

## **Orkney Environment Strategy 2013-2018**

In Orkney we are fortunate to enjoy a varied and high quality environment. The county's towns, villages and rural areas continue to provide opportunities for a good quality of life, work and recreation. Increasing numbers of visitors are also drawn to the islands, to experience and share their many natural and cultural interests.

Whilst a high quality environment is essential to both our social well-being and economic prosperity, it is recognised that social and economic activities can impact on the environment, both locally and globally. The challenge is to provide a balance between protecting and enhancing the environment and maintaining our social and economic development.

The Orkney Environment Partnership was established in response to the UK Government's Local Agenda 21 – a comprehensive programme of global action to achieve a more sustainable pattern of development for the 21<sup>st</sup> Century. The Partnership was seen to be an effective way of bringing together representatives of a range of organisations that have a role in protecting the environment, enabling a greater degree of collaborative working. It includes representatives from Orkney Islands Council, Scottish Environment Protection Agency, Scottish Natural Heritage, Scottish Government Rural Payments and Inspections Directorate, National Farmers Union Scotland, Royal Society for the Protection of Birds, Orkney Field Club, Orkney Fisheries Association, VisitOrkney, International Centre for Island Technology, Scottish Water, NHS Orkney, Orkney Local Access Forum and Highlands & Islands Enterprise.

Through a set of nine “themes” the Orkney Environment Strategy focuses on the environmental challenges facing our communities today. It identifies actions that we can take, as well as areas where we can work together in order to achieve local benefits and contribute to wider national and international aims.

The Strategy themes are:

1. Ecosystem services
2. Biodiversity
3. The built environment
4. Climate change
5. Waste
6. Agriculture
7. The marine environment
8. Tourism
9. Orkney's electric future

Where a measure of overlap between themes is evident, this serves to illustrate the interconnections and interdependencies that exist between our social and economic activities and the varied elements that collectively make up “the environment”.

The Strategy aligns with the following local priorities of the Orkney Community Plan and Single Outcome Agreement (2013):

- Maintain good environmental quality for water, air and land
- Safeguard the ecosystem services that are provided by the natural environment
- Conserve biological diversity in Orkney
- Protect Orkney's landscapes, its cultural heritage and environment and ensure their sustainable management
- Promote the appropriate enhancement of our biodiversity and cultural heritage
- Promote and support campaigns to reduce the incidence of fly-tipping and other illegal waste activities in the county
- Take action locally to adapt to the effects of climate change
- Ensure Orkney uses energy as efficiently as possible, and has a sustainable energy supply to meet its future needs
- Develop Orkney's renewable resources whilst minimising adverse impacts on the environment
- Reduce Orkney's carbon footprint
- Promote the waste hierarchy of reduce, reuse and recycle
- Encourage more sustainable use of resources and a reduction in waste.

By working together, the Environment Partnership aims to lead the community by demonstrating and promoting good environmental practice in order to safeguard our environment, which is so essential to our quality of life now and in the future. However, for this strategy to be successful it will also require the active participation and co-operation of other agencies, organisations and all sections of the community.

## Theme 1: Ecosystem services

### ❖ *Why have we included ecosystem services as a theme?*

As well as having its own intrinsic value, the natural environment provides us with a range of services and products that support us in our day to day lives and underpin our economy. These are known collectively as ecosystem services. We all benefit from ecosystem services, often in ways that we don't immediately recognise; examples include:

- Flood mitigation by peatlands, wetlands, woodlands and soils;
- Coastal protection by saltmarsh, mudflats, beaches and dune systems;
- Carbon capture and storage in peats, biomass, soils and sediments;
- Water purification through soil processes and natural filtration;
- Soil fertility through microbial biochemistry and decomposition;
- Pollination by invertebrate species;
- Landscape features provided by the diversity of vegetation cover and other wildlife;
- The presence of biochemicals which may be used to manufacture medicines, now or in the future;
- The non-material benefits people obtain from ecosystems through recreation, reflection and spiritual enrichment. For example, access to walking routes provides opportunities to take exercise and can enable people to experience and appreciate the natural environment, in turn offering a temporary diversion from the pressures of daily life.

All these (and others) contribute to human wellbeing and community health. In addition they have real economic value both directly and indirectly through the economic activities they underpin or protect.

### ❖ *What are the main environmental issues associated with ecosystem services in Orkney?*

Land use is a major factor, for example the likelihood of floods affecting people's homes depends in part on how the land is used in the surrounding catchment.

Rising sea levels, one of the predicted effects of climate change, may increase the risk of damage to coastal habitats such as dune systems, by intensifying erosional pressures and causing 'blow outs' and loss of coastal protection.

Peatland areas may be considered as locations for large scale wind energy development which can, in turn, result in the excavation of peat and carbon-rich soils that provide a 'sink' for carbon and also contribute to water regulation.

Nutrient enrichment of water courses can encourage the growth of potentially toxic phytoplankton, threatening the safety of our water supplies.

Disturbance to areas of natural vegetation exposes soil, leaving it vulnerable to colonisation by agricultural weeds such as nettles and docks, in turn impacting on the ecological and aesthetic value of these areas.

❖ **What do we want to achieve?**

We want to enable a more widespread understanding of the ecosystem services that are provided by the natural environment so that they can be safeguarded, both for our benefit now and for the benefit of future generations.

