual low water fishing activities they could record their size and location. This data would not only provide supplementary population samples, for year on year comparison, but could also provide size data for frequency analysis of the population structure.

Year	St Catherines	Location	
		St Brelade	Les Minquiers
2000	1.5	0.1	1
2001	2.5	0.1	1.5
2002	3	1.5	2
2003	3.5	2	1.5
2004			
2005	2	1.5	1



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2006	2	1.5	0.1
2007			
2008	1.5	0.75	0.2
2009	1.5	0.75	0.3
2010	1	0.5	0.3

Source: States of Jersey Department of the Environment

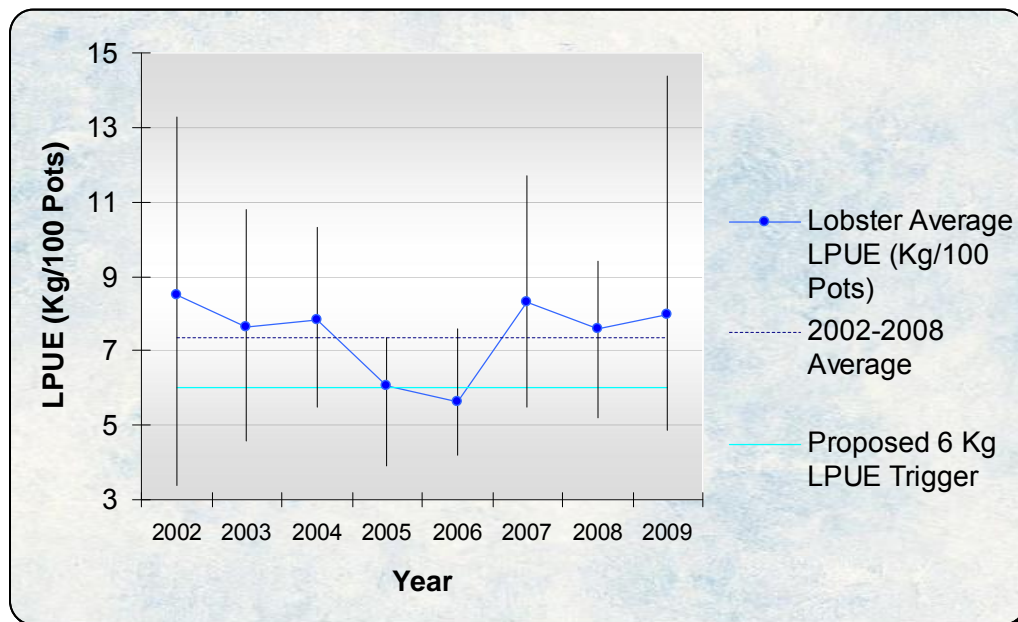
Table: Number of ormers found per 1 minute of search at the sample sites.

### Lobsters

In 2010, there was a total of 192 lobsters caught, an increase of 33.9% on the average for the previous 5 years. 180 pot hauls were achieved in the 2010 research trials, which is the highest since 2005. There was a marginal 4% increase in total lobsters per pot (1.07 kg) compared to the 5 year average (1.02 kg). However, within the catch, there was an increase of 102.7 % in lobsters per pot that were above the minimum

landing size. This is the highest % of catch as sized lobster (28.13%) since the study began in 2004.

The state of the stock is monitored using a number of systems including fishery independent and fishery dependent. This data is used to establish a current stock status. The current levels of approx 13 kg/100 pot lifts is well above the management action trigger point of 6kg.





Source: States of Jersey Department of the Environment

**Graph 2.24:** Annual average and range of monthly Lobster LPUE.



## 2.1.5 Ramsar sites

### Indicator MW3a Number and status of RAMSAR sites

Indicator	RAG Status	RAG Comment
Number and status of RAMSAR sites	 <b>AMBER</b> 	<p>Red – Qualifying sites not yet designated and not programmed in for designation</p> <p>Amber – All Sites designated but management plans not yet prepared</p> <p>Green – All qualifying sites are Ramsar designated and with management plans in place</p>

The importance of Jersey’s coastal waters is recognised by the fact that almost 190 square kilometres of intertidal habitat, spread across Jersey’s south-east coast and offshore reefs, are designated as wetlands of international importance under the Ramsar Convention. Four sites are designated as Ramsar sites and comprise of various habitats: reefs, boulder fields, mud, sandy and shingle shores not covered by water at low tide, combined with shallow tidal lagoons, seagrass beds and a constellation of outlying reefs

Designation as a Ramsar site is achieved by fulfilling criteria established under the Convention of Wetlands of International Importance commonly known as the Ramsar Convention. Criteria relate to the importance of a site to ecological communities, waterbirds and fish species. Once a site is designated a management plan is required. The plan provides a framework for the wise use of the area. It aims to integrate the

environmental management of the Ramsar area so that the ecological character of the area is conserved, in conjunction with the area’s important social and economic functions.

Jersey is situated in the Normano-Breton Gulf. The tidal range can exceed 12m. Its waters are relatively warm due to the influence of the Gulf Stream and surrounding oceanographic conditions. Assessment has shown a diverse range of habitats, communities and species. All sites have great ecological value which play a substantial ecological role in the natural functioning of the system.

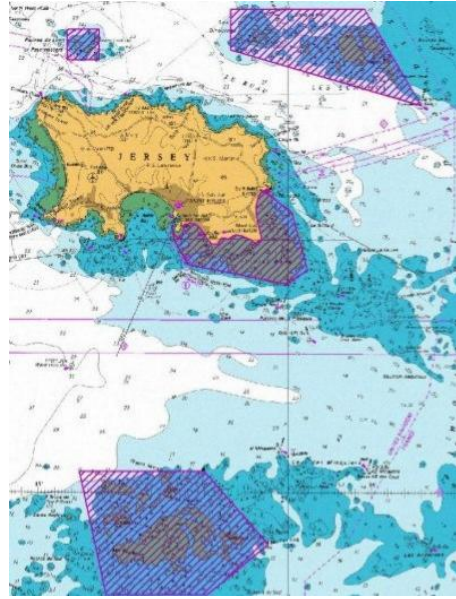
At low tide various habitats are exposed, including reefs, boulder fields, sandy shores and shingle banks. Jersey’s waters are fed clean well-oxygenated water which, together with the range of habitats and bio-geographical position, supports a wide range of rich and diverse biotopes and some unusual species assemblages. The flora and fauna is characterised by limit-



of-range species at the northern and southern margins of their distributions which are not present on shores either to the north or south respectively. Fishing and other recreational activities is of great cultural, social and traditional

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importance to the population of Jersey. Each of the four Ramsar sites have individual management plans. These plans contain sites specific details including management objectives and plans.





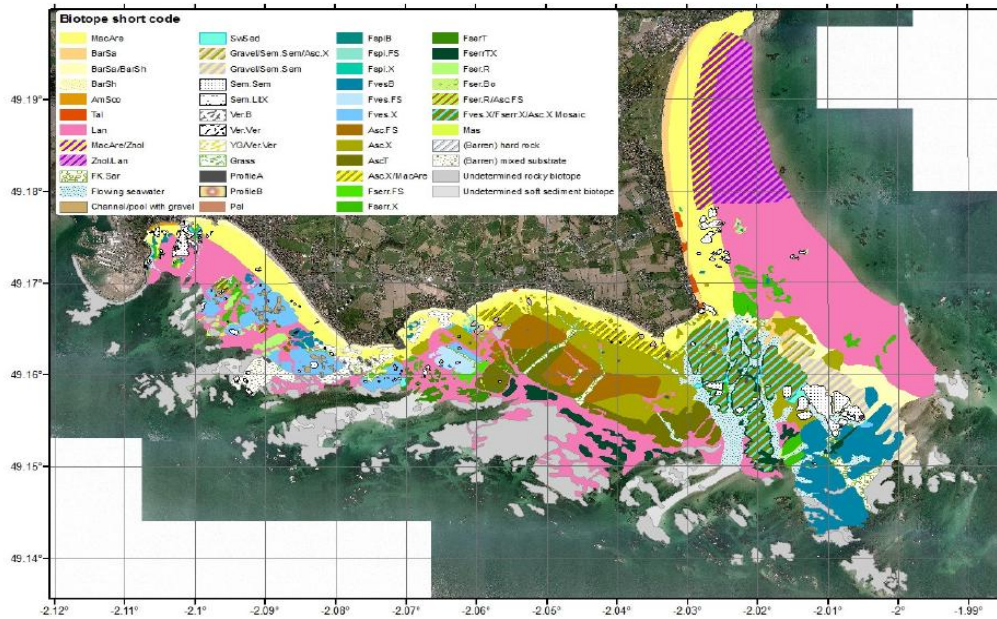


Indicator MW3b Biotope quality SE Ramsar site

Indicator	RAG Status	RAG Comment
Biotope quality SE Ramsar site	N/A	See text

Several studies have been published over the years that have assessed the biotopes within the SE coast Ramsar site (Kindleysides, 1995; Mercer, 1998; Linley et al., 2009). Linley et al. (2009) identified and mapped biotopes based on the JNCC

classification from La Collette to Gorey, see biotope map below. The SE coast management plan sets out a monitoring strategy that establishes permanent transects and protocols to facilitate assessment of biotope quality.



Biotope map of the Ramsar site. (Linley et al, 2009)



### 2.2 Update on 2005 environmental priority and key actions

#### Pressure on the quality and quantity of our water resources (State of Jersey 2005)

The replenishment of local water resources is from rainfall – a finite resource. The quality of these waters is affected by diffuse pollution (such as nitrates from fertilizer application and soakaways) or point source pollution (such as oil spillages from heating tanks). Around 90% of the Island's population receive their water from the public water supply which is predominately collected from streams.

In order to address this:

- i. Basic controls are necessary to ensure equitable distribution of this scarce resource. The draft Water Resources Law addresses this issue,
- ii. We must continue to enforce measures that minimise the occurrence of pollution from point source or diffuse sources, and
- iii. We must continue to reduce the legacy of pollution. To do so, we need good land management practices to minimise any further contamination.

**NB** Marine waters not identified as a priority in 2005. But marine mammals were included in the biodiversity priority.

#### 2.2.1 Water Resources Law

The Water Resources (Jersey) Law 2007 provides for the protection, management and regulation of the Island's inland water resources and promotes the conservation of animals and plants that rely on that resource and their habitats. It allows the proper allocation of water resources for the benefit of the Island's community and environment, ensuring that sufficient water will be available for drinking, industry, agriculture and recreation. Current and future public and private abstraction rights are also be protected.

The licensing and registration process includes the collection of comprehensive additional hydrological and hydrogeological data, the assessment of which will lead to a greatly improved understanding of the Island's water resources.

This, in turn, will also allow the long term integrated, equitable and sustainable management of the Island's limited water resources, the management of drought situations and increasing demand. It will also permit long-term strategies to be implemented to



minimise negative impacts of global warming and climate change.

At the end of 2010, a total of 198 Water Resources abstraction licences were in force, two further licences having been revoked. A total of 16 Water Resources

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abstraction licences were held by States of Jersey Departments. A total of 3129 registrations were in force at the end of 2010, of which 45 registrations were held by various Departments of the States of Jersey.

### 2.2.2 Pollution prevention

The Department of the Environment considers pollution prevention and public awareness of environmental issues as an integral and important part of its work and has been active in this area for many years.

Effective public education can reduce the risk of pollution occurring and potentially reduce the number of incidents attended.

Various means have been developed to inform the public about their responsibilities under the Water Pollution (Jersey) Law 2000 and how they can prevent pollution occurring.

This includes dissemination of pollution prevention information using different media, primarily through officer advice, anti-pollution campaigns, leaflets, the States website and the joint Oil Care Campaign. Pollution prevention is promoted through the Eco-Active campaign (See Chapter 6).

The Oil Care Campaign was established in 2008. The objective of the campaign is to reduce pollution caused by oil in Jersey and to provide a forum of oil companies, plumbers and heating engineers to enable discussion on joint concerns.

Successes to date include:

- distribution of oil care stickers to the majority of oil tank owners in the Island,
- production of the code of best practice for fuel distribution companies, heating engineers and plumbers,
- joint training day of fuel delivery drivers with Jersey Water,
- distributing a letter informing owners of the environmental risks of single-skinned oil tanks,
- alterations to the technical guidance notes of the Building Bye (Jersey) Laws 2007, to reflect common faults with oil tanks and associated pipework.



### 2.2.3 Marine Waters

Significant improvements have been achieved in our understanding and the management of our marine environment since 2005. The Integrated Coastal Zone Management (ICZM) Strategy was agreed by the States in 2008 and the Department of the Environment has delivered key aspect of this despite resourcing issues.

Work to deliver obligations under multi lateral environmental agreements (MEA's) has continued especially the Ramsar convention. The Ramsar Management Authority, established in 2010, has delivered management plans for the SE Coast and Paternosters

Ramsar Sites and is planning to complete the remaining by the end of 2011.

Management of fish stocks has been achieved through the Fisheries and Marine Resources Panel in Jersey and the Joint Advisory Committee and Joint Management Committee, set up under the Bay of Granville Treaty, for the wider Normano-Breton gulf.

Research has continued and developed since 2005 with programmes looking at commercial fish and shellfish stocks, marine mammals, environmental monitoring and key species and habitats ongoing.



### 2.3 The environmental priorities and key actions for 2011 - 2015

#### Water – Fresh and Marine Waters – The next 5 years

##### Fresh water

- Ensuring security of potable supply - Working with Jersey Water to enable them to deliver wholesome water in a sustainable way.
- Managing water resources- Continue to manage and develop our understanding of Jersey's water resources to enable us to protect that resource, particularly during periods of drought, for the benefit of the Island as a whole.
- Applying a more holistic way of working - Ensure that we are delivering an integrated and holistic approach to the protection of our aquatic environment by more thematic working, for example applying the principles of the Water Framework Directive,
- Responding to identified key pressures - Continue to develop and deliver strategies to mitigate identified pressures within the fresh and marine water environment.
- Encouraging stakeholder involvement and responsibility - Investigate ways to communicate with stakeholders and promote public engagement in water quality and water resources issues.

##### Marine Waters

- Continue to ensure compliance with legislation and conventions (e.g. OSPAR, ASCOBANS)
- Implementation of management plans for all Ramsar sites
- Development of Marine Spatial Plan
- Establish network of Marine Protected Areas (MPAs)

#### 2.3.1 Fresh Water

The key challenge relates to ensuring the security of the potable, drinking water, supply. The Department of the Environment will be continuing to work closely with Jersey Water to enable them to deliver wholesome water in a sustainable way in line with the Jersey Water 25 year plan. In order to manage our water resources, it

is essential that we continue to manage and develop our understanding of Jersey's water resources. This will enable the protection of that resource, particularly during periods of drought, for the benefit of the Island as a whole. By adopting a holistic approach to water policy and management, The Department of



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the Environment aims to integrate water management on a thematic basis across different policy areas. Where pressures have been or are identified in the future, the Department of the Environment will work with key stakeholders to develop and deliver relevant strategies designed to mitigate

identified pressures within the fresh and marine water environment. Key to successful management of our water resource is engaging with stakeholders in order to communicate and promote public engagement in water quality and water resources issues.

### 2.3.2 Marine Waters

The key challenge for the marine environment remains the delivery of a marine spatial plan for Jersey territorial waters and the wider Gulf with the conservation and preservation of marine habitats and species at its core. We are tasked under various obligations, including OSPAR and MSFD, of ensuring clean, healthy, safe, productive and biologically diverse seas.

A robust, species diverse marine ecosystem must surely be the basis for sustainable exploitation and use of the marine environment and be more resilient to climatic and other environmental changes. Developing an ecologically coherent network of Marine

Protected Areas (MPAs) is central to the success of this objective.

Delivery of other obligations under all the conventions and agreements remains another key challenge particularly the implementation of the management plans for the four Ramsar sites. Management of these important sites are vital and needs to be achieved although the complexity of this challenge needs to be acknowledged.

Full integration of all stakeholders in policy formation, management decisions and service delivery is a significant challenge in the marine environment and yet is a key component to the success of any aims.



Waste



This chapter provides an overview of the trends in Jersey in relation to waste arisings and recycling. The volume of waste produced is generally related to the population of Jersey and the prevailing economic climate.

Where possible, the data in this chapter has been presented in relation to the population to provide an indication of whether the amount of waste and amount of recycling per person is increasing or decreasing.

This chapter also provides some information in relation to the environmental impact from waste management and disposal activities.

The Jersey Solid Waste Strategy provides the overall strategic direction, targets and method of monitoring waste in Jersey. The Solid Waste Strategy was published in 2005 and is due for revision during 2012.



### 3.1 The Indicators

#### 3.1.1 Waste Management

Jersey's Solid Waste Strategy follows the internationally agreed Waste Hierarchy which prioritises waste reduction, reuse and

recycling. Minimising waste and increasing levels of reuse and recycling reduces the amount of residual waste requiring disposal.

#### Indicator WR1a – Total non-inert waste reused/recycled and composted per annum

Indicator	RAG Status	RAG Comment
WR1a Total non-inert waste reused/recycled and composted per annum	 <b>GREEN</b> 	<p>Red – Less than 30% of waste is recycled by 2009</p> <p>Amber – 31-30% of waste is recycled by 2009</p> <p>Green – by 2009 32% of waste is recycled by 2009</p>

As the target recycling rate of 32% was achieved in 2009, this indicator is shown as green, however disappointingly the recycling rate fell to 31% in the following year.

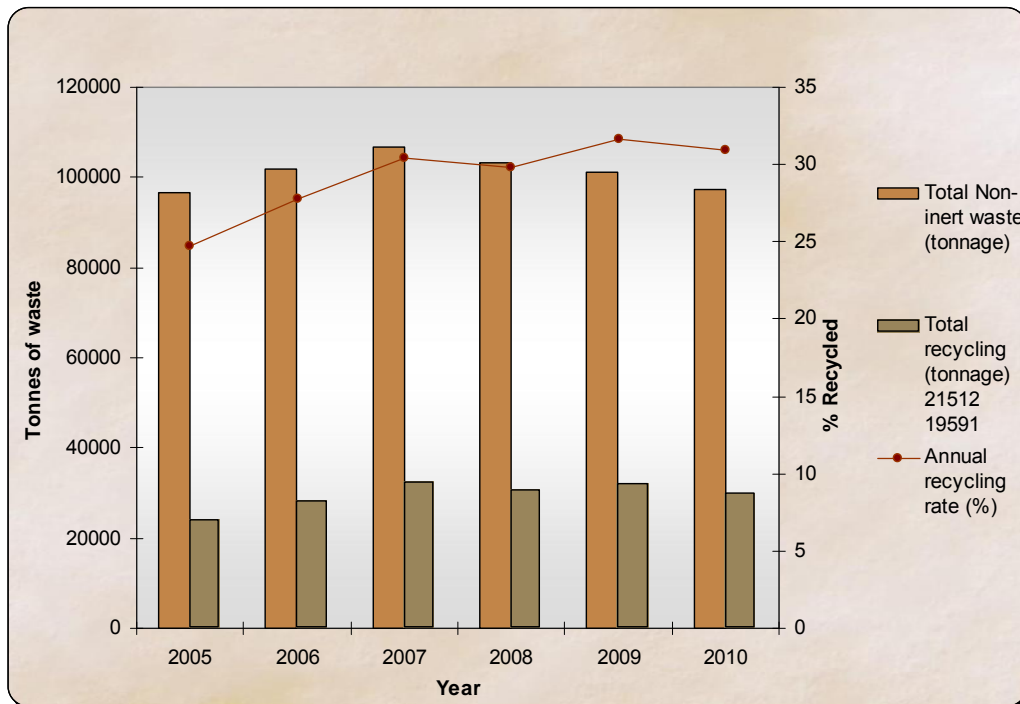
The target for the next reporting period is to achieve 36% by 2018, see the table below.





