



Appendix 1.1

RELEVANT EXTRACTS FROM POLICY AND GUIDANCE DOCUMENTS

UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, WHC 08/01 January 2008

Management systems

108. Each nominated property should have an appropriate management plan or other documented management system which should specify how the outstanding universal value of a property should be preserved, preferably through participatory means.

109. The purpose of a management system is to ensure the effective protection of the nominated property for present and future generations.

110. An effective management system depends on the type, characteristics and needs of the nominated property and its cultural and natural context. Management systems may vary according to different cultural perspectives, the resources available and other factors. They may incorporate traditional practices, existing urban or regional planning instruments, and other planning control mechanisms, both formal and informal.

111. In recognising the diversity mentioned above, common elements of an effective management system could include:

- a) a thorough shared understanding of the property by all stakeholders;
- b) a cycle of planning, implementation, monitoring, evaluation and feedback;
- c) the involvement of partners and stakeholders;
- d) the allocation of necessary resources;
- e) capacity-building; and
- f) an accountable, transparent description of how the management system functions.

UK policy is that the requirement for a management system is met through the development of a Management Plan.

The full text of the 2008 UNESCO Operational Guidelines can be found at:

<http://whc.unesco.org/archive/opguide08-en.pdf>

Draft Circular on World Heritage Sites. Annex A in Protection of World Heritage Sites, Consultation Paper. CLG May 2008

World Heritage Site Management Plans

13. A Management Plan needs to cover all the issues affecting the site, some of which do not relate to planning matters, and to reflect the advice cited in the UNESCO Operational Guidelines. It needs to be developed in a consensual way, fully involving all interested parties, including those responsible for managing, owning or administering the Site. The key stakeholders should form a Management Plan Steering Group, which will, in many

cases, be led by the relevant local or regional authority. The plan needs to draw its policies from a proper understanding of the significance of the site and focus on protection of the outstanding universal value, authenticity and integrity of the site. The plan should take account of sustainable community strategies as relevant. Further guidance on the preparation of Management Plans is provided in [the English Heritage Guidance Note].

14. The Secretaries of State for Communities and Local Government and for Culture, Media and Sport expect local authorities to treat relevant policies in Management Plans as material considerations in making plans and planning decisions, to take them fully into account when devising core strategies and other local development documents, and to give them due weight in their other actions relating to World Heritage Sites. For some sites it may be useful for Management Plan Steering Groups to develop the section of the Management Plan dealing with development control in such a way as to allow adoption of that section within a local development document.

English Heritage The Protection and Management of World Heritage Sites in England, Draft Guidance Note. Annex B in Protection of World Heritage Sites Consultation Paper. CLG May 2008

9 World Heritage Site Management Plans

9.1 All effective conservation is concerned with the successful management of change. Conserving each World Heritage Site is fundamental but change is inevitable if the Site is to respond to the needs of present-day society. Effective management of a World Heritage Site is therefore concerned with identification and promotion of change that will conserve and enhance the Outstanding Universal Value, authenticity and integrity of the Site, and with the modification or mitigation of changes that might damage that value. It is also necessary to develop policies for the sustainable use of the site for the benefit of the local population and economy.

9.2 These uses may be economic, for example for tourism or through adaptation of a historic building or area to a new function. Uses can also be social, for example by using a historic site as a focal point for a local community, or educational activity. It is entirely legitimate that a World Heritage Site should be used in these ways, provided that this is done in ways that do not harm its Outstanding Universal Value. Use of English Heritage's *Conservation Principles* can aid assessment of proposals.

9.3 It is therefore essential that change is planned and that competing uses are reconciled. The UNESCO World Heritage Committee has said that all World Heritage Sites must have an appropriate management system in place which should specify how the Outstanding Universal Value, authenticity and integrity of the site should be maintained, preferably through participative means. The Committee's *Operational Guidelines* recognise that an effective management system will vary according to the nature of the site as well as the legal system of the state party concerned. They say that effective management involves a cycle of long-term and day-to-day actions to protect, conserve and present the Site.

Appendix 1.1

9.4 They recommend that common elements of an effective management system should include:

- a) a thorough shared understanding of the property by all stakeholders
- b) a cycle of planning, implementation, monitoring, evaluation and feedback
- c) the involvement of partners and stakeholders
- d) the allocation of necessary resources
- e) capacity building
- f) an accountable transparent description of how the management system functions

9.5 Most English World Heritage Sites are complex and large and generally in multiple ownership. There can also be large numbers of official bodies with an interest in the Site. World Heritage Site Management Plans are intended to resolve such potential challenges and to achieve the appropriate balance between **conservation, access and interpretation, the interests of the local community, and sustainable economic use** of the Site. World Heritage Site Management Plans should be prepared on a participatory basis by a Steering Group or Committee made up of the key stakeholders in each Site. These will vary according to the site but should include representatives of the owners, local authorities including parish councils, DCMS, English Heritage (or Natural England in the case of a natural site) and other official bodies or NGOs with an interest in the site. ICOMOS UK is normally a member of Steering Groups. The leader of the Group will also vary according to the nature of the site but is often the relevant local authority or the key owner of the site.

9.6 As far as possible Plans should be based on consensus and involve all the stakeholders in each Site and be subject to public consultation. Implementation mechanisms and resources should also be identified. Steering Groups and Management Plans are most effective when there is a World Heritage Site Coordinator in place. For a complex site, this is likely to be a full time function. On sites in single ownership, the coordinating function can be combined with other roles.

9.7 UNESCO and the Advisory Bodies recommend that World Heritage Site Management Plans should have an overall **vision** for the Site, **long-term aims** looking forward 30 years, and **policies** for five years. The vision and aims provide a long term continuum in which effective policies can be developed. Five or six years is about the longest period for which it is possible to plan ahead effectively and with any certainty. From these policies, it should then be feasible to develop annual work plans.

9.8 Successful World Heritage Site Management Plans will be focused on the identification, conservation and sustainable use of the values of the site and particularly on its Outstanding Universal Value, authenticity and integrity. To achieve a successful outcome, it is necessary to know:

- 1. What is there:** description of the site covering all its aspects, including uses, and not confined just to those which give its Outstanding Universal Value;
- 2. What is important and why:** identification of the Site's values through analysis of the description. All values should be identified and if necessary prioritised. This should focus on the Outstanding Universal Value as agreed by the UNESCO World Heritage Committee but should also identify other national, regional and local site values. It may be helpful to follow the

methodology set out in English Heritage Conservation Principles;

3. What makes the values vulnerable: Identification of ways in which the values (particularly its Outstanding Universal Value, authenticity and integrity) of the Site are vulnerable, and also of ways in which they can be enhanced and used sustainably;

4. What policies need to be in place to protect the values: development of policies to counter the vulnerabilities and to enhance the character of the Site and its sustainable use, including education, promotion and access;

5. How will the policies be implemented and monitored: identification of the ways in which the Plan will be implemented, and of arrangements to monitor and review its effectiveness.

9.9 This is the same basic methodology as is used for Conservation Plans but expanded to include proposals for sustainable beneficial use. A World Heritage Site Management Plan will normally be at a higher and less detailed level than a Conservation Plan. Conservation Plans may supplement World Heritage Site Management Plans for particular parts of complex sites, such as specific assemblages of ruins or individual buildings.

9.10 It may be helpful to group policies under four headings:

Protecting the Site's Outstanding Universal Value: protection of a site is about the prevention of activities which might damage its Outstanding Universal Value, authenticity and integrity either on the site itself or through the effects of development in its setting, including any buffer zone

Conserving the Site: conservation is about the positive actions needed to conserve and enhance the site. They can include works such as repair of buildings or ruins, changes to agricultural regimes to protect buried archaeology, or landscape works to improve the setting of the site.

Using the Site: sustainable use of a site is often the best way of conserving it. The way in which the site is used will depend on the nature of the site. What is appropriate in an urban centre will be very different to what may be needed on an archaeological site. On any site proper provision for visitors is essential. The primary focus of sustainable use is clearly the conservation of the Site's Outstanding Universal Value, authenticity and integrity. All projects should be designed and implemented with this in mind. It is also important, though, that any use of a site should be economically sustainable. Sustainable use of a site is often the best way of conserving it. Policies for use of the Site should include not just economic use but also education, outreach, promotion and access.

Managing the Site: clear policies for putting the Plan into effect are essential if it is to be effective. It is essential that all key stakeholders are involved in the management process. That process must provide for this involvement, and allow all interests to input to definition of the appropriate balance between conservation, access, sustainable use, including tourism, and the interests of the local community.

9.11 The process by which the plan is developed and put into effect is as important as its content. Essentially the development of the plan will go through three stages:

1. The preparation of a draft plan through involvement of all stakeholders: discussion and participation through this process is essential to develop consensus on the policies of the plan. Public consultation on the draft plan is the last step of this stage although there may be public meetings and consultations throughout the preparation process as required.



2. Publication of the agreed plan and its adoption by all the key stakeholders; this is a key stage in the process since it presents a programme of work and an agreed vision and direction for the management of the site.

3. Implementation: without agreed means for implementation, the plan will be of little use. It is essential that someone is responsible for implementing the plan and acts as its champion. The Plan Coordinator should also be responsible for reviewing and monitoring the effectiveness of the plan on a regular basis.

9.12 Many World Heritage Sites are affected by natural or man made emergencies. The UNESCO World Heritage Committee have requested that Management Plans should assess the possible impact of climate change and the likely risk of flood, fire and other emergencies and prepare mitigation strategies as appropriate for the WHS and amongst other things their collections. Steering groups are advised to consult closely with the relevant regional resilience authority and with county and local authority emergency planners and encourage owners within the WHS to make their own preparations. English Heritage and the Museums, Libraries and Archives Commission can also provide valuable advice.

9.13 Successful management planning is key to the satisfactory conservation and sustainable, beneficial use of World Heritage Sites. Essentially the process is cyclical. The success of the plan should be reviewed on a regular basis (say every five years) and the plan revised in line with the results of the monitoring and review. Also essential is continued research and analysis of the history and significance of the Site, and of how it is used, since only through such work is it possible to refine the definition of why the Site is important and thus to improve the plan's policies. Improved understanding also enables the site manager to improve interpretation for visitors.

9.14 Management Plans are essential documents in the management of a World Heritage Site. The World Heritage planning circular advises that relevant policies in them should be material considerations in making plans and planning decisions, and that Management Plans should be taken fully into account when devising core strategies and other documents in the local development framework. It may be appropriate in some cases to develop the section of the Management Plan dealing with development control in such a way as to allow adoption of that section within a local development document. It is therefore essential that they should be subject to full public consultation. Once completed, Management Plans should be formally endorsed or adopted by the bodies that have to put them into effect.

9.15 Management plans may be subject to European *Directive 2001/42/EC* on the assessment of the effects of certain plans and programmes on the environment (the *Strategic Environmental Assessment (SEA) Directive*). Advice on how to establish whether the Directive applies, and on its requirements, is in *A Practical Guide to the SEA Directive*, published in September 2005.
<http://www.communities.gov.uk/documents/planningandbuilding/pdf/practicalguidesea.pdf>.

The full text of Protection of World Heritage Sites, Consultation Paper. CLG May 2008

can be found at:
www.communities.gov.uk/documents/planningandbuilding/doc/869111.doc

Appendix 1.2

Appendix 1.2

CURRENT MEMBERSHIP OF THE WHS MANAGEMENT PLAN COMMITTEE

Julian Acton	National Farmers Union, Northumberland
Lindsay Allason-Jones	Museum of Antiquities
John Bell	Carlisle County Council
Paul Bidwell	Tyne & Wear Museums Service
Maggie Birchall	Tyne and Wear Museums Service
Patricia Birley	Vindolanda Trust
Felicity Blanks	Castle Morpeth County Council
Professor David Breeze	Professor of Archaeology
Angus Collingwood-Cameron	Country Land and Business Association
Mike Collins	English Heritage
John Crouch	Allerdale Borough Council
Cllr Mrs Anne Dale	Tynedale Council
Susan Denyer	ICOMOS UK
Austen Dodds	National Farmers Union, Northumberland
Alan Eales	Carlisle City Council
Hugh Edmundson	Castle Morpeth Borough Council
Graham Gill	Forestry Commission
Tom Gledhill	Natural England
Nicky Grace	The National Trust
Richard Greenwood	Cumbria Tourist Board
Ian Haynes Chair	Roman Archaeology, Newcastle University
Dr Richard Hingley	Durham University
John Hodgson	Lake District National Park Authority
Ken Hutchinson	North Tyneside MBC
Giles Ingram	Northumberland Tourism
Brian Irving	Solway Coast Area of Outstanding Natural Beauty (AONB)
Major P Johnson	Country Land and Business Association
Paul Johnston	Castle Morpeth Borough Council
Raymond Knapton	Carlisle City Council
David Lawrence	British Geological Survey
Dr Nigel Mills	World Heritage and Access Director, Hadrian's Wall Heritage Ltd (HWHL)
Jonathan Mullard	Northumberland National Park Authority
Catriona Mulligan	Northumberland National Park Authority
David Murray	National Farmers Union, Cumbria
Julian Nelson	NE Country Land and Business Association
Henry Owen-John	English Heritage North West
Ian Payne	Allerdale Borough Council
Andrew Poad	The National Trust
Carol Pyrah	English Heritage North East
Phil Reddy	North West Development Agency
Elaine Rigg	Northumberland National Park Authority
Sara Rushton	Northumberland County Council
Dr Brian Selman	Community Council of Northumberland
Professor Peter Stone (Chair)	Newcastle University
Rob Terwey	Cumbria County Council
Hugh Thomson	Senhouse Museum Trust
Lynn Turner	Tynedale Council
Adrian Vass	Department for Environment, Food and Rural Affairs (Defra)
Hilary Wade	Tullie House Museum, Carlisle
Humphrey Welfare	English Heritage/HWHL Board
Jason Wood	Leeds Metropolitan University representing the Council for British Archaeology
Heather York	Natural England
Dr Christopher Young	English Heritage London



Appendix 1.3

PREPARATION OF THE 2008-2014 MANAGEMENT PLAN: THE PROCESS

This was undertaken as a staged sequence, with parallel strands of consultation and discussion.

Jan-end March 2007: initial public consultation

A discussion paper outlining the issues to be addressed in the new Management Plan for the period 2008–2014 was circulated in January 2007, inviting all those organisations and bodies with an interest in the WHS to submit their comments by the end of March 2007.

Early 2007: first stage of informal consultation

Interest Groups were formed to discuss the responses to the issues arising from the public consultation, in early 2007. Members of these groups had been invited to take part in this informal consultation process because of their wide-ranging experience and expertise rather than as representatives of their organisations.

Autumn 2007: second stage of informal consultation

The Interest Groups were reorganised in the autumn of 2007, cutting down their number to provide a more integrated approach to the concerns of each sector, and the membership of each group was reviewed so that the representation of the diverse interests of the WHS was more comprehensive. The new Interest Groups are:

- Planning and Protection
- Conservation, Farming and Land Management
- Access and Transport
- Visitor Facilities, Presentation and Tourism

The Education Forum and the Research Framework Steering Group continued to contribute to the process of developing policies in the areas of education and learning, and academic research.

June–end Aug 2008: formal public consultation

The draft Management Plan prepared for the WHS for the six-year period 2008–2014 was made available for comment to all organisations and bodies with an interest in the WHS and to the general public at the beginning of June 2008. The consultation draft was available from the Hadrian's Wall Heritage Ltd (HWHL) website at www.hadrians-wall.org and in hard copy format on request from HWHL.

The consultation process period was for three months from 2 June to 31 August 2008.

A steering group formed from a cross-section of the WHS Management Plan Committee (MPC) met regularly throughout the development of the Plan. The Interest Groups and steering group also met at regular intervals to discuss the key issues to be addressed in the new Management Plan, and to review the emerging draft text for the new Plan.

December 2008: Management Plan Committee and DCMS sign-off

The new Management Plan was published in December 2008 following a sign-off by the MPC, and formal endorsement by the Secretary of State for Culture, Media and Sport.

Appendix 1.4

Appendix 1.4

PREPARATION OF THE 2008-2014 MANAGEMENT PLAN: LESSONS LEARNED

The preparation of this Management Plan has been coordinated by HWHL on behalf of the Hadrian's Wall Management Plan Committee (MPC). The process has involved a considerable number of staff from a range of stakeholder organisations and bodies.

The principal lessons learned from the process are set out below.

Planning and timetabling

1. Preparation of the Management Plan should be coordinated by a dedicated project manager, supported by a team with a range of relevant skills and experience in archaeology, site management, national and international heritage policy, economics, public consultation, and editing processes. This requires adequate resourcing to be in place.
2. Early consensus on format, scope, purpose, target audiences and editorial conventions to be applied speeds the process of preparation.
3. Continuity of individual responsibilities should be built into planning for the preparation of a Management Plan.
4. Careful planning in advance of staff time and resources needed for the many and complex stages of preparation, consultation and editing, where at times phases of work will be happening in parallel, will ease the process.
5. The timetable for the preparation of the Plan must allow the full range of stakeholders to take part in the consultation process.
6. Having calculated the timescale, extra time should be built in for unforeseen circumstances!

Consultation

7. Preparation of a very basic framework for the Plan and outline of possible issues speeds consultation at the beginning of the process, giving consultees concrete ideas to agree or disagree with.
8. Although consultation has been wider than for previous Plans, more effective mechanisms still need to be found to encourage wider participation among the very numerous stakeholders and interests in the WHS: this is particularly true for local communities.
9. It should be borne in mind that, during the period of public consultation, the great majority of responses will come in during the last two or three weeks: time needs to be allocated to process these accordingly.

Content of the Plan

10. If sections of the Plan are to be written by Interest Groups, clear advance guidelines on the purpose, style, tone and length of the piece required makes integration into the Plan much easier.

11. A mechanism for the exchange of good or best practice in terms of the structure and format of consultation processes for UK World Heritage Sites would assist those preparing Management Plans in future.

12. The establishment of clearer guidance on these issues, perhaps through a national frequently-asked questions (FAQs) online resource for all UK World Heritage Sites, would be useful.

13. The Plan should include not only a review of success in delivering aims and objectives, but also an assessment of the usefulness of the Plan itself (ie its format, structure, length, degree of detail etc) as a tool in the management of the WHS.

Editing

14. At the end of the consultation and editing process, a copy editor not involved in the creation of the Plan should be employed to carry out a final edit, in order to ensure that there is an overall consistency of style and tone.

Publication

15. The hard copy full-length colour version of the 2002-2007 Plan with images had a relatively small take-up in comparison to the summary: 3,000 copies of the summary were printed, and most have been used.

It has been decided as result of consultation that three versions of the 2008-2014 Plan will be created. All will be available on the web.

- The full-length Plan with images: Copies of the full colour version will be printed using desktop publishing facilities, for the major stakeholders along the Wall. If further copies are needed, they can be requested and will be printed out at HWHL. This has decreased printing costs considerably.
- The summary version of the Plan: this has an important role in wider public communication, and as a form of recognition to stakeholders for their input into the planning process. It is written in a more popular, accessible style, will go out in hard copy, and should be distributed directly to stakeholders, and at sites along the Wall.
- The publication of a text-only 'grey' version of the Plan on the web, with each paragraph numbered, and with detailed footnoted referencing will allow the Plan to be printed out more economically by those who need a hard copy, and provides an easily referenced document for planners and researchers.

The next Plan

16. The Management Plan Steering Group (a sub-committee of the much larger Management Plan Committee) should continue to meet periodically throughout the next Plan period, in order to review the preparation of this Plan, to design at an early stage the approach to writing the next Plan, and to oversee consultation and writing, in order that useful experience is passed on.



Appendix 2.1

STRUCTURAL DESCRIPTION OF HADRIAN'S WALL AND ITS ASSOCIATED ARCHAEOLOGICAL REMAINS

The WHS is centred on the frontier works constructed by the Roman army from AD 122 on the orders of the Emperor Hadrian. Hadrian visited most provinces of the Roman Empire to define stable frontiers as statements of the extent of Roman expansion, in contrast to the fluid expansion policies of his predecessors. Hadrian's Wall itself is a complex structure, which was subsequently altered and adapted from the moment of its initial conception until the fourth century. It continued to be adapted and altered after the Roman period. The WHS also includes other Roman sites and structures which pre date the construction of Hadrian's Wall itself. These are important evidence of the intervention of the Roman army between the years when it first reached the isthmus and the building of the Wall. The agreed Setting or Buffer Zone of the WHS also includes a wealth of both pre-Roman and post-Roman archaeological sites and landscapes relating to the cultural development of the Tyne-Solway isthmus over 3,000 years, of which Hadrian's Wall was but one, albeit universally significant, episode. This wider archaeological landscape provides a context for Hadrian's Wall, important evidence for the interaction of the Romans with the existing native population which led to an element of intercultural fusion, and the lasting impact that the Roman remains have had on the subsequent history of the region.

Native pre Roman

A number of excavations along the length of Hadrian's Wall have produced evidence of activity by the pre-Roman native population directly underlying Roman structures, which dramatically indicate how the Roman appropriation of land for military installations disrupted the native population. Further evidence from the Setting or Buffer Zone comes from the surviving earthworks and crop-mark sites of native pre-Roman settlements, hill forts, burial cairns and traces of cultivation, particularly 'cord rigg', an early form of cultivation on narrow ridges, approximately 1m to 1.5m across, formed by a spade or hoe rather than a plough. A number of these site-types, such as settlements and cord rigg, survive in close proximity to reveal areas of pre-Roman archaeological landscape into which Hadrian's Wall intruded. The sum of the evidence demonstrates that the zone around Hadrian's Wall was already extensively populated before the arrival of the Romans, with a developed agricultural subsistence economy. The evidence suggests that, if anything, the emphasis in the upland areas was on mixed farming including the growing of cereals and other crops rather than solely on stock farming, as it is now¹.

The Romans in the north, AD 70 to the building of Hadrian's Wall

Evidence from Carlisle shows that the Romans were established in the north by AD 72-3 under the Flavian governor Cerialis, before their advance north into Scotland in the early AD 80s under Agricola. A second site, the supply base at Corbridge Red House, partly excavated in 1975 in advance of the construction of the Corbridge bypass, also belongs to this period.

The Agricolan advance into Scotland, which culminated in a major Roman victory at *Mons Graupius* in AD 83, was not pursued after AD 86, but instead the Romans made a phased withdrawal over nearly 20 years through what is now Scotland, reaching the Tyne-Solway isthmus by AD 105. Here they established a chain of forts between Carlisle and Corbridge, some using existing forts and possibly others were newly built, connected by a road known as the Stanegate (the medieval name – its Roman name is unknown). The forts that are associated with this period are those at Corbridge, Newbrough, Vindolanda, Haltwhistle Burn, Carvoran, Throp, Nether Denton, Boothby, Old Church Brampton and Carlisle. There are forts west of Carlisle at Burgh-by-Sands and Kirkbride which probably also date to this phase. A further small fort was proposed at Crosby on Eden in the 1930s but no positive evidence for it has ever been identified. Successive forts of varying size at Vindolanda, the earliest of which is dated to the mid AD 80s, as well as multiple-phase forts at Carvoran and Nether Denton, demonstrate that the period leading up to the building of Hadrian's Wall saw several changes in garrison and strategic reappraisal. Dendrochronology has established rebuilding at both Carlisle and Vindolanda c AD 105.

It is possible that not all the forts on the Stanegate were added at the same time. The small forts at Haltwhistle Burn and Throp may have been additions to the line of larger forts. The Stanegate itself may post date the earliest forts, built to connect them rather than the forts being constructed along its line. At Vindolanda, two milestones survive beside its line. A number of temporary camps on Haltwhistle Common are probably associated with the Stanegate, and the most western of these, Fell End, actually straddles the Stanegate. Signal towers, such as that at Mains Rigg east of Nether Denton, assisted Roman control of this zone. West of Nether Denton the overall course of the Stanegate is not clearly defined, and how it reached Boothby, Brampton Old Church and Carlisle is uncertain.

The building of Hadrian's Wall

The Emperor Hadrian ordered the construction of the Wall that bears his name as an artificial continuous barrier, the purpose of which, according to his biographer writing two centuries later, was 'to divide the Romans from the barbarians'.² Hadrian brought one of his most trusted friends, A Platorius Nepos, to Britain as governor to oversee the construction of the new frontier, and most of it appears to have been completed within his governorship.

The curtain wall itself was intended to be 76 Roman miles long and close off the Tyne-Solway isthmus. It was built in stone east of the River Irthing as far as the north side of the River Tyne at Newcastle. Initially built to a gauge of ten Roman feet, after two seasons a decision was made to reduce the width to between six and eight Roman feet. In many places this narrow Wall was built on broad foundations laid the previous season. The line of the Wall in the eastern sector was surveyed to run in straight sections between high points. From Chesters to Sewingshields the Wall followed a broad crest with extensive views north over the North Tyne valley, but between Sewingshields and Walltown the line sinuously followed the crest of the Whin Sill. Through the less dramatic topography of eastern Cumbria the Wall again followed a straighter line between high points.

¹ Tim Gates, 1999: *The Hadrian's Wall Landscape from Chesters to Greenhead: An Air Photographic Survey*. Commissioned by NNPA and supported by English Heritage and the RCHME.

² Anon, *Historia Augusta*, Life of Hadrian, 11, 2.

Appendix 2.1

Nowhere does the Wall survive to full height, although at Hare Hill the core stands 3m high. The faces were constructed of coursed rubble, weakly mortared, and the core was mainly clay bonded. There is no conclusive evidence as to how the top of the Wall was finished, whether with a walkway and parapet, or possibly with a sloping top to shed water, although some stones found could suggest that there was a crenellated parapet on the north side. Inscribed stones, of varying degrees of sophistication, recorded completion of individual sections by the units involved, including the names of centurions.

Between the River Irthing and the Solway estuary the Wall was constructed in turf, 20 Roman feet wide, with a steeper batter on the north side. Some sections of the Turf Wall west of Carlisle at Burgh by Sands have been found to have been constructed on a stone base, comparable to the later Antonine Wall, whereas elsewhere the turves were stacked directly on the stripped subsoil. It is suggested that the use of turf was dictated by the absence of building stone, although at a later date the Turf Wall was rebuilt throughout in stone.

The Wall crossed three major rivers – the North Tyne at Chesters, the Irthing east of Milecastle 49 and the Eden at Carlisle – on substantial bridges, initially limited to pedestrians. The major bridges were altered in the second half of the second century to accommodate vehicular traffic using the Military Way, and the evidence indicates they were impressive architectural statements, with columns rising above the parapets possibly carrying statues of emperors or Roman deities. The east abutments of the bridges crossing the North Tyne and Irthing survive as excavated consolidated remains, and the cutwaters of the Chesters Bridge can be seen in the riverbed when the water is low. In both cases the rivers have moved, destroying the west abutments, although the approach ramp to the Chesters Bridge survives. The Wall also crossed a number of smaller rivers and streams although there is little evidence of how this was achieved.