❖ **What are the key strategic drivers?**

The Water Framework Directive (2000/60/EC)  
The Wildlife and Natural Environment (Scotland) Act 2011  
The Flood Management Directive (2007/60/EC)  
The Flood Risk Management (Scotland) Act 2009  
The Scotland River Basin Management Plan  
The Orkney and Shetland Area Management Plan  
Scotland's Land Use Strategy  
The Scottish Biodiversity Strategy - "Scotland's Biodiversity: It's in Your Hands"  
The Orkney Local Biodiversity Action Plan  
Scottish Planning Policy and the Local Authority land use planning system

❖ **How will we work together and what will we do?**

- 1.1 Identify and protect ecosystem benefits through relevant plans, programmes and strategies.
- 1.2 Continue to monitor, and work to improve, water quality in the marine and freshwater environments.
- 1.3 Promote initiatives to reduce the level of nutrients (nitrates and phosphates) entering our water environment.
- 1.4 Encourage outdoor activity and appreciation of the natural environment, recognising that the condition of the environment influences health and quality of life, as well as providing opportunities for outdoor recreation.
- 1.5 Raise the profile of the environmental knowledge base and education and awareness.

**Theme 2: Biodiversity**

❖ **Why have we included biodiversity as a theme?**

Biodiversity is quite simply the variety of species and genetic varieties that exists on earth – from the tiny microscopic organisms that are invisible to the naked eye to the immense whales that swim in our oceans – as well as the habitats and ecosystems within which they live. There are strong ethical reasons to conserve biodiversity and it is widely recognised that it is wrong to let species decline in number and distribution until they become extinct.

Scotland's biodiversity is a shared responsibility. Scottish Natural Heritage provides a leadership role in its care but cannot achieve this alone. Everyone has a stake in their local environment and the quality of life it supports – from national government agencies to local community groups, from environmental organisations to local businesses and individuals - and people of all ages can make a difference.

Orkney's natural environment supports a wide range of habitats and species, many of which are identified nationally and/or locally as being priorities for conservation. Although some of these remain in good condition, others are threatened in terms of their extent, condition and/or distribution. We need to identify measures that can be taken locally to address the issues which threaten biodiversity and will, in turn, help conserve it for the benefit and enjoyment of future generations.

**❖ *What are the main environmental issues associated with biodiversity in Orkney?***

Climate change is already driving increases in sea temperature, an issue which has significant implications for marine ecosystems. Observed changes to these are considered to be a contributory factor in the collapse of Orkney's seabird colonies.

There is a risk of further fragmentation and loss of natural and semi-natural habitat due to built development and other forms of land use.

Where water courses are under pressure from nutrient enrichment there are associated risks to species diversity.

Colonisation by Invasive Non-Native Species presents risks to Orkney's native species, including the potential loss of genetic variation or entire species due to the introduction of pests and diseases

There remain gaps in our knowledge and understanding of the current extent and distribution of Orkney's habitats and species.

**❖ *What do we want to achieve?***

We want to ensure the sustainable management of Orkney's natural heritage, in order to conserve and, where appropriate, enhance biological diversity.

**❖ *What are the key strategic drivers?***

The Habitats Directive (92/43/EEC)

The Birds Directive (79/409/EEC)

The Water Framework Directive (2000/60/EC)

The Nature Conservation (Scotland) Act 2004

The Wildlife and Natural Environment (Scotland) Act 2011

The UK Biodiversity Action Plan

The Scottish Biodiversity Strategy - "Scotland's Biodiversity: It's in Your Hands"

The Orkney Local Biodiversity Action Plan

Scottish Planning Policy and the Local Authority land use planning system

### ❖ *How will we work together and what will we do?*

- 2.1 Ensure that new development avoids putting additional pressure on habitats and species that are already vulnerable to the effects of climate change.
- 2.2 Promote the appropriate management of Orkney's remaining areas of natural and semi-natural habitat.
- 2.3 Protect habitats and species from the adverse effects of development.
- 2.4 Raise awareness of the implications of Invasive Non-Native Species (INNS) and promote prevention as the key driver against their establishment in Orkney.
- 2.5 Promote the prevention of establishment of INNS as a key tool within planning policies.
- 2.6 Encourage action for biodiversity within the Council estate and across other sectors.
- 2.7 Investigate ways of improving our knowledge and understanding of Orkney's biodiversity.

### **Theme 3: The built environment**

#### ❖ *Why have we included the built environment as a theme?*

The quality of the built environment affects everyone. It is the purpose of architecture and urban design not only to meet our practical needs in housing our activities, but also to respond to the social and cultural values to which we aspire - to improve the quality of life for the population. How buildings and places are made, the quality of their design and of the built environments they help shape should be a matter of concern for us all.

The Orkney Islands have a particularly rich cultural heritage, expressed through their built environments, dating back over five thousand years. A total of 363 Scheduled Ancient Monuments (SAM) are widely distributed throughout the county, representing periods dating from the Neolithic era to the 20<sup>th</sup> century, of which 37 are in the care of the Scottish Ministers. Over 4,200 historic sites are listed on the Orkney Sites and Monuments Record. The condition of SAMs is monitored and Historic Scotland plans to revise the list with partners during 2013. Six monuments in particular - the chambered tomb of Maeshowe, the Stones of Stenness, the Barnhouse Stone, the Watchstone, the Ring of Brodgar and associated funerary monuments and stone settings, and the Skara Brae settlement - are collectively inscribed on the World Heritage List as the Heart of Neolithic Orkney World Heritage Site, one of only five World Heritage Sites in Scotland.

