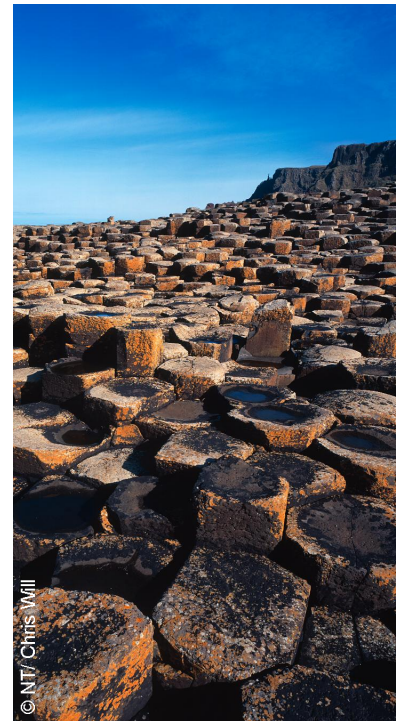


**Environment and Heritage Service
National Trust
Moyle District Council**

**GIANT'S CAUSEWAY AND CAUSEWAY COAST
WORLD HERITAGE SITE**



MANAGEMENT PLAN

Final Draft

January 2005

CONTENTS

PREFACE

ACKNOWLEDGEMENTS

1.0 INTRODUCTION

1.1 World Heritage Sites

1.2 The Need for a WHS Management Plan

1.3 Status of the WHS Management Plan

1.4 Preparation of the WHS Management Plan

1.5 Structure of the WHS Management Plan

1.6 Definition of Terms

2.0 SITE DESCRIPTION

2.1 Location and Extent

2.2 Description of the Site

2.3 The Socio-Economic Context and Tourism at the Site

2.4 Setting of the Site

2.5 Site Zones

3.0 OWNERSHIP, MANAGEMENT AND PLANNING

3.1 Ownership of the Site

3.2 Agencies with an Interest in the Site

3.3 Agencies with a Planning Function or Role

3.4 Policies and Plans Affecting the Site

4.0 JUSTIFICATION FOR INSCRIPTION AND STATEMENT OF VALUES

4.1 Introduction

4.2 Justification for Inscription and Criteria

4.3 Statement of Outstanding Universal Value

4.4 Statement of Other Values

5.0 MANAGEMENT PRINCIPLES, ISSUES AND OBJECTIVES

5.1 Introduction

5.2 Management Principles

5.3 Management of the Site

5.4 Conservation Values of the Site

5.5 Socio-Economic Context

5.6 Visitor Management and Experience

5.7 Setting of the Site

5.8 Site Boundary

6.0 VISION AND ACTION PLAN (2005-2011)

6.1 Introduction

6.2 Vision for Giant's Causeway WHS (2005 to 2011)

6.3 Strategy for the Implementation of the WHS Management Plan

6.4 Reviewing the WHS Management Plan

6.5 Action Plan

BIBLIOGRAPHY

APPENDIX A: FULL LIST OF STEERING GROUP

APPENDIX B: SUMMARY OF PUBLIC CONSULTATION PROCESS

APPENDIX C: REFERENCE POINTS FOR THE SITE

APPENDIX D: MONITORING

FIGURES:

2.1 General Site Location

2.2 Site Boundary

2.3 Extent of Site as shown in Nomination Document

2.4 Key Features on the Site

2.5 Designations within and around Site

2.6 Setting of the Site

2.7 Site Zones

6.1 Proposed WHS Management Structure and Information/Communication Flows

PREFACE

This Management Plan for the Giant's Causeway and Causeway Coast World Heritage Site was commissioned by the Environment and Heritage Service of the Department of the Environment on behalf of its partner organisations, the National Trust and Moyle District Council. It forms one strand of the Ministerial initiative announced in April 2003 by Northern Ireland Office Ministers Ian Pearson MP and Angela Smith MP. The two other strands of the initiative are:

- a Tourism Masterplan for the Causeway Coast and Glens area (published by the Department of Enterprise, Trade and Investment (DETI) in April 2004), and
- an international competition for a replacement visitor centre (to be launched by DETI in 2005).

Officials from UNESCO (the body responsible for the designation of World Heritage Sites) and IUCN (International Union for the Conservation of Nature) undertook a mission to the Giant's Causeway in February 2003. Subsequently, its World Heritage Committee requested the UK authorities to submit a Management Plan to the World Heritage Centre by February 2005.

The Management Plan addresses the conservation requirements of the site and the needs of the visitor, both in terms of access and information. It establishes a vision for the site and five underlying principles that will serve to guide its protection, management and enjoyment for many years to come. It thus provides an important context for the proposed new visitor centre. Looking ahead, it proposes a new structure to ensure that the site is managed in a unified manner and that the Management Plan is implemented effectively.

The Management Plan is not a statutory document. It does not include planning policies for either the World Heritage Site itself or for its wider setting. These policies will be contained within the Department of the Environment's Draft Northern Area Plan, to be published in 2005, and will be subject to public consultation and, in all probability, public inquiry through a separate process. The formal recognition of the setting through this statutory process will replace the interim 4km zone in which all proposals for development are carefully scrutinised by the Department's Planning Service and its advisers.

The resources to implement the Management Plan will have to come from a variety of sources. A partnership approach will be required to realise its speedy and full implementation. Through endorsing this Plan, the Site's owners, Government and other key stakeholders are signalling a continued commitment to investment at the Giant's Causeway.

We are confident that the Management Plan provides a sound basis for the future management of the World Heritage Site, and will serve as the foundation for a more effective and cohesive approach through involving and respecting the individual roles and responsibilities of the various stakeholders.

Environment and Heritage Service
January 2005

ACKNOWLEDGEMENTS

The WHS Management Plan was prepared by Chris Blandford Associates (CBA) in discussion with and on behalf of the WHS Management Plan Steering Group, which included the key stakeholders with an interest in the management of the Site. A full list of the Steering Group can be found in Appendix A.

The CBA team comprised:

Chris Blandford - Project Director

Andrew Croft - Project Manager

Marian Cameron - Environmental Planner

CBA was advised by a number of specialists including Bernard Smith, Queens University, Belfast, The Tourism Company, Spouncer Associates, the Countryside Consultancy, and CONSARC.



© NT/Chris Will

1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 World Heritage Sites

The Concept of World Heritage

- 1.1.1 The World Heritage Convention was adopted by the General Conference of UNESCO at its seventeenth session in November 1972 and introduced the concept of ‘*Outstanding Universal Value*’ and the need to preserve such value as part of the world heritage of mankind as a whole. It imposed the duty on the World Heritage Committee of establishing a *World Heritage List* of properties forming part of the cultural and natural heritage which it considers as having Outstanding Universal Value in terms of such criteria as it has established.
- 1.1.2 The Convention came into force in 1974 and the United Kingdom ratified it in 1984. In July 2004, there were 179 Contracting Parties to the Convention and the World Heritage List contained 788 Sites in 134 countries, of which 611 are cultural, 154 natural and 23 mixed sites.
- 1.1.3 The Giant’s Causeway and Causeway Coast World Heritage Site was inscribed on the World Heritage List in 1986 as a natural site under criteria (i) and (iii) in recognition of its geological and geomorphological values, its history of scientific study and its exceptional landscape values (the criteria are presented in full in section 4.2).

The United Kingdom and World Heritage

- 1.1.4 The United Kingdom (UK) Government ratified the World Heritage Convention in 1984 and submitted its first nominations in 1985. The Department for Culture, Media and Sport (DCMS) is responsible for the UK’s general compliance with the Convention. Twenty-six cultural and natural heritage sites have been inscribed on the World Heritage List in the UK and its overseas territories: sixteen of these are in England, four in Scotland, two in Wales, one in Northern Ireland and three in the UK’s Overseas Territories and Crown Dependencies. There are two World Heritage Sites in the Republic of Ireland.

1.2 The Need for a WHS Management Plan

UNESCO requirements

- 1.2.1 The Operational Guidelines issued by the World Heritage Committee strongly recommend that all State Parties have management frameworks and adequate legal protection for securing the long-term conservation of WH Sites. Though the Operational Guidelines do not actually specify Management Plans, the creation of WHS Management Plans has been the response of several governments, including the UK, to the more general management requirements of the Operational Guidelines.
- 1.2.2 In addition, all European and North American WH Sites inscribed prior to 1997 are subject to the current round of Periodic Reporting to UNESCO, which needs to be completed by 2005/6. Periodic Reporting takes the form of a report submitted by each of the State Parties that covers a number of key questions, including the application of the World Heritage Convention by the State Party, and the state of conservation of individual World Heritage Sites. As part of the Periodic Reporting for each site, the State Party needs to report on the management arrangements and plans for the sites compared to the situation at the time of inscription.

National Policy

- 1.2.3 As an early nomination in 1986, the Giant's Causeway and Causeway Coast WHS was not required to prepare a Management Plan at the time of nomination. However, it is now Government policy that all UK sites have a management plan in order to fulfil our obligations under the Convention.

The Local Context

- 1.2.4 The need for a WHS Management Plan stems not only from international guidance and UK Government policy but also from the situation at the Site. The production of a WHS Management Plan has been a long-standing aspiration of the various organisations that have an interest in the conservation, management and development of the Site and its visitor facilities. Most of these organisations are represented on the WHS Management Plan Steering Group. The Steering Group recognises that to achieve the World Heritage Convention's aims of sustaining the Outstanding Universal Value of World Heritage Sites,

there is a need to develop a coordinated and consensual framework for the long-term management of the Site.

1.3 Status of the WHS Management Plan

- 1.3.1 Within Northern Ireland, as in the rest of the UK, World Heritage Sites are not statutory designations and their Management Plans have no statutory basis but are implemented within the context of a hierarchy of local, regional, national and international policies. The WHS Management Plan provides an agreed framework for the sustainable management of the Site and will help guide current and future action on and around the Site. Achieving a sustainable future for the Giant's Causeway and Causeway Coast WHS depends on those supporting the WHS Management Plan working effectively in partnership towards the agreed aims and objectives.

Other Designations on the Site

- 1.3.2 Within the boundary of the Site there are a number of other international, national and local designations that need to be fully taken into account when managing the Site. These include:
- North Antrim Coast Special Area of Conservation (SAC);
 - Giant's Causeway National Nature Reserve (NNR);
 - Causeway Coast Area of Outstanding Natural Beauty (AONB);
 - Giant's Causeway and Dunseverick Area of Special Scientific Interest (ASSI);
 - Antrim Coast, Glens and Rathlin Environmentally Sensitive Areas (ESA); and
 - The *Girona* Historic Wreck Site (HWS).

Other Relevant Plans and Strategies

- 1.3.3 The WHS Management Plan forms a core component of a wider framework of plans and strategies for the future management of the WHS and its environs. The other key documents in this framework include:
- Planning Policy Statement 2 (PPS2): Planning and Nature Conservation (1997);
 - Planning Policy Statement 6 (PPS6): Planning, Archaeology and the Built Heritage (1999);
 - Northern Ireland Tourist Board: Strategic Framework for Action 2004-2007

- Visitor Servicing Strategy for Northern Ireland (2004) and the supporting manual;
- Northern Ireland Landscape Character Assessment (2000) and supporting detailed assessments of Moyle and Coleraine Council areas;
- The North East Area Plan 2002 (to be succeeded by the Northern Area Plan 2016);
- Regional Development Strategy 2025 (RDS) (2001);
- Causeway Coast AONB Management Plan (2003);
- Causeway Coast and Glens Tourism Masterplan 2004-2013 (2004);
- Antrim Coast, Glens and Rathlin Environmentally Sensitive Areas (ESA) management agreements;
- North Antrim Coast SAC Draft Conservation Objectives 2003;
- The Giant's Causeway NNR Draft Management Plan (2001); and
- National Trust Property Management Plan.

1.3.4 In addition to this WHS Management Plan, the other principal management tool is the Giant's Causeway NNR Management Plan (prepared by the National Trust and currently in draft form). It contains considerable detail relating to on-site management and maintenance regimes. The WHS Management Plan provides an overarching and broader strategic management framework for the Site and does not replicate detail presented in the NNR Management Plan regarding maintenance of the Site.

Relationship to the Ministerial Initiative

1.3.5 The WHS Management Plan is a key element of a three strand Ministerial initiative announced on the 14th April 2003 by Angela Smith MP, Northern Ireland Office Minister for the Department of the Environment, and Ian Pearson MP, Northern Ireland Office Minister for the Department of Enterprise, Trade and Investment, to provide integrated visitor management at the Site. The two other strands of the initiative comprise:

- Causeway Coast and Glens Tourism Masterplan (published April 2004); and
- the international competition to design a new visitor centre and associated facilities.

1.3.6 This WHS Management Plan has been developed in close co-operation with the other strands of the Ministerial initiative. A coordinated approach between all three strands has been recognised as critical to the successful development of a sustainable tourism industry within the area.

1.4 Preparation of the WHS Management Plan

1.4.1 The WHS Management Plan has been prepared in broad accordance with the general procedures and requirements published in a number of WHS-related documents, including:

- UNESCO Operational Guidelines for the Implementation of the World Heritage Convention (1999);
- Management Guidelines for World Cultural Heritage Sites (Fielden and Jokilehto, 1998);
- UNESCO Budapest Declaration on World Heritage (2002);
- UNESCO Principles for Tourism in Natural World Heritage Sites (1993); and
- World Conservation Vision and Reality, The World Heritage Convention in Action (IUCN 2001).

1.4.2 The preparation of the WHS Management Plan has been guided by a Steering Group comprising representatives of:

- Causeway Coast & Glens Heritage Trust (CCGHT)
- Council for Nature Conservation and the Countryside (CNCC)
- Department of Enterprise, Trade & Investment (DETI)
- Environment and Heritage Service (EHS)
- Geo-Conservation Commission (GC)
- Moyle District Council (MDC)
- National Trust (NT)
- Northern Ireland Tourist Board (NITB)

1.4.3 A full list of members can be found in Appendix A.

1.4.4 Following approval by the Steering Group, a Public Consultation Draft of the WHS Management Plan was launched in September 2004. The public consultation period ran for three months from the 6th September to the 3rd December 2004. Further details regarding the consultation process are included as Appendix B.

1.5 Structure of the WHS Management Plan

1.0 Introduction

Outlines the nature and structure of the WHS Management Plan and the history of its development.

2.0 Site Description

A relatively detailed physical and historical description of the Site, its key features and its setting broadly based on the Nomination Document and other sources.

3.0 Ownership, Management and Planning

Details current ownership, management structures, designations and the planning context.

4.0 Justification for Inscription and Statement of Values

Describes the Outstanding Universal Value of the Site and Other Values at the Site.

5.0 Management Issues, Principles, and Objectives

Explores the issues facing the Site and then identifies a series of Management Principles and Objectives to guide the future strategic management of the Site.

6.0 Vision and Action Plan (2005 – 2011)

Presents a ‘Vision’ for the Site and a comprehensive Action Plan for achieving the Vision and Management Objectives.

1.6 Definition of Terms

1.6.1 The following definitions are provided to assist the reader with the use of this WHS Management Plan:

- **Causeway Stones:** The collection of three geologically significant causeways (Grand, Middle and Little) located in the centre of the *Site*.
- **Site:** The extent of the Giant’s Causeway and Causeway Coast WHS as defined in Section 2.1.
- **Setting:** The physical surroundings of the Site incorporating all four ‘setting types’ described in Section 2.4.
- **Causeway Head:** The area of land within the Site where the visitor centre and hotel are currently located.

- ***Cultural Heritage***: Includes all aspects of the archaeological resource, built heritage and historic landscape.
- ***Landscape***: An area of land and/or sea, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.



© NT/Chris Will

2.0 SITE DESCRIPTION

2.0 SITE DESCRIPTION

2.1 Location and Extent

Country

2.1.1 United Kingdom

State, Province or Region

2.1.2 County Antrim, Northern Ireland

Name of Property

2.1.3 Giant's Causeway and Causeway Coast World Heritage Site.

Site Location

2.1.4 The Site lies within the District of Moyle on the north coast of Northern Ireland (see Figure 2.1).

2.1.5 The Site extends approximately 3 kilometres from northeast to southwest and 0.5 kilometres from northwest to southeast at its widest (see Figure 2.2). The Site occupies approximately 70ha of land and encompasses a further 160ha of sea. The co-ordinates for the north-east corner of the Site in Port na Truin are 6° 29' 10" by 55° 15' 29", and in the south-west corner 6° 38' 1" by 55° 14' 23". The full Ordnance Survey grid co-ordinates of the four corners of the Site are presented along with other geo-referenced points along the seaward boundary of the Site in Appendix C.

Site Boundary

2.1.6 Figure 2.3 is the map of the Site as supplied in the original Nomination Document. This map provides an unclear representation of the Site's boundary. Figure 2.2 presents a boundary of the Site based on Figure 2.3 and the text in the Nomination Document. This boundary represents a working assumption for the purposes of this Management Plan, especially around the visitor centre on the Causeway Head and the seaward extent of the Site. This

clarified boundary extends seaward to a line c.300m offshore from the major headlands. This area of seascape provides a landscape context for the cliffs and Site in general.

2.1.7 The Site therefore encompasses the following elements:

- the cliffs and causeways that represent part of the Outstanding Universal Value of the Site;
- an area of sea to provide a context for the land-based elements of the Site and reinforce the landscape values of the Site;
- the current visitor facilities, including the visitor centre, retail outlets, car park and access road;
- the Causeway Hotel; and
- the *Girona* historic wreck site.

2.2 Description of the Site

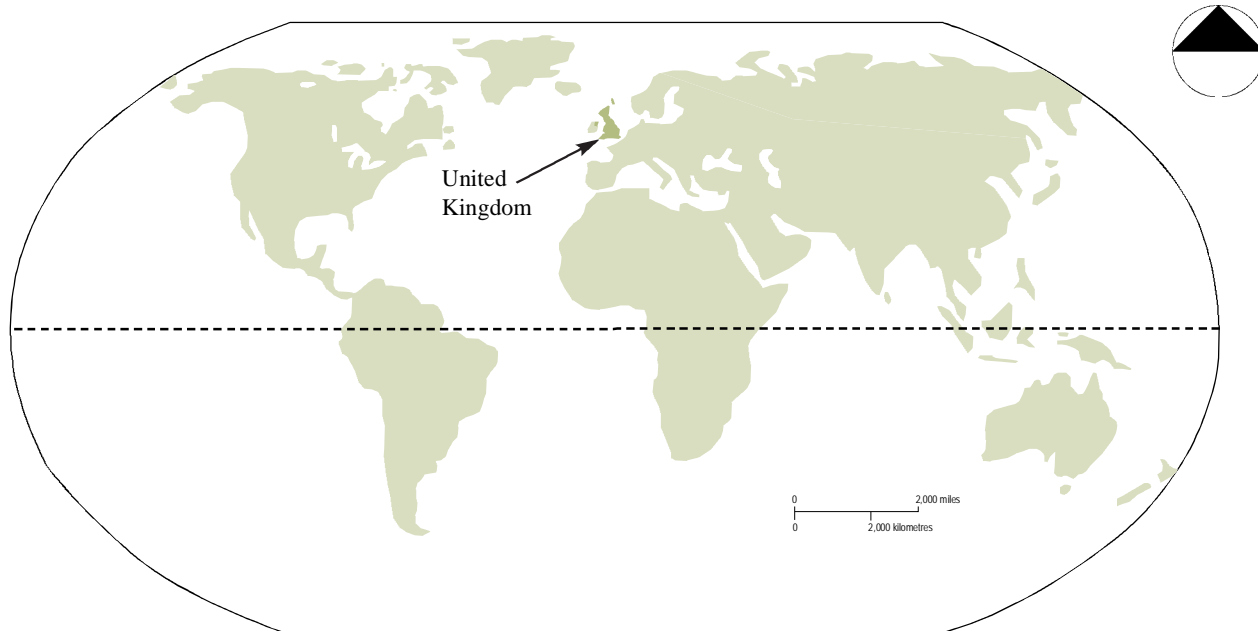
Introduction

2.2.1 The Giant's Causeway and Causeway Coast WHS lies on the North Antrim Coast within an area of a spectacular, dynamic coastal landscape of Atlantic waves, rugged cliffs, unparalleled geological formations, secluded bays and magnificent views. This section describes the many physical attributes of the Site. Figure 2.4 shows the location of some of the key features referred to in the text, Figure 2.5 shows the extent of designations within and around the Site.

Geology and Geomorphology

Key Designations

- Giant's Causeway and Causeway Coast World Heritage Site (WHS)
- Giant's Causeway National Nature Reserve (NNR)
- Giant's Causeway and Dunseverick Area of Special Scientific Interest (ASSI)



The World - Highlighting the United Kingdom



Northern Ireland - Highlighting Giant's Causeway and Causeway Coast WHS



Giant's Causeway and Causeway Coast WHS

Based on the Ordnance Survey of Northern Ireland with the permission of the Director and Chief Director. © Crown Copyright.

