

**Northern Ireland Habitat Action Plan**  
**Coastal Vegetated Shingle**  
**March 2005**

**1. Current Status**

**1.1 Physical and biological status**

- 1.1.1 Shingle coasts form in wave dominated locations where suitably sized material is available. In Britain, the term 'shingle' is applied to pebbles larger in diameter than sand (>2 mm) but smaller than boulders (<200 mm).
- 1.1.2 Five categories of shingle structures have been recognised which vary in their ecology as a result of their physical structure, location and the physical forces affecting them (Chapman, 1976). The simplest and commonest type is the fringing beach, forming a strip in contact with the land along the top of the beach. Shingle spits form where there is an abrupt change in direction of the coast and bars or barriers are effectively spits that have formed across estuary mouths or indentations in the coast. Ecologically, bars differ from spits in having less maritime environment to their lee (Kidson, 1963). These three structures are basically foreshores regularly washed by spray and storm waves and possess ephemeral vegetation, which varies in extent and frequency of establishment.
- 1.1.3 Cuspate forelands and offshore barrier islands are larger structures and have a more terrestrial nature. The former develop when shingle is available in large quantities and piles up in front of fringing beaches or spits and is then driven landwards by storm waves to form apposition beaches. If this process is repeated, a series of roughly parallel ridges may develop and an extensive area of stable shingle results. Where wave approach is from two directions only, the apposition beaches form into cuspate forelands. Large masses of shingle may also form offshore barrier islands under conditions of shallow water and low energy environments.
- 1.1.4 In Northern Ireland, coarse shingle banks, ridges and tombolos (islands joined to the land by sand or shingle spit) are found mainly along the low, rocky parts of the coastline of Co. Down, including in Strangford Lough. At Gransha Point, there is a large shingle bank attached to the mainland by a slender shingle spit above high tide level. Shingle beaches associated with raised beaches occur along the Co. Antrim coast, in Co. Down, most notable at Ballyquintin Point, a site that is notable for its extensive vegetated shingle banks.
- 1.1.5 It is estimated that 30% of the coastline of England and Wales is fringed by shingle. However, much of the vegetation associated with this consists of temporary strandline communities. Shingle structures sufficient to support perennial vegetation are a comparatively rare feature, with around 5000 ha in England, 700 ha in Scotland and 100 ha in Wales.

- 1.1.6 An estimated 50ha of vegetated shingle occurs in Northern Ireland (P Corbett, pers. comm.). Of this, approximately 30ha are considered stable. The most extensive areas have already been surveyed i.e. Ballyquintin Point National Nature Reserve (NNR) and Gransha Point on Strangford Lough (Cooper, *et al.*, 1992). These areas support a range of plant communities, including scrub and grassland, often rich in lichens. It is these areas of stable shingle that are the main focus of this habitat action plan.
- 1.1.7 The types of vegetation assemblage that may occur on shingle beaches are strongly influenced by stability. As stability increases, the number of species able to colonise the shingle surface increases, helping to create a wide range of community types. Unstable beaches tend to lack vegetation. Beaches stable between spring and autumn tend to be dominated by summer annuals for example cleavers *Galium aparine* and oraches *Atriplex spp.*, whereas those stable over three or four years are dominated by short lived perennials for example biting stonecrop *Sedum acre*. Long-lived perennials such as sea kale *Crambe maritima*, are most common on beaches stable over five to twenty years, and over longer periods, heath or grass-heath vegetation dominates with species such as blackthorn *Prunus spinosa* and heather *Calluna vulgaris*.
- 1.1.8 Besides stability, beach composition is the other principal factor affecting vegetation type. Shingle without a matrix is limited to a vegetation of lichens and tolerant angiosperms. Shingle that has a sand matrix, has the same hydrological conditions as foredunes, but the stability of rear dunes. It is therefore ecologically similar and contains species such as bird's foot trefoil *Lotus corniculatus*. Shingle with a clay matrix is most related, ecologically, to saltmarshes and has vegetation similar to that of saltmarsh levees, with species such as sea-purslane *Atriplex portulacoides*. Shingle with a nutrient-rich organic matrix consisting of rotting seaweed, supports populations of species that arrive as seed with tidal debris particularly goose foot *Atriplex spp.* The width of foreshore, water availability, climatic conditions and past management can also play a part in influencing vegetation type on shingle structures.
- 1.1.9 The vegetated shingle resource in Northern Ireland has not been fully surveyed in detail, but of the coastal sites in Northern Ireland surveyed by Cooper *et al.* (1992), nine contained shingle or strandline National Vegetation Classification vegetation communities (Rodwell, 2000). These were SD1 *Rumex crispus* – *Glaucium flavum* shingle community, SD2 *Honkenya peploides* – *Cakile maritima* strandline community and SD3 *Matricaria maritima* – *Galium aparine* strandline vegetation.
- 1.1.10 SD1 vegetation is found at a level reached only by exceptional tides or storms and where there is organic matter derived from the strandline. It has an inability to compete with invading rank grasses. Shingle is the required substrate but this can vary from fine gravel to large pebbles; the finer the substrate material the denser the vegetation tends to grow. Oysterplant *Mertensia maritima*, a northern species on the southern edge of its distribution and yellow horned-poppy *Glaucium flavum* along with sea-kale *Crambe maritima*, both southern species on the northern edge of their distribution, occur in this type of habitat. At Glassdrumman on the Mourne coast, all three of these species occur.