Over 600 buildings which are of special architectural or historic interest are "listed", ensuring that their special character and interest are taken into account when development-associated changes are proposed. These cover a wide range of uses and periods and together they chart a large part of the history of Scotland and continue to be relevant to all aspects of life, from education to recreation to homes and worship.

Life in Orkney throughout time is also reflected in many other buildings and structures that are found throughout the County. In order to effectively recognise and preserve this important local heritage the 'Orkney Local List' is being developed to catalogue buildings and structures of historic merit. Whilst many of the buildings and structures on the Orkney Local List do not feature on the statutory list of buildings of architectural or historic merit maintained by Historic Scotland, they are valuable none the less and make a significant contribution to the history, character and appearance of both urban and rural Orkney.

Gardens and Designed Landscapes are defined as "*grounds that are consciously laid out for artistic effect*" and may include the settings of important buildings, areas of parkland, woodland, water and formal garden elements. Three sites in the Orkney Islands are listed in the Inventory of Gardens and Designed Landscapes in Scotland. These are located at Balfour Castle in Shapinsay, Melsetter House in Hoy and Skail House in Sandwick.

However, the built environment is much more than protected sites and buildings – it includes the homes, shops, offices and civic buildings that we use in our everyday lives.

Conservation Areas are defined as "*areas of special architectural or historical interest, the character or appearance of which it is desirable to preserve or enhance*". They are designated by the local planning authority with the aim of preserving their historic character for the enjoyment and benefit of future generations. Conservation Areas cover both urban and countryside environments, from the historic cores of cities to isolated rural settlements or landscapes. The Orkney Local Plan 2004 lists four urban Conservation Areas: Balfour Village in Shapinsay, St Margaret's Hope in South Ronaldsay and areas within the towns of Kirkwall and Stromness. The island of Eynhallow and an area incorporating many of the component parts of the Heart of Neolithic Orkney World Heritage Site (Brodgar Rural Conservation Area) are also designated as Conservation Areas due to their great archaeological importance.

#### **❖ *What are the main environmental issues associated with the built environment in Orkney?***

Development pressure has the potential to affect the settings and surroundings of historic sites and other aspects of Orkney's cultural heritage.

There can be challenges associated with the repair and refurbishment of buildings within Conservation Areas, e.g. in terms of conserving original design features and accessing appropriate materials.

Kirkwall's historic town centre has faced increased commercial competition in recent years, reducing available funds for maintenance.

Changes to weather patterns as a result of climate change may accelerate the weathering rates of stone buildings and historic monuments.

Solutions to certain environmental issues can lead to the potential for conflict with objectives for conservation of the historic environment.

Many of Orkney's coastal archaeological sites are at risk from coastal erosion and the effects of predicted sea level rise.

There is a need for new development to be both energy and cost efficient; however there is potential for these factors to take precedence over siting, layout and design considerations.

❖ **What do we want to achieve?**

We want to ensure the sustainable management of Orkney's built heritage, in order to safeguard its character and local identity.

❖ **What are the key strategic drivers?**

Scottish Historic Environment Policy

Heart of Neolithic Orkney World Heritage Site Management Plan 2008-13 and 2014-19 forthcoming

Kirkwall Conservation Area Management Plan (forthcoming)

Scottish Planning Policy and the Local Authority land use planning system

Designing Streets: a policy statement for Scotland

Designing Places: a policy statement for Scotland

❖ **How will we work together and what will we do?**

3.1 Ensure the protection of historic resources from inappropriate or poorly sited and/or designed development.

3.2 Support the regeneration of Kirkwall's Town Centre.

3.3 Consider the implications for the historic environment when planning solutions to environmental issues, and identify suitable mitigative measures.

3.4 Develop a strategy for the protection of Orkney's cultural heritage.

3.5 Encourage an appreciation and understanding of Orkney's built heritage.

3.6 Tackle the barriers to good quality development, through education, skills and advocacy.

3.7 Deliver well-designed public buildings which are 'greener' and which represent good value for money, whilst respecting the rich cultural heritage of Orkney's built environment.

**Theme 4: Climate change**

❖ **Why have we included climate change as a theme?**

The Earth is surrounded by gases that trap heat from the sun, warming the surface and allowing it to sustain life. Since the industrial revolution the concentrations of these 'greenhouse gases' has increased, trapping too much heat, and causing the Earth to warm up. Human activity is responsible for the increasing atmospheric concentrations of these gases which are leading to the phenomenon known as



'global warming' or the 'enhanced greenhouse effect'. Carbon dioxide (CO<sub>2</sub>), the single largest contributor to the enhanced greenhouse effect, is produced and released into the atmosphere as a result of our everyday behaviour, for example when we burn fossil fuels such as coal, oil and gas to create energy to heat and light our homes and to power our transport. At the same time, vast areas of the world's forests which help absorb CO<sub>2</sub> are being destroyed to make way for development, reducing the natural capacity to mitigate against global warming and the predicted changes to world climates.

In Scotland, climate change is already evident from observed changes in temperature, rainfall and snow cover. These changes are causing significant shifts in the growing, breeding and migration seasons, as well as changes to species abundance and diversity. Higher river flows are leading to increase flood risk and sea level rise is aggravating rates of coastal erosion. We are also seeing more extreme weather patterns in Scotland and across the world.

The continued use of fossil fuels, a growing demand for energy and increased deforestation will escalate emissions of carbon dioxide to potentially irreversible levels. Uncertainties in the scientific understanding of global warming do not warrant a 'wait and see' attitude – left unchecked climate change will accelerate. There is much that we can do now that makes both environmental and economic sense. Climate change is an issue that will affect everyone and we can all make changes in our day to day life that will help.

