

Challenges for the water environment of Jersey



A summary of the main water management issues

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Foreword

Water is a precious resource, particularly on an island with a finite supply. Everyone has an important part to play in safeguarding this resource for human use and protecting the important aquatic habitats and species which depend on it.

In 2013, the Department of the Environment commissioned Atkins Ltd to undertake an Integrated Water Management Plan so that the States of Jersey can better plan and manage the Island's water resources and the important ecosystems which rely on it.

This document is part of the water management planning process; it sets out the current status of the water environment and the key pressures acting upon this important resource. It is the first in a two part series – the Integrated Water Management Plan will follow in 2015.

This document is being released for public information and your feedback is invited on the challenges discussed herein. This is an important step in managing the Island's water resources and gives you the chance to influence the approach to management in the future.

We would like your views on:

- The water management challenges on the Island that are limiting the benefits society obtains from the water environment; and
- The best way to address these challenges in the future;
- What should be done first?

How you can help?

We invite you to review the information contained within this report and respond to the following consultation questions:

1) Do you agree with the key water management challenges set out and how they are affecting the environment and society?

(Please be specific when responding, setting out which challenges your response refers to, whether your response refers to the whole island or specific catchments, and provide supporting information to fully explain your answer)

2) What do you consider to be the biggest challenges facing the water environment on Jersey?

3) How do you think these challenges should be addressed and in what order?

(Please specify which challenges your response refers to and bear in mind any resource implications such as public water supply etc.)

Please respond before the end of December 2014 to:

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Structure of this document and supporting information

This document is a summary of the information gathered and assessed through the first stage of the Integrated Water Management Plan process.

Firstly, this document sets out the land and water uses on the Island and why they are important. Then follows a brief summary of the organisations involved in the current management of the water environment in Jersey.

Next, the approach that has been taken here to identify the Island's bodies of water and assess their current status classification is briefly described. This includes coastal waters, streams, ponds and reservoirs and groundwaters.

Finally, the key pressures acting on the water environment are discussed.

This document is a high level summary only, with the specific purpose to set the scene for the Integrated Water Management Plan to be produced during 2015.

As such, the summary level of detail within this report is supported by technical appendices. These are provided separately and are referenced throughout the consultation document so you can readily understand the data and evidence used to underpin the key challenges set out. The technical appendices include:

Technical Appendix A: The approach to assessing the classification status of Jersey's waters – The detailed method statements setting out our approach to understanding the current status classification of Jersey's water bodies and how this approach compares to similar processes undertaken in England, Wales and France.

Technical Appendix B: The status classification of Jersey's water bodies – Tables to show the current status of Jersey's water bodies as assessed by the different classification processes set out in Appendix A.

Technical Appendix C: The economic analysis of water use on Jersey - Setting out how water is used to support the Island's economy.

1. Water – a vital resource

1.1 Water is essential for life

An adequate supply of good quality water is essential for a healthy and functional natural environment, for recreation and to support Jersey's economy. By managing the Island's waters appropriately, the ecosystem services that water provides us can be safeguarded for the future.

It is important to make sure that we use water in Jersey in a sustainable way, and ensure the decisions that we make today safeguard the uses of the water environment for tomorrow.

1.2 Jersey's geography, hydrology and climate

Jersey has an area of nearly 120 km². The highest area of the Island is towards the northern coastline, a plateau between 60 and 120 metres above sea level.

To the north of the plateau, the elevation drops rapidly forming a rocky cliff coastline. Looking south, the gradient is somewhat more gradual, forming a series of deep valleys that are predominantly north-south orientated, towards the sandy bay coastlines on the western, eastern and southern aspects of the Island (Figure 1).

The Island is situated in the Normano-Breton Gulf. The tidal range can exceed 12m and at low tide various habitats are exposed, including reefs, boulder fields, sandy shores and shingle banks.

The coastal waters are relatively warm due to the influence of the Gulf Stream and surrounding oceanographic conditions, which provide 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. These play a substantial ecological role in the natural functioning of the coastal system.

Jersey has a temperate marine climate and has less rainfall (including a lower intensity of rainfall) compared with the UK average. The annual average rainfall on Jersey is 866 mm (1981-2014) compared with a UK average of 1154 mm. Jersey also enjoys more sunshine hours than the UK (with the warmest, driest months being June to September) and fewer days of frost per year.



Figure 1 - Jersey – an Island overview

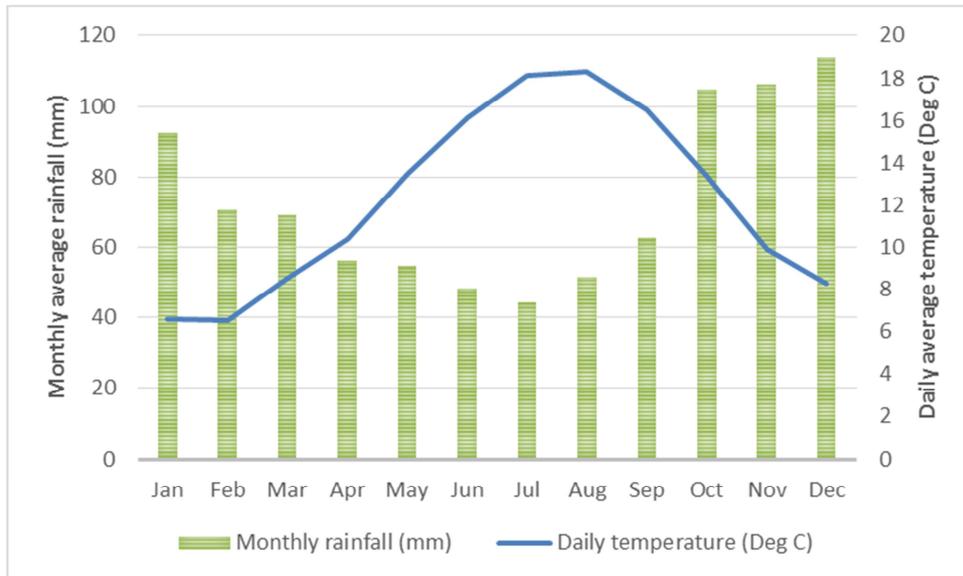


Figure 2: Jersey climate data (averages 1981 – 2010) (Source: Jersey in Figures, 2012)