H:\QTECH\11093701\Quark files\11093701 Fig 2-1.qxd

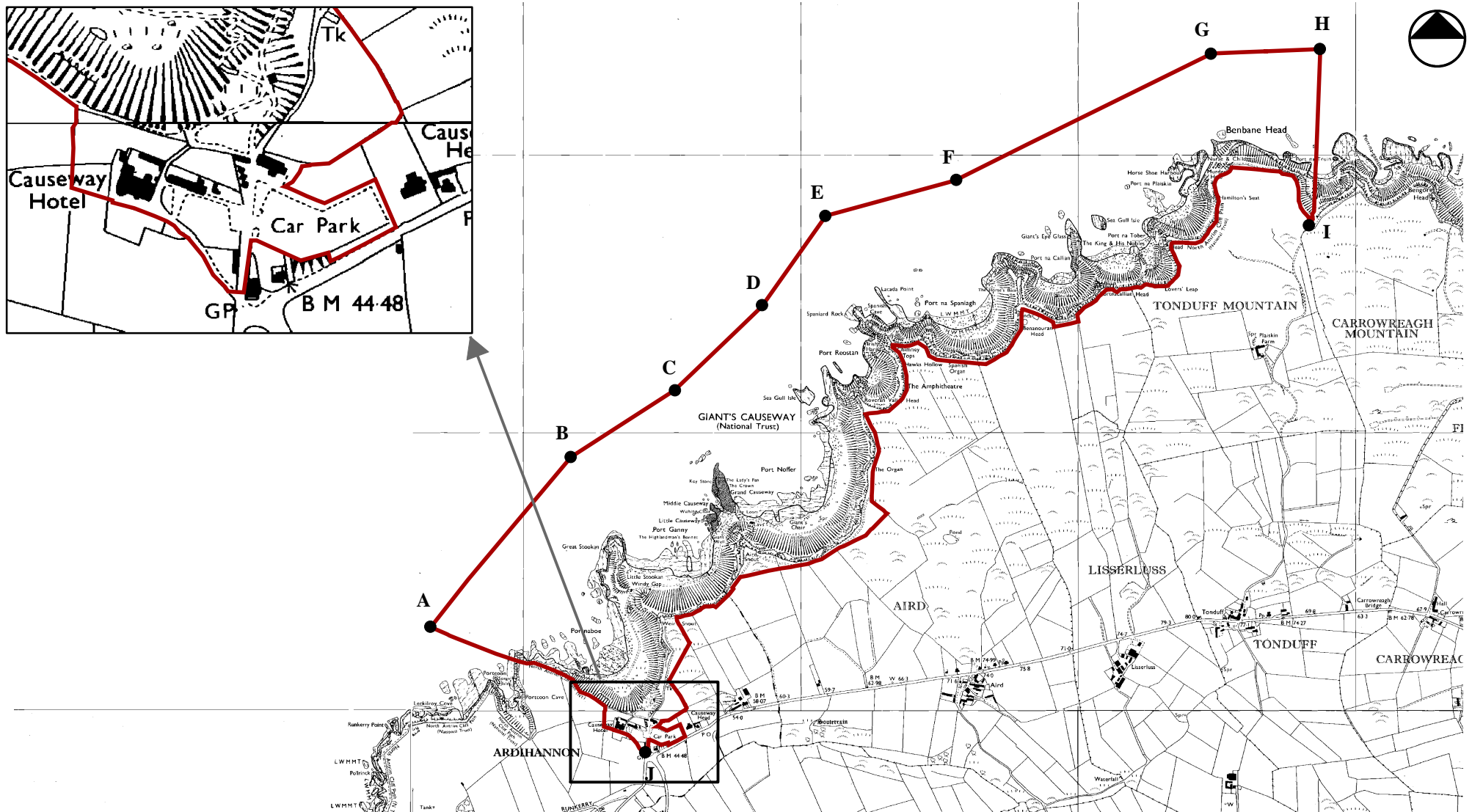


CHRIS BLANDFORD ASSOCIATES
www.cba.uk.net

January 2004

GIANT'S CAUSEWAY AND CAUSEWAY COAST WHS MANAGEMENT PLAN

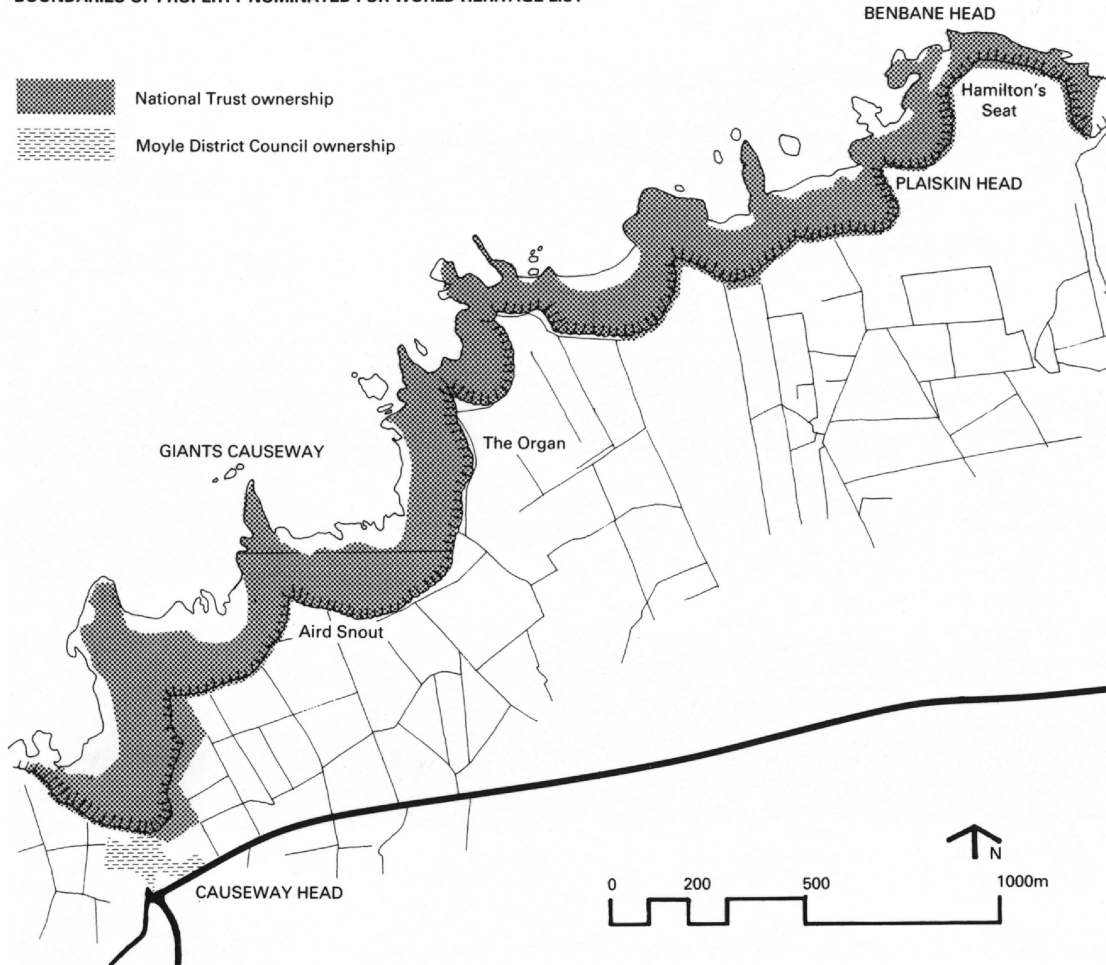
FIGURE 2.1
General Site Location



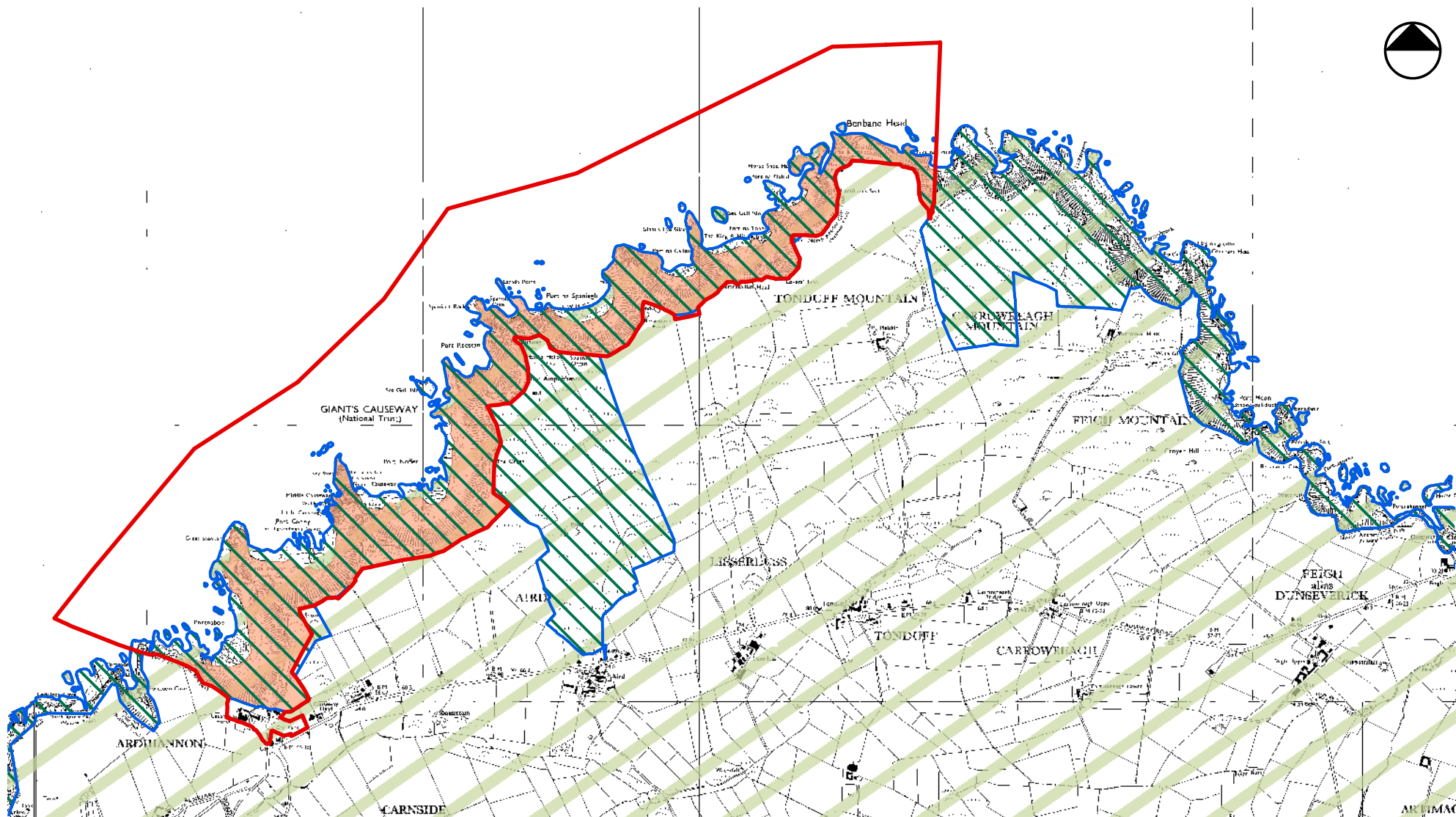
Key

- █ Site Boundary
- Georeferenced points as defined in Appendix 2

BOUNDARIES OF PROPERTY NOMINATED FOR WORLD HERITAGE LIST



Based on the Ordnance Survey of Northern Ireland with the permission of the Director and Chief Director, © Department of the Environment for Northern Ireland 1985



Key

 Site Boundary

 Area of Special Scientific Interest (ASSI)

 Area of Outstanding Natural Beauty (AONB) and Environmentally Sensitive Area (ESA)

 National Nature Reserve (NNR)

 Candidate Special Area of Conservation (cSAC)

0 250 500m



CHRIS BLANDFORD ASSOCIATES
www.cba.uk.net

January 2005

GIANT'S CAUSEWAY AND CAUSEWAY COAST WHS MANAGEMENT PLAN

FIGURE 2.5

Designations within
and around Site

Geological Formation Processes

- 2.2.2 The formation of the Causeway Coast began about 62 million years ago with an episode of extensive volcanic activity linked to the opening up of what is now the North Atlantic. The period was dominated by multiple flows of basalt lavas. The total area of these flows is now much reduced compared to their original extent, but they still constitute, at 3,800 km², Europe's most extensive lava field. Traditionally the lavas of the Antrim Lava Group in the area of the Site have been divided into three main phases of activity, separated by two extended periods of limited local activity. During these intervening periods, the upper surfaces of the preceding flows were exposed to wet sub-tropical climatic conditions and associated weathering. The results of these conditions appear as two, largely red coloured, Interbasaltic Beds separating the Lower, Middle and Upper Basalts. The exposed landscape of the Site is cut into the Lower and Middle Basalts and the lower of the two Interbasaltic Beds.

The Lower Basalts

- 2.2.3 The Lower Basalts are a series of up to 11 complex, olivine-rich flows. The flows consist of a thin basal vesicular layer, a compact middle layer and a thick vesicular top and are frequently filled with zeolites or calcite with chalcedony found less frequently. Individual flows are on average 7m thick, and can be separated by layers of consolidated and weathered wind blown dust or by narrow layers of weathered basalt with a thin lignite deposit.

The Lower Interbasaltic Bed (Port na Spaniagh Laterite)

- 2.2.4 The Lower Interbasaltic Bed was formed by deep weathering of the uppermost flow of the Lower Basalt, possibly aided by the circulation of hot groundwater, to produce a total thickness of some 15m of weathered material. This can be best seen in the cliffs to the east of the Causeway Stones. Along the Causeway Coast, incomplete decomposition has resulted in a mix of ferruginous, lateritic material, predominantly red in colour and rich in iron and aluminium, and a grey/green lithomarge that is richer in silica. Within the Interbasaltic Bed (for example below Roveran Valley Head) it is possible to find *in situ* rounded corestones of partially weathered basalt blocks (known locally as 'Giant's Eyes').
- 2.2.5 The formation of the Interbasaltic Bed was accompanied by significant fluvial erosion, which produced an extensive drainage network flowing in sometimes deep valleys. The margins of the valley around the Causeway Stones are defined by the outcrops of

interbasaltic material on the eastern side of Port Noffer and at the side of the road just below the existing visitor centre, and its form is indicated by the gradual dip of the Lower Basalts to below sea level between these two points. It was into this valley that the lava of the Middle Basalts flowed, which was ultimately to be exposed millions of years later as the Causeway Stones.

Middle Basalts (Causeway Tholeiite Member)

- 2.2.6 The Middle Basalts are a series of thick, fine-grained, tholeiitic (olivine-poor) lavas that average c. 18m in thickness, though they can be as much as 30m thick, and together exceed over 150m in depth. The most striking feature of these basalts is the distinctive structural characteristics of individual flows. Each lava sequence is seen to comprise a ‘*colonnade*’ of regular vertical columns, capped by an ‘*entablature*’ of narrower, more irregular and often curved columns.
- 2.2.7 These columns derive in part from the thickness of individual lava flows which were allowed to pond in river valleys that had formed in the Lower Basalt landscape. The cooling of these thick lava flows led to the development of a complex set of cooling points forming spectacular and often very regular columns. The formation of the more irregular often-curved columns at the top of the sequence is thought to relate to the inundation of the cooling lava flow by water from river drainage in the area displaced during the eruption. These columns grew downwards from the flow surface and take a number of inclinations and orientations related to the topography of the former landscape. In contrast the more regular, largely vertical columns are thought to have grown upwards from the base of the flow.

Causeway Stones: The Grand, Middle and Little Causeways

- 2.2.8 The Grand, Middle and Little Causeways were carved by the sea from the lowest colonnade of the Middle Basalts between Port Ganny and Port Noffer. Together, they are made up of approximately 40,000 vertical or gently inclined columns. The majority of these are five, six or seven sided, with a few that are four or eight sided. As at the Organ, ball-and-socket joints divide the columns horizontally and many comprise stacks of interlocking polygonal slabs some 300-600 mm thick. They owe their great number and regularity to the slow cooling and gradual contraction that took place at the base of the large mass of basalt.

Slope Failures

- 2.2.9 The form of the cliffs and slopes in this area of the Causeway Coast are highly dependent upon the shape of the coastline, which comprises a series of bays and headlands. Headlands represent zones of relative resistance to erosion due to the presence of doleritic dykes or variations in the structural characteristics of basalt lava flows. Due to active basal erosion of the bedrock, the headlands have vertical or near vertical clefts. Active removal of debris, but limited erosion of bedrock, allows slope form to adjust to underlying geological structure and produces stepped cliffs. Impeded basal removal may result in accumulation of screes, which eventually mask the cliff form.
- 2.2.10 Where headlands create wave refraction, wave energy concentrates along their flanks causing active basal erosion and removal of cliff foot debris. This can result in the pinching in of the headlands and may lead to the formation of an arch through the headland that could, in time, collapse leaving a stack and wave cut platform. In addition, major mass movements are also likely to occur. Continual basal erosion will ultimately lead to the undermining and collapse of the lower basalt which also increases the slope angle. Once undermined, the Causeway Tholeiite Member is prone to falling or toppling, depending upon its structure. In addition, the oversteepening of the cliff may increase local stress to the point where a rotational failure and subsequent collapse occurs. Often, collapse of an individual block or column can trigger release of surrounding material and consequently cause a considerable area of cliff to fall. There is a continual leakage of basalt debris from cliff faces onto the scree slopes and wave-cut platforms, interspersed with occasional concentrated falls of larger volumes of cliff material.

Landscape

Key Designations

- Giant's Causeway and Causeway Coast World Heritage Site (WHS)
 - Causeway Coast Area of Outstanding Natural Beauty (AONB)
 - Antrim Coast, Glens and Rathlin Environmentally Sensitive Area (ESA)
- 2.2.11 The Giant's Causeway and Causeway Coast WHS is situated within the Causeway Plateau Landscape Character Area (LCA) as defined in the Causeway Coast AONB Management Plan (EHS 2003). The AONB was designated in 1989, giving statutory recognition to the landscape of the North Antrim coastline between Ballycastle and Portrush. The Site, apart

from Zone 5, is also within the Antrim Coast, Glens and Rathlin Environmentally Sensitive Area (ESA).

Current Landscape Character of the Site

- 2.2.12 The AONB Management Plan describes the landscape character of the Site and its setting. The Site is on the edge of an *'elevated and open plateau, rising gently up to the coast, with dramatic cliffs plunging down to sea level'*. The cliffs form a distinctive *'crenulated coastline, with numerous small rocky bays and small islands'*. The landward boundary of the Site and the setting of the Site (see Section 2.4) lies within an area of mixed farming, with regular shaped fields divided by hedgerows and post and wire fences.

'The cliffs and formations of the Giant's Causeway provoke a very strong reaction. The vast scale, beauty and rarity of the Causeway Coast creates a sense of wonder and is quite breathtaking. The wild character of the coastline adds to the drama of views and sense of the splendour of nature. From the cliff path there are panoramic views out to the sea and inland'. (EHS 2003).

- 2.2.13 The coastline of the Site is composed of a series of bays and headlands with many offshore islands and an extensive wave-cut platform covered by large boulders. These features owe their presence to the occurrence of olivine and tholeiite dykes that cut vertically through the rock layers creating the pattern of variable resistance to erosion along the coast.
- 2.2.14 As indicated by Carter (1991), much of the coastal scenery of the Site dates from the end of the last glaciation (around 25-17,000 years ago) when at various times, ice would have covered and surrounded the cliffs, with the North Channel filled with pack ice. Ice sculptured forms were later modified by periglacial processes; in particular by frost action, where water entered cracks, freezing, expanding and splitting them to produce angular debris that accumulated as scree within many of the protected embayments. These processes continue to some degree today in conjunction with active marine erosion and the ongoing collapse and movement of the cliffs.
- 2.2.15 At the base of the headlands where there is concentrated wave attack, basal erosion and removal of cliff foot debris, the cliffs tend to be steeper. Consequently, as most of the active marine erosion occurs on the sides of the headland, these cliffs tend to be more vertical. In particular, the gentler slopes associated with the interbasaltic bed are steepened and in places

disappear altogether to leave a vertical cliff. These steep cliffs form a key aspect of the landscape character of the Site.

- 2.2.16 Along the cliff tops there is a valuable area of coastal heath supporting a rich and diverse vegetation dominated by gorse. Further inland the heath is succeeded by a mixture of arable and pastoral farming that creates a patchwork landscape pattern extending several miles inland into the surrounding countryside (see Section 2.4). It forms an open and exposed landscape with low vegetation with little species diversity. The fields on the Causeway Plateau are generally regular in shape and medium in scale. Traditionally, low and well trimmed blackthorn or gorse hedges would have divided them, but post and wire fencing has now largely replaced these.

Land-use on the Site

- 2.2.17 Existing land-use regimes vary across the zones within the Site (the zones are mapped and outlined in Section 2.5 and on Figure 2.7). The land-use regimes reflect the varied landform and features present in each zone. The dominating land-use in Zones 1 and 2 is recreation and leisure activities associated with visitors. Zone 1 has the highest density of visitors within the Site, especially around the Causeway Head and at the Causeway Stones.
- 2.2.18 The dominant land-use changes further away from the Causeway Head. Here, lower densities of visitors allow for agricultural practices, predominantly grazing. This type of land-use dominates Zones 3 and 4.
- 2.2.19 The offshore waters in Zone 5, are used for fishing, lobster potting and recreational use in the form of sailing and general boating. There are limited boat trips operated by the National Trust and private operators provide opportunities for visitors to view the Site and its surroundings from the sea.

Ecology

Key Designations

- North Antrim Coast Special Area of Conservation (SAC)
- Giant's Causeway National Nature Reserve (NNR)
- Giant's Causeway and Dunseverick Area of Special Scientific Interest (ASSI)
- Antrim Coast, Glens and Rathlin Environmentally Sensitive Area (ESA)

Habitats and Species

- 2.2.20 The geological structures that form the Site and its surrounding coast have provided a range of conditions that have led to the development of the different ecosystems found on the Site. Although important within the context of the Site, the ecological values do not form part of its Outstanding Universal Value (see Section 4.0).
- 2.2.21 The cliffs and cliff tops of the WHS include patches of heath, flushes, slips and screes, rock exposure with lichen cover and ledge/crevice flora. Scree is widespread, varying from species-poor block fields, to more diverse types comprising smaller grade rock. The large extent of unimproved grassland is particularly notable and includes a good range of maritime and non-maritime species. There are good examples of sub-maritime grasslands rich in primrose and wood anemone. The presence of stands of greater woodrush *Luzula sylvatica*, sea spleenwort *Asplenium marinum* and thyme broomrape *Orbanche alba* on the cliffs, rock sea-lavender *Limonium binervosum* on the rocky platforms between Port na Spaniagh and Port na Callian and Wilson's filmy-fern *Hymenophyllum willsonii*, found among areas of *Sphagnum capillifolium*, also adds to the ecological interest of the Site.
- 2.2.22 Saltmarsh is restricted to the more sheltered bays, occurring both in perched (fed by sea spray) and inundated situations. It is most extensive in Port Noffer where it grades backwards to non-brackish marsh and fen dominated by saltmarsh rush *Juncus gerardii*. Saltmarsh flat-sedge *Blismus rufus* is locally common within the marsh. Unvegetated creeks dissect the saltmarsh and there are some patches of red fescue *Festuca rubra* dominated grassland. At the southern end of Port Noffer the saltmarsh grades back into an area of sedge fen dominated by brown sedge *Carex disticha* and meadowsweet *Filipendula ulmaria*.
- 2.2.23 The strandline is particularly notable for the presence of oysterplant *Mertensia maritima* and Scot's Lovage *Ligusticum scoticum*.
- 2.2.24 The basalt bedrock on the cliff-top, and particularly the areas at Weir's Snout, Aird Snout and to the northeast generates base-rich but acidic soils, resulting in interesting mixtures of calcicole and calcifuge plant species. The heaths are herb-rich and include a wide range of species.
- 2.2.25 The intertidal area is dominated by bedrock with wave-cut platforms often reaching substantial widths. A seaweed community dominated by oarweed *Laminaria digitata* and dabberlocks *Alaria esculenta* has colonised this area, while shallower mid-shore areas are

frequently encrusted with coralline seaweed, which typifies the lower shores. The upper and mid-shore rock pools are often deep, with a range of green algae *Chlorophycota spp.*, bladder wracks *Furoid spp.* and kelp *Laminaria spp.* present. The common limpet *Patella vulgata* and barnacles *Cirripedia spp.* often dominate many of the most exposed rocks along the mid-shore sections.

- 2.2.26 The sub-tidal ecosystem of the Site is dependent on the extensive wave-cut platform and the geological structure of the underlying topography of the area. The variation in types of habitats found below mean low water mark has encouraged the development of a diverse ecosystem and feeding grounds for birds and mammals. Further from the shore, the rocks are succeeded by sand creating habitats for lobsters *Homarus gammarus* and fish and thus provide potential feeding grounds for seals *Phoca spp.*
- 2.2.27 The Site is also important for breeding and wintering birds. The most notable species breeding on the site is the chough *Pyrrhocorax pyrrhocorax*. This is their only breeding site in Northern Ireland. Other species that breed on the Site include peregrine falcons *Falco peregrinus*, raven *Corvus corax*, buzzards *Buteo buteo*, twite *Carduelis flavirostris*, reed bunting *Emberiza schoerichus*, shags *Phalacrocorax aristotelis*, fulmar *Fulmarus glacialis* and black guillemot *Cephus grille*. In the sheltered bays below the cliffs are feeding eider ducks *Somateria mollissima* and oyster catchers *Haematopus ostralegus*.
- 2.2.28 The Site supports a rich and diverse invertebrate assemblage with a number of notable species including snails *Gastropodae spp.*, narrow mouth whorl snail *Vertigo angustior*, craneflies *Tipulidae spp.* and weevils *Curculionidae spp.*. Mammals are also well represented with Irish hare *Lepus timidus*, Irish stoat *Mustela erminea hibernica*, badger *Meles meles*, fox *Vulpes vulpes*, pygmy shrew *Sorex minutes* and rabbit *Oryctolagus cuniculus* recorded within the Site.

Intangible Values and Cultural Heritage

Key Designations

- Historic Wreck Site – the *Girona*

Myth and Folklore associated with the Site

- 2.2.29 The curious appearance of the Causeway Stones has long inspired folklore, expressed in poetry, tales and music. Shepherds, fishermen and kelp gatherers, have known about the Causeway Stones for centuries. The mystery of the rock formation historically led locals to develop alternative theories about the creation of the Causeway Stones long before the geological formation of the structure came to be understood. The tourist guides then embellished and developed these stories in the late 19th and early 20th centuries. The most famous legend was that the Causeway Stones had been the work of an Irish giant, Finn MacCool (Fionn Mac Cumhail). Finn was alleged to have created the ‘Giant’s Causeway’ from Ireland to Scotland, where a similar columnar basalt formation can be found on the Isle of Staffa, in an attempt to reach his mythical Scottish rival, Benandonner.

Cultural Heritage

- 2.2.30 The Site contains a Historic Wreck Site safeguarded under the Protection of Wrecks Act 1973, the *Girona*. This wreck represents a significant period in European history. On 26 October 1588 the *Girona*, a galleass of the Spanish Armada, sank off Lacada Point, some three months after sailing from La Corunna as part of the Spanish Armada. When she sank, only five of the 1,300 men aboard survived. Robert Stenuit re-discovered the wreck in 1967 and salvaged items from the wreck including cannons, cannon balls, coins, jewellery, navigational equipment and even a set of portrait cameos. The wrecking of the *Girona* is remembered in the name of the bay close to where she sank, Port na Spaniagh.
- 2.2.31 Although there are no other designated archaeological sites within the boundaries of the Site, indications of historic human presence have been found. These take the form of place names and oral tradition. For example the little cove known as the ‘Brenther’, located within Portnaboe, probably takes its name from the Norse language, meaning ‘Steep Harbour’. Local oral history claims that Vikings camped in the bay under an upturned longboat raised on stone to provide a makeshift shelter.
- 2.2.32 Also within the WHS, the remains of some historic industrial activity survive. For example the burning of kelp is a traditional industry that has now entirely disappeared. This process produced an ash rich in alginate chemicals (soda, potash and iodine). Kelp walls used to dry the kelp survive in Portnaboe and in several bays to the east.

2.3 The Socio-Economic Context and Tourism at the Site

Socio-Economic Context

- 2.3.1 The Giant's Causeway and Causeway Coast WHS is the leading tourism attraction, in terms of visitor numbers, in Northern Ireland. As such, it is an important element of the economy for the Moyle District and the wider Causeway Coast and Glens area. It is one of the few attractions in Northern Ireland where the number of visits from overseas visitors exceeds those from local people, and because of this, the Site is particularly valuable to the Northern Ireland economy as well as having a positive local impact in terms of higher levels of spend.
- 2.3.2 Revenue from the Site is derived by Moyle District Council for the car park, the shop and the audio visual show. It is used for the maintenance of the centre and the car park, the refurbishment of exhibitions and the maintenance of other Council-owned visitor facilities within the district. The National Trust derives revenue from the bus, cafeteria and its shop and the income is used to fund visitor and environmental management and maintenance of the Site. Such income falls significantly short of meeting the full management costs.
- 2.3.3 The Site is uninhabited apart from the Causeway Hotel. Bushmills is the nearest substantial settlement to the Site and contains another of the most visited attractions in the Causeway Coast and Glens area, the Old Bushmills Distillery, with approximately 100,000 visitors per annum. Other settlements close to the Site include Portballintrae, Lisnagunogue, Dunseverick and Ballintoy. If an area is taken that includes Bushmills ward, the closest parts of Dunseverick ward (Moyle District Council area) and the closest parts of Dunluce ward (Coleraine Borough Council), there are just over 2000 people living within the ward boundaries around the Site.
- 2.3.4 Within the Moyle and Coleraine District Council wards, employment is spread across a number of key sectors rather than being reliant on one major employment type. At 19% of total employment, the most significant employment sector is retail and wholesale trade. Employment in health and social services (12%), manufacturing (12%), education (11%) and the construction trade (10%) are also significant. The hotel and catering industry is responsible for 6% of employment in the area while agriculture and forestry are responsible for 4% of employment.
- 2.3.5 The recently published Causeway Coast and Glens Tourism Masterplan (DETI 2004) provides a strategic framework for sustainable tourism within the area. This Tourism

Masterplan sets the broader strategic context for the WHS Management Plan and its contribution to the socio-economic regeneration of the wider area (2.3.10)

2.3.6 The Tourism Masterplan's Vision states that:

'The Causeway Coast and Glens area will be a 'must-see' world-class tourism destination. It will be known for its scenic beauty, its spectacular coastline and its key jewels, including the Giant's Causeway, Rathlin Island and the Glens of Antrim. It will be celebrated for its Tourist Trail, which will be on a par with the Ring of Kerry, the Pacific Drive in California and the Garden Route in South Africa.'

The area will set new standards in environmental management and sustainable tourism, while tourism interests will work closely together to create a quality visitor experience. This will ensure that the visitor encounters the best landscapes, seascapes, hospitality, culture and activity the area can offer and will allow the whole area to benefit economically and socially from the expected increase in visitor numbers over the next decade.'

Tourism at the Site

2.3.7 Travellers from other parts of Ireland, Britain and overseas have been helping to support the local economy since the late 19th century. Much of the attraction of the area for visitors is derived from its landscape and scenery. By the end of the 19th century, the Causeway Stones had become an important tourist attraction, documented in contemporary literature and visited by many famous travellers including Sir Walter Scott and William Thackeray. Portrush, 12km from the Site, was a popular Victorian seaside resort and the starting point for many visitors who travelled to the Giant's Causeway by jaunting car. Two hotels were established at this time at the Causeway Head. In 1883 the first hydro-electric tramway in the world was opened between Portrush and Bushmills and extended in 1887 to the Causeway Head.