- 1.1.11 SD2 is a pioneer community of sand and fine shingle strandline, on less exposed coasts. It has a marked southern distribution in Northern Ireland, occurring on shingle at Templecowey, Ballyquintin Point, Gransha Point, Horse Island, Killard and Mourne Coast. A northern sample has however been found at Whitepark Bay. The extent and distribution of this community can vary greatly from year to year, as it exists in a state of perpetual instability.
- 1.1.12 SD3 strandline vegetation community is notably northern in distribution in Great Britain and Northern Ireland and tends to be found on a matrix of mixed material consisting of pebbles, silt and shell deposits rather than pure shingle. Of greater importance to the establishment of this community is the accumulation of organic matter. Nutrients released from the decaying organic matter allow nitrophilous plants to flourish, while the comparatively high rainfall, combined with a degree of shelter, enable the establishment of plants which are not particularly salt tolerant.
- 1.1.13 In areas where raised shingle beaches are occasionally inundated by sea water, free-draining beds of larger shingle or cobbles may support lichen communities, with encroachment by grasses such as crested hair-grass *Koeleria macrantha*, crested dog's tail *Cynosurus cristatus* and red fescue *Festuca rubra*, as well as shrubs such as bumet rose *Rosa pimpinellifolia*, blackthorn *Prunus spinosa* and ivy *Hedera helix*. Coarse shingle banks that are sheltered and generally stable, although subject to inundation during high spring tides, may have vegetation with affinities to saltmarsh. At the highest levels they support rank grasses such as couch *Elymus farctus*, while sea mayweed *Tripleurospermum maritimum*, common saltmarsh grass *Puccinellia maritima* and annual sea-blite *Suaeda maritima* occur nearer the strandline.
- 1.1.14 Strandlines made up of sand and fine shingle are typical on the less exposed beaches. During the summer, annual species such as sea rocket *Cakile maritima* and prickly saltwort *Salsola kali* develop. In general the community is very variable and its extent may change from year to year. Sheltered shingle beaches with detritus and a mixture of sediment types including pebbles, silt and shells are found all around the coast of Northern Ireland. At Ballyquintin Point, along the seaward bank of the raised shingle, patches of low blackthorn scrub have been observed with an understorey of ivy. Along the inner bank, the community is dominated by gorse *Ulex europaeus* and bramble *Rubus fruticosus* scrub.
- 1.1.15 As well as plants, shingle structures may support breeding birds including lesser black backed gulls *Larus fuscus*, oystercatcher *Haematopus ostralegus* and ringed plover *Charadrius hiaticula*. Some off shore islands may have a shingle component and hold colonies of breeding terns, for example in Larne Lough and Carlingford Lough.
- 1.1.16 Diverse invertebrate communities are also found on coastal shingle; however there are very few published accounts of the fauna of individual sites or accounts of groups within Northern Ireland. At Ballyquintin Point the rare pill woodlouse *Armadillidium pulchellum* occurs at its most northerly site.

1.1.17 Vegetated shingle has undergone some decline over much of Britain and Ireland over the past century. In Northern Ireland, between 1991 and 1998, a loss of 32% (29 ha) was recorded (Murray *et al.*, 1992).

## **1.2 Links with other action plans**

1.2.1 This vegetated coastal shingle habitat action plan identifies specific targets and actions required to deliver Northern Ireland's contribution to the UK action plan (UK Biodiversity Steering Group, 1999).

1.2.2 The actions proposed in this plan should be combined with efforts to implement the actions of other habitat action plans closely linked with vegetated coastal shingle e.g. sand dunes and lowland heath.

1.2.3 Several Northern Ireland priority species are associated with coastal vegetated shingle including Irish hare, oyster plant and sea-kale. The requirements of these species should be taken into account during the implementation of this plan.