Rainfall tends to be very seasonal on the Island, with the majority of rainfall falling between October and March (Figure 2). The pattern of rainfall on the island varies, depending on the wind direction, with lower rainfall over the west and south-west of the Island, compared with the eastern side (Figure 3).

This rainfall replenishes the water resources of Jersey; the rain falls on the land, some of it runs off across the land to the streams directly and some rainfall infiltrates the earth and contributes to groundwater sources. The groundwater also then flows through aquifers to replenish the flow of the streams, often comprising a large portion of stream flow, particularly in drier months.

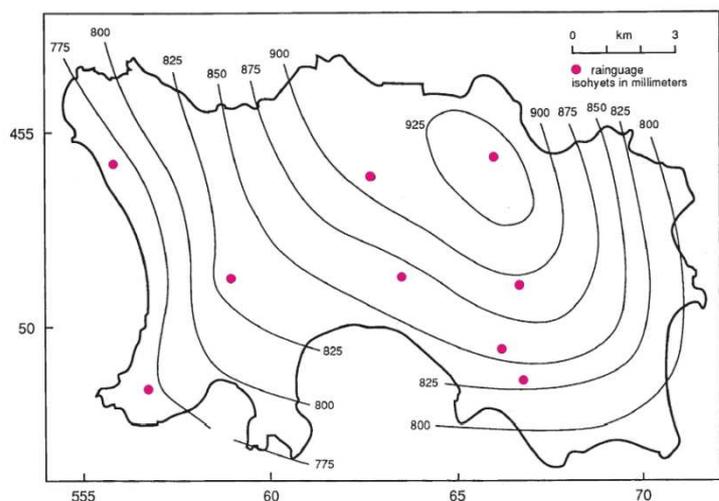


Figure 3: Rainfall pattern on Jersey (1961-1990) (Source: BGS, 2000)

Water Management Areas

Jersey can be divided administratively into 8 Water Management Areas which are based around water catchment boundaries. A catchment is an area in which all rainfall flows to a single point, with the catchment boundaries usually defined by high land – the ‘watershed’.

The idea of catchments is useful, as it is the standard functioning unit of the landscape: water, soil, plants and animals are all linked together within a catchment, and any activity that occurs within a catchment will affect not only the whole catchment but also the coastal waters into which the catchment drains. An integrated approach is therefore needed to manage the water environment - both freshwater and marine - effectively.

The main Water Management Areas (WMA’s) that drain water from the north of the Island southwards towards St Aubin’s Bay are: La Haule and St Peter’s Valley; Water Works Valley and Bellozanne Valley;

Grand Vaux, Valle des Vaux and St Helier. St Aubin, St Brelade and Southwest WMA drains the south west corner of the Island.

Draining to the eastern coast are the streams within the Longueville, Queen's Valley and Southeast catchment and St Catherine's Valley in the Northeast catchment. The Val de la Mare catchment within St Ouen and West WMA drains towards the west coast. These catchments all contain streams that are considered 'main' streams for the Island, some of which flow all year round and some (especially those draining to the northern, eastern and western coastlines) only flow for part of the year; typically the wetter parts.

The "Water Management Areas" are shown in Figure 4 below.