The Scottish Government's Climate Change Act sets a target of reducing greenhouse gas emissions by 80 per cent by 2050, including emissions from international aviation and shipping. It also sets an interim target for a 42 per cent cut in emissions by 2020.

Part 4 of the Act places duties on public bodies relating to climate change, requiring them to:

- contribute to the delivery of emission reduction targets,
- help deliver statutory climate change adaptation programme, and
- to do this in the most sustainable manner.

All Scottish local authorities signed Scotland's Climate Change Declaration in early 2007. As signatories to the Declaration, each local authority is committed to the following actions:

1. Providing effective leadership, governance and management on climate change.
2. Reducing the local authority's own corporate greenhouse gas emissions from their estate, services and functions.
3. Taking action to reduce emissions from the local authority area.
4. Assessing the risks of climate change impacts and working with others to adapt to the impacts of climate change.

5. Developing effective partnership working and climate change communications, including producing an annual statement of plans, activities and achievements.

Orkney Islands Council reports to the Scottish Government through an annual Climate Change Declaration Report, setting out what it is doing to reduce emissions both from its own estate but also within the wider community. It must also report on steps that are being taken to adapt and increase resilience to the likely effects of climate change.

A Flood Local Advisory Group (FLAG) has been established which will liaise with SEPA and seek to address flood risk-associated issues in Orkney.

Transportation accounts for a large proportion of Orkney's carbon emissions, and this can be attributed mainly to the dispersed pattern of settlement across the island group. Although there continues to be a strong reliance on the private car, Orkney Islands Council supports and encourages the use of public transport by subsidising a number of the county's scheduled bus routes. Some routes continue to be lightly used; however recent years have witnessed significant growth in the overall use of public transport and between 2010 and 2012 total passenger numbers increased by 20%.

Through the Enhanced Demand Responsive Transport Initiative (EDRTI), the Council also helps support community transport providers; one of these is Dial-A-Bus, a door-to-door service run for its members by the Orkney Disability Forum. The service is available for disabled people of all ages or people aged 62 or older (rising to 65 over the next three years) who have difficulty in accessing local transport.

Nine ferries operated by Orkney Ferries link thirteen of the North and South Isles with Mainland Orkney; and flights to six of the North Isles are operated by Loganair from Kirkwall Airport. These services are essential for sustaining fragile areas and for accessibility to work, education, training, healthcare services and shopping. With the internal ferry fleet now due for replacement, issues for consideration include the energy efficiency of the new vessels and options to use lower carbon fuels.

Orkney Islands Council was successful in its bid towards the Scottish Government Smarter Choices, Smarter Places Initiative for Kirkwall to become a Sustainable Travel Demonstration Town. The project entitled 'Kick Start Kirkwall' ran from 2009 to 2012 with the aim of reducing car journeys and increasing the uptake of sustainable travel options such as walking, cycling and the use of public transport. Investment in the project enabled a mix of infrastructure improvements and soft measures such as Personalised Travel Planning (PTP) and resources to promote public transport.

The Council also receives funding on an annual basis through Cycling, Walking and Safer Streets, in order to meet with national objectives such as the target of a 10% mode share in cycling by 2022.

Local programmes to improve energy efficiency of homes are coming to an end and are being replaced by a national 'Green Deal' which started in October 2012. This is effectively a loan for people to improve the efficiency of commercial and domestic properties e.g. through improved insulation, upgraded central heating boilers, more energy efficient glazing or harnessing renewable sources of energy.

❖ ***What are the main environmental issues associated with climate change in Orkney?***

In Orkney the physical effects of climate change are likely to include flooding and coastal erosion and both of these will be aggravated if sea levels continue to increase as predicted. Certain areas are susceptible to flooding during extreme rainfall events and this perhaps became most notably apparent on 25/26 October 2006 when 86.6mm of rainfall was recorded and many areas were affected by fluvial and drainage flooding. A number of low-lying coastal areas are at increased risk of coastal flooding, in particular when tidal surges associated with low pressure systems combine with high spring tides and onshore winds.

There is heavy reliance on fossil fuels, for both transport and space heating in homes and public buildings. Many older properties are difficult to heat.

Air quality in the county is currently good but a national drive towards wood burning as an alternative to oil could create smoke pollution and a need for increased smoke control.

❖ ***What do we want to achieve?***

We want to reduce our energy consumption and contribute to national emissions targets; we also need to take action locally to adapt to the effects of climate change;

❖ ***What are the key strategic drivers?***

The Climate Change Directive (2009/29/EC)

The Climate Change (Scotland) Act 2009

Public Bodies Climate Change Duties: Putting them into practice (2011)

Scottish Climate Change Adaptation Framework (2009) and Sector Action Plans (2011)

The First UK Climate Change Risk Assessment (2012)

Orkney Islands Council's Carbon Management Plan

The Flood Management Directive (2007/60/EC)

The Flood Risk Management (Scotland) Act 2009

❖ ***How will we work together and what will we do?***

4.1 Orkney Islands Council will continue to liaise with SEPA to identify and develop improvements which will increase the protection of certain areas within the county that are at high risk of flooding.

4.2 Identify and raise awareness of more general climate change adaptation measures.

4.3 Encourage and, where possible, enable a reduction in energy usage throughout the Council's estate and in the wider community.