2.3.8 From the late 19th century until 1961, when it was acquired by the National Trust, the Giant's Causeway was highly commercialised. During the summer season, visitors were harangued by curiosity sellers and by many official and unofficial guides offering boat trips and tours of the curious features, named by the local population and earlier visitors, for example the Wishing Well, the Wishing Chair, the King and his Nobles, the Giant's Loom, the Lady's Fan, the Amphitheatre, the Chimney Tops and the Harp.

- 2.3.9 Tourism in Northern Ireland has seen dramatic increases over the last decade, leading to 1,950,000 visitors to the Province in 2003, up 12% on 2002. In the same year the Causeway Coast and Glens area attracted an estimated 466,000 out-of-state staying visitors (22% of all visitor trips to Northern Ireland) (DETI, 2004). However, a large proportion of staying visitors in the Causeway Coast and Glens area are from the domestic market. On average in 2003, visitors to the Causeway Coast and Glens spent 6.2 days in Northern Ireland with an average of 3.8 days (61%) spent in the region (DETI, 2004). The number of tourist visits to Northern Ireland is predicted to increase in the future and the number of the visitors to the Site is expected to increase proportionally.
- 2.3.10 It is estimated that the Site receives over 400,000 visitors per year based on the known number of vehicles using the car park, multiplied by estimates of people per car/coach, and a percentage using public transport. However, these figures are likely to be underestimates, as they do not include the cars using the hotel car park or parking on the verges of the neighbouring roads. Visitor numbers are expected to rise significantly over the next ten years. The predicted increase in visitor numbers means that tourism is viewed as the key opportunity to generate economic benefits in the local area.

Access to the Site

- 2.3.11 Over 80% of visitors arrive at the Site by car or coach, with a small number arriving by public transport, on foot or by bicycle. Locally there are brown and white tourist signs signposting the Site from the A26 at Ballymoney and from Ballycastle. There is no signposting relative to the Causeway along the Antrim Coast Road, although it is a more picturesque route, passing a number of other visitor attractions and through the AONB. This route has been identified as a Tourist Trail and its promotion will be taken forward in the Tourism Masterplan (DETI 2004) as a key element in the development of the tourism product in the region.
- 2.3.12 At the Site itself there is a car park with a capacity of 200 cars and 13 coaches including the 60 'spillover' spaces on grasscrete between the visitor centre and the Causeway Hotel. Currently Moyle District Council manage the car park, providing vital revenue to the District Council to sustain those parts of the North Coast for which it is responsible.
- 2.3.13 There is also a regular train service from Belfast and Londonderry to Coleraine (10 miles from the Site). Portrush, 8 miles away, is the closest station to the Site. In addition there is a privately-run narrow gauge railway, the Bushmills-Causeway Railway, that runs from

Bushmills to just below the Causeway Head. There have been combined tickets introduced to encourage its use and provide a link with Bushmills Distillery.

2.3.14 The Giant's Causeway is served by four regular Ulsterbus routes, namely:

- Portrush to Ballycastle;
- Portrush to Giant's Causeway via Bushmills;
- Belfast to Coleraine via the Antrim Coast Road (Antrim Coaster - Service 252); and
- the Causeway Rambler Bus between Bushmills and Carrick-a-Rede.

2.3.15 Sustrans cycle route 93 follows the coast from Portrush to Ballycastle, passing the Site and through Bushmills. There is also a cycle route from Bushmills to the Site alongside the Bushmills-Causeway Heritage Railway. In addition, the NITB promotes a circular cycle route from Portrush, past Dunluce Castle and Portballintrae to the Causeway and on to Dunseverick Castle, returning via Bushmills.

2.3.16 The closest cycle-hire operators to the Site are in Bushmills, Ballycastle, Limavady and Cushendall. It is possible to take bicycles on trains for an additional charge, although there may be restrictions at peak times. Cycle racks are provided at the visitor centre, but there are currently no lockers for panniers or bags.

2.3.17 The Site is on the Causeway Coast Way, a 52km waymarked route that runs between Ballycastle and Portstewart. The path is also part of the 'Ulster Way' a long distance route around Northern Ireland. The NITB promotes the walk and an illustrated guide to the Causeway Coast Way (produced by the Countryside Access and Activities Network) is available from the Tourist Information Centre at Causeway Head. The Site can be accessed on foot from Portballintrae and from Bushmills along the track beside the Bushmills-Causeway Railway.

Pre-visit Information

2.3.18 The Giant's Causeway is currently marketed by Moyle District Council, the National Trust and through the Causeway Coast and Glens Ltd Regional Tourism Organisation. In addition, the NITB promotes the Site to overseas visitors. There is, however, no dedicated website to assist visitors with the planning of their visit. Information on the Site is included in: the National Trust handbook and promotional leaflet for Northern Ireland; general guide books, including *A Companion to the Causeway Coast Way*; and in publicity material from the

NITB and the Causeway Coast and Glens Ltd. In addition, many independent tour operators use images of the Causeway to promote a range of products, from cycling breaks or golfing holidays to coach tours of Ireland. There is also information available about the site at the Portrush Countryside Centre, Dunluce Centre, Ulster Museum in Belfast, Belfast Welcome Centre and the Northern Ireland Tourist Information Network.

The Visitor Centre

- 2.3.19 The current temporary visitor centre at the Site offers basic visitor facilities and information. The National Trust operates a cafeteria from March to October and a gift shop all year round. Moyle District Council has a large shop and tourist information area, which includes a Bureau de Change and accommodation booking service. Moyle District Council also operates an audio-visual display with paid entry. There is also a small number of other retail outlets at the centre.
- 2.3.20 Food can also be obtained at the Causeway Hotel and The Nook public house, both of which are close to the visitor centre complex. Accommodation is also available at the Causeway Hotel.

Visitor Access across the Site

- 2.3.21 There are facilities providing access for the disabled to and within the WHS. The National Trust offers large print guides and has a sympathetic hearing scheme. They have one wheelchair available to visitors. The buildings within the visitor centre complex, including toilets, are all suited to wheelchair access. Furthermore the bus to the Causeway Stones has a wheelchair hoist, and provides access to the Causeway Stones for visitors with mobility difficulties.
- 2.3.22 The National Trust commissions the Causeway Bus from the Ulsterbus Company to take any visitors willing to pay to the Causeway Stones from the visitor centre. The bus has proved popular with many visitors, particularly for the return journey uphill. The remainder of the Site is served by a number of loose surfaced paths of varying grade and widths, some with steps and stiles.

Visitor Safety

- 2.3.23 The Site, due to its location and geology, has a number of inherent safety risks. These include injury from falling rocks, falling from cliffs, inclement weather and proximity to the sea. There have been a few rare incidents of people getting washed into the sea by large waves and falling from cliffs, especially during high winds. As a result safety measures have been installed on the Site, including an emergency telephone, throw-lines, a safety leaflet handed out to visitors and an information panel on safety.
- 2.3.24 The Causeway Bus may also pose a risk to visitors walking along the road and examining geological exposures on the landward side of the road, as there is no demarcation of pedestrian areas and the bus takes up most of the width of the road.

Interpretation and Informal Education

- 2.3.25 There are several informative publications available from the shops on site. These include the two EHS publications: '*A Geological Excursion Guide to the Causeway Coast*' (1998); and '*Classic Geology in Europe: the North of Ireland*', (2003). The National Trust has produced a souvenir guide to the Site; '*Explore The Giant's Causeway*'. The guide explains the geological formation of the coastline, tells the folk tale of Finn MacCool and contains sections on other key features of landscape and ecological interest within the WHS and its surrounds. The guides include a map of the area from Portcoon Cave to Benbane Head, showing the main geological features, as well as providing visitors with stunning images. In addition, the National Trust has an older '*Coast and Country*' leaflet for the Site. Although its appearance now looks dated, it contains excellent interpretive information about the area's geology and local culture. It also encourages visitors to explore the Site beyond the Causeway Stones.
- 2.3.26 The National Trust runs guided tours from June to August which can be arranged for groups in advance. Special events such as the 'Finn MacCool and Celtic Mythology walk' are arranged on occasions. The National Trust has also provided a number of bespoke interpretation panels across the Site.
- 2.3.27 Moyle District Council provides an audio-visual show within the centre. It runs for 12 minutes and interprets the geology of the Causeway and surrounding coast, some of the myths surrounding the stones and finishes with a focus on other nearby attractions in the Moyle District that visitors may want to visit.

- 2.3.28 The National Trust, Moyle District Council and EHS have together produced interpretation panels for the Causeway Coast AONB which encompasses the Site. Panels are located in car parks and key points in the wider region, and a leaflet that includes a map of the area with information on the geology, wildlife and local industries is available. A self-guided walk leaflet on the Causeway Coast Way has been produced by the Countryside Access and Activities Network (CAAN). An illustrated book, *'A Companion to the Causeway Coast Way'* was published in 2004.
- 2.3.29 The Geological Survey of Northern Ireland (GSNI) has also produced easy to read interpretative material for the wider area encouraging people to visit other geological sites in Northern Ireland and around the Site. This includes the book *'A Story Through Time'* and the maps *'Landscapes from stone; A guide to the scenic landscapes and rocks of Ireland (North)'* and *'The Causeway Coast; Exploring the landscape and rocks'*.
- 2.3.30 The Causeway School Museum near to the National Trust's education centre supplements the information provided by the National Trust's education service. The Museum depicts life in a rural school in the 1920s. It is open to the general public in July and August, and to pre-booked groups outside this time. There is also a North Eastern Education and Library Board (NEELB) residential education centre in Bushmills.

Formal Education at the Site

- 2.3.31 The National Trust's education service caters for approximately 7,000 school pupils a year from an education centre adjacent to their office at the Causeway, but many other schools come on independent visits. The National Trust provides Key Stage 1, 2, 3, 4 and A level school programmes that are tailored to the Northern Ireland Curriculum and the co-joined themes of Education for Mutual Understanding and Cultural Heritage. Within this context the National Trust offers a variety of curriculum related programmes at the Site. Each activity can be adapted to the pupil's age and ability.

2.4 Setting of the Site

- 2.4.1 At its simplest level, the meaning of the term *'setting'* refers to the environment or surroundings in which a place is located. The setting of a World Heritage Site requires consideration of the significance and character of the Site, and the importance of the relevant surrounding elements to the Outstanding Universal Value of the Site. In the case of this Site,

it incorporates issues related to landscape character, visual relationships and physical approaches to the Site.

- 2.4.2 The World Heritage Committee attaches considerable importance to the relationship between a WHS and its setting. The relevant UNESCO *Operational Guidelines* consider the concept of the setting of the Site through the terminology of a buffer zone, stating that:

‘Whenever necessary for the proper conservation of a cultural or natural property nominated, an adequate ‘buffer zone’ around a property should be provided and should be afforded the necessary protection. A buffer zone can be defined as an area surrounding the property which has restrictions placed on its use to give an added layer of protection; the area constituting the buffer zone should be determined in each case through technical studies. Details on the size, characteristics and authorized uses of a buffer zone, as well as a map indicating its precise boundaries, should be provided in the nomination file relating to the property in question’.

The Definition of a Setting for the Site

- 2.4.3 The Causeway Coast AONB Management Plan (EHS 2003) has considered the setting of the WHS (see Figure 2.6), based on an analysis of the visual and landscape character of the Site and its environs. The analysis identified three principal components for the setting of the Site:

- *Distinctive Landscape Setting*
- *Supportive Landscape Setting*
- *Connective Landscape Setting*

- 2.4.4 Definitions of these areas can be found in the AONB Management Plan. The WHS Management Plan proposes a fourth component, that of seascape setting. This comprises extensive areas of the offshore marine environment that have a visual connection to the Site. This zone may extend at least 40 kilometres out to sea. All potential developments within this area should be considered in terms of their possible impact on the setting of the WHS.

2.5 Site Zones

- 2.5.1 Through an analysis of the Site it has been possible to identify and describe a series of five management zones (see Figure 2.7), which due to a combination of land-use, geology, access and management have different characters and requirements. These zones have helped guide

the development of the WHS Management Plan and should continue to help structure the implementation of the WHS Management Plan. It is expected that these zones may be subject to minor revision as the management of the Site evolves over the coming decades but their broad structure should remain relatively stable.

Zone 1

- 2.5.2 The main features of this zone are the visitor centre complex, hotel, car park, road and the Causeway Stones. The boundary of the zone follows the line of mean low water, while inland cliffs form the eastern boundary. To the south the boundary follows the cliff along the headland and then encircles the car park and visitor centre on the plateau. The north-eastern end of the Zone lies at Aird Snout. The western boundary follows the headland that encloses the western end of Portnaboe. The cliff tops surrounding this zone are generally included in Zone 2. This area has the highest density of visitors within the Site.

Zone 2

- 2.5.3 This zone contains the upper cliff path and land between Zone 1 and the inland edge of the Site from the start of the clifftop footpath at the visitor centre complex in the South up to and including the Shepherds Steps at the Northern end. Where Zone 1 meets Zone 2 there are the steep cliffs, making a natural boundary to this zone. Zone 1 includes the cliff faces with the boundary between the zones at the top of the cliffs.

Zone 3

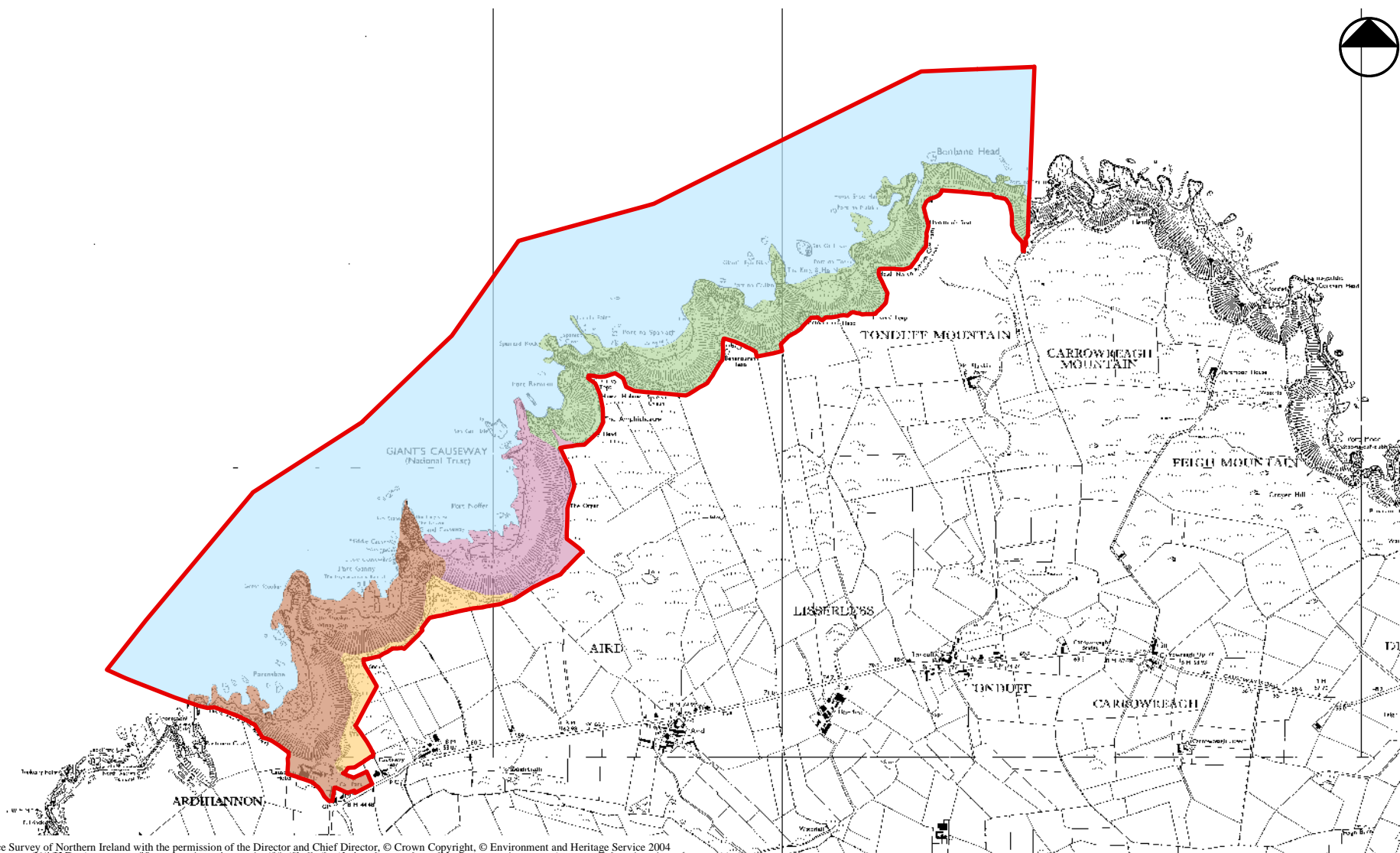
- 2.5.4 This zone extends from the end of Zone 1 eastwards to the viewing point in the Amphitheatre and contains the cliffs, cliff tops and shoreline around Port Noffer. The seaward side of the zone extends down to mean low water while the landward boundary is the fence line on the inland side of the coastal path at the top of the cliffs.

Zone 4

- 2.5.5 This zone contains the remainder of the Site above mean low water from the edge of Zone 3 to Benbane Head (eastern most extent of the Site). The zone covers the cliffs, including the cliff top path and base.

Zone 5

- 2.5.6 This zone contains the area of the WHS that is located below the mean low water mark. The area includes maritime habitats, the wreck of the *Girona*, the seabed and offshore geological features such as stacks, stumps and islands.



Key

Site Boundary

Zone 1

Zone 2

Zone 3

Zone 4

Zone 5

0 250 500 m



© NTPL

3.0 OWNERSHIP MANAGEMENT AND PLANNING

3.0 OWNERSHIP, MANAGEMENT AND PLANNING

3.1 Ownership of the Site

3.1.1 There are six landowners at the Giant's Causeway and Causeway Coast World Heritage Site:

- National Trust;
- Moyle District Council;
- three private landowners; and
- Crown Estate.

National Trust

3.1.2 Since 1961 the National Trust has acquired approximately 70ha of the Site through freehold or leasehold after an initial bequest of 13ha. It currently owns and manages the majority of the cliffs and foreshore within Zones 1 to 4 and the Causeway Hotel, and is responsible for visitor management across the Site and along the coast path. Some of the National Trust landholdings are inalienable, which means that the National Trust is duty-bound to maintain the property, as far as possible, in its natural state for the nation to enjoy. The National Trust cannot sell or mortgage inalienable land without the formal approval of the National Trust's Council. Approval can only be given if the matter is considered to be of over-riding national interest and that all possible steps have been taken to avoid or mitigate the risk of damage to the property. If the National Trust's Council is not satisfied that the necessary action has been taken, the matter becomes subject to special parliamentary procedures.

Moyle District Council

3.1.3 Moyle District Council owns and manages the visitor centre and audiovisual exhibition, car park and land on which the visitor centre and facilities are located; all within Zone 1.

Private Landowners

3.1.4 There are three private landowners covering a relatively small part of the Site. The majority of the private land lies towards the eastern end of the Site in Zone 4.

Crown Estate

- 3.1.5 The Crown Estate is considered the legal owner of all land between the high and low water mark including part of the Causeway Stones. The Crown Estate also has rights over the seabed within the territorial waters of the United Kingdom.

3.2 Agencies with an Interest in the Site

- 3.2.1 In addition to the site owners, there are several other organisations and agencies with management responsibilities for, or interests in, the Site. Many of these bodies are represented on the World Heritage Site Management Plan Steering Group (see Section 1.4 and Appendix A). The following are the key organisations with an interest in the Site:

- Department of the Environment (DOE), particularly Environment and Heritage Service (EHS) and Planning Service (PS);
- Department of Enterprise, Trade and Industry (DETI);
- Northern Ireland Tourist Board (NITB); and
- Causeway Coast and Glens Heritage Trust (CCGHT).

3.3 Agencies with a Planning Function or Role

Department of the Environment for Northern Ireland: The Planning Service

- 3.3.1 The Department of the Environment for Northern Ireland is the unitary planning authority. The Planning Service, an agency within the Department, is responsible for regulating development and the use of land in the public interest. The Planning Service prepares plans and policies in consultation with other relevant bodies. The Agency's aim '*is to plan and manage development in ways which will contribute to a quality environment and seek to meet the economic and social aspirations of present and future generations*'.
- 3.3.2 At a local level, Planning Service is in the process of preparing the Northern Area Plan to replace the current North East Area Plan 2002. The Northern Area Plan will play a major role in guiding the future development of the area around the Site and the development of new visitor centre and related facilities at the Site. One of the Area Plan's functions will be to interpret, at a local level, planning policies set out in Planning Policy Statements (see Section 3.4).

Department of Regional Development

- 3.3.3 The Department for Regional Development is responsible for strategic planning including the preparation and implementation of the Regional Development Strategy 2025 (RDS) and its sister document the Regional Transportation Strategy (RTS). Both the RDS and the RTS are material planning considerations in the determination of planning applications. The RDS and RTS contain strategic planning policy and guidance for Northern Ireland that informs the preparation and development of new and emerging Planning Policy Statements.
- 3.3.4 The Department of Regional Development's aim is *'to improve the quality of life for everyone in Northern Ireland by maintaining and enhancing a range of essential infrastructure services and by shaping the region's long-term strategic development'*.
- 3.3.5 The Strategic Planning Guidelines applicable to the Site within the RDS include the following aims:
- to protect and manage areas designated for their scientific interest, and
 - to protect, enhance and encourage appreciation of the Region's landscapes.

Local Government

- 3.3.6 Northern Ireland is divided into 26 Local Government Districts (LGD's), each district forming a single tier local authority (City, Borough or District Councils). The Local Authorities have a consultative role with regard to planning, transport and housing. Recently, they have had an increasing role in the delivery of economic development initiatives. A review of public administration in Northern Ireland is currently underway and this may affect the role and responsibilities of district councils. Moyle District Council currently has local government responsibility for the Site.

3.4 Policies and Plans Affecting the Site

Regional Development Strategy (RDS)

- 3.4.1 The RDS sets guidelines for the future development of Northern Ireland. It takes account of key driving forces and seeks to inform and guide development to create a dynamic, prosperous, and progressive Northern Ireland. Development Plans must be in conformity

with the RDS and its strategic guidelines are a material consideration when determining planning applications.

3.4.2 Strategic Planning Guidelines applicable to the Site within the RDS include:

- SPG ENV 1: To conserve the natural environment;
 - ENV 1.2: To protect and manage areas designated for their scientific interest;
 - ENV 1.4: To protect, enhance and encourage appreciation of the Region's landscapes;
- SPG ENV 2: To protect and manage the Northern Ireland coastline;
 - ENV 2.1: To conserve the coast of Northern Ireland:

'Protect the World Heritage Site of the Giant's Causeway by respecting and protecting its setting, conserving its physical features, managing change, and controlling access and tourism impacts in a sensitive way.'
- SPG RNI 1.6: To expand rural tourism in a sustainable manner;
- SPG RNI 4: To create an accessible countryside with a responsive transport network that meets the needs of the rural community;
- SPG ECON 7: To promote a sustainable approach to the provision of tourism infrastructure;
- SPG ECON 8: To establish a world-wide image for Northern Ireland, based on positive images of progress and attractive places to visit;
- SPG ECON 8.1: To enhance and develop the 'distinctiveness' of the Region as a key element of its tourist product;
- SPG HOU 6.4: Identify in development plans, settlements and areas under pressure from second home developments.

The Planning Strategy for Rural Northern Ireland

- 3.4.3 The Planning Strategy for Rural Northern Ireland remains the relevant strategic statement on planning policy for the Site. Its provisions are gradually being superseded by focussed Planning Policy Statements (PPSs) and Strategic Planning Guidelines (SPGs).

Planning Policy Statements

- 3.4.4 Planning Policy Statements (PPSs) set out policies on land-use and other planning matters and apply them to the whole of Northern Ireland. Their contents are taken into account in the preparation of Development Plans and are also material to decisions on individual planning applications. There are two PPSs of particular relevance to the Site:

- *Planning Policy Statement 6 (PPS6): Planning, Archaeology and the Built Heritage,*
- *Planning Policy Statement 2 (PPS2): Planning and Nature Conservation*

Planning Policy Statement 6 (PPS6): Planning, Archaeology and the Built Heritage

- 3.4.5 PPS 6 states that Development Plans should identify World Heritage Sites and their setting and should normally include local policies or proposals to safeguard such areas. Within PPS 6, *Policy BH 5: The Protection of World Heritage Sites* states that:

‘The Department will operate a presumption in favour of the preservation of World Heritage Sites. Development which would adversely affect such sites or the integrity of their settings will not be permitted unless there are exceptional circumstances.

‘There is currently only one World Heritage Site in Northern Ireland, the Giant’s Causeway, the setting of which has not yet been formally identified by the Department. As an interim measure until such time a new development plan is prepared for this area and this matter is addressed, development proposals within a 4 kilometre radius of the site will be subject to particular scrutiny by the Department (DOE, 1999).’

Planning Policy Statement 2 (PPS2): Planning and Nature Conservation

- 3.4.6 Paragraph 24 of PPS 2 states that *‘the Directives (Birds and Habitats) require all Natura 2000 sites to be protected from deterioration or damage. Plans or projects likely to have a significant effect on the site must be assessed to decide whether the nature conservation interest would be damaged.’* The government aspires to development proposals affecting all possible European sites being considered in the same way, i.e. as if they had already been designated. Paragraph 41 states that *‘if the Department finds that the proposed development will adversely affect the integrity of the site (designated for its nature conservation importance) and that this effect will not be removed by conditions, then planning permission will not be granted except in the following circumstances:*

- *the Department must first be satisfied that there are no alternative solution;*
- *if there are no alternative solutions, and the Site does not host a priority natural habitat type of species, planning permission will not be granted unless the proposed development has to be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. Such reasons would need to be sufficient to override the ecological importance of the designation; or*

- *if the Site hosts a priority habitat or species, and there is no alternative solution, the only considerations which can justify the granting of planning permission are those which relate to human health, public safety or beneficial consequences of primary importance to the environment or to other reasons which in the opinion of the European Commission are imperative reasons of overriding public interest’.*

Planning Guidance

The North East Area Plan 2002

- 3.4.7 This is the current statutory Local Area Plan covering the World Heritage Site and its surrounding hinterland. The Plan acknowledges the Site as one of Northern Ireland’s main tourist attractions and outlines the policies for the whole plan area including the Site.

