

Cynllun Rheolaeth
Bro'r Sgydau
Waterfall Country
Management Plan

2010

Brecon Beacons National Park Authority,
Forestry Commission Wales,
Countryside Council for Wales



Waterfall Country: Management Plan 2010 – 2019

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Foreword

Waterfall Country supports an immense richness of biodiversity and heritage. The importance of this area is acknowledged by the numerous designated sites it supports. It has two Sites of Special Scientific Interest (SSSI), one Special Area of Conservation (SAC), numerous Geological Conservation Review (GCR) sites, Scheduled Ancient Monuments (SAMs), listed buildings, and it falls within the Fforest Fawr Geopark. These combined designations not only reflect the international importance of this area but also afford large parts of this area protection through national and international law.

The Countryside Council for Wales (CCW) have highlighted the fact that many parts of the SAC and SSSI's are in unfavourable condition, placing a requirement on the Forestry Commission and the National Park as major landowners to demonstrate that we are taking steps to prevent further deterioration of the site as well as bringing the site back into a favourable condition.

Along with the above requirements this management plan aims to highlight the additional threats and issues faced by the area and the people that live within it, along with the urgent need to prevent further deterioration of this internationally significant site. Ultimately the aim is to identify ways in which we can protect and enhance this area for future generations to come.

The success of this plan relies on it being integrated within all aspects of site management and within all decision making, and to this end the five year work plan will be instrumental.

This management plan has been produced and will be reviewed on an annual basis, by a group of key stakeholders comprising of both major landowner representatives and statutory bodies.

Helen Pye, Waterfalls Area Warden, Brecon Beacons National Park Authority

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1. Summary

The sustainable management of Waterfall Country is key to its future. The area not only supports internationally important habitats and species but also over 100 adventure activity businesses, 160,000 visitors a year and several small settlements and farmsteads. This management plan's overall aim is to identify ways in which we can successfully manage the area in a way that will allow the wildlife, users, visitors and inhabitants of Waterfall Country to co-exist and thrive together.

Four key aims have been identified to achieve this overall aim (see Section 4.):

- To provide and promote opportunities for safer recreation and a positive visitor experience that fosters understanding and appreciation of the SAC, SAMs, SSSI's and surrounding area and that meets the management plan's objectives.
- Increase our knowledge and understanding of the area, its sensitivities and its use.
- Preserve, restore and foster appreciation and understanding for the SAC/SSSI/SAM interests as well as other valuable habitats and sites within Waterfall Country, whilst ensuring that the SAC and SSSI objectives are supported in all projects.
- Implement a successful and sustainable plan.

The one-off and ongoing projects and tasks that will help us achieve these four key goals have been laid out in the five year work plan (see Section 5), which also gives clear details of division of labour, funding/resources and deadlines/timescales. Projects and tasks have also been divided into three categories according to their urgency – Essential, Important and Desirable. This will enable us to prioritise funding and resources for the most urgent tasks and projects.

The key areas covered by essential projects are:

Car parking: Solutions for car parking issues in the area.

Outdoor activities: Projects covering safety and sustainability.

SAC, SSSI, SAM and geological interests: Surveys, information gathering and monitoring and habitat management.

Visitor Monitoring: Monitoring of visitor satisfaction and visitor numbers.

Community: Establishing regular contact with the local community and identifying and addressing their concerns.

Education: Incorporating information on the SAC and SSSI interest into educational material, guided walks and talks.

Other projects: Staff training and establishment of a core steering group.

The key areas covered by essential ongoing tasks/projects are:

Interpretation: Developing interpretation in line with accepted principles and standards of good practice as identified in the Waterfalls Interpretation Plan and the National Park Interpretation Strategy.

Outdoor activities: Continuation of WASAG (Waterfalls Area Safety Advisory Group) and liaison with the South Wales Outdoor Activity Providers Group (SWOAPG) in relation to training and updates of the Gorge-walking Code of Conduct.

Site maintenance: Litter picking, stray sheep, boundary fencing.

Habitat management: Selective thinning and bark ringing.

Safety and Security: Liaison with police on thefts in the area and annual safety inspections.

Funding: Annual review of resources available for key projects and ongoing tasks.

Rights of Way (RoW) and patrols: Identification and prioritisation of RoW maintenance and improvement, ongoing monitoring/condition assessments of RoW, upgrading of key routes, improvement of signage and waymarking, management of viewpoints, vegetation clearance and consideration of SAC/SSSI sensitivities in all projects/tasks.

Further details on these tasks and projects as well as details of ‘important’ and ‘desirable’ projects can be found in Appendix 15.