1.2.4 An all-Ireland Species Action Plans has been published for the Irish hare.

1.2.4 Relevant published Northern Ireland Species Action Plans include the Irish hare, chough *Pyrrhocorax pyrrhocorax* and roseate tern *Sterna dougallii*.

## **2. Current Factors Affecting the Habitat**

**2.1** Sediment supply - is frequently lacking, owing to interruption of coastal processes by coast defence structures, by offshore aggregate extraction or by artificial redistribution of material within areas of coast.

**2.2** Natural mobility - shingle features are rarely stable in the long term. Many structures exhibit continuous longshore drift, and ridges lying parallel to the shoreline tend to be rolled over towards the land by wave action in storm events. This movement has a knock-on effect on low-lying habitats behind the shingle. Movement is likely to be accelerated by climate change resulting in sea level rise and increased storminess.

**2.3** Exploitation - as a convenient source of aggregates, shingle structures have been subject to varying degrees of extraction resulting in severe alteration of morphology and vegetation or almost total destruction of major parts of the feature. Industrial plant, defence infrastructure and even housing have been built on shingle structures destroying vegetation and ridge morphology. Long-term denudation of the shingle resource also occurs as a result of removal by private individuals for the surfacing of access tracks etc..

- 2.4 Recreation – the impact of recreation which includes access for sport, bird watching, walking etc. is not well understood but may be locally significant.
- 2.5 Sea defence and coastal protection – can have potentially serious implications for shingle habitats. Defence works may result in changes to the movement of material on and offshore and alongshore. This has important consequences for the natural dynamics of the habitat. The structures themselves can also lead to a loss of overall extent in habitat.
- 2.6 Grazing – a traditional activity on many areas of shingle has now largely ceased, leading to domination by rank grasses, gorse, blackthorn *Prunus spinosa* scrub and occasional Willow *Salix* spp. carr. Where overgrazing occurs a reduction in species diversity occurs as stress-tolerant species dominate. General overstocking e.g. through the provision of supplementary feeding can be locally significant.

### 3. Current Action

#### 3.1 Legal status

- 3.1.1 Statutory site designation plays an important part in the conservation of coastal vegetated shingle. In 1992, the EC adopted the *Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna*, known as the ‘Habitats Directive’. The Habitats Directive requires member states to designate and manage Special Areas of Conservation (SAC’s) for habitats (listed in Annex 1 of the Directive) and species (listed in Annex 2). A small proportion of these habitats and species, which are considered to be most in need of conservation at a European level, are given priority status. Vegetated shingle is listed as two habitat types under Annex I of the ‘Directive’: *annual vegetation of drift lines* (H1210) and *perennial vegetation of stony banks* (H1220). Examples of both these habitats occur in Strangford Lough candidate SAC while *annual vegetation of drift lines* occurs at both the Rathlin and North Antrim Coast cSACs.
- 3.1.2 The *Conservation (Nature Habitats, etc.) Regulations (Northern Ireland) 1995* and *The Conservation (Nature Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2004* (The Habitat Regulations) require competent authorities, when considering a plan or project not directly connected with the management of a European site e.g. an SAC or SPA, to undertake an Article 6 assessment. This assessment will determine if the plan or project, either alone or in combination with other plans or projects, is likely to have a significant impact on the site. In the case of a negative or undetermined assessment, a competent authority may only agree to the plan or project where it is satisfied that there are no alternative solutions and that the plan or project must be carried out for imperative reasons of overriding public interest, which may be of a social or economic nature. However, if the site hosts a priority habitat or species then the plan or project may only be approved for: a) reasons of human health, public safety, beneficial consequences of primary importance to the environment, or b) other reasons which the Department (DOE), having considered the opinion of the European Commission (EC), determines are imperative reasons of overriding public interest.