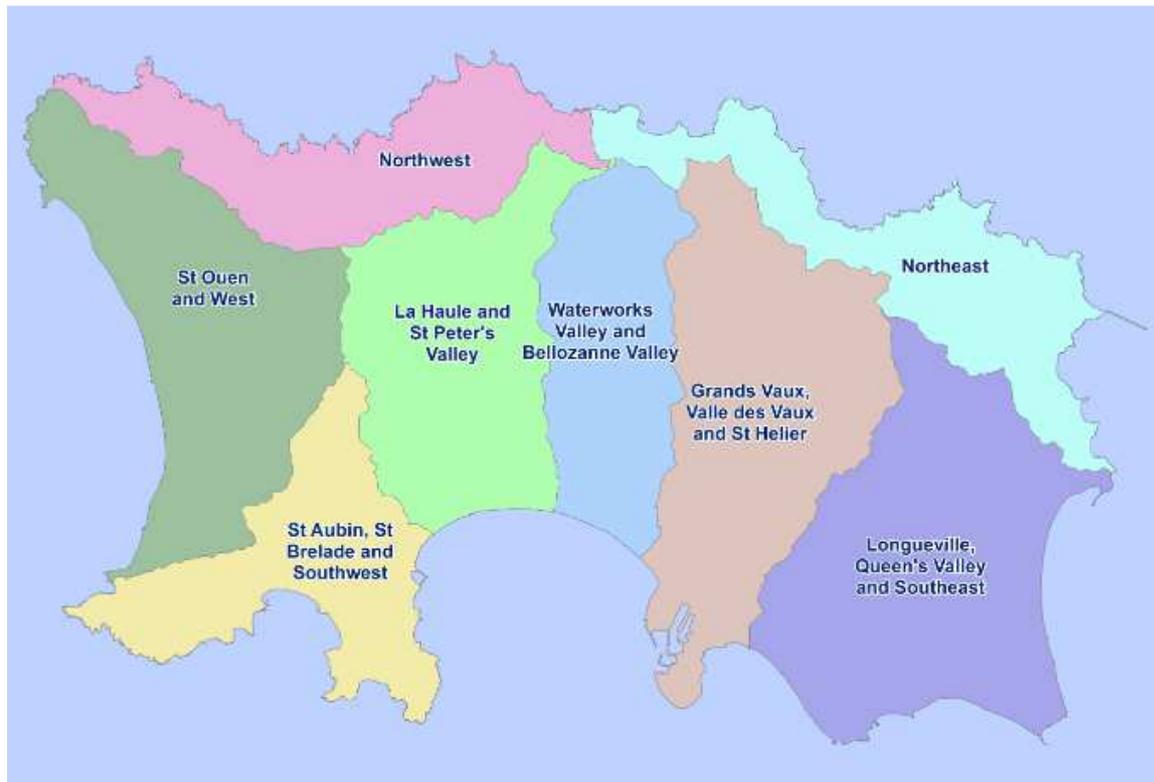


Figure 4: Overview of Jersey Water Management Areas

The main public water supply reservoirs on the Island: Val de la Mare, Grands Vaux, Queen's Valley and Handois are fed by some of the larger streams. These reservoirs, along with smaller surface water sources on the Island, supply 90% of the population with their water needs (Department of Environment, 2012). Underground, much of the Island is underlain by a shallow fractured bedrock aquifer. Alongside a second, smaller sand aquifer around St Ouen's Bay, these groundwaters supply a small proportion of the public water supply and the remaining 10% of the population with water through private boreholes.

1.3 Land use in Jersey

The main land uses in Jersey are urban, agricultural and the natural environment (Figure 5 and Table 1).

Approximately 25% of the land cover of Jersey is considered urbanised (this includes buildings, gardens and roads). Urbanisation, with extensive hard standing areas and the roofs of buildings can reduce the ability of rainfall to percolate into soils and aquifers; increasing runoff to storm drains rather than to groundwater and streams. Urban areas can also contribute pollutants.

Agriculture is the dominant land use on the Island, with more than half the Island's surface area (54%) being cultivated.

Alongside this, woodland and scrub (11%), grassland (3%) and other miscellaneous vegetation (<1%) help to give Jersey the landscape that it has today.

Land use and water quality are inherently linked, and these land uses are reflected in the key issues for water management, discussed later in this report.

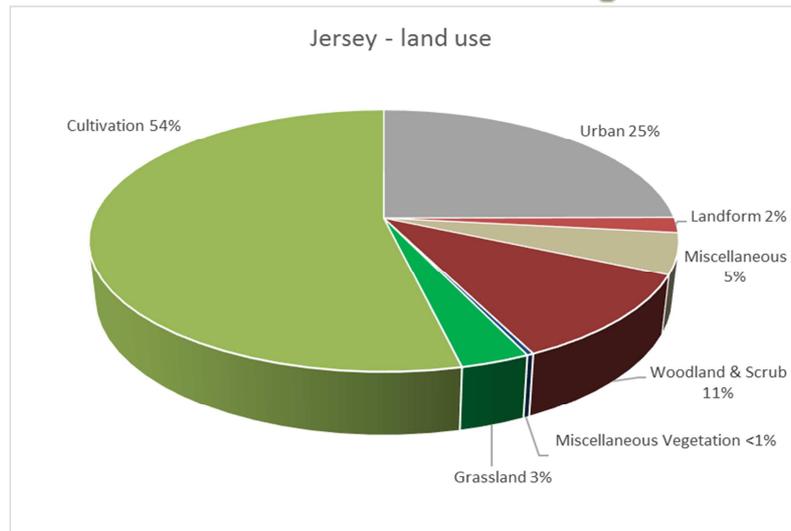


Figure 5: Land use on Jersey (Source: Jersey land features dataset)

Table 1: Jersey land use categories and areas (Source: Jersey land features dataset)

Land use	Area km ²	% total Island area
Urban	29.7	25%
Landform	2.3	2%
Miscellaneous	6.0	5%
Woodland & Scrub	13.1	11%
Grassland	3.9	3%
Miscellaneous vegetation	0.4	<1%
Cultivation	63.9	54%
Totals	119.3	100%

A map of land cover on Jersey is given overleaf in Figure 6.