The development of this plan, which has enabled a significant improvement in communication between key stakeholders, has been a long and complex process. The plan will continue to require an annual review in order to keep it current and relevant and this will be carried out by the core steering group identified in Appendix 15. Key decision making will be aided by continual monitoring and surveying as laid out in this plan.

2. Legislation and Policy

2.1. Strategy and Policy

2.1.1. Strategy and Policy of Partners Involved

Brecon Beacons National Park Authority (BBNPA) Strategy and Policy – taken from “Managing Change Together: Brecon Beacons National Park Draft Management Plan” (Brecon Beacons National Park Authority 2009)

National Parks in Wales and England were designated under the 1949 National Parks and Access to the Countryside Act, but their current framework is the Environment Act 1995. Section 61 of this act sets out the Parks’ **two statutory purposes**:

- **Conservation and enhancement** - to conserve and enhance the natural beauty, wildlife, and cultural heritage of the National Parks.
- **Understanding and enjoyment** - to promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public.

Sandford Principle

The two purposes of the National Parks are underpinned by the Sandford Principle which states that enjoyment of the National Parks —shall be in a manner and by such means as will leave their natural beauty unimpaired for the enjoyment of this and future generations. It asserts the primacy of the first purpose over the second in cases of obvious conflict. In most cases, though, the two purposes are mutually supportive and share equal importance.

Statutory Duty

The National Parks of Wales, Scotland, and England are Category V protected areas as defined by the World Conservation Union (IUCN) in the Guidelines of Protected Area Management Categories 1994. Category V protected areas are living and working landscapes with characteristic qualities, features, and services that have been moulded by the interplay of natural forces and human activities over the course of time. Consequently, careful regard must be given to the linkage between local communities and economies and environmental conservation in and around the National Parks. As such, the National Park Authority (NPA), in pursuit of the two statutory purposes, has a duty to:

“...seek to foster the economic and social well-being of local communities (within the National Park by working closely with the agencies and local authorities responsible for these matters).”

The Park’s statutory duty should be carried out with the Park’s purposes in mind; policies and actions designed to promote social and economic well-being should also aim to conserve and enhance the natural and cultural heritage of the Park (Brecon Beacons National Park Authority 2009).

National Park Management Plan

The National Park Management Plan sets the vision and objectives for the future of the Park during the next 20 years. It promotes co-ordinated implementation between public sector organisations such as the Countryside Council for Wales, Forestry Commission Wales, Environment Agency

Wales, community councils, town councils, the Brecon Beacons National Park Authority and other statutory undertakers such as water, gas and electricity utilities and is the product of wide consultation with the public and with these organisations.

Social inclusion

Social inclusion is one of the guiding principles underpinning the National Park Management Plan. The Welsh Assembly Government envisions that Wales' National Parks will be enjoyed and cherished by a full cross section of society, irrespective of people's backgrounds. Therefore, in supporting the Parks' purposes through services provided, the Park Authorities aim to be mindful of the needs of all sectors of society, to foster economic and social well-being and reduce social exclusion and broaden the availability and appeal of the Parks to more people from all walks of life. Furthermore the Welsh Assembly Government emphasises that the Parks are there for everyone to enjoy, that visitor numbers will need to be managed effectively in order to conserve the Parks (for example not all parts of the Parks will be equally accessible or appropriate for recreation and visitor pressure) and that the Parks have significant potential to enrich the lives of people in nearby urban communities.

The consultation draft National Park Management Plan (2009) includes the following strategic objectives:

Woodland management

- Capture the existing values of the lower valley native farm woodlands in the National Park and expand these habitats towards the higher slopes where existing forests lie.
- Manage forests at higher elevations to maintain a sound commercial presence as coniferous forests, contributing to the rural economy whilst offering the opportunity to improve landscape design and create new upland open space via felling.
- Restore internationally recognised habitats, including upland bogs, heath land and upland oak woods, where the viability and potential exists.
- Practice continuous cover forestry in forests within the National Park where tree species, aspect, previous management and soils allow.
- Integrate woodland management into the Local Development Plan within the National Park.
- Consider and create new community woodlands within easy access of future and existing communities that contribute to the improved sense of health and well-being.

Outdoor Access and Recreation

- Strategically manage the rights of way network.
- Improve the provision of information with regard to public access.
- Make the best use of external funding and resource opportunities to improve public access.
- Improve access to and on water.
- Continue to work constructively with partners to reduce and resolve conflicts and improve access and recreation provision.