The Northern Area Plan 2016

- 3.4.8 The emerging Northern Area Plan will identify local environmental features that should be considered for protection; these will include the World Heritage Site and its setting. The Causeway Coast AONB Management Plan has informed the preparation of the draft Northern Area Plan 2016.
- 3.4.9 When the Draft Plan is published in 2005 it will provide for a replacement visitor centre and associated facilities on the existing site. The Draft Plan also intends to protect the setting of the World Heritage Site by policies operating within designated zones around it. These zones have been informed by those suggested in the AONB Management Plan. This planning approach would provide a range of controls to ensure the preservation of the natural qualities of the World Heritage Site and the protection of the wider setting.

Protective Site Designations (see figure 2.5)

World Heritage Site (WHS)

- 3.4.10 The Site was inscribed as a natural WHS in 1986. The WHS designation places no additional statutory responsibilities on the Site’s owners or managers, although the designation is addressed in relevant statutory planning documentation.

Special Area of Conservation (SAC)

- 3.4.11 Virtually all of the Site occurs within the North Antrim Coast Special Area of Conservation (SAC), proposed under the EU Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (the Habitats Directive). The SAC includes the cliffs, beaches, platforms and isles between White Park Bay in the east and Runkerry Strand in the west. The boundary of the SAC follows that of the ASSI.

Area of Outstanding Natural Beauty (AONB)

- 3.4.12 In 1989, the Department of the Environment, under the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985, designated the Causeway Coast as an Area of Outstanding Natural Beauty (AONB). The designation gives formal statutory recognition to the quality of the landscape of the North Antrim coastline between Ballycastle and Portrush. This designation superseded an earlier one made under the Amenity Lands Act (1965). The AONB encompasses an area of spectacular coastal scenery stretching for approximately 29 km.

National Nature Reserve (NNR)

- 3.4.13 The Site was designated a National Nature Reserve (NNR) by the Department of the Environment in 1987 because of its 'nationally important' geological and biological interest. It was established to protect some of the most important geological features in the UK and to promote its use as a place for scientific research.

Area of Special Scientific Interest (ASSI)

- 3.4.14 The Site forms part of the '*Giant's Causeway and Dunseverick ASSI*', which was designated in 2000 by the Department of the Environment by reason of the flora, fauna, geological and physiographical features. Any change in management activities or any potentially damaging activity within the ASSI must receive prior notifiable operational consent from EHS.

Historic Wreck Site

- 3.4.15 The *Girona* has been designated for protection on the grounds of historical, archaeological or artistic interest in accordance with the terms of the 1973 Protection of Wrecks Act. The Act

has empowered EHS to designate by order a 300m restricted area around the site of the *Girona* in order to protect it from unauthorised interference.

Environmentally Sensitive Area (ESA)

- 3.4.16 The Site, excluding Zone 5, is located within the Antrim Coast, Glens and Rathlin Environmentally Sensitive Area. It was designated by the Department of Agriculture for Northern Ireland in July 1989 under the Agriculture (Environmental Areas) Northern Ireland Order 1987, to help safeguard areas of the countryside where the landscape, wildlife or historic interest is of particular importance and where that interest would benefit through farmers continuing with, or engaging in, environmentally sensitive farming practices. The boundary of the ESA broadly reflects that of the AONB as shown in Figure 2.5.

Other Documents

- 3.4.17 The Giants Causeway/Antrim and Causeway Coast has been identified by the Northern Ireland Tourist Board's (NITB) Strategic Framework for action 2004-2007 as a 'Signature Project'. Such projects aim to deliver world class excellence, drawing visitors from home and overseas. Achieving the aims of the 'Signature Project' will be the responsibility of the North East Regional Tourism Partnership. The Partnership led by DETI produced the Causeway Coast and Glens Tourism Masterplan 2004-2013 (2004) which is intended to serve as a blueprint for the development of tourism in the area. Although the Tourism Masterplan does not address the Site itself, it does seek to identify key actions to ensure that the Causeway Coast and Glens area benefits more widely from this world-class tourist attraction.

- 3.4.18 The two principal objectives of the Tourism Masterplan are:

- *'to spread the benefits of visits attracted by the Giant's Causeway to a wider geographical area; and*
- *to develop strong attractions elsewhere in the area'.*

- 3.4.19 Strategic objectives for the Giant's Causeway area are:

- *'to improve the visitor experience at the Giant's Causeway, by adopting best practice standards of service, visitor and environmental management, meeting local aspirations*

and recognising UNESCO guidelines, and becoming a demonstration site for best natural World Heritage Site practice;

- *to ensure that local communities experience more economic and social benefit than disadvantage from tourism; and*
- *to improve traffic management’.*



© NT/Chris Will

4.0 JUSTIFICATION FOR INSCRIPTION AND STATEMENT OF VALUES

4.0 JUSTIFICATION FOR INSCRIPTION AND STATEMENT OF VALUES

4.1 Introduction

4.1.1 This section explores the values of the Giant's Causeway and Causeway Coast World Heritage Site, beginning with a review of the 1986 Justification for Inscription and World Heritage Criteria. This review is used to identify the Outstanding Universal Value of the Site and the criteria under which the Site was originally inscribed. Following the review is a statement of Outstanding Universal Value that explores and defines the elements of the Site that contribute to its Outstanding Universal Value and a separate statement that outlines the Other Values, which form part of the Site's wider international, national and regional significance. The Other Values, although important elements of the Site do not comprise part of the Site's Outstanding Universal Value.

4.1.2 The two statements identify those aspects of the Site that require conservation during the ongoing management of the Site. The complex frameworks of designations and inscriptions that identify the Site as having international and national importance for its geology/geomorphology (WHS, NNR, ASSI), landscape (WHS, AONB, and ESA), ecology (SAC, NNR and ASSI) and marine archaeology (Historic Wreck Site) also strongly influence this ongoing management.

4.2 Justification for Inscription and Criteria

4.2.1 The Giant's Causeway and Causeway Coast WHS was inscribed as a natural site on the World Heritage List in 1986 under the 1972 UNESCO Convention Concerning the Protection of World Cultural and Natural Heritage (World Heritage Convention). The Site was inscribed under natural criteria (i) and (iii) (as defined in 1986), with the following Justification for inclusion in the World Heritage List and Justification for Inscription:

Criterion i - Be outstanding examples representing the major stages of the earth's evolutionary history.

The geological activity of the Tertiary is clearly illustrated by the succession of lava flows and interbasaltic beds which are in evidence on the Causeway Coast. Interpretation of the succession has allowed a detailed analysis of Tertiary events in the North Atlantic. The extremely regular columnar jointing of the Theoleiitic basalts is a spectacular feature which is displayed in exemplary fashion at the Giant's Causeway. The Causeway itself is a unique formation and a superlative horizontal section through columnar basalt lavas.

Criterion iii - Contain superlative natural phenomena, formations or features, for instance, outstanding examples of the most important ecosystems, areas of exceptional natural beauty or exceptional combinations of natural and cultural elements.

The cliff exposures of columnar and massive basalt at the edge of the Antrim Plateau represent a spectacle of exceptional natural beauty. The extent of visible rock sections and the quality of the exposed columns in the cliffs and on the Causeway combine to present an array of features of considerable significance.

4.2.2 The Nomination Document for the inclusion of the Giant's Causeway on the UNESCO World Heritage List includes the following justification:

‘Natural Property

In terms of its natural heritage, the Causeway Coast is of outstanding universal value and meets two of the criteria for an outstanding natural property:

- *It is a prime example of the earth's evolutionary history during the Tertiary epoch.*
- *It contains rare and superlative natural phenomena.*

The geological activity of the Tertiary era is clearly illustrated by the succession of lava flows and interbasaltic beds which are in evidence on the Causeway Coast. Interpretation of the succession has allowed a detailed analysis of Tertiary events in the North Atlantic.

The extremely regular columnar jointing of the Theoleiitic basalts is a spectacular feature which is displayed in exemplary fashion at the Giant's Causeway. The Causeway itself is a unique formation and a superlative horizontal section through columnar basalt lavas. Its sea level location, where the dimensions and structure can be observed closely and where the tops of the columns form a pavement, makes it a truly exceptional feature.

The cliff exposures of columnar and massive basalt at the edge of the Antrim Plateau present a spectacle of exceptional natural beauty. The extent of visible rock sections and the quality of the exposed columns in the cliffs and on the Causeway combine to present an array of features of international significance.

Since it was first documented in 1963 the Causeway Coast has been the subject of much controversy concerning the origins and history of the earth. The site is a classic locality for the study of Tertiary basalts and has played a fundamental role in the historical development

of geological interpretation. Its value for scientific research, which has made important contributions to petrogenesis over a period of nearly 300 years, marks it as a site of international significance in the history of earth science.

Cultural Property

In addition to its universal value as an exceptional natural property, the Causeway Coast is of outstanding cultural value in that it contains a nautical archaeological site associated with an event of international historical significance.

The site of the sinking of one of only four Galleass of the Spanish Armada, the Girona, has yielded a magnificent collection of artefacts and jewellery which have provided significant insights into the Armada and 16th century European history’.

- 4.2.3 In their report to the WH Committee in 1985, the IUCN provided additional comments on the Justification for Inscription of the Site as a natural property including:

‘The Causeway Coast has an unparalleled display of geological formations representing the volcanic activity during the Tertiary Period some 50-60 million years ago. The geological and landscape interest is provided by the surface outcrops of the Tertiary Beds. This is structured by the cliff-like edge of the plateau, the varied structure and colour of the basalts and Interbasaltic beds and their differential erosion patterns.

The Causeway Coast including the Giant’s Causeway is a classic locality for the development of features associated with basaltic lava flows and their weathering. It is particularly noteworthy for its magnificent development of columnar structures in the basalt lavas, formed during the cooling of the flows, the clear development of weathered horizons, or ancient (reddened, iron-rich lateritic) soils between some flows, the three dimensional form of individual flows, particularly the flow forming the Grand Causeway at and near sea level, the contrast between older olivine basalt flows and the later, thick quartz basalt or tholeiitic flows (which comprise the higher parts of the cliffs and the Grand Causeway), the varied suite of late-formed zeolite minerals that infill former gas cavities in the lava flows, the clear demonstration that late vertical dykes of basalt cut the basaltic lavas, and the spectacular marine erosion features associated with this varied geology. It thus meets criteria (i) and (iii) for natural properties’.

4.2.4 The IUCN report also noted that:

‘The basaltic columns of Giant’s Causeway however, are considered unrivalled for the regularity of their columns, the high proportion that are 6-sided, and their exceptional ball-and-socket cross-jointing. In addition the cliffs of the Causeway Coast display an exceptional example of lateritic soils (palaeosoil) attesting to the former tropical climate of the area.

Finally, no other area has the historic associations with the development of the geological sciences which began in 1693’.

4.2.5 In summary, the Outstanding Universal Value of the Site, and the reasoning behind its inscription on the World Heritage List, are rooted in the geological and geomorphological values of the Site, its history of scientific study and its exceptional landscape values.

4.3 Statement of Outstanding Universal Value

4.3.1 The Giant’s Causeway and Causeway Coast World Heritage Site is a spectacular and complex landscape. It is a classic locality for the study of Tertiary basalts and has played a fundamental role in the historical development of geological interpretation. The wild landscape it exhibits is designated an Area of Outstanding Natural Beauty.

4.3.2 The physical, geological and geomorphological landscape of the WHS is the primary reason for the global significance of the Site and forms the framework for all of the other values. The physical geology of the Site comprises an internationally unparalleled display of geological formations, representing local volcanic activity during the Tertiary period some 50-60 million years ago. The most famous feature of all is the Grand Causeway pavement, formed of geometric columns of volcanic basaltic lava.

Geology and Geomorphology

4.3.3 The geology and geomorphology of the Site, that form the core of the Site’s Outstanding Universal Value, are of global significance. The 2003 UNESCO/IUCN evaluation mission to examine the condition of the Site and report on its management highlighted its importance as a *‘dynamic geological site with ongoing geological processes and coastal erosion phenomena, which have to be managed as such’*. Whilst the Causeway Stones themselves are considered to be the most spectacular feature of the coast, and display in great detail the

columnar basalt structures for which the Site is famous, the magnificent cliffs to the east of the Causeway Stones also clearly demonstrate the geological succession of the Tertiary in cross-sections of outstanding clarity. These cross-sections most distinctly lay out the geological history of the area of the World Heritage Site, and the study of these has led to major advances in geological thought.

4.3.4 The internationally significant series of geological formations and spectacular landscape contained within the Giant's Causeway and Causeway Coast WHS have developed as a result of the interactions between:

- a varied geology comprising two major episodes of superimposed, early Tertiary lava flows separated by a thick palaeosol suggestive of humid tropic-like conditions, all of which are cut through by numerous dykes (Lyle 1996, Smith and Warke 2001);
- a complex late and post-glacial history that saw ice retreat from the area, sea levels rise and fall and the para-glacial adjustment of marine cliffs to create, for example, the many bays and the extensive screes found along the coast (Carter 1991; Knight 2002);
- the long-term exposure of the Site to high-energy coastal conditions that worked with the underlying geology to erode and emphasise the distinctive embayed coastline. These high-energy conditions are now actively attacking the headlands they created (Smith and Ferris 1997); and
- a long, and ongoing history of human intervention including: stone extraction, footpath construction and road building, the construction and demolition of various buildings and the running of a transport system (Smith *et al.* 1994; Smith and Hughes 1999).

Basaltic Lava Flows

4.3.5 The Site is internationally significant as a classic locality to observe the development of features associated with basaltic lava flows and their weathering. The Site provides an ideal opportunity to examine exposures that illustrate the three dimensional characteristics of individual lava flows, particularly the flows forming the Causeway Stones, at or near sea level. The Tertiary lava flows of the Antrim Plateau, although only a remnant of their former extent, cover some 3,800 km² and represent the largest remaining lava plateau in Europe.

- 4.3.6 The Site is an excellent example of the contrasts between older Olivine basalt flows and later, quartz basalt or tholeiitic flows which comprise the upper cliffs along much of the coastline and the Grand, Middle and Little Causeways, where the lava flows infilled a valley cut into the Lower Basalts.
- 4.3.7 The Site provides an important opportunity to observe varied suites of late-formed zeolite minerals that infilled former gas filled cavities within the basaltic flows. These include zonal arrangements of zeolites through a single flow (Benanouran Head) and exposures of the mineral paulingite at Portnaboe, below Weir's Snout.

Basaltic Columns

- 4.3.8 The Site is most famous for its internationally notable display of the development of magnificent columnar structures formed during the cooling of deep valleys filled with basaltic lava. These columns are especially impressive within cliff sections to the east of the Causeway Stones.
- 4.3.9 The Grand Causeway columns are not the only global occurrence of this phenomenon, and other similar sites can be found across the globe, including in Scotland, Germany, and North America. However, there is no other location where the columns are so magnificently exposed in such perfect horizontal sections on such a scale and in such an easily accessible location. The presence of a 'Causeway' where the dimensions and structure can be observed closely and where the tops of the columns form a pavement is a truly exceptional feature. In addition, the columns are unrivalled for their regularity, the high proportion of six-sided columns and exceptional 'ball-and-socket' cross jointing.

Interbasaltic Horizons

- 4.3.10 The Site is the location of internationally important exposures of iron- and aluminium-rich interbasaltic horizons formed by in-situ weathering of underlying basaltic surface. These provide a unique, time-constrained opportunity to evaluate climatic conditions at the beginning of the Tertiary (Migon and Lidmar-Bergstrom, 2002). Crucial elements in the interpretation of these beds are the corestones in the laterite, referred to locally as 'Giant's Eyes'.

Basalt Dykes

- 4.3.11 The Site is also notable for its clear exposures of north-west trending basalt dykes that post-date and cut through the major lava flows, and which are instrumental in the shaping of the characteristic embayed coastline.

Environmental Information

- 4.3.12 The Site is significant for the information it contains about the environmental conditions associated with the opening up of the Atlantic Ocean at the end of the Cretaceous period and the beginning of the Tertiary.

Slope Failures

- 4.3.13 The Site's slope failures are part of the essential dynamism of the geomorphological processes that continue to shape the Site. They are an almost constant occurrence and range from shallow, translational mudflows to large scale rotational landslides and block falls ranging from individual boulders to major failures measured in hundreds of tons (Smith *et al.* 1994). These failures are an essential component of the Site, in that they:

- have intrinsic scientific importance as geomorphological features;
- are essential in maintaining the overall rugged nature of the coastline and are crucial to the creation and maintenance of the Site's spectacular landscape;
- continuously create new geological exposures for scientific study; and
- regularly expose bare soil and bedrock which are instrumental in the maintenance of the Site's biodiversity.

- 4.3.14 Two areas within the Site that have particular geomorphological value for their slope falls are the Amphitheatre and Port Noffer.

- 4.3.15 The Amphitheatre, together with the cliffs above Lacada Point, has consistently been identified as the most active cliff section within the Site (Smith *et al.* 1994 and 1997; McDonnell 2000). The headland is especially prone to the toppling of basalt columns and deep-seated rotational failures through the interbasaltic bed that runs along the cliff at mid-height. Within the Amphitheatre is a superb example of active scree. This provides an accessible opportunity for visitors to view and understand the dynamic nature of the Site, the processes responsible for shaping it and the direct link between slope failures and underlying

geological controls – in this case the outward tilt of columns within the Middle Basalts that makes them susceptible to collapse.

- 4.3.16 Port Noffer is the location for numerous shallow translational slides and flows above and within vegetated screes around most of the embayment (Smith *et al.* 1994 and 1997; Smith and Warke 2001); regular block falls from the cliffs; and well-marked rotational failures and slides associated with the interbasaltic bed. The mudflows are valuable for maintaining vegetational variety through the regular recolonisation of new erosion scars. However, the wider significance of the embayment lies in the variety of active and recent slope failures found within a relatively small area, their accessibility for study and the opportunity they provide for explaining the ongoing development of the Site to visitors.
- 4.3.17 Many of the slope failures across the Site can be linked to springs or, more commonly, seepage lines (so-called ‘percolines’) that reduce cohesion within both bedrock and slope debris. These percolines often manifest along the foreshore as marshy areas, for example, in Portnaboe and Port Noffer, where they form important ecological niches that contribute significantly to the overall biodiversity of the Site.

Scientific Study

- 4.3.18 The Site has played, and continues to play, an important role in the development of scientific ideas concerning the nature and operation of key geological processes associated with basalt terrains. During the last 300 years the ‘Natural Architecture’ of the Site captured the attention of eminent geologists as evidenced by the wealth of scientific literature which sought to explain its remarkable structures. Although known for centuries by shepherds, fishermen and kelp gatherers, the Giant’s Causeway was ‘discovered’ by the Bishop of Derry in 1692 and first reported in 1693, when Sir Richard Bulkeley presented a paper to the Royal Society.
- 4.3.19 Key scientific contributions include:
- Dr T Molyneux (1694) was the first to identify correctly the rock as basalt.
 - The importance of the locality in the advancement of volcanology concepts in the late 18th and early 19th centuries, when etchings produced from the water colours of Susanna Drury. Reverend Hamilton (1786) made it one of the best known geological localities in the world at that time; as such he is commemorated in the name Hamilton’s Seat. He was the first observer to extend detailed analysis from the Causeway Stones to

include the basalt cliffs. His observations and conclusions were published in a series of fascinating letters, which described the features of the Site for the first time and provided an interpretation of their origins.

- The work of Tomkeieff (1940), who first likened the characteristic structures of the Middle Basalt lava flows to architectural elements of a classical building. This terminology has achieved widespread acceptance and has informed the understanding of similar colonnaded basalts in areas such as the Columbia River, USA.
- The occurrence of hyaloclastite material in the form of flow-foot breccias at Port-na-Spaniagh (Lyle & Preston, 1993) provides evidence of abundant water in the eruptive environment of the Causeway Coast tholeiites. These occurrences are again similar to those seen in the Columbia River Basalt Group in the USA, where there is well-documented evidence of the displacement of major rivers by lava flows.
- More recently, geochemical studies of the Causeway Coast area by Lyle and Preston (1993) and Wallace *et al.* (1994) have allowed important links with Tertiary volcanic rocks in western Scotland to be established. This has built upon extensive studies of the petrology of the basalts by, amongst others, Lyle (1980), Patterson, (1955) and Patterson and Swaine (1955).

4.3.20 The Site continues to be an important international case study both for teaching and further exploration of geology and geomorphological processes and it is visited by geology students from across the world.

Landscape

4.3.21 The basaltic columns of the Grand Causeway form ‘*one of the most distinctive and widely recognised landforms in the British Isles*’ (EHS, Earth Science Conservation Review) However, the wider landscape of the Site displays spectacular coastal scenery and contributes to the Outstanding Universal Value of the Site.

4.3.22 The coastal scenery of the Site is formed by surface outcrops, which are entirely located within the Tertiary basalts. The cliff-like edge of the plateau, the varied structure and colour of the basalts and interbasaltic beds and the subsequent differential erosion of the different rock and soil types have resulted in a unique arrangement of features which are of outstanding scenic quality as well as geological interest. This scenic value is recognised nationally through the designation of the Causeway Coast as an Area of Outstanding Natural Beauty (AONB).

4.3.23 The landscape allows the study of individual events that illustrates:

- the dynamic nature of the coastline;
- the range of natural processes operating;
- the natural impermanence of many of the coastal features; and
- the importance of cliff failures in providing new geological exposures and landslide scars that ‘refresh’ and help to maintain the biodiversity of the cliffs.

4.3.24 Most notable of these failures within the Site was the collapse in 1949 of a major sea arch known as the Giant’s Eye Glass.

4.4 Statement of Other Values

Ecology

4.4.1 The ecology of the Site is of international interest, containing a wide range of habitats as well as protected species. The Site is contained within an area of the North Antrim Coast identified as a Special Area of Conservation (SAC). This designation recognises the coast’s European importance as a site of biological conservation interest. This ecology has also been recognised as being of national significance through its designation as a National Nature Reserve (NNR) and an Area of Special Scientific Interest (ASSI).

Habitats and Plant Communities

4.4.2 The citation for the SAC designation identifies the narrow-mouthed whorl snail, *Vertigo angustior*, as the main species of importance with regard to this designation. The North Antrim Coast supports the only known living population of this snail in Northern Ireland.

4.4.3 The SAC citation indicates that the following habitats found within the Site are also of European significance:

- annual vegetation of drift lines;
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*);
- Species-rich nardus grassland, on siliceous substrates in mountain areas; and
- vegetated sea cliffs.

4.4.4 The NNR and ASSI citations describe the Site as being nationally notable for a range of semi-natural habitats and plant communities, which include some rare and decreasing species:

- *Maritime cliff communities* - the cliff lands are enhanced by patches of heath, flushes, slips and screes, rock exposure with lichen cover and ledge / crevice flora;
- *Wet and dry heath* - the relict heath and species-rich grassland on the cliff-top are of particular significance, representing valuable relicts of a vegetation which was presumably once wide-spread along these cliff-tops;
- *Species-rich grasslands* - The large extent of unimproved grassland within the NNR is particularly notable as are the stands of greater woodrush, *Luzula sylvatica*;
- *Saltmarsh* - This contains some uncommon species, including the saltmarsh flat-sedge, *Blasmus rufus*, which is rare in Ireland;
- *Strandline and Intertidal communities* - these include coastal vegetated shingle, which comprises the rare and decreasing species, oysterplant *Mertensia maritima*, and bedrock with rock pools;
- *Sub-tidal communities* – This area is dominated by bedrock with wave-cut platforms often reaching substantial widths and boulders providing habitats rich in biodiversity. Further offshore, sand dominates the seabed.

Invertebrates

4.4.5 The wide range of habitats contained within the Site support a rich invertebrate assemblage with a number of notable species, including snails, crane flies and weevils. Together with more common or typical species, a number of rarer species have been found at the Site. These include:

- the rare ground beetle, *Trechus discus*;
- two rare crane flies, *Limonia goritiensis* and *Dactylolabis sexmaculata*; and
- the strandline woodlouse *Metatrichoniscoides celticus*, which is unknown elsewhere in Ireland.

Birds

4.4.6 The Site is important as a feeding and residential site for both breeding and wintering birds, with significant populations of breeding shags, fulmar, black guillemot and most notably,

breeding chough. This Site has the only remaining breeding population of chough in Northern Ireland. The choughs are of national significance and identified as a Northern Ireland Biodiversity Strategy (NIBS) priority species. A large number of birds of lesser significance feed at the Site and are present all year round, including stonechat. In addition the grasshopper warbler *Locustella naevia* is a migratory visitor to the site. Other residents include the buzzard, peregrine falcon, twite and eider duck. The large numbers of breeding birds present at the Site have led the Royal Society for the Protection of Birds (RSPB) to consider the area as being of regional importance as a breeding site.

Cultural Heritage and Intangible Values

4.4.7 The Site is of great cultural significance, for its central role in:

- the development of 18th century geological controversies on the origins of basalts (see above);
- the 19th and 20th century development of tourism in Northern Ireland (see below); and
- displaying a nationally, regionally and locally iconic landscape.

4.4.8 In addition, the Site also embodies several intangible values, including mythology and the role of mythology in the creation and negotiation of identity; folklore; the role of landscape in inspiring the creative arts; the development of place-names and local history.

Myth and Folklore

4.4.9 The Site is one of several mythical landscapes associated with the famous 3rd century AD Irish warrior leader of Finn MacCool, the son of the High King of Ireland, Cormac Mac Art. Finn is the Giant of Giant's Causeway, who constructed the pavement to join with the causeway pavement in Scotland so that he could fight the Scottish giant, Benandonner. Early medieval Irish monks first documented the oral legends of Finn MacCool. These legends, and in particular the Giant's Causeway tales, were then embroidered by locals over the centuries for the benefit of tourists. The stories of Finn MacCool were a key aspect of the 19th and 20th century 'Celtic Revival' associated with Lady Gregory, Synge and Yeats, and played a central role in the creation of the identity of the new nation state of the Republic of Ireland.