- 3.1.3 Under the terms of the Habitat Regulations, the above Article 6 assessment by the competent authority is required for plans or projects e.g. land reclamation, which are outside European sites but may still have an impact on the site.
- 3.1.4 Guidance to help competent authorities and others to interpret the Habitat Regulations has been published (EHS, 2002).
- 3.1.5 Guidance on the completion of an Article 6 assessment has also been published (European Commission, 2000)
- 3.1.6 Not all of the vegetated shingle resource of Northern Ireland has received Areas of Special Scientific Interest (ASSI) notification. Some of the ASSIs currently protected under the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985, are protected because they contain vegetated shingle, however for many of the ASSIs the occurrence of this habitat has not been the primary selection feature. Around 48 ha of vegetated shingle habitat in Northern Ireland are protected as ASSI's which are identified and declared by the Department of the Environment (DOE) through the Environment and Heritage Service (EHS). ASSI status has been applied to 5 sites in Northern Ireland where coastal vegetated shingle is a feature. These include Strangford Lough, Ballyquintin Point, Giant's Causeway and Dunseverick and Rathlin Island. An additional site with this feature includes Outer Ards (Kearney Point and Millin Hill- circa 9 ha) as part of a coastal mosaic feature.
- 3.1.7 In 2000, the Northern Ireland Biodiversity Group (NIBG) made its Recommendations to Government (NIBG, 2000). These were largely accepted by the Northern Ireland Executive in 2002, with the publication of the *Northern Ireland Biodiversity Strategy* (DoE, 2002). *The Regional Development Strategy 2025* (DRD, 2001) is underpinned by the sustainable approach and includes Strategic Planning Guidelines (SPGs) on the protection of the environment which bring together a comprehensive collection of natural heritage and built heritage strategic guidance that includes sustaining and enhancing biodiversity.
- 3.1.8 Regional Planning and Transportation Division within DRD is responsible for co-ordinating the implementation of the *Regional Development Strategy (RDS) for Northern Ireland 2025* (DRD, 2001). The RDS contains a Spatial Development Strategy and related Strategic Planning Guidelines (SPGs). The emphasis in the SPGs is on competitiveness, sustainable development and tackling social exclusion and division. Operational policies to give effect to the SPGs are contained in Planning Policy Statements (PPSs). Some of these policies have a direct or indirect bearing on the prevention of adverse impacts on priority habitats and species.
- 3.1.19 *PPS2 Planning and Nature Conservation* (DoE Northern Ireland, 1997) (under review) contains planning policy for the hierarchy of sites of nature conservation importance. It also addresses trees and woodlands, protection of species and peatlands.

- 3.1.10 *PPSI5 Planning and Floodrisk* is currently out to public consultation. It embodies the Government's commitment to sustainable development and the conservation of biodiversity and adopts a precautionary approach to decision making that takes account of climate change.
- 3.1.11 *PPSI4 Sustainable Development in the Countryside* is due to be published by the end of 2005.
- 3.1.12 Site protection policies are included in Development Plans. Sites of Local Nature Conservation Importance (SLNCIs) are being identified for consideration by Planning Service and will be formally included in Development Plans. Where such sites are confirmed in adopted plans, specific planning policies will be applied to development proposals on those sites. The SLNCI network will include a number of mixed ashwood sites of substantive nature conservation interest, which are not designated as ASSIs or NNRs.
- 3.1.9 Semi-natural areas, which are likely to be of particular environmental importance, are protected through the *Environmental Impact Assessment (Uncultivated Land and semi-Natural Areas) Regulations (Northern Ireland) 2001*. These regulations, which came into operation in Northern Ireland in February 2002, are administered by DARD and seek to ensure that agricultural development of uncultivated land or semi-natural areas must first be assessed for environmental significance. This would also include cases where the land use changes are aimed at restoring or enhancing vegetated shingle.
- 3.1.10 The UK Woodland Assurance Standard (UKWAS Steering Group, 2000), a voluntary certification standard, requires that valuable semi-natural habitats are being treated in a manner that does not lead to further loss of biodiversity. Forest Service is certified against this standard and is undertaking a survey of its lands to identify valuable semi-natural habitats.
- 3.1.11 *The Environmental Impact Assessment (Forestry) Regulations (Northern Ireland) 2000* require anyone who wishes to carry out a project including afforestation, deforestation, forest road works or forest quarry works that is likely to have significant effects on the environment to obtain consent for the work from the Department of Agriculture and Rural Development.
- 3.1.12 Forest Service acquisition policy is outlined in *Afforestation – the DANI Statement on Environmental Policy* (DANI, 1993). It states that there should be a presumption against afforestation of botanically rich sites, which have undergone little disturbance for many years.

## **3.2 Management, research and guidance**

- 3.2.1 EHS, as part of the requirements of the Habitats Directive, has prepared conservation objectives for those sites submitted as cSAC's. Where vegetated shingle occurs on

cSACs and ASSIs, it is protected by control of potentially damaging operations and by the application of targeted conservation objectives.