Promoting Understanding and Enjoyment

- Information, interpretation and education will be at the heart of all projects to ensure the long term support for, understanding of and commitment to the National Park by visitors and the local populations.
- Promote opportunities to connect people to the National Park
- Ensure that the National Park can be enjoyed by all and that services and facilities don't deliberately or inadvertently exclude people.

Information

- Provide a first class visitor experience and welcome to anyone interacting with and enjoying the National Park and its special qualities.
- Provide a holistic and networked dissemination of information which gives visitors the confidence to explore the National Park safely, by working with NPA centres, tourism providers and agencies operating within the Park.
- Increase awareness of environmental sensitivity and sustainability issues to positively influence behaviour.
- The NPA will provide a range of information on the National Park, its recreational opportunities and its special qualities to provide a holistic understanding to a range of audiences.

Education

- Raise awareness and promote understanding of National Park purposes, policies and activities.
- Provide a *unique, Park-specific* outdoor experience that is not available through any other source.
- Provide learners with the opportunity to have an experience relating to the National Park purposes face-to-face, in the Park, on-line or through written or audio materials.
- Ensure the health and safety of all learners/participants, retaining the Adventure Activities Licensing Scheme (AALS) status as a minimum standard.
- Provide learners with an enjoyable experience of the National Park.
- Create learning opportunities for all, including those who have not traditionally had such opportunities in the BBNPA.
- Demonstrate the principles of sustainability through learning materials and in practice and by supporting Eco-Schools and attaining and maintaining Eco-Centre status for NPA centres.
- Work with internal and external partners to promote and implement the effective and safe use of the Brecon Beacons National Park for learning.
- Meet the needs of learning providers through the development and provision of learning services, including those in Welsh.
- Enable educators to learn how to utilize the National Park as a place for learning (i.e. through training days).
- Incorporate national and international education efforts (e.g., UNESCO decade for ESD, Curriculum Cymreig 2007/8) into the Education Strategy as they arise.

The Purpose and Remit of CCW – A Summary:

General purpose and remit

- To perform functions for the conservation and enhancement of the natural beauty and amenity of the countryside.
- To encourage the provision or improvement for the enjoyment of the countryside, including opportunities for open-air recreation and the study of nature.
- To have regard to the social and economic interests of rural areas in Wales.
- To give independent advice based on strong scientific evidence.

Duties

- To discharge nature conservation functions - notify Sites of Special Scientific Interest; declare and manage National Nature Reserves and advise on EC Habitats and Birds Directives and the Biodiversity Convention.
- To conserve and enhance natural beauty in Wales and the amenity of the countryside in National Parks, Areas of Outstanding Natural Beauty (AONBs) and elsewhere in Wales.
- To designate National Parks and to advise Ministers.
- To establish (with 'sister bodies' in England and Scotland) a Joint Nature Conservation Committee to perform "special" functions – GB wide and international matters.
- To act as a licensing authority in relation to derogations from statutory species protection.
- To keep under review all matters relating to provision of facilities for enjoyment of the countryside, conservation and enhancement of the natural beauty and amenity of the countryside and the need to secure public access to the countryside for the purposes of open air recreation.
- To advise any Minister or public body on matters they may refer to CCW, or as CCW thinks fit.
- To provide publicity and information services relating to the countryside, places of beauty or interest therein or the functions of the Council.
- To have regard to the purposes of National Parks and AONBs when exercising its functions.

Powers

- To carry out or commission such research as the CCW deems necessary for the purposes of any of its functions.
- To experiment and implement experimental schemes.
- To give grants to public and voluntary bodies and individuals for purposes connected with any of CCW's functions.
- To designate, by order, AONB, where desirable.

Statutory Advice

- To advise local planning authorities and other bodies on a range of developments or operations that might impact on countryside or nature conservation matters.
- To advise the Secretary of State, Ministers or any public body, on conservation or countryside matters as they may refer to the CCW or as the CCW sees fit.
- To respond to consultations on, inter alia, local development plans.
- National Park and AONB Management Plans; Strategic Environmental Assessment.

- Habitats Regulations Assessment.
- Habitats Regulations.
- Appropriate Assessment and Environmental Impact Assessment.
- Development proposals – including responding to duties laid on third parties to consult CCW.
- To be consulted, and advise the National Assembly, on appointments, plans, funding and administration of National Park Authorities.

Forestry Commission Wales (FCW) Strategy and Policy

FCW are the Welsh Assembly Government's department of Forestry, as well as being part of Forestry Commission GB. They work in three main ways:

- They develop forestry policy and advise the Welsh Assembly Government (WAG) on forestry matters
- They manage the Assembly Governments woodland estate (38% of woodland in Wales).
- They provide grant aid through the Better Woodlands for Wales scheme and regulate forestry through felling licences

Their current themes are:

- Welsh woodland and trees.
- Responding to climate change.
- Woodlands for people.
- Developing a competitive and integrated forest sector.
- Improving environment quality.