Year	Total tonnes non inert waste	Total tonnes recycled	% recycling rate
2005	96,753	23,905	25%
2006	101,950	28,322	28%
2007	106,587	32,377	30%
2008	103,231	30,747	30%
2009	101,094	31,934	32%
2010	97,449	30,093	31%

Table 3.1 Total amount of solid waste (non-inert) recycled



Source: States of Jersey Transport and Technical Services Department

Graph 3.1 Total amount of solid waste (non-inert) recycled

The above graph shows that the total non-inert waste generated increased year on year until 2008 when changes to the global economy affected this growth trend. Although this affected the tonnage of recyclables collected,

there are also other contributing factors which can be as diverse as the local climate impacting the amount of green waste received for composting and changes to packaging which are described in more detail in the following section.

**3.1.2 Total solid waste arisings per capita**

The tonnage of non-inert solid waste is used to analyse changes in the Island’s solid waste arisings.



This data reflects the total tonnage of recyclables collected and the total residual waste received for



energy recovery. This provides an indication of Jersey's municipal solid waste although it includes domestic and commercial wastes as these are not calculated separately. It does not include other waste streams such as the scrap metal recycled, aggregates recycled and the residual inert

waste received. These types of wastes are from industrial sources such as construction and demolition and due to the large tonnages recorded for these wastes, including them in this data would not allow the local data to be compared to other jurisdictions.

**Indicator WR1b – Total Solid Waste (non-inert) arisings per capita**

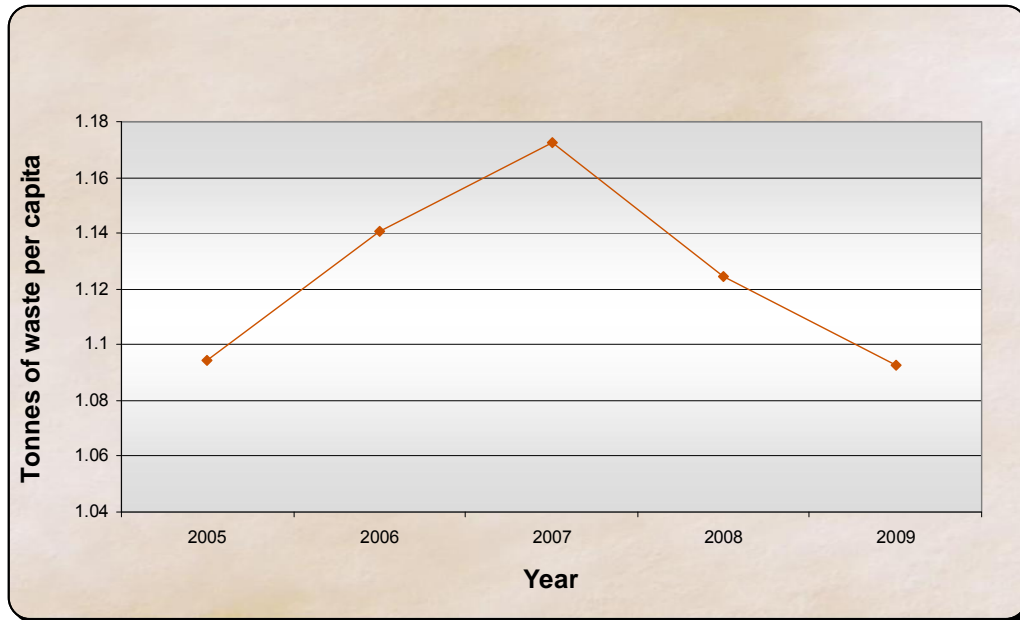
Indicator	RAG Status	RAG Comment
WR1b Total Solid Waste (non-inert) arisings per capita	 <b>GREEN</b> 	Red - Waste per capita is increasing Amber - Waste per capita is static Green – Waste per capita is reduced

Year	Total Tonnes Solid Waste	Population	Tonnes of waste per capita
2005	96,753	88,400	1.09
2006	101,950	89,400	1.14
2007	106,587	90,900	1.17
2008	103,231	91,800	1.12
2009	101,094	92,500	1.09
2010	97,449	*	*

Source: States of Jersey Transport and Technical Services Department

**Table 3.2** Total tonnes solid waste per annum

\* 2010 population data not available, 2010 per capita figures not included.  
 \*\* Indication for 2010 is that as a decrease in solid waste was reported, the tonnes of waste per capita will have also decreased in 2010



Source: States of Jersey Transport and Technical Services Department

**Graph 3.2** Total Tonnes of Solid Waste arisings per capita

Graph 3.2 shows that waste per capita was increasing year on year from 2005-2007. The decline since 2007 is likely to have been caused by the shift in the global economy. An improving economy and a continued increase in the number of households will tend to increase the amount of solid waste arisings but this will be balanced by international trends towards waste minimisation, for example, by reducing the weight and volume of packaging.

This highlights the impact of global factors on local indicators and another significant factor is the amount of packaging entering the local waste stream. Factors addressing this are the 'Courtauld Commitment' which impact national retailers operating locally; work on health promotion to deter against the purchase of ready meals/heavily processed (and packaged) foods and the Recycle

for Jersey and ECO-ACTIVE education programmes.

This data focuses on the tonnage of non-inert solid waste received for recycling and energy recovery but there are other large waste streams that are not included above that the Island generates each year.

In 2010 108,158 tonnes of inert material was received and used in the filling of the La Collette reclamation site and 60,229 tonnes of material was separated and reused as recycled aggregates. This figure is fairly typical of previous years but varies depending on the activity in the construction and earth moving market.

The La Collette inert waste site is the only publicly owned site on the Island for the disposal of inert waste. Inert waste takes many forms but is principally building and demolition waste and general



excavations. The volumes received at La Collette are totally dictated by market forces and the Transport and Technical Services Department has little control over the volumes received. A review of planning obligations will consider options for reducing these volumes.

In 2010 TTS began work on the Inert Waste Strategy which seeks to determine the available tipping space, and hence end life of La Collette as an inert waste tip, and the identification of another suitable site in advance of La Collette closing. Initial estimates show that there is between 6 - 8 years tipping space left at La Collette and TTS are currently investigating ways of extending this period.

The safe disposal of scrap metal, particularly vehicles, is an important service to the Island. Jersey's current recycling position for metals is good, with over 80% being recycled. Currently the residue from the fragmenting

plant, which is a mixture of plastics, rubber, insulation and some embedded metals, is disposed of at the Energy from Waste (EfW) plant.

Clinical waste is a special category of waste because it may include pathogens and cytotoxic compounds. As a result, it must be kept totally separate from other waste streams and be burnt in a special incinerator at higher temperatures than those achieved in the Energy from Waste plant.

There are a number of hazardous waste materials, such as asbestos, redundant chemicals and used oil. Asbestos is stored in containers at La Collette. The final disposal options for the asbestos in storage are being assessed. Other hazardous wastes are stored at Bellozanne, in a secure compound. Some waste oils are re-used as fuels and other hazardous wastes including chemicals and agrochemicals are shipped to the UK for safe disposal.



### 3.1.3 Recycling

As explained above, the recycling target set out in the Solid Waste Strategy was 32% by 2009. This was achieved in 2009 and so the indicator is shown as green.

However, a reduction in the recycling rate to 31% was recorded in 2010 largely due to the tonnages of green waste and glass collected.



**Indicator WR2a – Recycling – Total percentage of recyclables collected per annum**

Indicator	RAG Status	RAG Comment
WR2a Recycling – Total percentage of recyclables collected per annum	 <b>GREEN</b> 	<p>Red – Less than 30% of waste is recycled</p> <p>Amber – 31% of waste is recycled by 2009</p> <p>Green – by 2009 32% of waste is recycled</p>

The current target is to reach a recycling rate of 36% by 2018. The total tonnage of individual waste streams collected for recycling is monitored and recorded.

premises. The data presented in the table below represents the tonnages of materials collected for recycling as a combination of domestic and commercial.

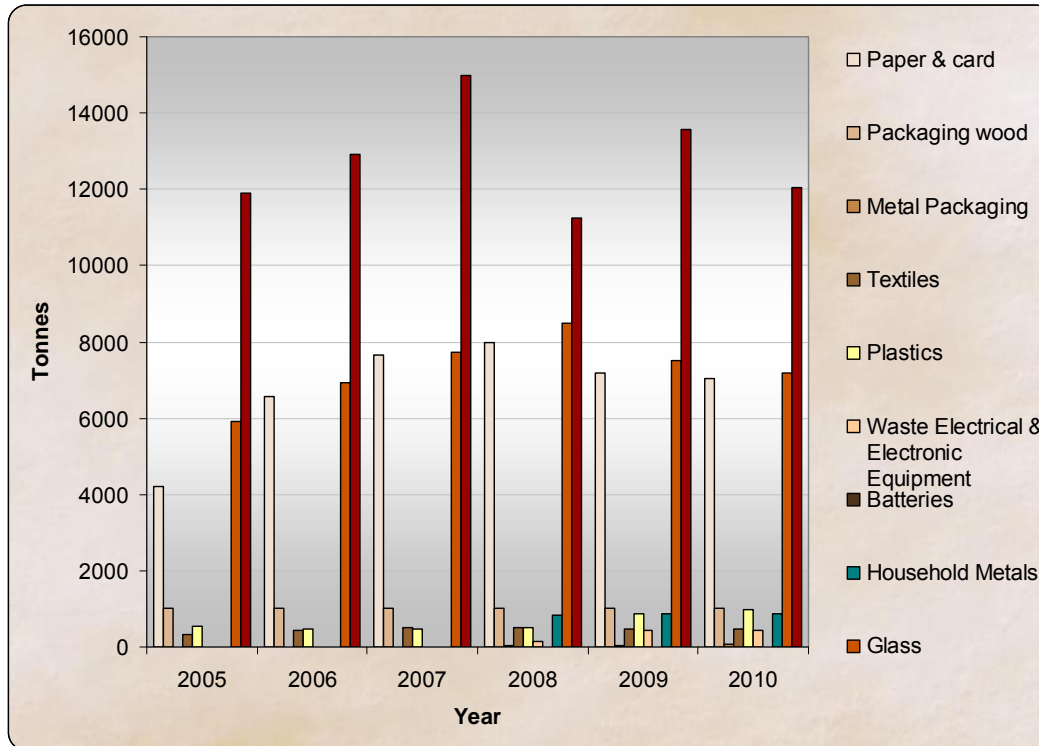
However, it is not possible to record separate weights collected from commercial and domestic

Recycling	2005	2006	2007	2008	2009	2010
Paper & card	4,221	6,571	7,654	7,985	7,174	7,021
Packaging wood	1,008	1,000	1,000	1,000	1,000	1,000
Metal Packaging	14	16	16	29	39	84
Textiles	327	436	507	499	486	477
Plastics	536	479	484	503	858	964
Waste Electrical & Electronic Equipment				148	442	446
Batteries				5	5	4
Household Metals				849	856	870
Glass	5,897	6,918	7,719	8,490	7,520	7,190
Green Waste Received	11,902	12,902	14,997	11,239	13,553	12,038
<b>Total recycling</b>	<b>23,905</b>	<b>28,322</b>	<b>32,377</b>	<b>30,747</b>	<b>31,934</b>	<b>30,093</b>

Source: States of Jersey Transport and Technical Services Department



**Table 3.3** Annual Tonnes of materials collected for recycling from all sources:



Source: States of Jersey Transport and Technical Services Department

**Graph 3.3** Materials collected from all sources for recycling/reuse

Graph 3.3 shows the weights of the different materials collected. All of the materials collected for recycling are recycled although many are processed off island.

The general trend is an increase in the tonnage of each material collected as public awareness grows, kerbside recycling is introduced and the number of recycling sites increases. There is also a greater variety of materials being collected today compared with 2005, e.g. waste electrical and electronic equipment and batteries. This has been facilitated by the opening of the Household Recycling Centre at Bellozanne in 2007 and the ongoing development of the island’s ‘bring bank’ network and introduction of Parish household recycling collections. A number of external factors also

contribute to the island’s recycling rate. The economic downturn appears to have reduced waste as people are buying less and throwing away less. This also impacts commercial waste in the same way. As global manufacturers make changes to their packaging, for example thinner glass is becoming more common in the manufacture of items such as food and drink packaging, the tonnage collected locally will decline although the number of bottles and jars collected may actually increase. The success of other local initiatives, e.g. the promotion of home composting, may reduce the tonnage of recyclables collected as people compost their garden waste in preference to taking it to a composting site for processing.



**Recycling process by material**


Material	Recyclable	Destination	Outcome
Paper and card	✓	Exported to UK recyclers	Processed to create recycled paper & card products
Packaging wood	✓	Processed locally	Reused, animal bedding & kindling wood
Metal packaging	✓	Exported to UK recyclers	Melted down into raw metals & used to create recycled metal products, for example food & drink cans
Textiles	✓	Re-used locally or exported by local charity	Re-used or recycled into fabric by textile mills
Plastics	✓	Exported to UK recyclers	Processed to create recycled plastic products
Glass	✓	Processed locally	Used as a basic construction aggregate
Green waste	✓	Processed locally	Agricultural compost or Soil Improver for household use
Electrical & Electronic Equipment	✓	Disassembled locally before export to UK recyclers	Components are separated & recycled into metal & plastic products
Batteries	✓	Exported to European recyclers	Recycled into metal products including new batteries

Theoretically, around 85% of the materials in the municipal solid waste stream could be recycled or composted. The national UK average recycling rate is 41% (DEFRA, 2010) with higher rates achieved in mainland Europe. Jersey's recycling rate recorded in 2010 was 31% with a target of 36% by 2018.

Before a material is collected for recycling an evaluation is conducted to assess the environmental benefits and financial impact along with traceability. This ensures that Jersey's recycling is being processed responsibly and achieving the Best Practicable Environmental Option (BPEO).



**Indicator WR2b – Recycling – Number of States of Jersey recycling facilities**

Indicator	RAG Status	RAG Comment
WR2b Recycling – Number of States of Jersey recycling facilities	 <b>GREEN</b>	<p>Red – A decrease within recycling facilities</p> <p>Amber – No change within recycling facilities</p> <p>Green – improved and a higher number of recycling facilities for the general public</p>

In 2005, there were five bring banks providing limited household recycling facilities in addition to the island’s main waste reception at Bellozanne. By 2010, Bellozanne was developed into the island’s Household Recycling Centre and

seventeen bring bank sites were located across the island, providing householders with local facilities to recycle paper, plastic bottles and cans with some sites also providing facilities for textile and cardboard recycling.



Locations of where and what you can recycle across the Island (June 2011)

**Kerbside Recycling Schemes**

It is generally accepted that convenience is the key to public participation in recycling schemes and this was reflected in the Solid

Waste Strategy 2005. With collections directly from households (the kerbside system) little effort on the part of the householder is





required and experiences elsewhere show that recycling rates increase.

A number of parishes have worked with the States of Jersey Transport and Technical Services (TTS) Department to develop kerbside recycling schemes. The St Lawrence household kerbside recycling scheme has been operating since 2009 and a recent survey conducted by the parish

found that 92% of those surveyed were in favour of the scheme continuing. In addition, kerbside collections also began in St Mary and Trinity in 2009 whilst the St John scheme has been in place since 2006. In 2010, St Helier began a kerbside scheme with a phased introduction across the Parish and, as part of the Solid Waste Strategy review, TTS is developing an action plan to assist all of the remaining parishes to implement kerbside recycling.

**Indicator WR3 – Total Liquid Waste (Sewage) processed per annum**

This data series relates to the volume of liquid waste (sewage) processed at the Bellozanne treatment works. Bellozanne is the main public treatments works and treats approximately 25,000 cubic metres of sewage per day.

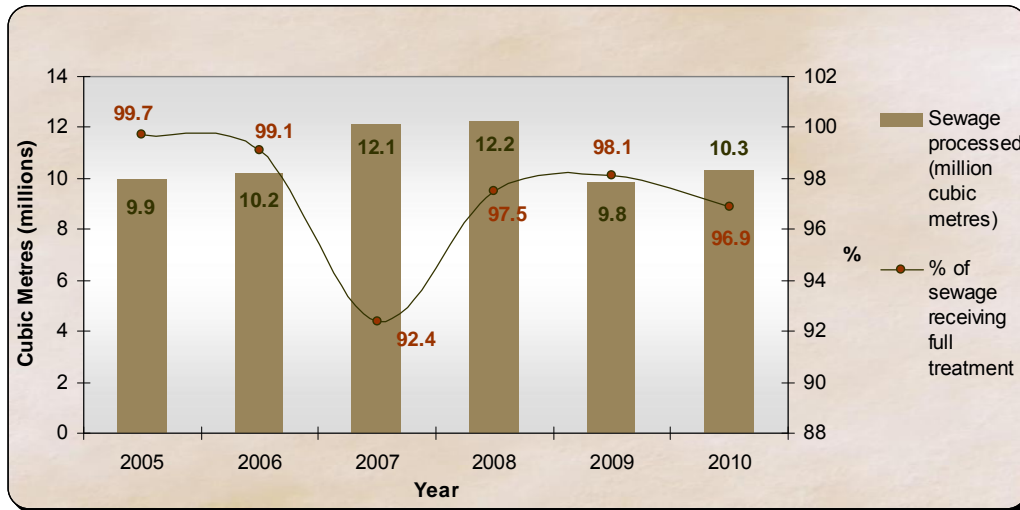
The sewage sludge from the sewage treatment works in Bellozanne Valley is treated by a

digestion process and centrifuged to produce a product similar in appearance to soil. In line with the Waste Hierarchy, the enhanced treated pellets are being recycled as an agricultural fertilizer. If the land bank is unavailable due to adverse weather conditions or crop constraints, the pellets will be diverted to the Energy from Waste plant.

Indicator	RAG Status	RAG Comment
W1b Total liquid waste (sewage) processed per annum	N/A	The load arriving at the works remains fairly constant. When it rains the volumes go up. The historic peaks and troughs are mainly down to the rainfall events for that year and not plant performance

The general trend is a reduction in liquid waste being processed at the plant and an associated reduction

in the amount of sludge being generated, see graph 3.4



Source: States of Jersey Transport and Technical Services Department

**Graph 3.4:** Liquid waste receiving full treatment

### 3.1.4 Pollution from waste

#### Pollution from Waste – atmospheric pollution from waste point sources

This section provides data from a number of pollution point sources. The storage and management of waste can cause controlled and sometimes uncontrolled emissions to air, land and water. These are monitored in different ways according to severity and likelihood of causing a pollution incident.

Atmospheric emissions from a small number of industrial sources may be significant: emissions from the Bellozanne Waste Incinerator, the Jersey Electricity (JE) Power Station and the Island's Crematorium have been identified as potentially problematic. The Bellozanne waste incinerator was decommissioned during 2010. An ongoing monitoring programme by JE commenced in Spring 2011 and JE are working closely with the States of Jersey to manage these emissions. The crematorium fitted



improved technology which meets the requirements of UK's Process Guidance Note 5/2 (04) Secretary of State's Guidance for Crematoria. The Crematorium is monitored by the Health Protection team in the Health and Social Services Department.

Emissions from the Energy from Waste plant at La Collette are strictly controlled by the emission limits set out within its Waste Management Licence and reporting requirements which reflect the requirements of the European Waste Incineration Directive (WID).