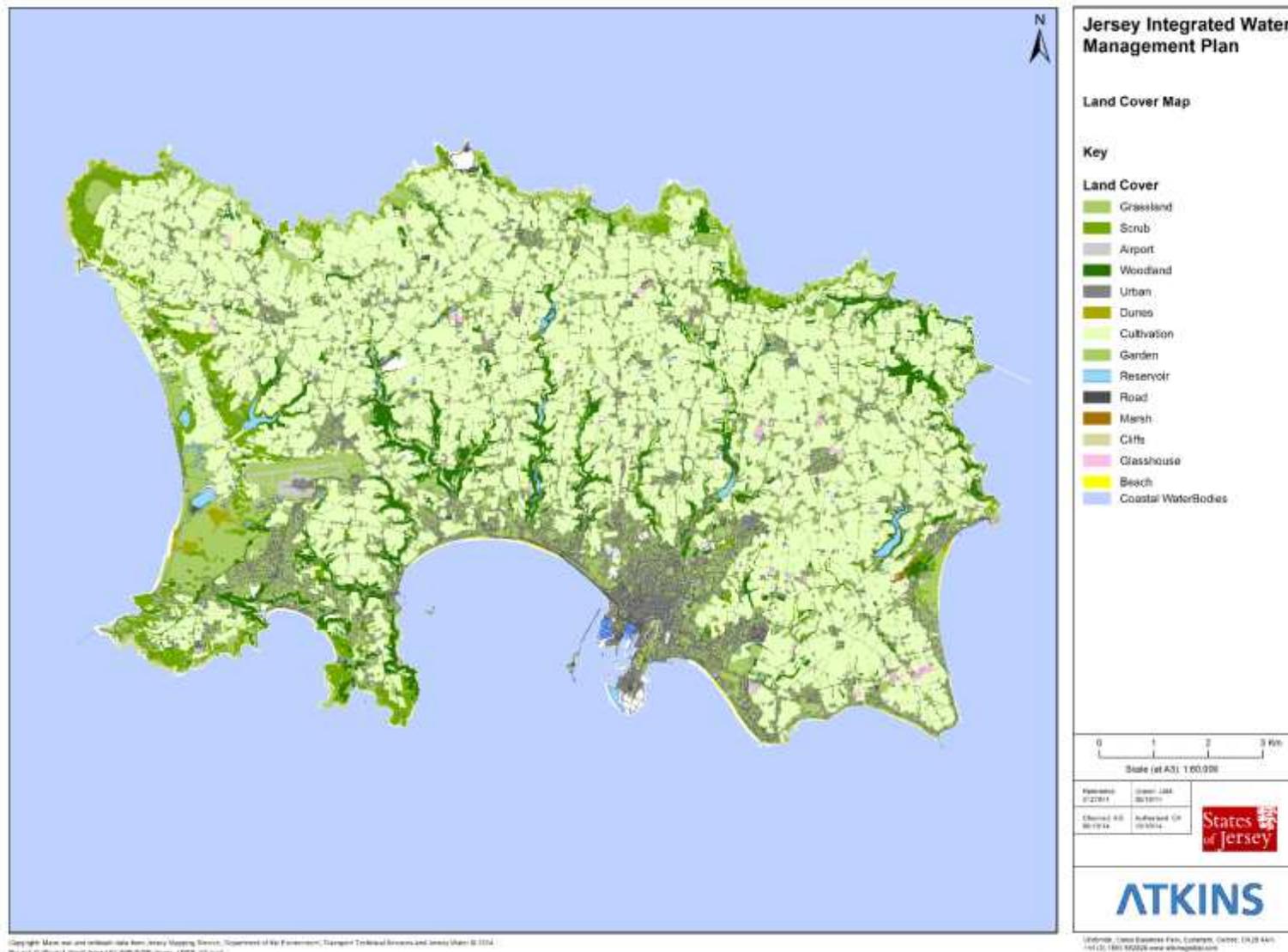


Figure 6: Land cover map of Jersey

1.4 Water use in Jersey

Water use in Jersey can be divided into water for public water supply, supply to business, industry, the agricultural sector, recreation and for maintaining the natural environment of the Island.

1.4.1 Public water supply

The public water supply is administered by Jersey Water which supplies clean drinking water to 90% of the homes and businesses across the Island. In 2013 Jersey Water supplied 7,047 million litres (7,047,000 m³) of water to approximately 38,000 homes and businesses from two water treatment works at Handois and Augres (Jersey Water, 2009).

Jersey's water resources are nearly all derived from rainfall dependent surface waters. Jersey Water collects and stores raw (untreated) water in six impounding storage reservoirs with a capacity of 2,687 million litres (2,687,000 m³), which is equivalent to approximately 120 days of average demand (Department of Environment, 2012).

Surface water derived public supply is complemented by groundwater supply from the St Ouen's well field which provides a pumped supply to the Val de la Mare reservoir, particularly during drier years. In addition, in dry periods, supply can be supported by La Rosière desalination plant.

1.4.2 Private water supply and use

Aside from mains water supply derived from surface waters, groundwaters are also used to provide water for domestic and business use in areas not served by mains water network. An estimated 2,162,597 m³ was abstracted from groundwater (information derived from the licensed and registered abstraction records held by States of Jersey).

The analysis of recent water use indicates that Jersey Water also abstracted approximately 132,137 m³ from groundwater sources in 2013 to support public water supplies (this comprises 6% of total groundwater abstraction in the year). A further 551,742 m³ of groundwater was abstracted in 2013 to supply domestic water needs via private borehole abstractions (26% of the total groundwater use on the Island). The total private groundwater abstraction to support the business sector in 2013 was estimated at 387,259 m³.

Aside from the three incidences of dewatering¹ in specific locations, overall the groundwater abstraction records on the Island are dominated by domestic, business and agricultural supply. This is shown in Figure 7 below.

Aside from water supply aspects, several organisations have permits to discharge into the aquatic environment..

¹ These are abstractions associated with the dewatering activities at three mineral extraction sites. Dewatering is from sumps and will include a significant, but unknown, proportion of runoff as well as true groundwater, so these quantities should not be considered as coming solely from groundwater.