Wall ditch and counterscarp mound

A V-shaped ditch protected the Wall on its north side, except where the natural topography made this superfluous. This was the case where the Wall followed the Whin Sill in the central sector, although short sections of ditch were provided in the gaps and west of Carlisle where it followed the south bank of the River Eden. The dimensions of the ditch vary considerably with the topography and geology, from 7m across and 3m deep to 2m wide and 800mm deep. Where the ground fell away to the north, the north side of the ditch was built up with a carefully constructed artificial bank, known as the counterscarp mound. Elsewhere the counterscarp mound takes a variety of forms whose purpose is not yet fully understood. The ditch had a dual role of providing materials for the construction of the Wall, as well as placing an additional barrier to the north of the Wall when completed. Additionally a number of Roman quarries, identified by inscribed Roman graffiti, are known close to the Wall.

Milecastles

Small fortlets, approximately 25m square with characteristic rounded exterior corners, were attached to the rear of the Wall at intervals of approximately one Roman mile. North and south gateways were linked by a central road flanked by one or two internal barrack buildings. Of the supposed 80 milecastles, only

58 have been firmly located and partially excavated. Only six have been fully excavated.

The milecastles on the Turf Wall were constructed with turf ramparts and timber gates and buildings. Evidence from the post holes for the gateways suggest that the north gate was more elaborate than the south and was probably surmounted by a tower. Both stone and turf and timber milecastles had an *ascensus* leading to the rampart walk, of which the first four steps survive at Milecastle 48 (Poltross Burn).

The function of milecastles as first built is enigmatic, as the double gates were wide enough for vehicular traffic. It is now considered likely that most milecastles were initially provided with a causeway to provide access across the Wall ditch, although a recent survey (Welfare, 2000) found only scant traces surviving and suggests that causeways may have been removed by the Romans. This could have been at the same time as the north gates were narrowed. Whether the north gates were restricted to military use or provided access for civilian traffic is unknown. The Wall cut across the farmland of the native population and would have isolated the scattered settlements north and south of the Wall. The main north-south communication routes crossed the Wall through substantial gateways, at Portgate on Dere Street and probably also at Carlisle on the road to Birrens, while a later gateway was provided at the Knag Burn, east of Housesteads.

Turrets

Between each milecastle, two turrets, approximately 6m square, were attached to the Wall at intervals of one third of a mile. Like the milecastles, these towers were built in advance of the Wall with projecting wing walls. These wing walls, built to the full ten Roman feet width of the 'Broad Wall', were conspicuous when the Wall was subsequently constructed following the decision to reduce its width.

The turrets in the Stone Wall sector east of the River Irthing were partly recessed into the Wall and projected to its rear. Access was by a doorway in the rear wall and probably also from the Wall top. Turrets in the Turf Wall sector were constructed as rectangular stone towers set wholly within the width of the Turf Wall.

The turrets probably rose above the level of the Wall parapet, although the details of their superstructure are matters of conjecture. The position of the Turf Wall turrets in relation to the later replacement Stone Wall suggests that there were side doors on the first floor giving access onto the Wall walk. Slight differences of detail in the construction of both the milecastles and turrets are generally thought to indicate the individual building methods of the legions engaged.

Cumberland coastal system

Milecastle 80 at Bowness-on-Solway was the westernmost point of the Wall as described above, but the defences continued around the Solway coast. Between Bowness and Moricambe Bay, two parallel ditches are known from aerial photography and excavation, possibly with an associated wooden palisade. However, south of Moricambe Bay, there was no continuous barrier, where the defences faced the sea. From immediately west of Bowness to at least south of Maryport there were free-standing fortlets and towers, corresponding to and similar in size



to milecastles and turrets attached to the Wall. The turf and timber milefortlets were surrounded by a ditch with a causeway opposite the north and south gates. The towers were stone structures but at Tower 2b the stone tower replaced two earlier timber towers. Forts were also constructed along this coast, at Beckfoot, Maryport, Burrow Walls, Moresby and Ravenglass. The precise extent of the Cumberland coastal system is uncertain; the milefortlets and towers have only been traced as far as Flimby, just south of Maryport, but the earliest phase at Ravenglass was a small fortlet, not dissimilar in size to the milefortlets. It is this earliest phase at Ravenglass that justified its inclusion within the WHS, despite its distance from Moresby, the next known fort northwards.

Forts added to the Wall

The first major change of plan during construction of the Wall was to build new forts attached to it. Some replaced earlier turrets and milecastles. At the same time the curtain wall was extended eastwards for four miles, wholly as Narrow Wall, to Wallsend on the north bank of the River Tyne.

The fort decision has until recently been regarded as a single decision with the exception of later additional forts. The evidence now suggests that this was a much more complicated development, and that certainly the Stanegate forts at Vindolanda and Carlisle continued to be occupied during the Hadrianic period, and possibly also that at Corbridge.

The five eastern forts at Wallsend, Benwell, Rudchester, Halton Chesters and Chesters were all built in stone astride the Wall, facing north. Other new forts at Housesteads, Great Chesters, Stanwix, Drumburgh and Bowness-on-Solway were attached to the rear of the curtain wall and, with the exception of Drumburgh, were constructed with their long axis east west and the fort facing east.

The new forts within the Turf Wall sector were all initially constructed in turf and timber. The Stanegate fort at Carvoran, close to the line of the Wall continued in use. It is uncertain whether the fort at Castlesteads, also detached from the Wall, was a new fort or was rebuilt on the site of an earlier fort.

Three forts are known at Burgh by Sands: Burgh I, 1km south of the modern village, was probably associated with the Western Stanegate (see above) and was built over an earlier signal tower within a circular ditch. The second fort (Burgh II), attached to the Wall and partly overlain by the modern village, was probably a later addition, although its exact date remains to be determined (see below). A further fort (Burgh III), also detached from the Wall at the west end of Burgh-by-Sands and possibly guarding Burgh Marsh, is known from aerial photography but its date and how it related to the frontier are not known. This fort is not protected by scheduling and thus is not formally included in the WHS (see Part 6, Issue 1).

A further fort at South Shields stood on a bluff on the south bank of the Tyne near the mouth of the river. There was probably a Hadrianic fort, which has as yet not been located but is hinted at by a rammed gravel parade ground. A fort was certainly here in the Antonine period and this was enlarged and converted into a supply base, initially containing 15 granaries. Further alteration increased this to 24 granaries, to supply the campaigns of the Emperor Severus into Scotland in the early third century. The

initial function of this fort was most likely to guard a port at the mouth of the Tyne from which Hadrian's Wall was supplied from the east, although changes to the river mouth have destroyed all evidence of a Roman harbour. Kirkbride may have continued to serve a similar function on the Solway coast, and it is also suggested that the low-lying land north-east of the fort at Maryport may in Roman times have been a navigable creek. These emphasise the importance of sea trade in the Roman period to supplement the road network and the potential for maritime archaeological research, a little-realised aspect of Hadrian's Wall studies.

Outpost forts

In addition to the forts on the Wall, three forts were built north of the western end of the Wall at Birrens, Netherby and Bewcastle. The latter was on a newly established site, occupying a hexagonal platform, initially with a turf rampart, stone gates and a mixture of timber and stone internal buildings. It was connected to the Wall fort of Birdoswald by a road, the Maiden Way. Because of its particularly close and exclusive relationship with Hadrian's Wall, it is included within the WHS. The other two Hadrianic outposts were built on the site of earlier Flavian forts and, because of their greater distance from the Wall and their dual function as outpost forts of Hadrian's Wall and hinterland forts to the Antonine Wall, are not included within the WHS. It is also uncertain that significant remains of the fort at Netherby survive from the construction of Netherby Hall in the 18th century. At this period there were no outpost forts covering the eastern end of the Wall.

Vallum

The *Vallum*, contemporary with the decision to build forts attached to the Wall, runs south of it. It consisted of a steep sided flat bottomed ditch, 6m wide and 3m deep flanked by two mounds, each 6m across. A third and smaller mound on the south lip of the ditch was once thought to result from cleaning out of the ditch, but is now recognised as a primary feature. The mounds were built from spoil from the excavation of the ditch. The course of the *Vallum* was surveyed quite independently of the Wall, and the distance between the two linear elements varies from close proximity to nearly 1km west of Kirkandrews on Eden. The precise purpose of the *Vallum* is still a subject for debate, but the generally accepted view is that it was to provide a secure area under direct military control to the rear of the Wall across which unauthorised access was virtually impossible. At each of the forts a causeway with a gateway was constructed across the *Vallum*, making these the only points at which access for civilian traffic through the frontier was possible.

Civil settlements and cemeteries

The wealth of the military attracted a civilian following wherever the Roman army went, and civil settlements (*vici*) developed outside the forts, initially south of the *Vallum*. The best evidence for the *vici* comes from other forts away from Hadrian's Wall and suggests a mixture of official, semi official and commercial buildings to satisfy the requirements of the soldiers. Important buildings outside forts in most cases were bathhouses. A number of these have been identified along Hadrian's Wall, and surviving bathhouses are displayed at Chesters, Vindolanda and Ravenglass. Other buildings known include a mansio (rest house for travelling officials), temples and shrines, shops, industrial buildings, taverns and most likely brothels. The *vici* also

Appendix 2.1

contained accommodation for the families of serving soldiers. The type of building most associated with *vici* is the so-called strip-house, built with a gable end facing the street. Although many of the buildings would have been robust stone-built structures, there is likely to have been considerable variety in construction and some buildings may have been of humble construction, leaving only ephemeral traces. Only a few buildings from a handful of the *vici* on the Wall have been explored by excavation: recent geophysical surveys however indicate that some may have been more extensive than previously thought, such as at Birdoswald, Halton Chesters, Carvoran and Castlesteads. Geophysical survey has revealed the ground plan north of the fort at Maryport, which includes the largest Roman buildings known within the frontier zone. Cemeteries extended outside the civil settlements (as Roman law prohibited burial within an inhabited settlement). A few of these have been located, at South Shields, Great Chesters, Vindolanda and Birdoswald, although a considerable collection of tombstones from the Wall zone survives, mostly in museum collections. Much more remains to be discovered about the locations and extent of the cemeteries on the Wall.

Late Hadrianic modifications

Further modifications were made to the Wall later in Hadrian's reign. A new fort, approximately halfway between Housesteads and Chesters, was constructed at Carrawburgh while the Stanegate fort at Carvoran and the easternmost five miles of the Turf Wall were rebuilt in stone. Around Birdoswald the stone replacement Wall was built on a new line approximately 300m to the north of the Turf Wall, with new turrets and a new milecastle. At the same time the fort at Birdoswald was rebuilt in stone (though possibly not completed), initially to project north of the Turf Wall, and then wholly to the rear of the new Stone Wall. The Wall seems to have been largely abandoned after Hadrian's death when his successor, Antoninus Pius (AD 138–161), advanced the frontier to the Forth-Clyde isthmus.

The Military Way, reduction in turrets and conversion of the Turf Wall

The Roman withdrawal from southern Scotland and the Antonine Wall, which began in the late AD 150s, saw further changes. A new metalled road, the Military Way, connected all the forts and milecastles, running between the Wall and the *Vallum*. Many of the turrets were seen as superfluous and abandoned in the late AD 180s. Some of these were demolished in the early third century. The remainder of the Turf Wall was rebuilt in stone, incorporating the primary stone turrets, as were the turf and timber forts. The lack of a suitable building stone west of Carlisle involved the importing of stone from elsewhere, possibly from the Eden valley and also from the northern shore of the Solway near Annan where a red sandstone outcrop occurs. The function of the *Vallum* to segregate the military area appears to have been relaxed and *vici* crowded around the forts inside the *Vallum*.

Additional forts

New outpost forts were established on Dere Street in the mid-second century at Risingham, High Rochester and Newstead, all on the site of earlier Flavian and Antonine forts, although Newstead, along with Birrens in the west, was given up c AD 180. The forts at Risingham and High Rochester were, however, along with Bewcastle and Netherby in the west, occupied until

the first decade of the fourth century. Although they were functionally part of the Roman frontier, and in the third century held powerful and versatile garrisons of infantry, cavalry, scouts and irregular units, these forts are not (with the sole exception of Bewcastle) included in the WHS. However, a case is made (see Part 6, Issue 1) that the two forts at Risingham and High Rochester should be considered as extensions to the Site.

Two new forts were added to the Wall at the end of the second or early in the third century: these were at Newcastle, to guard the bridge crossing the River Tyne, and at Burgh-by-Sands (Burgh II), replacing the earlier detached fort south of the Wall.



Appendix 2.2

JOINT CHARACTER AREAS DEFINED BY NATURAL ENGLAND

Landscape Character Assessment is a technique used by Natural England to develop a consistent and comprehensive understanding of what gives the countryside of England its character. It uses statistical analysis and application of structured landscape assessment techniques. Landscape Character Assessments provide more detailed descriptions at a local level within **Joint Character Areas**.

Descriptions below summarise the Joint Character Area assessments for the areas through which the WHS runs. The full texts can be accessed via the web links.

Character Area 14, the Tyne and Wear Lowlands

In the east, urban Tyneside falls within Character Area 14, the Tyne and Wear Lowlands. The landscape in this sector is dominated by the conurbation of Tyneside, the result of urban and suburban expansion linking previously separate settlements. Predominant influences were the industries of shipbuilding, coal extraction and the railways as well as the developing prosperity of Newcastle as the commercial capital of the north east. Essentially, in much of this area, the archaeological remains of the WHS have been dislocated from their landscape setting.

For Natural England's Assessment, see:

http://www.countryside.gov.uk/Images/JCA14_tcm2-21122.pdf

Character Area 11, the Tyne Gap and Hadrian's Wall

This stretches from Heddon-on-the-Wall to Brampton, a varied corridor that separates the North Pennines to the south from the Border Moors and Forests to the north. From Heddon to the A68 trunk road, the landscape consists of undulating countryside between 100m and 150m above sea level with rich soils where the predominant land use is arable. This is punctuated by clusters of largely broadleaf woodland and pockets of improved pasture.

The higher ground, between 200m and 250m above sea level, within the section between the A68 and Chollerford, contains substantial areas of semi- to unimproved grassland. Broadleaf trees give way to small conifer plantations, some of which act as windbreaks in this more exposed landscape. Settlement between Heddon-on-the-Wall and Chollerford is mainly dispersed farms with a few hamlets. From central Newcastle to Chollerford the B6318, the Military Road, follows the line of Hadrian's Wall with only short divergences.

By contrast, the Tyne valley with its fertile soils is intensively managed and is more densely populated. The small towns of Corbridge, Hexham, Haydon Bridge and Haltwhistle are the main settlements as well as a number of smaller villages and dispersed farms. The landscape character of the Tyne valley is strongly influenced by its strategic importance as a major east-west communications corridor through the high Pennines, both historically and in the present day, as demonstrated by the Carlisle to Newcastle Railway, the A69 trunk road, and overhead power lines. The gently sloping valley sides contain a mosaic of

pasture and woodland. The parkland estates within the Tyne valley are also characteristic, epitomised by those at Beaufort and Chesters.

Between Walwick and Greenhead the land rises above 150m with no settlements apart from the scattered farms and no modern cultivation. Hedges give way to stone walls as field boundaries, and the smaller hedged fields of east Northumberland are replaced by larger fields of semi-improved pasture. The dramatic eruption of the Whin Sill above the upland plateau becomes the most prominent feature of the landscape from Sewingshields to Greenhead and the land rises to over 300m above sea level. From the line of Hadrian's Wall throughout this section there are extensive views south to the North Pennines and north across the loughs, mires and commons.

The artificial Wark and Spadeadam Forests extend to within 2km of the Whin Sill and Hadrian's Wall, and cover the northern horizon. These predominantly coniferous forests were planted for timber production in the 20th century, with harsh geometric boundaries. Forest Enterprise is now managing these to soften their impact by diversifying the species to include broadleaf woodland and modifying the boundaries to follow natural landform features. The aim is that the very visible forest edge should act as a transition zone between the open landscape in the foreground and the vast area of Kielder Forest that extends into the far distance.

From Greenhead to Brampton the landscape undulating around the 150m contour is characterised by upland grassland, little of which has been improved. At Greenhead, Hadrian's Wall crosses the Tipalt Burn which is a tributary of the River South Tyne, but 2km to the west at Gilsland, the Wall meets the River Irthing, which runs westwards, through a steep gorge biting into the soft red sandstone, into the River Eden. Whereas east of Greenhead the major communication lines – Hadrian's Wall and its precursor the Stanegate, the A69 road, the railway and overhead powerlines – all cling to the north side of the river valley, west of Greenhead all keep to the south of the River Irthing with the sole exception of Hadrian's Wall itself. From vantage points at Birdoswald, the hamlet of Banks and Craggle Hill, the view south of the managed landscape of the Irthing valley, densely wooded and framed by the looming wild uplands of the North Pennines, contrasts with the thinly populated wastes stretching north of the Wall.

For Natural England's assessment, see:

http://www.countryside.gov.uk/Images/JCA11_tcm2-21073.pdf

Character Area 6, the Solway Basin

West of Brampton, Hadrian's Wall runs through Character Area 6. This is an intensively managed landscape of sheep and cattle farms. The Solway Basin is open and exposed with wide views to the Dumfries and Galloway coast, the Cumbrian Fells and across the Irish Sea, with a foreground of intertidal mudflats and saltmarshes. Further south the coastal fringe is composed of low cliffs of eroding drumlins, sand and pebble beaches, sand dunes and raised beaches formed by sea level changes, backed by dune headlands. The coastal resort of Allonby was said in 1748 to have had 'considerable concourse for bathing in the sea'. In the following century Silloth was developed as a planned holiday resort on a grid of streets. Since the closure of the branch

Appendix 2.2

railway from Carlisle in the 1960s it has struggled as a resort, although its elegant character is retained.

For Natural England's assessment, see:
http://www.countryside.gov.uk/Images/JCA6_tcm2-21068.pdf

Character Area 7, the West Cumbria Coastal Plain

South of Maryport, the WHS includes only the fort sites of Burrow Walls (on the outskirts of Workington), Parton or Moresby and Ravenglass overlooking the estuary of the Rivers Esk and Mite. These lie within Character Area 7, the West Cumbria Coastal Plain. This is an undulating landscape with sea cliffs, punctuated by the urban centres of Maryport, Workington and Whitehaven. These towns arose from sea trade and as outlets for the former industries of coal mining, iron smelting and shipbuilding. Dereliction in the form of abandoned railways, reclaimed former ironworks and colliery workings contrasts with intensive pastoral activity on fertile soils.

For Natural England's assessment, see
http://www.countryside.gov.uk/Images/JCA7_tcm2-21069.pdf



Appendix 3.1

THE KEY LEGISLATIVE FRAMEWORK FOR THE PROTECTION OF THE WHS AND ITS BUFFER ZONE

Although there are many national and regional statutes and policies that protect associated values within the WHS, such as its natural values, the principal current measures that aim specifically to protect the Outstanding Universal Value (OUV) for which Hadrian's Wall was inscribed as a WHS, and its authenticity and integrity, are listed below. It needs to be considered that some of these will change during the period of the Management Plan, particularly heritage protection legislation, currently in the form of the draft Heritage Protection Bill, now anticipated to be introduced into Parliament in the 2009-10 session.

The Ancient Monuments and Archaeological Areas Act, 1979, amended by the Heritage Act 1983 is the current statutory framework for establishing and maintaining a schedule of archaeological and historical monuments deemed to be of national importance. It provides the mechanism for protecting and controlling change to these sites through the process of scheduled monument applications, which must be made to the Secretary of State for Culture, Media and Sport. English Heritage was created by the 1983 Heritage Act, and became the Secretary of State's statutory adviser on such applications and on additional sites on the schedule. The Acts also cover the management of those monuments in the care of the state, which responsibility the 1983 Act transferred to English Heritage. It is proposed to replace these Acts by new legislation within the period of this Management Plan (see below Part 6, Issue 2).

The Ancient Monument (Class Consent) Order 1994 details certain activities – including established agricultural operations – that are deemed to already be in receipt of scheduled monument consent. Class consent can be revoked for specific activities on a scheduled site but, if this is done, compensation is normally payable. The principal activity that affects Hadrian's Wall is Class 1 Consent, which permits land management activities that were carried on for the five years prior to the Ancient Monuments and Archaeological Areas Act 1979 coming into effect, and that have been continued to be carried out without applying for scheduled monument consent within the past five years. Class 1 Consent permits ploughing to the same depth and in the same area. Other consents apply to specific activities such as 'minimum works necessary in the interests of health and safety' (Class 5)³ or those carried out by specific bodies such as the British Waterways Board for specific purposes.

The Town and Country Planning Act 1990 requires authorities to have regard to environmental considerations, including those relating to the historic, natural and cultural heritage in preparing their development plan policies and proposals.

The Planning and Compulsory Purchase Act 2004 modernises the development plan system by introducing Regional Spatial Strategies and Local Development Frameworks (LDFs), and abolishing Structure, Local and Unitary Development Plans. LDFs will relate to local community strategies and contain the core spatial policies and proposals for the development and use of

land in their area over a period of at least ten years. They must take into account the national and regional planning policies. LDFs comprise a portfolio of documents including area action plans for those areas with significant regeneration or conservation needs, and non-statutory Supplementary Planning Documents.

National Planning and Policy Guidance Notes (PPGs). Those most relevant to the WHS are PPG 15 and PPG 16.

Planning Policy Guidance Note 15 Planning and the Historic Environment, published in 1994, sets out government policy in relation to the wider historic environment. It deals primarily with listed buildings and conservation areas, but it is also the only formal document referring to World Heritage Sites.

Local Authorities are required to formulate specific policies to protect World Heritage Sites, and to place great weight on the need to protect them for the benefit of future generations as well as our own. Development proposals should be scrutinised for their likely effect on the Site and its setting or Buffer Zone and the PPG also suggests that formal environmental assessment should be generally required for significant development. It also recommends the preparation of management plans for World Heritage Sites. The new Planning Circular on World Heritage Sites should come into force during 2009.

Planning Policy Guidance 16, Archaeology and Planning, published in 1990, sets out government policy on how ancient monuments and archaeological sites should be handled under the development plan and development control system. It is designed to provide advice to local planning authorities, property owners, developers, archaeologists, amenity societies and the general public. The PPG is based on the principle that archaeological sites are a finite, non-renewable resource and are valuable both for their own sake and for their role in education, leisure and tourism. Where nationally important archaeological remains (whether scheduled or not) and their settings are affected by proposed development there is a presumption in favour of their physical preservation *in situ*. It also places the responsibility on developers to provide adequate information to satisfy the planning authority of the impact of proposals on archaeological remains and how this will be mitigated. Although this PPG does not specifically refer to World Heritage Sites and their settings or Buffer Zones, the reference to archaeological remains of national importance clearly includes Hadrian's Wall and its associated elements. That this PPG does not distinguish between whether such sites are scheduled or not adds protection to those parts of Hadrian's Wall which are not scheduled for pragmatic reasons, particularly in urban and other built-up areas, and which are not formally part of the WHS.

PPGs are in the process of being replaced by Planning Policy Statements (PPS). **Planning Policy Statement 1** sets out the government's commitment to preserving places of national and international importance:

The government is committed to protecting and enhancing the quality of the natural and historic environment, in both rural and urban areas. Planning policies should seek to protect and enhance the quality, character and amenity value of the countryside and urban areas as a whole. A high level of

³ Statutory Instrument 1994 No. 1381, The Ancient Monuments (Class Consents) Order 1994, 5.

Appendix 3.1

*protection should be given to most valued townscapes and landscapes, wildlife habitats and natural resources. Those with national and international designations should receive the highest level of protection.*⁴

Regional Planning Guidance (RPG) provides the regional framework for the plans and strategic decisions of public, private and voluntary organisations, including the preparation of local authority development plans. Since The Planning and Compulsory Purchase Act 2004, Regional Planning Guidance became the Regional Spatial Strategy (RSS) in each region outside of London, and now forms part of the statutory development plan. Regional Spatial Strategies will subsequently be amalgamated with Regional Economic Strategies into integrated Regional Strategies.

The **North East of England Regional Spatial Strategy** was published in July 2008 and the **North West of England Plan Regional Spatial Strategy to 2021** was published in September 2008. These both stress the significance of Hadrian's Wall as a WHS and the need to protect and conserve it for present and future generations.

Policy 32: Historic Environment of the North East of England Regional Spatial Strategy requires that strategies, plans and programmes and planning proposals should seek to conserve and enhance the historic environment of the region by:

*encouraging and supporting the preparation and review of the management plans for Hadrian's Wall Military Zone World Heritage Site, Durham Cathedral and Castle World Heritage Site, and the candidate World Heritage Site at Jarrow and Monkwearmouth and incorporating their principles and objectives.*⁵

The North West of England Plan Regional Spatial Strategy to 2021 does not feature Hadrian's Wall as prominently as the North East Regional Spatial Strategy but **Policy EM1 (A): Landscape** does require that plans, strategies, proposals and schemes should identify, protect, maintain and enhance natural, historic and other distinctive features that contribute to the character of landscapes and places within the north west including '*the characteristics and setting of World Heritage Sites*'.⁶

In addition **Policy W6: Tourism and the Visitor Economy** requires that plans, strategies, proposals and schemes should seek to deliver improved economic growth and quality of life, through sustainable tourism activity in the north west. This should be in line with the principles outlined in **Policy W7: Principles for Tourism Development**, which states that:

*opportunities should be sought which take place in locations adjacent to the National Park and Areas of Outstanding Natural Beauty, thus spreading the economic benefit of tourism; opportunities related to Regional Parks, Hadrian's Wall and Liverpool World Heritage Sites. Tourism activity in these locations should be promoted within the context of the relevant Strategic Frameworks and Management Plans.*⁷

The central sector of Hadrian's Wall forms part of the Northumberland National Park, which was designated in 1956. National Parks are the highest landscape designation, reflecting the natural beauty of their areas.

The Environment Act (1995) updated the purposes of designation:

- conserving and enhancing natural beauty, wildlife and cultural heritage (of the National Park);
- promoting opportunities for the understanding and enjoyment of the special qualities of the areas by the public.⁸

The National Park Authority also has a duty to '*seek to foster the social and economic wellbeing of the local communities.*'⁹ **Section 62** of the Environment Act also places a duty on all public bodies and public utilities to have regard to the purposes of designation in carrying out their work. **Circular 12/96**, which implemented the Act, explains that this:

*ensures that they take account of Park purposes when coming to decisions or carrying out their activities relating to or affecting land within the Parks.*¹⁰

4 ODPM 2005 Planning Policy Statement 1 (PPS1): *Delivering sustainable development*, 7

5 Government Office for the North East 2008 *Regional Spatial Strategy to 2021*, 137

6 ibid 93

7 ibid 54

8 DoE 1995 *The Environment Act*, Part III: National Parks, 9

9 ibid

10 DoE 1996 Circular 12/96 *Environment Act 1995*, Part III: National Parks



Appendix 4.1

RELEVANT EXTRACTS FROM THE SUMMARY NOMINATION FOR THE FRONTIERS OF THE ROMAN EMPIRE WORLD HERITAGE SITE (2004)

The Roman Empire is of undoubted outstanding universal value. Spanning three continents, the Empire developed and transmitted over large parts of Europe a universal culture based on Greek and Roman civilisation. Its influence reached far beyond its actual boundaries in Europe and around the Mediterranean. Its culture framed and guided the cultures of Europe and beyond up to and including the present day.