There are, in addition, emissions from a variety of commercial waste management activities which are regulated via the Waste Management (Jersey) Law 2005 and agriculture activities which are regulated by the Department.



**Indicator WR4a Pollution from Waste – Annual Countryside Renewal Scheme (CRS) spend on waste reduction**

Indicator	RAG Status	RAG Comment
WR4a Annual CRS spend on waste reduction	 <b>GREEN</b> 	<p>Red – Some dairy farms will not have slurry storage facilities</p> <p>Amber - Funding has been provided for slurry stores but the scheme is not on track for completion</p> <p>Green - All dairy farms have received funding for slurry stores and 2011 target of completion is on track</p>

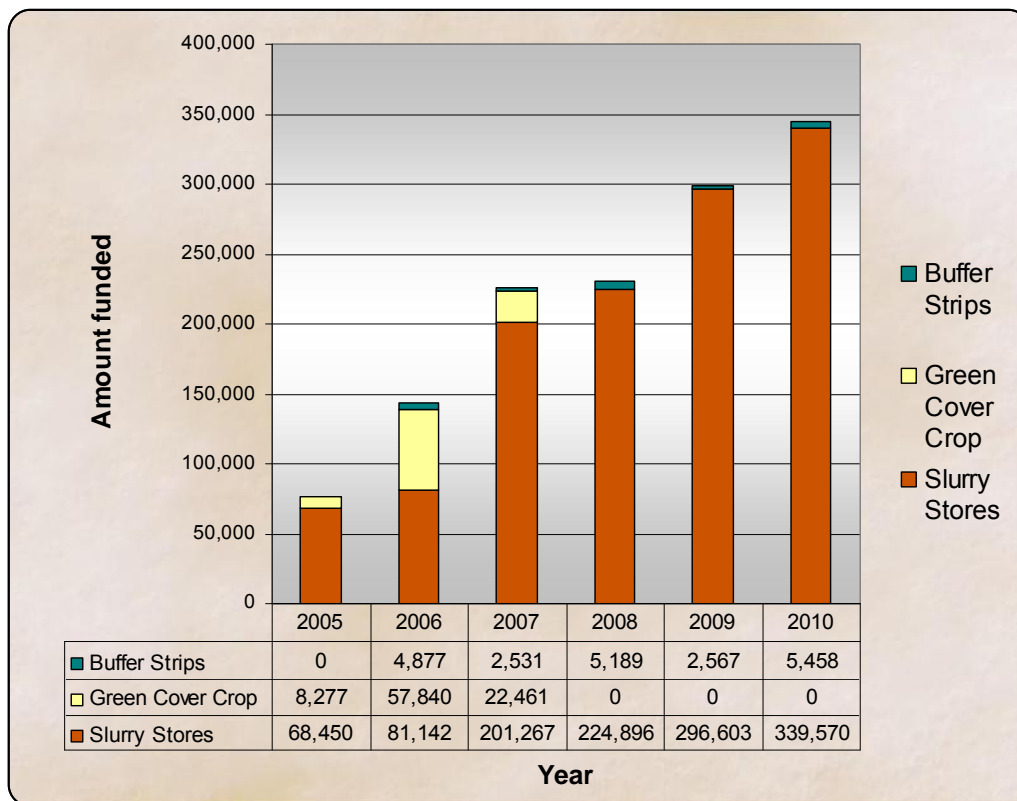
Livestock slurries and manures have the potential to cause considerable damage to the environment and can cause a nuisance in urban situations if not stored and handled properly. They are an important source of plant nutrients and can reduce the use of expensive inorganic fertilisers.

Dairy farmers and other livestock holdings have to comply with the Water Pollution (Jersey) Law, 2000. Financial assistance is required to help livestock farmers upgrade slurry handling and storage facilities and as a result pollution and nuisance risks will be minimised. The total expenditure, to ensure each dairy farm in Jersey has at least 4 months slurry storage amounted to £2.48m between 2005 – 2011, with £1.65 m of that sum being provided via States grant.

Green cover crops reduce soil and soil nutrient loss from arable fields left fallow over the autumn and winter. Therefore ground and

surface water quality is improved by reducing nitrate and phosphate leaching over the wetter periods. Plant nutrients are maintained at rooting level and recycled into the following crop leading to a reduced need for applied fertilisers. In addition, an increased organic matter content of the soil will lead to less erosion and an improved soil structure.

Rough grassland around cultivated fields and intensively managed grassland provides a refuge for a range of wildlife including small mammals, ground nesting birds and invertebrates. These areas may also support wildflowers not found in other parts of the field, as well as acting as “corridors” which allow wildlife to disperse across a wider area. Furthermore, permanent vegetation strips will help to reduce the amount of fertiliser and pesticide use and also to prevent surface water run-off, soil erosion and nutrient leaching.



Source: States of Jersey Department of the Environment

**Graph 3.5:** CRS spend on Waste reduction components.

Graph 3.5 shows an increased take up of slurry storage facilities such that by 2012 all dairy farmers will have at least 4 months on-farm storage for livestock slurries. In addition there has been a small but steady uptake of the buffer strip component. A review of the CRS 2005 – 2010 is currently underway



to ensure that the new scheme to be introduced in 2012 encourages agricultural best practice, minimises nutrient losses from field systems, supports waste recycling and safeguards and improves the landscape and biodiversity of Jersey.

**Indicator WR4b – Pollution from Waste – Chemical quality of key polluted sites**

This section provides data on monitoring at 3 sites which are known to be have been polluted in

the past. Ongoing monitoring provides information about the current status of the sites.



Indicator	RAG Status	RAG Comment
WR4b Chemical quality of key polluted sites	 <b>GREEN*</b> 	Red – Deterioration in chemical quality Amber – No change in chemical quality Green – Improvement in chemical quality

\* The RAG status recorded for this indicator relates to general trends not to the specific sites. It provides an indication of the trend in relation to the chemical quality of these sites.

**Crabbe**

In the early 1990's the Crabbe site was used to store and treat green wastes arising from States of Jersey activities. By the mid 1990's groundwater contamination of the underlying aquifer was identified. Monitoring programmes and remedial works commenced.

However, in 2002 a further problem was identified of arsenic contamination resulting from the inclusion of tanalised timber in the composting process. The monitoring data tells us that the results for Chemical Oxygen Demand (a measure of organic pollution) and arsenic in groundwater below the site. COD has declined from the very early days but fluctuates depending on groundwater conditions. Arsenic is very much dependent on the solids loading of the sample and pH conditions.

**Beauport**

In 1992 4,000 tonnes of surplus potatoes were buried in a field above Beauport Bay. The resulting

leachate contaminated groundwater below the site. Monitoring programmes and the removal of leachate commenced. It was not until 2007 that a pumping station was installed to automatically pump leachate to the sewage treatment works. Since then there has been a steady decline in COD levels.

**Airport**

Historically, at the eastern end of the Airport site, the airport fire service has operated a fire training ground for over 30 years. At the beginning of the 1990's a new aircraft rig was set up which used pressurised kerosene. The airport fire tenders used fire fighting foam to extinguish the flames. Any waste effluents, containing unspent fuel, burnt fuel products and foam chemicals, were disposed of to soakaway. In 1993 contamination of the underlying aquifers with persistent fire fighting foam chemicals was identified. Monitoring commenced and in 2003 a significant remediation strategy was completed.



**3.2 Update on 2005 environmental priority and key actions**

In 2005 Waste and recycling was identified as an environmental priority and some key actions were proposed as follows:

**High Levels of Waste Production (State of Jersey 2005)**

Excessive waste generation represents a misuse of resources and causes pollution. Jersey’s municipal waste has risen by, on average, almost 3% for the last five years and our levels of recycling are not as good as have been shown possible in other European countries. Emissions from our present incinerator fall well short of accepted agreed standards.

In order to address this, the Environment and Public Services Committee has developed a draft Waste Strategy which calls for:-

- i. The urgent replacement of the inadequate waste disposal facility at Bellozanne.
- ii. Strict adherence to be paid to internationally agreed standards in future waste management planning.
- iii. Improvements in recycling rates.

**3.2.1 Replacement of disposal facility at Bellozanne**

The operational implementation of waste policy lies with the Transport and Technical Services Department. The Waste Management Licence for the Energy from Waste (EfW) plant at La Collette was issued in December 2010 using the consultation protocol defined by the Law. This brought the operation of the EfW plant under the regulatory control of the Waste Management

(Jersey) Law 2005, for which the Minister for Planning & Environment is the regulator. The licence stipulates that emissions to air are fully compliant with the EU Waste Incineration Directive 2000/76/EC. Such improvements in emissions to air (compared with the old Bellozanne incinerator) contribute to the objectives in the evolving draft States of Jersey Air Quality Action Plan.

**3.2.2 Waste management standards**

The Waste Management (Jersey) Law 2005 (the Law) came fully into force in 2007. The Law

implements the OECD Decision<sup>1</sup>



and the Basel Convention<sup>2</sup> which, along with and the EC Regulation (EC) No 1013/2006 on shipments of waste, enables a legislative framework within which Jersey can ship waste to European member states and other signatories to the Basel Convention.

The Waste Law is administered by the Department of the Environment.

In particular, the Law:

- Implements the Basel Convention in Jersey, if necessary this enables the shipment of hazardous wastes out of the Island for disposal. This is of practical benefit to the Island as it allowed the export of hazardous wastes which had been stored at States facilities<sup>3</sup> since 2002.
- Enables Jersey to adopt “environmentally sound management of hazardous and other wastes”, as part of its own internal waste management activities. This is primarily achieved through new regulatory licensing, including:
  - Regulation of unlicensed or harmful activities involving waste.
  - Control procedures for movements of hazardous wastes exported from Jersey for disposal or recovery in other jurisdictions.
  - Licensing and control of those waste management activities specified in the Law
  - Registration of carriers of hazardous or healthcare wastes unless otherwise exempt.
  - Control procedures for movements of hazardous or healthcare wastes within Jersey

- Provides an additional tool for pollution control available for Environmental Protection.

### **“Knock – on” benefits of Tighter Regulation**

The Law also delivered additional best practice compliance derived from the Waste Electrical and Electronic Equipment Directive 2002/96/EC and End of Life Vehicle Directive 2000/53/EC. This was achieved by appropriately dealing with or removing from the waste stream for recycling and recovery these items prior to incineration. Additionally, the Waste Management licence for the EfW requires TTS to regularly review the recovery rate of waste heat energy from the steam.

### **Regulation of Contaminated Land Clearance and Remediation from the Town Park**

Following public consultation in 2010, a Waste Management Licence was issued to regulate the use of mobile plant for the treatment of controlled waste and remediation of the new Town Park in St Helier.

### **Regulation of the States of Jersey Green Waste Facility**

Liaison between TTS, the Health Team in Health and Social Services Department and the Environmental Protection team in the Department of the Environment, on the operation and licensing of the green waste facility at La Collette has led to TTS adopting state of the art processes.

### **Regulation of the Export of Hazardous Wastes**



Jersey is a signatory to the Basel Convention via an agreement with the UK. This has resulted in strict and comprehensive regulation of hazardous waste shipments, both in terms of what is permitted to be shipped and the methodologies employed for recovery or disposal of wastes to ensure maximum environmental safeguard. Exports of waste have to follow the notification procedures in the Waste Management (Jersey) Law 2005 and the EC Regulation (EC) No 1013/2006 on shipments of waste. The prior informed consent of the Minister for Planning & Environment and the competent authority in the destination jurisdiction is required before wastes can be shipped lawfully. In

2010, approximately 100 tonnes of hazardous waste were exported to the UK for specialist disposal by high temperature incineration under the notification procedures. These hazardous wastes had been stockpiled since 2002 due to the expiry of the memorandum of understanding with the UK.

Since 2008, Environmental Protection have processed and consented to a total of ten shipments; nine shipments of waste for recovery and one for the disposal of hazardous wastes mentioned above.

There were a further nine notifications for waste exports on which Environmental Protection provided advice in 2010.

### 3.2.3 Improvements in recycling rates

Since the adoption of the Solid Waste Strategy in 2005, an evolving programme of recycling has been implemented that has shown that the people of Jersey want to support the 'reduce, reuse and recycle' programme. A growing number of parishes have implemented kerbside collections and an increasing number of bring banks are strategically positioned across the Island which has all contributed to a rise in the Island's recycling rate from 28% in 2006 to 32% in 2009. Particularly important is the removal of hazardous materials like batteries and waste electrical and electronic equipment from the waste stream, ensuring that, as far as possible, only appropriate material enters the energy from waste plant.

#### Encouraging Recycling

Recycling and reuse of materials is encouraged through the Waste Management (Jersey) Law 2005 by exempting such activities from the full waste management licensing regime. Recycling activities exceeding certain thresholds or sorting mixed waste materials still require licences. Accordingly, the Parish of St. Helier has submitted an application for a licence to allow the sorting and baling of card/paper, plastic/tins/cans from the household waste for shipment to recycling facilities in France.

The ECO-ACTIVE campaign has worked with the 'Recycle for Jersey' team to design a mobile exhibition trailer that is designed to take the environmental message out and about.





A review of the Solid Waste Strategy in 2012 will revisit the current recycling target of 36% by 2018. The review will also explore

waste minimisation initiatives and provide a programme to generate increased environmental benefits from Jersey's recycling.

### 3.3 The environmental priorities and key actions for 2011 - 2015

#### Waste – The next 5 years

- Develop a new Liquid Waste strategy to include replacement or renewal of Bellozanne liquid waste treatment plant
- Review and revise the Solid Waste Strategy
- Continue to abide by internationally agreed standards in future waste management planning.
- Continued improvement in recycling rates
- Waste minimisation targets will be considered in the Solid Waste Strategy Review.

#### 3.3.1 Develop a new Liquid Waste strategy to include renewal of Bellozanne liquid waste treatment plant

This Liquid Waste Strategy will describe, at a high level and in broad terms, the vision for ensuring that the collection, treatment and disposal of liquid waste across Jersey is in accordance with current and future international best practice up to and including 2028.

The Strategy will set out how the Transport and Technical Services (T&TS) Minister intends to fulfil his obligations to Islanders to prevent pollution and maintain public health by ensuring safe and efficient collection, treatment and disposal of liquid waste.

The Strategy will include:

- Current and future international environmental legislation, regulation and best practice that governs the strategy

- Levels of service that Waste Management Services commits to deliver to the Island's population;
- The current status and issues of the sewerage system,
- The current status and issues of the liquid waste treatment system,
- The current status and issues of the disposal system,
- Projected demand forecasts on the liquid waste system,
- The assessment of options for future wastewater treatment, and
- A commitment to carry out further studies and also to adopt best practice asset management to ensure optimum delivery of services.



**3.3.2 Review and revise Solid Waste Strategy**

The Solid Waste Strategy (2005) will be reviewed to provide a framework to deliver waste minimisation and recycling initiatives going forward. The review will address each of the waste streams and provide a hierarchy categorising which materials cannot, and should not, be sent for energy recovery either

due to legislation or the environmental benefits achieved by recycling. This will ensure that the Best Practical Environmental Option (BPEO) is implemented for each of the island’s waste streams and that Jersey’s waste management practice continues to be based upon the internationally agreed Waste Hierarchy.

**3.3.3 Continue to abide by internationally agreed standards in future waste management planning.**

Waste management practice is based upon the internationally agreed Waste Hierarchy which prioritises waste prevention, minimisation, reuse and recycling in that order above energy

recovery. The Solid Waste Strategy (2005) adopted this approach and the Solid Waste Strategy Review will continue to adhere to this international best practice.

**3.3.4 Continued improvement in recycling rates**

The Solid Waste Strategy Review will address each of the island’s waste streams and provide recycling targets. This will provide a framework for future activity which will be focused on those materials that cannot and should not be sent for energy recovery

either due to legislation or the environmental benefits achieved by recycling. This will result in an overall increase in recycling rates but more specifically a targeted increase in the recycling of waste streams that have been identified as a priority for the island.

**3.3.5 Waste minimisation targets will be considered in the Solid Waste Strategy Review.**

The Waste Strategy Review will follow the internationally agreed Waste Hierarchy which prioritises waste prevention, minimisation, reuse and recycling in that order above energy recovery. By reducing the amount of waste

generated in the first instance, there are smaller waste streams requiring reuse, recycling or energy recovery. As a fundamental part of waste management, waste minimisation will be included in the Solid Waste Strategy Review



Transport





Jersey has a high level of car ownership and car usage. High car usage leads to increases in congestion, local air and noise pollution, global carbon emissions, and road injuries.

The need to provide for the use of the car puts pressure on our environment and its use also results in less physical activity and, consequently, a less fit and healthy society.

### ***Issues associated with transport and the environment:***


- **congestion** – a negative impact on the local economy and our quality of life. It also significantly increases the amount of pollution a vehicle emits for a given length of journey.
- **local air and noise pollution** – motor vehicles create air and noise pollution which can be damaging to our health and quality of life.
- **global greenhouse gas emissions** – almost a quarter of Jersey's greenhouse gas emissions, contributing to global climate change, come from road traffic.
- **reduced physical activity** – the dominance of the motor car for travel has contributed to a reduction in physical activity, which in turn leads to health issues such as obesity, cardio vascular disease and mental health problems. The Health and Social Services Department consider exercise through daily travel as key to addressing this problem.
- **the built environment** – the need to provide for high numbers of motor cars creates high demand for road space and parking space and makes many areas unwelcoming except by car.
- **road injuries** – typically 400 road injuries occur on Jersey's roads every year of which approximately 35 are serious.
- **access for everyone** – 12% of households in Jersey do not have a car, but still need to travel safely and conveniently.
- **oil dependency** – oil supplies are unsustainable, prices are rising and supplies are falling. The States of Jersey has been working to develop a sustainable transport policy with the aim of reducing traffic on the road at all times. This policy was adopted in late 2010. This will result in real financial benefits through reductions in congestion, pollution, road injuries and health problems caused by low levels of physical activity. It will also provide savings through a reduction in the space given over to car parking.



**4.1 The Indicators**

As identified above, there are a wide range of transport related issues which can have environmental, health and economic impacts. The indicators that are reported on in this section focus on traffic numbers, mode of transport and associated atmospheric emissions which are directly linked to traffic volumes. Issues in relation to the impact on the natural environment and land

use are covered in separate chapters of this report. Health related impacts are not included but are reported in the Medical Officer’s annual report.

Indicator	RAG Status	RAG Comment
T1a Annual traffic flow at 5 major sites		Red – No reduction or increase Amber – Small reduction Green – Significant reduction

**4.1.1 Transport Choices**

**Indicator T1a - Annual traffic flow at 5 major sites**

Annual traffic flow is considered to be the best indicator of the volume of traffic flow at all times. The data for this indicator represents the number of vehicles recorded over each entire year (24hrs per day 7 days a week) using the following roads: -

La Route des Issues (by St John’s Marks and Spencers Store)

The data is collected by means of permanent traffic counters installed in the road surface. The equipment is checked regularly for accuracy and is known to be reliable.