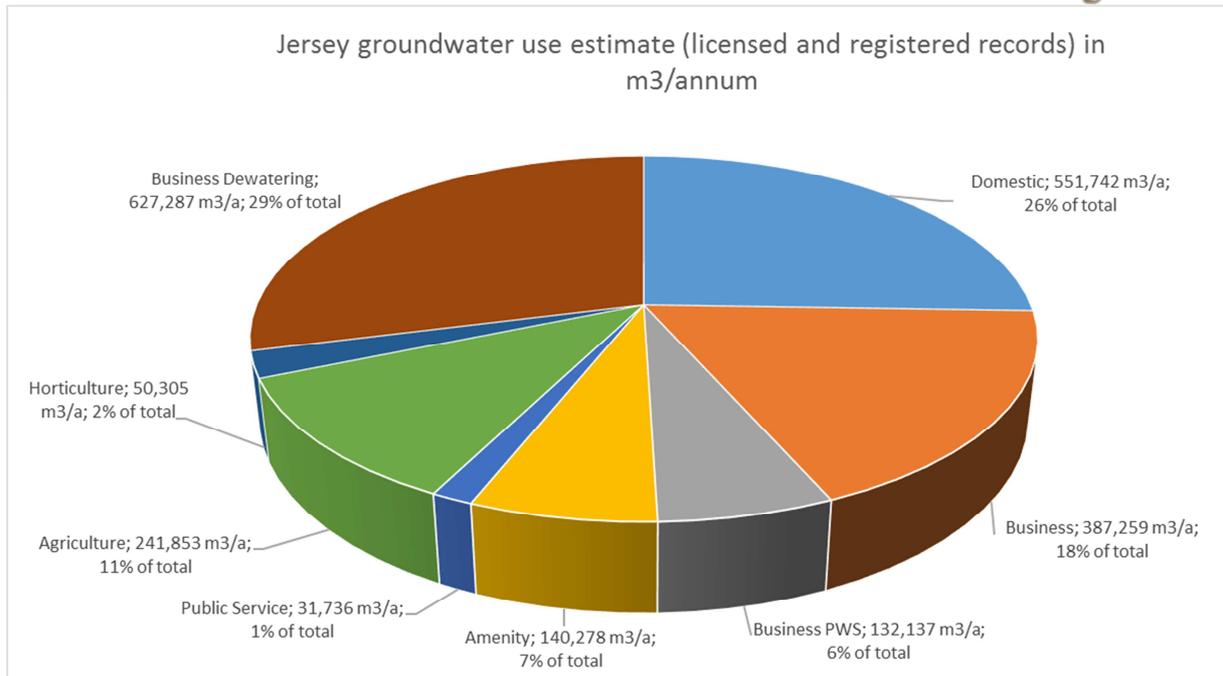


Figure 7: Analysis of groundwater abstraction licenses and registrations 2013

1.4.3 Industry

In terms of water consumption, there is currently no significant industrial usage on Jersey and this is anticipated to remain the case at least over the forthcoming two decades (MWH, 2009). However, the economy is heavily dominated by the financial sector; this is supported by a thriving service sector; both of which rely on water.

The port is an important industrial hub on the Island, providing a vital life line to the Island, with 98.6% of all goods entering St Helier through this route. Not only do the Ports of Jersey facilitate the importation of goods they are also responsible for the protection of the marine environment from shipping activities within Jersey's territorial waters and harbour areas.

Jersey has no significant manufacturing industry. However in the context of water quality management in Jersey, the term 'industry' may be used to refer to the manufacturing and mineral extraction industries. Currently the only minerals actively worked on the Island are sand and stone, with extraction taking place at several sites on land and in the coastal zone. Mineral extraction requires some dewatering activities and these are reflected in the analysis of the groundwater use licences granted by the States of Jersey Environment Department. The Island Plan 2011 notes that although marine dredging for aggregates does not currently take place, there is at least one suitable area from which sand and gravel could be extracted. The Plan cites numerous issues associated with marine dredging, but it could turn out to be a potential pressure on the marine environment in the longer-term.

1.4.1 Fisheries and aquaculture

The island has over 50 miles of coastline and extensive near shore and coastal waters which help support a strong Island commercial fishing industry, with the fleet playing a significant role in Island life. In 2012, a total of 1,328,477 kg (1,328 tonnes) of shellfish was landed from Jersey waters including brown crab, lobster, crawfish, scallop, spider crab, whelk, prawn, velvet crab, cuttlefish, squid, praire, amande and ormers. The value of the 2012 shellfish catch was estimated at £5,416,111. Aside from shellfish, 184 tonnes tonnes of wetfish was also landed, including main catches of bass, dogfish, mackerel, seabream, pollack and skate/ray; the value of the 2012 wetfish catch was estimated at £596,143.

The industry provides an estimated 180 jobs directly and more in associated industries. In this way, as well as providing food locally, the coastline and sea also help to promote the tourism and recreation industry. (States of Jersey Marine Resources Annual Report, 2012).

1.4.2 Agriculture

The analysis of groundwater abstraction on the Island shows that agriculture abstracts an estimated 241,853 m³ in 2013 (11% of total licensed and registered annual groundwater use across the Island). Horticulture abstracted a further 50,305 m³ in 2013 (2% of the total). The agricultural portion appears low considering the predominance of cultivated land on the Island; however it is important to note that these numbers represent an average for the whole year and a large portion of the agricultural abstraction is likely to serve as irrigation during drier months. The water abstracted might then be expected to be taken over just 3-5 months each year during the drier spring and summer period.

1.4.3 Tourism and recreation

The extensive coastline and near shore and coastal waters also help to promote and sustain tourism and recreation on the Island. The coastal water environment provides opportunities for participation in a wide range of water-related leisure activities. Fishing, sailing and other recreational activities are of great cultural and social importance.. Coastal water-dependent adventure activities and sports also include sea swimming, rowing, body boarding, jetskiing, coasteering, diving, kite surfing, canoeing, sea kayaking, surfing, and wind surfing.