2.1.2. Other Relevant Strategy and Policy

Tourism strategies for local authorities that cover the plan area

Waterfall Country falls within two tourism promotion areas in Wales - Mid Wales and Brecon Beacons and Swansea Bay, Mumbles, Gower, Afan, & Vale of Neath. The authorities responsible for marketing Waterfall Country are Powys County Council (PCC) and Neath Port Talbot Borough Council (NPTCBC). Rhondda Cynon Taff is also emerging as an authority keen to promote tourism. Whilst both PCC and NPTCBC are keen to promote tourism as part of their remit to encourage economic development, PCC do not currently promote Waterfall Country within their promotional literature and focus their marketing on the Central Brecon Beacons and Mid Wales attractions. NPTCBC do though view the waterfalls as one of their key attractions and market the area within their promotional literature. They have recently been successful in securing external funding to develop tourism infrastructure and facilities in the area, improve marketing and publications and work with tourism businesses to improve the visitor experience. They are keen to develop tourism across their authority area though, not just within Waterfall Country, and are looking to work closely with the BBNPA in developing any projects in Waterfall Country.

2.2. Current Ownership

A large proportion of the area is owned by the FCW, with significant portions owned by the BBNPA (see map in Appendix I for a map of known landowners). At present BBNPA takes a lead role in the management of the area – in particular on the footpaths and Rights of Way (RoW).

2.3. Designations and Legislation

The area covered by the management plan supports two Sites of Special Scientific Interest (SSSI) designated under Section 28 of the Wildlife & Countryside Act 1981 (as amended) which was substituted by Schedule 9 of the Countryside & Rights of Way (CROW) Act 2000. Each SSSI notification is accompanied by a list of Potentially Damaging Operations (PDO's). It is a requirement of the legislation that owners and occupiers must notify CCW of their intention to undertake any of the operations on the established list. Consents to complete such works may be provided by CCW.

Both FCW and the BBNPA are Section 28G authorities as defined by this section of the 1981 Wildlife and Countryside Act (as amended). This section requires that:

28G (1) A section 28G authority shall have the duty set out in subsection (2) in exercising its functions so far as their exercise is likely to affect the flora, fauna or geological or physiographical features by reason of which a site of special scientific interest is of special interest.

(2) The duty is to take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest.

Therefore, both FCW and BBNPA are under an obligation to further the scientific interest of those parts of Waterfall Country that are designated as a SSSI, which as a matter of UK policy are also coincident with the Coedydd Nedd a Mellte SAC. This management plan will help both organisations to fulfil this obligation.

A significant proportion of the land has been recognised under the European Habitats Directive (Council Directive 92/43/EEC) as a Special Area of Conservation (SAC) to form part of a wider network of protected wildlife areas, known as the Natura 2000, across the European Union. The Habitats Directive was adopted into UK legislation in the form of the Conservation (Natural Habitats, & c.) regulations 1994 (as amended), more commonly known as the Habitat Regulations, which provide the framework for the designation, protection and management of SACs. Regulation 3 (2) provides a general duty on all parties for the compliance with the Habitats Directive to protect SACs. Specific duties are derived from Regulations 18 and 19 which control potentially damaging operations (as recognised under Section 28 of the Wildlife & Countryside Act 1981 (as amended) as substituted by Schedule 9 of the CROW Act 2000) and also under Regulations 48 which controls developments which are likely to have a significant effect on a European site.

Five major Scheduled Ancient Monuments (SAMs) and 10 Grade II listed buildings also exist in the area. SAMs are important sites and monuments that are given legal protection by being placed on list or 'schedule'. In Wales Cadw take the lead in identifying these sites. The Ancient Monuments and Archaeological Area Act 1979 supports a formal system of consent for any work carried out to a SAM. Cadw also take the lead on Listed Buildings in Wales. All buildings built before the 1700 that are anything like their original condition are given listed building status. Anything built between 1700

and 1840 also tends to be given a listed status. All the buildings in the plan area are Grade II* or Grade II listed buildings which are particularly important buildings of more than special interest or nationally important buildings and of special interest respectively. Listed building consent must be applied for before any changes are made that might affect the special interest of that building.

2.3.1. Dyffrynnoedd Nedd a Mellte a Moel Penderyn SSSI

Size: 420.5 ha. (SN907100, SN921090, SN937088).