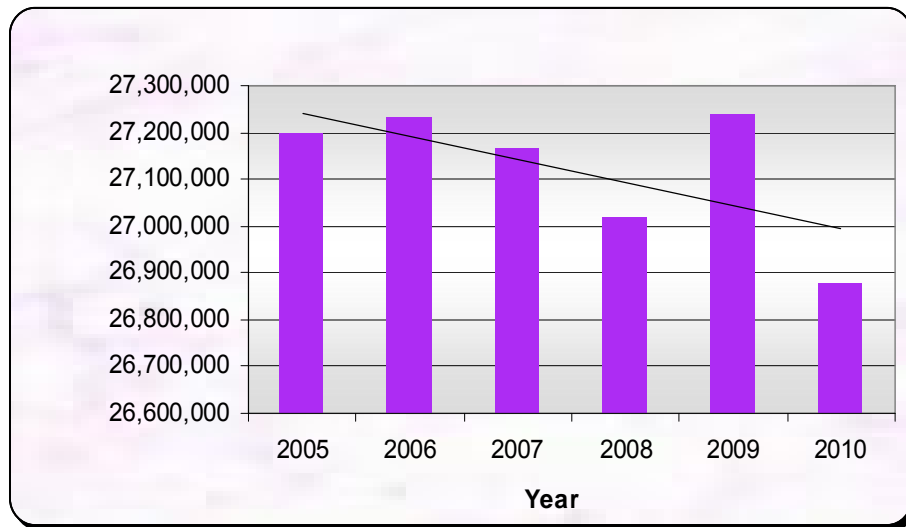
- La Route du Fort Tunnel
- St Peter’s Valley (by Tesson Chapel)
- La Route de la Haule (by Le Perquage pelican crossing)
- La Grande Route de St Laurent (by St Lawrence Church)



	2005	2006	2007	2008	2009	2010
Number vehicles recorded	27,193,664	27,229,300	27,164,533	27,017,674	27,235,516	26,875,258
% change previous year		0.13	-0.24	-0.54	0.81	-1.32

Source: States of Jersey Transport and Technical Services Department

Table 4.1 Annual total traffic flow on 5 major sites



Source: State of Jersey Transport and Technical Services Department

Graph 4.1 - Annual traffic flow at 5 major sites (black line is trend line)

The data shows that traffic levels have been relatively constant between 2005 -2010, and that 2010 was the lowest value, though only 1% lower than in 2005. The total traffic using those roads needs to be assessed against the background of population changes and economic growth. The population office estimates that the population has increased by 4.6%

from 2005 to 2009 though the recession and subsequent reduction in economic growth may have countered the potential traffic growth.<sup>4</sup> Per capita traffic movements have therefore decreased more than the data illustrates. This decrease could be due to a number of different factors such as the changing economic climate, the age profile of the population and location of new developments.

**Indicator T1b - Volume of road traffic by type of vehicle**



Indicator	RAG Status	RAG Comment
T1b Volume of road traffic by type of vehicle	 <b>AMBER</b>	<p>Red - An increase or remains static for car and van peak traffic (even with an increasing population)</p> <p>Amber – By 2015 a reduction of between 1-14% in car and van peak time traffic</p> <p>Green - By 2015 a 15% reduction in car and van peak time traffic.</p>

Two data sources are used to look at mode of travel to work. These can be taken together to help assess modal shift away from private car use, particularly during peak commuter periods. Both sets

of figures have a limited database so to increase confidence in the results the two sets of data are included together.

Mode of travel in to St Helier (7.30 to 9am weekday in May, weather dry)			
% by mode	2008	2009	2010
car or van	78	79	76
walk	11	10	12
cycle	3	3	4
motor cycle	3	3	3
bus	4	5	5

Source: Source: State of Jersey Transport and Technical Services manual counts Table 4.2a. Peak time mode of travel into St Helier 2008-2010.

The data in Table 4.2a provides information on the % split by mode of travel into St Helier. This is measured manually (by TTS staff) positioned on all 14 roads which feed traffic into the town area from 7.30 am to 9am on one dry week

day before the school summer half term break, typically end of May. It is therefore susceptible to daily variance, which can be several percent for individual roads but will only be a few percent for the summary figures.

Entering St Helier 7.30 to 9am weekday in May, dry weather				
	2008	2009	2010	2011
Number of cars/vans	12281	12699	12011	11845
% change on previous year		3.4036	-5.418	-1.38

Source: Source: State of Jersey Transport and Technical Services manual counts Table 4.2b Number of cars / vans entering St Helier 2008-2010.



Table 4.2b presents the number of cars and vans observed during the counts and provides an indication

of the % change between 2008-2011.

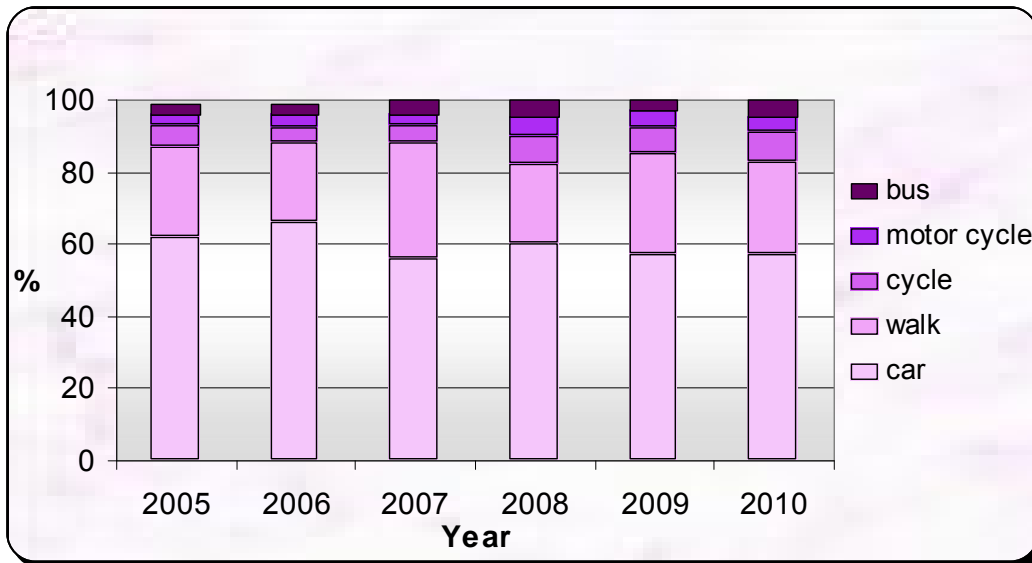
Mode of travel to work JASS survey						
% by mode	2005	2006	2007	2008	2009	2010
Car	62	66	56	60	57	57
Walk	25	22	32	22	28	26
Cycle	6	4	5	8	7	8
Motor cycle	3	4	3	5	5	4
Bus	3	3	4	5	3	5

Source: JASS annual survey

Table 4.3. Mode of travel to work – JASS data

Table 4.3 provides data from the Jersey Annual Social Survey (JASS), which asks respondents to state mode of travel to work (which as many people work outside of St Helier is a different dataset to the

former) but has a limited sample size and is a response to the respondents typical mode choice, which will vary from day to day, see graph 4.2.



Source: JASS annual survey

Graph 4.2 Mode of travel to work

Using the information from both data sets together, there appears to have been a small reduction in car use in favour of cycling, motorcycling and using the bus. The changes that have been

recorded are not sufficient to establish a significant shift in modal use with confidence.

The States Sustainable Transport Policy predicts that approximately



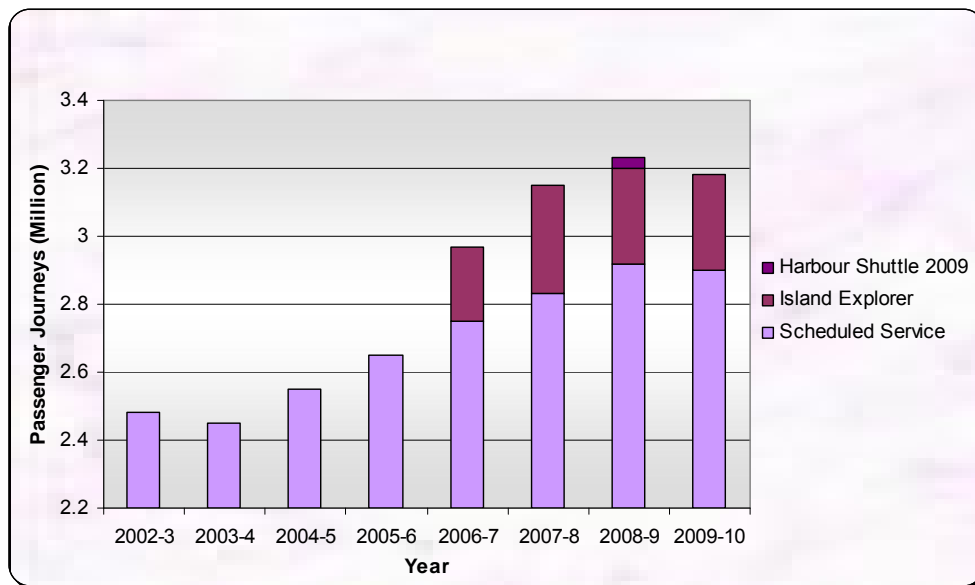


half of the target 15% reduction in traffic levels will come from increased bus use and the number of peak hour bus users is expected to double.

The States of Jersey took over provision of the bus service in 2002 in order to stabilise a service in decline due to falling tourist numbers. The States of Jersey adopted the then incumbent operator's timetable from 1999/2000. Doing so reinstated some lost services that were previously considered not to be viable. The network remained largely unchanged for several years though with a modernised fleet and fares not increased despite inflation, patronage grew as can be seen from the chart below. In 2007 the move from the Weighbridge to the new Liberation Station provided bus users with an excellent modern indoor terminus facility. Since 2009 some additional funding for sustainable transport

initiatives along with negotiations to extend the current bus operator's contract to the end of 2012, have enabled improvements to be made to the service, particularly in peak hour capacity, and a more comprehensive service has been provided to the more rural areas. Some integration with the school service has been achieved since the current operator took on the school bus service in 2006. Graph 4.3 shows that bus patronage has increased significantly from its lowest point in 2003, with a high point reached in 2008/9 and a slight decline in the following year.

The contract for all public bus services in Jersey is currently out to tender for a new contract to commence in January 2013. The new contract will include incentives for the new operator to provide improvements to the services necessary to deliver the required growth by 2015.



Source: States of Jersey Transport and Technical Services Department

**Graph 4.3** Bus passenger journeys



**4.1.2 Atmospheric pollution from transport**


Emissions from road transport and industry are identified as the main sources that have the potential to impact on Jersey’s air quality, with the former being the primary source of pollution on the Island.<sup>5</sup>

40% of vehicles on Jersey’s registration system are over 10 years old. Whilst it is not possible to calculate the exact number still actually on the road since the abolition of road tax, this still means that a significant proportion of Jersey’s road fleet produces a higher level of pollution compared to younger and better maintained vehicles.

Currently, only about 1,000 vehicles (1%) are subject to annual testing at DVS. These include buses, taxis and oversize trucks. This ensures that the emissions of those vehicles comply with the published levels of emissions for that vehicle at year of manufacture.

Air quality monitoring undertaken since 1997 has indicated that the main pollutants of concern in Jersey are benzene (90% from car refuelling and fuel storage); carbon monoxide (CO – road transport); Lead (Pb – road transport); nitrogen dioxide (NO<sub>2</sub> – road transport, electricity generation, shipping and domestic sources); particulates (PM<sub>10</sub> – road transport) and sulphur dioxide (SO<sub>2</sub>, particularly from industrial emissions). Of the pollutants listed above, NO<sub>2</sub> and PM<sub>10</sub> from road transport emissions present the greatest challenge to Jersey in terms of improving air quality.

**Indicator T2 - Atmospheric pollutant monitoring**

Indicator	RAG Status	RAG Comment
T2 Atmospheric pollutant monitoring: e.g. nitrous oxides, volatile organic compounds, ground level ozone, particulates, radioactive substances	 AMBER	Red - An increasing trend Amber - Static trend Green - A decreasing trend

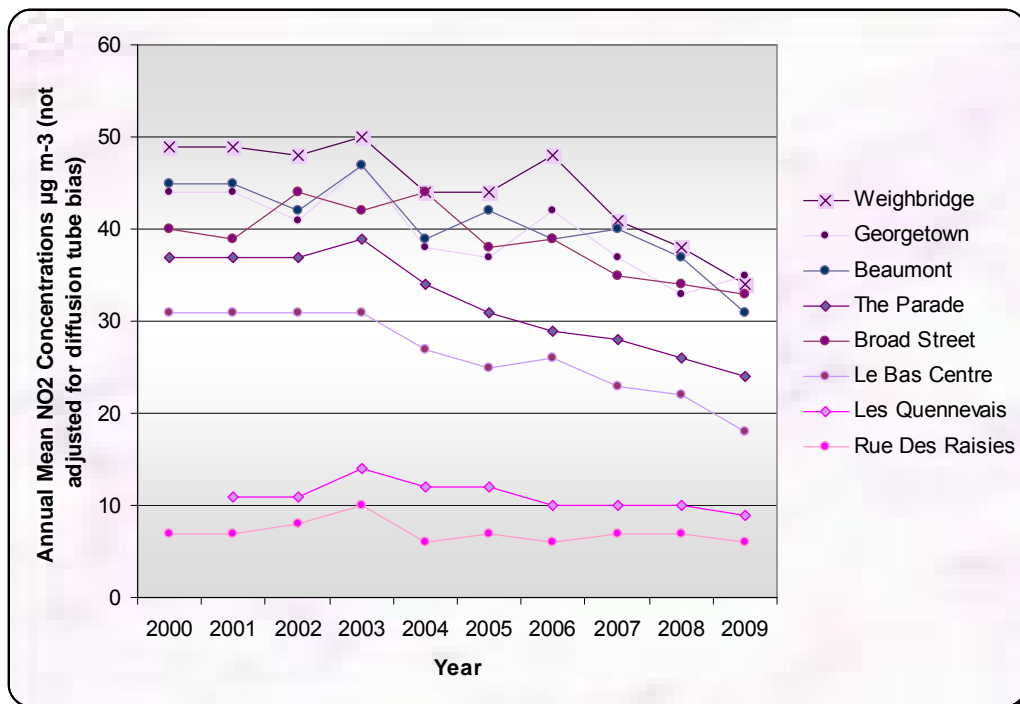
Over the past 5 years atmospheric pollutant levels have fluctuated slightly but have remained at a constant level. The measurements are not comparable with

international standards and therefore cannot be compared against target levels in the EU. The monitoring methodologies are subject to a review in 2011.



Daily monitoring of air has been carried out since the 1960s. This includes not only sulphur dioxide (SO<sub>2</sub>) and smoke concentrations but also screening for airborne radioactivity. Air quality monitoring is carried out by Health Protection and the States Official Analyst. Health Protection, in conjunction with the Meteorological Department and AEA Technology, upload daily the airborne particulate (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) results to the Jersey Meteorological Department's website to provide the public with access to air pollution levels for Jersey. <http://www.jerseymet.gov.je/>

As shown in graph 4.4, annual mean NO<sub>2</sub> concentrations at the kerbside, roadside and urban background sites (Weighbridge, Georgetown, Beaumont, the Parade, Broad Street, and Le Bas Centre) have recorded an ongoing decline since 2004. All sites are within the EC Directive Limit Value of 40 µg m<sup>-3</sup> (note: NO<sub>2</sub> concentrations vary from year to year due to meteorological and other factors). The residential background and rural sites at Les Quennevais and Rue des Raisies do not show any significant increase or decrease.



Source: AEA NO<sub>2</sub> air quality monitoring report

**Graph 4.4** Annual Mean NO<sub>2</sub> Concentrations µg m<sup>-3</sup> (not adjusted for diffusion tube bias)



## 4.2 Update on 2005 environmental priority and key actions

### Transport (State of Jersey 2005)

Jersey has the world's highest car ownership ratio as well as a dependence on air transport for external travel. This results in:

- Local congestion and an associated reduction in economic efficiency
- High carbon dioxide emissions which contribute to the greenhouse effect
- Localised air pollution that occasionally breaches internationally agreed standards and has risks to health
- The fragmentation of natural habitats by the road networks, airport and harbour development.

In order to address this;

- i. The Environment and Public Services Committee is developing a sustainable travel and transport plan that will be delivered in 2005
- ii. We will tackle congestion and encourage fuel efficient vehicles through fiscal mechanisms

#### 4.2.1 Sustainable Travel and Transport Policy

In 2010 the States of Jersey adopted the Sustainable Transport Policy which sets out a high level target of achieving a 15% reduction in peak time car travel by 2015.

Reducing peak hour commuter and school traffic in and out of St Helier is a key target area, but the policy aims to reduce car dependence island-wide and cause a significant shift towards more sustainable forms of transport at all times.

Although the peak hour target will be measured against target date of 2015, this policy sets a longer term strategy which will continue to further reduce the Island's car dependence and improve and protect the quality of our environment for future generations. The data provided indicates that there has been a slight increase in the use of bus, cycling and walking, but the change is not sufficient to be considered significant.

#### 4.2.2 Introduction of Vehicle Emissions Duty

The investigation into the introduction of environmental taxes was included in the 2005-2011 States strategic plan. The concept was that revenue from any environmental tax would be

earmarked for environmental purposes; the tax itself would yield a positive environmental effect by taxing a negative environmental action. The revenue from an environmental tax was intended to



fund three defined projects; energy efficiency service, recycling improvements and sustainable transport options.

The Department of the Environment carried out a consultation regarding a range of environmental tax options during 2007. A proposition to introduce a Vehicle Emission Duty was taken to the States in 2007. During the 2009 business plan debate (P113/2008) environmental expenditure relating to energy efficiency, waste recycling and sustainable transport was supported by the States who recognised the need and helped a desire to fund these initiatives. It was agreed that for 2009 this expenditure would be met from increased cash limits, but for 2010 and beyond the States decided that the expenditure would be funded by the introduction of an

environmental tax, following further public consultation. The Treasury went to the public consultation in July 2009 to ask what environmental tax the public would be prepared to support.

The main options put forward at that time were (i) increased fuel duty; or (ii) a tax payable on the registration of new vehicles that related to engine emissions (Vehicle Emissions Duty).

The States supported the introduction of VED in the 2009 budget debate. However, it was agreed that it would not be implemented until September 2010, when the economic recovery was underway. Meantime, cash limits remained at the increased amounts so that the environmental projects begun two years previously could continue.

**4.3 The environmental priorities and key actions for 2011 - 2015**

In recognition of the challenges associated with transport, the Sustainable Transport Policy (STP) was formally adopted by the States in 2010. Road transport accounts for over one third of final energy consumption in Jersey and is the key contributor to air pollution. Nitrogen Dioxide (NO<sub>2</sub>) and particulates (PM<sub>10</sub> and PM<sub>2.5</sub>) from road transport emissions present the greatest challenge to Jersey in terms of improving air quality.

The draft Air Quality Action Plan developed by the Department of the Environment in 2010/11 identifies the need, as a minimum, for the protection of human health,

to continue to monitor both nitrogen dioxide and particulates (PM<sub>10</sub>) pollutants.

Implementation of the recommendations within the STP will improve air quality both by reducing the amount of road traffic and by increasing the number of low emission vehicles. The STP sets an overall target of reducing peak hour traffic levels to and from St Helier by 15% by 2015. The electric car market is moving towards the commercial production of all-electric vehicles and it is likely that these innovations will reduce the impact of personal car use where it is unavoidable



Vehicle Emissions Duty (VED) was introduced in September 2010 to encourage the purchase of low emission new vehicles. European legislation also requires new models of vehicles to be extremely fuel efficient. The States of Jersey

car fleet has moved substantially to low emission / high efficiency small petrol or diesel cars in the last 2 years reducing emissions as well as making efficiency savings. This is a good example of good environmental practice making good business sense.

### Transport – The next 5 years

Progress in this area over the last 5 years has been focused on the development and adoption of the STP and the introduction of Vehicle Emissions Duty to fund sustainable transport initiatives.