4.4 Encourage people to buy and produce local products, reducing the "carbon miles" associated with the goods we consume.

4.5 Continue to encourage and enable sustainable travel options such as walking and cycling and by promoting public bus routes and encouraging participation in the Cycle to Work and Car Sharing Schemes.

4.6 Support work to identify sustainable transport options for Orkney's North and South Isles.

## **Theme 5: Waste**

### **❖ Why have we included waste as a theme?**

Waste affects every one of us in Scotland, including here in Orkney. Every day we acquire, use and dispose of resources and, as individuals and organisations, we need to become increasingly aware of our impact on the environment, as well as the need to look after the precious resources we all depend upon.

The Scottish Government's Zero Waste Plan sets out a vision of a zero waste Scotland where waste is treated as a valuable resource and not as a burden. It proposes a long term target of recycling 70% of all Scotland's waste, requiring that waste is sorted into separate streams for recycling and reprocessing, leaving only limited amounts for residual waste treatment, such as energy recovery or landfill.

This resource centred approach is summarised in the 5-step Waste Hierarchy:

- Prevention
- Re-use
- Recycle
- Recover other value, e.g. heat energy
- Disposal to landfill if no alternative is available.

Driving waste management up the waste hierarchy is central to the development of sustainable waste management in Scotland and the ambition of a Zero Waste society.

Orkney Islands Council works closely with Shetland Islands Council to an Orkney and Shetland Area Waste Plan. Municipal Solid Waste (MSW) uplifted by Orkney Islands Council is collected and baled at its Waste Transfer Station at Chinglebraes in St Ola, before being transported by sea to Shetland for incineration at the Lerwick Waste to Energy Plant. Heat energy from the incineration process is then used to supply participating properties in the Lerwick District Heating Scheme.

The Council has a draft agreement with Shetland Islands Council to deliver a minimum tonnage of 5,000 of MSW per annum. During 2010/11 the quantity of MSW incinerated was 7,261 tonnes. Because of this arrangement, Orkney will satisfy all its diversions from landfill targets set by the Scottish governments for the foreseeable future (i.e. 2013 and even 2020 targets).

On Mainland Orkney waste recycling facilities are available at five Civic Amenity Sites; these are located at Garson, Stromness; Cursiter Quarry, Firth; Hatston

Industrial Estate on the outskirts of Kirkwall; Bossack in Tankerness; and St Margaret's Hope in South Ronaldsay. Further, smaller waste recycling facilities are located in the Isles and at a number of locations around the mainland.

In recent years fortnightly kerbside collection for glass and paper has been operational in the main settlements of the mainland. This is now set to be replaced by alternate weekly collections (AWC) which are currently being rolled out on the Mainland of Orkney. Under the scheme, residents will receive three 140 litre 'wheelie' bins – two for recyclates and one for rubbish. Recyclates which will be collected are paper and thin card, plastic bottles, cans and glass. This is the next step in the Council's plan to introduce an AWC service across Orkney – to help increase recycling rates in the county, encourage reduced consumption and waste generation, and save on waste collection costs. Ultimately, the service would mean all households in Orkney have rubbish and recyclates picked up from their usual collection point. Currently many rural residents only receive a rubbish collection.

A local charity, Orkney Zero Waste, has been established which aims to raise awareness and offer practical recycling advice in Orkney. The charity runs SteptOZe Yard, a community re-use / recycling site at Garson Industrial Estate in Stromness as a 'one stop drop', helping the community by offering recycling solutions whenever possible. Restart Orkney, a scheme operated by employability Orkney accepts donations of good-quality furniture, household goods and white goods for onward sale at affordable prices. Regular sales of second-hand furniture, books and farm implements are also held by the Orkney Auction Mart. Other recycling initiatives which are underway in Orkney include Radio Orkney's "Bruck Programme" and "Merkitplace", a locally based Facebook site.

The Council promotes awareness through going to schools and events and reinforcing messages through the alternate weekly collections. There are many urban myths about recycling in Orkney and it would be useful if partners also supported the Council in promoting awareness and dispelling myths.

The Scottish Environment Protection Agency's Vision in Business for the Environment of Scotland (VIBES) Awards aim to recognise businesses of all sizes and sectors employing environmental best practice in their day-to-day activity to cut down on resource use, increase sustainability, improve reputation and benefit their company's bottom line.

Another form of waste which can impact significantly upon the environment is waste water, e.g. domestic sewage, industrial effluents and surface water run-off, and the provision and maintenance of sustainable drainage infrastructure is integral to improving and maintaining a good quality water environment in Orkney. Scottish Water is the responsible authority for waste water treatment in Orkney and operates treatment facilities at a number of locations throughout the county. Within the towns and parts of the larger settlements wastes are collected and piped to these facilities where they undergo varying degrees of treatment before the residual effluent is discharged to the water environment.

In the wider countryside where the dispersed pattern of housing means that connection to a public sewer is not feasible, waste water is generally collected and treated through private septic tank and soakaway systems, where the success of the

system is dependent upon its design and the capacity of the soil to accommodate and complete treatment of the residual effluent. Soakaways constructed on waterlogged soils have little capacity to accommodate and treat waste water, and can allow untreated water to impact on water bodies, as well as presenting a risk to public health and amenity. Reed and willow bed filtration systems promote a higher level of treatment by breaking down substances such as ammonia as well as reducing the nutrient content of the final effluent and their incorporation into septic tank systems can be useful in particular where water courses are at risk.