- 3.2.2 Common Standards Monitoring guidelines are being established in the UK to assess the extent and condition of coastal vegetated shingle within designated sites. However, standards for assessing favourable condition of the habitat in the wider countryside have not yet been agreed. Advice on undesignated areas will depend on the detection of a habitat that is often difficult to differentiate from adjacent habitats and communities.
- 3.2.3 The Management of Sensitive Site scheme (MOSS) launched in 2002 by EHS, is a voluntary scheme designed to ensure the positive management of ASSIs. Under the scheme, landowners can receive payment for carrying out conservation work within the framework of a written agreement. MOSS covers issues such as agricultural improvement, grazing and control of invasive scrub species. One-off payments for works such as fencing and scrub clearance to assist grazing can be made.
- 3.2.4 The UK Government has set out its commitment to sustainable management of the coast in a number of publications. *Planning Strategy for Rural Northern Ireland* (DOE 1993) has provisions relating to development, access and conservation of the coast.
- 3.2.5 The conservation of the coastline of Northern Ireland took a step forward with the publication in 1995 of a consultation paper on coastal zone management (DOE, 1995). Currently an Integrated Coastal Zone Management strategy is being developed for Northern Ireland and is due for completion by 2006. This will help provide a strategic context for the implementation of this action plan.
- 3.2.5 DARD, through its Countryside Management Branch (CMB), has developed a series of agri-environment schemes including the Environmentally Sensitive Areas (ESA) Scheme (revised in 2000) and the Countryside Management Scheme (CMS). A further revision to both the ESA and CMS has recently been approved under the current Northern Ireland Rural Development Programme (2000-2006). Their objective is to protect and enhance semi-natural habitats by encouraging more sensitive management practices. Both these schemes have similar management provisions, are voluntary and apply to the whole farm.
- 3.2.6 The Habitat Improvement Scheme (HIS) aims to help farmers protect, enhance and establish habitats which are considered to have major conservation value. This is achieved by taking land out of agricultural production or by entering into a 10 year agreement which involves extensive grazing based on non-application of fertilizers and pesticides to the land. No new applications for the HIS are being accepted as the scheme closed in mid-1999. The scheme has been replaced by the Countryside Management Scheme (CMS).
- 3.2.7 The CMS, launched in 1999, was developed with the primary aim of maintaining and enhancing biodiversity and is open to application from all farmers and landowners outside ESAs. As funding is limited, entry into the scheme is competitive, being based on who can offer the greatest environmental benefits. DARD can provide area-based

payments on blocks of > 0.1 ha in area within the farm unit, where it meets clearly defined criteria. The priority habitat must be brought under agreement and managed according to the specific objectives and prescriptions of the agri-environment scheme. A range of habitats are under long-term monitoring by QUB's Agri-environment Monitoring Unit (QUB, 2004).

- 3.2.8 DARD has developed the Entry Level Countryside Management Scheme (ELCMS) which is due to open mid 2005. ELCMS has been designed to be easily accessible and to deliver a range of basic agri-environment improvements. Participants in the scheme will be required to undertake a field boundary management module, one of 3 possible water quality modules and one of 5 further biodiversity modules. The scheme will complement the existing agri-environment programme.
- 3.2.9 The *Northern Ireland Countryside Survey* (NICS) is a sample survey of Northern Ireland vegetation communities used to estimate the extent and distribution of broad habitats across Northern Ireland countryside. Repeat surveys are used to assess land-use change. The first phase in the process was *A land classification and landscape ecological study of Northern Ireland* carried out in the early 1990s (Murray *et al.*, 1992). The NICS 2000 (Cooper & McCann, 2001) repeated the survey in 1998.
- 3.2.10 Other relevant information is gathered through specialist biological recording groups, Non-Governmental Organisations (NGOs), universities and other government bodies. Biological records are currently stored at the Museum and Galleries of Northern Ireland (MAGNI) and at the Centre for Environmental Data and Recording (CEDaR). CEDaR was established in 1995 in a partnership with EHS, MAGNI and the biological recording community. There are currently in excess of 1.4 million records held by CEDaR and there are developments underway to make these records more accessible through the Internet. This will be achieved through the National Biodiversity Network, a union of organisations throughout the UK working together to create an information network of biological data to provide an accessible data source for biodiversity information.
- 3.2.11 Over 700 miles of coastline are owned and protected by the National Trust; 125 miles of which are in Northern Ireland. The National Trust is actively involved in reinstating grazing on many of their properties. Other non-governmental organisations such as the RSPB and Ulster Wildlife Trust also own or manage a number of vegetated shingle sites in Northern Ireland. These areas often have the benefit of a warden/ranger service which encourages appropriate management and control of damaging activities, and provides interpretive and educational services. They all contribute to coastal zone management initiatives in Northern Ireland.
- 3.2.12 Environmental impact assessment is a statutory requirement for certain proposed developments where there is likely to be a significant effect on the environment.
- 3.2.13 The Strangford Lough Management Scheme was formally launched on the 8<sup>th</sup> October 2001, with a new version currently being developed. It is intended to safeguard the conservation status of those features for which Strangford Lough has been selected as a

candidate Special Area of Conservation (SAC) and classified as a Special Protection Area (SPA). The scheme sets the framework through which activities will be managed so as to achieve the conservation objectives of the European marine site.