The challenges ahead are:

- To implement the Sustainable Transport Policy
- Implementation of the Island Plan to ensure that spatial planning supports the objective of reducing the need for car dependency
- Ensuring that the target revenue from VED is achieved (by reviewing the rate of VED) and to continue to reinvest a proportion of that money in transport programmes.

The key actions are:

- i. Implementation of Sustainable Transport Policy target areas:
  - Bus service improvements
  - Walking and cycling infrastructure improvements
  - Workplace and school travel plans, public awareness campaigns
  - Reviewing car parking
- ii. Implementation of Island plan policies
  - Development of supplementary planning guidance
  - Conditions on developments requiring workplace travel plans
- iii. Implement air quality monitoring programme to continue to monitor emissions from vehicles.
  - Review current air quality monitoring programme

#### 4.3.1 Implementation of Sustainable Transport Policy

The States approved the Sustainable Transport Policy in 2010. This comprehensive document identifies objectives and a policy framework within which to

achieve these. The policies within it will enable, over the next 5 years, a modal shift away from private car use. The full STP report can be found on [www.gov.je](http://www.gov.je). The funding



to implement the measures is through income from the Vehicle Emissions Duty (VED).

Headline actions from the STP are as follows:

- Improvements in the bus service are key to achieving modal shift, it is expected that 50% of the target will be achieved by increased public transport use.
- Further improvements to the bus service are currently under development, some to be implemented in 2011 and 2012 by the current operator, though the majority will be implemented when a new contract is awarded by tender to commence in January 2013.
- Work is also ongoing to encourage cycling, help pedestrians and make roads safer especially for vulnerable road users.
- The first section of an eastern cycle route was completed in 2011 running from Gorey Pier south for approximately 1 mile. Development work is underway to extend it south to Grouville Primary school. Works are ongoing to provide an extension of the existing cycle route from La Route de La Liberation at the head of New North Quay, along Commercial buildings, through La Collette and along Havre des Pas promenade.
- Encouraging the use of low or zero emissions personal transport and ensuring that legislation encourages their use, providing that safety is not compromised.
- All new developments likely to generate significant amounts of travel (for example, offices over 2,500m<sup>2</sup> or retail developments over 800 sq.m) are required to submit a workplace travel plan
- School travel plans have been produced at several schools, Work is ongoing to ensure that all schools have an effective travel plan in place by 2015.

For further details of and a full list of recommendations see [www.gov.je](http://www.gov.je)

### 4.3.2 Implementation of Island Plan Policies

Maintaining and enforcing good spatial planning underpins the objective of achieving modal shift, reducing congestion and peak time car numbers. For example, meeting most of the Island’s development needs from within the existing urban area reduces the need to travel, provides more sustainable travel choices whilst enabling the regeneration of the urban

environment and protection of the countryside.

The Island Plan 2011 establishes a hierarchy of movement to ensure that, in making land-use and transport-related decisions, priority is given to the most sustainable modes of travel. This hierarchy of provision in ascending order of importance is as follows:



- walking; cycling
- travelling by bus
- travelling by taxi;
- car sharing
- single occupancy car travel.

This hierarchy relates to the movement of people. It should be recognised that people with disabilities have special needs whatever their mode of travel. The movement of goods is also essential and an optimum between efficiency and environmental safeguards should be sought.

The Island Plan also contains a range of policies designed to enable and require the delivery of transport infrastructure that supports more sustainable modes of travel, such as footpaths, cycle paths and bus shelters and support for improved bus services. These

can be delivered through direct provision or planning obligation agreements.

The supply of parking, at both the start and end of a journey, will have a direct influence over car use, and the planning system can, therefore, effect this by regulating the amount of parking space required and/or permitted as an integral part of development. The Minister for Planning and Environment will review parking standards to better reflect the objectives of the STP.

It is recognised that the health benefits arising from a successful increase in sustainable transport options e.g. walking and cycling should contribute to the management of obesity in the general population.

### 4.3.3 Monitoring of atmospheric pollution

The 2011 draft air quality action plan makes a series of recommendations to ensure that high quality air quality is maintained in Jersey. These include;

- undertaking a review of current monitoring systems;
- making air quality information available to the public;
- working with both large and small scale industry and the agricultural sector to manage point source emissions.

In addition, the Air Quality action plan fully supports the implementation of the recommendations within the STP, which will help to improve air quality both by reducing the amount of road traffic and by

increasing the proportion of vehicles with lower levels of emissions.

The STP includes the following recommendations, within two sections, specifically targeted to improve air quality:

#### **Encouragement of low emissions vehicles through parking advantages**

The STP encourages low emissions vehicles through parking advantages, specifically:

- Continuing to provide discounted parking prices for low or zero emissions vehicles and increase the cost of parking for other vehicles as the number





of low emissions vehicles become significant.

- Providing spaces and charging points for electric vehicles in public car parks, as those vehicles become commonly available.

In 2009 TTS introduced an 'eco permit' parking scheme offering 50% discount on parking card charges for vehicles within the UK's emissions rating category A (under 100gms CO<sub>2</sub>/km) and hybrid vehicles in category B (under 120gms CO<sub>2</sub>/km).

Although uptake of this scheme has been relatively slow to date (49 in January 2010), it is anticipated that this will increase as technology improves and the incentive provided to buy a low emissions vehicle through the introduction of the Vehicle Emissions Duty, which came into force in September 2010, takes effect.

### **Vehicle Choices – low emission vehicles**

The STP also contains recommendations to encourage the purchase of low or zero emissions vehicles and also to consider introducing road worthiness testing to ensure that the existing vehicles are maintained appropriately so as to reduce air pollution from vehicles as much as possible.

- TTS will take a proactive role in identifying low or zero emissions personal transport and ensure that legislation does not restrict their use, providing that safety is not compromised.
- Monitoring the impact of VED with regard to commercial vehicles and consider

mechanisms to incentivise fleet replacement if necessary.

- Monitoring trends and developments for future consideration in relation to the costs and benefits of requirements for all road motor vehicles over a certain age to be tested regularly for emissions and road worthiness.
- Introducing commercial vehicle operator licences that require commercial operators of large vehicles to have those vehicles regularly tested for emissions and road worthiness, and to have adequate parking arrangements.

The STP notes that there is an issue with a large number of privately owned older vehicles operating in Jersey which do not meet the requirements of the Euro 3 standard. All vehicles manufactured for sale in the EU after 2000 are required to meet the Euro 3 engine (2000) standard - 98/69/EC<sup>6</sup>.

Whilst there is an issue with respect of the age profile of the vehicles in Jersey, the Euro 3 manufactured vehicles are now working their way through the 2<sup>nd</sup> hand market, this external driver provides a mechanism that over time will ensure all vehicles operating in Jersey are meeting the Euro 3 standard.

The introduction of an emissions test alongside a road worthiness test will ensure the existing commercial and domestic vehicles are operating to the requirements of the standard, and will ensure that older vehicles are maintained in line with the requirements.



## Transport

As vehicles in the States of Jersey fleet are replaced on a planned replacement basis, by 2011 all vehicles within the fleet will be at least Euro 3 compliant. Lease

vehicles are renewed annually and vehicles specifications for fuel efficiency and emissions levels are included in the contract.



Natural Environment



## 5 Natural Environment

This chapter examines the state of Jersey's natural and working environment. Despite the Island's small size of 118 square kilometres it contains an incredibly diverse range of natural habitats alongside our more built up areas and many would argue that Jersey's specific countryside character contributes significantly to the quality of life we experience locally. The Jersey countryside is one of its most prized assets but the scarcity of land in the Island has resulted in it

being subject to considerable pressure for development. To some extent this pressure is related to the over-spill of development from urban areas but it is also generated to meet the needs and aspirations of those living and working in the countryside.

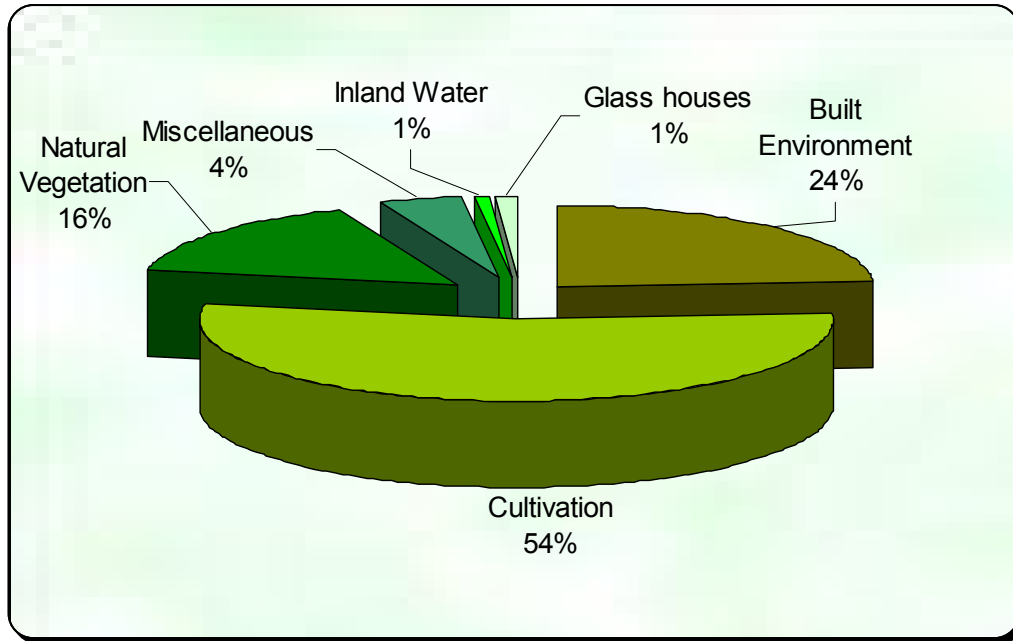
The challenge is to manage and conserve the Island's key habitats and the species that live there alongside the places that we live, work and farm.

### 5.1 Overall land cover

Graph 5.1 shows how Jersey's land surface can be categorised. What is notable is that approximately one quarter is 'built environment' which includes man-made surfaces such as buildings, roads, footpaths, domestic gardens, and harbour areas. The largest category, over 50%, is under 'cultivation' and so it is the nature of our working countryside that defines much of our local identity and this chapter will look at the natural and working countryside alongside one another.

The "natural vegetation" category includes all semi-natural habitats i.e. woodlands, dunes, grassland, cliffs and shrub much of which is found on our coastline.

'Miscellaneous' includes amenity land like parks, golf courses, the airport, urban open spaces, cemeteries and sports fields. "Glasshouses" only includes commercial glasshouses over 200m<sup>2</sup>.



Source Jersey in Figures 2010

**Graph 5.1** Categories of land use in Jersey

**5.2 Protecting the Island’s natural and built heritage**

**Ecological Sites of Special Interest (SSIs)**

Legal protection for key semi-natural habitats and ecosystems in Jersey is given under the Planning and Building (Jersey) Law 2002 which provides for the designation of sites of ecological, botanical, archaeological or zoological interest ('SSIs'). SSI designation is one of the principal mechanisms by which Jersey meets its obligations at international, national and local level to conserve its special species, habitats and ecosystems. Special characteristics of a site that might justify its designation as an SSI include high species diversity or rarity, fragility, typicalness and potential value.

480 hectares of ecologically important semi-natural habitats in

Jersey are now protected with SSI status, these areas include wetlands, woodland, maritime heath, sand dunes and grasslands. Over half of these sites are managed for nature conservation by the Department of the Environment and private land owners such as the National Trust for Jersey. Only 3 ecological SSIs were designated pre-2005 but between 2005 and 2011 the total number of SSIs rose to 17.

They include for example St Ouen’s Pond SSI (La Mare au Seigneur) which was designated in 2007. The site encompasses the largest area of naturally occurring water in the Island surrounded by Jersey’s largest area of reedbed, as well as wet meadows that are of exceptional botanical interest and of great local importance. Ouaisne



## Natural Environment

Common is one of the Island's richest and most diverse nature reserves and was also designated as an SSI in 2007. The site has a rich and varied wildlife due to the large number of small but varied habitat types. These consist of wetland areas including dune slacks, bog and mature willow carr as well as open sand, and a varied mix of vegetation stands including blocks of gorse, dwarf shrub heath and grassland. There is also a large pond and reed bed on the southern edge of the site.

Only approximately 20% of the key semi-natural habitats (as defined in the Biodiversity Strategy 2000) are protected by SSI designation which shows that there is still a large area of critical natural habitat that is not protected. By 2012 an updated island-wide habitat survey will have been completed. This will provide a 13 year update on the change in habitat area and condition allowing comparisons to be made from an initial survey in 1998.

In addition to areas of land of ecological importance, five buildings have been designated as SSIs for their ecological importance. These include the forts known as L'Etacquerel, La Crête Fort, Fort Leicester and St Aubin's Fort, as well as Mont Orgueil Castle which all host important populations of the wall lizard (*Podarcis muralis*), a species that is protected under the Conservation of Wildlife (Jersey) Law 2000.

Marine protected sites such as Ramsar sites are covered in the Water chapter.

### **Geological Sites of Special Interest (SSIs)**

The Planning and Building (Jersey) Law 2002 also provides for the designation of sites of geological interest. The geology of Jersey is recognised for its rich and unusual variety of phenomena and many features are of national or international importance. Criteria for selection of geological SSIs include research or educational importance as well as uniqueness or rarity.

Since 2005 nineteen geological SSIs have been designated, representing an approximate total area of 67 hectares. The majority of these sites are coastal headlands and rocks. They include Belle Hogue Caves SSI on the north coast of Trinity; these caves are internationally recognised as one of the only coastal localities in Armorica where the acid rocks are sufficiently calcium rich so that  $\text{CaCO}_3$  has been leached out, thus helping to preserve animal and shell remains. Of the inland sites, Mont Huelin Quarry SSI in St Ouen is one of only two local examples of an exposed intrusive contact between north-west granite and the Jersey shale formation.

### **Listed trees**

Trees can be added to the List of Protected Trees where they have high amenity value and where they make a valuable and important contribution to the local environment. Most often, trees are given protection when they are the subject of some type of threat, usually a development proposal. Trees may also be protected through a condition on a planning permit.



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### Listed buildings

There are presently 4,355 listed buildings and places in Jersey – a reflection of the island's long, rich history. Amongst these are archaeological sites, including great prehistoric monuments such as La Hougue Bie as well as more modest sites such as the remains of medieval field systems. Also listed are traditional Jersey farmsteads and Victorian town houses, coastal defence towers and German occupation structures, and smaller features such as milestones and roadside water pumps - each a part of the Island's character. Many of these listed buildings have ecological value as the building itself or its surrounding gardens or land are used by plants and animals. For example swallows regularly nest in outbuildings, bats roost in attics and barn owls will roost in holes in very old trees in mature gardens or field edges.

### Managing land for nature conservation

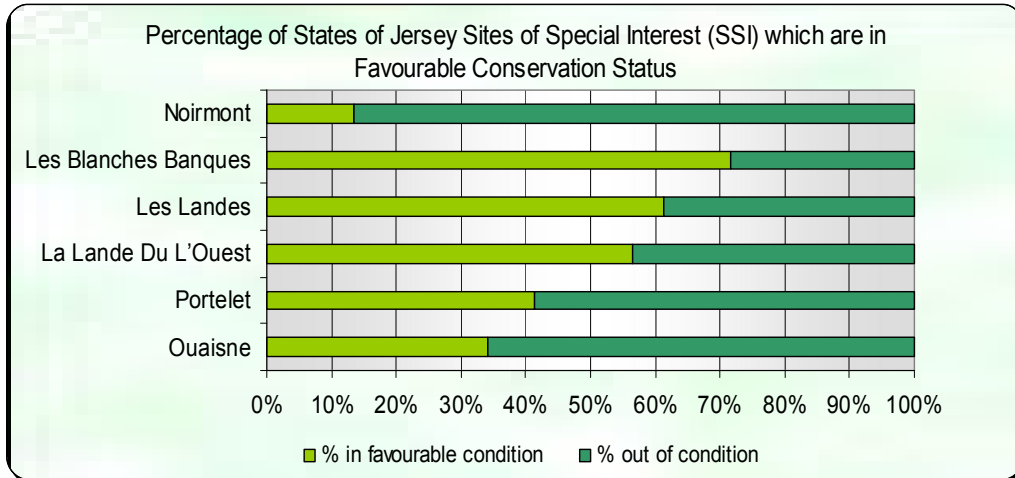
Semi natural habitats require careful management for them to retain the features that make them ecologically valuable. For example without the careful cutting of gorse and bracken in areas of maritime heath, natural succession would take over. In Jersey the areas of natural habitat are relatively small and therefore the need for habitat management is particularly relevant. The Department of the Environment manages nearly 600 hectares for nature conservation. However this is less than 5.1% of the Island's total area and whilst

the National Trust for Jersey also carry out habitat management in other areas there are still sites at risk because of inadequate overall resources to adequately manage many natural areas.

Measuring the 'conservation status' of a site can show how much management is required and whether existing management regimes are successful. A site can be divided into areas and each is judged in 'favourable conservation status' or not according to whether it achieves a number of pre-determined objectives that have been set for each desired habitat.

Graph 5.2 looks at six SSI's and shows the proportion of them that are in favourable conservation status. It is clear that even amongst our most precious sites there is further management required to bring the whole site into favourable conservation status.

Noirmont Common is similar in its habitat types to Portelet Common thus their management regimes are similar. Portelet Common has been sympathetically managed for nature conservation since the early 1990's however Noirmont Common has only been managed since 2005. Less than 20% of habitat at Noirmont is in favourable condition compared to over 40% of that at Portelet. Noirmont Common contains many nationally rare and uncommon species in the remaining pockets of native habitat and will require a lot of time, effort and resources to bring the majority of the site back into favourable condition.



Source: States of Jersey Department of the Environment

**Graph 5.2** The percentage of SSIs which achieve favourable conservation status

**Biodiversity in the working countryside - The Countryside Renewal Scheme (CRS)**

Given the extent of cultivated land in Jersey, there are opportunities for significant gains if the environmental benefit of this agricultural land can be maximised. The Countryside Renewal Scheme

(CRS) has assisted since its creation in 2005 by providing environmental financial support to land owners for the benefit of the Island's population.

**5.3 The indicators**

**5.3.1 Improving the biodiversity of the working countryside**

**Indicator NE1a Area of new habitat created under countryside renewal scheme**

Indicator	RAG Status	RAG Comment
NE1a Area of new habitat created under countryside renewal scheme	 <b>GREEN</b> 	Red - No habitat created Amber - N/A Green - Areas of new habitat have been created.

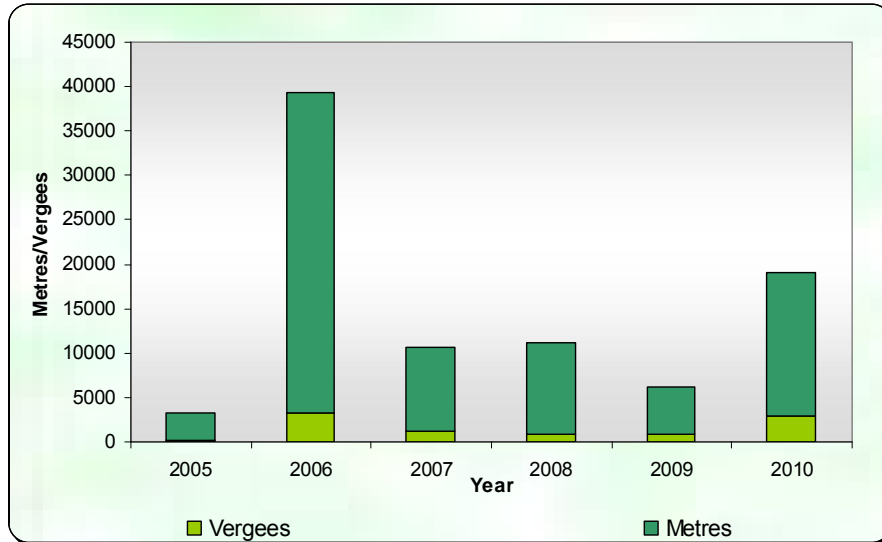




## Natural Environment

The Countryside Renewal Scheme (CRS) provides grant subsidy to create new habitats and 9,244 verges (including heathland and natural grassland) and 16,000

linear metres (including hedgerows and field margins) of new habitat has been created since 2005 (Graph 5.3).