The frontiers of the Roman Empire form the single largest monument to this civilisation. They helped define the very extent and nature of the Roman Empire. As a whole, they represent the definition of the Roman Empire as a world state. They also played a crucial role in defining the development of the successor states to the Roman Empire. The frontiers and their garrisons were also a crucial tool of Romanisation on both sides of the border line.

The frontiers also have high significance as illustrating the complexity and organisational abilities of the Roman Empire. With only the technology and communications of a pre-industrial society, the Empire was able to plan, create and protect a frontier of some 5,000 kms, and garrisons of tens of thousands of men. It was then able to manage and use this system, on the whole successfully, for periods of many centuries, both as a physical barrier, and also as the basis for diplomatic and military intervention far beyond the actual frontier line itself.

Physically, the frontiers demonstrate the variety and sophistication of the responses of the Roman Empire to the common need to demarcate, control and defend its boundaries. This had to be done in widely differing circumstances, reflecting the interaction of political, military and topographical features. Mostly, the Empire faced a variety of tribal groups, but on their eastern front they were confronted by the Parthian Empire, a state of equal sophistication and complexity.

In some places the boundary ran along rivers. Elsewhere it edged the desert and elsewhere again it ran through areas with no natural barriers. In each case, the Romans developed a local solution, making use of topographical features and political circumstances to provide a barrier that was an effective control of movement across the frontier as well as a strong military defence. The variety of physical remains have outstanding value in demonstrating the complexity and success of this society in using boundary works to define and protect itself in ways appropriate in each case to the local circumstances.

Criteria under which Frontiers of the Roman Empire World Heritage Site was inscribed

As a whole, the Frontiers of the Roman Empire World Heritage Site meets three criteria for inscription as a cultural WHS, which are those that Hadrian's Wall met in 1987. These are:

Criterion (ii) exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town planning or landscape design

Taken as a whole, the frontiers of the Roman Empire show the development of Roman military architecture from temporary camps through winter quarters for whole armies to the establishment of permanent forts and fortresses. These show through time a development from simple defences to much more complex arrangements.

Linked to this is the development of the infrastructure of roads and waterways, along with systems of linear barriers and watchtowers. The frontier also promoted the development of urbanisation, particularly in central and western Europe, from which it had previously been largely absent.

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared

The Roman frontier is the largest monument of the Roman Empire, one of the greatest of the world's pre-industrial empires. The physical remains of the frontier line, of the forts and fortresses along it, as well as of the cities, towns and settlements associated with it, and dependent upon it, demonstrate the complexities of Roman culture and its spread across Europe and the Mediterranean world.

Unlike the great monuments from the urban centres around the Mediterranean already inscribed as World Heritage Sites, the frontiers show a more mundane aspect of Roman culture, both military and civilian. As such they are evidence of the spread of Roman culture and its adoption by the Empire's subject peoples.

Inscriptions and other evidence demonstrate the extent to which the frontier led to an interchange of peoples across the Empire. To a large extent, this was the result of the movement of military units (eg British units in Romania, or Iraqi boatmen in northern Britain) but there is also strong evidence of civilian movement (eg merchants from the Middle East who settled in Britain, Germany and Hungary). The frontiers also acted as the base for the movement of Roman goods (and presumably ideas) to pass well beyond the Empire.

Criterion (iv) be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates a significant stage in human history

The physical remains of the frontiers of the Roman Empire demonstrate the power and might and civilisation of the Romans. As such they are evidence of the development of the Roman Empire and its spread across much of Europe and parts of Asia and Africa. They therefore illustrate the spread of classical culture and of Romanisation which shaped much of the subsequent development of Europe.

Appendix 4.2

Appendix 4.2

NATURE CONSERVATION INTERESTS OF HADRIAN'S WALL WORLD HERITAGE SITE

1. Introduction

The aim of this document is to highlight the main nature conservation interests that exist within Hadrian's Wall WHS. It details objectives and targets for the maintenance and enhancement of geological and geomorphological features and biological habitats that are deemed particularly important within the Site. It is the biodiversity and geodiversity processes, both locally and nationally however, and not the Hadrian's Wall WHS Management Plan, that will be delivering these objectives. The WHS Management Plan will however engender greater awareness and understanding of the World Heritage Site's biodiversity and geodiversity as a means of encouraging and facilitating wider participation in its conservation.

Hadrian's Wall World Heritage Site (WHS) encompasses a wide range of features of natural history interest, including sites of geological, geomorphological and wildlife importance. Geological features include long stretches of the rocky escarpments of the Whin Sill, important outcrops of Carboniferous sedimentary rocks, including several fossiliferous limestones, exposures of red Permo-Triassic sandstones and mudstones, mineralogical sites of international importance, as well as numerous areas of glacial and post-glacial deposits and landforms. Biological habitats and species range from the blanket bogs and heathlands of the rolling upland moors, to the Solway Firth mud and sandflats. Many of these habitats are of international importance, while others are distinctive locally; and while some habitats and species are secure, increasing numbers face a complex range of issues. All of these natural features however, form an integral part of Hadrian's Wall WHS setting, both influencing, and being influenced by the presence of the Wall itself. In order to satisfactorily manage and protect the WHS, the full range of these varied nature conservation interests must be addressed.

2. This document

This document has drawn upon several sources of information, bringing together the nature conservation aspirations of the following.

2.1 Biodiversity Action Plans (BAP)

Having signed up to the Convention on Biological Diversity at the 1992 Earth Summit in Rio de Janeiro, the United Kingdom government published its national strategy for the conservation and sustainable use of biological diversity *Biodiversity: The United Kingdom Action Plan*, in 1995. At the same time, the government established a Biodiversity steering group, whose remit was to develop detailed action plans for the conservation of a range of habitats and species, to explore ways of improving accessibility to and coordination of biological information, to increase public awareness of and participation in nature conservation, and to establish a process to review the delivery of commitments contained in the Biodiversity Action Plan.

One of the key recommendations was that local Biodiversity Action Plans (BAPs) be developed in parallel to the national process, to ensure that national targets for habitats and species be translated into effective action at the local level. There are two local BAPs that cover the majority of Hadrian's Wall WHS: Cumbria and Northumberland. The Newcastle and North Tyneside local BAPs also cover some of the WHS.

2.2 Geodiversity

Geodiversity is the variety of geological environments, phenomena and active processes that make landscapes, rocks, minerals, fossils, soils and other superficial deposits that provide the framework for life on earth. Geodiversity is the link between people, landscapes and their culture through the interaction with biodiversity, soils, minerals, rocks, fossils, active processes and the built environment. Geodiversity is thus fundamental to biodiversity.

It is important to understand the physical basis of the natural landscape in order to fully understand the biological and human landscape. Despite this, the concept of geodiversity is just establishing a place in planning policies, following some time after the incorporation of biodiversity planning. A local geodiversity action plan has been written for the Northumberland National Park and surrounding area and is just starting to be implemented. The incorporation of geodiversity issues within the present document contributes to one of the actions in the Plan. The publication of *Ancient Frontiers*¹¹, which describes the geology and landscape of the central part of the Hadrian's Wall area, also helps to make links between the geology and archaeology of the WHS.

3. Nature conservation interests

3.1 Overview of nature conservation interests

There are many key features of nature conservation interest within Hadrian's Wall WHS.

Geological sites embrace a variety of features of interest across a wide spectrum of earth science. In addition to possessing numerous sites of importance in illustrating key geological features of importance in both the local and national context, Hadrian's Wall WHS includes several sites with more specialised interest and significance. These include several localities of considerable palaeontological, stratigraphical, structural, mineralogical, and geomorphological significance. Sites of geological interest include natural exposures, abandoned quarry workings, spoil heaps from quarries and underground mines, natural springs and landscape features, including landscapes partly modified by human intervention. The distribution and essential features of sites within each of these broad topics are discussed more fully below, together with comments on likely or potential threats to their integrity.

Wildlife sites comprise several types of mires, including upland blanket bogs and lowland raised mires, which both have very characteristic plant and animal communities of international importance. Heathland is another important upland habitat, not only for its invertebrate communities, but also as a feeding and breeding ground for several key wader bird species. The WHS

11 Pickett, E., Young, B., Lawrence, D., Clarke, S., Everest, J., Thompson, G. and Young, R. 2006 *Ancient Frontiers - Exploring the geology and landscape of the Hadrian's Wall area*. British Geological Survey.



holds several loughs that have naturally moderate nutrient levels, and are nationally significant for their wetland plant communities. The River Eden is an example of an entire river system in good condition from source to sea and is internationally designated as a result. Herb-rich Whin Sill grasslands are an extremely distinctive habitat within this WHS in Northumberland, where rare species such as wild chives and maiden pink can be found. Coastal habitats of importance include saltmarsh, mudflats, sand flats, and sand dunes. These are of national and international importance for wintering wildfowl and wading birds and the Solway Firth forms a vital link in a chain of west coast estuaries for migrating birds. The saltmarshes are home to the natterjack toad, which is endangered in the United Kingdom.

In addition, there are several other habitat types of great importance, such as upland semi-natural woodlands and hay meadows. In section 5.1 the key habitats have specific action plans, while summary information is given for the remainder. Details are given of how the habitats are covered by national and local BAPs, and from which Habitat Action Plan (HAP) the targets are selected.

There are many **species of international importance**. Section 6.1 has details of those listed for internationally designated sites within the WHS. These include otter, a resident of the River Eden; three species of lamprey of the River Eden and Solway Firth; and numerous waterfowl and waders, including whooper swan, barnacle geese and golden plover, all of which regularly use the upper Solway Firth. In addition there are numerous examples of species of national or regional importance, such as: the red squirrel; wild chives, which only grow in the Whin Sill grasslands; the large heath butterfly, present on many of the bogs; and several waders that use both the Solway Firth and the uplands. Section 6.2 has details of these.

4. Nature conservation designations

Hadrian's Wall WHS contains many areas that have been designated in order to conserve landscape and nature conservation interests. While the distribution of wildlife and natural features does not follow human boundaries there is a case for establishing, promoting and resourcing nature conservation within identified areas. The identification and designation of special areas helps to define management objectives and can help to bring in funds for land management. There is a range of designations that include statutory and non-statutory sites and those originating from an international, national, or local level. See accompanying maps and section 6.3 for details and locations of designated sites.

4.1 International

RAMSAR SITES

These sites are designated for the protection of wetlands of international importance, especially as a waterfowl habitat. There are three Ramsar Sites in Hadrian's Wall WHS.

The Upper Solway Flats and Marshes: Located in Cumbria, this site forms one of the largest continuous areas of intertidal habitat in the United Kingdom. This site qualifies for its wintering wildfowl population, which includes internationally important numbers of the following migratory species: barnacle geese, bar-tailed godwit, curlew, knot, oystercatcher, pink-footed geese, pintail, redshank, scaup and whooper swan. It also

qualifies for supporting over 10% of the British population of natterjack toad and a population of great-crested newt.

Irthing Mires: In both Northumberland and Cumbria, The Wou component Site of Special Scientific Interest (SSSI) is within Hadrian's Wall WHS. While the majority of the Irthing Mires are classified as raised mire, The Wou is a valley mire.

Northumbria Coast: In the WHS setting at South Shields, Northumberland, this proposed Ramsar Site qualifies for the internationally important populations of purple sandpiper and turnstone.

SPECIAL PROTECTION AREAS (SPAs)

Sites that contain internationally significant assemblages of birds may be designated as SPAs under the EC *Directive on the Conservation of Wild Birds* (known as the *Birds Directive*). Once established, appropriate steps must be taken to avoid pollution or deterioration of habitats or any disturbances affecting the birds. There are two SPAs in Hadrian's Wall WHS.

The Upper Solway Flats and Marshes: This qualifies as an SPA for supporting the following Annex 1 species: barnacle goose, whooper swan, Bewick's swan and golden plover. It also qualifies for its internationally important assemblage of waterfowl, which include the following migratory species in internationally important numbers: pink-footed goose, shelduck, oystercatcher, sanderling, knot, curlew, redshank and turnstone.

Northumbria Coast: This is a potential SPA; see above for description.

SPECIAL AREAS OF CONSERVATION (SACs)

Implemented under the EC Habitats Directive 1994, this designation offers wider-ranging protection to SSSIs that contain good examples of habitat types and species that are rare or threatened in a European context. All sites within the WHS are now fully designated SACs. SACs and SPAs are called *Natura 2000* sites and are covered by **The Conservation (Natural Habitats, etc) Regulations 1994 (Habitats Regulations)**. Under these regulations, plans or projects likely to have a significant effect on the European sites require that an appropriate assessment be completed before consent is granted for the plan or project. Habitats and species included in the reasons for site recommendation are either of European priority interest or European interest.

NORTHUMBERLAND

Border Mires, Kielder – Butterburn: Also in Cumbria, Muckle Moss component Site of Special Scientific Interest (SSSI) is within the WHS. It is recommended due to the European priority interests of the blanket bog. Two types of heathland habitats are of European interest.

Roman Wall Loughs: This SAC is designated because the loughs are good examples of naturally nutrient-rich lakes with emergent and submerged vegetation.

CUMBRIA

Drigg Coast: This site is recommended due to the European priority interests of the coastal dune heathland, for which this is considered to be one of the best areas in the United Kingdom. The estuaries and dunes with creeping willow are of European interest.

Appendix 4.2

River Eden: This site is recommended due to the European priority interests of the alder woodland on floodplains; the presence of five fish species, otter and riparian habitats are of European interest.

Solway Firth: This site is recommended due to the European priority interest of the dune grasslands. A further eight habitats present are of European interest.

Solway Mosses: This site is also in Dumfries and Galloway; only Bowness Common, Drumburgh Moss and Glasson Moss component SSSIs are within the WHS. This site is recommended due to the European priority interest of active and degraded raised bogs.

4.2 National

SITES OF SPECIAL SCIENTIFIC INTEREST (SSSIs)

SSSIs form the backbone of statutory site protection in the United Kingdom. They are designated by Natural England under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), in recognition of their national importance for the entire spectrum of nature conservation, including, geological, geomorphological and wildlife interest. There are eight SSSIs in the Northumberland section of the WHS. The main habitats are mesotrophic loughs, Whin Sill grasslands and mires, together with four geological designations. In WHS in Cumbria there are 14 SSSIs. The main habitats are lowland raised mires, coastal saltmarsh, mud and sand flats and sand dunes.

NATIONAL NATURE RESERVES (NNRs)

These reserves, declared under the Wildlife and Countryside Act 1981, are SSSIs that are either owned by or managed by agreements with Natural England, and are deemed to be of national importance. There are four in Hadrian's Wall WHS; Greenlee Lough and Muckle Moss in Northumberland and Drumburgh Moss and South Solway Mosses in Cumbria.

4.3 Local

SITES OF NATURE CONSERVATION IMPORTANCE (SNCS)

These non-statutory sites are considered to be of nature conservation importance at a county level, and are selected by the county Wildlife Trust. In Northumberland, designations are made on an ecological and geological basis, while in Cumbria the selection is purely ecological with the Regionally Important Geological/Geomorphological Sites (RIGS) system running parallel. Although appropriate management cannot be assured on these sites, they are subject to planning protection within both structure and local plans. In the WHS within Northumberland there are 20 SNCS, and in the Cumbria area there are 24; both county's SNCS cover a wide range of features, habitats and species.

REGIONALLY IMPORTANT GEOLOGICAL AND GEOMORPHOLOGICAL SITES (RIGS)

These non-statutory sites are considered to be of conservation or research importance at a regional level. Hadrian's Wall WHS is covered by two RIGS groups, which select and propose designation of sites for RIGS status. The Cumbria RIGS group covers the Cumbrian sector of the WHS and the RIGS sites so far designated in Cumbria are listed in section 6.3. The

Northumbria RIGS group covers the Northumberland sector but has not been very active in recent years. There are plans to reinvigorate this group and investigate the designation of RIGS sites in Northumberland.

Although appropriate management cannot be assured on these sites, they are subject to planning protection within both structure and local plans.

5. Key landscape and geological sites and features

Hadrian's Wall WHS includes many important landscape and geological sites and features. A geodiversity audit and action plan has been produced for the Northumberland National Park and surrounding area, which covers the central section of the WHS¹². This document identifies and highlights important features of sites and discusses some attributes that may be interpreted in the future. This work is supported by that of Young¹³ which identified and outlined the attributes of key sites within geologically distinct sections of the WHS. This author also drew attention to the very considerable potential to develop a variety of interpretation initiatives, at a variety of levels, to bring the importance and interest of many of these to a wide audience.

The geological and landscape interest within the WHS encompasses a variety of thematic issues. In the following section the main areas and sites of interest within each of these themes are briefly outlined. More detailed comments on individual sites and features can be found in the *Geodiversity Audit and Action Plan* (2007) and Young (2000). A list of the most important literature references to the geology and landscape of the WHS can also be found in these publications.

5.1 The main geological and landscape themes in the WHS

EXPOSURES OF CARBONIFEROUS ROCKS

Numerous exposures, both in natural outcrops and in abandoned quarry workings, are to be seen throughout the WHS, especially within the upland areas. Only those exposures considered to exhibit some feature, or features, of particular interest or importance are listed by Young (2000).

Good exposures of Coal Measures sandstones are to be seen in the eastern portions of the WHS, mainly within the western suburbs of Newcastle upon Tyne. Quite apart from their interest as typical examples of these important elements in the geological succession, several of these sandstones have been quarried for building stone: some Roman quarrying is likely to have supplied stone for construction of the Wall and its associated structures.

Coal Measures rocks, including several coal seams, are again seen in well-exposed coastal sections on the Cumbrian coast near Parton, especially in Providence Bay.

Exposures of sandstones and limestones within the Stainmore Formation, the Carboniferous lithostratigraphical unit which lies immediately beneath the Coal Measures, are to be seen at various places in the country between Heddon-on-the-Wall and Greenhead. Particularly important sites include the old quarries

12 Lawrence, D.J., Arkley, S.L.B., Everest, J.D., Clarke, S.M., Millward, D., Hyslop, E.K., Thompson, G.L. and Young, B. 2007. *Northumberland National Park: Geodiversity Audit and Action Plan*.

13 Young, C. 2000 Hadrian's Wall, United Kingdom. In *Management planning for archaeological sites*. Los Angeles: Getty Conservation Institute, 60-67



at Harlow Hill, where fine sections through the Newton Limestone may be seen. The quarries at Brunton Bank and Black Pasture, east of Chollerford expose sections through the Great Limestone and the overlying sandstone respectively: Brunton Back Quarry offers one of the finest sections through the Great Limestone in this part of Northumberland and includes features of considerable palaeontological significance (see below). Black Pasture Quarry reveals spectacular exposures of ripple-marked sandstone bedding planes. The older parts of the quarry were formerly maintained as a Local Nature Reserve by the Northumberland Wildlife Trust. Adjacent parts of the quarry are still worked intermittently as a source of high-quality building stone. The remaining sections of Crindleykes Quarry expose further fine sections through the Great Limestone. Of particular interest is the eastern quarry, which exposes a striking anticlinal fold of a type characteristic of this part of Northumberland. Such folds, or 'rolls' as they were known by the quarrymen, are thought to give evidence of significant earth movements related to major structural features during deposition of the Carboniferous rocks. The gorge-like valley of Haltwhistle Burn provides dramatic sections through several thick sandstone units, together with some valuable sections through limestones and coal seams, within this part of the Carboniferous succession.

Rocks belonging to the Yoredale Group, of Lower Carboniferous age, crop out within parts of the upland sections of the WHS. Fine sections through the Three Yard Limestone and its associated beds, including former workings for ironstone in the shales above this limestone, are to be seen in the Brackies Burn and Bradley Burn near Vindolanda. Abandoned quarries in the Four Fathom Limestone are important elements in the landscape in the vicinity of the Milecastle Inn, north of Haltwhistle. There are, in addition, traces of old workings for coal and ironstone from the beds beneath the limestone in this area. Nationally important fossiliferous exposures of the Lower Bankhouses Limestone are exposed in the Tipalt Burn, near Greenhead (see below).

The nature and physical properties of the numerous sandstones within this part of the WHS have clearly had a profound influence on the design and construction of the wall and its associated structures. Moreover, these, together with the limestones and other rocks, clearly play a major role in influencing the distribution and character of numerous plant communities.

EXPOSURES OF PERMO-TRIASSIC ROCKS

West of Brampton the route of Hadrian's Wall crosses extensive outcrops of Permo-Triassic rocks. In north-west England these comprise parts of the St Bees and Kirklington sandstone formations of the Sherwood Sandstone Group, together with the Stanwix and Eden shale formations, the local representatives of the thick succession of mudstones and shales known as the Mercia Mudstone Group. Over much of the area covered by the WHS these rocks are concealed beneath superficial, or drift, deposits of Quaternary or later date, though good exposures are seen in places.

The basal breccias of the Permo-Triassic succession are exposed locally in streams near Lanercost Priory and the overlying Eden Shales are seen near Lanercost Bridge.

Excellent exposures of the red St Bees Sandstone are seen in the

sides of the River Gelt gorge in Geltsdale, where this rock has been much quarried for building stone. The famous Written Rock of Gelt is a Roman inscription on a Roman quarry face. St Bees Sandstone is also seen in the sea cliffs and foreshore at Maryport.

The rather similar Kirklington Sandstone is exposed in the Cam Beck and in the River Irthing near Ruleholme Bridge. Especially fine sections through these beds are exposed in the low sea cliffs at Rockliffe on the Solway coast.

SITES OF PALAEONTOLOGICAL IMPORTANCE

Several of the geological sites outlined above also exhibit features of palaeontological importance.

The large exposures of Great Limestone in Brunton Quarry, near Chollerford, include fine sections through the Chaetetes Bed, a bed rich in fossils of the sclerosponge *Chaetetes depressus*, which has very considerable significance as an important stratigraphical marker horizon across large parts of northern England. Brunton Quarry is the original site from which this bed was described and thus has considerable significance as an important key reference section.

Exposures of the Lower Bankhouses Limestone in the Tipalt Burn, upstream from Thirlwall Castle, exhibit highly fossiliferous limestones with a rich fauna of molluscs, echinoderms, bryozoans, corals and brachiopods. The occurrences have been compared with the reef-knoll limestones of the Craven area of Yorkshire and are important in understanding the evolution and palaeoecology of the Carboniferous rocks of Northumberland.

Intermittent exposures of submerged forest deposits on the Solway coast near Glasson and Cardurnock contain abundant remains of Holocene plant remains.

EXPOSURES OF WHIN SILL ROCKS

Hadrian's Wall WHS includes extremely important sections of this major unit in the geology of northern England. The Whin Sill-swarm comprises a suite of closely related sills and dykes composed of dolerite, intruded into the surrounding Carboniferous rocks about 295 million years ago. The Whin Sill of Northumberland is the original sill of geological science. The name 'sill' originated in the north of England as a quarryman's term for any roughly horizontal body of rock. 'Whin' is another quarryman's term meaning a hard black rock. Since the intrusive igneous origin of the Whin Sill was recognised in the 19th century, the term 'sill' became adopted throughout the world to describe any more or less flat-lying, concordant body of intrusive igneous rock.

The intrusion of huge volumes of molten rock at temperatures of around 1000°C caused substantial alteration, or metamorphism, of the surrounding rocks. Such metamorphic rocks can be seen locally adjoining the Whin Sill in the WHS.

The most striking exposures of Whin Sill within the WHS are also some of the area's most striking and best known scenic features. For much of the central parts of its course the Wall is sited on the naturally defensive, north-facing escarpment of the Whin Sill: the crags around Housesteads, Steel Rigg and Hotbank Crags are some of the best known landscape features in the north of England. Particularly fine sections through the entire thickness

Appendix 4.2

of the sill, and showing the top and bottom contact with Carboniferous rocks, are beautifully exposed in the abandoned quarries at Cawfields and Walltown. Large, detached blocks, or rafts, of sandstone and limestone, broken off during the intrusion of the sill can be seen embedded in dolerite near Sewingshields Farm. Erosion of joints and faults within the sill give rise to conspicuous gaps in the escarpment at such places as Busy Gap, Windshields Crags and the Nine Nicks of Thirlwall.

The Whin Sill supports a distinctive thin alkaline soil, which in turn supports characteristic plant communities.

SITES OF MINERALOGICAL IMPORTANCE

Hadrian's Wall may be seen as marking the northernmost extremity of the base metal mineralisation of the Northern Pennine Orefield. No definite evidence of Roman working of these deposits has ever been established, though in view of the Roman exploitation of similar deposits elsewhere in Britain it seems inconceivable that the Romans were unaware of the substantial deposits close to the Wall country. A number of veins, belonging to the Northern Pennine suite, crop out close to Hadrian's Wall, and several enjoyed distinguished histories of exploitation in the 18th, 19th and 20th centuries. Lead was worked from mines at Fallowfield, near Acomb; Langley Barony, near Haydon Bridge and Stonecroft, Greyside and Settringstones, near Newbrough. Associated with the lead ore (galena) were substantial quantities of other, non-metallic, or gangue, minerals. These include minerals such as baryte (barium sulphate) and witherite (barium carbonate). With the demise of lead mining towards the end of the 19th century, following a collapse in world prices, some of these gangue minerals attracted commercial interest as a source of raw materials for the manufacture of a wide variety of chemical products.

Of particular interest in Northumberland was the mineral witherite. Whereas elsewhere in the world this is a very rare mineral, it occurs in Northumberland in very large concentrations. Most notable of these were the deposits at the Fallowfield and Settringstones mines. Many thousands of tonnes of the mineral were worked here with production coming to an end at Settringstones as recently as 1969. Associated with witherite at Fallowfield was another very rare mineral, the double carbonate of barium and calcium, known as alstonite. This extremely rare mineral, known from only a small handful of other world localities, was first recognised as a new mineral in the 19th century, from specimens collected both from Fallowfield and another mine near Alston. Fallowfield is today the world's only easily accessible source of samples of this mineral: it can be found on several of the spoil heaps. Witherite can still be found at Fallowfield, though it is much more abundant on the remaining spoil heaps at Settringstones. Both sites are designated as SSSIs for their mineralogical importance.

The remaining spoil heaps at Stonecroft and Langley Barony mines also contain important concentrations of interest mineral assemblages including baryte, sphalerite and locally the uncommon barium zeolite mineral known as harmatome.