- 3.2.14 The Strangford Lough Wildlife Scheme created by the National Trust, manages and controls the wildfowling on the foreshore in this Lough and on adjacent lands owned or managed by the National Trust. Shooting free core wildlife zones have been designated to protect the wildfowl populations not only from excessive killing, but from the disturbance it causes. On other estuaries such as Lough Foyle and Dundrum Inner Bay, agreements are in place between wildfowling groups, RSPB and local authorities
- 3.2.15 The development of Local Biodiversity Action Plans (LBAPs), based on District Council areas and/or discrete landscape areas, and the appointment of Local Biodiversity Officers will help to build on the SLNCI network and encourage, co-ordinate and inform local biodiversity action.

#### **4 Action Plan Targets**

- 4.1 Maintain the current extent of coastal vegetated shingle at 50 ha.
- 4.2 Maintain the area of coastal vegetated shingle in favourable condition at 25 ha.
- 4.3 By 2015, restore to favourable condition as much as is practical, of the remainder of the resource i.e. 25ha.

#### **5. Proposed Action with Lead Agencies**

##### **5.1 Policy and legislation**

- 5.1.1 By 2005, initiate discussions with other government departments to ensure appropriate consultation mechanisms exist for proposed changes in land-use.  
(ACTION: DOE, DARD, EHS, Planning Service)
- 5.1.2 By 2006, review *Planning Policy Statement 2 (PPS2) – Planning and Nature Conservation*, to include policies relating to the conservation of priority habitat and species.  
(ACTION: Planning Service, EHS)
- 5.1.3 By 2006, produce *Planning Policy Statement (PPS15) on Planning and Flood Risk*. This includes an objective to promote an integrated sustainable approach to the management of development and flood risk that, among other matters, will contribute to the conservation and enhancement of the biodiversity of Northern Ireland.  
(ACTION: Planning service, EHS)

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- 5.1.4 By 2005, produce *Planning Policy Statement (PPS14) on Sustainable Development in the Countryside* which includes objectives to minimise the impact of housing development on the environmental resources of habitat, water quality and biodiversity of the rural area, thereby contributing to the conservation of biodiversity in Northern Ireland.  
(ACTION: DRD, EHS, Planning Service)
- 5.1.5 By 2005, produce a Planning Policy Statement (PPS) on the coast to manage coastal development in a sustainable manner and protect the natural character and landscape of the coast.  
(ACTION: DRD)
- 5.1.6 Identify further examples of coastal vegetated shingle as SLNCIs for consideration for adoption into appropriate Development Plans.  
(ACTION: EHS, Planning Service)
- 5.1.7 In the preparation of Planning Policy Statements, the promotion of biodiversity will be taken into account where appropriate.  
(ACTION: Planning service, DRD, EHS)
- 5.1.8 By 2006, develop and promote policies and procedures which will aim to prevent losses of coastal vegetated shingle habitat to development and exploitation through for example, development schemes, flood and coastal defence works, dredging operations.  
(ACTION: Planning Service, DARD, Rivers Agency, EHS, DETI, Harbour Authorities)
- 5.1.7 5.1.9 Ensure that important maritime cliff and slope sites not already identified e.g. as SLNCIs, are recognised and, where appropriate, site protection policies are included in Development Plans and other strategic plans such as Local Biodiversity Action Plans (LBAPs) and coastal zone management strategies.  
(ACTION: Planning Service, EHS, DARD, District Councils, Forest Service)
- 5.1.10 By 2006, explore options for using statutory measures, aside from those specifically designed for nature conservation, to protect vegetated shingle habitats  
(ACTION: DOE, DARD, DCAL, DRD)
- 5.1.11 By 2006, develop and promote agri-environment schemes which will encourage restoration and sustainable management of vegetated shingle  
(ACTION: DARD)
- 5.1.12 By 2006, consider the implications of enabling agricultural land to be made available for coastal habitat creation, for example through awareness of agri-environment schemes, the development of appropriate management mechanisms and the incorporation of the non-use value of vegetated shingle into cost/benefit analysis for flood defence schemes.  
(ACTION: EHS, DARD, DOE, District Councils)