Inland waters are also used for fishing activities. Some of the main reservoirs are stocked with fish for recreational fishing purposes. Val de la Mare and Queens Valley Reservoirs are stocked each year with rainbow trout and other reservoirs are stocked for coarse fishing, including Millbrook and Dannemarche. St Ouen's Pond is a fishery as well as a National Trust bird sanctuary.

Whether involving relaxation, exercise, learning, sport or adventure, water is important for the well-being of Islanders and visitors alike.

The total on-island visitor expenditure in 2013 was £228 million; an average of £334 per visitor. Although it is not possible to say with any certainty what proportion of this expenditure is specifically related to water-based activities, a high level assessment has been undertaken as part of the economics analysis of water use (Appendix C). In this assessment, the value of water-based recreation to the Jersey economy is estimated to be between £2.8 million and £4.4 million per year. The figures are based on the results of a visitor survey² undertaken by States of Jersey in 2008 and is considered a high level assessment only. It is likely to underestimate the value of total water-based recreation because it does not include day trippers, visiting yachtsmen or business visitors (these sectors could account for a large amount of revenue, with an estimated 19,900 visiting yachtsmen, 101,300 day trippers and 112,700 business visitors estimated in 2013) and it also does not take account of local residents' expenditure on these activities.

1.4.4 Natural Environment

The services we derive from our water environment depend on their ecological quality and biodiversity. A healthy water ecosystem underpins our way of life, enabling us to enjoy multiple benefits from our waters.

Despite the Island's small size it contains an incredibly diverse range of natural habitats alongside the more built up areas. Jersey's geographical position and favoured climate allows many species normally restricted to either Britain or the European continent to extend their range, resulting in an overlapping mixture of animals and plants found only in the Channel Islands³.

² <http://www.jersey.com/business/Visitor%20Surveys/2008%20Summer%20Visitor%20Survey.pdf>

³ Biodiversity – a strategy for Jersey, Planning and Environment Department, States of Jersey, 2000

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. 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, water birds and fish species⁴.

The natural environment of Jersey is also highly important to the Island's identity. According to a recent States of Jersey survey of residents on issues regarding the Island's heritage⁵, the character of the Island's environment was consistently ranked as the most important factor by respondents. The sea, beaches, shoreline cliffs and paths, reservoir walks, and historical water features such as mills and wheels - the water environment plays a huge part in the character of the island.

⁴ The State of Jersey report 2005-2010, Department of the Environment, States of Jersey

⁵ <http://www.gov.je/Government/JerseyWorld/StatisticsUnit/PeopleCommunities/Pages/SurveyonHeritageinJersey.aspx>

2. Integrated Water Management Plan

2.1 Why are we doing this?

We all need to ensure that the water we use, and the way in which we use it, is sustainable. Our current activities should not jeopardise water's vital uses and benefits in the future.

To safeguard the water environment of Jersey, both now and into the future, the States of Jersey has undertaken to produce an Integrated Water Management Plan (IWMP) for the whole Island and the surrounding coastal waters. This five year management plan will set out the current status of the Island's water resources, identify where we would like to prioritise improving the status, and the steps we need to take to not only protect but also enhance the water environment over the period 2015 – 2020.

Jersey has a special relationship with the European Union (EU). In simple terms, the Island is treated as part of the European Community for some purposes under Protocol 3, but otherwise is not a part of the EU. Therefore there is no obligation to implement EU directives that relate to the water environment. However, the States of Jersey has made a commitment in '2000 and beyond' and in the 'Environmental Charter of 1996' to ensure that standards are at least equivalent to those given in European Directives.

The approach taken through the IWMP to assess the status of the Island's waters follows the approach adopted by other countries across Europe, using the principles of water management planning as set out in the EC Water Framework Directive (WFD); these have been further tailored to the specific needs of Jersey in order to ensure the approach is both appropriate and relevant.

The WFD takes a holistic approach to managing the water environment and differs from previous water management related legislation that typically relates to single issues, such as aquatic biology or water chemistry for example, and instead focusses on the overall health of the waters in terms of "ecological status". This combines factors such as water quantity, chemistry and biology, habitat availability, the structure and functioning of the water courses and the biology into one ecological assessment.

2.2 What is already being done?

Although the Integrated Water Management Plan approach will facilitate a more progressive and integrated way of planning and coordinating improvements to the freshwater and marine environment, there has already been, and continues to be, a considerable amount of work undertaken to protect and improve the aquatic environment in Jersey. Much of this is driven and facilitated by the requirements of existing legislation and Multilateral Environmental Agreements (MEA) and the associated regulatory activities arising from these.

Jersey is a signatory of several relevant MEAs which include OSPAR, Ramsar and the Convention for Biological Diversity. There are also several key pieces of domestic legislation that help the Department of the Environment safeguard the environmental quality of the Island. These relating directly to water include:

- i. **Water Pollution (Jersey) Law 2000** (water pollution control and prevention, including regulation of discharges to the aquatic environment);
- ii. **Water (Jersey) Law 1972**, as amended (drinking water regulation);
- iii. **Water Resources (Jersey) Law 2007** (water resource management); and
- iv. **The Code of Good Agricultural Practice for the Protection of Water** (The Water Code), 2009.

2.2.1 Environmental Protection within the Department of the Environment

The Water Resources Section (WRS) of the Department of the Environment has responsibility for safeguarding the quality & availability of water for the health and sustainability of the Island. It is also regulates the quality of the Island's mains public drinking water supply.