Several of these spoil heaps are also important hosts for small, but extremely important communities of heavy metal-tolerant plants, known collectively as metallophytes. These small plants, which include spring sandwort (*Minuartia verna*), alpine pennycress (*Thlaspi alpestre*), scurvy grass (*Cochlearia officinalis*)

and mountain pansy (*Viola lutea*) have evolved to be tolerant of otherwise prohibitively toxic concentrations of metals such as lead and zinc.

SITES OF QUATERNARY AND RECENT GEOLOGICAL INTEREST

Hadrian's Wall WHS includes several sites with deposits or landscape features formed during, or since, the last glacial period.

Glacial scouring of the pre-glacial landscape has resulted in a dramatic accentuation of the east-west striking features associated with the alternating resistant and less-resistant Carboniferous rocks and Whin Sill of the upland sections of the Wall country. Several of the loughs, including Bromlee Lough, Greenlee Lough and Crag Lough, which are so characteristic of this area, occupy shallow basins eroded by glacial scour. Accumulations of till, or boulder clay, mantle large areas, in places forming ovoid hillocks known as drumlins, good examples of which can be seen in the area between Greenhead and Carlisle. Natural sections in boulder clay are comparatively rare, as the material rapidly becomes vegetated. However, the banks of the River Irthing, below the Roman fort at Birdoswald, have been made steep by river erosion and commonly exhibit small sections through typical stony boulder clay.

Extensive accumulations of sands and gravels, formed in part by glacial meltwaters, form highly distinctive hummocky country in places, notably around Brampton.

The development of bogs in shallow basins on the post-glacial land surface has resulted in the formation of many of the ecologically important bogs and mires. Substantial accumulations of peat have also developed within the alluvial deposits of the Solway lowlands.

Fluctuations in sea level in the post-glacial period resulted in the formation of forests at levels below present day sea level. Subsequent sea level adjustments have drowned these deposits, some of which are preserved and are commonly exposed on the foreshore at Glasson and Cardurnock.

Marine and estuarine sedimentation around the margins of the Solway has produced extensive flat, low-lying accumulations of mainly silt and clay grade sediments, including the Solway saltmarshes.

Accumulations of Roman material, including numerous artefacts, in unusual conditions at Vindolanda have yielded a wealth of remarkably preserved material. These deposits are of some interest mineralogically for the abundance within them of the uncommon mineral vivianite (an iron phosphate) formed by reactions of iron- and phosphorous-rich debris in an anaerobic environment.

Landscape features

The landscape of Hadrian's Wall WHS owes much to the underlying geology. Reference has already been made to the distinctive landforms associated with particular geological units. It is, however, worth emphasising that the relationship and influence of geology on the character of landforms is more clearly apparent in this area than in most parts of the United Kingdom.



5.2 Designations

Several sites recognised as having conservation importance are designated as SSSIs, RIGS or SNIs. These are listed in section 6.3 of this appendix.

5.3 Threats

The main threat to the continued availability, and thus usefulness, of geological sites applies to abandoned quarries. Abandoned quarries commonly attract interest for landfilling. Whereas large-scale use by Local Authorities may not constitute a major threat to such sites in this area, their use as sites for disposal of farm waste, or as unauthorised sites attracting fly tipping, may pose a significant threat. In addition, natural deterioration by progressive degrading of the exposed faces and by the progressive growth of vegetation may ultimately lead to the obliteration of features of interest.

5.4 Opportunities

Many sites offer considerable research and educational potential, both in terms of their intrinsic geological interest and as an important aspect of continuing investigation of the archaeological and historical interest of the WHS. The very considerable volume of sandstone employed in the construction of Hadrian's Wall and its associated buildings was clearly supplied from local sources. Whereas Roman exploitation of stone can be recognised with some confidence at several sites, there is considerable scope for further work in this field. No systematic examination of the nature, properties or sourcing of individual sandstone types within the Wall has yet been attempted. This is perhaps surprising in view of the large volume of detailed examination to which the structures of the WHS have been subjected over many decades. Up-to-date geological information, combined with modern techniques in petrological examination, offer important opportunities for studies of this sort. The availability of geological exposures, both natural and man-made, is an important element in undertaking investigations of this sort.

Several sites offer scope for incorporating the features they display into a modern interpretation of the landscape and the area's natural heritage. Very limited on-site, or local, interpretation exists for the WHS. In view of the crucial role of the geological materials and features in shaping the natural and human landscape, as well as their direct involvement in the construction and characteristics of the monuments, enormous and hitherto unexploited opportunities exist to incorporate appropriate geological elements into future interpretation, thus creating valuable links between geology and biodiversity.

Individual themes worthy of consideration for special interpretation include the use of geological materials by Roman and later builders; the geological background and constraints that influenced the nature and siting of the Wall; the unique heritage interest of the Whin Sill and rare minerals such as witherite and alstonite.

5.5 Objectives and targets

Geological and landscape features should be seen as essential parts of the WHS. Their protection, use and interpretation should be accepted as key elements in the overall approach to sympathetic management of the entire natural history resource of the WHS. A geodiversity action plan has been produced for

the area of the WHS within, and immediately adjacent to, the Northumberland National Park (Lawrence *et al* 2007). Objectives and actions from this plan pertaining to the WHS area should be implemented.

A Hadrian's Wall geodiversity action plan should be prepared to cover the entire length of the WHS. This should sit alongside the Northumberland National Park geodiversity plan and existing biodiversity action plans and provide a framework/context for the conservation/management/interpretation of Hadrian's Wall WHS.

6. Key wildlife habitats

6.1 Blanket and raised bog

DESCRIPTION

Peatlands are habitats that develop over several thousands of years as a result of slow vegetation decay in the cool humid conditions of the north and west of the United Kingdom. They tend to be dominated by dwarf shrubs, bog mosses, cottongrass or deergrass, and are important for invertebrate communities, including large heath butterfly, spiders, dragonflies and water beetles. While both blanket and raised bogs are exclusively rain-fed, raised bogs are recognisable by their gently sloping mound form. Lowland raised mires tend to develop on low-lying, level ground, mostly on marine, estuarine or fluvial deposits adjacent to estuaries or on the floodplains of rivers. Active bogs are those in which the peat is still able to accumulate because of the growth of the surface vegetation.

STATUS

Although extensive where it occurs, blanket bog is a globally scarce habitat and it is thought that 10 to 12% of the world's resource is in the United Kingdom. From a total United Kingdom estimate of 1,500,000 hectares, the majority is found in Scotland, with 215,000 hectares occurring in England. Many of the blanket bogs are located along the central section of the WHS and are only five to 20 hectares in size. Many are visible from the Wall itself. Intact lowland raised bog is one of Europe's rarest and most threatened habitats. The 6,000 remaining hectares in the United Kingdom are scattered across a large number of small sites, however one of the largest concentrations of relatively intact raised mire is within the Solway basin. Bogs are also important in storing carbon and ameliorating flooding.

DESIGNATIONS

Blanket bog is listed in Annex 1 of the EC 1992 *Habitats Directive*, and active examples are a priority habitat. Blanket bog is highlighted as being of European priority interest in the Border Mires SAC, for which the area is considered to be one of the best in the United Kingdom. This SAC is also considered to be one of the best areas in the United Kingdom for transition mires and quaking bog. In addition, Solway Mosses SAC is considered to be one of the best areas in the United Kingdom for active and degraded raised bog.

ISSUES OF LOCAL CONCERN

Most blanket bogs are still at risk from past drainage (gripping) which has left them drier and subject to oxidation and erosion. Current issues include excessive grazing, inappropriate burning and possible erosion from recreational use. In addition some areas of high quality are not designated and as a result are not

Appendix 4.2

recognised as high priority for restoration and protection. Lowland raised bogs are mainly threatened by lowering of the water table, and in limited cases, peat and mineral extraction. Blanket bog is covered in the national, Northumberland, and Cumbria BAPs; the objectives and targets below are an amalgamation of all three.

OBJECTIVES AND TARGETS

The resource should be primarily secured through the provision of financial incentives to promote appropriate management, for example through Environmental Stewardship. Priority should be given to safeguard remaining areas of primary bog, ensuring that the full functioning hydrological units supporting the habitat are maintained. Appropriate grazing regimes should be established (though grazing may not be appropriate management for some raised mires), along with the cessation of burning and gripping; afforestation proposals should be directed away from important bog areas. Implications of the *Countryside and Rights of Way (CRoW)* Act may include disturbance to important species of ground-nesting birds and possible erosion. This should be monitored where appropriate. Alternatives to peat should be promoted, and all appropriate sites should be protected by designation.

- Maintain the current extent and overall distribution of blanket and raised bog.
- Improve the condition of those areas of blanket and raised bog that are degraded but readily restored, so that the total area in, or approaching, favourable condition by 2005 is around 30% of the total extent that is restorable.
- Introduce management regimes to improve to, and subsequently maintain in favourable condition a further 25% of degraded blanket and raised bog by 2010, and a further 20% by 2015; resulting in a total of around 75% of the total extent of restorable blanket and raised bog in, or approaching, favourable condition.

6.2 Heathland

DESCRIPTION

Heathland is a general term applied to describe treeless landscapes dominated by dwarf-shrubs of the heather family. There are several types of heathland. Dry heaths are found on free-draining, nutrient-poor generally acidic soils, which characteristically occur as mosaics with acid grasslands. They are most commonly dominated by ling, along with bell heather, bilberry, crowberry, bearberry and western gorse. Wet heaths are distinguished by cross-leaved heath and/or purple moor grass, and tend to occur in acidic, nutrient-poor shallow peat or sandy soil with impeded drainage, where they are often present with blanket bog. Heathlands are found in both the lowlands and uplands. Although this habitat type is generally poor in plant species it supports specialised communities of bird and invertebrate fauna. Heathlands have traditionally been maintained by low-intensity grazing.

STATUS

Upland heathland is recognised as being of international importance because its distribution is largely confined to the western sea-board of Europe. The United Kingdom resource is very significant, comprising an estimated 2,500,000 hectares; with the English extent estimated at 215,000 hectares. Upland heathlands are found mainly along the central sections of the WHS.

DESIGNATIONS

The Border Mires SAC holds several types of heath included on Annex 1 of the *EC Habitats Directive*. It is considered to be one of the best areas in the United Kingdom for European dry heath and the area is also considered to support a significant presence of northern Atlantic wet heaths with *Erica tetralix*.

ISSUES OF LOCAL CONCERN

Upland heathland has suffered losses due to excessive grazing, especially in winter, conversion to grassland and forestry (which not only causes direct loss, but also provides habitat for corvids, which predate ground-nesting birds), poor burning practices leading to grass domination, agricultural intensification and recreational disturbance.

Heathland is covered in the national, Northumberland, and Cumbria BAPs; the objectives and targets below are an amalgamation of all three.

OBJECTIVES AND TARGETS

The resource should be primarily secured through the provision of financial incentives to promote appropriate, sympathetic management, for example through Environmental Stewardship. Priority should be given to reverting to more traditional low-intensity grazing, and appropriate burning practices should be encouraged. Afforestation proposals should be directed away from important heathland areas; implications of the CRoW Act need to be considered. Re-creation of heathland should aim to reduce habitat fragmentation, where appropriate, by linking small, vulnerable areas; while at the same time favouring the creation of mosaics and transitions with other habitats. All appropriate sites should be protected by designation.

- Maintain the current extent and overall distribution of the heathland that is in favourable condition.
- Achieve favourable condition on all upland heathland SSSIs by 2010, and achieve demonstrable improvements in the condition of at least 50% of semi-natural heath outside SSSI by 2010 (compared with their condition in 2000).
- Seek to increase dwarf shrub cover to a minimum 25% where it has been reduced or eliminated due to inappropriate management.
- Initiate management to recreate areas of heath by 2005 where it has been lost due to agricultural improvement or afforestation, with a particular emphasis on reducing fragmentation of existing heathland.

6.3 Mesotrophic loughs

DESCRIPTION

Loughs can be classified according to their nutrient status. Mesotrophic waters have naturally moderate nutrient levels and can potentially support the highest diversity of plants and animals of any waters. Within mesotrophic loughs there can be a number of different aquatic plant communities depending on substrate, depth and exposure to wind-induced turbulence. In sheltered bays with stable water columns, pondweeds dominate with quillwort and water milfoil, while in shallower waters water lobelia is more common. Dragonflies, water beetles, stoneflies and mayflies are well represented in mesotrophic waters, as are coarse and salmonid fish. Wildfowl use these loughs as wintering and breeding habitats. Crayfish have been recorded in Broomlee Lough and Greenlee Loughs. Otters also use the loughs.



STATUS

Mesotrophic loughs and lakes are relatively infrequent in the United Kingdom, and largely confined to the margins of upland areas in the north and west; there are no exact figures. There are several important mesotrophic loughs along the central sections of the WHS, from which most are visible.

DESIGNATIONS

The loughs in the Roman Wall Loughs SAC are considered to be some of the best in the United Kingdom, with magnopotamion or hydrocharition-type vegetation (pondweeds), which are of European interest. Greenlee Lough, which is covered by this SAC, is also a NNR, managed by the Northumberland National Park. In the River Eden SAC the oligotrophic to mesotrophic standing waters are of European interest. Here the area is considered to be one of the best in the United Kingdom, to be characterised by vegetation of the shoreweed (*Littorelletea uniflorae*) and /or quillwort (*Isoeto-nanojuncetea*).

ISSUES OF LOCAL CONCERN

These waters are vulnerable to artificial nutrient enrichment (for example, from sewage effluent, nutrient-rich water running off adjacent agricultural or forested land), changes in adjacent land use (for example, ploughing of land, land drainage, afforestation), water abstraction, lowering of the water table, acid deposition, recreation, fishing and angling.

Mesotrophic waters are specifically covered in the national and Cumbria BAPs; the objectives and targets below are an amalgamation of both.

OBJECTIVES AND TARGETS

The resource should be primarily secured through the provision of financial incentives to promote appropriate, sympathetic management, for example through Environmental Stewardship. Priority should be given to implementing measures to improve water quality and maintain the characteristic ecology of the loughs. Disturbance from forestry and agriculture should be tackled by creating and maintaining sufficiently large buffer zones, and zoning schemes implemented to reduce recreational impacts. Appropriate management of the margins of standing water should be promoted, for example by the exclusion or management of livestock. General awareness and understanding of the wildlife value of the loughs should be raised.

- Maintain and enhance the current extent, diversity, condition and characteristic ecology of the loughs and associated habitats through site safeguard and appropriate management.
- Encourage sympathetic management of the loughs' catchment areas.
- Allow for the creation or restoration of additional wetland habitats where appropriate and extend the wetland resource.
- Control pollution and recreational impacts on the loughs.
- Monitor levels of eutrophication and blue green algae blooms.

6.4 Rivers and riparian habitats

DESCRIPTION

Rivers are dynamic systems which, in their natural state, continually modify their form and consequently their immediate environment. They have a diverse range of features, such as riffles, shingle banks and pools, which each support a diverse range of plant and animal species. These channel features are complemented by bank features (riparian habitats), such as earth or rock cliffs, stands of reeds, woodland or herb-rich

grasslands. The nutrient status and physical structure of the river are the main determinants of river habitat quality. Rivers act as natural wildlife corridors.

STATUS

The true extent of this habitat in the WHS is unknown. The WHS follows the Rivers Eden and Irthing along much of their lengths in Cumbria.

DESIGNATIONS

Rivers with floating vegetation often dominated by water crowfoot (*Ranunculus spp*), are of international conservation importance, and as such are listed in Annex 1 of the EC *Habitats Directive*. This habitat is highlighted as being of European interest in the River Eden SAC, as the area is considered to be one of the best in the United Kingdom.

ISSUES OF LOCAL CONCERN

Rivers are currently at risk from pollution, including nutrient enrichment, toxic discharges and sheep dip, the spread of invasive pernicious species, inappropriate channel and bankside management, and the affects of catchment land use including agricultural intensification and developments in the flood plain.

Rivers are covered in the national, Northumberland, and Cumbria BAPs; the objectives and targets below are an amalgamation of all three.

OBJECTIVES AND TARGETS

Best practice has developed from the acknowledgement that river management has to be addressed in a more holistic manner, not on a site-by-site basis, taking account of catchment influences on the river. Water quality and flows should be maintained and, wherever appropriate improved, and appropriate bankside management should be promoted. Priority should be given to increasing our understanding of the status and requirements of key species and the impact of water abstraction on ecological processes in watercourses. Degraded river channels and floodplain features should be restored and rehabilitated. All appropriate sites should be protected by designation.

- Maintain the quality of existing natural channels, floodplain features and wildlife.
- Protect, maintain and, wherever appropriate, improve water quality. Achieve good (class A or B) Biological Water Quality on all watercourses by the 2010 General Quality Assessment (EA).
- Enhance degraded river channels, floodplain features and dependent wildlife. Increase the area of bankside agricultural land in conservation management agreements by 25% by 2005.

6.5 Herb-rich Whin Sill grasslands

DESCRIPTION

The Whin Sill, upon which west Northumberland sections of the Wall are built, is intruded igneous rock, which forms 'cuestas' (asymmetric ridges formed by the edge of a tilted resistant rock stratum, comprising a scarp slope and a dip slope). These thin soils support an unusual and specialised flora. The many outcrops support an impressive array of basiophilous spring annuals and drought-tolerant perennial herbs, while the scarp crags and block scree under the Wall are rich in ferns. Of particular note are field garlic, chives, maiden pink, several species of hawkweeds and stonecrops, spigelia and spring

Appendix 4.2

cinquefoil. In the dip slopes, where drainage is impeded, very different plant communities dominate, often including purple-moor grass.

STATUS

The extent and status of Whin Sill grasslands in Northumberland has been surveyed by the Northumberland Wildlife Trust. The quality of the grasslands seems to have declined since the last survey in the 1980s and is some cause for concern. These grasslands occur in localised sections along the central portion of the WHS.

DESIGNATIONS

The Allolee to Walltown SSSI in Northumberland has been specifically designated for Whin Sill grasslands. There are no internationally designated sites for this habitat type.

ISSUES OF LOCAL CONCERN

These grasslands are at risk from increased erosion as a result of recreational activity along the Wall, improvement of agricultural land and overgrazing, and rabbit grazing.

Whin Sill grasslands are covered in the Northumberland BAP; the objectives and targets below incorporate some of the targets in the plan, are similar to those set for other grassland types.

OBJECTIVES AND TARGETS

The resource should be primarily secured through the provision of financial incentives to promote appropriate, sympathetic management. These should include appropriate grazing levels and management of recreational activity. Due to the small and fragmented nature of this resource, the restoration and enhancement of degraded Whin Sill grasslands should be an essential element of the conservation strategy of this habitat. All appropriate sites should be protected by designation.

- Protect herb-rich Whin Sill grasslands from inappropriate land use and recreational pressures.
- Encourage environmentally sensitive management of herb-rich Whin Sill grasslands.
- Review and use where appropriate existing measures, such as Environmental Stewardship, to encourage appropriate management.
- Find appropriate sites for restoration of the habitat working with partners such as quarry operators.
- Establish a source of local provenance seed for site restoration.

6.6 Saltmarsh

DESCRIPTION

Saltmarsh in the United Kingdom comprises the upper, vegetated portions of intertidal mudflats, and is usually restricted to sheltered locations, such as estuaries. The development of saltmarsh vegetation is dependent on the presence of intertidal mudflats, and consists of a limited number of salt-tolerant species. Although the lower limits tend to be fairly species poor, with only the pioneer glasswort (*Salicornia spp*) generally present; the mid-upper marsh is more species-diverse and traditionally grazed. Saltmarshes act as breeding sites for waders, gulls and terns, feeding sites for wildfowl, food sources for passerine birds, and coastal defence. The Upper Solway saltmarshes support over 10% of the United Kingdom's rare natterjack toad, where they breed in landward edge pools.

Saltmarshes provide sheltered nursery sites for several species of fish.

STATUS

The most recent estimates put the total extent of saltmarsh in the United Kingdom at 45,500 hectares, with 35,500 hectares of this in England. There is a total of 2,278 hectares of saltmarsh in the Solway Firth area of the WHS. Together with mudflats, the extent of this habitat in the upper Solway Firth forms one of the largest continuous areas of intertidal habitat in the United Kingdom.

DESIGNATIONS

Estuaries as a whole are of European interest in both the Solway Firth and Drigg Coast SACs, both of which are considered to be among the best areas in the United Kingdom for the resource. Atlantic salt meadows are also highlighted as being of European interest in the Solway Firth SAC, again because the area is considered to be one of the best in the United Kingdom. The Royal Society for the Protection of Birds (RSPB) owns a nature reserve at Campfield Marsh, where saltmarsh is one of the three main habitat types. Most of the saltmarsh habitat in the WHS is in the Solway Coast Area of Outstanding Natural Beauty (AONB).

ISSUES OF LOCAL CONCERN

Since medieval times saltmarshes have been reduced in extent by land claim, which has continued until very recently. Saltmarshes have traditionally been extensively grazed. Either intensive grazing, or a complete lack of it, can have a detrimental effect. Other issues include erosion and 'coastal squeeze', and other human influences such as waste-tipping and pollution.

Saltmarsh is covered in the national BAP, from which the objectives and targets below are selected. The Cumbria BAP has a group HAP for all coastal habitats.

OBJECTIVES AND TARGETS

The resource should be primarily secured through the provision of financial incentives to promote appropriate, sympathetic management, for example through Environmental Stewardship. Priority should be given to offsetting the current losses due to coastal squeeze and erosion, in order to maintain the existing habitat and restore the area of saltmarsh to 1992 levels.

- There should be no further net loss.
- Create further saltmarsh each year in a plan to replace all that has been lost between 1992 and 1998, based on current estimates.
- Maintain the quality of the existing resource in terms of community and species diversity and, where necessary, restore the nature conservation interest through appropriate management.

6.7 Mudflats and sandflats

DESCRIPTION

Mud and sandflats are sedimentary intertidal habitats created by deposition in sheltered areas, especially estuaries. They are intimately linked by physical processes to, and may be dependent on, other coastal habitats such as saltmarshes. Although they are characterised by high biological productivity, these flats generally have low diversity with few rare species.



However, due to their high number of invertebrates, mud and sandflats, together with other intertidal habitats, support large numbers of wildfowl and fish. They provide feeding and resting areas for migrant and wintering waterfowl, and are also important nursery areas for flatfish. The Upper Solway regularly supports 85,000 wintering waders. Mudflats play an important role in protecting saltmarshes from erosion, coastal defences from damage and low-lying land from flooding.

STATUS

The total United Kingdom estuarine resource has been estimated at 588,000 hectares, of which 55% is mud and sandflats. The total extent in the WHS is unknown, however the upper Solway Firth forms one of the largest continuous areas of intertidal habitat in the United Kingdom.

DESIGNATIONS

Estuaries as a whole are of European interest in both the Solway Firth and Drigg Coast SACs; both are considered to be among the best areas in the United Kingdom for the resource. Intertidal mudflats and sandflats are also of European interest in the Solway Firth SAC, as are subtidal sandbanks. Most of the mudflat habitat in the WHS is in the Solway Coast AONB.

ISSUES OF LOCAL CONCERN

Mud and sand flats face threats from land claim, barrage schemes for water storage, amenity and flood defence, diffuse and point source discharges from agriculture, industry and urban areas, oil and gas extraction, fishing and bait digging. Sea level rise is likely to result in future coastal squeeze of intertidal habitats.

Mudflats are covered in the national BAP, from which the objectives and targets below are selected. The Cumbria BAP has a group HAP for all coastal habitats.

OBJECTIVES AND TARGETS

The overall objectives of this Plan are to offset the current losses, to maintain the existing habitat, and restore degraded areas of mud and sand flats. Financial incentives should be made available that promote appropriate management.

- Maintain at least the present extent; this target will require compensating predicted losses to development by the restoration of mudflats.
- Create and restore sufficient intertidal area over the next 50 years to offset predicted losses to rising sea level in the same period.
- Restore estuarine water quality to ensure that existing mud and sand flats fulfil their important ecological and conservation role.

6.8 Coastal sand dunes

DESCRIPTION

Coastal sand dunes develop where there is an adequate supply of sand in the intertidal zone and where onshore winds are prevalent. There are many different types of dunes, which accord to their physiographic location. Embryonic and mobile dunes occur mainly on the seaward side, where sand deposition is still occurring, and tend to support few plants. The most stable dunes are those on the landward side where vegetation is well established and some soil development has taken place. Dune heaths, although very rare, are found in Hadrian's Wall WHS,

where dunes have become acidified by leaching. Dune systems along the Cumbria coast are a stronghold for natterjack toads and other rare animal and plant species. Appropriate grazing of sand dunes is required to ensure the maintenance of the habitat and species diversity. Coastal heath, which is a component of dune systems, can be found in Hadrian's Wall WHS, where heathland plants are joined by sand dune plants such as sand sedge.

STATUS

The *Sand Dune Survey of Great Britain* (1993-5) gives the total area of sand dunes as 11,897 hectares in England. The total extent in Hadrian's Wall WHS is unknown.

DESIGNATIONS

While dune grasslands and coastal shingle vegetation are highlighted as being of European priority interest in the Solway Firth SAC, these do not occur in the WHS. Most of the sand dune habitat in the WHS is in the Silloth Dunes SSSI and on the Drigg coast. The Drigg Coast SAC is considered to be one of the best areas in the United Kingdom for coastal dune heathland. Here the resource is of European priority interest, due to the total extent in the United Kingdom being estimated at less than 1,000 hectares. Dunes with creeping willow, which too are considered to be rare, are also of interest in this SAC.

ISSUES OF LOCAL CONCERN

Threats to sand dune systems are many. They include erosion; falling water tables, which put at risk dune slack plant communities; inappropriate or lack of grazing; recreation; sea defence and stabilisation; inappropriate dune management and military use at Eskmeals.

Sand dunes are covered in the national BAP, from which the objectives and targets below are selected. The Cumbria BAP has a group HAP for all coastal habitats.

OBJECTIVES AND TARGETS

The overall objectives of this plan are to offset the current losses, to maintain the existing habitat, and restore degraded areas of sand dunes. Again, the resource should be primarily secured through the provision of financial incentives to promote appropriate management.

- Protect the existing sand dune resource from further losses to anthropogenic factors, whether caused directly or indirectly.
- Offset the expected net losses due to natural causes of about 2% of the dune habitat resource over 20 years by encouraging new dunes to accrete and where possible by allowing mobile dune systems to move inland.
- Seek opportunities for restoration of sand dune habitat lost to forestry, agriculture or other human uses.
- Encourage natural movement and development of dune systems, and control natural succession to scrub and woodland where necessary.
- Maintain dune grassland, heath and lichen communities on the majority of dune systems.

7. Other habitats of interest

7.1 Upland semi-natural woodlands

Upland semi-natural woodlands in Hadrian's Wall WHS include oak, mixed ash and wet woodland types. All are now extremely

Appendix 4.2

limited in their extent, and tend to occur as isolated fragments, often in steep-sided gorges; they regularly appear in association with each other. While oak woods tend to occur on acidic, well-drained soils, ash and elm woods are found on more base-rich soils, and alder woods occur in wetter areas. Irthing Gorge, which straddles the Cumbria and Northumberland border, is an excellent example of how these woodland types concur in the uplands.