Cultural Heritage

- 4.4.10 The Site has also entered European cultural history as the place where one of the ships of the Spanish Armada sank after their defeat by the British. The Site contains the wreck of the 16th century Spanish Armada galleass *Girona*, located below the isolated basalt columns known as the ‘Chimneys’ in the bay of Port na Spaniagh, which is named after the victims of the wreck. This wreck is of considerable cultural importance and is a protected Historic Wreck Site. The discovery and partial excavation of the wreck between 1967-1969 was one of the most important nautical archaeological finds of modern times in Europe. Artefacts recovered from the wreck are conserved in the Ulster Museum, Belfast, and include a series of portrait cameos by Byzantine Caesars, religious medals, orders of chivalry and other gold jewellery such as decorative personal items, navigational equipment, gold and silver coins, cannon balls and pieces of metal work.

Tourism and Community

- 4.4.11 The Site is an important location in the development of tourism in Ireland and has been a celebrated feature on tours of the island from the 18th century to the present day. Located near to the popular Victorian seaside resort of Portrush, Victorian visitors at first accessed the Site by jaunting car and then hydro-electric tramway. During its history as a tourist site, many famous travellers, including Sir Walter Scott and William Thackeray, visited the Site.
- 4.4.12 The Site has an important role within the historic development of tourism nationally, regionally and locally (as described in Section 2.3). This role continues in the modern day, forming an important contemporary significance of the Site and an integral element of the tourism economy of Northern Ireland and the North Antrim Coast with more than 400,000 visitors per annum. The Site, and the cluster of attractions near to it, together attract more than half of all tourists and visitors to the Causeway Coast and Glens region. The Site is also one of the few attractions in Northern Ireland where the number of visits from overseas visitors exceeds those from local people. The Site is justifiably considered to be Northern Ireland’s premier tourist attraction. The distinctive coast and shape of the Causeway Stones have also become instantly recognisable icons for Northern Ireland and a key visual image for the region.



© NT/Chris Will

5.0 MANAGEMENT PRINCIPLES, ISSUES AND OBJECTIVES

5.0 MANAGEMENT PRINCIPLES, ISSUES AND OBJECTIVES

5.1 Introduction

5.1.1 This section of the WHS Management Plan forms the heart of the document. It explores the issues facing the Site and identifies a series of underlying principles and broad management objectives to guide the long-term management of the Site and provide a broad policy context for future decision making. The issues identified cover the following six themes:

- Management of the Site (Section 5.3);
- Conservation Values of the Site (Section 5.4);
- Socio-Economic Context (Section 5.5);
- Visitor Management and Experience (Section 5.6);
- Setting of the Site (Section 5.7); and
- Site Boundary (Section 5.8).

5.1.2 Each section begins with a broad overview of the key issues, followed by one or more management objectives to address those issues. The objectives are supported by explanatory text. The discussion of the issues and objectives are cross-referenced, where necessary, with other issues and objectives.

Overview of the Current Situation and Opportunities / Threats

5.1.3 The Giant's Causeway and Causeway Coast WHS is a globally significant geological site, internationally important ecological reserve and Northern Ireland's leading tourism attraction. The Causeway Stones are an instantly recognisable iconic form and one of the first images to be conjured up in national and international perceptions of Northern Ireland. The myths and folklore associated with the Site have played a significant role in the development of identity for communities across Northern Ireland and the Republic of Ireland. Since the Site was 'discovered' in the 17th century it has played a major role in the development of geological thought, particularly in the field of volcanology.

5.1.4 All of these values and roles need to be addressed by the site managers in their day-to-day work and strategic decision making. This WHS Management Plan has been developed to assist in this process through supplying a broad overview of the importance of the Site, the

issues facing it and a framework for delivering a sustainable future for the Site and its setting.

- 5.1.5 The most significant single issue facing the Site is the effective management of large numbers of visitors. The accommodation and management of visitors needs to be achieved in a manner that delivers a high quality visitor experience without compromising the conservation values of the Site or contravening any statutory designations that apply to the Site. Achieving this will ensure the transmission of these values to future generations with no significant degradation of quality.
- 5.1.6 The management of the Site is currently sustaining and conserving the geology/geomorphology, landscape and ecology to a level that should ensure their transmission to future generations with no significant degradation of quality. There are, however, localised issues relating to impacts on the geological and landscape values of the Site resulting from the management of visitors. These impacts arise from the provision of infrastructure necessary for visitors' comfort, information, access and safety. The impacts are predominately visual in nature, but some elements, such as the road and turning circle by the Causeway Stones, are also having a physical impact. These impacts are to some extent the direct result of the limitations placed on the site managers by the available resources.
- 5.1.7 The quality of the visitor experience on the Site was substantially degraded by the fire in 2000 which all but destroyed the visitor centre. The present temporary facilities are acknowledged to be of inadequate quality for a World Heritage Site. Currently, the Department of Enterprise, Trade and Investment (DETI) is preparing to announce an international competition to provide a world-class visitor facility for the Site. This should deliver significant benefits for the visitor in enjoying and understanding the Site as well as enhancing its landscape and conservation.
- 5.1.8 Visitors have expectations and needs that extend beyond a reception centre and affect the Site as a whole. The delivery of a new visitor centre and associated facilities will need to be undertaken in parallel with schemes to address on-site issues. These include enhancing visitor access, improving interpretation, maintaining high levels of visitor safety and general improvements in the quality of on-site furniture and surfaces. This creates an ideal opportunity to deliver benefits for the conservation of the Site as well as delivering a better visitor experience.

- 5.1.9 The Site does not reside in a vacuum. It is an integral element of the tourism economy of Northern Ireland and the North Antrim Coast area in particular. The Site is Northern Ireland's premier 'must see' attraction and draws upwards of 400,000 visitors per annum. Although it contributes to the local economy through visitor expenditure in the surrounding area and region, considerable work remains to be done to deliver greater benefits for the region and local area. This, along with many other issues, led to the publication in 2004 of the Causeway Coast and Glens Tourism Masterplan 2004-2013 (DETI 2004). The Site plays a key role in the Tourism Masterplan and the future management and development of the Site will have to be cognisant of the needs and aspirations of regional and local communities and other tourism providers. The Site also lies within the Causeway Coast AONB and therefore forms an integral part of the AONB Management Plan (EHS, 2003).
- 5.1.10 Central to the successful resolution of the above issues, and many of those outlined in the rest of Chapter 5.0, is a structure for the future management of the Site. Traditionally, the National Trust and Moyle District Council have led in managing the Site. However, a WHS Management Plan Steering Group was established to guide the development of this document and has brought together a wider group of stakeholders and interested parties to develop a long-term strategy for managing the Site. Although details remain to be finalised, it is anticipated that a WHS Management Group will be established to replace the Steering Group and will work to deliver the integrated conservation and visitor management set out in this WHS Management Plan.
- 5.1.11 The opportunity therefore now exists to enhance significantly the conservation and management of the Site in a way that would deliver major visitor experience benefits in the context of maintaining the geological/geomorphological, landscape and ecological integrity of the Site. It is the responsibility of the Site owners, managers and steering group members to work in partnership to realise this opportunity and deliver a sustainable future for the Site that will benefit today's visitors and local communities as well as future generations of both.

5.2 Management Principles

- 5.2.1 These principles are intended to guide the actions and decisions of both the on-site management bodies and the external organisations that make decisions affecting the Site. Experience at other World Heritage Sites has demonstrated that a small number of broad principles reflecting the key issues and Outstanding Universal Value of the Site can help provide a clear framework for the future management of the Site.

- 5.2.2 The underlying management principles presented below are intended to be long-lived and should remain relevant to future revisions of the WHS Management Plan. They have been developed from an analysis of the issues facing the Site and also take into consideration the requirements of the 1972 UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage and the 1992 Operational Guidelines.

Principle 1 – Sustain and conserve the Outstanding Universal Value of the Site’s geology and landscape for future generations

This is the fundamental and overarching requirement and sets a benchmark by which all decisions and scenarios can be assessed. The principle places the conservation of the geological, geomorphological and landscape (including seascape) values of the Giant’s Causeway and Causeway Coast WHS at the very core of the WHS Management Plan and all future management decisions. All site owners and public bodies with an interest in the protection, management and promotion of the Site should be aware of the need to conserve the Outstanding Universal Value of the Site.

Principle 2 – Sustain and conserve the ecological, intangible heritage and cultural heritage values of the Site

It is critical that the wider values of ecology, intangible and cultural heritage of the Site are understood, conserved and promoted. These values are identified in the statement of Other Values (see Section 4.4). It is important that all the Site’s diverse values are considered and accounted for in all decisions, in order to protect and conserve them.

Principle 3 – Deliver tangible socio-economic benefits for local communities through the management and promotion of the Site

In line with the World Heritage Committee’s Budapest Declaration (2002), this principle seeks to ensure that the needs of the local communities are addressed within the Site’s management. The Site should continue to play a major role in providing socio-economic benefits for the local community through the provision of a high quality and distinctive visitor attraction that encourages people to return and stay longer in the area, hence increasing and spreading the economic value of tourism within the surrounding area.

Principle 4 – Maintain an appropriate setting and ‘sense of place’ for the Site

The landscape character of the Site’s setting needs to be conserved to ensure that the Site’s current ambience, tranquillity and ‘sense of place’ is retained. The landscape quality and character of the setting of the Site (see Section 5.7) is a major consideration of Planning Service in preparing policy for and dealing with development proposals within the setting of the Site.

Principle 5 – Deliver and maintain a world-class and sustainable visitor experience at the Site

The sustainable development of a high quality visitor experience at the Site should ensure that all visitors (able, less-able or disabled) continue to be accommodated on the Site with minimal adverse impacts on the Outstanding Universal Values and other values outlined in Section 4.0. As an integrated part of the visitor experience, appropriate interpretation and education facilities should be provided and developed at the Site in a manner that reflects the character and values of the Site. As Northern Ireland’s premier tourist attraction and icon, future proposals for the visitor centre and associated access facilities should be of a very high quality.

5.3 Management of the Site

- 5.3.1 The effective management of the Site is crucial to its conservation and enjoyment. Details on current ownership and management can be found in Section 3.0. During the development of this WHS Management Plan, a number of key issues have been identified with regard to the existing and future management of the WHS and these are explored below.

The Structure of Management at the Site

- 5.3.2 Prior to the formation of the WHS Management Plan Steering Group, the Causeway Coast Access & Recreation Group acted as a forum for discussions, but no formal structure existed through which the Site owners, statutory agencies, advisory bodies and other key parties could meet to discuss the Site and the issues facing it. As highlighted by some stakeholders, this had inhibited communication between key parties and prevented the development of an agreed strategic direction for the future management and development of the Site. Through the development of this WHS Management Plan significant advances in this regard have been made.

- 5.3.3 There remains the issue of how the operation of the new visitor centre will interact and relate to the management of the Site. The location, design, content and operation of the proposed new facilities will be fundamental to the delivery of a world-class visitor experience. These factors will also have a profound effect on the way in which visitors are managed on and around the Site. The proposed WHS Management Group will wish to advise on the development and future operation of these facilities and their relation to the Site as outlined in Objectives 17 and 21.

Community Involvement

- 5.3.4 Limited community involvement in the production of the WHS Management Plan was achieved through an elected representative of Moyle District Council on the Steering Group. Additional community input also came from the Causeway Coast and Glens Heritage Trust, who have representatives from two sub regional networks (North Antrim Community Network and South Antrim Community Network) together with Coleraine Rural and Urban Network. Wider, and more direct, community involvement in management of the Site may be beneficial to achieving wider benefits for the local communities and for fostering a stronger sense of pride and ownership of the Site within these communities. Such involvement may also enable site owners and managers to identify opportunities for employment, business growth and enhancement of the setting of the Site (see Section 5.7).

Available Information

- 5.3.5 There is no single integrated system or archive that holds information on all features, designations, attributes of significance and other influencing factors such as slope stability, and visitor numbers. At present, information on these and other aspects is held individually by researchers or agencies responsible for particular designations or actions. Operationally, this lack of data integration generates a duplication of resources and confusion over some issues. In addition, and perhaps more significantly, the absence of integrated data can hinder the day-to-day management and maintenance of the Site and increases the risk of unintentional impacts on habitats or features of value. Currently, on-site staff are, through extreme diligence, managing to avoid and minimise such impacts.

Objective 1 – Implement, monitor and review the WHS Management Plan through the formation of an active and effective partnership of bodies with responsibility for making and implementing decisions that may affect the Site.

The members of the current WHS Management Plan Steering Group bring considerable expertise, experience and access to resources to assist with the long-term strategic management of the Site. It is proposed to retain this partnership in the form of a WHS Management Group in order to fulfil a monitoring and advisory role following the completion of the WHS Management Plan. Section 6.3 outlines the new management structure and the proposed WHS Management Group's key roles.

The WHS Management Group would provide strategic guidance for the development, management and conservation of the Site, including the visitor centre and associated facilities. It would oversee the delivery of the vision and objectives of the WHS Management Plan and act as a coordinating body for activities and operations on the Site.

The WHS Management Group could be assisted by the appointment of a WHS Management Officer. This post would aid the delivery of key ongoing projects and help foster greater integration of effort between the statutory bodies. The Officer would also greatly help facilitate the integrated and cohesive management of the Site on a day-to-day basis.

Objective 2 –Integrate the management of the visitor centre and associated facilities and the management of the Site

The proposed new visitor centre will be important to the management of visitors at the WHS; a high degree of communication and integration will be needed between the site managers and the centre operators. Section 6.3 outlines the new management structure and the proposed WHS Management Group's key roles. In relation to the visitor centre, the proposed WHS Management Group should provide:

- defined management responsibility for actions that could impact on the Site;
- a practical structure that ensures close co-operation between Site managers;
- the identification of measures and authority for restricting visitor access to parts of the Site, should conservation or health and safety needs require it;
- encouragement to all stakeholders to invest revenue and other resources on Site; and
- procedures that ensure the management of the visitor centre, other facilities and that of the Site is seamless from a visitor perspective.

Objective 3 - Involve local communities in the strategic management of the Site

Support for, and involvement in, the strategic management of the Site by local communities living and working in the surrounding area is important for the long-term sustainable management of the Site. Any future management body should seek to establish links with local community organisations and individuals, perhaps through the establishment of a Local Forum. These links should provide the local community and wider stakeholders with the opportunity to feed into and comment on more specific and detailed plans.

Objective 4 – Ensure adequate information is available to all site managers

Information is vital to the effective management of the Giant's Causeway and Causeway Coast WHS. To assist in the management of the Site a Geographical Information System (GIS) and a multi-organisational database should be set up to assist with site planning and decision-making. Both the GIS and the database need to be fully compatible with EHS and National Trust systems. It is anticipated that this tool would provide the capability for browsing, organising, distributing and documenting new and existing information vital for day to day management of the Site, as well as informing strategic decision making and proposed monitoring and evaluation regimes (see Appendix D). The GIS could store and provide information on a wide range of topics and survey data including:

- designated features and areas;
- geological stability of the Site;
- a detailed landscape character assessment of the Site and its setting.
- a robust ecological baseline including new survey data for the sub-tidal habitats and species;
- surveys of all visible archaeological or historic structures and features;
- visitors numbers and distribution patterns; and
- land management regimes.

The multi-organisational database would provide easy access to what information is known about the Site and who is responsible for it. This requires close co-ordination between the various organisations that store data in its various forms including documents, paintings and photographs of the Site. These include organisations external to the current Steering Group such as:

- Causeway Coast and Glens Ltd;
- Ulster Museum;
- Queens University Belfast;
- Causeway Museum; and
- RSPB.

Objective 5 - Establish links with other similar World Heritage Sites

Links should be established with other natural WH Sites in the UK and internationally to collaborate and share information on management and monitoring across the Site. Other sites might include the Dorset and East Devon Coast WHS and Hadrian's Wall WHS. A commitment to these links would help to place and promote the Causeway in its global and UK context.

5.4 Conservation Values of the Site

5.4.1 Conserving the physical and intangible values embodied in the WHS is fundamental to delivering a sustainable future for the Site. Key amongst these physical and intangible elements is:

- the ongoing dynamic *geological and geomorphological processes* and coastal erosion phenomena;
- one of the most distinctive and widely recognised *landscapes* in the British Isles;
- a rich and diverse *ecology* of international interest; and
- an *intangible and cultural heritage* that forms an iconic legacy of national, regional and local cultural significance.

5.4.2 These values mean that much of the Site is protected through a range of international, national and regional designations. These designations are described in Section 2 and their monitoring requirements are referred to in Appendix D. They carry a variety of obligations for obtaining consent and requirements for consultation with specified statutory consultees prior to change. Furthermore the Site also lies within the Antrim Coast, Glens and Rathlin ESA which, although voluntary, requires participants to adhere to management prescriptions designed to enhance biodiversity and landscape features.

- 5.4.3 The following paragraphs explore the issues facing the conservation of the Site's Outstanding Universal Value and Other Values as described in Section 2.0 and 4.0.

Geology and Geomorphology

- 5.4.4 Geology and geomorphology are fundamental to the inscription of the Site and provide the foundation interest for both the casual visitor and scientific visitor. The management of the geological values of the Site poses a number of issues, in particular the requirement to balance the Site's two roles as an international geological/ecological reserve and as Northern Ireland's leading tourism attraction. The majority of the issues outlined below relate primarily to ongoing and past attempts to achieve this balance. In addition, there are potential threats to the geological values of the Site arising from the effects of climate change. Climate change is potentially causing sea levels to rise and storms to increase in frequency and power. This may increase the rate of erosion along the coast and submerge parts of the Causeway Stones. However, beyond monitoring the situation little can be done within the context of on-site management to address the climate change issues (see Appendix D).

Geological Conservation Issues Arising from Access Management

- 5.4.5 Slope instability and failure is an integral aspect of the Site's geological character. As such, any attempts to stabilise coastal processes and erosion can have significant adverse consequences for the geological, geomorphological, ecological, landscape and aesthetic values of the Site. Integral characteristics of the geomorphological processes, such as slope failure and instability, need to be monitored and their effects on other significant values managed, but instability and failure cannot be prevented or overly controlled without compromising the Outstanding Universal Value of the Site.
- 5.4.6 Visitor safety may be compromised if both access and geomorphological dynamism are allowed to continue without intervention. For instance, in 1994, a series of slope failures caused extensive damage to the lower cliff path in the Amphitheatre, resulting in the closure of sections to the general public (Smith *et al*, 1994). At the time of the closure a compromise was achieved to allow continued access to parts of the Site for valid scientific study. Access is currently permitted for appropriately equipped scientific and other interested and suitably qualified parties by prior arrangement with the National Trust; unauthorised and inappropriately equipped persons are not currently admitted to potentially dangerous and highly sensitive areas.

- 5.4.7 Since the closure of the path there has been frequent debate on the possibility of re-opening the path to all visitors (see Section 5.6 and Objective 19). As well as the inherent health and safety issues and potential costs associated with such a course of action, there are also increasing concerns that footpaths themselves are contributing to the erosion of the Site by interrupting the dynamic movement of slopes and increasing undercutting and slope failures. Where footpaths cross 'soft' geological features such as the inter-basaltic beds, localised erosion of material also occurs. This is particularly apparent near the current terminus of the lower cliff path and at various points along the former line of the lower cliff path.
- 5.4.8 As noted above, the management of visitors and the visitors themselves contribute to the geomorphological instability of the Site. In the past people have also contributed to the degradation and erosion of the Site by removing stones from the Causeway Stones. This practice has now been banned on the Site and is actively prevented by on-site management regimes. On the upper cliff path, some areas are suffering localised erosion. In some cases a lack of intervention has resulted in visitors eroding a new path (sometimes parallel to the original line) in an attempt to find a more suitable route or seeking a viewpoint through the gorse. If the lateral erosion is towards the cliff edge then the chances of localised slope failure or dislodging debris are increased, with the attendant public safety risks.
- 5.4.9 The current management of the Site includes a limited number of areas where geomorphological dynamism is being interrupted, for example along the road to the Causeway Stones and the land just east of the Grand Causeway. Soil transported on shoes or by wind can accumulate in cracks and joins of the Causeway Stones providing a habitat for vegetation. The vegetation causes an increase in the rate of erosion through the development of root systems that widen cracks, whilst foliage masks the underlying rock formation. Furthermore, at the turning circle, people waiting for the bus may cause soil compaction. It has also been noted that the roadway and turning circle cause some difficulty in accessing roadside exposures of the cliff line for the geologists and geomorphologists studying the rock structures in the area.

Objective 6 – Accept the management consequences of a dynamic Site.

The Site is dynamic and this has consequences for its management. Current provisions for visitor safety and access should be reviewed and innovative solutions sought to deliver both visitor safety and access benefits whilst maintaining the natural geomorphological dynamism of the Site (see Section 5.6.17 and Objective 20). Future management should not seek to create a totally stable site but where retention walls have already been used (for example along the side of the road and by the Grand Causeway) these should be retained to allow current patterns of access to continue.

Objective 7 – Support geological research programmes and projects

Geological and geomorphological research is an important aspect of the Site's Outstanding Universal Value. Future research on the Site could benefit both the wider academic world and the management of the Site, particularly if the results of the research are incorporated into the monitoring regimes (see Appendix D).

The development of a GIS (see Section 5.3 and Objective 4) would be a valuable aid to research programmes and future projects. For example, existing data could be used to model slope stability in relation to a number of factors including land-use, visitor access and rock type.

Landscape

- 5.4.10 The scenic beauty of the landscape in this area is intimately linked to its geological history and characteristics. The landscape of the Site and its setting are described in Section 2.2. The landscape character and aesthetic qualities of the Site contribute to its Outstanding Universal Value. The following paragraphs highlight a number of issues relating to the conservation of the Site's distinctive landscape.

Understanding the Landscape Character of the Site

- 5.4.11 The Causeway Coast AONB Management Plan (EHS 2003) contains a Landscape Character Assessment for the whole AONB. In addition, the Landscape Character Assessment produced for the whole of Northern Ireland (EHS 2000) provides a broad regional context for the area. However, these assessments were not undertaken to a level of detail sufficient to identify differing landscape characteristics of areas within the Site.

- 5.4.12 Further analysis, in the form of a detailed assessment to record the key factors that contribute to and affect the perceived landscape character of the Site, would allow for the development of a detailed understanding of the Site's internal distinctiveness and would create a clear baseline for the monitoring and evaluation of change across the Site (see Appendix D and Objective 4). This would allow the monitoring of cumulative changes which could damage the landscape character of different parts of the Site.

Visual Intrusions

- 5.4.13 Currently, the visibility of features such as the Causeway Hotel, visitor centre, road, bus stop, and some safety materials (for example throw lines) are compromising the sense of wildness and aesthetic values within the Site. These modern visual intrusions, in particular the road, fencing and safety materials, are an urbanising influence on the character of the Site and may even have an adverse effect on people's ability to perceive the safety risks (see Section 5.6).
- 5.4.14 There are also localised visual impacts associated with the path network within the WHS. These relate to:
- current path surfacing materials;
 - scarring from slumps and soil erosion;
 - the style of the permanent fencing; and
 - the nature of temporary safety measures (e.g rope fencing).

Land-use

- 5.4.15 The pastoral land management regime in the Site maintains an essentially rugged 'green' open landscape devoid of trees or substantial woody shrubs (excepting gorse). The grazing regimes also avoids the overly manicured look that can result from mowing. Any change in land-use in the setting (see Section 5.7) could potentially and significantly alter the landscape character of the Site and its aesthetic values.

Objective 8 – Ensure that the unique character, distinctiveness and aesthetic quality of the Site’s ‘natural’ landscape is recognised, conserved and enhanced

Elements that urbanise the site should be minimised, for example by reducing the visual intrusion of the buildings into the lower areas of the WHS. On-site infrastructure and site furniture should be reviewed and replaced as necessary to ensure they reflect the landscape character and quality of the WHS in parallel and in concert with the visitor centre design. Key features for consideration include permanent and temporary fencing, the road and turning circle for the bus (see Objectives 17 and 18), new path surfaces, appropriate signage and a coordinated design style for all of the on-site furniture (temporary or otherwise) for example benches, bins and safety materials.

The conservation of the landscape of the WHS would be aided by a managed dispersal of visitors across the Site to reduce the point loading of visitors at key areas such as at the Causeway Stones and the bus turning circle. This could be achieved through the development of a Visitor Access Masterplan (see Objectives 18 and 19).

Furthermore, the landscape of the Site could be conserved and enhanced through supporting and maintaining current patterns of land-use through an appropriate level of agri-environment scheme funding, such as the existing Environmentally Sensitive Areas Scheme. This may also benefit the conservation of the choughs.

Objective 9 – Improve knowledge and understanding of the landscape character of the Site and its setting.

A detailed landscape character assessment would provide baseline information to assist with the long-term management of the Site (see Objective 4). The preparation of such an assessment for areas outside of the Site would also assist with a review of the Site's boundary (see Section 5.8 and Objective 24). The information should be developed in a format suitable for inclusion within the GIS and, as discussed in Appendix D, be subject to regular review and update.

Ecology

- 5.4.16 The importance of the Site's ecology is recognised by the presence of a range of international and national designations (see Section 2.2). Although the ecological values are not considered to be of 'Outstanding Universal Value' (see Section 4.0), they are still highly important, a fact reflected in the degree of protection associated with the statutory designations on the Site.
- 5.4.17 The WHS (excluding Zone 5) and National Nature Reserve (NNR) boundaries are virtually identical (see Figure 2.5). This places the majority of the WHS under the remit of the NNR Draft Management Plan (2001) as well as the ASSI. The implementation of the SAC conservation objectives and the NNR Draft Management Plan within the context of the WHS Management Plan provide the necessary instrument to ensure the continued conservation of the land-based ecological values of the WHS. As the existing designations do not include sub-tidal communities further studies need to be undertaken in this regard. The following paragraphs explore some of the issues facing the conservation of the Site's ecology.

Visitor Related Impacts

- 5.4.18 In general, the paths on the Site tend to limit potential damage to and disturbance of habitats by channelling visitors along predetermined routes. However the concentration of visitors in particular areas and along certain stretches of footpaths can cause localised damage to habitats through disrupting the integrity of areas of rich biodiversity and disturbing nesting birds and other animals, which can potentially impact on breeding success. Currently it is difficult to quantify the extent of these impacts due to the lack of available recent survey data.
- 5.4.19 The visitor presence on parts of the Site also restricts the potential for appropriate site grazing regimes. These may be required to maintain or enhance the ecological values of some habitat elements especially on stable slopes in Zones 3 and 4.

Natural Impacts

- 5.4.20 There is a natural dynamic relationship between the ecology and the geological processes of the Site. The geological processes contribute significantly to the ecological diversity of the Site by creating new habitats on an almost continual basis, allowing for a natural succession

of plant and animal communities. However, there are some short-term and localised impacts associated with geological processes.