Source: States of Jersey Department of the Environment

**Graph 5.3** The area of new habitat created under the Countryside Renewal Scheme

### Indicator NE1b Area of farmed land under environmental stewardship schemes

Indicator	RAG Status	RAG Comment
NE1b - Area of farmed land under environmental stewardship schemes		<p>Red – Decreasing proportion of land under environmental stewardship schemes</p> <p>Amber – Stable proportion of land under environmental stewardship schemes</p> <p>Green – Increasing proportion of land under environmental stewardship schemes</p>

In order to receive the 'Single Area Payment' (SAP) or 'Quality Milk Payment' (QMP) landowners or tenants must demonstrate that they are complying with good environmental management of their land and systems. This includes compliance with Good Agricultural and Environmental Practices (e.g.

The Water Code, Animal Welfare Codes etc) or could be on land that is accredited for organic production. Farmers may be complying with 'assured produce' schemes in order for their produce to be eligible for sale to many of the main supermarkets and these have been accepted as satisfying the

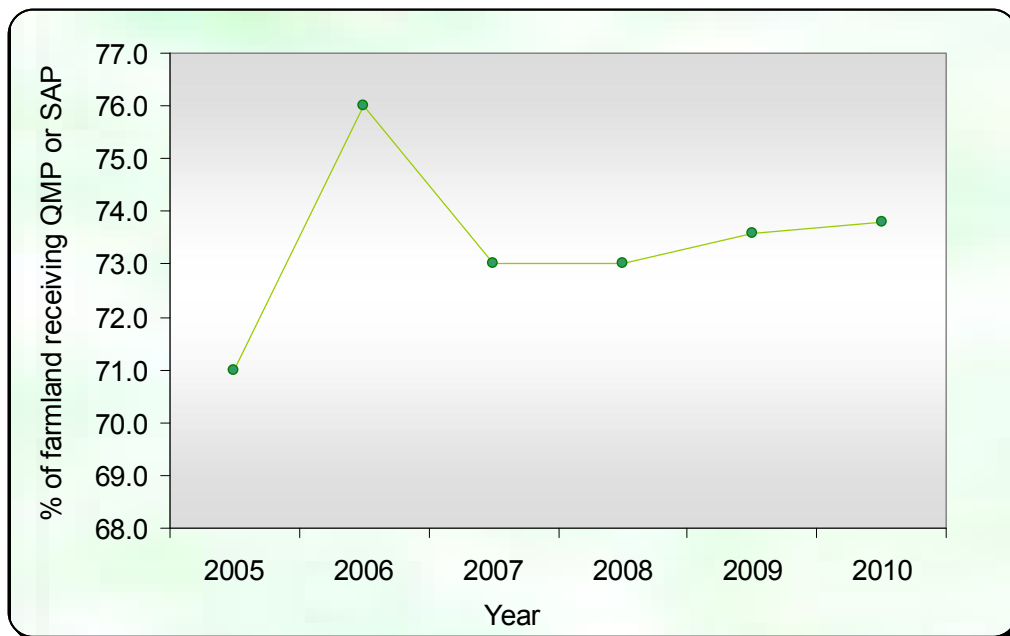


## Natural Environment

eligibility criteria for the SAP or QMP.

Thus the measurement of the proportion of land in receipt of either SAP or QMP provides a good proxy for the amount of agricultural land under good environmental management. This is a minimum estimation since there are farmers who do not claim SAP who may be operating formal environmental management schemes but these are considered to be minimal.

The trend in Graph 5.4 shows a good take up in the first year that the SAP/QMP was introduced with a peak in applicants the next year. Thereafter some applicants left the scheme but over the last 3 years a steady area of land remains under the different environmental stewardship schemes. The challenge over the next few years is to better measure the environmental management systems in place on land not receiving the QMP or SAP and increase the area of land under recognised stewardship schemes.



Source: States of Jersey Department of the Environment

**Graph 5.4** Area of farmed land under environmental stewardship schemes

### Indicator NE1c – the status of butterfly indicator species

Indicator species are chosen and monitored because they act as good barometers for their environment. Butterflies are uniquely placed amongst terrestrial insect and other invertebrate

groups to act as indicators of the state of the environment as they have rapid lifecycles and, in many cases, high sensitivity to environmental conditions.



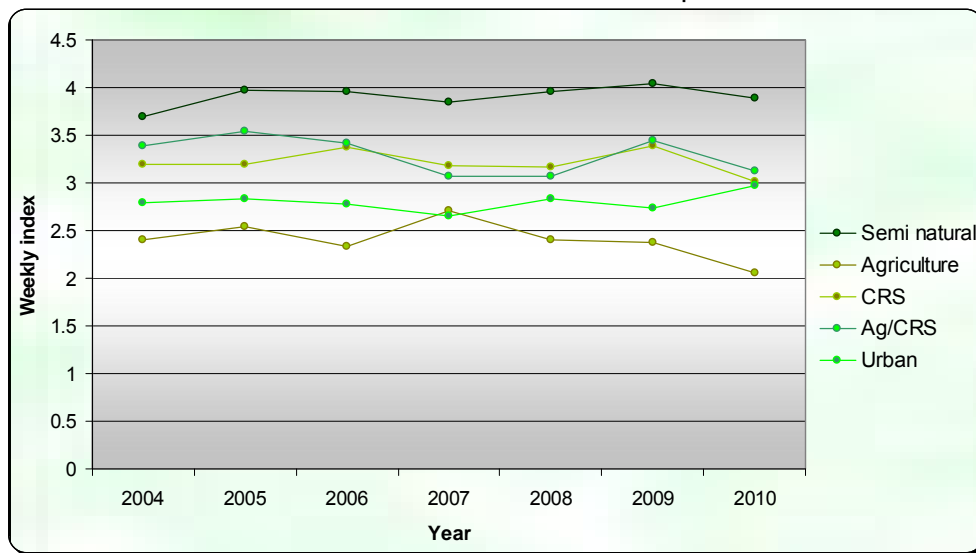
Indicator NE1c	RAG Status	RAG Comment
NE1c Status of butterfly indicator species across key habitat types	N/A	For further comment please see text

In 2004 the States of Jersey Department of the Environment launched the Jersey Butterfly Monitoring Scheme (JBMS). The scheme forms part of the Department's integrated monitoring program for Jersey in order to carry out 'State of the Environment Monitoring'.

The JBMS uses the same methodology used in the UK Butterfly Monitoring Scheme (UKBMS). The scheme is financed by the States of Jersey but is almost entirely based on volunteer recorders, making it highly cost-effective. Data is collected annually to monitor changes in the abundance of butterflies, using well-established data collection and analysis methodologies.

The indicator shows measures of collated butterfly indices from 34 transects using 28 species commonly encountered in five key habitat types: semi-natural; agricultural; CRS (Countryside Renewal Scheme) managed; agriculturally improved (under CRS); and urban sites, see graph 5.5.

As expected the best sites are the semi-natural habitats. Habitats managed under CRS and agriculturally improved (under CRS) schemes show more diversity compared with areas managed purely for agriculture. This indicates that changes in land-use regimes designed to enhance biodiversity are being successful in increasing the populations of the indicator species.



Source: States of Jersey Department of the Environment

**Graph 5.5** The status of indicator species (butterflies) across 5 key habitat types



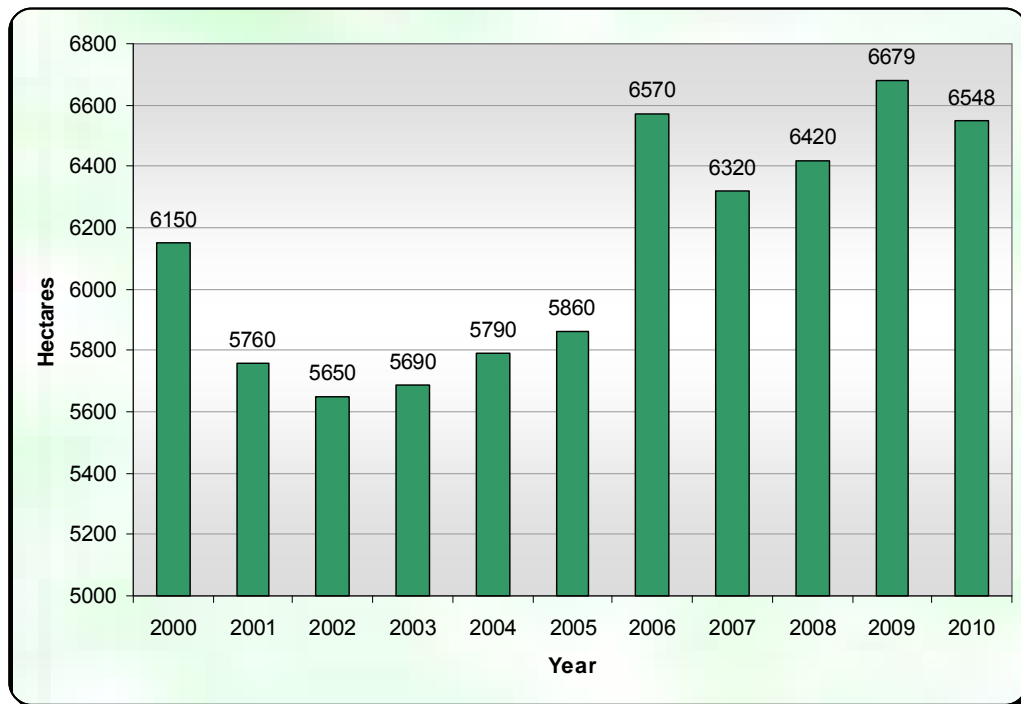
**5.3.2 The Working countryside**

**Indicator NE2 – Total area of land farmed**

Indicator	RAG Status	RAG Comment
NE2 Total area of land farmed	N/A	See text for comment

Until 2005 the agricultural statistics indicated that 50% of the total land use in Jersey was agricultural land. An Island land-use review in that year indicated a further 10% that may be being used agriculturally, and a subsequent land-owner survey established all land use for field sizes over 1 vergée (0.18

hectares). This more detailed survey found that in 2006 the total area available to agricultural was increased by 3,965 vergées (713 hectares) compared with 2005 (Graph 5.6). An additional 416 holdings were identified as owning or occupying agricultural land, albeit with small areas.



Source: States of Jersey Department of the Environment

**Graph 5.6** The area of land farmed in Jersey


In terms of monetary value, potatoes are the most lucrative. In real terms (allowing for inflation), the export value of potatoes

remained at the same level for 2008 as that in 2007. Tomato exports fell by about a quarter (£0.9 million) in 2008.



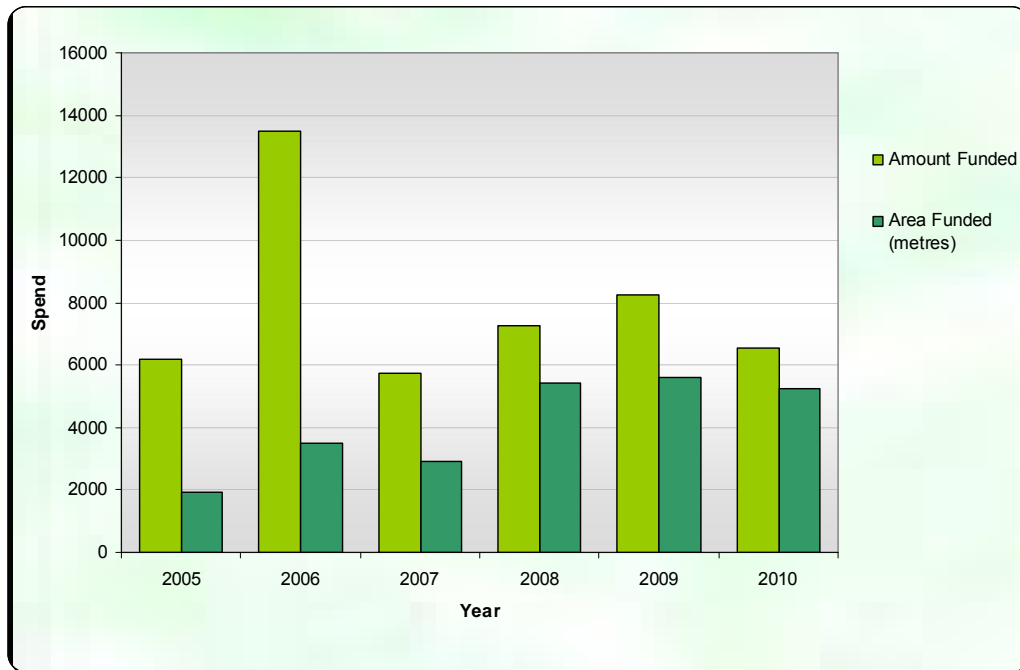
**5.3.3 Access to the Countryside**

**Indicator - NE3 Length of new footpaths created under the Countryside Renewal Scheme**

Indicator	RAG Status	RAG Comment
NE3 Length of new footpaths created under the Countryside Renewal Scheme	 <b>GREEN</b>	Red – no new footpaths created Amber – minimal new footpaths created Green – Significant new footpaths created

The Countryside Renewal Scheme awards grants to landowners to assist in the creation of new footpaths or to carry out maintenance of existing paths

across their land. Graph 5.7 shows the amount of money provided to landowners by the CRS and the subsequent length of footpath financed.



Source: States of Jersey Department of the Environment

**Graph 5.7** Graph showing the amount of CRS funding each year and the length of footpath which is funded.

In addition to privately owned and managed footpaths, the Department of the Environment manages over 70km of public

footpaths and 9km of bridle paths. This involves the maintenance of over 5,000 items of infrastructure, plus an additional 15 car parks and



## Natural Environment

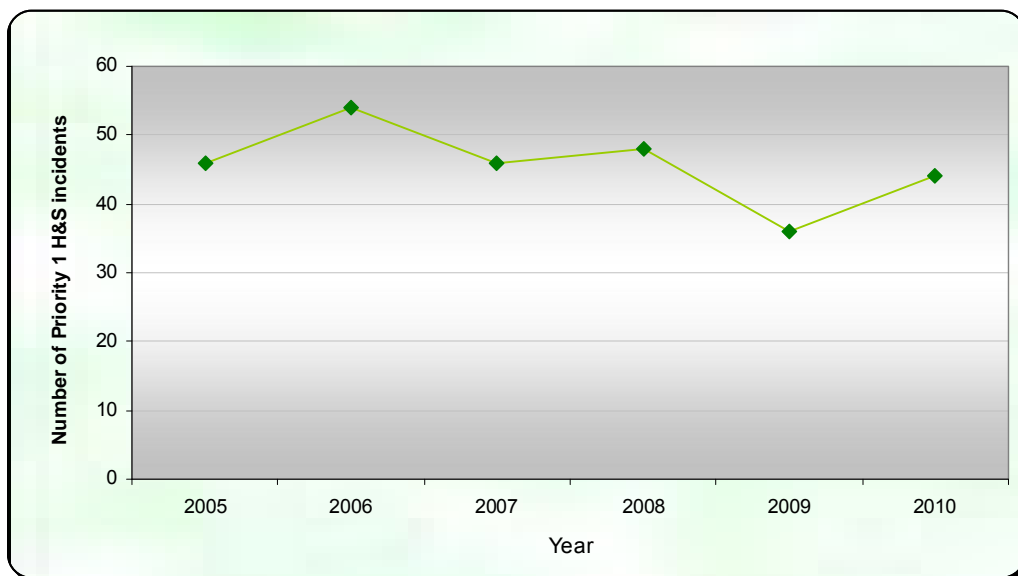
associated access tracks and roads. The most recent upgrades or changes to public access include the following:

- A new stretch of footpath at La Rosière Bay, Le Corbière measuring 45 metres in 2009.
- A new stretch of bridle path to link Jardin D'Olivet to Bouley Bay measuring 1,510 metres in 2010.
- Restoration work on the stretch of north coast footpath from Plemont to Grève De Lecq measuring 2,500 metres in 2010.

maintenance contracts for all Department of Environment access ways are re-tendered. This includes reviewing and re-writing 25 separate specification documents each time. The process was last completed in the spring of 2011.

An indicator of the condition of the Island wide footpath system is the amount of priority 1 heath and safety issues which are responded to within one week of being reported. Graph 5.8 shows the amount of cases which have been responded to in this way over a five year period.

In order to ensure best value for money, every three years the



Source: States of Jersey Department of the Environment

**Graph 5.8** The number of priority 1 Health and Safety incidents responses

### 5.3.4 Species protection

#### Indicator NE4a – The Conservation of Wildlife (Jersey) Law 2000 (as amended)



The Conservation of Wildlife (Jersey) Law 2000, protects a number of important species as well as their nests and dens. In

2009 the Starling (*Sturnus vulgaris*) was also given protected status. This was because of a long term trend in the decline of local and



national populations. Also in 2009 a schedule of plant species to be

given protection under the Law was added.

Indicator	RAG Status	RAG Comment
NE4a - The Conservation of Wildlife (Jersey) Law 2000 (as amended)	 <b>RED</b> 	<p>Red – Significant updates to law outstanding</p> <p>Amber – Minor updates to law pending</p> <p>Green – Conservation of Wildlife (Jersey) Law completely up to date, no additional species pending for addition</p>



Bryophytes and lichens have yet to be afforded protected status unless their location happens to coincide with a designated SSI. Invertebrate species (e.g insects and molluscs) are also not independently protected outside of designated

SSIs, however seven invertebrate species are the subject of biodiversity action plans (BAP) that acknowledge the threatened status of the species and outline objectives for their conservation.

### Indicator NE4b Biodiversity Action Plans for protected species

The Jersey Biodiversity Strategy published in 2000 represents Jersey’s response to signing the Convention on Biological Diversity 1992 at the Rio Earth Summit. One of the commitments from the Summit and Article 8 of the Convention was to produce local biodiversity action plans (BAPs) to achieve recovery of our most threatened species and habitats.

Each individual plan sets out the problems faced by the animal, plant or habitat and lists the practical actions and targets with emphasis upon the population distribution and conservation status necessary to ensure its survival. Over time, these plans will encompass all threatened or protected species and habitats in Jersey.

Indicator	RAG Status	RAG Comment
NE4b - The development of Biodiversity Action Plans (BAP) for protected species	 <b>AMBER</b> 	<p>Red - Target number of BAPs not achieved and thus implementation delayed</p> <p>Amber - Target number of BAPs achieved but not fully implemented</p> <p>Green – Target number of BAPs achieved and implemented</p>



## Natural Environment

Jersey's first set of action plans were published in July 2006 with the addition of several new action plans each year in 2008 and 2010. Currently there are 54 biodiversity action plans in nine different

species and habitat categories which are; plants, insects, amphibians, reptile, mammals, birds, fish, key habitats and broad habitats.