DESCRIPTION

Upland oak woodland is dominated by sessile oak, along with pendunculate oak, downy and silver birch, with an under storey of holly, rowan and hazel; the ground flora varies with soil type and the degree of grazing. Diverse lichen communities are often present and a distinctive breeding bird assemblage is associated with them throughout much of their range. There are no precise data for the total extent of oak woodlands, but there is believed to be between 70,000 and 100,000 hectares in the United Kingdom.

Upland mixed ash woods have ash as the major species. However, oak, birch, elm, small-leaved lime and even hazel may be the most abundant species locally. Mixed ash woods are among the richest habitats for wildlife in the uplands, notable for bright displays of flowers such as bluebell, primrose, wood cranesbill and wild garlic; they tend to be fern-rich. They harbour a rich invertebrate fauna and, when coppiced, are noted for butterflies such as high brown fritillary. The dense shrub layer found in some examples provides suitable habitat conditions for dormice. There are no precise data on the total extent of upland ash woods in the United Kingdom, but estimates are of between 40,000 and 50,000 hectares.

Wet woodland occurs on poorly-drained or seasonally wet soils and is usually dominated by alder, birch and willow. The ground flora is enormously variable depending on the hydrological condition, soil type and management. On sites with a rich, mineral soil there can be a mixture of flowering herbs, sedges and grasses; on peat, bog mosses may be abundant. There are no precise data on the total extent of wet woodland in the United Kingdom, although estimates have been made of 50,000 to 70,000 hectares; only half of this is thought to be of ancient origin.

ISSUES

Upland semi-natural woodlands are currently at risk from uncontrolled grazing by stock and deer, the cessation of traditional management practices, invasion by non-native species, disturbance through recreational pressures, fly-tipping, clearance and conversion to other land-uses, and possible effects of air pollution. Wet woodlands are also at risk from lowering of the water table through drainage and abstraction, poor water quality, flood prevention measures and the virulent disease *phytophthora*.

OBJECTIVES

Priority should be given to securing the future of the existing resource through livestock exclusion or a reduction in grazing pressure, the removal of non-native species, and measures to facilitate regeneration where required through traditional management practices, for example, coppicing. Resource expansion through planting should avoid existing areas of importance for nature conservation and take into account the

increasing isolation, attempting to link existing fragments of particular importance, while buffering these sites from adjacent land, creating habitat mosaics. The restoration of former oak and ash woodlands should also be targeted, for example where the sites have been degraded by planting with conifers.

For wet woodlands, appropriate management regimes should be put in place, for example, the re-establishment of natural hydrological systems by blocking drains or removing unnecessary embankments. In order to expand the area of wet woodlands, natural regeneration is highly desirable, and due to its general success, less planting is likely to be required. For all woodland types, appropriate sites should be protected by designation.

7.2 Upland hay meadows

DESCRIPTION

Traditionally managed meadows form part of the 'in bye' land of the hill farms where they are cut for hay between early July and August, and grazed in the autumn and then again in the spring; traditionally meadows receive only light applications of farmyard manure and lime to maintain fertility and neutral pH. Such fields support a characteristic northern montane meadow community, notable for its diversity, with up to 30 species per square metre and as many as 120 species per field. Hay meadows are especially important as feeding areas for insects including butterflies and bees, and for insect-feeding bats. They are also of great importance for breeding birds such as yellow wagtail and lapwing, and for feeding birds such as twite, curlew and golden plover.

It is estimated that less than 1,000 hectares of upland hay meadow now survive in northern England, and only two meadows are thought to exist in Hadrian's Wall WHS in the Northumberland National Park. This grassland community is now one of the most rare in the United Kingdom. Mountain hay meadows are of international importance, and as such are listed in Annex 1 of the EC *Habitats Directive*.

ISSUES

Hay meadows are currently at risk from the use of fertilisers, herbicides and pesticides, ploughing and reseeding, conversion to silage, early cutting, heavy grazing pressure, drainage, and neglect.

OBJECTIVES

The resource should be primarily secured through the provision of financial incentives to promote appropriate management following traditional practices. These should include halting ploughing and reseeding, the application of artificial fertiliser and slurry, and returning to hay production in place of silage. Due to the small and fragmented nature of this resource, the restoration and enhancement of degraded hay meadows should be an essential element of the conservation strategy using local native seed to increase diversity. All appropriate sites should be protected by designation.



8. Species

8.1 Species of international importance

The internationally designated nature conservation sites in Hadrian's Wall WHS qualify as such by supporting internationally important populations of the following species:

MAMMALS

Otter - *Lutra lutra* (River Eden SAC)

Formerly widespread throughout the United Kingdom, the otter underwent a rapid decline in numbers from the 1950s to the 1970s, largely due to the use of organochlorine insecticides in farming. In addition to utilising large river systems, otters also use a wide range of wetland habitats, such as loughs, ditches, moorland streams and ponds. Current factors causing declines include pollution of watercourse, insufficient prey associated with poor water quality, impoverished banksides habitat features, and incidental mortalities. The otter is listed in Annex II of the EC *Habitat Directive*.

BIRDS

Barnacle goose - *Branta leucopsis* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The barnacle goose winters in the United Kingdom, but is limited to a few important sites. The feeding grounds in winter are mainly pasture and coastal saltmarshes, but the bird increasingly uses agricultural pasture sown for cattle-feeding. Threats include disturbance and alterations to habitat. The barnacle goose is protected under the Wildlife and Countryside Act 1981, and is listed in Annex I of the EC *Birds Directive*.

Bar-tailed godwit - *Limosa lapponica* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The bar-tailed godwit is a localised winter visitor and passage-migrant to the United Kingdom. It is almost entirely restricted to estuaries, and particularly to a few major sites. The major threat comes from estuarine land-claim arising from large developments, disturbance and bait-digging. The bar-tailed godwit is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Curlew - *Numenius arquata* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The curlew breeds and winters in the United Kingdom. About half of the wintering populations are found on non-estuarine coasts and adjacent farmland. In winter the main threat is from estuarine land-claim, while land-use changes – particularly re-seeding, over-grazing and afforestation – represent the major threat to the breeding population. The curlew is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Golden plover - *Pluvialis apricaria* (Upper Solway Firth and Marshes SPA)

The golden plover typically nests on blanket bogs and areas with very sparse vegetation on high moors. However, in winter it is a familiar sight in lowland and coastal areas, where large flocks feed in intertidal mudflats and roost on arable fields at high tide. Threats include the loss of upland breeding habitat. The golden plover is protected under the Wildlife and Countryside Act 1981, and is listed in Annex I of the EC *Birds Directive*.

Knot - *Calidris canutus* (Upper Solway Firth and Marshes SPA)

The Knot is a localised winter visitor and passage migrant to the United Kingdom. It is almost entirely restricted to estuaries, and is found in very large concentrations on a few sites. At present, the major threat comes from estuarine barrages and development involving land-claim. The knot is protected under the Wildlife and Countryside Act 1981, and is listed in Annex I of the EC *Birds Directive*.

Oystercatcher - *Haematopus ostralegus* (Upper Solway Firth and Marshes SPA and Ramsar Site)

A United Kingdom resident, with numbers supplemented by many north-west European birds arriving in the autumn and remaining through to late winter. The wintering population in Britain is localised. Pressures on the species come from estuarine land-claim and persecution, due to claims of damage to commercial beds of cockles, one of its main foods. The oystercatcher is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Pink-footed geese - *Anser brachyrhyncus* (Upper Solway Firth and Marshes SPA and Ramsar Site)

This species winters in the United Kingdom, and frequents arable fields and pasture in 30km of nocturnal roosts, which are mainly on estuarine flats and sandbanks, freshwater lakes and reservoirs. Threats include disturbance at wintering areas, but potentially more serious are the threats that may affect the breeding grounds in Iceland. The pink-footed goose is protected under the Wildlife and Countryside Act 1981, and is listed in Annex I of the EC *Birds Directive*.

Pintail - *Anas acuta* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The pintail is a rare breeder and a localised winter visitor. In winter it occurs mainly on estuaries, but it is also found on inland floodplains; on estuaries its most important food is the mollusc *Hydrobia*. The most severe threat to wintering birds is land-claim on estuaries, particularly through the construction of barrages. The pintail is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Purple sandpiper - *Calidris maritima* (Northumbria Coast Ramsar Site)

In the United Kingdom, the purple sandpiper is a regular passage-migrant and winter visitor, from October to May or from July to May, depending on region, chiefly on rocky coasts of eastern and northern parts of the country. It is also a rare breeding bird. Threats include human disturbance and egg-collecting. Fortunately though, this species sits very tightly on the nest and is easily overlooked. The purple sandpiper is protected under the Wildlife and Countryside Act 1981, and the EC *Birds Directive*.

Redshank - *Tringa totanus* (Upper Solway Firth and Marshes Ramsar Site)

The wintering population of redshank in the United Kingdom is localised, and has declined by 25% since 1975/76. About 18% of the European total also breed in Britain, with the majority nesting on saltmarshes. Outside the breeding season, three-quarters of those wintering in the United Kingdom frequent estuaries. Threats include those which generally affect birds

Appendix 4.2

using an estuarine habitat; particular problems for the redshank include loss of habitat, severe weather and agricultural encroachment. The redshank is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Scaup - *Aythya marila* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The scaup is an occasional breeder and a winter visitor in localised concentrations. In the winter the bird occurs mainly in coastal or estuarine areas, where a strong attraction to sewage outfalls has been noted in the United Kingdom. Threats to individual pairs may include disturbance and the loss of eggs to collectors, while threats to the wintering birds may include oil pollution and loss or reduction in food supplies. The scaup is protected under the Wildlife and Countryside Act 1981, and is listed in Annex II/2 of the EC *Birds Directive*.

Turnstone - *Arenaria interpres* (Northumbria Coast Ramsar Site)

The turnstone is a winter visitor to the United Kingdom, and is confined to coastal habitats where they are widely distributed on estuaries, sandy beaches and rocky shores. Turnstones generally forage in small groups, congregating in larger flocks - and with other species - at high-tide roosts. Threats include those which generally affect birds using an estuarine habitat. The turnstone is protected under the Wildlife and Countryside Act 1981, and the EC *Birds Directive*.

Whooper swan - *Cygnus cygnus* (Upper Solway Firth and Marshes SPA and Ramsar Site)

The whooper swan is a rare breeding bird, which also winters in the United Kingdom. It breeds on banks or islets of lochs, or on hummocks in northern marshes; it is solitary. Food in the breeding season includes roots and shoots of aquatic plants and aquatic invertebrates. In winter the birds eat a variety of emergent and submerged water plants as well as grass, spilled grain and winter cereals. Threats include human disturbance and poisoning by lead and agricultural chemicals. The whooper swan is protected under the Wildlife and Countryside Act 1981, and is listed in Annex I of the EC *Birds Directive*.

AMPHIBIANS

Natterjack toad - *Bufo calamita* (Upper Solway Firth and Marshes Ramsar Site)

The natterjack toad requires a combination of suitable breeding pools for egg laying and larval development and an adequate area of terrestrial habitat for adults and juveniles. Outside the breeding season natterjack toads live on dry land and this is as important a habitat as the breeding ponds. Cumbria supports approximately 50% of all the United Kingdom's natterjack sites, although the Workington site has recently become extinct. Threats include loss and deterioration in quality of breeding pools and terrestrial habitat through lack of suitable management. The natterjack toad is protected by the Wildlife and Countryside Act 1981, and is listed in Annex IVa of the EC *Habitats Directive*.

Great-crested newt - *Triturus cristatus* (Upper Solway Firth and Marshes Ramsar Site)

The great-crested newt is one of our six native amphibians, and the largest of our three native newts. Newts spend a great deal of the year out of water, only returning to breeding ponds when

weather permits in early spring. Around these ponds newts prefer areas of mixed habitat in which to feed and shelter, such as tall grassland, piles of logs and rubble. The main reason for the decline of the great-crested newt is the loss or decline in quality of habitats; particularly of ponds through neglect, infilling and development pressures. The great-crested newt is protected by the Wildlife and Countryside Act 1981, and is listed in Annex II and IV of the EC *Habitats Directive*.

FISH

Atlantic salmon - *Salmo salar* (River Eden SAC)

The Atlantic salmon is the largest of our migratory fish and spawns in the least polluted rivers of north-west Europe. It has declined due to over-fishing at sea, pollution and barriers to migration in its spawning rivers. The United Kingdom supports a large proportion of the salmon population in the European Union. The salmon is listed in Annex II of the EC *Habitats Directive*.

Brook lamprey - *Lampetra planeri* (River Eden SAC)

The brook lamprey is a primitive, jawless fish resembling an eel, and is the smallest of the lampreys found in the United Kingdom. It lives entirely in fresh water and occurs over most of the United Kingdom in streams and occasionally in lakes. This lamprey is listed in Annex II of the EC *Habitats Directive*.

Bullhead - *Cottus gobio* (River Eden SAC)

The bullhead is a small bottom-living fish found in upper reaches of lowland rivers and lower and middle rivers in England and Wales. It is not found in badly polluted rivers. The bullhead is listed in Annex II of the EC *Habitats Directive*.

River lamprey - *Lampetra fluviatilis* (River Eden and Solway Firth SACs)

The river lamprey is a primitive, jawless fish resembling an eel. Confined to western Europe, it migrates from the sea to spawn in silt beds of many rivers in the United Kingdom. The river lamprey is absent from some rivers because of pollution and barriers to migration. The river lamprey is listed in Annex II of the EC *Habitats Directive*.

Sea lamprey - *Petromyzon marinus* (River Eden and Solway Firth SACs)

The sea lamprey is a primitive, jawless fish resembling an eel. It is the largest of the lampreys found in the United Kingdom. It inhabits North Atlantic coastal waters and migrates to spawn in rivers. It has a widespread distribution in the United Kingdom, although populations have declined due to pollution and barriers to migration. This lamprey is listed in Annex II of the EC *Habitats Directive*.



8.2 Species of national/local importance

While the above species are of international importance, there are many other species that are of importance on a national, regional or local scale. Many of these species will be protected through the relevant habitat action plan.

This list below has drawn upon the SSSI citations, which list rare and scarce species, the *flora* references for the counties, and following consultations with interested parties in the area. As tends to be the case, there is an inevitable bias towards plants, while other taxonomic groups, such as invertebrates, tend to receive less attention.

SPECIES	INTERESTS / LOCATIONS	HABITAT ACTION PLAN
PLANTS		
Bog Orchid <i>Hammarbya paludosa</i>	Scarce - bogs/wetlands	Blanket and raised bogs
Chives <i>Allium schoenoprasum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Cinquefoil sp. <i>Potentilla neumanniana</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Field garlic <i>Allium oleraceum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Great sundew <i>Drosera anglica</i>	Rare and on only a few bogs	Blanket and raised bogs
Hairy stonecrop <i>Sedum villosum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Isle of Man Cabbage <i>Coincyia moensis</i> ssp. <i>Monensis</i>	Scarce - Solway Firth	Sand dunes
Knotted clover <i>Trifolium striatum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Lax-flowered sea-lavender <i>Limonium humile</i>	Scarce - Drigg Coast SSSI	Saltmarsh
Maiden pink <i>Dianthus deltoides</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
A moss <i>Dicranum undulatum</i>	Rare RDB - Drumburgh Moss SSSI	Blanket and raised bogs
A moss <i>Sphagnum pulchrum</i>	Scarce - Drumburgh Moss SSSI	Blanket and raised bogs
A moss <i>Sphagnum balticum</i>	One of five known United Kingdom locations at Muckle Moss SSSI	Blanket and raised bogs
A moss <i>Sphagnum dusenii</i>	Only known United Kingdom location at Muckle Moss SSSI	Blanket and raised bogs
Oysterplant <i>Mertensia maritima</i>	Scarce - Solway Firth	Sand dunes
Portland spurge <i>Euphorbia portlandica</i>	Scarce - Drigg Coast SSSI	Sand dunes
Purple/Yarrow broomrape <i>Orobanche purpurea</i>	Rare - Maryport Harbour SSSI is the only Cumbria location	-
Rough clover <i>Trifolium scabrum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Seaside centaury <i>Centaureum littorale</i>	Scarce - Solway Firth	Sand dunes and Saltmarsh
Slender trefoil <i>Trifolium micranthum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Spignel <i>Meum athamanticum</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Upright chickweed <i>Moenchia erecta</i>	Particular to Whin Sill grasslands	Herb-rich Whin Sill grasslands
Variegated horsetail <i>Equisetum variegatum</i>	Rare - Irthing Gorge SSSI	-

Appendix 4.2

MAMMALS

Red squirrel <i>Sciurus vulgaris</i>	One of the last English strongholds	Upland semi-natural woodlands
--------------------------------------	-------------------------------------	-------------------------------

BIRDS

Black grouse <i>Tetrao tetrix</i>	Upland heathland	Heathland
Dunlin <i>Calidris maritima</i>	Solway Firth and uplands	Saltmarsh, mudflats and sandflats, heathland and bogs
Goldeneye <i>Bucephala clangula</i>	Solway Firth	Saltmarsh, mudflats and sandflats
Grey plover <i>Pluvialis squatarola</i>	Solway Firth	Saltmarsh, mudflats and sandflats
Ringed plover <i>Charadrius hiaticula</i>	Solway Firth, Northumbria Coast	Saltmarsh, mudflats and sandflats
Roseate Tern <i>Sterna dougallii</i>	North Tyneside - one of the only known congregation sites away from breeding colonies	-
Sanderling <i>Calidris alba</i>	Solway Firth, Northumbria Coast	Saltmarsh, mudflats and sandflats
Shelduck <i>Tadorna tadorna</i>	Solway Firth	Saltmarsh, mudflats and sandflats
Shoveler <i>Anas clypeata</i>	Solway Firth	Saltmarsh, mudflats and sandflats
Teal <i>Anas crecca</i>	Solway Firth	Saltmarsh, mudflats and sandflats

INVERTEBRATES

Large heath butterfly <i>Coenonympha tullia</i>	Blanket and raised bogs	Blanket and raised bogs
Small blue butterfly <i>Cupido minimus</i>	One of only three Cumbria sites at Maryport Harbour SSSI	-
Spider <i>Centromerus laevitarsis</i>	One of only four localities in England at Glasson Moss SSSI	Blanket and raised bogs
White-faced dragonfly <i>Leucorrhinia dubia</i>	Rare, found at Scaleby Moss SSSI	Blanket and raised bogs
White clawed crayfish	Listed in WCA found in Roman Wall Loughs and surrounding burns	Loughs, rivers and streams



8.3 Summary of designated sites in Hadrian's Wall WHS

INTERNATIONAL

RAMSAR SITE	INTEREST
The Upper Solway Flats and Marshes (C)	Intertidal flats and marshes - waders and wildfowl
Irthing Mires (C and N)	Mires – raised, blanket and valley
Northumbria Coast (N)	Coastal - purple sandpiper, turnstone

SPECIAL PROTECTION AREAS	INTEREST
Upper Solway Flats and Marshes (C)	Intertidal flats and marshes - waders and wildfowl
Northumbria Coast (N)	Coastal - purple sandpiper, turnstone

SPECIAL AREAS OF CONSERVATION	INTEREST
Drigg Coast (C)	Coastal heathlands, intertidal and dunes
River Eden (C)	Riverine habitats, fish species and otter
Solway Firth (C)	Dune grasslands and coastal shingle vegetation
Solway Mosses (C)	Active raised bogs
Border Mires, Kielder - Butterburn (N)	Blanket bog
Roman Wall Loughs (N)	Mesotrophic loughs

NATIONAL

NATIONAL NATURE RESERVES	HABITAT	GRID REF
Drumburgh Moss (C)	Lowland peatlands	NY257 585
Finglandrigg Woods (C)	Woodland, valley mire, heath	NY277 569
South Solway Mosses (C)	Lowland raised bogs	NY216 602 NY186 595 NY238 601
Greenlee Lough (N)	Lough	NY767 697
Muckle Moss (N)	Valley mire	NY 799 668

SITES OF SPECIAL SCIENTIFIC INTEREST	HABITAT	GRID REF
Bowness Common (C)	Lowland raised mire	NY 205 601
Drigg Coast (C)	Coastal, particularly dunes	SD 070 955
Drumburgh Moss (C)	Lowland raised mire	NY 255 585
Glasson Moss (C)	Lowland raised mire	NY 238 603
Maryport Harbour (C)	Grassland	NY 029 363
River Derwent and Tributaries (C)	River	NY 235 083
River Eden and Tributaries (C)	River	NY 490 302
Salta Moss (C)	Raised/valley mire	NY 086 454

Appendix 4.2

Scaleby Moss (C)	Raised mire	NY 430 635
Siddick Pond (C)	Pond	NY 002 304
Silloth Dunes and Mawbray Bank (C)	Sand dunes	NY 105 525
Spadeadam Mires (C)	Blanket mire complex	NY 598 717
St Bees Head (C)	Cliff face, grassland and shore	NX 945 133
Upper Solway Flats and Marshes (C)	Estuarine complex	NY 160 610
White Moss, Crosbymoor (C)	Lowland raised mire	NY 462 606
Allolee to Walltown (N)	Whin Sill grasslands	NY 686 669
Brunton Bank (N)	Geological	NY 928 698
Irthing Gorge (C and N)	Upland gorge woodland	NY 635 685
Muckle Moss (N)	Valley mire	NY 799 668
Roman Wall Escarpments (N)	Geological	NY 715 667
Roman Wall Loughs (N)	Mesotrophic loughs	NY 775 693
Tipalt Burn (N)	Geological	NY 659 661
Fallowfield Mine (N)	Geological	935 675
Settlingstones Mine (N)	Geological	NY850 688
Wou, The (N)	Valley mire	NY 675 697

LOCAL

SITES OF NATURE CONSERVATION INTEREST	HABITAT	GRID REF
Allonby (C)	Ponds and scrub	NY 079 421
Bank End (C)	Wet meadow	NY 052 384
Blackbank Wood and Meadow (C)	Ancient semi-natural woodland	NY 613 660
Bowness-on-Solway Churchyard (C)	Churchyard	NY 225 627
Bowness-on-Solway Nature Reserve (C)	Disused gravel workings	NY 207 616
Carling Gill Meadow and Verge (C)	Unimproved wet grassland	NY 583 634
Castlebank Wood (C)	Ancient woodland	NY 525 630
Coombe Crags (C)	Riverside woodland	NY 591 651
Copt Hill Meadow (C)	Fen-meadow	NY 331 584
Cowgate (C)	Marshy grassland	NY 097 473
Disused campsite near Houghton (C)	Grassland, scrub and woodland	NY 414 587
Harrow's Beck Wood (C)	Riverside woodland	NY 620 667
Hazel Gill (C)	Grassland, scrub and woodland	NY 008 308
Heugh Wood (C)	Ancient semi-natural woodland	NY 537 653
Highberries Beck (C)	Marshy grassland	NY 467 634
House Wood (C)	Semi-natural woodland	NY 510 630
Jubilee Pond (C)	Pond	NY 554 619



Maryport and Allonby Coast (C)	Dune grassland	NY 055 390
Miltonrigg Wood (C)	Ancient semi-natural woodland	NY 561 615
Naworth Castle Woods (C)	Ancient woodland	NY 570 638
Rockcliffe Moss (C)	Lowland peat moss	NY 374 625
Rosetrees Moss (C)	Lowland peat moss	NY 344 661
Sea Brows (C)	Neutral grassland	NY 042 380
Walton Wood (C)	Ancient semi-natural woodland	NY 553 652
Baron House Bog (N)	Peatland	NY 643 664
Bell Crag Flow (N)	Border Mire	NY 769 724
Black Law (N)	Bog	NY 819 738
Cawfields Crags (N)	Woodland and grassland	NY 720 668
Fourstones and Park Shield Quarries (N)	Grassland and geological	NY 885 687
Gap (N)	Open water	NY 643 664
Hanging Shield Rigg (N)	Valley mire	NY 691 675
Harlow Hill Quarry (N)	Geological	NZ 077 687
Lemington Gut (N)	Open water	NZ 188 644
Milestone House Quarry (N)	Geological	NY 721 661
River North Tyne - Wark to Chollerford (N)	River	NY 897 742
Scroggs, The (Keepershield Quarry) (N)	Grassland	NY 892 726
Shawfield (N)	Scrub	NY 627 648
Standingstone Rigg (N)	Bog	NY 810 732
Swallow Crags and Caw Burn (N)	Running water and grassland	NY 744 687
Throckley Dene (N)	Woodland	NZ 164 667
Walltown Quarry and Crags (N)	Grassland and geological	NY 675 661
Whittle Dene Reservoirs (N)	Reservoirs	NZ 068 685
Whinnetley Moss (N)	Bog	NY 817 665
Winshields Crags (N)	Whin Sill cliffs	NY 720 668

LOCAL NATURE RESERVES	LOCATION	GRID REF.
Kingmoor Sidings (C)	Urban fringe	NY 386 575
Heddon Common (N)	Rural	NZ 128 667
Walbottle Brickworks (N)	Urban	NZ 170 658
Sugley Dene (N)	Urban	NZ 190 653
Denton Dene (N)	Urban	NZ 196 648

Key: C = Cumbria N = Northumberland

Appendix 4.2

8.4 List of Regionally Important Geological and Geomorphological Sites (RIGS).

All of the currently designated RIGS sites in Hadrian's Wall WHS lie in Cumbria. There are so far no RIGS sites designated in the WHS in Northumberland or the Tyne and Wear area.

REGIONALLY IMPORTANT GEOLOGICAL AND GEOMORPHOLOGICAL SITES

	HABITAT	GRID REF
Seascale Beach	Triassic rocks	NY034 012
Silver Tarn, Nethertown	Kettle hole and hydrosere	NX997 069
The Knoll, Netherton	Fluvioglacial deposits	NX987 074
St Bees Beach	Fluvioglacial deposits	NX97 11
Birkham's Quarry, St Bees Head	St Bees Sandstone	NX956 174
Tom Hurd Rock, Whitehaven	Coal Measures	NX965 187
Bransty Cliffs, Whitehaven	Coal Measures	NX978 185
Cunning Point, Lowca	Coal Measures	NX978 228
Maryport foreshore	St Bees Sandstone	NY03 37
Swarth Hill, Allonby	Drumlin and raised beach	NY069 403
Mawbray Banks	Active sand dunes	NY067 418
Beckfoot	Submerged forest	NY085 484
Glasson Point	Drumlin	NY260 609
Rockcliffe shore, Carlisle	Kirklington Sandstone	NY35 61
Arthuret Howes, Longtown	Esker	NY38 67
Wetheral woods, Carlisle	St Bees Sandstone	NY47 54
Hetherburn, Hethersgill	Permo-Carboniferous contact	NY487 670
Gelt Woods, Brampton	Gorge in St Bees Sandstone	NY52 58
Ashycleugh, Bewcastle	Carboniferous rocks	NY57 76
Forest Head Quarry	Great Limestone	NY58 57
Wall Bowers, Gilsland	Carboniferous limestones	NY59 65
Irthing Gorge, Gilsland	Carboniferous rocks	NY64 68



8.5 Summary of legislation for protection of natural heritage

NATIONAL AND INTERNATIONAL DESIGNATIONS

Site of Special Scientific Interest (SSSIs)

SSSIs are designated under the Wildlife and Countryside Act 1981, and are the principal statutory designation for sites of nature conservation or earth science importance. Protection is implemented through legislative and planning policy mechanisms, and appropriate management is achieved through management agreements. Sites that receive any of the following national or international designations must also be notified as SSSIs.