❖ ***What are the main environmental issues associated with waste in Orkney?***

Certain types of waste are unsuitable for incineration, e.g. glass and metals, and their inclusion in the waste stream simply adds to the quantities of waste dispatched to Shetland without providing any benefit in terms of energy recovery; indeed these materials add cost (and increased carbon emissions) to the transport of waste in terms of the additional fuel required for their shipment.

Dog fouling is both a waste issue and a health issue due to the risk of transmission of round worm (*Toxocara canis*) eggs. Young children are particularly at risk because their play habits make them more likely to come into contact with contaminated soil. Although the Council's Environmental Health Service provides dog waste bags free of charge, some dog owners still fail to clean up after their pet; others collect the waste into a bag, only to leave the bag lying on the ground. The issue is even more apparent in some parts of the countryside e.g. where people exercise their dogs along footpaths and on beaches, often letting the animal off its lead. The responsibilities of dog owners are set out in the Scottish Outdoor Access Code which includes an owners' advice leaflet.

Fly-tipping is another issue which impacts upon the environment. Typically the waste involved includes earth and rubble; however other materials including glass, metal and plasterboard may also be present. Fly-tipping is unsightly and often occurs in out of the way places such as remote coastlines where the tipped materials can lead to weeds such as nettles and docks replacing the naturally occurring vegetation. They can also present a hazard to walkers and wildlife.

Water logged soils are not conducive to effective soakaway systems and where systems can affect water bodies there is potential for pollution and nutrient enrichment problems. In addition, where multiple septic tank systems are constructed in close proximity, there can be insufficient soil capacity to deal with the residual effluent and this can lead to cumulative effects.

❖ **What do we want to achieve?**

We want to encourage more sustainable use of resources and a reduction in waste.

❖ ***What are the key strategic drivers?***

The Waste Framework Directive (2008/98/EC)

❖ ***How will we work together and what will we do?***

- 5.1 Promote sustainable waste management, enabling resources that can be re-used or recycled to be taken out of the waste stream.
- 5.2 Encourage a wider range of waste recovery or disposal options.
- 5.3 Communicate with dog owners, to encourage more responsible behaviour.
- 5.4 Identify ways of reducing the impact of litter, scrap and fly-tipping on the landscape.
- 5.5 Encourage and enable the effective and sustainable management of private waste water treatment systems.

**Theme 6: Agriculture**

❖ ***Why have we included agriculture as a theme?***

Much of Orkney is managed for agriculture and the industry is a significant contributor to the local economy. Farmland is an important part of the nature of Orkney and provides much of its wildlife habitat and landscape interest. The industry also has strong connections with the wider rural community through activities ranging from providing opportunities for recreation and walks, visitor facilities, wildlife tourism, family and education activities. It has also been instrumental in developing a body of knowledge and demonstrating quality production methods, including organic production and accreditation schemes. In recent years a rekindled interest in provenance and locally sourced food has reinforced the importance of the agricultural industry to other sectors in the county, most notably the food and drink industry and tourism.

Improved and semi-improved grassland is largely managed for livestock rearing and is either directly grazed by animals or grown and cut to make silage, hay and haylage for winter feeding. Livestock numbers have decreased somewhat in recent years but the pattern of farming remains fairly intensive with many store cattle being exported in the early autumn for finishing on mainland Scotland. Barley and, to a lesser extent, oats are the main cereal crops and these are used as animal fodder and bedding. Smaller areas of wheat and bere are grown but the relatively short growing season can be a limiting factor to their success. Other crops include potatoes, turnips and cabbages.

Field sizes in general remain relatively small and often a wide variety of habitats can be found on a single holding or within a particular parish. This variety has created an intricate mosaic of diverse habitats across the county, supporting many nationally and internationally important species of wildlife. Agricultural policy and development are key factors in determining how successfully Orkney's rural

environment can be managed to conserve and enhance this mosaic of habitats and its attendant species.

The Scotland Rural Development Programme 2007-13 (SRDP) is currently the main source of funding for land management projects. It offers opportunities both for supporting the management of the wider countryside and more targeted projects. It is an important support for the management of protected sites as well as for biodiversity in general. The Rural Development Contracts - Rural Priorities scheme forms one component of the SRDP. It provides funding for specific environmental projects, managing habitats, delivering biodiversity benefits, forestry, managing water and soils, enhancing landscape features, renewable energy measures and access provision, as well as diversification, rural communities and business improvement projects such as increased storage capacity for animal waste slurries.

❖ ***What are the main environmental issues associated with agriculture in Orkney?***

The current levels of agricultural support received by Orkney farming are uncertain beyond 2013, when a new CAP structure will be put in place across the European Union. It is thought likely that direct support via several of the major CAP schemes will decrease thereafter. Funding for agri-environment schemes may be reduced. Currently many farms inspections are linked to these schemes.

Increasing numbers of greylag geese are causing damage to agricultural grassland and crops. In recent decades, numbers of over-wintering geese have increased and in addition a resident breeding population has become established which is seen to be growing year on year. There are concerns that the increase in the resident breeding population is having an impact on small water bodies, but this has yet to be investigated.

❖ ***What do we want to achieve?***

We want to promote environmental sustainability in agricultural practices.

❖ ***What are the key strategic drivers?***

The Common Agricultural Policy  
The Scotland Rural Development Programme  
The Wildlife & Countryside Act 1981

❖ ***How will we work together and what will we do?***

6.1 Ensure the targeted use of agricultural grants to maximise biodiversity benefits.

6.2 Encourage the Scottish Agricultural College and other farming organisations to trial methods for improved sustainability in agriculture.