- 5.4.21 The complex mosaic of habitats within the WHS is valuable to breeding and feeding birds. Some habitats, such as cliff lines, scrub, pasture and coastline are of particular significance as places for nesting or feeding. However, the dynamic nature of the WHS can lead to localised erosion and disruption of nesting and feeding sites, and temporarily impact on local bird populations.

Climate Change

- 5.4.22 The ecology of the Site is susceptible to ongoing climate change. A change in temperature and weather patterns on the Site could potentially change the habitats that currently naturally occur. With a change in habitats new species could be introduced to the Site and changes may occur in the species frequency and dominance.

Marine Pollution

- 5.4.23 Discharges of marine fuel or other spillage incidents could result in the site being polluted. The most likely source of oil spill near to the Site is from passing tanker traffic. A large oil spill or cargo spill off the North Antrim coast could have a catastrophic effect on the habitats and animals of local, national and European significance. At greatest risk would be the internationally important seabird populations, which would be seriously affected by oil floating on the water while feeding or resting. Other habitats and species in the area are likely to be at less risk, as any oil swept on to the shore is likely to be washed off very rapidly by natural forces due to the high wave energy environment characteristic of the North Antrim coastline.

Sub-tidal Habitats and Species

- 5.4.24 As previously mentioned, the areas below the high water mark are not currently included within either the SAC, NNR or ASSI areas. Consequently, little is documented regarding the ecology of these areas and they are afforded no statutory protection. The future management of Zone 5 will require more detailed analysis of the sub-tidal habitats and species.

Objective 10 - Balance the management requirements of visitors with the Site's ecology

The majority of the Site is not regularly visited by significant numbers of people. In effect Zones 3, 4 and 5 are largely, undisturbed ecological reserves. Human interference is limited to cliff-top pedestrian access, grazing in the bays, minimal land management (fence and path maintenance) and fishing. This has the effect of insulating the ecological values of the Site from the disturbance that visitors can cause.

However, within Zones 1 and 2 (see Section 2.5 and Figure 2.7) ecological concerns do need to be taken into account during the development of the Visitor Access Masterplan (see Objectives 2, 18 and 19) and in the day-to-day management of the Site. Although visitors should be encouraged to remain on surfaced paths and the current policy of restricting access where there are sensitive habitats should be continued, opportunities to increase controlled visitor access to other areas, such as parts of the shoreline, should be sought to deliver an enhanced visitor experience.

Objective 11 – Update and use the SAC conservation objectives, NNR Draft Management Plan and additional ASSI objectives to manage the Site's ecology.

The Site contains several important habitats and species that have been recognised in the designations of the Site, as outlined in Section 3.4. These need to be maintained in a favourable condition. The SAC conservation objectives should be used in conjunction with the NNR Draft Management Plan and ASSI objectives to provide focussed protection on habitats and species of European and national importance.

The NNR Draft Management Plan should be updated in light of the recommendations, principles and objectives of the WHS Management Plan and finalised. The revised final plan should be used as a key tool for managing ecological values on the Site.

Objective 12 – Develop management proposals for the sub-tidal zone.

Neither the ASSI and SAC conservation objectives nor the NNR Draft Management Plan address sub-tidal habitats. Further analysis is required for this area (Zone 5) and additional management prescriptions may be required.

With regard to marine pollution incidents, if there is a spillage or discharge then the contingency counter-pollution and response procedures will be implemented to counteract the effects.

Intangible Values and Cultural Heritage

Myth, Folklore and the Visitor

- 5.4.25 Although there are no formal designations for the intangible values of the Site, they still form an important part of its significance and have also historically formed a part of the visitor experience (see Section 4.4). Some of the intangible values of the Site are currently interpreted and promoted as a key element of the visitor experience. Whilst it is acknowledged that the myths and legends supply an excellent story to draw visitors to the Site, the WHS is predominantly a natural geological site, which should be reflected in its interpretation and promotion.

Cultural Heritage

- 5.4.26 The most widely recognised historic feature of the WHS is the wreck of the *Girona*. This is an Historic Wreck Site; consequently information about its actual location is restricted in order to aid its preservation.
- 5.4.27 Along the coast between Portnaboe and Dunseverick Castle there are numerous cultural heritage features including adits, mines, tracks and buildings; all representing past human activity and in particular mining. Some of these lie within the Site boundary. Management of the Site should include the identification, conservation and interpretation of these features. The Geological Survey of Northern Ireland maintains an inventory of all abandoned mine workings in Northern Ireland.
- 5.4.28 There is a considerable body of historic photographs, documents and collections associated with the Site but not a strong appreciation of the value of these items in terms of monitoring long-term change at the Site. The fact that these are held in a number of locations makes access to these documents difficult (see Objective 4). The Museums and Galleries of Northern Ireland are keen to make as much of their collections available for public exhibition as possible, beyond the confines of the Museum itself.

Objective 13 – Interpret and promote the intangible values and cultural heritage of the Site

The intangible values, especially the mythology, associated with the Site are significant and warrant continued inclusion within the interpretation material available on the Site. They are considered an important aspect of the visitor experience to the Giant's Causeway. The new visitor centre and associated interpretation should seek to balance the mythical aspects of the Site with the need to promote and interpret its Outstanding Universal Value and other values to provide a holistic view of the Site.

5.5 Socio-Economic Context

- 5.5.1 As outlined in Section 2.0, the Site forms an important element of the wider regional and local economy, as well as being a source of local pride and identity. In the Budapest Declaration (2002), UNESCO recognises that WH Sites are located within places that contain communities that have economic and social needs. The Convention acknowledges that the protection of World Heritage can only be achieved through a mutually beneficial relationship with local communities and that a WHS can be an instrument for sustainable development.
- 5.5.2 The Giant's Causeway and Causeway Coast WHS can play a role in aiding the sustainable regeneration of local communities such as those in the village of Bushmills. The Site can assist through providing a high quality tourist attraction in the area to draw in visitors, generate tourism revenue and help create jobs, all of which are important to the regeneration of the area. This is recognised in the Causeway Coast and Glens Tourism Masterplan (DETI 2004) which provides the strategic context for the long-term development of the wider area's tourism industry. The WHS is seen, in the Tourism Masterplan, as a fundamental element of that tourism product.
- 5.5.3 As identified in the Tourism Masterplan, it is important that local benefits including employment, retention of services, community infrastructure gains and beneficial contact with visitors can be shown to outweigh the disadvantages of seasonal congestion, pressures on local services, rogue parking and restricted development opportunities.
- 5.5.4 Currently, local communities seemingly benefit little from the existing patterns of tourism spend in the area. There is a local desire to change this situation, with the residents of Bushmills and other nearby settlements working to generate more local benefits from visitors

attracted to the Site. The Tourism Masterplan seeks to address this issue. Its two principal objectives are:

- *to spread the benefits of visits attracted to the Giant's Causeway to a wider geographical area; and*
- *to develop strong attractions elsewhere in the area.*

5.5.5 The future redevelopment of the visitor centre at the Site and the enhancement of the visitor experience in ways which are outlined in this Management Plan, will help to deliver these objectives and support local communities and the regional economy.

5.5.6 The Causeway Coast AONB Management Plan (2003) highlights the '*lack of training and development of the local employment base for tourism employment*' with other skill deficiencies amongst certain sectors of the workforce. This lack of skills and training may be a key barrier to distributing the benefits of the WHS amongst the local communities.

Objective 14 – Support the delivery of the Causeway Coast and Glens Tourism Masterplan

The Giant's Causeway and Causeway Coast WHS is a key element of a much wider tourism product in Northern Ireland. As identified in the Tourism Masterplan, investment in new facilities at the Site is required, but it is also important that resources should be used to improve the tourism product and infrastructure throughout the area. This would encourage a greater number of visitors to stay in the area, visiting other attractions, making use of local restaurants and pubs and spending money in local shops. Such an approach would be more economically and socially sustainable in the long term, and ensure that a greater proportion of profits generated through tourism remain in the local economy. A joint ticketing scheme between the Site and other attractions in the area, for example the Bushmills – Causeway Heritage Railway and Bushmills Distillery, should be explored as part of this approach.

The wider strategy should also seek to encourage the development of small businesses in the tourism industry (crafts, local food outlets, B&Bs, etc), including addressing the current skills gap, and the provision of good quality hotel accommodation in the area.

The inclusion of local communities within the long-term strategic management framework for the Site (see Section 5.3) could also benefit the delivery of the Tourism Masterplan.

It is important that the values and significances of the Site and the character of its setting are not degraded by growth in tourism infrastructure. The aim should be to develop a sustainable approach that respects the very assets that draw people into the area. This ethos underpins both this WHS Management Plan and the Tourism Masterplan (see Section 2.3).

5.6 Visitor Management and Experience

- 5.6.1 Management of visitors to the Site, especially given the predicted increases in visitor numbers over the coming decade, is a key issue for its long-term conservation. It is important to deliver a high-quality visitor experience at the Site appropriate to its World Heritage status that enables visitors to better appreciate the Site and wider area, hopefully enticing them to stay longer, visit other places and spend more. Overall, the aim is to conserve the geological, landscape and ecological values of the WHS, whilst ensuring that the economic benefits associated with the Site are exploited and that visitor experience, education and satisfaction are maximised.
- 5.6.2 The following have been identified as the main existing and potential future issues that may arise from the need to accommodate these visitors.

Transport to the Site

- 5.6.3 As described in Section 2.3, current visitor transport to the Site is dominated by private cars and coaches. The provision of car parking and access roads places considerable pressures on the landscape resource of the Site. It also creates traffic congestion for the wider area during peak periods. In the future, such heavy reliance on car/coach transport may result in increasing traffic congestion at the Site, given the predicted increase in visitor numbers.
- 5.6.4 Feedback from some visitors and members of the local community has revealed that some people consider the fee for parking in the designated car park too high. This has led to people parking on the nearby verges and in the adjacent hotel car park to avoid paying the fee. There are currently no plans to distribute parking across a wider area. Therefore in peak times there may be traffic congestion around the entrance to the Site, creating a poor impression for visitors as well as forming a safety hazard.

- 5.6.5 Although more sustainable forms of transport are available to and from the Site, as detailed in Section 2.3, insufficient provision has been made to make them an attractive prospect, for example the lack of covered bus stops and luggage storage. This lack of provision may be constraining the development of sustainable transport solutions.

Objective 15 – Seek to increase visits to the Site using public and/or other forms of sustainable transport

Encouraging visitors to arrive at the Site via sustainable transport would aid in the reduction of traffic congestion in peak times around the car park and along the approach roads to the Site. To achieve this, the proposed WHS Management Group and the competition for the new visitor centre need to encourage and support sustainable methods of transport to the Site, perhaps within the context of a Green Transport Plan. The sustainable transport options should be promoted at the principal access points to Northern Ireland and opportunities to enhance public transport in the area around the Site should be sought, particularly when these can also deliver benefits for local communities. Sustainable access would suggest the retention of railway services north of Ballymena to Coleraine, which are important both for residents and visitors.

In addition, the Site would benefit from an enhanced bus service from the Glens to the WHS and the connection with the Bushmills-Causeway Heritage Train developed. Such measures should reduce the need to increase car parking at the Site, although off-site solutions may be required to be linked with public transport initiatives in Bushmills or at other locations.

The provision of extra facilities for visitors, for example luggage lockers, may significantly improve visitor experience for people who have arrived at the Site by public transport, on foot or by bicycle.

Objective 16 - Signage and information on transport links to the Site should be easily available within the Causeway Coast and Glens Region and at the principal arrival points.

Enhancing access to the Site requires the enhancement of information and signage. Currently signage provision is extremely poor in the wider region and information is very limited at the principal access points. Recognisable tourist signs signposting the World Heritage Site would provide an immediate benefit. The positioning of these, and the use of associated information, could also help promote other visitor attractions and encourage people to prolong their visits to the area.

The promotion of the Site could also assist in building up expectation of where a visit should begin, and where associated attractions and amenities are in the area. The development of the signs in the area should follow the guidelines outlined in the Visitor Servicing Strategy for Northern Ireland Manual (NITB, 2004). The policy for signage is comprehensively summarised in *'The Guide to Tourist Signing in Northern Ireland'* (NITB and the Roads Service).

Current Visitor Experience and Access

- 5.6.6 A comprehensive visitor survey in 1997 by Queen's University, Belfast estimated that 15% of visitors spent less than an hour on the Site, 65% spent one to two hours and 12% two to three hours. The survey also identified a high percentage of repeat visits to the Site, which could suggest a high degree of satisfaction with the visit or reflect the lack of other significant tourism attractions in the area with no direct admission charge. More recent but less comprehensive visitor surveys at the Site, from 1997 to 2003, have broadly confirmed these patterns. The short visit length is a matter of concern as those making short visits do not tend to spend as much money as those staying longer on a site. This pattern of visitation both reduces the potential beneficial economic impact of the Site on the wider area and suggests that visitors may not have taken the time to visit all parts of the Site to fully appreciate its interest and dramatic beauty.
- 5.6.7 The survey also measured visitor satisfaction. It found that for the majority of visitors in 1997 the Site had met or exceeded their expectations and very few (2%) were disappointed. The main areas for dissatisfaction were the toilet facilities (too much queuing) and car parking arrangements (mainly objections to the charge).
- 5.6.8 The WHS Management Plan process has involved a rapid review of the current visitor experience, from pre-visit material through to arrival and experience of the Site. A summary of this is provided below to highlight key issues.

Welcome and Arrival

- 5.6.9 Due to the topography of the area restricting views to the Site on their approach, most visitors form their first impressions of the Site in the car park. The car park and the area around the visitor centre buildings are regularly congested and are currently not of the quality expected for such an iconic site. The bus to the Stones may be considered an

incongruously urban feature and its presence detracts from a 'wilderness' experience. There is also a distinct lack of signage and readily available orientation information.

The Visitor Centre and Visitor Facilities

- 5.6.10 The current temporary facilities are not of the quality expected of such a site. DETI is currently leading a process for the development of new visitor centre as part of the three-strand Ministerial initiative. The exact nature and extent of these facilities will be determined through an international competition.

Visitor Access across the Site

- 5.6.11 There are indications that the majority of visitors restrict their visit to the Causeway Stones after leaving the car park and visitor centre. This may reflect the quality and quantity of information accessed by visitors prior to their visit and at the visitor centre. However, the lack of comprehensive visitor statistics and information may be distorting an understanding of the reasons for current visitor patterns.
- 5.6.12 There is no suggested or formal visitor route(s) signposted around the WHS, and none of the Site's key features are signposted. There are some on-site interpretation panels, but these are not designed to encourage visitors to follow any particular route or visit particular features.
- 5.6.13 The cliff top path provides a longer linear walk and experience for the more adventurous visitor. Currently there are no circular walks that would allow the visitor to undertake a 3 to 4 hours walk to and from the visitor centre without resorting to walking on roads. The two local ends of the cliff top path (the Causeway Head and Dunseverick Castle) are also not connected by any form of frequent transport, although they are served by the seasonal Causeway Rambler bus service. There is also little signposting or information to encourage the visitor to undertake a longer walk and to experience more of the eastern half of the WHS in Zone 4.
- 5.6.14 The bus described in Section 2.3 currently provides the only means of assisted access to the Causeway Stones and as such forms a key tool in the current visitor management regime on the Site. It enables less abled visitors to the Causeway to enjoy more of the Site than they would otherwise be able to. However, it has encouraged visitors to go directly to the Causeway Stones and back again without exploring other parts of the Site. This limits the length of time visitors stay, gives a very rapid turnaround of visitors and in many respects

provides a very limited and poor quality experience. The bus is also intrusive visually and in terms of noise and odour (see Section 5.4). Together with the nature of the road on which it operates, to some users it is an intrusive urban artefact in an otherwise wild place. The legal status of the road also requires clarification.

- 5.6.15 The National Trust, alongside other private operators, operates occasional boat trips from Portballintrae providing opportunities for visitors to view the Site and its surroundings from the sea. These trips have proved highly successful leading to the National Trust planning to run them more frequently in the future. However, difficulties are likely in terms of providing a reliable boat trip service as the weather and sea conditions can result in trips being cancelled at short notice.

Objective 17 – Enhance the visitor experience without compromising the significance of the Site

The visitor centre requires urgent and comprehensive updating to reach a world-class standard. The Department of Enterprise, Trade and Investment is leading the process to provide a new centre in attractively designed buildings that are appropriate to the local environment and provide a comprehensive introduction to the Site and the wider area. The design and operation (see Objective 2) of the facilities will reflect the principles and objectives contained in this WHS Management Plan and will be informed by international best practice in other World Heritage and similar sites.

An important issue is the provision of an integrated marketing/promotion strategy to advertise and distribute information on the Site to international, national and regional audiences. This would involve the production of publicity material with a clear message about the Site, its inherent ‘risks’ (see Objective 20) and the opportunities for other activities in the area. The first stage in this could be the provision of an official Giant’s Causeway and Causeway Coast WHS website and a corporate brand.

Visitor experience on site would also benefit from improvements to interpretation facilities (see Objective 21) and access arrangements (Objectives 18 and 19).

Objective 18 – Reduce the impact of the ‘assisted access’ vehicle from Centre to the Stones

Assisted access to the Stones is necessary for some but consideration should be given to replacing the current bus with a smaller, less intrusive means of conveyance. Slowing down

the vehicle, perhaps to walking pace, may make it more acceptable and reduce safety concerns. However consideration should also be given to replacing the bus with a new system operating on a narrower footbed. This may enable the area of hardstanding to be reduced, particularly at the turning circle by the Causeway Stones. These possibilities for reducing the impact of the assisted access, whilst still retaining vital access for emergency response vehicles, should be explored as part of the Visitor Access Masterplan.

Any proposed system should focus on transporting people who need (rather than want) to use the facility, and encouraging those who do not need assistance to experience the wider Site on foot (see objective 19). This would reduce site traffic, allow visitors to form a greater appreciation of the Site and extend visitor stay. In addition, the development of the Visitor Access Masterplan should involve a formal legal review of the status of the road.

Objective 19 – Develop a Visitor Access Masterplan for the Site

The development of a Visitor Access Masterplan would provide a tool to manage and monitor visitor access and carrying capacity to ensure that the Outstanding Universal Value and other values of the Site are conserved for future generations while providing a world-class visitor experience. It should seek to enhance visitor experience by offering a range of opportunities to explore the Site and its environs, improving on-site facilities and providing sustainable ‘access for all’ solutions. The Visitor Access Masterplan should be holistic in nature and seek to address access issues across the whole Site (see Objective 17 and 18).

The Visitor Access Masterplan should also focus on methods of dispersing visitors away from the ‘honeypot’ area around the Causeway Stones and maximising the areas of the Site that can be safely accessed through walking.

Sensitively signed circular walks of varying lengths and levels of difficulty within and around the Site would enhance the visitor experience and encourage people to explore more of the Site than just the Causeway Stones. This could be achieved through clear way marking and promotion of routes using the existing pathways around Zones 1, 2 and 3 (see Figure 2.7) and the area adjacent to the Site. This could be supported by a shuttle service linking to the Causeway Head and Dunseverick Castle. The service would need to be regular, reliable and be integrated into the wider bus network to provide links to other attractions and benefits for local communities.

The development of the Visitor Access Masterplan would also provide the means to explore reopening sections of the Lower Cliff Path including that from the Amphitheatre viewing platform to Port na Spaniagh. Although access is allowed at present to scientific groups and National Trust approved persons, the consultation process for this WHS Management Plan indicated that there was wide support for opening the footpath for the general public at least as far as Port na Spaniagh. This would provide access to the unique geological features and to the bay where the *Girona* galleass was found. The Visitor Access Masterplan should therefore explore the feasibility of re-instating a new sensitively constructed path. The cost of maintaining the path and safety issues should also be considered along with potential adverse impacts on the geological, landscape and ecological values of the Site.

In the future, improved technology could allow the development of ‘virtual access’ with cameras relaying images to the visitor centre of areas of the Site where actual access is deemed impractical or undesirable.

Visitor Safety

- 5.6.16 Safety inspections are carried out by National Trust managers on a weekly basis during the off-peak season and more frequently at peak times. Particular attention is paid to the very steep Shepherd’s Steps that are liable to landslips. However, perhaps the most significant safety concern relates to visitor perceptions of safety.
- 5.6.17 The current relatively urban approaches to the Site and the promotional material relating to the Site do not give the impression that the WHS is an exposed, rugged and potentially hazardous location. Visitors therefore expect a low-risk safe environment, perhaps similar to a country park. Within this context, people do not perceive potential risks and tend to ignore warning signs, as they are counter-intuitive to their reaction to, and expectation of, the Site. This situation can lead to accidents.
- 5.6.18 The National Trust is currently using the guiding principles produced by the Visitor Safety in the Countryside Group (VSCG) for reviewing visitor safety. Using this guidance the National Trust revisited and substantially revised a risk assessment in June 2003 describing the principal hazards to members of the public visiting the Site and the precautions in place to protect visitors. The assessment identified further precautions considered to be reasonably practicable. However, these measures will only be partially effective so long as visitor perceptions are contrary to reality.

Objective 20 – Identify, monitor and address visitor safety issues at the Site

The balance between management intervention and user self-reliance is a key aspect of managing visitor safety. It is important that access to the Site is presented so that visitors fully appreciate the nature of the Site and the limitations of site managers in mitigating the hazards. This will boost awareness of the contribution they can make for their own safety, for example by wearing suitable footwear.

The zones could provide a useful framework for delivering management responses to differing levels of risk. Zones 1 and 2 would require distinct and different safety interventions compared to Zones 3 and 4 (due to numbers of visitors) and this, supported by a de-urbanisation of materials and features on the Site, would encourage people to view the Site as an outdoor, rugged experience rather than as a stroll in a country park. This would need to be supported by appropriate safety promotion material. Through supplying appropriate surfaces, fencing and literature, it should be possible to manage risk and people's perception of risk in a manner that reflects the geological dynamism, character and significance of the Site. This process of educating the visitor to the nature of the Site should commence within the visitor centre and in pre-visit literature, and form a key element of the proposed Visitor Access Masterplan (see Objective 19).

The current regime of safety audits, monitoring and risk assessments should continue, and new safety measures should be implemented, wherever needed, in accordance with the principles of the WHS Management Plan.

Given their adverse impact on the landscape character of the Site (see Section 5.4), the effectiveness of the existing safety materials, in particular the throw-lines at the Grand Causeway and some of the fencing materials, should be reviewed and where possible less visually intrusive solutions found to deliver visitor safety.

Interpretation and Informal Education

- 5.6.19 Interpretation and informal education at the Site are relatively low key and it is easy for visitors to miss the interpretative displays provided and audio-visual show. Although there is no recent free interpretative leaflet for the Site, the safety leaflet does contain drawings of six geological features found within the WHS.

- 5.6.20 From all of the existing material described in Section 2.2, the visitor can discover a wealth of information about the Site, its surroundings and other opportunities in the wider area. However, the current material is variable in quality, style and content and presents a confusing view to the visitor. Overall it has a disjointed and *ad-hoc* feel. Enhanced interpretation on Site would have a significant benefit for the visitor experience.

Objective 21 - Develop a co-ordinated approach to the maintenance and improvement of the interpretation facilities on the Site

The wealth of features across the Site demands a cohesive and co-ordinated approach to interpretation by developing a new interpretative strategy focused on the Site that includes the visitor centre. The strategy should have close links with other strategies within the region such as the Causeway Coast AONB Management Plan and the Causeway Coast and Glens Tourism Masterplan 2004-2013. This formal interpretative strategy will be developed by the Management Group in association with the design process for the visitor centre.

In addition to explaining the Site and its values, the strategy should also focus on links between the Site and the surrounding area in order to give a North Antrim context to the interpretation. The themes should include:

- interpretation of the Causeway Stones and the Site's geology including its role in the history of the study of earth sciences;
- interpretation of the wider North Antrim Coast within the Causeway Coast AONB and its landscapes and associated landforms;
- interpretation of the habitats and species found within the Site especially those characteristic of the Site and protected by the designations referred to in Section 2.2; and
- interpretation of the cultural heritage and intangible assets associated with the Site including the *Girona* and the myths and mythology associated with the Giant's Causeway.

The new interpretation strategy would investigate different delivery mechanisms for accessing the information either by the self-guided visitor using displays, signs, leaflets and tapes or through events with specialists or costumed characters as guides. Specialist groups should be supplied with information tailored to their interests and level of knowledge.

Information should be available in various languages and tailored to people with hearing, vision and mobility difficulties.

Formal Education

- 5.6.21 Current educational provision is described in Section 2.2. The Site is an acknowledged resource for life-long learning and as such educational provision on the Site is a core element of its management. A significant proportion of educational visits to the Site are made independently and have no linkages to the National Trust or NEELB.

Objective 22 - Maintain and improve the educational programmes and facilities on the Site

The provision of facilities for the formal education of school children should be continued with frequent monitoring and reviews on ways to enhance the facilities. The facilities should aim to provide an enjoyable, interactive learning experience focused on the key aims within the National Curriculum for Key Stages 1, 2, 3, 4 and A level through a forward looking education programme. Interactions between other local education facilities such as those based in the NEELB Bushmills Education Centre, Causeway School Museum and the facilities provided by the National Trust should be enhanced in order to exchange ideas and share resources. The access route between the National Trust education centre and the Site needs to be improved.

5.7 Setting of the Site

- 5.7.1 The setting of the Site is described in Section 2.4 and Figure 2.6. The key issues relating to the setting of the Site are considered below.

Physical Impact on the Setting

Built Development

- 5.7.2 The area around the Site, in particular the area within the Distinctive Landscape Setting, has been subjected to a high level of piecemeal development built throughout the 20th century. This has included a relatively recent spate of clachan-style developments for holiday homes and single dwellings in the countryside. These developments have, in terms of their design and integration into the landscape, begun to alter the landscape character of the area. The recent growth of Portballintrae has also begun to impact on the wider landscape character of the Site's Distinctive Landscape Setting.

- 5.7.3 Past development at the Causeway Head area has also had an adverse impact on landscape character with the existing cluster of buildings dominating the local rural landscape. This creates, especially in medium to long views of the WHS, a sense of urbanisation and over-development out of character with the landscape setting of the Site.
- 5.7.4 For the Distinctive Landscape Setting of the WHS, further intensification of visible built development is likely to result in the degradation of the area's landscape character (see Causeway Coast AONB Management Plan for a description of the landscape character) and degrade the quality of the visitor experience on the approach to the Site.