Number of protected species with Biodiversity Action Plans		
Flora and fauna groups	No of protected species	Number of species with Biodiversity Action Plans
Plants	66	22
Invertebrates	0	7
Amphibians	3	2
Reptiles	4	4
Terrestrial mammals	16	5 plans covering 15 species
Birds	All birds protected other than 4 species	9
Fish	1	1

### 5.3.5 Populations of key species

#### Indicator NE5 – Populations of key species (Birds and bats)



Bird populations are considered to be a good indicator of the broad state of wildlife in the countryside because they occupy a wide range of habitats and they tend to be near the top of the food chain. The distribution, abundance and changes over time in wild populations are equally important in telling us about the state of our environment as animal communities are good indicators of the condition of the habitat itself. Common bird species populations are widely accepted as valuable indicators, which provide broad trends in bird populations.

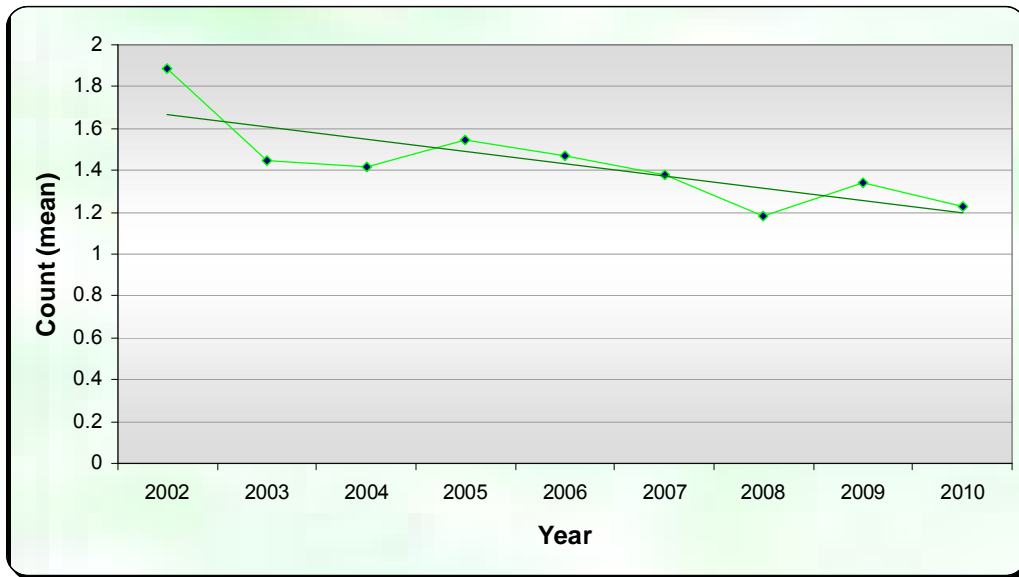
#### Garden Birds

Population trends of terrestrial and marine birds are monitored through the efforts of volunteer birdwatchers taking part in a variety of surveys. These include nation-wide surveys such as the Breeding Bird survey and Bird Atlas 2007-2011, whilst local surveys include garden birds, farmland birds, waders, seabirds and bird ringing. Surveys are carried out using time counts or transects under specific conditions. Each has its own primary methodologies that are the same as UK nationally applied programmes collecting counts of birds or nests annually.





Indicator	RAG Status	RAG Comment
NE5a Status of 12 species of garden birds	 <b>RED</b> 	<p>Red – declining numbers of garden birds</p> <p>Amber – stable numbers of garden birds</p> <p>Green – Increased numbers of garden birds</p>



Source: States of Jersey Department of the Environment

**Graph 5.9** Trends in the numbers of garden birds

The garden bird survey is carried out once a year, when Islanders are invited to record and contribute their sightings to an annual publicity campaign. The survey is run by the volunteer group Action for Wildlife Jersey. The indicator shows one measure of 12 garden bird species regularly found in local gardens. Once again the measure demonstrates a declining trend (figure 5.9).

### Wading Birds

Jersey has a number of obligations to conserve, protect and monitor migratory wading species and their



habitats under the Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the African-Eurasian Waterbird Agreement, which is an affiliated instrument of the CMS. Jersey is also affiliated to the Ramsar Convention (for further information, refer to the Water section), which calls for the protection of both migratory and resident wading birds as well as their habitats. Selected wading species such as Brent goose (*Branta bernicla*) are monitored at a number of sites Island-wide, including Grouville Bay and St Aubin’s Bay. Although Graph 5.10

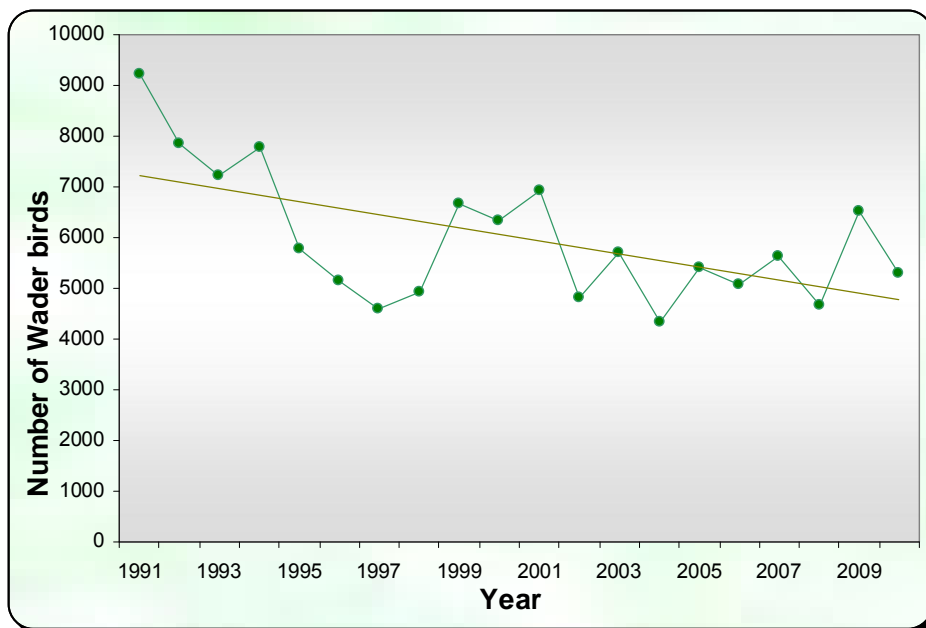


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shows that there are large inter-annual variations in weather and climate, there is a declining trend from combined data of 11 species of wading birds at selected sites over the Island. There are fears

that disturbance from recreational activities like dog walking and kite surfing are affecting wader numbers reducing their feeding efficiency.

Indicator	RAG Status	RAG Comment
NE5b Numbers of wading birds	 <b>RED</b> 	<p>Red – declining numbers of wading birds</p> <p>Amber – stable numbers of wading birds</p> <p>Green – Increased numbers of wading birds</p>



Source: States of Jersey Department of the Environment

**Graph 5.10** Wading birds counts at key sites across the Island

### Breeding birds

Between 1999 and 2010, populations of breeding birds have been monitored as part of Jersey's contribution to the Breeding Bird Survey (BBS). The BBS is a national monitoring scheme for all species of breeding birds throughout the UK and aims to provide data on population's trends

to inform and direct conservation action. The survey in Jersey is managed by the Société Jersiaise, and is carried out by volunteer recorders



The indicator shows two measures of wild breeding bird populations. Bird species are aggregated

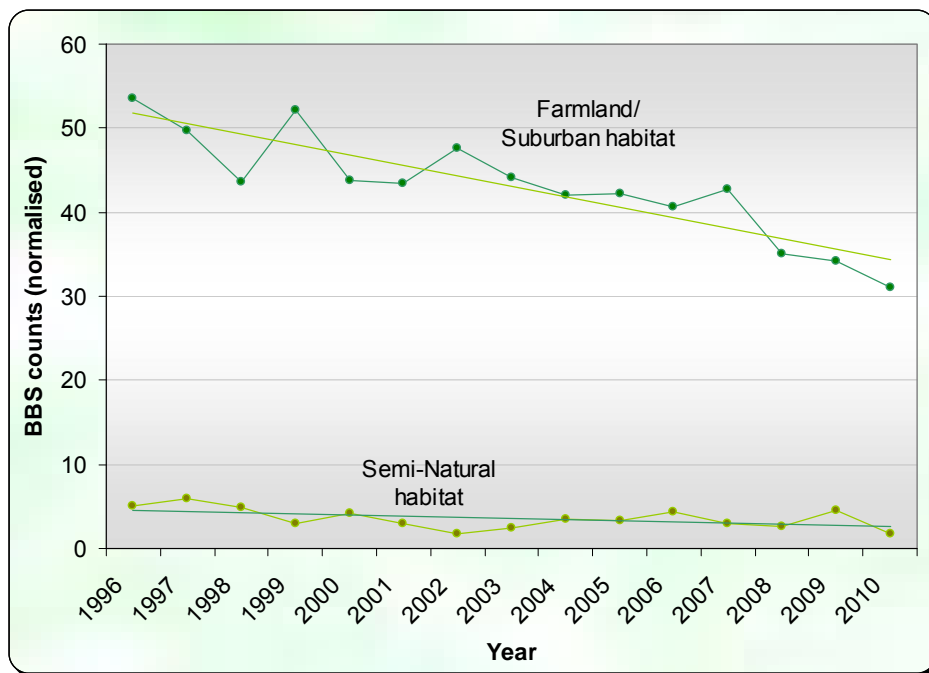


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together to measure both trends in farmland and suburban areas and semi-natural natural habitats. Figure 5.11 demonstrates a similar declining trend for both trends however, farmland and suburban

birds are declining much more severely.

Indicator	RAG Status	RAG Comment
NE5c Numbers of breeding birds	 <b>RED</b> 	Red – declining numbers of breeding birds Amber – stable numbers of breeding birds Green – Increased numbers of breeding birds



Source: States of Jersey Department of the Environment

**Graph 5.11** – Counts of 32 species of birds occupying farmland/suburban habitats and 10 species of breeding birds occupying semi-natural habitats

### Indicator NE5d - Protecting birds species through the planning process

Because of the close proximity of the (sub)urban and semi-natural habitats in our small Island often protected species are found using the built environment for parts of their life cycle. Barn swallows (*Hirundo rustica*), house martins (*Delichon urbica*), house sparrows (*Passer domesticus*) and common

kestrels (*Falco tinninculus*) are often found nesting in buildings.



Inappropriate conversions, extensions and replacements of traditional farm buildings have eroded the Jersey 'vernacular' and in some cases this has resulted in the decline of traditional nesting



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sites. Building habitat niches, such as nesting sites for house martins, swallows and swifts are being

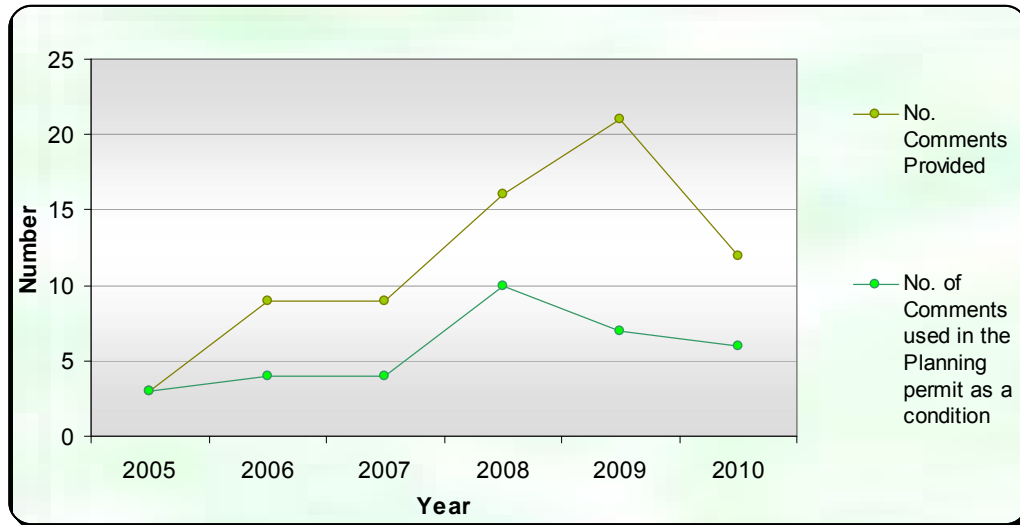
threatened as older buildings/barns are converted.

Indicator	RAG Status	RAG Comment
NE5d - Number of site protections of selected nesting birds through planning process (as measured by inclusion of recommendations on the permit)	 <b>RED</b> 	<p>Red – Less than 69% of comments included as legally enforceable conditions</p> <p>Amber – between 94% and 70% of comments included as legally enforceable conditions</p> <p>Green – more than 95% of comments included as legally enforceable conditions</p>

The indicator and Graph 5.12 provides information on the amount of planning applications the Natural Environment team has responded to concerning both swallow and house martin nesting sites during the last five years. If the comment has been included and/or integrated into the approved planning permit it is considered that the nest site has been maintained on site since planning conditions are legally enforceable.

Graph 5.12 shows that not all comments provided by the Natural

Environment team are reflected as legally enforceable conditions on a planning permit. In many instances the comments are only given as 'informatives' instead. However, 'informatives' are considered a weaker way to protect the habitats, roosts or dens of protected species because they are not legally enforceable. Ideally all comments would be included as conditions on the permit; the current average from 2005 to 2010 is 49%. An internal review is underway to ensure the most appropriate way to improve.



Source: States of Jersey Department of the Environment

**Graph 5.12** Proportion of bird nest sites protected through the development control process

### Indicator NE5e - Protecting bat species

Bats account for almost a third of all mammal species in the UK and they occupy a wide range of habitats, such as wetlands, woodlands, farmland, as well as urban areas. Because they are top predators of common nocturnal insects and are sensitive to changes in land use practices they can tell us a lot about the state of the environment. The pressures they face - such as landscape change, agricultural intensification, development, and habitat fragmentation are also relevant to many other wildlife species, which makes them excellent indicators for the wider health of all wildlife.

Jersey is a signatory to Eurobats (Agreement on the Conservation of European Bats), which is an affiliated instrument of the Bonn Convention. This International agreement covers the conservation and management of bats. 10 Bat species in Appendix II of the Bonn Convention (and Annex I of

EUROBATS) are known to be present in Jersey. By becoming a signatory in 2000 Jersey has signalled its intention to monitor and conserve bats. The Island takes part in national led schemes such as the National Bat Monitoring Programme (NBMP) and iBat, both coordinated by the UK's Bat Conservation Trust.

#### Bat roosts

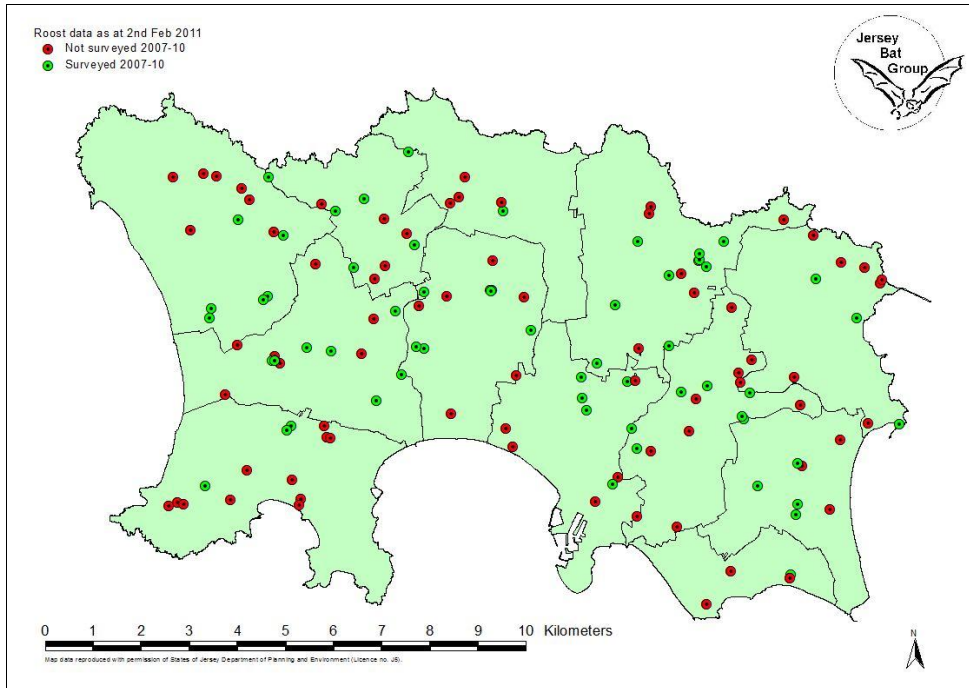
All Jersey bat species make use of buildings on occasion, but for some species, buildings are essential as roost sites. Species have adapted to share our built structures, whether they are older properties, modern houses, barns or churches. The Jersey Bat Group monitors bat roost occupancy as well as maintaining the bat roost register. This is done throughout the summer period by volunteers performing evening bat emergence surveys. Jersey has 136 known or suspected bat roost sites.



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Emergence surveys were made to 49% of suspected roosts in the period 2007 – 2010, and 48.5% of those roosts were shown to be active, as illustrated in the map on the next page. This data includes

six roosts which were not visited by the Jersey Bat Group but which were categorised as active on the strength of reliable information from the occupier.



Source: Jersey Bat Group

Bat roost survey data 2007-2011

### Indicator NE5e - Number of roosts protected through the development control process

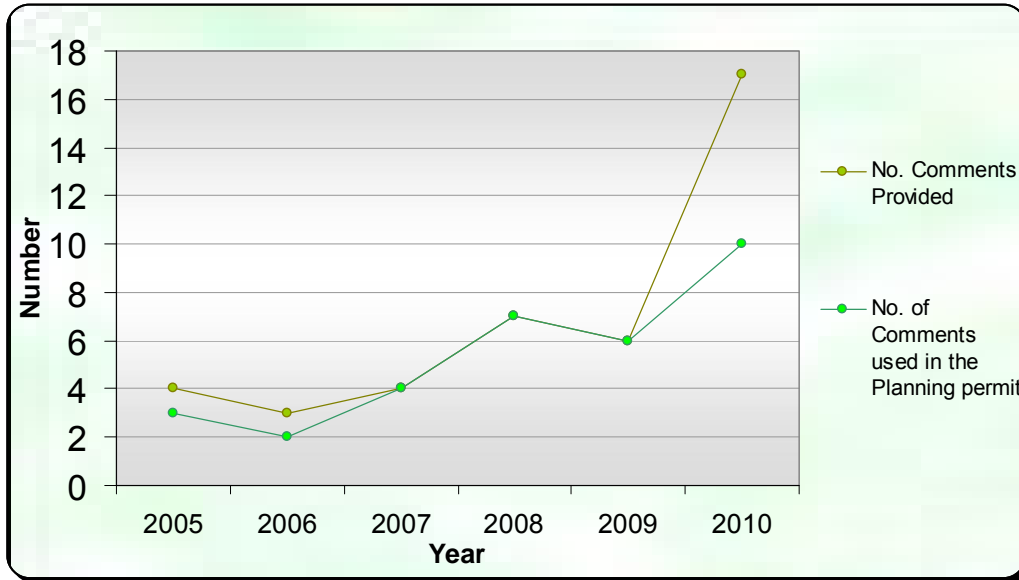
Indicator	RAG Status	RAG Comment
NE5e - Number of roosts protected through the development control process		<p>Red – Less than 69% of comments included as legally enforceable conditions</p> <p>Amber – between 94% and 70% of comments included as legally enforceable conditions</p> <p>Green – more than 95% of comments included as legally enforceable conditions</p>



Graph 5.14 provides information on the amount of planning applications to which the Natural Environment team has responded concerning bat roosts during the last 5 years.