Ramsar Sites

Ramsar Sites are wetlands of international importance especially as waterfowl habitat, and are designated under the 1971 Convention on Wetlands of International Importance. As a matter of government policy, Ramsar Sites receive the same protection as SPAs and SACs.

Special Protection Areas (SPAs)

SPAs are classified under the Birds Directive to provide protection to populations of wild birds of European importance. Protection of SPAs in the United Kingdom is provided through the *Habitats Regulations* 1994.

Special Areas of Conservation (SACs)

SACs are classified under the Habitats Directive to provide protection to a range of habitats and species of European importance. The Directive is implemented in the United Kingdom through the *Habitats Regulations* 1994. Sites that have gone forward for designation are called candidate SACs until they have been accepted by the European Commission, but these receive exactly the same protection under the *Habitats Regulations* as designated sites.

Local Nature Conservation Designations

These are mostly non-statutory, but are recognised in development plans, Planning Policy Guidance and related documents such as Biodiversity Action Plans, Local Agenda 21 Plans and Nature Conservation Strategies, and include the following:

- Sites of Nature Conservation Interest/Importance (SNCI), also called County Wildlife Sites (CWS)
- Wildlife Corridors
- Non-Statutory Nature Reserves
- Regionally Important Geological Sites (RIGS)
- Local Nature Reserves, which are designated by Local Authorities under the National Parks and Access to the Countryside Act, 1949.

9. Bibliography

Batten, L.A., Bibby, C.J., Clement, P., Elliott, G.D., Porter, R.F. (1990) *Red Data Birds in Britain*. Nature Conservancy Council and RSPB.

Cumbria Biodiversity Partnership (2000) - *The Cumbria Biodiversity Action Plan - Consultation Draft*.

English Nature (1997) *Natural Area Profile: Solway Basin*. EN, Kendal

English Nature (undated) *Natural Area Profile: Border Uplands*. EN, Stocksfield

English Nature web site - www.english-nature.org. United Kingdom

English Nature (undated) *Research Report No. 317*.

Lawrence, D. J. D., Arkley, S. L. B., Everest, J. D., Clarke, S. M., Millward, D., Hyslop, E. K., Thompson, G. L. and Young, B. 2007. *Northumberland geodiversity Audit and Action Plan*. British Geological Survey Commissioned Report, CR/07/037N.

Newcastle City Council (2000) Your Wildlife - *The Newcastle Biodiversity Action Plan*. Consultation Draft.

North Tyneside Council (2000) *Species Action Plans - Draft Plan*.

Northumberland Biodiversity Steering Group (2000) *Working for Wildlife - The Northumberland Biodiversity Action Plan*.

Pickett, E., Young, B., Lawrence, D., Clarke, S., Everest, J., Thompson, P. and Young, R. 2006. *Ancient Frontiers – the geology and landscape of the Hadrian's Wall area*. Keyworth, Nottingham: British Geological Survey.

Swan, G.A. (1993) *Flora of Northumberland*. Natural History Society of Northumbria, Newcastle.

UK Biodiversity Steering Group (1995) *Biodiversity: the UK Steering Group Report. Volume 1: Meeting the Rio Challenge*. HMSO, London

UK Biodiversity Steering Group (1995) *Biodiversity: the UK Steering Group Report. Volume 2: Action Plans*. HMSO, London

UK Biodiversity Steering Group (1998) *Tranche 2 Action Plans: Volume II - Terrestrial and Freshwater Habitats*. English Nature, Peterborough.

UK Biodiversity Steering Group (1999) *Tranche 2 Action Plans: Volume V - Maritime Species and Habitats*. English Nature, Peterborough.

UK Biodiversity Steering Group (2000) *Index to the Steering Group Report and Tranche 2 Action Plans*. English Nature, Peterborough.

Young, B. 2000. *Hadrian's Wall World Heritage Site Management Plan: Geology and landscape features of the Hadrian's Wall Corridor*. British Geological Survey Technical Report WA/00/48R

Appendix 5.1

Appendix 5.1

SUMMARY REVIEW OF 2002-2007 MANAGEMENT PLAN

POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Policy 1: The boundaries of the WHS and its setting should be kept under review to ensure that its Outstanding Universal Significance is adequately protected		
The definition of the WHS as only the scheduled ancient monument should be reconsidered and proposals for an alternative basis should be formulated before the next revision of the Management Plan (HWCU)	Achieved	Policies 2a & 2b
The inclusion of adjacent and functionally connected sites within the WHS should be considered and consulted upon (HWCU)	Achieved	Policies 2c & 2d
Any changes to the boundaries of the WHS and its setting should be defined and notified to the World Heritage Committee (HWCU)	Outstanding	Policies 2e & 2f
English Heritage should consider with the Tyne and Wear County Archaeologist the most appropriate method of protecting the buried remains of the WHS in Tyneside (EH/LOCAL AUTHORITIES)	Outstanding	Policies 4a – 4f
The revision of the scheduling of the WHS should be completed for Hadrian's Wall in Tyneside and other satellite sites within the setting (EH)	Outstanding	Policies 3a, 3g & 3h
GIS should be used when developed for the WHS to assess the current boundaries of the setting (HWCU)	Outstanding	Policy 9a - Action1.
Policy 2: The WHS should be taken into account in the preparation and implementation of all planning, regulatory and policy documents which might affect it		
Regional Government Offices should include reference to the significance and values of the WHS in Regional Planning Guidance (GOVERNMENT OFFICES-NE/NW)	Achieved / Ongoing	Not specified
Local Authorities should include adequate policies to protect the values and significance of the World Heritage Site when Local Plans are revised (LOCAL AUTHORITIES)	Established / Ongoing	Policies 3c & 3d
Planning authorities should not permit development that would be detrimental to the WHS (LOCAL AUTHORITIES)	Established / Ongoing	Policies 3b & 3c
Planning authorities should give consideration to the effect that development proposals within the setting of the WHS might have on the Site and its setting (LOCAL AUTHORITIES)	Established / Ongoing	Policy 3f
Planning authorities should generally require formal environmental impact assessment for any proposed development which might have a significant effect on the WHS or its setting. They should also require developers to provide an archaeological evaluation if the effect of a proposal is uncertain (LOCAL AUTHORITIES)	Established / Ongoing	Policy 3e



POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Policy 3: All site managers should continue to assess their sites for potential risks and maintain appropriate plans to counter these		
Discussions with Emergency Planners, Ministry of Defence, Civil Aviation Authority and the emergency services should be undertaken to consider the need for plans for dealing with disasters that could potentially affect the WHS and its setting (HWCU/ LOCAL AUTHORITIES)	Outstanding	Policy 6c
Site Managers should maintain counter-disaster plans for their sites, including museums, and review these as necessary at appropriate intervals (SITE MANAGERS/MUSEUM CURATORS)	Established / Ongoing	Policy 6d
Museum Curators and Site Managers should work together and exchange information on security measures and risk preparedness (SITE MANAGERS/MUSEUM CURATORS)	Established / Ongoing	Policy 6d
The site manager at Birdoswald should draw up an action plan to counter erosion and landslip within the estate and oversee its implementation (CUMBRIA COUNTY COUNCIL)	In process	Not specified
Cumbria County Council should complete its Coastal Statement to assess loss of parts of the WHS through coastal erosion on the Cumbrian coast, and develop mitigation proposals with relevant partner organisations (CUMBRIA COUNTY COUNCIL/ EH/SRI)	In process	Not specified
English Heritage should monitor the effects of fluvial erosion on the site of the Roman bridge at Corbridge and the civil settlement at Chesters and develop mitigation proposals as required with the landowners (EH)	Corbridge complete – Chesters outstanding	Not specified
Policy 4: The conservation of the landscape of the WHS should be guided by an overall conservation framework which should be developed to assist in the management of change in the landscape		
A conservation framework should be developed for the best management of the historic and natural environment and landscape setting of the WHS (HWCU/EH/ LOCAL AUTHORITIES /COUNTRYSIDE AGENCY/ NNPA/ENGLISH NATURE)	Outstanding	Policies 1c & 8d
A pilot project for the development of a conservation framework should be developed within the Northumberland National Park (NNPA)	Not taken forward	Not specified
Within the conservation framework, policies should be developed for beneficial change to the setting of the WHS, thus allowing sustainable economic growth (HWCU/SITE MANAGERS/LANDOWNERS/RURAL DEV. SERVICE)	Not taken forward	Policy 1c
Historic Landscape Characterisation Surveys should be completed for Cumbria and undertaken in Northumberland in order to inform and meet the objectives of the conservation framework, research framework and local interpretative plans (CUMBRIA COUNTY COUNCIL/ LDNPA/ NORTHUMBERLAND COUNTY COUNCIL/NNPA)	Achieved	N/A
Every opportunity should be taken to emphasise the linear character of Hadrian's Wall in urban areas, for example by clearing and marking its line (LOCAL AUTHORITIES)	Not completed	Policies 4b & 9a
All agencies should identify ways in which farm incomes can be augmented through sustainable use of the WHS (ALL AGENCIES)	Ongoing	Policies 8a & 12j
Agri-environmental schemes should be developed and implemented, tailored to the needs of the WHS, its setting and its inhabitants (HWCU/ RURAL DEV. SERVICE)	Ongoing	Policies 7f & 8a

Appendix 5.1

POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Forestry proposals which enhance the character of the WHS or its setting should be encouraged but consideration should be given to maintaining the open aspect of the landscape where this is the dominant character (FORESTRY COMMISSION)	Ongoing	Policy 8c
Policy 5: Landowners, managers of sites managed for conservation and public access, and relevant agencies should develop appropriate work programmes for the management and conservation of individual sites		
Site managers should develop and maintain appropriate conservation or management plans for their sites (SITE MANAGERS)	Ongoing	Policies 1d, 7d, 7g & 7f
Site managers should include appropriate archaeological investigation and recording in all schemes for conservation or other works to any element of the WHS (SITE MANAGERS)	Established	Policy 7g
Proposals for conservation of natural features should be integrated with those for conservation of the landscape and archaeological sites (EH/ENGLISH NATURE)	Established / Ongoing	Policy 1c
Proposals contained in the Bio-diversity Action Plan for the WHS should be implemented, provided they do not adversely affect the significance of the WHS and its setting (ALL NATURAL AGENCIES)	Ongoing	Policy 1c
Conservation of archaeological elements should not compromise natural values of the WHS and its setting (EH/ LOCAL AUTHORITIES /NATURAL AGENCIES)	Established / Ongoing	Policy 1c
Tree cover on protected archaeological sites should be felled when appropriate and not replaced (LANDOWNERS/FORESTRY COMMISSION)	Established / Ongoing	Policy 8c
Funding schemes such as agri-environmental schemes and Management Agreements should be promoted, targeted and concluded as appropriate with individual landowners to assist with conservation of the historic and natural environment of the WHS and its setting (EH/Defra)	Established / Ongoing	Policy 8a
Earthworks suffering from erosion and potentially at risk should be identified and the causes of damage defined (HWCU/EH)	Established / Ongoing	Policy 7c
Where necessary remedial action should be taken to repair earthworks and arrangements for future proactive management established (EH/ RURAL DEV. SERVICE)	Established / Ongoing	Policy 7c
Guidance should be developed and published on the proactive management of earthworks (HWCU)	Completed	Policy 7h
Areas of the WHS under plough should be evaluated to see if damage is occurring (EH)	In process	Policy 8b
Where damage to archaeological deposits is being caused by arable cultivation, a solution should be found by negotiation if possible and confirmed by means of a management agreement if appropriate. If no negotiated solution is possible, other means such as excavation or revocation of Class Consent should be considered (EH)	In process	Policy 8b
The conservation of the castle at Bewcastle should be carried out and appropriate arrangements made for its future maintenance (EH)	Completed	N/A
Consolidation of the exposed masonry remains of Great Chesters Fort together with the lengths of Hadrian's Wall between the fort and Walltown should be carried out and appropriate arrangements made for their future maintenance (EH/NNPA)	In process	Not specified



POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Site managers should develop regular and appropriate programmes for the maintenance and repair of masonry that has already been conserved (SITE MANAGERS)	Established / Ongoing	Policy 7a
English Heritage should manage its own sites as exemplars, appropriate to its status as the lead body for the historic environment and to the World Heritage status of the Site. (EH)	Established / Ongoing	Not specified
In order to facilitate maintenance, EH should develop with site managers' proposals for term SMCs for specified types of maintenance work (EH)	Established / Ongoing	Policy 7f
The results of research into the use of lime mortars for repairs and the nature of building should be promulgated (EH)	Due for publication	N/A
Policy 6: The WHS should be used to assist the sustainable economic growth and post foot and mouth disease recovery of the local economy, provided that there are no adverse impacts on the integrity and Outstanding Universal Value of the Site and its setting.		
Plans should be developed immediately to co-ordinate action for the sustainable use of the WHS to ensure the recovery of the local economy after the impact of foot and mouth disease (HWTP/ALL AGENCIES)	Complete	N/A
Sustainable and diversified agriculture should be encouraged (Defra/ LANDOWNERS/LOCAL AUTHORITIES)	Established / Ongoing	Policies 8a, 8b & 12j
Hadrian's Wall as an 'icon' should be used to promote the economy of northern England (HWTP/NORTHUMBRIA TOURIST BOARD/ CUMBRIA TOURIST BOARD/REGIONAL DEVELOPMENT AGENCIES/ LOCAL AUTHORITIES)	Established / Ongoing	Policy 14a
Targeted tourism marketing campaigns should be developed that bring added value from tourism to the area. (HWTP/NORTHUMBRIA TOURIST BOARD/ CUMBRIA TOURIST BOARD/ LOCAL AUTHORITIES)	Established / Ongoing	Policy 14a
Opportunities for building stronger links between urban and rural tourism businesses should be developed. (HWTP/ NORTHUMBRIA TOURIST BOARD/CUMBRIA TOURIST BOARD)	Initiated	Not specified
Wall-wide schemes for the development of skills and employment should be developed (HWTP/ LOCAL AUTHORITIES)	Initiated	Policy 12g
Development of wet weather attractions within the WHS should be encouraged (HWTP/SITE MANAGERS)	Initiated	Policies 11a & 12d
Mechanisms such as 'Visitor Payback' to direct maximum return from visitor spend into conservation of the WHS and enhancement of visitor facilities should be identified and implemented (HWTP/SITE MANAGERS/LOCAL AUTHORITIES)	Not taken forward	Policy 12d
Policy 7: Links between the WHS and the local communities around it should be improved		
Communications between agencies involved with the WHS and local communities should be maintained and improved (HWCU / HWTP)	Established / Ongoing	Policies 13b & 14a
Appropriate arts and cultural initiatives should be developed with local communities, including initiatives such as Marking the Wall (HWTP)	Established / Ongoing	Policy 11f

Appendix 5.1

POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Museums within the WHS should build and maintain links with their local communities to encourage a sense of local identity with their collections (MUSEUM CURATORS)	Established / Ongoing	Not specified
Site Managers should consult on plans for their sites with local communities and encourage local involvement (SITE MANAGERS)	Established / Ongoing	Not specified
Links between the WHS and its setting and local services and businesses should be strengthened (HWTP)	Established / Ongoing	Policies 12a, 12c & 12h
The local supply chain should be strengthened, particularly for the tourism industry (HWTP / SITE MANAGERS)	Established / Ongoing	Policies 12c & 12h
Policy 8: Sustainable access to and within the WHS and its setting should be improved		
The Transport Strategy should be used as a framework for the development of sustainable transport policies acceptable to the local communities and other stakeholders (HWCU/HWTP/HIGHWAY AUTHORITIES/LOCAL AUTHORITIES /NNPA).	Initiated	Policy 10l
Provision of improved cycle facilities and access to the WHS and its setting should be developed (HIGHWAY AUTHORITIES/HWTP/RAIL SERVICE OPERATORS/SITE MANAGERS/SUSTRANS)	Established / Ongoing	Policy 10i
Provision of public transport to and within the WHS should be developed and improved (HIGHWAY AUTHORITIES/HWTP)	Established / Ongoing	Policies 10a, 10b & 10d
Long-term funding for the operation of the Hadrian's Wall Bus service AD 122 should be secured (HW BUS PARTNERSHIP)	Not achieved	Policies 10a & 10l
The National Trail should be completed on target as soon as foot and mouth disease restrictions are lifted. Thereafter it should be maintained, managed and promoted as a means of sustainable access and enjoyment of the WHS (COUNTRYSIDE AGENCY/HIGHWAY AUTHORITIES/NNPA/HWCU/HWTP)	Completed / Ongoing	Policies 10e & 10f
Sufficient resources should be made available for the sustainable maintenance and management of the Rights of Way network (HIGHWAY AUTHORITIES)	Established / Ongoing	Policies 10g & 10h
Access for All should be developed as a policy for all sites (SITE MANAGERS)	Established / Ongoing	Policy 10m
Policy 9: Visitor facilities and interpretation of the WHS should be developed at all levels to meet visitor expectations as a means of improving the enjoyment and understanding of visitors and local people and their appreciation of the universal significance and status of the WHS and its setting.		
The quality of visitor provision within the WHS and its setting should be continuously monitored, reviewed and improved to a standard commensurate with the universal significance of the Site (HWTP/SITE MANAGERS/LOCAL PARTNERSHIPS)	Established / Ongoing	Policies 11a, 11c & 11d
The Northumberland National Park Authority and the Youth Hostels Association should draw-up plans for redevelopment of both the Visitor Centre and the youth hostel at Once Brewed and implement these, subject to the necessary approvals (NNPA/YOUTH HOSTELS ASSOCIATION)	Ongoing	Appendix 6.1
Northumberland County Council and the Youth Hostels Association should explore funding opportunities for development of Rudchester Farm and the Roman fort as combined interpretation and accommodation facilities for walkers and other visitors (NORTHUMBERLAND COUNTY COUNCIL/YOUTH HOSTELS ASSOCIATION)	Not taken forward	Not specified



POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
English Heritage, The National Trust and Northumberland National Park Authority should seek to develop co-ordinated management arrangements at Housesteads, appropriate to the site's special values. (EH/NATIONAL TRUST/NNPA)	Initiated	Appendix 6.1
English Heritage should review the design of its guardianship panels to suit the special status and significance of the WHS and its setting (EH)	Completed	N/A
Interpretation and information should be accessible to all, informative and enjoyable up-to-date, and based on the best available research, and cover all aspects of the WHS and its setting including the natural heritage and land use (HWTP/SITE MANAGERS)	Established / Ongoing	Policies 11a & 11f
Interpretation should clarify for visitors the position of each site within the total scheme of Hadrian's Wall and the location of other sites to underline the linear nature of the Wall (HWTP/SITE MANAGERS)	Established / Ongoing	Policies 11a, 11b & 11f
Information and orientation displays should be displayed at all gateway sites to encourage awareness of the whole of the World Heritage Site, the links between the individual sites and local services and amenities.	Established / Ongoing	Policies 11a, 11b & 11f
The unifying identity for the WHS should be developed through marketing and through its use in interpretative material (and greater use made of the WHS emblem) (HWTP / HWCU)	Established / Ongoing	Policy 1a
The 1996 Interpretative Strategy should be reviewed and updated and communicated to all (HWTP/HWCU)	Initiated	Policies 11a & 11f
Local Interpretative Plans should be developed for all sectors of the WHS (HWTP/HWCU/LOCAL PARTNERSHIPS)	Only partially initiated	Not specified
Local partnerships should implement Local Interpretative Plans once developed (LOCAL PARTNERSHIPS)	Not taken forward	Not specified
Interpretation should be continually monitored and evaluated at existing sites and improved as appropriate (SITE MANAGERS)	Established / Ongoing	Policies 11a & 11f
Interpretative panels on free sites should be maintained and repaired, renewed and replaced as necessary (SITE MANAGERS)	Established / Ongoing	Policy 11f
The brown signing within the WHS and its setting should be reviewed and revised as necessary (HWTP/HIGHWAY AUTHORITIES)	Not completed	Policy 10k
All techniques of interpretation should be developed and utilised within the Site, particularly audiovisual methods, Information Communication Technology (ICT) and virtual reality (HWTP/SITE MANAGERS/MUSEUM CURATORS)	Initiated	Policies 11a & 11f
Interpretative events and re-enactments as well as appropriate arts initiatives should be developed and implemented to enhance the enjoyment and understanding of all visitors to the WHS (HWTP/SITE MANAGERS)	Established / Ongoing	Policy 11f
All reconstruction should follow the English Heritage guidelines on reconstruction and be founded on the best possible research; <i>in situ</i> reconstruction should not be carried out on a purely speculative basis or if it damages significant archaeological deposits (EH/SITE MANAGERS)	Established / Ongoing	Policy 11i
Policy 10: Museum authorities within the WHS should consider opportunities for co-operation to improve access to their collections		
Museums should secure funding where needed to complete the cataloguing of their collections (MUSEUM AUTHORITIES/NEMLAC)	Established / Ongoing	Not specified

Appendix 5.1

POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
Options for establishing a link between their catalogues to enhance access to all collections from the WHS should be explored and implemented if practical and affordable (MUSEUM CURATORS)	Not taken forward	Not specified
Museums should build up links with local communities and schools (MUSEUM CURATORS)	Established / Ongoing	Not specified
Museum authorities within the WHS should consider the case for re-establishing the Museums Liaison Committee to develop co-operative initiatives (MUSEUM CURATORS)	Established / Ongoing	Policy 1g
Policy 11: The educational use of the WHS and its setting should be maximised on the principles of Life Long Learning		
The WHS and its setting should be used within all subject areas of the National Curriculum and aspects of Life Long Learning (HWTP/EDUCATION OFFICERS/LOCAL AUTHORITIES)	Established / Ongoing	Policy 15b
The Hadrian's Wall Education Directory should be maintained and updated (HWTP/EDUCATION OFFICERS)	Updated not maintained	Not specified
All educational material should contain reference to the significance of the WHS and the need for its conservation and sustainable use (HWTP/ EDUCATION OFFICERS)	Established / Ongoing	Policy 15e
Collaborative schemes between sites and museums to provide electronic educational access to the WHS should be developed (EDUCATION OFFICERS)	Established / Ongoing	Policy 15a
The Hadrian's Wall Educational Forum should be used to develop and exchange best practice (EDUCATION OFFICERS)	Established / Ongoing	Policy 15a
The varied educational facilities, including residential centres, across the WHS should complement each other to add value to the overall educational potential of the WHS (HWTP/ EDUCATION OFFICERS)	Established / Ongoing	Policy 15a
Policy 12: The Management Plan should be implemented through the co-ordinated actions of all stakeholders and at the most local level appropriate for each policy		
The Hadrian's Wall WHS Management Plan Committee should oversee the implementation of the Management Plan 2001 – 2007 (MPC/HWCU)	Achieved	Not specified
Hadrian's Wall WHS Management Plan Committee should consider the development of wider consultative arrangements (MPC/HWCU/ HWTP)	Initiated	Policies 1e, 1f & 1g
The Management Plan should be disseminated as effectively and as widely as possible (MPC/HWCU)	Achieved	Policies 1f & 1g
The Hadrian's Wall Co-ordination Unit should act as champion of the Plan, co-ordinate its implementation, and service the WHS Management Plan Committee (HWCU)	Transferred to HWHL	Policies 1d & 1e
The HWTP should continue its role in the promotion and development of sustainable tourism, arts and community initiatives and should undertake responsibility for the implementation of the Enrichment and Enterprise scheme (HWTP)	Transferred to HWHL	Not specified
Development of area based implementation of the Management Plan should be trialled through a pilot study in the NNP (NNPA)	Not taken forward	N/A
Recurrent expenditure should be funded as far as possible from the resources of those bodies responsible for implementing specific policies (ALL AGENCIES)	Established / Ongoing	Not specified



POLICIES / ACTIONS	CURRENT STATUS	2008-14 PLAN REFERENCE
A framework should be developed for funding applications to the Heritage Lottery Fund and other bodies and to identify sources of alternative funding, particularly where applicants would not be eligible for HLF funding (HWTP)	Initiated	Policy 11b
A suite of monitoring measures should be agreed and drawn up, and assessed on a regular basis (MPC/HWCU)	Initiated	Policy 1g
An action plan for implementation of the Management Plan with SMART objectives should be agreed annually at the summer meeting of the Management Plan Committee over the period of the Plan (HWCU/MPC)	Not taken forward	Policy 1g
The Management Plan should be reviewed, revised as needed, consulted upon and endorsed by the Management Plan Committee by the end of the period of the current Plan in 2007 (HWCU/MPC)	Completed & carried forward	Policy 1e
Policy 13: Every effort should be made to improve understanding of how the WHS was created, has developed and is now used		
An academic research framework should be developed for the WHS and its setting to identify areas for future archaeological research, priorities and resources (HWCU)	Completed	Policy 9f
The programme of qualitative and quantitative visitor research should be developed (HWTP)	Established / Ongoing	Policy 12i
Research programmes should be developed on non-archaeological aspects of the use and significance of the WHS (HWTP/HWCU)	Initiated	Policy 9f
A Geographical Information System (GIS) should be developed for the overall management of the WHS and implementation of the Management Plan (ALL AGENCIES)	Not taken forward	Policy 1d
Digital mapping of all aerial photography of the WHS should be prepared (EH)	Initiated	Policy 9a

Appendix 6.1

Appendix 6.1

SUMMARY OF CURRENT PROPOSALS FOR INVESTMENT AT SITES ON HADRIAN'S WALL

- The Great North Museum project will create a major new facility in Newcastle opening in 2009, bringing together collections from four existing museums – the Hancock, the Museum of Antiquities, the Shefton Museum and the Hatton Gallery. The Hadrian's Wall gallery will be one of the highlights of the new museum and will feature a scale model of Hadrian's Wall along with interpretation based on real people identified through some of the inscriptions. The new gallery aims to act as a gateway to Hadrian's Wall and *Hadrian's Wall Country* for residents of, and visitors to, Newcastle.
- Elsewhere in Tyne and Wear, at Arbeia, a concept has been developed to improve visitor facilities and to create new display areas that will provide opportunities to present the rich collections obtained from excavations over the last ten years. At Segedunum there is a need to update and re-invigorate the displays and develop the role of Segedunum in the wider regeneration of Wallsend.
- The Vindolanda Trust, with support from HWHL, developed significant new proposals, for the execution of which the Heritage Lottery Fund (HLF) has awarded £4 million. These include:
 - interpreting the writing tablets that are currently located at the British Museum
 - improving interpretation and display of other exhibits at Vindolanda
 - improving research facilities for the ongoing programme of excavation
 - improving facilities for the large number of local and international volunteers who participate in this programme each year.