Wind Turbines

- 5.7.5 On-shore and off-shore wind turbines have yet to become a substantial concern for the setting of the WHS. There is, however, a proposal for an offshore windfarm at Tunnes Plateau near Magilligan that may be visible from the WHS. Given the demand for renewable energy, it is possible that other developments may come forward that could impact on the visual setting of the WHS.

Land-use

- 5.7.6 The current mixed-use farming regime in the setting of the Site creates a strong rural landscape character for the Site's setting that is in keeping with its Outstanding Universal Value and scenic qualities. A significant shift away from this land management regime would adversely impact on the quality and nature of the Site's setting.

Managing Change in the Setting of the Site

- 5.7.7 The key tool for managing change within the setting of the Site is the planning policy framework (see Section 3.4). It is expected that the future Northern Area Plan (current publication of the draft is expected to be May 2005) will provide broad and robust guidance on permissible development in the setting of the Site. The current planning policy framework applies a broad-brush 4 km 'buffer zone' around the Site for the regulation of development within the setting of the WHS. This will be refined by the Northern Area Plan and replaced by policies based on the landscape setting of the WHS as defined in the Causeway Coast AONB Management Plan (see also 3.4.9).

5.7.8 In addition, the AONB Management Plan includes several objectives relating to managing landscape change in the AONB which are of particular relevance to the WHS setting:

- ***‘Objective B: To ensure that any development which is permitted supports the purposes of the AONB and does not undermine the quality and special distinctiveness of the landscape as set out in the landscape character assessment.***
- ***Objective E: To ensure land-use planning and development decisions help to protect the landscape resource upon which most economic activity within the AONB is based.***
- ***Objective F: To ensure that economic activity supports investment in environmental conservation and promotes high quality design.***
- ***Objective X: To conserve, and enhance where appropriate, the natural beauty of the WHS landscape, as well as its landscape and seascape setting.’***

5.7.9 At present, beyond the recommendations in the Causeway Coast AONB Management Plan, there are neither clear guidelines on land use management within the setting of the Site nor a clear vision for the nature of the landscape in and around the Site. The Management Group should seek to address this with the support of DARD and other key agencies.

Objective 23 - Encourage the protection of the setting of the Site to secure the overall integrity of the WHS.

Three proposals are made to achieve this objective:

1. Ensure no inappropriate development in the setting of the Site.

Firm and robust statutory policies need to be invoked through the Northern Area Plan to protect the integrity of the Site and to ensure that development does not have an adverse impact on the landscape within the setting of the Site.

2. Promote a high standard of design for new development in the setting at on Site.

Any new development in the setting of the Site must be of a high standard. New development should not adversely affect the ‘sense of place’. Encouragement should be given to the preparation of a development design guide for the setting of the Site and the wider area. All bodies associated with the management of the Site should seek to promote the highest standards for the design of such development whether they are the commissioning body or statutory consultee.

3. Encourage sensitive land management in the setting of the Site

The current mixed-farming regime within the setting of the Giant's Causeway and Causeway Coast WHS should be encouraged and supported by the major stakeholders. Special attention should be given to land within the Distinctive Landscape Setting of the WHS (see Section 2.3) so that the landscape character is kept compatible with the Site's Outstanding Universal Value and scenic qualities. The possibility of introducing a special agri-environment scheme for the area, perhaps within the context of the existing ESA Scheme, should be considered by EHS and DARD; the DEFRA sponsored Countryside Stewardship Scheme for the Stonehenge WHS may serve as a useful model.

Landowners and managers, especially the farmers within the area, must be made aware of the WHS setting issues. The proposed WHS Officer could play a useful role in this regard.

5.8 Site Boundary

- 5.8.1 The current boundary of the Site (see Section 2.1 and Figure 2.3) marks its extent as it was identified during the original nomination in 1985/6 and clarified during the preparation of the WHS Management Plan. However, the geological and landscape values for which the Site was primarily inscribed may apply to a larger area than the current Site boundary. In the future, two extensions to the Site could be considered by the proposed WHS Management Group: one eastwards and one westwards.
- 5.8.2 An eastward expansion towards Dunseverick Castle would encompass areas that contain significant geological features and ecological habitats. It could create a more complete coastal landscape for the WHS and contribute significantly to the outstanding scenic beauty and scientific interest of the WHS. The area seems to include land of sufficient geological and landscape value to justify inclusion within the Site; further study is however required. Furthermore, the inclusion of this extension would include areas of significant cultural heritage interest such as remains of historic industrial activity and mining.
- 5.8.3 Regardless of whether this expansion is pursued, there remains the opportunity to provide waymarked access to the Causeway from a second access point near Dunseverick Castle. This would assist in providing safe, enjoyable and sustainable access for visitors without compromising the integrity of the Site. The provision of a second access point could also assist with the managed dispersal of visitors along the coast away from the Causeway Stones.

5.8.4 An eastward expansion is broadly supported by the UNESCO/IUCN mission report of 2003. It would, however, pose a number of issues, including:

- a significant increase in the number of Site owners;
- the need for increased funding for a much larger site; and
- a possible increase in the area regarded as the setting for the Site.

5.8.5 It could, however, bring a number of significant benefits, including:

- opportunities for increased access to the Site including the base of the cliffs and shoreline;
- significant opportunities for landscape and ecological enhancement; and
- the possibility of shifting visitor focus away from the ‘honey-pot’ at the Causeway Stones to the wider landscape.

5.8.6 A possible westwards expansion remains to be considered in any detail, although there are acknowledged features of geological and landscape interest in the area. However, insufficient analysis has yet been undertaken to define the exact extent of any future boundary expansions.

5.8.7 Given the need to consult extensively with local landowners and other interested parties and compile relevant geological, landscape and cultural heritage baseline information, the WHS Management Plan Steering Group has decided not to seek expansion of the WHS at this stage. Any future expansion would require the preparation of a revised WHS Management Plan.

Objective 24 – Review the WHS boundary by the end of 2010.

Any proposed expansion must be carried out in the context of a balanced approach between conservation and economic activity. To this end the existing boundary of the WHS should be reviewed prior to the completion of the next revision of the WHS Management Plan in 2010-11. This will require a detailed assessment of the geological and landscape interests of the coastlines to the east and west of the current Site and wide consultation.



© NT/Chris Will

6.0 VISION AND ACTION PLAN

6.0 VISION AND ACTION PLAN (2005-2011)

6.1 Introduction

- 6.1.1. This section of the WHS Management Plan provides a vision for the future of the Giant's Causeway and Causeway Coast WHS to guide the management of the Site over the next six years. This vision reflects the five underlying Management Principles and supports the Management Objectives set out in Section 5.0. The Action Plan outlines actions required to deliver those objectives, to prepare the baselines for the required monitoring (Appendix D) and to achieve the Vision.
- 6.1.2 The organisations that have worked together to develop this WHS Management Plan need to face the challenge of implementing the Objectives, Action Plan and Vision to secure the protection of the Site and its Outstanding Universal Value for future generations. The implementation of the WHS Management Plan requires the support and participation of these and other organisations and individuals. The WHS Management Plan itself can provide the focus for co-ordinating this effort, but it requires a significant level of continued commitment and resources if it is to succeed.
- 6.1.3 The recognition of this commitment is implicit in the work of the current WHS Management Plan Steering Group. This group was responsible for guiding the preparation of this WHS Management Plan, and it represents a long-term commitment by its members to conserving and improving the WHS. The members of the group have a continuing role to play in creating a sense of ownership of, and support for, this Plan among all users of the Site and those that may be affected by it. These include the local community, landowners and visitors, and those bodies with statutory responsibilities within and around the WHS.
- 6.1.4 Section 6.2 presents the Vision for the Site for the next six years. Section 6.3 outlines a strategy for implementing the WHS Management Plan, whilst 6.4 details how the WHS Management Plan should be reviewed. Section 6.5 presents the Action Plan.

6.2 Vision for Giant's Causeway WHS (2005 to 2011)

The *Giant's Causeway and Causeway Coast World Heritage Site* will become an international exemplar in the integrated sustainable management of complex natural landscapes. The Site will be managed in a considered and consensual manner to deliver an effective balance between:

- the conservation of the Site's dynamic geological landscape;
- the conservation of the Site's ecological values;
- the delivery of a world class visitor experience; and
- the need to provide positive benefits for local communities.

This will be achieved through the programmed delivery of the WHS Management Plan's Actions and Objectives by the stakeholders through the proposed WHS Management Group and other agencies. Key amongst these deliverables will be the:

- development of integrated management structure and tools for the Site;
- enhancement of public, scientific, physical and intellectual access across the Site;
- provision of new world-class visitor facilities for the Site;
- improved interpretation and educational facilities; and
- preparation of clear planning policy for the setting of the Site.

6.3 Strategy for the Implementation of the WHS Management Plan

- 6.3.1 For the WHS Management Plan to deliver a sustainable future for the WHS it needs to be actively promoted, monitored and implemented. This requires considerable commitment from the partner organisations in the form of a proposed WHS Management Group as discussed in Objective 1. This group would have a balanced membership to reflect the conservation and tourism interests of the Site. It would provide strategic guidance on the activities and operations occurring on Site by the Site owners and visitor centre operators and facilitate dialogue with the Local Community Advisory Forum comprising of local stakeholders and people with an interest in the Site. A proposed management structure for the Site is shown in Figure 6.1. Refinement of this structure may occur as the WHS Management Plan implementation proceeds and stakeholders are consulted further. It may also be transitional,

depending on the outcome of the discussions between DETI, the National Trust and Moyle District Council on the re-development of the visitor centre.

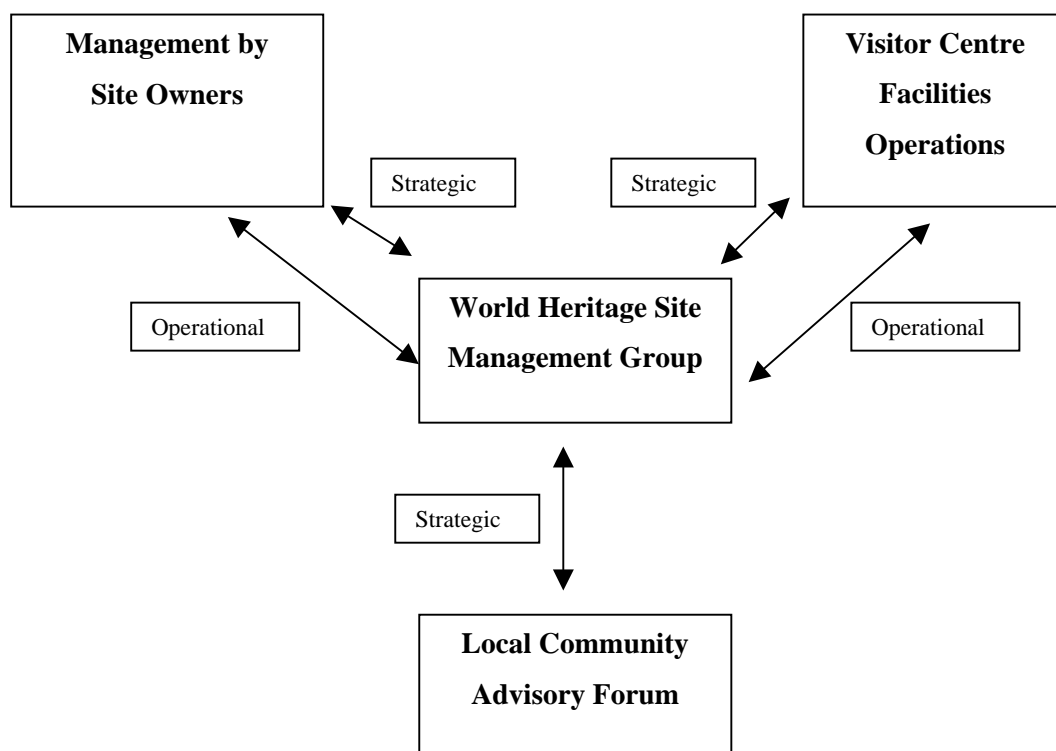


Figure 6.1 Proposed WHS Management Structure and Information/Communication Flows

Proposed WHS Management Group Role

6.3.2 While it is recognised that detailed duties for the proposed WHS Management Group have still to be fully agreed, key responsibilities would include:

- update, prepare and co-ordinate an annual programme for action based on the Action Plan (Section 6.5) that translates the WHS Management Plan's objectives into practical action on the ground;
- establish monitoring procedures based on the guidance outlined in Appendix D, including the maintenance of relevant databases and indicators for monitoring progress;
- secure funding to cover co-ordination costs;
- review and update the WHS Management Plan on a six-yearly cycle (see Section 6.4);
- co-ordinate and facilitate new initiatives identified in the WHS Management Plan;
- identify opportunities for funding to support new initiatives;

- integrate the interpretation of the Site and proposed visitor centre;
- work with local communities to deliver initiatives in the setting of the Site;
- inform the local community about the Site and the activities occurring on it;
- monitor development in the setting of the Site;
- liaise with other organisations (including site owners) to ensure the implementation of the WHS Management Plan;
- liaise with other bodies and landowners on the Site and within the setting; and promote the WHS to local, regional and international audiences.

6.3.3 There may also be a case for appointing a locally based WHS Management Officer. This Officer would support the Management Group in its role, facilitate the integrated and cohesive management of the Site and encourage participation and action in line with the agreed objectives of the adopted WHS Management Plan.

6.4 Reviewing the WHS Management Plan

6.4.1 New information or changed perceptions of management priorities can change the emphasis of a WHS Management Plan as the knowledge and practical experience of those responsible for the management of the Site develops. As additional information or knowledge comes to light, for example the location of new geological features or new habitats, the understanding of the value of the Site and its components also changes. These will have an effect on the long-term management of the Site.

6.4.2 The WHS Management Plan therefore needs to be regularly reviewed and updated as required. It may be appropriate to link this review of the Plan to the Committee's Periodic reporting cycle, which is approximately every six years.

6.5 Action Plan

6.5.1 The Action Plan identifies the tasks required to implement the objectives set out in Section 5.0 and the monitoring baseline requirements identified in Appendix D. These tasks require action by a wide range of agencies and bodies but whether these actions are implemented by a single body or require a partnership approach, it is of fundamental importance that they are conceived, designed and implemented within the framework established by the WHS Management Plan and are undertaken in a manner that is compliant with the management principles (see Section 5.2).

6.5.2 The actions are outlined below in two tables. All actions are related to particular objectives and monitoring requirements.

6.5.3 Some of the suggested actions represent WHS-wide actions, while others are more area-specific and reflect targeted objectives in specific Zones (see Section 2.4). The following abbreviations are used to describe the zone(s) to which a particular action relates:

WHS	Entire Site
Setting	Entire setting (as defined in Section 2.4)
Z1	Zone 1
Z2	Zone 2
Z3	Zone 3
Z4	Zone 4
Z5	Zone 5

6.5.4 The following abbreviations are used to identify the agencies or bodies with the lead responsibility for implementation for each action:

CCGHT	Causeway Coast and Glens Heritage Trust
DARD	Department for Agriculture and Rural Development
DETI	Department of Enterprise, Trade and Investment
DRD	Department for Regional Development
DoE	Department of the Environment
EHS	Environment and Heritage Service
GCC	Geoconservation Commission
MDC	Moyle District Council
NITB	Northern Ireland Tourist Board
NT	National Trust
MG	Proposed WHS Management Group
PS	Planning Service
RS	Roads Service
RTO	Regional Tourism Organisation
CG	Coastguard
MAGNI	Museums and Galleries of Northern Ireland

6.5.5 The reference to the WHS Management Group against some actions in the table are not intended to imply that the site owners, or other bodies with statutory obligations, are expected to forego their legal responsibilities.

6.5.6 Target dates for implementation are either specifically stated or are indicated as follows:

Complete	Action/Project completed
In progress	Action/Project currently in progress
Ongoing	A continuing ongoing action/project with no defined start/finish date
Short Term	Action/Project to be completed by the end of 2010
Medium Term	Action/Project to be completed by the end of 2015.

	Action	Extent	Agencies	Target for implementation
Objective 1 – Implement, monitor and review the WHS Management Plan through the formation of an active and effective partnership of bodies with responsibility for making and implementing decisions that may affect the Site.	Form the proposed WHS Management Group to provide strategic guidance for the development, management and conservation of the Site.	WHS	DETI, EHS, MDC, CCGHT, NT	January 2005
	Prepare and co-ordinate an annual programme for action that translates the WHS Management Plan's objectives into practical action on the ground	WHS	MG	January 2005
	Co-ordinate with other bodies and landowners on the Site and within the setting to prevent duplication of activities	WHS	MG	Ongoing
Objective 2 - Integrate the management of the visitor centre and associated facilities and the management of the Site	Consider appointment of a WHS Management Officer.	WHS	EHS, NT, MDC	Short Term
Objective 3 - Involve local communities in the strategic management of the Site	Identify key points of contact and establish formal links with local community groups.	WHS	MG	Short Term
	Establish a Local /Regional Advisory Forum to advise the future management of the Site	WHS	MG	Short Term

	Action	Extent	Agencies	Target for implementation
Objective 4 – Ensure adequate information is available to all Site managers	Develop effective monitoring regimes (see Appendix D)	WHS	MG	Short Term
	Develop a GIS system accessible to all agencies involved with Site management	WHS	MG	Short Term
	Incorporate ecological baseline data into the GIS	WHS and Setting	EHS, NT	Short Term
	Survey the Site to record the location and condition of archaeological/historic structures and features and then incorporate the results into the proposed GIS.	WHS	EHS, NT	Short Term
	Create a database of known historical information relevant to the Site	WHS	MG	Medium Term
	Explore the feasibility of creating a single repository for storing original material and copies relevant to the Site	WHS	MG, MAGNI	Medium Term
Objective 5 – Establish links with other similar World Heritage Sites	Establish links to collaborate and share information on management and monitoring with other similar WH Sites.	WHS	MG	Ongoing

	Action	Extent	Agencies	Target for implementation
Objective 6 – Accept the management consequences of a dynamic Site.	Review the use of stabilisation techniques which prevents / reduces geomorphological activity	WHS	MG	Short Term
Objective 7 – Support geological research programmes and projects	Encourage researchers to use the Site in their work	WHS	MG	Ongoing
	Ensure that the GIS (see Objective 4) is available to researchers and that their results are, where appropriate, incorporated back into the GIS	WHS	MG	Ongoing
	Encourage the use of the Site and region for academic conferences	WHS and Setting	MG	Ongoing
Objective 8 – Ensure that the unique character, distinctiveness and aesthetic quality of the Site’s ‘natural’ landscape is recognised, conserved and enhanced	Reduce, whenever possible, the visual intrusion of the buildings into the lower areas of the WHS.	WHS	MG, PS DETI	Ongoing
	On-site infrastructure, including bus, road, paths, fencing and temporary fencing should be reviewed and redesigned to reflect landscape character and quality of the WHS.	WHS	MG, DETI	Opening of visitor centre
	Ensure landscape concerns are reflected in the Visitor Access Masterplan (see Objective 18)	WHS	MG, DETI	Opening of visitor centre

	Action	Extent	Agencies	Target for implementation
Objective 9 – Improve knowledge and understanding of the landscape character of the Site and its setting	Undertake a landscape assessment for the Site and its setting	WHS	MG	Short-term
	Incorporate landscape baseline into GIS system to support decision making	WHS	MG	Short-term
Objective 10 - Balance the management requirements of visitors with the Site's ecology	Include ecological constraints and issues within the Visitor Access Masterplan (see Objective 19)	WHS	MG, DETI	Opening of visitor centre
Objective 11 – Update and use the SAC conservation objectives, NNR Draft Management Plan and additional ASSI objectives to manage the Site's ecology	Update and finalise the NNR Draft Management Plan in line with WHS Management Plan.	WHS	NT, EHS, MG	2005
	Continue to use the SAC objectives and NNR Draft Management Plan to inform the development of visitor access proposals and in day-to-day management of the Site	WHS	MG	Ongoing
Objective 12 – Develop management proposals for the sub-tidal zone	Commission research into the conservation interests of the sub-tidal zone	WHS	EHS	Short term

	Action	Extent	Agencies	Target for implementation
	Ensure that the counter-pollution and response procedures are activated when necessary to counteract accidental discharge from the land or passing maritime vessels	WHS and Setting	CG and EHS	Ongoing
Objective 13 – Interpret and promote the intangible values and cultural heritage of the Site	Include cultural heritage and intangible values in the interpretation of the Site	WHS	MG, DETI	Ongoing
Objective 14 – Support the delivery of the Causeway Coast and Glens Tourism Masterplan	Support the implementation of the Tourism Masterplan	WHS and Setting	MG	Ongoing
	Work with all agencies to ensure that investment and resources are used to improve the tourism product and infrastructure throughout the area.	WHS and its Setting	MG	Ongoing
	Encourage small businesses in the tourism industry and address the need for good quality hotel accommodation in the area	Setting	MG	Ongoing
Objective 15 – Seek to increase visits to the Site on public and/or other forms of sustainable transport	Promote details on how to reach the WHS focussing on sustainable methods of transport	WHS	MG	Ongoing

	Action	Extent	Agencies	Target for implementation
	Provide facilities on-site for visitors to store luggage, cycles etc	WHS	MG, DETI	Ongoing
	Examine the feasibility of providing increased levels of Public Transport to the Site	WHS and Setting	MG, DRD	Medium Term
	Prepare a Green Transport Plan for the Site.	WHS and Setting	MG, DRD, DOE	Opening of visitor centre
Objective 16 - Signage and information on transport links to the Site should be easily available within the Causeway Coast and Glens Region and at the principal arrival points.	Review current signage provision and enhance as necessary	WHS	NITB, DRD	2005
	Use the Visitor Servicing Strategy for Northern Ireland Manual and The Guide to Tourist Signing in Northern Ireland to promote the Site	Setting	NITB, RS	Short Term
Objective 17 – Enhance the visitor experience without compromising the significance of the Site	Develop an official Giant’s Causeway and Causeway Coast WHS Website	WHS	MG	Short Term
	Develop new world-class visitor centre for the Site	WHS and Setting	DETI, NITB, MG	Short Term
	Prepare an integrated marketing / promotion strategy for the Site	WHS	RTO, MG	Short Term

	Action	Extent	Agencies	Target for implementation
Objective 18– Reduce the impact of ‘assisted access’ vehicle from Centre to the Stones.	Consider alternative means of ‘assisted access’ to the Causeway Stones	WHS	MG	Opening of visitor centre
	Undertake a legal review of the road’s status	Z1	EHS, NT, RS	Opening of visitor centre
Objective 19 – Develop a Visitor Access Masterplan for the Site	Prepare a Visitor Access Masterplan	WHS	MG, RS, DETI	Opening of visitor centre
	Explore the feasibility of creating a network of circular works and longer walks to and from the Site	WHS and Setting	MG	Short Term
	Explore the feasibility of creating a shuttle service between Dunseverick Castle and Causeway Head to facilitate longer walks to and from the Site	WHS and Setting	MG, DRD	Short Term
	Undertake a feasibility study for reopening the lower cliff path at least as far as Port na Spaniagh	Z3 and Z4	MG	Medium Term

	Action	Extent	Agencies	Target for implementation
Objective 20 - Identify, monitor and address visitor safety issues at the Site	Within the Visitor Access Masterplan (see Objective 19) use the Visitor Safety in the Countryside Group (VSCG) guidance to produce a zoned approach to visitor safety and access.	WHS	MG	Short Term
	Undertake regular safety audits, monitoring and risk assessments	WHS	MG	Ongoing
	Review the effectiveness of safety throw lines on the Grand Causeway. If appropriate, implement a less visual intrusive scheme.	Z1	NT	Short Term
	Identify and use less visually intrusive types of temporary safety fencing	Z1, 2, 3	NT	Short Term
Objective 21 - Develop a coordinated approach to the maintenance and improvement of the interpretation facilities on the Site	Prepare an cohesive and coordinated interpretation strategy for the Site and new visitor facility	WHS	MG, NITB, RTO DETI	Opening of visitor centre
	Promote interpretive links to the wider region, particularly through the landscape and geology themes.	WHS and its Setting	MG, NITB, RTO	Ongoing
	Explore opportunities for increasing first person interpretation of the Site	WHS	MG, NITB, RTO	Short Term
Objective 22- Maintain and improve the educational programmes and facilities on the Site	Frequently monitor and review the provision of facilities for formal education of school children	WHS	MG, NEELB	Ongoing

	Action	Extent	Agencies	Target for implementation
the Site	Develop formal links between NEELB and the National Trust to exchange ideas and share resources	WHS	NT and NEELB	Ongoing
	Extend the education programme(s) to others not currently involved.	WHS	MG	Ongoing
Objective 23 - Encourage the protection of the setting of the Site to secure the overall integrity of the WHS.	Monitor effectiveness of NAP in achieving protection of the setting of the Site	WHS and its Setting	MG, PS	Ongoing
	Commission historic and current usage study to demonstrate history and nature of change of development in the area	WHS and its Setting	MG	Short Term
	Promote high standards of design for development in the setting	WHS and its Setting	MG	Ongoing
	Support the development of a design guide for WHS, setting and wider area	WHS, Setting and beyond	EHS, Planning Service, MG	Short Term
	Encourage and support the current mixed farming regime within the setting of the Site.	WHS and its Setting	MG, DARD	Ongoing

	Action	Extent	Agencies	Target for implementation
	Undertake an active process of communication to ensure that local landowners and managers, especially the farmers within the area, are made aware of the WHS setting issues.	WHS and its Setting	MG, DARD	Ongoing
	Explore the feasibility of implementing a special agri-environment scheme to support farmers within the setting of the WHS	WHS and its Setting	EHS, DARD	Short Term
	Encourage the retention and restoration of historic and traditional hedgerows.	WHS, Setting and beyond	DARD, MG	Ongoing
	Undertake detailed landscape character assessment as baseline for future studies and comparisons	WHS, Setting and beyond	MG	Ongoing
Objective 24 – Review the WHS boundary by the end of 2010	Review the boundary of the WHS	WHS and Setting	MG	2010
	Undertake geological and landscape study of possible extension areas to inform boundary review	WHS and Setting	EHS	2010