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- 5.1.13 By 2006, develop and promote incentives to encourage the management and restoration of vegetated shingle.  
(ACTION: EHS, DARD)
- 5.1.14 By 2007, monitor and review the effectiveness of agri-environment schemes to ensure that vegetated shingle is being maintained and enhanced across Northern Ireland.  
(ACTION: DARD, Forest Service, EHS)
- 5.1.15 By 2007, ensure that agri-environment scheme prescriptions relevant/appropriate to maritime cliff and slope are contributing to maintaining and enhancing the habitat across Northern Ireland.  
(ACTION: DARD, EHS)
- 5.1.16 By 2006, prepare an Integrated Coastal Zone Management Strategy for Northern Ireland.  
(ACTION: DOE, EHS)
- 5.1.17 By 2007, establish a Northern Ireland cross-sectoral steering group, to take forward the requirements of the coastal habitat action plans  
(ACTION: EHS, DARD)
- 5.1.18 By 2007, consider the use of Shoreline Management Plans in the delivery of this plan.  
(ACTION: EHS)
- 5.1.19 Ensure that designated coastal vegetated shingle sites are properly recognised within River Basin Management Plans by 2009 as required by the Water Framework Directive.  
(ACTION: EHS)
- 5.1.20 By 2007, give consideration to how planning policy might discourage new built development within appropriate buffer zones in the vicinity of vegetated shingle.  
(ACTION: DOE, EHS, District Councils)
- 5.1.21 By 2005, ensure that the importance of shingle structures and offshore shingle resources is recognised in flood and coastal defence strategies and, where appropriate, encourage such strategies to contribute to the objectives and targets of this plan.  
(ACTION: DOE)
- 5.1.22 By 2005, ensure conservation management requirements for vegetated shingle are included in the development and implementation of coastal zone management plans and ensure that they are not managed in isolation from other habitats and communities in these areas.  
(ACTION: DOE, EHS)

## **5.2 Site safeguard and management**

- 5.2.1 By 2006, determine the extent and quality of the coastal vegetated shingle resource which falls within protected areas and notify further sites, if required, to fill significant gaps. In particular, ensure that there is adequate representation of the full range of variation in coastal vegetated shingle communities found around Northern Ireland.  
(ACTION: EHS)
- 5.2.2 By 2005, identify vegetated shingle that have been damaged or degraded by, for example, coastal defences, drainage schemes, recreation, tourism development, agricultural management, land reclamation, and invasive species.  
(ACTION: EHS)
- 5.2.3 By 2006, prioritise areas, timescales and targets, based on designation status and restoration potential, for the conservation, improvement and expansion of coastal vegetated shingle.  
(ACTION: EHS, DARD)
- 5.2.4 By 2006, where feasible, initiate remedial action to restore damaged or degraded shingle.  
(ACTION: EHS)
- 5.2.5 By 2006, produce conservation objectives for all statutory sites that incorporate coastal vegetated shingle habitats ensuring that the objectives do not conflict with the requirements of vegetated shingle.  
(ACTION: EHS)
- 5.2.6 By 2006, establish uptake and management agreements including MOSS, with landowners and occupiers on statutory designated sites aimed at creating or maintaining favourable condition of vegetated shingle.  
(ACTION: EHS, DARD, District Councils)
- 5.2.7 By 2008, encourage golf course management policies and practices which are sympathetic to the flora and fauna of coastal ecosystems.  
(ACTION: EHS, District Councils)
- 5.2.8 By 2008, encourage the increased use of soft e.g. foreshore recharge, rather than hard engineering techniques where some degree of coastal stabilisation is essential.  
(ACTION: DARD, DOE, District Councils)

## **5.3 Advisory**

- 5.3.1 By 2006, provide information to landowners on the conservation and importance of vegetated shingle habitat through production, promotion and dissemination of literature.  
(ACTION: EHS, DARD)

- 5.3.2 By 2006, make use of the potential provided by coastal partnerships in taking forward the actions of this plan.  
(ACTION: EHS, District Councils)
- 5.3.3 By 2006, develop guidelines that identify those circumstances under which degraded vegetated shingle restoration should be encouraged.  
(ACTION: EHS, DARD)
- 5.3.4 By 2007, develop and promote awareness and training programmes on the conservation, management and restoration of vegetated shingle through key organisations/individuals involved in the delivery of advice to farmers and land managers.  
(ACTION: EHS, DARD)
- 5.3.5 By 2007, promote and develop demonstration sites for the management and creation of vegetated shingle.  
(ACTION: EHS, DARD)
- 5.3.6 By 2006, encourage applications from potential partners to obtain funding to bring vegetated shingle habitat into favourable management.  
(ACTION: EHS, DARD, District Councils)

#### **5.4 International**

- 5.4.1 Further develop links with Great Britain, the Republic of Ireland and other European and international organisations and programmes such as the European Environment Agency and the European Centre for Nature Conservation, to promote the exchange of information and experience in research, management techniques, education and conservation strategies.  
(ACTION: EHS)
- 5.4.2 Liaise with research institutes in Europe and elsewhere to exchange data and information on the conservation of vegetated shingle.  
(ACTION: EHS)