A linked programme of investment is proposed for the Roman Army Museum, providing a complementary, family-focused experience.

- The National Trust and English Heritage, with HWHL and HLF support, are working together to improve visitors' experience of Housesteads, where currently the standards fall well below those expected from a site of such iconic status. The two organisations are developing a joint approach to providing integrated management and new facilities. This agreement should be finalised and the proposals implemented in the Plan period.
- At Chesters, work on the Clayton collection has just been completed, but there remains a need to explore investment opportunities to ensure more effective presentation of the site. There is also potential at Corbridge to improve access and to widen the appeal of the facility, subject to local plans. This could be explored during the Plan period.

- Northumberland National Park Authority (NNPA), with HWHL and HLF support, is working up proposals for the development of a new discovery centre that would celebrate the significance of protected landscapes and promote enjoyment and sustainable management of their special qualities. The proposed location for this development is Once Brewed. This development would complement other facilities along the Wall by focusing on the landscape setting of the WHS.
- Facilities at Birdoswald are among the best currently available along the central section of the WHS, but need enhancement and re-invigoration.
- Heritage has an important role to play in acting as a catalyst in the regeneration and future development of Carlisle, as indicated in Issue 12. Tullie House Museum could form an important gateway to the WHS for visitors arriving from the west, and opportunities to link interpretation should be explored. Proposals for Tullie House recommend the development of the site, to upgrade interpretation, facilities and the education offer.
- At Maryport, HWHL and the Senhouse Museum Trust are developing ambitious proposals that will create a new visitor facility to present and interpret the collections alongside an ongoing programme of archaeological research. New displays will tell the story of the Roman occupation of the area in the context of the wider frontier and indeed of the empire. The project has the potential to make a significant contribution to regenerating the west coast of Cumbria and improving its link with the rest of the WHS.
- Romans in Ravenglass is a partnership led by HWHL to facilitate improvements in all areas. Projects include interpretation and conservation of the Roman bathhouse, geophysical survey on the *vicus* (carried out by the community under expert supervision financed through English Heritage), a new all-purpose website, a visitor information and signage strategy, and proposals for a 'port to fort' visitor centre.

Outside these established visitor sites, scope for investment in interpretation at Rudchester in Northumberland was identified in earlier WHS Management Plans and followed up by site feasibility studies. Small scale interpretation has been developed and there is potential for further small-scale investment. The possibility of some small-scale investment based on the milefortlets in the Solway Coast AONB area could also be explored.



Appendix 6.2

HADRIAN'S WALL WHS CONTINUING LEARNING STRATEGY

1. Introduction

The Continuing Learning Strategy has been developed by the Hadrian's Wall Education Forum (HWEF) and HWHL in partnership in order to promote, enhance and facilitate a strategic approach to education provision across and beyond Hadrian's Wall WHS.

It links to Policy 15a of the 2008-14 Hadrian's Wall Management Plan. This strategy aims to suggest a framework and action plan through which this policy can be implemented and developed. The overall theme for the strategy over the next ten years is to:

aspire to encourage the development, provision and enhancement of the learning opportunities offered by HW WHS to inspire interest and engagement for all.

2. Background

The HWEF was set up in 1999 with the aim of providing a meeting place for those working to develop and deliver education at sites along the Wall. The membership includes the education practitioners at each site whether site staff or freelance workers and also representatives of other groups who support education along the Wall such as the YHA. The membership therefore includes Tyne and Wear Museums, University of Newcastle, English Heritage, The Vindolanda Trust, Northumberland National Park, Tynedale Museums, The National Trust, Birdoswald Roman Fort, Tullie House, and Senhouse Roman Museum representing the sites.

The aim is to build up partnership, discuss current issues affecting education on the Wall, share knowledge and best practice and to work to create an educational identity for the Wall through events and resources focusing on the Wall as well as activities at the individual sites.

There are numerous organisations and individual sites that have interests in the development, provision and enhancement of learning opportunities with respect to the WHS. The aim of this strategy is not to impose a single learning strategy or approach on members of the HWEF, but to further develop the individual work of organisations, partnership working and Wall-wide collaboration.

The development, provision and enhancement of learning opportunities are specialised tasks, and each site delivers its work in close collaboration through the Hadrian's Wall Education Forum (HWEF). The HWEF defines education in the broadest possible terms and sees it as covering all aspects of formal, informal and lifelong learning. Education is not seen as the preserve of those following formal curricula but as the right of all members of society, regardless of age, ability, or individual social, intellectual, cultural or economic background.

This strategy has identified a number of key issues, that, given adequate investment in time, resource and training, and further

collaboration, will give the visitor to Hadrian's Wall WHS a more powerful, holistic, and world-class learning experience.

3. Aims/vision

This strategy aims to develop, facilitate, provide, enhance and achieve:

- Hadrian's Wall WHS as a focus for quality formal and informal learning opportunities
- joined-up and equally supportive learning, marketing, interpretation and site management across the WHS
- visitors enjoying the WHS (physically and virtually) and inspired to learn more
- local communities in and beyond the WHS developing a deeper sense of pride and ownership for the Wall and its landscape (fostered) by learning from it
- new research into and understanding of the significance of the WHS (and its landscape throughout time) communicated effectively through learning initiatives, ensuring that locals, and visitors from the United Kingdom and worldwide are experiencing wider enjoyment and understanding of the Wall.

To deliver this Strategy HWHL and the HWEF will work closely together to encourage all partner organisations to contribute their vision in their education/learning work.

This strategy, once agreed, will require a specific action plan to enable successful embedding of the outcomes across the whole WHS with a focus on very specific Wall-wide issues.

4. Issues, outcomes and actions

4.1 Coordinate and consolidate

ISSUE

The coordination of existing and new initiatives to raise awareness of Hadrian's Wall WHS to a wider and greater audience.

OUTCOME

Better communication leads to improved understanding of resources, staffing and audiences etc, across and beyond the WHS.

ACTION

- HWHL and HWEF work closely together to seek funding to deliver coordinated education programmes.
- Sustained development and delivery.
- Appointment of a Wall-wide Learning Coordinator.
- Gap-finding and filling across the WHS.
- Carry out an audit of existing resources and sharing of best practice.
- Create a national and international education network.

4.2 Review and renew

ISSUE

The provision of a strategic, responsive and comprehensive quality education service.

OUTCOME

All learners (groups and individuals) receive the maximum offer across the WHS.

Appendix 6.2

ACTION

- Continue to undertake or instigate research and evaluation into current learning provision and access to Hadrian's Wall WHS.
- HWHL to develop and finance a coordinated education programme reflecting needs and requirements of individual partners.
- Develop new opportunities.
- Consult with both current and potential audiences.
- Review future of directory. Is a practical guide better?
- Set up learning trails: time trails, change over time, geology/industry, WHS site management, ecology trail, art and design, science.
- Create a better educational web presence – national promotion of education, visit info (hazard IDs, facilities, FAQs).
- Make facilities available to groups: after-school clubs, adult classes.
- Provide pre- and post-visit support: downloads, maps, flyovers, geological data, recent discoveries, learning trails, accommodation for residential visits?
- Create travelling displays for children/families, with common characters.
- Provide assistance for local schools in delivery of curriculum: QCA schemes of work.
- *Roamin' Romans* outreach workshops run by different sites at quiet times of year. Objects, activities, lesson plans, photos in costume (run by freelancers to promote visits to sites).
- Provide teacher and staff training.

4.3 People and place

ISSUE

Coordinating the effective and enhanced use of staff and facilities for quality WHS education.

OUTCOME

Staff, facilities and resources support new opportunities through coordinated planning, development and promotion.

ACTION

- In conjunction and partnership develop and work with qualified and experienced people to undertake effective delivery of programmes.
- Provide additional training for learning/education staff.
- Evaluate and share evaluation of coordinated approach to monitor progress and to inform its future development and that of individual sites and organisations.
- Include World Heritage in general and Hadrian's Wall WHS in particular in some way on all courses: formal, academic and vocational and training.
- Keep up to date with continuing development on landscape and environmental studies, archaeology, geography, history, sustainable tourism.
- Resources, facilities and staff expertise to be effectively shared and access encouraged to educational facilities for current non-users.
- Coordination with and celebration of research at Durham and Newcastle Universities.
- Creation of a worldwide study and training centre.

4.4 Integrate and involve

ISSUE

Involving the local communities to foster and develop a sense of pride in place, ownership and empowerment of the WHS.

OUTCOME

The communities, working closely with schools and Further Education establishments, develop projects to encourage involvement and access.

ACTION

- Encourage greater involvement of communities, commercial enterprise and non-commercial education resource providers to develop learning resources.
- Develop a chain of Wall-wide 'ambassador schools', encouraged to develop projects drawing in families and the wider community.
- Work with extended school coordinators to get a better presence in the community.
- Link schools to universities and museums.
- Provide a key to social and economic development.

4.5 Challenge and change

ISSUE

Develop, challenge, celebrate and record the wider 21st century public understanding of Hadrian's Wall WHS and develop (beyond current boundaries) the public understanding of protected landscapes and conservation.

OUTCOME

Through existing and new mechanisms Hadrian's Wall WHS education is presented to the public in a dynamic and exciting way, thus developing new understanding, a sense of pride and ownership, and continued protection of their natural and cultural heritage.

ACTION

- Promote awareness of the wider educational potential of the WHS.
- Work in the context of UNESCO's World Heritage education.
- Work with the policies of Hadrian's Wall WHS Management Plan.
- Create a Visitor Forum.
- Use a Communication bulletin, 'wall board', vox pops?

4.6 Excellence and enjoyment

ISSUE

Getting the wide range of Hadrian's Wall WHS messages across effectively and accessibly so that people enjoy the WHS.

OUTCOME

All visitors and the local community learn about the history and significance of Hadrian's Wall WHS and are inspired by it.

ACTION

- HWHL to provide a lead role in the promotion and delivery of key messages linked to the interpretation plan.
- HWEF to advise on and support coordinated approaches.
- Carry out staff training (from FOH, learning, education, curatorial, and freelance educators) to promote key messages, recent finds, conservation etc.
- Lifelong learning: train members of the community as volunteer guides/short courses to develop knowledge and



- skills/ traditional skills/ vocational skills.
- Give a coherent identity to guided walks and trails.
 - Support and promote learning programmes that build on the success of *Pax Britannica* and *Touching the Wall* (2008-9)

4.7 Wall and world

ISSUE

Enhanced national and international cooperation leads to learning initiatives developed across the WHS becoming a model of best practice locally, nationally and internationally.

OUTCOME

The role of Hadrian's Wall WHS education in a national and global context is understood and celebrated.

ACTION

- Work closely with education providers, advisers and other educational professionals at the local regional, national and international level.
- Develop links with other World Heritage Sites (eg with the German *Limes* through video conferencing?).
- Run World Heritage education workshops.
- Develop a young people's fanzine.
- Set up a regional youth forum.
- Create a sustainable futures network linked to UNESCO, schools abroad.
- Encourage experimental archaeology projects.

5. Future responsibility

This strategy has been jointly agreed by the HWEF and HWHL. The strategy will be reviewed annually or when significant internal or external circumstances warrant.

Background papers held by:

Maggie Birchall – Hadrian's Wall Education Forum Chair.
Learning Officer – Segedunum Roman Fort, Baths and Museum,
Tyne and Wear Museums

Adam Goldwater - Learning Officer, Research and Communication, Tyne and Wear Museums

Appendix 7.1

Appendix 7.1

LONG TERM AIMS AND MEDIUM TERM OBJECTIVES FOR THE WHS

LONG TERM AIMS (30 YEARS)

Identifying and protecting the World Heritage Site	<ul style="list-style-type: none">To preserve the World Heritage Site and its Buffer Zone for future generations through appropriate policies and adequate protective measures.
Conserving the World Heritage Site	<ul style="list-style-type: none">To improve awareness and understanding of the archaeological, historical and other values which make the World Heritage Site so special and of the significance of its inscription as a World Heritage Site.To identify and promote change beneficial to the World Heritage Site and its Buffer Zone.To maintain and reinforce the special character of the Wall's landscape, including its beauty and its natural heritage.To ensure that all parts of the World Heritage Site are regularly monitored as well as adequately and appropriately conserved.To define and enhance the line of the Wall through the urban areas and in appropriate ways in rural areas.To take advantage of available opportunities to free the most sensitive sites from modern development, or planting.
Presenting, enjoying and transmitting understanding of the World Heritage Site	<ul style="list-style-type: none">To provide visitors with an overall experience of the World Heritage Site worthy of its special values and significance.To retain the vitality of the landscape, both urban and rural, within the WHS and its Buffer Zone.To ensure that the World Heritage Site and its Buffer Zone create sustainable economic benefits through tourism and other means, without compromising its Outstanding Universal Value.To achieve sustainable access for all to and within the Hadrian's Wall World Heritage Site and its Buffer Zone without compromising its Outstanding Universal Value.To ensure that information of the highest quality and accuracy on the Site is accessible to all those using the Site for recreational and educational purposes.
Managing the World Heritage Site	<ul style="list-style-type: none">To develop partnership and consensus among all those involved within the World Heritage Site and its Buffer Zone, whether public bodies or individuals.To strengthen links between the World Heritage Site and local communities to foster their appreciation of the Site and its cultural benefits.To ensure adequate and sustainable financial and human resources to achieve the Vision for the Site.To develop appropriate management to achieve the right balance between the values of the World Heritage Site and those of its Buffer Zone.



MEDIUM TERM OBJECTIVES (5 YEARS)

Managing the World Heritage Site	<ul style="list-style-type: none"> ● To develop integrated and fully informed management of Hadrian's Wall WHS as part of Frontiers of the Roman Empire, successfully communicating UNESCO's universal values.
Identifying and protecting the World Heritage Site	<ul style="list-style-type: none"> ● To establish and maintain boundaries of the WHS that comprehensively encompass all elements of the Roman frontier that reflect the Site's Outstanding Universal Value and its authenticity and integrity. ● To secure protection of the OUV, fabric, integrity and authenticity of the WHS through appropriate legislative provision. ● To maintain the effective protection and management of remains of the Roman frontier in urban environments. ● To protect the archaeological remains of the WHS and Buffer Zone from damage caused by inappropriate metal detecting.
Conserving the World Heritage Site	<ul style="list-style-type: none"> ● To pre-empt where possible the effects of disasters and emergencies on the WHS and to safeguard it by responding to these events. ● To manage the archaeological remains across the WHS and Buffer Zone in a way that ensures their continued enjoyment by future generations. ● To achieve a sustainable balance whereby the integrity of the WHS can be conserved while accommodating current and future land uses. ● To enhance and develop a continuous, jointly coordinated, publicly accessible programme of research designed to inform academic and public understanding of the WHS its management and its interpretation.
Presenting, enjoying and transmitting understanding of the World Heritage Site	<ul style="list-style-type: none"> ● To develop a fully integrated range of sustainable options for transport and other forms of access to and along the WHS. ● To establish an internationally acknowledged reputation for a range of first-class attractions offering diversified, integrated interpretation that is accessible, relevant and challenging to a wide range of audiences ● To ensure that the WHS is a major, high quality contributor to the local and regional economy. ● To offer communities in, neighboring and associated with the WHS opportunities to be engaged with the WHS, and develop the contribution that the Site can make to community life. ● To establish the WHS as a destination that is firmly on the agenda of the domestic and overseas visitor, with a visit to at least one of its major attractions included in a trip to <i>Hadrian's Wall Country</i>. ● To ensure that the WHS is acknowledged nationally and internationally as a focus for high quality, challenging, innovative and enjoyable learning, and for the communication of new research and understanding of the Site through learning initiatives.

Appendix 7.2

Appendix 7.2

SUMMARY OF ISSUES, POLICIES AND ACTIONS

Management of the WHS

ISSUE	POLICY	ACTIONS
Issue 1: Management of the WHS		
Objective 1: Integrated and fully informed management of Hadrian's Wall WHS as part of Frontiers of the Roman Empire, successfully communicating UNESCO's universal values.	Policy 1a: Raise awareness about World Heritage, in line with UNESCO guidelines.	<ol style="list-style-type: none">1. The Hadrian's Wall Management Plan Committee (MPC) and Hadrian's Wall Heritage Limited (HWHL) will champion the aspirations, aims and objectives of UNESCO's World Heritage Committee;2. Site and museum managers and educators will aim to engage the public in the issues of World Heritage, and the management of Hadrian's Wall as part of the Frontiers of the Roman Empire WHS;3. The design agreed for use of the World Heritage emblem on Hadrian's Wall should be used throughout the WHS, as part of the strategy to raise awareness of World Heritage.
	Policy 1b: Individual parts of the Frontiers of the Roman Empire WHS will be managed in a sustainable framework of interdisciplinary cooperation to achieve common standards of identification, recording, research, protection, conservation, management, presentation, promotion and understanding of the Roman frontier, above and below ground.	<ol style="list-style-type: none">1. Develop and maintain appropriate international links through the Bratislava Group and the Frontiers of the Roman Empire Intergovernmental Body (see Part 3);2. Work with international partners to develop a set of management principles on the identification, recording, research, protection, conservation, management, presentation, promotion, understanding and contribution to sustainable development of the Roman frontier; and guidelines for potential new members on the process, mechanisms and standards needed for inclusion in the Frontiers of the Roman Empire WHS;3. Those responsible for managing Hadrian's Wall and the Antonine Wall will develop a close working relationship on all aspects of WHS management.
	Policy 1c: An overall conservation framework which includes the cultural and natural heritage should be developed for the differing values within the WHS and Buffer Zone.	<ol style="list-style-type: none">1. Audit the values of the Site, their current condition and consider the resources the various organisations can bring to the conservation management of the Site and Buffer Zone;2. Develop an agreed conservation management framework to prioritise agreed values and identify conflicts, using guidance such as English Heritage's Conservation Principles and the Getty Conservation Institute's Heritage Values in Site Management - Four Case Studies.



ISSUE	POLICY	ACTIONS
	<p>Policy 1d: HWHL will strive to be proactive in coordinating continuing research and data analysis as a basis for improved management of the WHS.</p>	<ol style="list-style-type: none"> 1. Prepare a full audit, mapping and tabulation of ownership in the WHS and Buffer Zone; 2. Conduct a full baseline condition assessment of the standing masonry monuments and earthworks of the WHS; 3. Improve mapping of the WHS, including developing and using a uniform Geographic Information System (GIS); 4. Enhance information about the WHS, its management, and the Frontiers of the Roman Empire available on the Internet : e.g. explore the possibility of using the <i>Hadrian's Wall Country</i> website and improved mapping to offer layered mapping facilities; 5. Develop further specialist reports for the next Management Plan: e.g. geological Sites of Special Scientific Interest (SSSIs); population density and distribution in the WHS and Buffer Zone; a statement of principles governing archaeological work; the WHS Research Framework; 6. Undertake regular research into usage of and participation in the WHS.
	<p>Policy 1e: Preparation of future Management Plans should be resourced to allow continuous development and review during the next Plan period.</p>	<ol style="list-style-type: none"> 1. The Management Plan Steering Group should continue to meet throughout the Plan period, to collect and analyse material for the next update; 2. The necessary centralised project coordination and management function currently provided by HWHL will be appropriately resourced, with appropriate contributions from partner organisations; 3. Partner organisations should be encouraged to contribute to the process of continuing development and review through the MPC.
	<p>Policy 1f: At all meetings the MPC should aim to be as representative of all stakeholders as possible, with stakeholders accepting responsibility for and ownership of the Plan.</p>	<ol style="list-style-type: none"> 1. Encourage partner organisations to incorporate Hadrian's Wall Management Plan policies and objectives into their own corporate plans; 2. Undertake research into MPC members' views on barriers to effective participation in management of the WHS and act to reduce these; 3. Strongly encourage members of the MPC to participate as often and as actively as possible, and keep all possible methods of participation under review.

Appendix 7.2

ISSUE	POLICY	ACTIONS
	<p>Policy 1g: Support the further development of the role and responsibilities of the Interest Groups.</p> <p>Policy 1h: The MPC should consider publishing annual progress reports on implementation of the Plan.</p>	<ol style="list-style-type: none"> 1. HWHL will facilitate the review of the Interest Groups and formalisation of their membership and terms of reference under the oversight of the MPC. This should take place within the first nine months of the Plan period; 2. HWHL will support the Interest Groups in drawing up detailed action plans based on the policies and actions identified in this Plan. These Action Plans should be drawn up and agreed within the first 12 of the plan period and adapted in response to change; 3. The Interest Groups will be supported by HWHL in developing appropriate monitoring indicators within the first 12 months of the Plan period, by which progress in delivering the objectives of the Management Plan can be assessed; 4. The development of monitoring indicators will be informed by consideration of monitoring indicators used by other WHS Co-ordinators across the UK, in particular those recommended by ICOMOS UK. Where possible, common indicators will be developed for the several parts of the Frontiers of the Roman Empire WHS, to enable meaningful comparison between the Sites; 5. The assignment of responsibilities and provision of resources for implementing the Action Plans will be negotiated between the relevant partners.



Identification and protection

ISSUE	POLICY	ACTIONS
Issue 2: The boundaries of the WHS and its Buffer Zone		
Objective 2: To establish and maintain boundaries of the WHS that comprehensively encompass all elements of the Roman frontier that reflect the Site's Outstanding Universal Value, authenticity and integrity.	<p>Policy 2a: The existing boundary of the WHS should be clarified by supplying definitive maps to the World Heritage Centre.</p> <p>Policy 2b: The definition of the Hadrian's Wall part of FREWHS should be reviewed in the light of the approach to defining boundaries as set out in the FRE Summary Nomination.</p> <p>Policy 2c: The boundaries of Hadrian's Wall WHS should be extended to include functionally connected sites and the entire length of the linear elements.</p> <p>Policy 2d: Any areas proposed for extending the boundaries of the World Heritage Site will meet the test of authenticity and integrity and must have adequate legal protection and management arrangements. They must also be consistent with the Outstanding Universal Value of the World Heritage Site as accepted by the World Heritage Committee.</p> <p>Policy 2e: Changes to the boundaries that would require full re-nomination will not be considered for notification to the World Heritage Committee.</p> <p>Policy 2f: Changes in the boundaries resulting from the revision of the scheduling under the English Heritage Monuments Protection Programme will be notified to the Committee.</p> <p>Policy 2g: The boundaries of the Buffer Zone agreed for the 2002-7 Management Plan will remain unchanged for the period of this Management Plan.</p>	<ol style="list-style-type: none"> 1. Produce a definitive set of maps of scheduled areas which form the WHS; 2. Seek agreement of other partners in FREWHS to this clarification of the boundary; 3. Confirm clarification of the current boundaries of the WHS with the UNESCO World Heritage Centre as part of the follow-up to the Retrospective Inventory. <ol style="list-style-type: none"> 1. Produce a clear statement of discrepancies between the present boundaries of the Hadrian's Wall WHS and the policy set out in the Frontiers of the Roman Summary Nomination document. <ol style="list-style-type: none"> 1. Carry out a review the boundaries of the WHS, coordinated by the HWHL Management Plan Coordinator and in cooperation with partner organizations and landowners in the WHS; 2. Identify implications of the review with respect to submission of proposed boundary changes nomination to the World Heritage Committee; <ol style="list-style-type: none"> 3. Obtain the approval of other partners in Frontiers of the Roman Empire WHS to any proposed submission to the World Heritage Committee; 4. Identify and action any implications arising from the boundary and nomination review.

Appendix 7.2

ISSUE	POLICY	ACTIONS
Issue 3: Legislative protection for the WHS		
Objective 3: To secure protection of the WHS's OUV, fabric, integrity and authenticity through appropriate legislative provision.	<p>Policy 3a: The MPC will be alert to policy changes coming into force during the period of the Management Plan which have a bearing on the WHS.</p> <p>Policy 3b: Local Authorities and English Heritage should be adequately resourced to continue the same high standards of protection through Heritage Asset Consent as currently applied to the granting of Scheduled Monument Consent.</p> <p>Policy 3c: Under the proposed reform of heritage protection, local planning authorities should be encouraged to adopt and apply standards that are both uniform, and consistent with the OUV of the WHS when granting Heritage Asset Consent.</p> <p>Policy 3d: Local Authorities will carry forward the proposals of the 3-Level Framework above into new LDFs.</p> <p>Policy 3e: Local Authorities will require formal environmental impact assessment for significant developments affecting Hadrian's Wall WHS and its Buffer Zone.</p> <p>Policy 3f: Local Authorities should assess developments outside the Buffer Zone for their impact on the OUV. They should consult with appropriate expert advisors and where necessary require applicants to commission further information to allow this assessment. Development adversely affecting the OUV will not be permitted.</p> <p>Policy 3g: Legislative protection, either under the current regime or the new Heritage Protection Review system should be reviewed where new discoveries are made.</p> <p>Policy 3h: Existing anomalies in the legislative protection of sites in the WHS should be reviewed and brought into line and taking into account the level of threat to them.</p> <p>Policy 3i: Managers of all assets in the WHS will consider the OUV of the archaeological remains of Hadrian's Wall when managing other assets under other consent regimes in The WHS and its Buffer Zone.</p>	<ol style="list-style-type: none"> Alert stakeholders to the implications of policy changes relevant to the management of the WHS and the protection of its OUV; Set up a mechanism for monitoring and reporting on the impact of Heritage Asset Consent on protection standards and on the consistency of policies with regard to protecting the Outstanding Universal Values of the WHS.
		<ol style="list-style-type: none"> Set up a mechanism through which local planning authorities share, monitor and review information, policies and actions relating to development proposals and the protection of the Outstanding Universal Value of the WHS with HWHL and the MPC.
		<ol style="list-style-type: none"> Set up mechanism for regular review of areas protected by scheduling and for the scheduling of newly discovered sites.
		<ol style="list-style-type: none"> Set up a mechanism through which to monitor and review management practices and issues where assets are managed under multiple consent regimes.