	Action	Extent	Agencies	Target for implementation
Monitoring - Geology and Geomorphology (Baseline Requirements)	Convert slope stability data into a GIS-compatible format	WHS	EHS	Short Term
	Identify, record and measure extents of current human interventions	WHS	MG, EHS	Short Term
	Gather data on number of scientific articles / research trips relevant to Site undertaken over past decade	WHS	MG	Short Term
	Identify and record damage to the stones through encroachment of vegetation etc.	WHS	MG, EHS, NT	Short Term
Monitoring - Landscape (Baseline Requirements)	Prepare landscape baseline and photographic survey for Site	WHS	EHS	Short Term
Monitoring - Ecology (Baseline Requirements)	Convert ecological data into a GIS-compatible format	WHS	EHS	Short Term
Monitoring - Intangible Values and Cultural Heritage (Baseline Requirements)	Prepare cultural heritage baseline and surveys for the Site	WHS	EHS	Short Term
Monitoring - Visitor Management and Experience (Baseline Requirements)	Undertake baseline Visitor Survey	WHS	MG, NITB	Ongoing
	Undertake baseline Traffic Survey	WHS	MG	Short Term
	Undertake Visitor Safety Risk Assessment	WHS	NT, MG	Ongoing

	Action	Extent	Agencies	Target for implementation
Monitoring - Socio-Economic (Baseline Requirements)	Undertake baseline Visitor Survey	WHS	MG	Ongoing
Monitoring - Setting (Baseline Requirements)	Undertake land-use mapping exercise	WHS	EHS	Short Term
Monitoring - Results	Undertake an audit of the monitoring results	WHS	MG	Ongoing

BIBLIOGRAPHY

- Carter, R. W. G. (1991). *Shifting Sands : A study of the coast of Northern Ireland from Magilligan to Larne*. Countryside & Wildlife Research Series No. 2. Belfast : HMSO.
- DETI (2004). *Causeway Coast and Glens Tourism Masterplan*
- EC Directive on the Conservation of Natural Habitats and of Wild Flora & Fauna. (92/43/EEC).
- Environment and Heritage Service (2000) The Giant's Causeway sustainable Management Strategic Plan
- Environment & Heritage Service (2003a). *Causeway Coast Area of Outstanding Natural Beauty*. Summary Management Plan. Volume 1.
- Environment & Heritage Service (2003b). *Causeway Coast Area of Outstanding Natural Beauty*. Recommendations Towards a Management Plan. Volume 2.
- Environment & Heritage Service (2003c). *Causeway Coast Area of Outstanding Natural Beauty*. Management Plan Appendices. Volume 3.
- Fielden, B and Jokilbo, J (1998). Management Guidelines for World Cultural Heritage Sites. ICCROM, UNESCO and ICOMOS.
- Hamilton, W. (1786). Letters concerning the northern coast of the County of Antrim, London.
- ICOMOS (1986). World Heritage List No. 369 Evaluation Report
- Knight, J. (ed) (2002). *Field Guide to the Coastal Environments of Northern Ireland*. University of Ulster, Coleraine. p.204.
- Lyle, P. (1980). *A petrological & geochemical study of the Tertiary basaltic rocks of northeast Ireland*. Journal of Earth Services, Royal Dublin Society. **2** : pp.137-152.
- Lyle, P. & Preston, J. (1993). *Geochemistry & volcanology of the Tertiary basalts of the Giant's Causeway area, Northern Ireland*. Journal of the Geological Society, London. **150** : pp.109-120.
- McDonnall, B. A. M. (2000). *An investigation of mass movements in Northern Ireland, with implications for their Management*. PhD thesis. Queen's University Belfast, p.530.
- Migon, P. & Lidmar-Bergstrom, K. (2002). *Deep weathering through time in central & north-western Europe : problems of dating & interpretation of geological record*. In : Smith, B. J., Turkington, A. V. & Thomas, M. F (eds.) : The Interpretation & Significance of Weathering Mantles. Catena Special Issue. **49** : pp.20-35.
- National Trust (2001) The Giant's Causeway NNR Draft Management Plan
- Northern Ireland Tourist Board (2004) Visitor Servicing Strategy for Northern Ireland
- Northern Ireland Tourist Board (2004) Visitor Servicing Strategy for Northern Ireland Manual
- Patterson, E. M. (1955). *The Tertiary larva succession in the northern part of the Antrim plateau*. Proceedings of the Royal Irish Academy. **57B** : pp 79-122.
- Patterson, E. M & Swaine, D. J. (1955). *A petrochemical study of Tertiary theolitic basalts: the Middle lavas of the Antrim plateau*. Geochemica et Cosmochimica Acta. **8** : pp.173-181.
- Queen's University of Belfast (1997) Management Study of the Giant's Causeway Area.
- Smith, B. J. & Ferris, T. M. C. (1997). *Giant's Causeway : management of erosion*. Geography Review. **11** : pp.30-37.
- Smith, B. J., Ferris, T. M. C., Hughes, D. A., Greer, J. U. P., Murray, M. R. (1994). *Footpath and visitor management strategy for the Causeway Coastal Path Network*. Report for Environment & Heritage Service. p.110.

- Smith, B. J. & Hughes, D. A. (1989). *Condition assessment of the Giant's Causeway road and recommendations for remedial actions*. Report for Environment & Heritage Service & DOE Roads Service. p.28.
- Smith, B. J. & Warke, P. A. (2001). *Classic Landforms of the Antrim Coast*. Geographical Association, Sheffield, p.52.
- Tomkeieff, S. I. (1940). '*The basalt lavas of the Giant's Causeway district of Northern Ireland.*' Bulletin Volcanologique. Serie 2, **6** : pp.89-143.
- UNESCO (1972). Convention concerning the protection of the World Cultural and Natural Heritage.
- UNESCO (1999). Operational Guidelines for the Implementation of the World Heritage Convention.
- UNESCO World Heritage Committee (2002). Budapest Declaration on World Heritage.
- UNESCO (1985). UNESCO World Heritage List. Giant's Causeway Natural Site Nomination.
- UNESCO(2001). The Giant's Causeway NNR: Draft Management Plan, December 2001.
- UNESCO (2003). State of Conservation of Giant's Causeway and Causeway Coast (United Kingdom)
- Wallace, J. M., Ellam, R. M., Meighan, I. G., Lyle, P. & Rogers, N. W. (1994). *Sr isotope data for the Tertiary lavas of Northern Ireland : evidence of open system petrogenesis*. Journal of the Geological Society, London. **151** : pp.869-877.
- World Heritage Convention (1985). Giant's Causeway and Causeway Coast, County Antrim, Northern Ireland.



APPENDICES

APPENDIX A: FULL LIST OF STEERING GROUP

Chair:	Graham Seymour - Environment and Heritage Service
Members:	<p>Sandi Howie - Environment and Heritage Service</p> <p>Ruth Blair - Environment and Heritage Service</p> <p>Graham Thompson - National Trust</p> <p>Jo Burgon - National Trust</p> <p>Kevin McGarry - Moyle District Council</p> <p>David McAllister – Moyle District Council</p> <p>Ciaran McGarrity - Department of Enterprise, Trade and Investment</p> <p>Peter Harper - Causeway Coast and Glens Heritage Trust</p> <p>Philip Pentland - Northern Ireland Tourist Board</p> <p>Bob Brown - Council for Nature Conservation and the Countryside</p> <p>Peter Doyle - Geo-Conservation Commission</p>
Consultants:	<p>Chris Blandford - Chris Blandford Associates</p> <p>Andrew Croft - Chris Blandford Associates</p> <p>Marian Cameron - Chris Blandford Associates</p>

APPENDIX B: SUMMARY OF PUBLIC CONSULTATION PROCESS

B.1 Introduction

- B.1.1 Following approval by the Steering Group, a Public Consultation Draft of the WHS Management Plan was launched in September 2004. The public consultation period ran from the 6th September to the 3rd December 2004.
- B.1.2 During the consultation period, the Environment and Heritage Service promoted the opportunity to give feedback and input into the Draft Management Plan through a programme of events, promotional material, exhibitions and a meeting for invited consultees.
- B.1.3 By the end of the consultation process written responses had been received from 37 individuals and organisations.

B.2 The Consultation Process and Draft Management Plan

- B.2.1 To stimulate responses to the Plan, public consultation took the form of:
- a press release;
 - a single web page on the EHS website advertising the plan and hosting a digital copy of the full plan and summary;
 - a series of invitation letters sent out inviting specialists, staff and organisations to comment on the plan and attend a public consultation meeting on the 9th November; and
 - reminder letters were sent to key target audiences and updates were made on the web page.
- B.2.2 These key elements resulted in two main ways to comment on the Public Consultation Draft of the Management Plan. These were either by sending in written comments to the consultants Chris Blandford Associates or orally at the public consultation meeting.
- B.2.3 The following organisations responded in writing:

Steering Group

- Environment and Heritage Service

- National Trust
- Moyle District Council
- Department of Enterprise, Trade and Investment
- Causeway Coast and Glens Heritage Trust
- Northern Ireland Tourist Board
- Council for Nature Conservation and the Countryside Geo-Conservation Commission

Invited Consultees

- Causeway Coast AONB Management Group
- Coleraine District Council
- DCMS Maritime Archaeology
- Department of Agriculture and Rural Development
- Earth Science 2000
- Faculty of Business and Management, University of Ulster
- Geological Survey of Northern Ireland
- Keeper of Geology and Acting Head of Sciences Division National Museums and Galleries of Northern Ireland
- Northern Branch of the Ulster Society for the Protection of the Countryside
- RSPB / Chough Steering Group
- The Causeway Coast and Glens Ltd
- The Roads Service (Roads Agency for Northern Ireland)
- The Ulster Society for the Protection of the Countryside
- Centre for Coastal and Marine Research, School of Environmental Sciences, University of Ulster and British Geological Survey
- The Crown Estate

Other Interested Parties

- A.C. Mitchell Station Officer of the Ballycastle Coastguard Team
- W.S. Askin
- Awakin
- B. Bailie
- T. Bazley
- S. Gray
- Heritage Lottery Fund

- P. Hirsh
- Historic Buildings Council
- J. Knox
- W.P. Millar
- Portballintrae Residents' Association
- Reid
- R.S. Twist

B.2.4 The following individuals and representatives from organisations attended the public consultation meeting:

- Ian Nicol - DOE Planning Service (NAP)
- Johnny McNee - DOE Planning Service (NAP)
- Philip Doughty - Earth Science 2000
- Annesley Malley - CNCC
- David and Judith Knox - landowner
- Caro-lynn Ferris - CAAN
- Moira Mann - Coleraine Borough Council
- Michael McConaghey - Moyle District Council
- Ann Rossborough - Causeway Coast and Glens Ltd
- Sean Farren - MLA
- Mervyn Storey - MLA
- Maxime Sizaret - CCGHT
- Peter Harper - CCGHT
- Robin Cardwell - North Coast Lobster Fishermens Association
- Cecil Montgomery - North Coast Lobster Fishermens Association
- Audrey Gilmore - University of Ulster
- Lynn Fawcett - University of Ulster
- Paddy McAteer - USPC
- Ian Ramont - USPC
- Eliz McNeill - USPC
- Ian Binnie - Portballintrae Residents Association and USPC
- David Hogg - Portballintrae Residents Association
- D McConaghey - Shopkeeper at visitor centre
- F McConaghey - Shopkeeper at visitor centre

- WD Bustard - Giant's Causeway & Bushmills Railway
- John Bustard - AWAKIN Ltd

B.3 Key Issues Raised

B.3.1 In summary the public consultation process highlighted the following key issues:

- a better balance was needed between tourism, economics and conservation within the plan;
- more detail was needed in relation to future management structure and responsibilities for the Site and future visitor facilities;
- the need for a more cohesive vision shared by the Management Plan, the future visitor centre and the AONB Management Plan;
- requests for access to the Lower Cliff path to be extended at least as far as Port na Spaniagh;
- information should be made widely available with a flow of themes and interpretation throughout the Site; and
- better definition of the setting of the Site and the related policies for its conservation.

APPENDIX C: REFERENCE POINTS FOR THE SITE

C.1.1 Table C.1 shows the full Ordnance Survey grid co-ordinates for the geo-referenced points marked on Figure 2.2, along the seaward boundary of the Site i.e. 300m off the major headlands.

Geo-referenced point	X coordinate	Y coordinate
A (Corner of Site)	293664	444297
B	294168	444911
C	294546	445151
D	294859	445457
E	295087	445779
F	295558	445908
G	296476	446365
H (Corner of Site)	296870	446382
I (Corner of Site)	296830	445745
J (Corner of Site)	294440	443845

Table C.1 Full Ordnance survey grid coordinates for the geo-referenced points marked on Figure 2.2

APPENDIX D: MONITORING

D.1 Introduction

D.1.1 This section outlines a strategic level approach to monitoring change on the Site. This will help managers to identify trends, issues and emerging conflicts and ensure that these are addressed at both the day-to-day and strategic levels. The monitoring regime identified here should be supported by detailed regimes for key elements of the Site's values. Some of these regimes already exist and are resourced by EHS or the National Trust, for example the monitoring of the SAC conservation objectives and NNR Draft Management Plan and additional ASSI objectives. Others, such as the monitoring of landscape change in the setting, will require new resources.

Outline of Approach

D.1.2 The approach taken to monitoring follows standard approaches to environmental monitoring in that it:

- identifies the key themes to be monitored (in this case taken from the statement of Outstanding Universal Value and statement of Other Values);
- identifies one or more indicators for each theme identified;
- outlines the nature of the baseline data required against which future change can be measured;
- highlights how monitoring of change should occur; and
- identifies desired outcomes so that the success, or failure, of initiatives can be rapidly identified.

D.1.3 Appendix D.2 presents the proposed approach to strategic monitoring in the form of a table. This is supported by a more detailed discussion of the monitoring process in Appendix D.3. The Action Plan in Section 6.5 identifies key actions that are required to address some of the issues identified in Appendix D.2 and D.3.

D.2 Monitoring Framework

D.2.1 The following table provides a summary of the key indicators, baseline and desired outcome for each of the key themes.

Table D.1: Monitoring key themes

*Note: Baseline data marked with a * is not currently available*

Key Themes	Key Indicators	Baseline data	Monitoring data	Desired outcome
Geology and Geomorphology	<i>1. Geomorphological dynamism</i>	Data used in <i>Giant's Causeway Management of erosion hazard</i> by Smith and Ferris	Updates of baseline data	No decrease in condition of the current areas classified as Unstable, Very Unstable and Extremely Unstable.
	<i>2. Human Interventions to limit rock fall and slope movement</i>	Measurements of extent of current interventions plus a photographic record*	Updates of baseline data	No increase in extent of intervention or visual impact of interventions
	<i>3. Scientific Activity</i>	Number of articles / research trips per annum*	Update of baseline data	No long-term decrease
	<i>4. Vegetation encroachment on the Causeway Stones</i>	Vegetation encroachment baseline data*	Update of baseline data	No increase in area of exposed rock covered by encroaching vegetation
Landscape	<i>1. Extent of visual intrusion from buildings and light pollution</i>	Landscape Assessment and photographic survey*	Updates of baseline data and photographic surveys	Decrease in visual intrusion from original baseline
	<i>2. Extent of visual intrusion from features such as fences, safety equipment, roads etc</i>	Landscape Assessment and photographic survey*	Updates of baseline data and photographic surveys	Decrease in visual intrusion from original baseline
	<i>3. Extent of human generated erosion</i>	Landscape baseline and photographic survey*	Updates of baseline data and photographic surveys	Decrease in erosion from original baseline

Key Themes	Key Indicators	Baseline data	Monitoring data	Desired outcome
Ecology	<i>1. Integrity of the SAC</i>	Site Integrity Monitoring*	Site Integrity Monitoring	No sand, gravel or rock extraction.
	<i>2. Condition of the SAC</i>	Condition Assessment	Condition Assessment	Site features are in favourable or recovering condition.
	<i>3. NNR feature Status</i>	Details in NNR Draft Management Plan	Details in NNR Draft Management Plan	No decrease in number of key indicators met
	<i>4. ASSI feature status</i>	Minimum requirements of Common Standards Monitoring Programme (site conservation objectives)	Common Standards Monitoring survey	Site features are in favourable or recovering condition.
	<i>5. Condition of the Sub-tidal communities</i>	Sub-tidal Baseline data*	Field survey and multibeam echo sounder surveys	No significant deterioration in condition
Intangible Values and Cultural Heritage	<i>1. Condition of Cultural Heritage Resource</i>	Cultural Heritage Baseline data*	Field survey	No significant deterioration in condition
Socio-Economic	<i>1. Number of visitors who also visit other places and attractions in the area</i>	Visitor Surveys*	Visitor Surveys	Increase on original baseline data
	<i>2. Number of days people stay in the Causeway Coast and Glens area</i>	Visitor Surveys*	Visitor Surveys	Increase on original baseline data
Visitor Management and Experience	<i>1. Quality of visitor experience</i>	Visitor Surveys*	Visitor Surveys	Year-on-Year increase in satisfaction levels
	<i>2. Number of visitors</i>	Visitor Surveys*	Count visitors	Sustainable year on year increase

Key Themes	Key Indicators	Baseline data	Monitoring data	Desired outcome
	3. <i>Percentage of visitors arriving by car</i>	Traffic Surveys*	Traffic Surveys	Year-on-year decrease
	4. <i>Average length of time spent on the Site</i>	Visitor Surveys*	Visitor Surveys	Increase on original data
	5. <i>Number of accidents on site requiring off site treatment</i>	National Trust Visitor Safety Risk Assessment	National Trust Visitor Safety Risk Assessment	No increase in the number of accidents.
Setting of the Site	1. <i>Landscape character</i>	AONB Landscape Character assessment	Field survey and updates	No significant change in landscape character
	2. <i>Land-use regimes</i>	AONB Landscape Character assessment and field survey*	Field Survey	Retention of mixed land-use regimes and restoration of historic field systems and hedgerows.

D.3 Indicators for Monitoring

Geology and Geomorphology

Geomorphological Dynamism

- D.3.1 Geomorphological dynamism is an important aspect of the geological significance of the Site. Smith and Ferris undertook a slope stability survey in 1997. This survey provides baseline data for areas considered Stable, Unstable, Very Unstable, and Extremely Unstable. This data should be incorporated into the proposed GIS and using the same methodology, further monitoring should be undertaken on a six-year basis (e.g. at each review of the WHS Management Plan). Over the long-term, this data should provide an accurate picture of how the Site is responding to natural and human influences. Given the significance of this aspect, it is considered desirable that there is no change in the geomorphological dynamism of the Site. Any such decrease would need to be explored in detail to determine whether natural or human influences were the cause. In addition, the distribution of the range of geological features should be incorporated into the GIS.

Human Intervention to limit rock fall and slope failure

- D.3.2 In a limited number of areas within the Site, interventions have been carried out to control rock fall and slope failure for health and safety and visitor access reasons. This intervention affects the balance of natural processes on the Site. The areas where this has occurred need to be identified, mapped and recorded. Monitoring should be undertaken through an ongoing programme of photographs and measuring of the areas influenced by human intervention. The long-term aim should be to reduce interventions and their impact on the Site's natural processes and landscape character.

Scientific Activity

- D.3.3 Scientific activity on the Site has contributed much to the understanding of geology and geomorphology and its continuation should be encouraged wherever possible. Most of the Site is currently accessible to people undertaking scientific activity on the Site. The lower cliff path area in particular is important due to the various rock exposures and geomorphological dynamism of the area. Currently the National Trust due to health and safety reasons restricts access to the lower cliff path as discussed in Objective 20. In the future the requirements for scientific activity in this area of the Site need to be monitored and included in reviews of access to the path.

Vegetation encroachment on the Causeway Stones

- D.3.4 A photographic and measured survey of current vegetation encroachment on the Causeway Stones should be prepared and updated regularly. Action may be required to reduce encroachment in extreme cases.

Landscape

Extent of visual intrusion from buildings

- D.3.5 At present parts of the development on the Causeway Head are visible from within the lower areas of the WHS, and this is impacting on the landscape character of the Site. Based on an analysis of the landscape assessment recommended in Section 5.4, it should be possible to monitor the visual intrusion of these elements in the WHS and identify opportunities for reducing their impact.

Extent of visual intrusion from features such as fences, safety equipment, roads etc

- D.3.6 Many features, e.g. the road and fencing, installed within the Site cause visual intrusion and detract from the character of the Site. Furthermore, in some places, they can appear superfluous or ineffective. Consequently, their presence and function should be reviewed. The baseline data and future monitoring should be undertaken through photographic evidence and the landscape baseline data updated. The desired outcome would be to reduce visual intrusion of human-made elements within the Site.

Extent of human generated erosion

- D.3.7 Erosion across the Site is occurring alongside footpaths, on desire lines to restricted areas and around the Causeway Stones. This needs to be identified, mapped and photographed as part of the landscape assessment. Regular monitoring would enable the identification of 'hot-spots' where erosion is occurring frequently and to unacceptable levels. The recently completed Raphael Project on erosion on Hadrian's Wall WHS (English Heritage 2004) may provide some models for the detailed monitoring of this theme.

Ecology

Integrity of the SAC

- D.3.8 The Site lies within the North Antrim Coast SAC. A monitoring regime is already being undertaken at a number of levels, using a variety of methods including Site Integrity. Through undertaking Site Integrity Monitoring annually, most of the more rapid processes of change are likely to be detected.

Condition Assessment of the SAC

- D.3.9 The SAC is also subject to Site Condition Assessment which is undertaken every six years. This monitoring should detect the slower, more natural processes such as changes in coastal dynamics, inappropriate grazing regimes (resulting in loss of species diversity) and changes in community distribution. Additional features that require monitoring for the SAC include:
- annual vegetation drift lines
 - Atlantic salt meadows
 - species-rich *Nardus* grassland, on siliceous substrates in mountain areas and
 - vegetated sea cliffs of the Atlantic and Baltic coasts.

Feature status of the NNR

D.3.10 Most of the Site is also designated as a National Nature Reserve (NNR) with a draft management plan that outlines the performance indicators, monitoring methodology and desired outcomes for each of the indicators. The Giant's Causeway NNR Draft Management Plan (National Trust, 2001) should be followed for detailed information on the following key ecological features that require monitoring:

- maritime cliff & slopes
- coastal salt marsh
- coastal vegetated shingle
- lowland heath (inc. mosaics of dry heath & acid grassland)
- chough
- littoral communities

ASSI feature status

D.3.11 The ASSI boundary coincides with the boundary for the SAC. Therefore the monitoring regime should be the same for both designations.

Condition of the sub-tidal communities

D.3.12 The Site boundary extends into the coastal waters below mean low tide. This area is not covered by any of the nature designations described above. There is very little information on the ecology of this area of the Site. Therefore a baseline of the condition of the sub-tidal communities should be established and regularly monitored through field surveys in conjunction with high resolution multibeam echo sounder surveys (MBES).

Intangible Values and Cultural Heritage

Condition of Cultural Heritage Resource

D.3.13 There are a number of cultural heritage resources within the WHS including the *Girona* and evidence of historic industrial activities that warrant conservation as part of the overall management process. All aspects of cultural heritage in the survey would include the location, extent and condition of these resources requiring recording. Quinquennial surveys

should be undertaken to determine the condition of the remains in order to help prevent deterioration. The results of the surveys should be amalgamated with archives of material already stored to form a more holistic database of information.

Socio-Economic

Number of people who visit other places and attractions in the area

- D.3.14 As the Site is the premier attraction in Northern Ireland, it has the potential to encourage visitors, through promotion, to visit other attractions and places in the surrounding region. Visitor surveys such as those currently undertaken by Causeway Coast and Glens Ltd would provide an indication of the influence of the Site and the distribution of economic benefits from the Site.

Number of days people stay in the Causeway Coast and Glens area

- D.3.15 The number of days people stay in the vicinity of the Site provides an indication of the benefits the local economy gains through tourism. The longer people stay in the area the greater the amount people are likely to spend. This should be monitored through visitor surveys such as those carried out by Causeway Coast and Glens Ltd.

Visitor Management and Experience

Quality of Visitor Experience

- D.3.16 The quality of visitor experience is a key component in determining visitor management strategies. Visitor experience will influence numbers of visitors to the WHS, how long they stay and if they will return. In order to monitor visitor experience it is necessary to undertake regular visitor surveys. There are several ongoing visitor surveys undertaken by different organisations with the general aim to provide accurate databases to allow more objective forecasting. However, survey questions that focus on the visitor experience could prove invaluable in determining a range of factors such as satisfaction, length of stay etc. Therefore the ongoing visitor surveys may need to be updated or another survey developed to be carried out in parallel.

Number of Visitors

- D.3.17 Every site has a theoretical carrying capacity for visitor numbers (this can be increased or decreased through intervention). Therefore, a count of the number of visitors to the WHS during the year and spot counts on the number of people on the Site during peak times should be carried out alongside the visitor surveys. Currently there are no accurate counts or estimates of visitor numbers.

Percentage of visitors arriving by car

- D.3.18 The percentage and pattern of use of visitors arriving by car would provide a broad indication of the car parking spaces required. It would also provide an indication of the number of people arriving by more sustainable transport. Detailed information on the patterns of use of the car park, nearby grass verges and the demand for car parking spaces would help inform decisions on the provision of parking spaces. It would also help highlight opportunities for targeting more sustainable transport at times of peak demand.

Average length of time spent on site

- D.3.19 The average length of time spent on a site can help, along with other indicators, provide an indication of the quality of the visitor experience. Most visitors currently, seemingly, spend a short time at the Site; this reduces economic benefits for the Site and surrounding area and reduces the appreciation of the Site. Visitor surveys should be used to monitor length of stay, to determine whether this is increasing, decreasing or remaining stable.

Number of accidents on-site requiring off-site treatment

- D.3.20 The National Trust's Visitor Safety Risk Assessment reviews the number of accidents. This should continue for the entire Site. The Visitor Safety Risk Assessment also biannually reviews the precautions required to maintain a safe environment. These may need to be reviewed in light of the WHS Management Plan.

Setting of the Site

Landscape Character

- D.3.21 A Landscape Character Assessment has been carried out for the area around the WHS. This can be used as a baseline from which to monitor change in the character of the area to ensure that the area's character is not being degraded through land-use change or new development. This process should be undertaken alongside each review of the WHS Management Plan.

Land-use Regimes

- D.3.22 The land-use regimes in the setting of the WHS affect the character of the WHS. These require monitoring through field surveys. In addition, the field surveys could also monitor the rate of loss and restoration of historic field systems and hedgerows. A map-based baseline survey is required to determine the current mix of land-uses.