In this capacity WRS undertakes numerous activities including a water pollution response service, enforcement and licencing activities, monitoring, regulatory compliance assessments, stakeholder and public awareness campaigns, pollution prevention advice and projects related to specific pressures on the water environment, including the Diffuse Pollution Project and the Blue Fish Project.

Aside from the Water Resources Section, other sections within the Department of the Environment play an important role in the integrated management of the Island's waters. These include the Marine Resources Section; the Natural Environment Team; and the Rural Economy Team.

- The **Marine Resources Section** of the Department is responsible for regulation and control of fishing activities and stock protection of marine resources and ecosystems under the Sea Fisheries (Jersey) Law 1994. Marine Resources are also responsible for administering the Food and Environmental Protection Act (FEPA) Order 1987 (Amendment order passed in 1997), which enables the licensing of deposits at sea, protecting Jersey's coastal and territorial waters. The Integrated Coastal Zone Management Strategy is an important tool for this Section which is used as a framework in which to bring together all those responsible for the development, management and use of Jersey's coast. Marine Resources are also responsible for a number of Multilateral Environmental Agreements, most relevant to the protection of marine water quality are OSPAR - The Convention for the Protection of the Marine Environment of the North-East Atlantic and Ramsar – The Convention on Wetlands (areas already designated under this convention are Jersey's Southeast corner and the off-shore reefs).

Aside from regulatory activities, the Marine Resources Section undertakes research and development programmes mainly focussed on fish stocks and population dynamics. They also assist other land based State's Departments to fulfil any marine functions.

- **The Natural Environment Team** is responsible for, amongst other things, protecting and enhancing Jersey's biodiversity. Along with the Wildlife Law, SSI designation under the Planning and Building (Jersey) Law 2002 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, representativeness and potential value. 17 designations over 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 grasslands⁶. 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 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. There is also a large pond and reed bed on the southern edge of the site⁷. A significant number of the plants and animals that are identified as conservation priorities by the National Environment Team for example in the Biodiversity Action Plans (BAPs) live in or around water or predate species that do and therefore are heavily reliant on careful water resource management.
- The **Rural Economy Team** are responsible for formulating and implementing the Rural Economy Strategy. The Rural Economy Strategy (RES) is a five-year strategy designed to grow the rural economy in line with the objectives of the States Strategic Plan, 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 in a 'triple

⁶ The State of Jersey report 2005-2010, Department of the Environment, States of Jersey, 2012

⁷ The State of Jersey report 2005-2010, Department of the Environment, States of Jersey, 2012

bottom line'. The Team administer the Rural Initiative Scheme, the Countryside Enhancement Scheme and provide farm business advisory and support services. The Diffuse Pollution project which seeks to work with farmers and growers to minimise diffuse pollution from agricultural activities, particularly Nitrate, has been delivered by a joint initiative between Rural Economy and Water Resources and delivered through the RES.

The 2011-2015 Jersey Rural Economy Strategy describes a number of new or enhanced policies and schemes that aim to reduce diffuse pressures from the agricultural sector. This is currently being reviewed and updated for release in 2015 and the IWMP will feed into this process.

- The **Agricultural Inspectorate, Waste Regulation team, Eco-Active team, Plant Health Laboratory and the States Veterinary Officer** also play a part in assisting or enabling WRS to carry out monitoring and deliver water quality improvements, or carry out activities that dovetail with WRS activities.
- **The Planning Division** are responsible for development and building control and operate a plan led system. The new Island Plan 2011 reflects that challenge of balancing competing priorities and contains 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 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. In relation to water, it designates a water pollution safeguard area and issues or proposes planning guidance and new policies on foul and surface water drainage, including SUDS. Consultation between WRS and Planning also takes place as part of the Development control process in relation to pollution prevention requirements and advice and contaminated land interventions, as well as building control regulations in such areas as drainage systems, oil tanks and underground pipe-work.

2.2.2 Other States Departments, organisations and other stakeholders:

Jersey Water

Jersey Water is the public water supply company in Jersey. The States of Jersey currently own a majority shareholding in the Company of 54%. The quality of water supplied to the public by Jersey Water is regulated by the Department of the Environment under the Water (Jersey) Law, 1972.

The Jersey Water Resources Management Plan

Jersey Water published its current Water Resources Management Plan (WRMP) in 2009, covering the period 2007-2032, and is due to publish its revised Plan in 2014. Each Plan sets out the current state of water resource management, supply and demand, and undertakes assessments of future supply and demand scenarios given the potential impacts of population growth and climate change. Any shortfalls in the supply-demand balance are then planned for through this process.

Transport and Technical Services

The States of Jersey Transport and Technical Services Department (TTSd) operate the Island's municipal waste management and waste water treatment facilities, which are regulated by the Department of the Environment. Amongst other things their duties include:

- the provision of sustainable and efficient waste management facilities
- the development and operation of schemes for waste minimisation and recycling
- the provision, management and maintenance of the foul and surface water sewerage system
- the treatment and disposal of the Island's liquid waste
- the maintenance and cleaning of public spaces, amenities, structures and sea defences
- the provision and maintenance of formal parks, gardens, open spaces and amenity areas

TTS Wastewater Strategy⁸

This TTSd strategy sets out plans for £75m spend in the wastewater sector for an upgrade to sewage treatment works in St Aubin's Bay, commencing 2019. This includes the assurance by TTSD that the construction will ensure the Island can conform to the standards required by the Water Framework Directive 2000/60/EC as part of the regulatory regime for St Aubin's Bay. This includes an undertaking to comply with the Urban Waste Water Treatment Directive (91/271/EEC, as amended). It also makes provision for the Minister for Transport and Technical Services, to develop a strategy for providing assistance for householders to connect to the Public foul sewer network and for recommencing the extension of the foul sewer network.