ISSUE	POLICY	ACTIONS
Issue 4: Protection of the archaeological remains in urban areas		
Objective 4: To maintain effective protection and management of remains of the Roman frontier in urban environments.	<p>Policy 4a: Local authorities should seek to protect or enhance non-scheduled elements that contribute to the OUV of the WHS.</p> <p>Policy 4b: Local planning authorities should not permit new development on currently open land on the line of the Wall.</p> <p>Policy 4c: Townscape features that help people interpret and appreciate the Wall where it is not visible, such as street patterns, should be protected.</p> <p>Policy 4d: Local Authority decisions about the excavation, recording and possible reburial of sites on the Wall, and conservation and publication of finds should be informed by PPG 16, the Planning Policy Statement that will replace it, and the Hadrian's Wall Research Framework.</p> <p>Policy 4e: Local Authorities should, as part of the planning process, require from a developer interpretation of both exposed and reburied remains excavated as a result of development.</p> <p>Policy 4f: Local Authorities will protect or enhance other, non-scheduled elements in their areas that relate to Hadrian's Wall WHS.</p>	<p>1. Set up a mechanism through which Local Authorities share, monitor and review information, policies and actions relating to the protection and management of the remains of the Roman frontier in urban areas with the Planning Interest Group of the Management Plan Committee.</p>
Issue 5: Metal detecting		
Objective 5: To protect the archaeological remains of the WHS and Buffer Zone from damage caused by of inappropriate metal detecting.	Policy 5a: Metal detecting within the WHS and on other sites within the Buffer Zone will only be supported where it is in concordance with EH's guidelines, as part of a properly organised research project.	<p>1. Partner organisations along the Wall will seek to develop and implement strategies to discourage inappropriate and prevent illegal metal detecting within the WHS and Buffer Zone, through cooperation with regional police forces;</p> <p>2. Where illegal metal detecting is discovered, the relevant authorities will be urged to devote appropriate resources to investigate possible criminal offences committed, and prosecute offenders if appropriate.</p>

Appendix 7.2

Conservation and research

ISSUE	POLICY	ACTIONS
Issue 6: Risk preparedness and disaster management		
Objective 6: To pre-empt where possible the effects of disasters and emergencies on the WHS and to effectively safeguard it in responding to these events.	<p>Policy 6a: The Hadrian's Wall Research Framework should be used to prioritise archaeological fieldwork to mitigate threats to archaeological remains if <i>in situ</i> preservation of such areas at risk is not possible.</p> <p>Policy 6b: The WHS will be managed to pre-empt the effects of climate change to prevent deterioration of its OUV.</p> <p>Policy 6c: Emergency planners and aviation managers should be aware of the WHS and emergency services should take it into account in their planned response to an incident.</p> <p>Policy 6d: Mitigation of risk to sites and museum collections should be put in place.</p> <p>Policy 6e: Managers in the World Heritage Site should aim to reduce carbon emissions by the implementation of energy efficient measures to reduce the rate of climate change.</p> <p>Policy 6f: Managers in the World Heritage Site should aim to reduce carbon emissions by the implementation of energy efficient measures to reduce the rate of climate change.</p>	<ol style="list-style-type: none"> 1. Develop and implement plans to record the archaeology where protection is not possible, and to publish the results fully; 2. Implement measures to conserve vulnerable sites where possible. 1. Identify, prioritise and regularly review sites or areas potentially at risk; 2. Monitor potentially harmful changes in flora, fauna, or the landscape. 1. Establish appropriate mechanisms of liaison with Local Authority emergency planning teams, aviation managers and emergency services; maintain contact with them, and carry out an annual review of provisions; 2. Develop strategies to reduce, if not eliminate, the need to close sites during outbreaks of contagious livestock diseases. 1. Keep appropriate, up to date emergency plans in place at all sites and museums; 2. Develop cooperation between sites for the management of emergencies; 3. Regularly check security systems on sites and in museums, and update where necessary; 4. Ensure that collections are adequately recorded, with backup records off site. 1. Produce and promote guidelines on sustainability principles for visitor facilities; 2. Audit all existing facilities against appropriate guidelines, and develop action plans to improve sustainability and energy efficiency; 3. Monitor progress in implementing measures to improve sustainability and energy efficiency.



ISSUE	POLICY	ACTIONS
Issue 7: Conservation of the archaeological monuments and sites		
Objective 7: To manage the archaeological remains across the WHS and Buffer Zone in a way that ensures their continued enjoyment by future generations.	<p>Policy 7a: There should be regular monitoring and maintenance of exposed masonry by all organisations and individuals responsible for its care.</p> <p>Policy 7b: Preventative and active conservation measures for the Clayton Wall should be improved.</p> <p>Policy 7c: Archaeological earthworks must be protected from damage by erosion.</p> <p>Policy 7d: All areas of the WHS on the Heritage at Risk Register should be removed, or reduced in risk on the register, by the end of the life of this Plan.</p> <p>Policy 7e: The activities of burrowing animals in the WHS will be managed where it impacts on significant archaeological remains.</p> <p>Policy 7f: The use of generic consents and Heritage Partnership Agreements (HPAs) should be further developed for the conservation of the OUV of the WHS.</p> <p>Policy 7g: Conservation and repair work carried out in the WHS should adhere to best practice and appropriate current research.</p> <p>Policy 7h: The work of the Raphael Project should be reviewed.</p> <p>Policy 7i: The condition of archaeological remains in the WHS should be surveyed and monitored on a regular basis.</p>	<ol style="list-style-type: none"> Survey the condition of exposed masonry not covered by the EH Asset Management Plan; Coordinate action and resources to conserve and repair exposed sections of masonry. Implement measures to discourage visitors from climbing and walking on the Clayton Wall; Investigate and implement measures to waterproof and increase stability of the Clayton Wall. Implement and monitor management regimes on archaeological earthwork sites that are prone to erosion. Improve the condition of all areas on the Heritage at Risk Register. Farming bodies, English Heritage and Natural England should develop a joint strategy for managing burrowing animals which impact on significant archaeological remains in the WHS and Buffer Zone. Develop further generic consents as appropriate; Develop, post Heritage Bill, Heritage Partnership Agreements. Use appropriate research and guidelines in carrying out any conservation and repair work. Review and reassess the methodologies proposed in the Raphael Project manual, and the work undertaken within the project period; Continue with and review the results of the Trail Management day schools on managing paths in archaeologically sensitive areas; Publish results of the reviews. Repeat the condition survey of the archaeology of the WHS under grassland and forestry carried out during the Raphael Project; Develop a methodology for survey of Scheduled Monuments at Risk in the WHS, and carry out surveys every five years.

Appendix 7.2

ISSUE	POLICY	ACTIONS
Issue 8: Rural land management		
Objective 8: To achieve a sustainable balance whereby the integrity of the WHS can be conserved while accommodating current and future land uses.	<p>Policy 8a: Greater use of Higher Level Stewardship schemes which prioritise the historic environment should be promoted across the WHS.</p>	<ol style="list-style-type: none"> 1. Encourage farmers and landowners to enter into the Higher Level Stewardship schemes to benefit the conservation and sustainability of the WHS; 2. Encourage Natural England to prioritise projects within the WHS for support through the Scheme; 3. Work towards a goal of having all agricultural land in the WHS managed under Stewardship Agreements.
	<p>Policy 8b: The effect of agriculture on vulnerable sites throughout the WHS and its Buffer Zone should be monitored and assessed, to maintain a satisfactory balance between conservation and agricultural viability.</p>	<ol style="list-style-type: none"> 1. Establish a mechanism for monitoring sites identified as at potential risk from ploughing and apply appropriate solutions in cooperation with farmers; 2. Prioritise support for sites identified as at medium or high risk on the Heritage at Risk register; 3. Encourage farmers to enter Stewardship and Section 17 agreements to manage their stock in a sympathetic manner that avoids damage to structures and prevents erosion; 4. Where earthworks are damaged by farm stock, identify proactive solutions to prevent erosion, enable rapid responses when damage occurs, and provide sustainable grazing.
	<p>Policy 8c: Management of forestry and woodlands within the WHS and its Buffer Zone should take the OUV of the Site into account.</p>	<ol style="list-style-type: none"> 1. Identify trees at risk from being blown over which could cause damage to archaeological remains, and negotiate their removal; 2. Identify trees whose root growth is likely to result in damage to archaeological remains and negotiate their removal; 3. Encourage the removal of intrusive conifer blocks and the planting of broadleaved native species where appropriate.
	<p>Policy 8d: A strategy should be developed for the management and protection of the rural landscape in so much as it impacts on the OUV of the WHS.</p>	<ol style="list-style-type: none"> 1. Create and implement management plans for each SSSI which take into account the needs of both the historic and natural environments; 2. Identify and implement the necessary processes to develop a wider landscape strategy appropriate for the WHS; 3. Carry out fixed point photographic monitoring of key views.



ISSUE	POLICY	ACTIONS
Issue 9: Research		
Objective 9: To enhance and develop a continuous, jointly co-ordinated, publicly accessible programme of research designed to inform academic and public understanding of the WHS its management and its interpretation.	<p>Policy 9a: A programme of on-going survey, fieldwork and analytical research will be developed to take forward projects and priorities identified in the Research Framework.</p> <p>Policy 9b: Organisations with responsibilities and commitments to develop and implement research along Hadrian's Wall will work in partnership and co-ordinate their activities wherever possible.</p> <p>Policy 9c: Wherever possible, non-invasive methods of archaeological investigation should be used in preference to excavation.</p> <p>Policy 9d: Archaeological excavation will be undertaken under guidance from the Archaeological Research Framework.</p> <p>Policy 9e: Archaeological excavation will only take place where there is adequate provision for post-excavation, publication and the conservation of finds.</p> <p>Policy 9f: A wider Research Framework should be developed to help understand and manage the WHS, and maintain its OUV. It should incorporate the use of the landscape by visitors and local people and the impact of this use on its natural, historic and modern elements.</p> <p>Policy 9g: Wherever possible opportunities will be sought to engage local people and visitors in the research process.</p> <p>Policy 9h: The results of all research will be publicly accessible.</p>	<ol style="list-style-type: none"> 1. Develop and implement a GIS programme for the WHS that is informed by and builds on existing GIS operated by stakeholders; 2. Co-ordinate action to maximise the knowledge yield from sites being damaged by erosion; 3. Carry out strategic excavations of a range of site-types; 4. Identify the precise course of the Wall and the boundaries of its installations in the West using all appropriate techniques, including a complete set of geophysical surveys for the principal Wall and Stanegate sites; 5. Make resources available for aerial reconnaissance whenever the conditions are suitable. <ol style="list-style-type: none"> 1. Set up a forum to provide liaison for research activity throughout the WHS; 2. Develop a co-ordinated approach to seeking funding for an on-going Wall-wide programme of fieldwork and analytical research. <ol style="list-style-type: none"> 1. Develop a broad, integrated Research Framework for the WHS. <ol style="list-style-type: none"> 1. Create opportunities to involve local people and visitors in the research process; 2. Communicate the results of research in accessible, informative and imaginative ways.

Appendix 7.2

ISSUE	POLICY	ACTIONS
Presenting, enjoying and transmitting		
Issue 10: Sustainable physical access	<p>Policy 10a: The <i>Hadrian's Wall Country Bus</i> service should be developed and enhanced to the greater benefit of visitors and communities within the WHS and to increase passenger numbers and the viability of the service.</p> <p>Policy 10b: Site managers should consider offering incentives to visitors who travel to their sites using public transport exclusively.</p> <p>Policy 10c: Accessibility for coach services should be improved where this can be done without detriment to the OUV of the Site.</p> <p>Policy 10d: The greater use of rail services should be promoted as a means of improving access to the WHS.</p> <p>Policy 10e: The Hadrian's Wall National Trail should be proactively managed primarily as a grass sward surface to protect the archaeology underfoot and the setting of the WHS.</p>	<ol style="list-style-type: none"> 1. Increase frequency of the service, and explore joint ticketing and other incentives to increase bus usage; 2. Explore the provision of new buses in the lifetime of the Plan, using this as an opportunity to introduce more environmentally fuel-efficient vehicles; 3. Continue to monitor and review the performance of the <i>Hadrian's Wall Country Bus</i> service and the needs and experience of visitors and local communities using it; 4. Develop better integration between the <i>Hadrian's Wall Country Bus</i> service and other modes of transport. <ol style="list-style-type: none"> 1. Continue to consider options to improve coach access; 2. Maintain and improve liaison with coach operators to better understand their access and scheduling requirements. <ol style="list-style-type: none"> 1. Continue to work with rail service operators to promote the WHS; 2. Continue to work with rail service operators to provide better integration of services with other modes of transport. <ol style="list-style-type: none"> 1. Continue to monitor and manage the National Trail through a dedicated and adequately resourced staff team, including lengthsman; 2. Explore further with EH the use and expansion of generic scheduled monument consent for works on the Trail and its conversion to a Heritage Partnership Agreement under the new Heritage Protection legislation; 3. Encourage Rights of Way Authorities to invest greater time and resources in the National Trail; 4. Continue to research, implement and monitor the use of techniques and materials for the maintenance of the grass sward on the Trail; 5. Promote local permissive footpath diversion agreements with landowners to help to manage the grass sward and to provide alternative routes.



ISSUE	POLICY	ACTIONS
	<p>Policy 10f: Promote the Hadrian's Wall National Trail in such a way that protects the archaeology underfoot and the setting of the WHS.</p>	<ol style="list-style-type: none"> 1. Promote use of the Trail in the summer through the passport scheme; 2. Keep the Essential Companion booklet updated and available; 3. Develop for alternative itineraries and destinations for the winter period, to take pressure off the National Trail and the WHS; 4. Update and promote the code of respect for the WHS Every Footstep Counts, among visitors and tourism operators; 5. Develop and promote a code of practice for large parties of walkers in cooperation with other organisations such as NNPA.
	<p>Policy 10g: Options should be developed to broaden choices for walkers and to improve the quality of their experience.</p>	<ol style="list-style-type: none"> 1. Improve the rights of way network within the WHS and its Buffer Zone and develop and maintain a network of circular walking routes of varying length and ability; 2. Encourage Rights of Way Authorities to invest greater time and resources in the network linking with the National Trail; 3. Promote the development of the North West Coastal Trail and provide appropriate interpretive and promotional material linked to the National Trail.
	<p>Policy 10h: The Rights of Way authorities should invest adequate resources and prioritise works to maintain the network within the WHS and Buffer Zone, and link them to their setting.</p>	<ol style="list-style-type: none"> 1. Develop and upgrade the cycleway along the Cumbrian coast to enable access throughout the WHS; 2. Clarify and confirm responsibilities and the provision of resources for the ongoing maintenance of the cycleway; 3. Improve and upgrade signage along the Cycleway and signage linking it to other routes and other modes of transport; 4. Improve the provision of facilities for cyclists throughout the route and elsewhere within the WHS.
	<p>Policy 10i: Measures should be implemented to promote use of the Hadrian's Cycleway and to improve the experience of cyclists using it.</p>	<ol style="list-style-type: none"> 1. Review car parking charging policies, provision and usage across the WHS and make recommendations for improvements, including the potential provision of park and ride facilities; 2. Commission research to monitor road traffic volumes speeds and usage; 3. Establish a Military Road Action Group to identify options and make recommendations to improve safety along the B6318.
	<p>Policy 10j: A review of recommendations for the management of private car usage in the 1999 Transport Strategy should be undertaken with the protection of the OUV of the Site and Buffer Zone as a central principle.</p>	

Appendix 7.2

ISSUE	POLICY	ACTIONS
	<p>Policy 10k: Create an integrated strategy for signage for the WHS.</p> <p>Policy 10l: Partners will work together with HWHL to provide a strategic approach to sustainable transport provision to and within the WHS and to ensure that adequate resources are provided to develop and maintain sustainable transport options.</p>	<ol style="list-style-type: none"> Review current signage provision and make recommendations for improvement. Actively develop and promote sustainable transport options including cycling and walking hubs and use of public transport for access to and within the WHS; Invest in existing and new attractions that encourage sustainable modes of transport and limit growth of car-based travel, where possible; Promote Hadrian's Wall WHS as a green tourism destination.
	<p>Policy 10m: Access to the WHS should be as widely inclusive as possible, without compromising its OUV.</p>	<ol style="list-style-type: none"> All those involved in management of access will examine what can be done to improve access within the WHS for all disabled visitors; DDA compliance will be regularly reviewed by site and museum managers.
Issue 11: Developing the visitor experience and understanding of the World Heritage Site and Buffer Zone		

Issue 11: Developing the visitor experience and understanding of the World Heritage Site and Buffer Zone

Objective 11: To establish an internationally acknowledged reputation for a range of first-class attractions offering diversified, integrated interpretation that is accessible, relevant and challenging to a wide range of audiences.

- Policy 11 a: Investment in first-class interpretation and visitor facilities that maximise understanding and appreciation of the WHS should continue at sites in the WHS and its Buffer Zone.
 - Policy 11b: Investment proposals should be the result of coordination between partner organizations along the Wall, and should contribute to an approach that sees Hadrian's Wall as a linked destination;
 - Policy 11c: Investment proposals must preserve the OUV of Hadrian's Wall;
 - Policy 11d: All WHS museums should meet national museum accreditation standards and aspire to exceed these standards.
 - Policy 11e: Investment at hinterland and complementary sites should be explored where resources permit.
 - Policy 11f: Interpretation of the WHS and its Buffer Zone must be coordinated, based on accurate and up-to date information, explain the meaning and significance of the places being visited, be thought-provoking, and engender greater enjoyment of and care for the heritage by the visitor.
- Develop a coordinated programme for investment in first-class attractions and facilities at the sites, based on proposals in Appendix 6.1 and other appropriate opportunities;
 - Aim to provide better wet-weather attractions, family-friendly visitor facilities, catering, toilets and facilities for walkers and cyclists at the main WHS attractions and sites;
 - Coordinate a programme of WHS-wide research to monitor levels of visitor satisfaction;
 - Encourage all WHS attractions to participate in the national Visitor Attraction Quality Assurance Service (VAQAS) scheme and the Welcome suite of schemes operated by VisitBritain.
- Develop an overall Hadrian's Wall WHS interpretation framework;



ISSUE	POLICY	ACTIONS
	<p>Policy 11g: The WHS should demonstrate best practice in public engagement leading to an appreciation of the significance and values of the WHS and its Buffer Zone.</p> <p>Policy 11h: Interventive fieldwork for interpretation reasons alone will not be supported.</p>	<p>2. Develop and deliver a coordinated programme of maintenance of interpretation panels, especially in urban areas;</p> <p>3. Explore opportunities to engage visitors and local people more positively in the management of the Site and its landscape;</p> <p>4. Review the service provided by the Hadrian's Wall information line and the <i>Hadrian's Wall Country</i> website in the light of changing visitor information needs and provision in the regions and develop as appropriate;</p> <p>5. Encourage provision of site-based tours by trained staff and volunteers where no other service is provided; training will include awareness of WHS issues and values;</p> <p>6. Support and develop interpretative events and re-enactments, local cultural and heritage events and arts-based interpretation that contribute to WHS values.</p>
	<p>Policy 11i: Any proposals for physical reconstruction will only be supported where they follow English Heritage's 2001 Policy statement on reconstruction and 2006 Conservation Principles[1], and take into account the UNESCO decision on reconstruction in the Frontiers of the Roman Empire WHS[2], and the OUV of the Site.</p> <p>Policy 11j: Use of virtual reconstruction in line with the OUV of Hadrian's Wall should be researched.</p>	<p>1. Investigate the use of appropriate, well researched and stimulating virtual reconstruction on Hadrian's Wall, as part of an integrated strategy for interpretation.</p>
Issue 12: Sustainable development and economic regeneration		

Issue 12: Sustainable development and economic regeneration

Objective 12: To ensure that the WHS is a major, high quality contributor to the local and regional economy.

Policy 12a: The WHS should be used to assist in the sustainable economic development of the local area, while maintaining and promoting the OUV of the Site.

1. Establish cooperative working between organizations within the WHS, and regional, sub regional, other local organizations with responsibilities for supporting economic development;

2. Improve awareness of the special qualities of the WHS among businesses, business advisors, local communities and other stakeholders through a programme of roadshows, workshops, seminars, training, familiarisation visits and appropriate networking activity.

Policy 12b: Provision of visitor infrastructure and facilities should be of the highest possible quality to meet the needs of visitors and to respect WHS values.

1. Assess all new development proposals seeking public support against their ability to meet agreed guiding principles;

Appendix 7.2

ISSUE	POLICY	ACTIONS
	Policy 12c: Organisations involved in the WHS should source quality local products to both support local producers and to promote local produce to visitors.	<p>2. Develop and support proposals to provide wet weather facilities which extend the tourism season without impacting adversely on the National Trail;</p> <p>3. Encourage businesses to participate in national accreditation schemes;</p> <p>4. Develop the <i>Hadrian's Wall Country Local Produce Scheme</i>; encourage retailers, accommodation providers and attractions to use and promote local suppliers.</p>
	Policy 12d: Wall-wide coordinated schemes which can add value to visits to the WHS by increasing length of visitor stay or the number of sites visited should be developed.	<p>1. Investigate the potential for joint incentive schemes between private and public sector stakeholders that meet visitor aspirations , bring operational benefits and add value to WHS visits.</p>
	Policy 12e: Initiatives which encourage more environmentally sustainable provision of visitor facilities and services should be developed and supported.	<p>1. Encourage all involved in the visitor economy of HW WHS to review and adapt their activities as far as possible to embrace environmentally responsible business practices, encourage sustainable visits to the WHS and explore opportunities for visitor payback schemes.</p>
	Policy 12f: Businesses should be supported to exploit the opportunities presented by new and emerging information technologies.	<p>1. Develop appropriate networks, support and training to ensure communities and businesses linked to the WHS benefit from new developments in IT.</p>
	Policy 12g: More individuals and businesses across the WHS should participate in training, to sustain and increase the level of skills.	<p>1. Establish mechanisms to provide more effective coordination between agencies responsible for the delivery of training and skills.</p>
	Policy 12h: Economic development opportunities presented by the WHS should be more fully exploited in the local and regional economy.	<p>1. Fully develop opportunities identified to develop Tyneside and Carlisle as gateways to the WHS;</p> <p>2. Promote economic development opportunities associated with the WHS in market towns and smaller settlements throughout the WHS;</p> <p>3. Develop and exploit greater linkages with other attractions and destinations across the regions.</p>
	Policy 12i: A fuller understanding of tourism markets and economic development as it relates to the WHS should be developed and maintained.	<p>1. Regularly update gap analysis and market intelligence to identify opportunities for appropriate development. Communicate findings to stakeholders, and monitor business investment and developments.</p>



ISSUE	POLICY	ACTIONS
	<p>Policy 12j: The contribution of traditional land based industries to the local economy of the WHS and its Buffer Zone should be recognised and opportunities sought for land managers to maximise the benefits from their association with the WHS.</p>	<ol style="list-style-type: none"> Identify mechanisms for closer engagement between land management industries and relevant support agencies; Actively promote business development opportunities to land managers and seek to identify appropriate measures of support to assist them to exploit these opportunities; Support development proposals in rural areas which do not adversely impact on the WHS and its landscape setting.
Issue 13: Engaging with communities		
Objective 13: To offer communities in, neighbouring and associated with the WHS opportunities to be engaged with the WHS, and to develop the contribution the Site can make to community life.	<p>Policy 13a: Opportunities for greater participation in and engagement with the WHS by local individuals and communities should be developed and exploited.</p> <p>Policy 13b: WHS managers should follow a programme of proactive engagement to establish a better understanding of local community groups and interests.</p>	<ol style="list-style-type: none"> Create links with community development agencies along the WHS and facilitate collaborative working that engages local communities more actively in the WHS; Develop a programme to raise awareness of the special qualities of the WHS among communities through local groups, talks, workshops, visits and appropriate networking events; Support and develop WHS wide community based arts and cultural activities that are relevant to the WHS, reflect WHS values, and contribute to the interpretation framework; Investigate potential for an archaeological heritage programme (both Roman and non Roman) involving local communities in events, workshops and fieldwork, provided these are justified in research terms, properly resourced and organised (see Issue 9); Work with volunteers and local agencies to develop circular walks that connect settlements with the WHS and National Trail and improve existing circular walks; Continue to develop mechanisms for regular communication between local communities and WHS management.
Issue 14: Marketing the WHS		
Objective 14: To establish the WHS as a destination that is firmly on the agenda of the domestic and overseas visitor, with a visit to at least one of its major attractions included in a trip to <i>Hadrian's Wall Country</i> .	Policy 14a: Continued and coordinated marketing and communication should be used to increase the value of tourism at and around the WHS, provided that there are no adverse impacts on the integrity and OUV of the WHS.	<ol style="list-style-type: none"> Develop targeted marketing and communications campaigns through partnership building on previous work, and designed to attract new and existing audiences for the benefit of all stakeholders within the WHS corridor; Develop and maintain an improved understanding of market intelligence and of emerging techniques and technologies associated with audience engagement;

Appendix 7.2

ISSUE	POLICY	ACTIONS
		<p>3. Share the results of market intelligence and economic impact research between stakeholders;</p> <p>4. Encourage positive editorial coverage locally, nationally and internationally;</p> <p>5. Continue to develop relationships with travel trade and tour operators ensuring access to potential visitors through specialised distribution channels;</p> <p>6. Continue investment in the central Hadrian's Wall website;</p> <p>7. Deliver a continued and coordinated programme of WHS wide communications that includes a robust database of stakeholders, the Frontier newsletter of the WHS and appropriate events.</p>

Issue 15: Education

Objective 15: To ensure that the WHS is acknowledged nationally and internationally as a focus for high quality, challenging, innovative and enjoyable learning and for the communication of new research and understanding of the Site through learning initiatives.

Policy 15a: Opportunities to work in collaboration to develop learning provision should be identified and exploited within the Hadrian's Wall WHS and with other World Heritage Sites nationally and internationally.

Policy 15b: The work undertaken to date to widen the learning offer provided by the WHS should be built upon and expanded.

Policy 15c: Understanding of the learning aspirations and requirements of all learning audiences should be improved and the potential of the WHS as a learning resource should be more proactively promoted.

1. Develop the work of HWEF to maintain and update the Learning Strategy and to coordinate the implementation of its actions;

2. Define and adequately resource a central co-ordinating function for learning activities;

3. Prepare an annual programme of learning activities across the World Heritage Site;

4. Develop and implement a programme of engagement with other World Heritage Sites' education and learning staff.

1. Research and identify opportunities for the expansion of subject areas, facilities and learning media;

2. Identify and adopt best practice in the provision of diversified learning provision from elsewhere.

1. Provide a co-ordinated service to formal learning organizations that is appropriate to their needs;

2. Establish and maintain a better understanding of the aspirations and requirements of non-traditional learning audiences within the WHS corridor and beyond;

3. Develop and implement an awareness raising programme to improve understanding of the WHS as a learning resource within non-traditional audiences.



ISSUE	POLICY	ACTIONS
	<p>Policy 15d: The opportunities offered by new technologies and by learners' changing preferences for accessing learning should be explored and exploited.</p>	<ol style="list-style-type: none"> 1. Identify and adopt best practice in the use of new technologies for learning; 2. Monitor developments in new technologies as they might potentially apply to learning provision;
	<p>Policy 15e: Understanding of the philosophy of UNESCO World Heritage should be promoted.</p>	<ol style="list-style-type: none"> 3. Incorporate the concept of World Heritage and its universal human values, and the reasons for Hadrian's Wall's inscription into learning provided by the WHS.