The graph demonstrates that not all comments are reflected as legally enforceable conditions. In many instances the information is only

reflected as 'informatives' instead but this is considered a weaker way to protect the habitats of protected species. Ideally all comments would be included as conditions on the permit, the current average from 2005 to 2010 is 78%; an internal review is underway to ensure the most appropriate way to improve on this number.



Source: States of Jersey Department of the Environment

**Graph 5.14** Proportion of bat roosts protected through the development control process

**Indicator NE5f - Bat species diversity and abundance at key foraging sites**

Indicator	RAG Status	RAG Comment
NE5f - Bat species diversity and abundance at key foraging sites	N/A	See text for comment

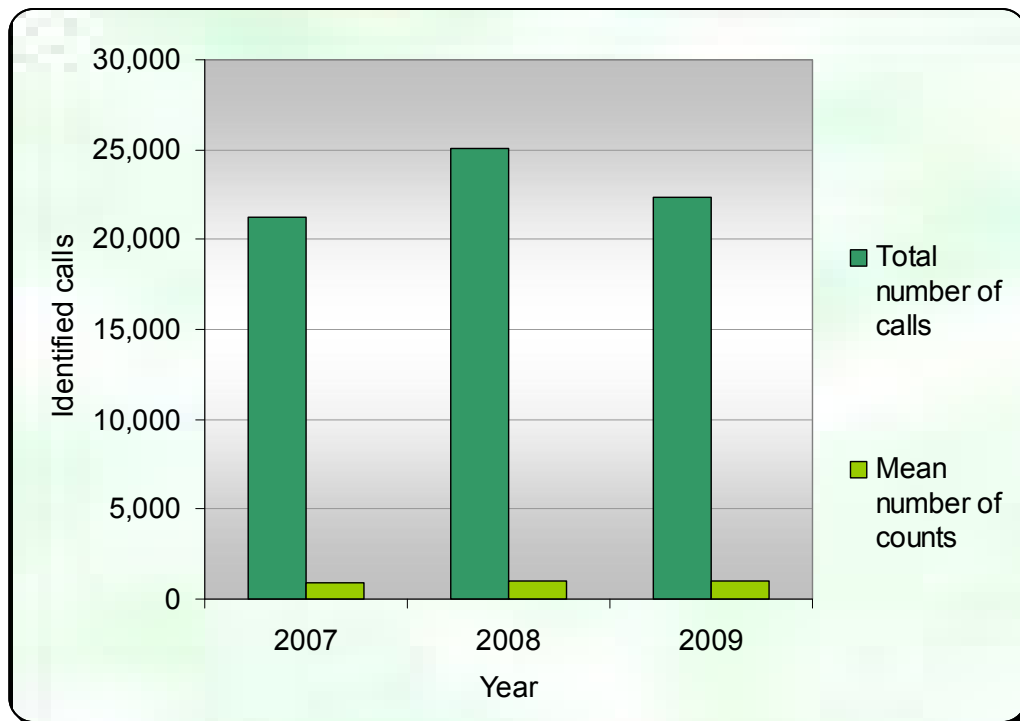


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During 2004 to 2009 an annual monitoring project was carried out to monitor the species diversity and abundance of bats observed at two key foraging habitat types: water bodies and woodland. Bats use both habitat types extensively but have extremely high activity indexes over water since they frequently feed on the small invertebrates associated with water bodies.

Eight species of bats were identified and a subset of data for

the Common pipistrelle (*Pipistrellus pipistrellus*) was used to examine changes over time. Throughout the period 2007 - 2009 there is no evidence that common pipistrelle activity has declined during this period (Graph 5.15). This is only a short period of time and far longer data sets are required to show trends. However initial observations are that count means and totals are reasonably consistent across the years.



Source: States of Jersey Department of the Environment

**Graph 5.15** - Common pipistrelle abundance at key foraging sites

### 5.3.6 Non-indigenous invasive pests and diseases

Plants suffer from a wide variety of pests and diseases with some leading to severe economic or environmental damage. Some are naturally occurring whilst some are non-indigenous, imported via

natural routes or by human activity. The most damaging of these organisms are regulated and known as Statutory Organisms; they must be surveyed for at points of import, areas of production and






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in the natural environment. If detected these organisms must be controlled and eradicated.

Surveys play a vitally important role in the protection of the Island's farmed, natural and urban environment and there are international obligations in respect of monitoring and control of regulated organisms. Species covered include the Colorado beetle (*Leptinotarsa decemlineata*)

a pest of potatoes, Tobacco whitefly (*Bemisia tabaci*) a pest of tomatoes and fireblight (*Erwinia amylovora*) a disease of the family *Rosaceae* which includes apples, pears and hawthorn trees.

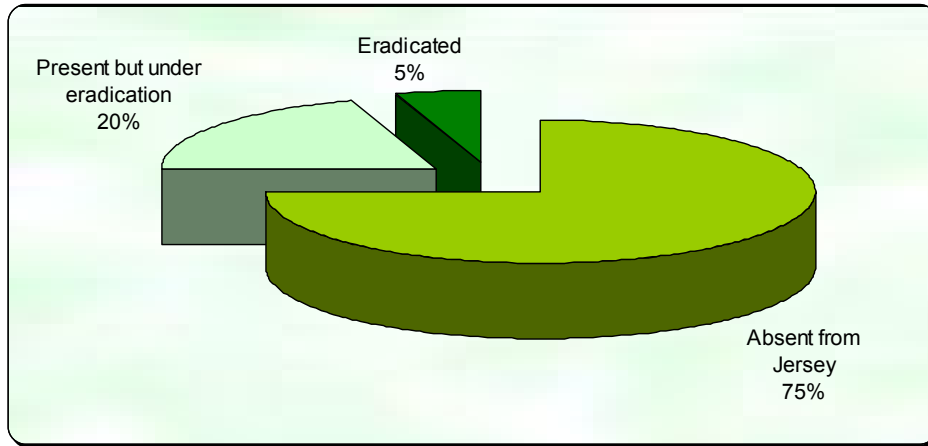
Indicator	RAG Status	RAG Comment
NE6 - Incidence of crop pests and diseases		<p>Red – Critical pests and diseases present but not responding to eradication and control measures with a risk that they may become permanently present.</p> <p>Amber – Minimal Pests and diseases present with active eradication and control underway</p> <p>Green – All critical pests and diseases absent from the Island</p>

### Indicator NE6 - Incidence of crop pests and diseases

Additional monitoring of non-statutory pests such as Gypsy Moth and Oak Processionary Moth are undertaken because of the risk that they pose to human health.

The Plant Science Laboratory at Howard Davis Farm provides specialist diagnosis of plant pests and diseases, as well as the analysis of soil, water and plant samples for farmers, growers, the Plant Health Inspectorate, other States departments and the public.

Although there are numerous potential invasive plant pests and diseases, there are approximately 20 which require an annual survey under UK and Jersey Plant Law. Of these 20, the majority (Figure 5.16) remain absent from Jersey but are monitored for closely, 5% have been eradicated from the Island despite previous incidences, and 20% are present in the Island but undergoing successful control and eradication programmes.



Source: States of Jersey Department of the Environment

### Graph 5.16 The status of 20 critical plant pests and diseases

The management of pests and diseases, whether regulated or naturally occurring is always conducted in an environmentally sympathetic manner. All control regimens are now conducted under an integrated pest management framework, in which physical and cultural controls are the first to be employed, with chemical controls being the last control option selected. Biological control, monitoring, pheromone trapping

and resistance play large parts in this strategy, and farmers and growers are now skilled in employment of these methods. It is legally required under the Pesticide (Jersey) law 1991 (Certificate of Competence) for anyone applying pesticides on a commercial basis to hold the NPTC City & Guilds National Proficiency Test Council which is co-ordinated by the Department for the Environment.



## 5.4 Update on the 2005 environmental priorities and key actions

### Changes in the countryside and our natural history (State of Jersey Report 2005)

The Island is experiencing declines in the populations of common species such as toads, butterflies and farmland birds like goldfinches. To confirm the actual levels and explain the causes of these declines, we need robust, long-term scientific evidence.

Nevertheless, the main causes of change in marine and terrestrial biodiversity are likely to be:

a) Encroaching development; Development of previously undeveloped land causes a gradual suburbanisation of the countryside and coastal zone.

In order to address this we must:

- i. Adhere to the policies guiding development control as laid out in the Jersey Island Plan 2002
- ii. Encourage landowners to preserve Jersey's natural habitats on their land; for example, wildlife friendly gardening helps prevent the fragmentation of natural habitats.

b) Change through habitat succession; although habitats change naturally, man's influence distorts nature's process and continuity.

In order to address this we must carefully manage naturally occurring habitat succession to maintain biodiversity.

c) Changes in the rural economy; traditional and long-term management of the countryside gave us today's familiar landscape. But economic pressures and changing practices have led to local water pollution and changes to our traditional methods of land management.

In order to address this we must re-engineer the rural economy to create a profitable working countryside with diverse rural activities that sustains our rural landscape and the habitats it supports.



The indicators have shown that the decline in certain key indicator species that was noted in 2005 has continued through to 2010.

### **Birds**

The evidence for the continued decline in bird species is based on long term monitoring data across a range of habitats including coastal, common garden and farmland. This downward trend is largely a national/international concern. However, within the island the indicators have shown that encroaching development and farming practices are factors affecting nesting sites and foraging habitats.

### **Bats**

Long term monitoring data for bats is not yet robust enough to confirm current trends for this indicator species. However, the national status of each of the bat species recorded in Jersey is either rare or declining. Development pressure on roost sites has been shown to be a significant contributing factor.

Monitoring activity has changed this year to the international iBats methodology of driven transect monitoring. This has been shown to offer a considerable increase in both power and sensitivity of monitoring species diversity and abundance with the benefit of a substantial reduction in officer resources. This methodology also offers the opportunity to be contributing to broader international bat monitoring.

Recent changes to planning legislation have resulted in the exemption of certain building activities such as loft conversions,

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from the requirement for formal planning consent. The consequences of this law change for roost sites island-wide will need to be closely monitored.

### **Butterflies**

The Jersey Butterfly Monitoring Scheme, founded in 2004, requires ten years of data before any analyses can be afforded a robust statistical significance. However, current trends suggest that the principal factors governing the indicator species' diversity and abundance on Jersey are probably habitat type and land management practice. Once the monitoring scheme has ten years' data it should be possible to outline with confidence some of the key factors controlling variation in Jersey's butterfly species and thereafter to propose actions which will sustain or enhance the health of the overall population.

### **Habitats**

Significant progress has been made in affording statutory protection (in the form of SSIs) to the island's largest areas of semi-natural habitat. The Department of the Environment will continue to identify and prepare other sites for designation in 2011 and onwards. These will target the island's most extensive and fragile areas of key habitats as defined in the Biodiversity Strategy, such as woodlands and wet meadows.

For approximately 80% of the island's key habitats, protection remains dependent upon effective implementation of island-wide policy such as that set out in the Island Plan 2011. This includes



pockets of land, fringe habitats, wildlife corridors which may not justify SSI status due to their small size but which are nevertheless of significant ecological value. New policies in the Plan also enable the impact of development upon biodiversity to be a material policy consideration in the planning process.

The Department of the Environment has been successful in achieving and maintaining favourable conditions for those sites that are under State management. For those valuable sites that are privately owned, the Department continues to work with landowners and stakeholders to secure sympathetic management.

### **Access Strategy**

The indicators have shown that since 2005 the countryside access network has been extended and enhanced. Good access provision is a valuable tool in encouraging more people to use and appreciate the countryside, thus promoting the

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benefits in protecting and enhancing the natural environment.

In addition to ongoing maintenance of existing infrastructure, a number of further initiatives have been prioritised for 2011 onwards. These include addressing the undersupply of access routes for horse riders and mountain bikers. It would also be desirable to provide additional access links to existing provision in order to extend the network. A coordinated approach to providing signage and interpretation is also needed to facilitate the enjoyment of the countryside for all, and to encourage safe and responsible use.

During 2012 the Department of the Environment will be working with all stakeholders to produce an Access Strategy for Jersey. This will provide a framework for the management and promotion of countryside access in a strategic, coordinated way. It is acknowledged that different organisations and interests need to be encouraged to work together for the greatest combined effect.



### 5.5 The environmental priorities and key actions for 2011 - 2015

#### Natural Environment - The next 5 years

The island's terrestrial biodiversity is under pressure from encroaching development and the need to improve statutory protection.

In order to address this we must:-

- Strengthen and enforce **legislation** for the protection of species and their habitats
- Continue to support and promote **agri-environmental initiatives**
- Ensure that new planning policies under the **Island Plan 2011** concerning species and habitat protection and enhancement are implemented and monitored
- Continue with **long term monitoring** (implement a long term monitoring strategy/framework)

#### 5.5.1 Species Protection- Legislation and Policy

##### Conservation of Wildlife (Jersey) Law 2000 - Under Review

The indicators have highlighted the need to strengthen the island's wildlife legislation on a number of fronts. The Conservation of Wildlife (Jersey) Law 2000 ('the Wildlife Law') has not been revisited since coming into force and needs to be updated to ensure compliance with international obligations and environmental best practice. In addition, a number of failings in the current Wildlife Law which hinder effective species protection have been identified. These include:

- lack of statutory protection for key species groups such as invertebrates;
- loose definitions preventing effective enforcement;
- lack of statutory protection for nests/dens and other habitats upon which species depend.

##### Biodiversity Action Plans

Although they have little legal significance, the Biodiversity Action Plans for Jersey clearly represent the island's commitment (under the CBD) to conserving its local wildlife and habitats, particularly those that are rare or threatened. The



indicators have shown that the total number of Action Plans in publication has progressed significantly since 2005. The

challenge for 2011 and beyond will be to ensure that each Plan is fully implemented and monitored.

### 5.5.2 Habitat Protection – Legislation and Policy

#### Island Plan 2011

The Island Plan 2011 introduces a number of policies which have the potential to facilitate significant advances in the consideration of biodiversity and habitats in the face of development pressure. These include:

- a strong presumption against development affecting animal or plant species protected by Law, or their habitats;
- the requirement for appropriate and adequate mitigation measures where a proposal may have an adverse affect on protected species or sites of wildlife value; and
- for the first time material consideration is given to the protection of trees, hedgerows, woodland habitats and wildlife corridors from the effects of development; development proposals that do not make adequate provision for the appropriate landscaping of a site- including the retention of existing trees and hedgerows and the provision of new planting, as appropriate, with species of benefit to the island's biodiversity – will not be approved.

One of the key initiatives of the Island Plan 2011, is the use of enhancement and compensation where appropriate; where the need for a proposed development clearly outweighs the biodiversity value of

a site appropriate mitigation and compensatory measures will have to be adopted to secure a demonstrable net gain in biodiversity. This policy development will allow for the promotion of opportunities to conserve wildlife and to create and manage new natural or semi-natural habitats in the context of development schemes

The Island Plan also makes provision for the designation of Environmentally Sensitive Areas (ESA) representing some of the Island's key habitats, such as the North Coast heathlands and the woodland and coastal habitats of Rozel.

Sites of Importance for Nature Conservation (SINC), smaller semi-natural areas or sites that are important to wildlife and which have a biodiversity value, along with wildlife corridors.

There is also considerable potential to develop and adopt supplementary planning guidance to provide landowners, developers, architects and planning officers with more information about the potential impact of development upon species and habitats and the potential, not only for mitigation, but also for habitat creation and enhancement.



### Coastal National Park

The primary objective for this designation, which will be accompanied by a management plan, will be to balance the conservation and enhancement the natural beauty, wildlife and cultural heritage of the Coastal National Park with promoting public

enjoyment and awareness of its special values. In this area there will be the strongest presumption against all forms of new development for whatever purpose, and a strong presumption against redevelopment for other uses; their extension; and the intensification of their use.

### 5.5.3 Changes in the Working Countryside

The period 2005 to 2010 has witnessed a proactive approach to management of the countryside, with progress made in the main aim of balancing the rural economy with biodiversity conservation in rural areas.

Between 2005 and 2009 through the CRS over £2m of expenditure was approved for environmental improvements in the countryside including new habitat creation and the adoption of sympathetic farming practices. Although more robust long term evidence of positive effects on terrestrial biodiversity is needed, short term monitoring data eg for the butterfly indicator species, suggests that agri-environmental schemes such as these have the potential to have a positive effect over the long term.

During 2010 the CRS was closed to all new applications due to budgetary restraints. By 2011 the scheme will have undergone a review, covering all aspects of design, content, delivery and monitoring. This review will investigate ways in which the scheme could be improved or redesigned to deliver greater environmental benefits, whilst

being made simpler to administer, achieving best possible value for money and maximising environmental benefit(s).

During the review, the scheme's environmental and compliance monitoring will also be re-developed and improved.

#### Rural Economy Strategy (2011-2015)

The Rural Economy Strategy (RES) is a five-year strategy which considers the 'triple bottom line' of profit, people, environment. It was agreed and passed at a States sitting on the 18 January 2011. The RES 2011-2015 is designed to grow the rural economy in line with the objectives of the States Strategic Plan, the Countryside Renewal Scheme, Island Plan Policies, and the Biodiversity Strategy whilst safeguarding Jersey's countryside, its character and the environment. The RES recognises that economic sustainability of the rural sector depends on also providing positive environmental and social benefits, hence the introduction of an Environment Plan where each farmer and/or landowner receiving





public funding will be required to *inter alia* detail how they will implement Codes of Good Agricultural and Environmental Practice (CGAEP), mitigate against climate change and enhance biodiversity on their holdings.

There are a number of policies set out within the RES 2011-2015. Attached to each policy is a measure of progress for each year of the life of the Strategy in order that progress can be monitored.

The policy which specifically lends itself to monitoring the natural environment and provides a reporting platform for the State of Jersey, is policy 'PE6 Monitoring changes in biodiversity': whereby the Department of the Environment has committed itself to reviewing State of Jersey indicators in 2011, with continued monitoring of key biodiversity indicators from 2012 to 2015 and with compliance with Multi-lateral Environment Agreements.

### 5.5.4 Long term monitoring of species and habitats

Since 2005 the collection of long term robust scientific evidence for trends in terrestrial biodiversity has continued to be a priority and a challenge. In 2012 the implementation of a Surveillance and Monitoring Framework for the Department of the Environment will ensure that long term monitoring is effective in measuring changes in biodiversity over time, providing the evidence to meet targets, identify changes and drivers and to guide further directions in policy and legislation.

In 2010 the Jersey Biodiversity Partnership undertook public workshops and a survey which established the desire and need for a Jersey Biological Records Centre. During 2011 work has been undertaken to explore the logistics and potential costs associated with

establishing and maintaining a biological records centre. Two main options were considered: (1) establishing an independent biological records centre for Jersey; and (2) expanding the pre-existing Guernsey Biological Records Centre so that it covers all the Channel Islands.

As well as cost, other factors that have been explored in 2011 include management issues, location, IT systems and software, effectiveness and data protection. A survey of forty-one UK biological records centres was undertaken so that Jersey's needs could be compared to models operating elsewhere. The results of this recent work will be presented to the Jersey Biodiversity Partnership meeting in October 2011.



## Natural Environment



**ECO-ACTIVE**







## 6 ECO-ACTIVE

Since 2006 a key development in the awareness and outreach work of the 99ACTIVE campaign. Its role has been to provide information in order to promote environmentally conscious decision making in all sectors.

ECO-ACTIVE recognises that there is a need to enable collective responsibility to ensure a positive impact on the living and working environment, which is such a precious resource.

The ECO-ACTIVE programme has grown from a simple public awareness campaign in 2006 into a suite of tailored programmes across many sectors as illustrated in the 'family tree' below.





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