Health Protection

Health Protection at the Health and Social Services Department provides advice about maintaining a healthy and safe environment, as well as enforcing public health regulations. The Health Protection and Environment Departments work together to monitor and test for pollution across the Island. The Health Protection Unit looks specifically at environmental issues that are related to human health, including air quality, contaminated land and advising on private drinking water supplies.

2.2.3 Third sector organisations and other stakeholders

Third sector bodies in the Island include industry bodies such as the Jersey Farmer's Union or the Oil Care Group, and voluntary organisations, lobbying organisations and charities such as the Société Jersiaise, National Trust for Jersey, Save Our Shoreline and Jersey Heritage.

2.3 Working together

The core principle of integrated water management is to understand all the issues, coordinate action and achieve an overall outcome that is dependent on the sum of its parts. This will require a common understanding of the range and extent of the water management issues, and coordinated action across sectors in order to achieve the desired outcomes. We propose to achieve this by working collaboratively to deliver the actions set out in the IWMP next year. This will include:

- involving the different sectors that rely on water resources and contribute to the key pressures identified;
- working alongside existing initiatives to strengthen delivery;
- forming partnership approaches with environmental groups;
- working together with the water industry and agriculture to steadily reduce nitrates; and
- working with others that benefit from the water environment (such as the tourism and recreation industries).

2.4 Planning for the future

The purpose of the IWMP is to:

- a) assess the current condition of Jersey's waters. This is termed "ecological status" and takes into account the water quality, ecology, physical form and function (morphology and hydrology);
- b) understand how this condition relates to the conditions that we would expect to be present under natural undisturbed conditions;

⁸ States of Jersey Waste Water Strategy 2014 <http://www.statesassembly.gov.je/AssemblyPropositions/2014/P.039-2014.pdf>

- c) set appropriate targets for each water body; and
- d) define the environmental management measures that could be put in place to improve and protect the current status of the water body so that it can reach its full ecological potential and value.

The long term aim of the IWMP is to achieve good ecological status of Jersey's water bodies; this means that the condition of the water body only varies slightly from what would be expected under natural conditions associated with limited impacts from human activity.

Similar approaches have been taken to managing water resources across Europe through implementation of the Water Framework Directive. This IWMP follows similar principles and makes use of lessons learned from other countries.

The WFD is an iterative process, repeated every six years and consisting of several defined steps. The approach taken for the IWMP will also be cyclical but on a 5 year basis to align with other existing environmental plans and strategies on the Island. The defined steps for the IWMP are as follows:

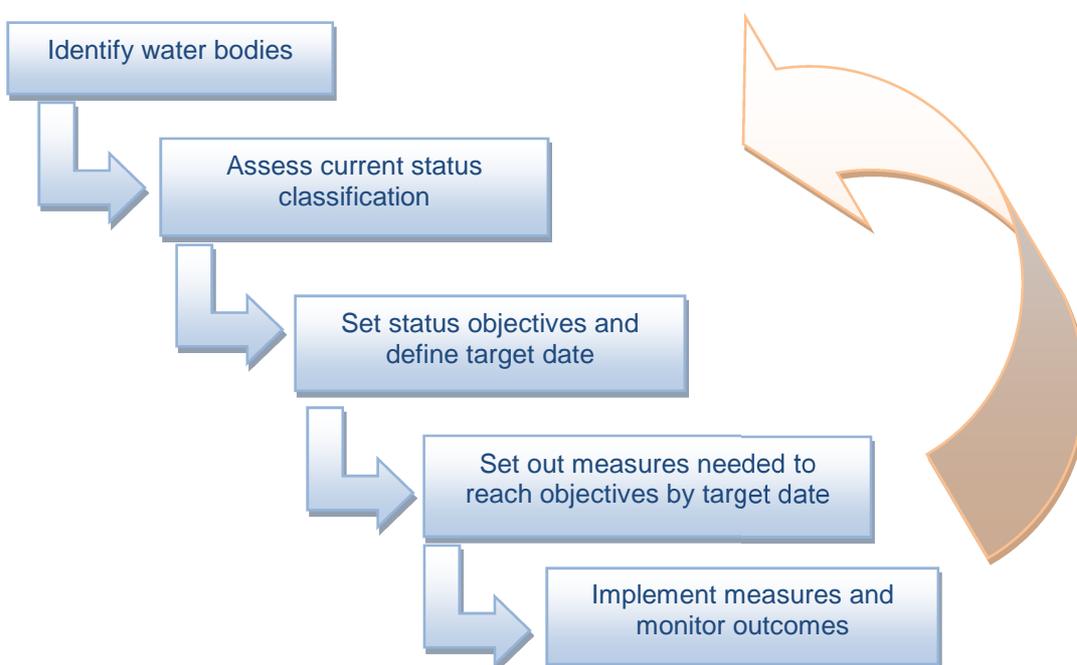


Figure 8: The IWMP Process

2.4.1 Where are we now in this process?

This document sets out the first two steps; the identification of water bodies and the current status classification of these water bodies. It goes on to briefly outline the key challenges for managing the water environment on the Island.

Throughout the remainder of 2014 and early 2015, we will be completing the remaining steps: setting objectives for each water body and target dates to achieve these objectives; and defining the measures required to do this. This information will be published in our Draft Integrated Water Management Plan at the end of 2015. The measures will be progressed from 2016-2020.