6.3 Continue to support and advise on adaptive measures for the control of resident greylag goose populations.



## Theme 7: The marine environment

### ❖ *Why have we included the marine environment as a theme?*

The marine environment has had an immense influence on the development of the Orkney Islands and, to this day, it remains a priceless asset. Various industries have grown to benefit from its resources, contributing to the strength of the economy both locally and nationally. The wide variation in physical exposure and tidal strength of the waters surrounding the islands provides the conditions to support a richly diverse range of habitats and species, some of which are identified as priorities for conservation whilst others are economically exploited. Orkney's cultural heritage is also widely evident in the coastal environment; in particular where the erosive forces of wind and waves have revealed previously buried archaeology. In recent years archaeological finds have been made in shallow coastal waters where sea level rise has inundated previous settlements and it is believed that further underwater sites remain undiscovered.

The inshore waters support an economically important shellfish industry where target species include lobster, brown and velvet crab, prawn, scallop and razor fish (spoots). The Orkney Fisheries Association also aspires to add certain pelagic and demersal species to the target list. In the more sheltered areas the aquaculture industry has developed sites for the caged farming of fin fish, primarily Atlantic salmon as well as more limited shellfish cultivation. Much of the seafood sourced and produced locally is exported for sale outwith the islands but it is also a highly valued product in local shops and restaurants. A high quality marine environment is vital to the ongoing success of the fishing and aquaculture industries. It is also a key resource for the wildlife tourism industry.

More recently attention has focused on the prospect of harnessing renewable energy from the sea and in 2006 the European Marine Energy Centre was established at Stromness. With wave and tidal test sites at Billia Croo and the Fall of Warness, as well as 'nursery' sites in Scapa Flow and the Bay of Meil, the purpose of the Centre is to provide a world class facility for testing energy devices at various stages of development.

The marine environment is also recognised as one of the major contributors to the natural beauty of Orkney, and its coastal landscapes and seascapes are appreciated by locals and tourists alike. They provide the location for, as well as the backdrop to, a variety of tourism and recreation-based activities, many of which are centred around the islands' natural and cultural heritage resources.

The marine and coastal environment of Orkney also hosts a variety of other activities including waste disposal, sand extraction, oil industry activities and transport facilities. Therefore an integrated approach is needed to ensure that our marine and coastal resources are managed in a sustainable way. A balance needs to be found to ensure that Orkney's natural and cultural heritage can co-exist successfully with man's marine-related economic activities.

❖ ***What are the main environmental issues associated with Orkney's marine environment?***

Competition for development space in the marine environment is increasing and poorly sited development can impact upon sensitive marine wildlife.

Unsustainable fishing practices can put pressure on native species.

Marine litter impacts upon marine wildlife and also affects the public amenity of our beaches and coastlines.

Colonisation by Invasive Non-Native Species remains a risk, and could be exacerbated by increasing sea temperatures.

An observed decline in catches of velvet crabs in recent years remains unexplained but is not thought to be due to a reduction in species numbers.

❖ ***What do we want to achieve?***

We want to promote environmental sustainability in marine industries.

❖ ***What are the key strategic drivers?***

The Common Fisheries Policy

The Water Framework Directive (2000/60/EC)

The Scotland River Basin Management Plan

The Orkney and Shetland Area Management Plan

Scottish Planning Policy and the Local Authority land use planning system

The Pentland Firth and Orkney Waters Marine Spatial Plan

❖ ***How will we work together and what will we do?***

7.1 Ensure data availability in the marine environment is sufficient to inform the appropriate siting and design of new marine development.

7.2 Support initiatives to increase sustainability in the marine fisheries and aquaculture sectors.

7.3 Continue to support initiatives that tackle the issue of marine litter.

**Theme 8: Tourism**

❖ ***Why have we included tourism as a theme?***

Tourism is an important industry in Orkney, and is one which has stimulated and supported the development of many further businesses in the county, for example in the hospitality and jewellery design and manufacture sectors. Many smaller artisan workshops are also involved in the creation of a wide range of arts and crafts products.

Orkney is marketed as a clean, green tourism destination with a high quality environment and maintaining these credentials is key to the ongoing success of the industry. Whilst the current condition of the Orkney environment largely supports this view, visitor expectations are high; it is therefore important to ensure that

sustainability and environmental conservation continue to be at the forefront of local plans and strategies.

The tourism industry itself has potential to impact upon the environment; it is therefore recognised that careful management is necessary to ensure that the success of Orkney's tourism industry does not damage the very features that people expect to experience during their visit to the islands.

VisitScotland defines sustainable tourism as “.....*tourism committed to generating a low impact on the surrounding environment and community by acting responsibly while generating income and employment for the local economy and aiding social cohesion.*”

Much has already been done to improve the sustainability of tourism in Orkney, for example many of the newer developments have incorporated renewable energy at build stage to provide future energy savings. Local operators work with the Royal Society for the Protection of Birds (RSPB), Scottish Natural Heritage (SNH) and other bodies to promote the wildlife of Orkney in a sustainable manner, by using local tour guides and Ranger services.

❖ ***What are the main environmental issues associated with tourism in Orkney***

Pressure on the local transport system, including localised pressure on certain country roads;

Levels of “wear and tear” are more severe at certain archaeological sites which attract large numbers of visitors annually;

Peak visitor numbers tend to be concentrated into the summer months;

Increased numbers of visitors to the islands requires increased import of goods into the county, increased usage of energy and water as well as the production of higher volumes of waste.