#### **5.5 Monitoring and research**

- 5.5.1 Assess and report on the need for research on the impacts of natural and anthropogenic impacts on coastal dynamics in relation to vegetated shingle.  
(ACTION: EHS)
- 5.5.2 By 2006, initiate an assessment of land management practices on vegetated shingle, including grazing.  
(ACTION: EHS)

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- 5.5.3 By 2005, set standards for assessing favourable condition of vegetated shingle throughout Northern Ireland.  
(ACTION: EHS).
- 5.5.4 By 2006, compile an inventory of all vegetated single in Northern Ireland.  
(ACTION: EHS)
- 5.5.5 By 2007, prioritise those sites which are suitable for improving condition, for restoration and for enhancement.  
(ACTION: EHS)
- 5.5.6 By 2006, carry out an assessment of how the conservation interest of vegetated shingle may be affected by climate change and pollution and promote research needs accordingly.  
(ACTION: EHS)
- 5.5.7 By 2008, commission a study to identify possible coastal and sea defence strategies that may be more sympathetic to the nature conservation interests of vegetated shingle, and identify stretches of coastline where such sympathetic modifications are feasible.  
(ACTION: DOE, EHS)
- 5.5.8 By 2006, ensure that all relevant information gathered in surveys is passed to the Centre for Environmental Data and Recording (CEDaR) based at Ulster Museum and to other relevant centres. Encourage access to, and exchange of these records by contributing to the National Biodiversity Network.  
(ACTION: EHS)
- 5.5.9 By 2007, initiate monitoring programmes to establish the effectiveness of government funded schemes and management methods in achieving the targets of this plan.  
(ACTION: EHS, DARD)
- 5.5.10 By 2010, monitor coastal vegetated shingle restoration sites so that management resources can be focused on areas most likely to show a positive response.  
(ACTION: EHS)
- 5.5.11 By 2007, assess the likely medium to long-term demand for offshore sediment in order to maintain the current vegetated shingle structures and their associated habitats.  
(ACTION: DOE, DRD, CEC)
- 5.5.12 By 2006, set in place a reporting and monitoring structure to encourage progress towards the delivery of the targets and the completion of actions identified in this plan.  
(ACTION: EHS)

## **5.6 Communications and publicity**

- 5.6.1 By 2006, raise public awareness of vegetated shingle and its value for a variety of interests including coastal processes, flood defence, fisheries, nature conservation, amenity and recreation.  
(ACTION: EHS)
- 5.6.2 By 2005, devise a strategy for ensuring effective distribution of existing advisory material to managers and farmers and if gaps are identified, produce and disseminate appropriate material to fill these.  
(ACTION: EHS, DARD)
- 5.6.3 By 2006, promote the conservation of vegetated shingle through the scientific press and popular media.  
(ACTION: EHS, DARD)
- 5.6.4 By 2008, facilitate production of a simple web-site, an attractive booklet and CD-ROM for the public and schools which explains the conservation importance of vegetated shingle in Northern Ireland.  
(ACTION: EHS, Department of Education, DARD)
- 5.6.5 By 2008, implement at appropriate venues such as the Ulster Museum, the Exploris Aquarium and coastal EHS Countryside Centres, 'flagship' programmes for achieving education, increased public awareness and appreciation of vegetated shingle in Northern Ireland  
(ACTION: EHS)

## **6. Costings**

- 6.1 A table showing the global costs for this and other HAPs is available on the EHS/Biodiversity web page.

## **7. References**

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**List of Useful Acronyms**

ASSI	Area of Special Scientific Interest
BAP	Biodiversity Action Plan
CEDaR	Centre for Environmental Data and Recording
CMD	Countryside Management Division
CMS	Countryside Management Scheme
DARD	Department of Agricultural and Rural Development
DCAL	Department of Culture, Arts and Leisure
DETI	Department of Enterprise, Trade and Industry
DOE	Department of the Environment
DRD	Department for Regional Development
EHS	Environment and Heritage Service
ESA	Environmentally Sensitive Area
ESCRs	Earth Science Conservation Review Site
HAP	Habitat Action Plan
JNCC	Joint Nature Conservation Committee
MAGNI	The National Museums and Galleries of Northern Ireland
NIBG	Northern Ireland Biodiversity Group
NICS	Northern Ireland Countryside Survey
NNR	National Nature Reserve
PPG	Planning Policy Guideline
PPS	Planning Policy Statement
RA	Rivers Agency
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SLNCI	Sites of Local Nature Conservation Importance
SoCC	Species of Conservation Concern
SPA	Special Protection Area
WFD	Water Framework Directive
WWT	Wildfowl and Wetlands Trust