❖ **What do we want to achieve?**

We want to encourage a high level of environmental sustainability in the tourism sector.

❖ ***What are the key strategic drivers?***

VisitScotland Sustainable Tourism Strategy

The Orkney Tourism Partnership Strategy and Plan 2006-2015

❖ ***How will we work together and what will we do?***

8.1 Encourage collaboration and co-operation between transport providers and other key sectors of Orkney's tourism industry to enable effective forward planning.

8.2 Develop new tourism initiatives linked to Orkney's cultural heritage assets, with a view to developing mechanisms for the dispersal of visitors to a wider range of visitor attractions in Orkney.

8.3 Support sustainable initiatives to extend the tourism season in Orkney.

8.4 Promote the procurement of goods and services from sustainable sources, including locally sourced produce, and encourage tourism businesses to reduce their environmental impact, e.g. in terms of energy usage and waste management.

8.5 Develop Orkney as a Green Destination, by building on the use of green energy and sustainable practices.

### **Theme 9: Orkney's Electric Future**

#### **❖ *Why have we included Orkney's Electric Future as a theme?***

The earth's fossil fuel supplies (oil, gas, coal) are limited and will be depleted over time. As this process continues, remaining reserves will become increasingly difficult to access. It is also widely recognised that the gases released when fossil fuels are burned to produce energy are contributing towards changes in our climate and rises in global temperatures. By using increasing amounts of renewable energy (as well as by conserving as much energy as possible), we can live more sustainably, reduce our use of fossil fuels and help to protect our environment.

The Scottish Government is committed to promoting the increased generation and use of renewable energy. It has set clear targets for renewable sources to generate the equivalent of 100 per cent of Scotland's gross annual electricity consumption by 2020. Similarly a target has been set for renewables sources to provide the equivalent of 11 per cent of Scotland's heat demand by 2020. An increase in the amount of renewable energy generation (electricity and heat) as a means of reducing carbon emissions could also contribute to actions to address climate change.

The Orkney Renewable Energy Forum (OREF) was established in 2000, to bring together representatives from the private, public and academic sectors with an interest in the generation of energy from renewable sources and continues to act as a focus for promoting renewable energy development in the county.

Orkney has been at the forefront of marine renewable energy development for a number of years, following the establishment in 2006 of the European Marine Energy Centre in Stromness, and the associated test sites for wave and tidal energy technology at Billia Croo and the Fall of Warness. In 2010, following a competitive leasing round, the Crown Estate entered into agreements for lease for wave and tidal energy projects with a potential capacity of up to 1,600 MW in the Pentland Firth and Orkney Waters.

In recent years the islands have seen significant uptake of on-shore wind energy technology, in particular small and medium sized turbines; photo voltaic solar panels have also proven to be popular. However current export capacity to the national electricity grid is now constraining further on-shore renewable energy development. Projects are underway to upgrade connections to allow the export of energy and to work with Ofgem to get the cost of exporting energy reduced.

An application for a new subsea cable linking Orkney to northern Caithness has been submitted to the National Grid. Capacity on the cable will be underwritten by the marine renewables sector and the cable is scheduled to be in place by 2018. In the shorter term, efforts are underway to seek solutions to the distribution network grid constraints.

A pilot project '**Orkney's Electric Future**' has evolved from both a need to address the local National Grid constraint on new renewables projects in Orkney as well as a strategic aspiration to transition to a low carbon economy. The project is intended to boost local demand for locally produced renewable electricity as well as focusing effort on the necessary investment and strengthening of the grid connection to mainland Scotland. Core areas for development will be:

- optimising heating in domestic and non-domestic properties;
- energy storage; and
- the electrification of transport.

'Orkney's Electric Future' is a marketing tagline to promote explorations and activities that aim to achieve one or both of these outcomes. For example in 2011 the Orkney Community Planning Partnership received Low Carbon Transport Funding from Transport Scotland which was allocated to the Council to trial and assess electric vehicles with a view to sharing the information with other interested community groups. The Council purchased two electric vehicles – a car and a pickup truck - and plan to order an electric minibus for a local Residential Care Home from the 2012 fund. Charging infrastructure has also been installed in four locations providing a good geographical spread to the charging network in Orkney.

The Council has already invested in a number of small turbines for example at certain schools and at the Kalisgarth Care Centre in Westray and is looking into share in larger developments.

❖ ***What are the main environmental issues associated with further development of Orkney's electric future?***

There is concern about the environmental effects, in particular landscape impacts, of renewable energy technology and infrastructure.

Further renewable energy development is constrained by available capacity on the National Grid.

The relatively high cost of electric vehicles means they are unlikely to represent a feasible alternative to conventional vehicles in the short term.

❖ ***What do we want to achieve?***

We aim to develop renewable energy resources whilst minimising adverse impacts on the environment;

❖ ***What are the key strategic drivers?***

Orkney Green Information and Communication Technology Strategy  
The Renewables (Scotland) Obligation

***How will we work together and what will we do?***

9.1 Support ongoing research and development of the renewables sector, including research into its environmental effects.

9.2 Support initiatives to assess the cumulative environmental impact of renewable energy development on the Orkney Islands and identify measures that will avoid or minimise adverse effects.

9.3 Consider how surplus locally produced electrical energy may be used until grid issues are resolved, e.g. whether it could be used to benefit those in fuel poverty.