This site includes the wooded valleys of the rivers Nedd, Mellte, Pyrddin and Sychryd, and their tributaries above Pontneddfechan, as they pass through a Millstone Grit and Carboniferous Limestone plateau, and Moel Penderyn, which lies to the east. The plateau lies at about 300m, with the rivers having eroded deep, narrow valleys with gorges, cliffs, block screes and waterfalls.

There is an extensive and diverse range of semi-natural woodland, important populations of flowering plants and outstanding assemblages of mosses, liverworts and lichens. Geological features include cave systems and associated karst; exposures at Moel Penderyn, Craig y Ddinas and Bwa Maen and geomorphological features within parts of the valleys of the Hepste and Mellte (Countryside Council for Wales April 2008).

2.3.2. Blaen Nedd SSSI

Size: 187.7 ha (SN914135).

Blaen Nedd is situated in the upper valley of the Nedd Fechan, approximately 1 km west of the village of Ystradfellte. It consists of a series of contiguous enclosures rising eastwards and north-eastwards from the river towards the lower flanks of Fan Nedd.

The site supports a wide variety of habitat types including oak and ash woodland, neutral grassland, calcareous grassland, limestone pavement, marshy grassland and wet dwarf-shrub heath. Geological features include a cave system and associated karst (classic limestone landscape) surface features (Countryside Council for Wales April 2008).

2.3.3. Coedydd Nedd a Mellte SAC

Size: 378.18 ha. (SN919093).

Designated under the 1992 European Habitats Directive, this SAC is underpinned by both the above-named SSSIs. It is of European importance for its stands of lime-field maple woodland (with ash trees) for which the area is considered to be significant, and sessile oak woodland, for which this is considered to be one of the best areas in the UK. These gorges in the SAC support characteristic upland woodland communities typical of north and west Britain, with extensive areas of oak woodland mostly confined to the river valleys where the underlying geology is mainly Carboniferous Maros Group and Coal Measures sandstones and mudstones, and smaller areas of ash woodland occurring mainly on the more base rich-sandstones, particularly along tops of crags, and on limestone in the north and south.

The rivers and wooded gorges provide a very humid microclimate akin to a temperate rainforest, and the terrain of much of the site maintains and provides some shelter and some protection from the effects of atmospheric pollution. This has provided ideal conditions for the development of important moss, liverwort and lichen communities, and the maintenance of these conditions is critical to the conservation interests of the site. The waterfalls provide splash zones and spray, which contribute significantly to the wetness and humidity that many species in these communities

require. The rocks and cliffs, flushed ground, decaying logs and mature and over-mature trees provide some of the specific habitats required by several scarce lower plants within these communities (Countryside Council for Wales April 2008).

2.3.4. Fforest Fawr Geopark

The western half of the Brecon Beacons National Park Authority (BBNPA), including the whole of Waterfall Country has enjoyed the status of European and Global Geopark since September 2005.

Designation of an area as a European/Global Geopark is principally intended to promote sustainable tourism. Geopark designation has no statutory basis and affords no additional form of legal protection either to landscapes or habitats. It is nevertheless intended to assist in the conservation and protection of landscapes and sites important for either geodiversity and/or biodiversity, through the provision of improved interpretive, informational and educational facilities in the area. The Geopark movement also encourages the involvement of local communities in this approach.

Geopark status, once attained by an area, is open to renewal on a four year cycle. Retention of Geopark status is conditional on a sufficient level of activity by the sponsoring bodies. Fforest Fawr Geopark was successfully revalidated in September 2008 and will be considered once again in 2012.

2.3.5. Geological Conservation Review sites

GCR Block: Westphalian

Name of site: Pontneddfechan

The best exposure in south Wales of the rock strata of the *Gastrioceras subcrenatum* Marine Band in its full development. The full range of environment types are represented in the section, including brackish water with a restricted fauna and off-shore marine environments with a goniatite-rich fauna. This site is important in understanding how this brief marine incursion occurred, which in turn is important because the marine band, the expression of this event in the rocks, is taken to indicate the start of the Westphalian Epoch of Carboniferous time.

GCR Block: Caves

Name of site: Porth yr Ogof

The site covers a single cave with nearly 3km of passages underlying the valley floor of the River Mellte. The main passage of Porth yr Ogof carries the entire flow of the river and, being completely vadose, rates as the finest valley floor river cave in Britain. Extensive side passages underneath the upstream east bank are completely flooded in sections and carry leakage from the riverbed in an early stage of subterranean river capture.

GCR Block: Fluvial Geomorphology of Wales

Name of site: Afon Mellte and Afon Hepste

This site is exceptional in showing the combined effects of karst, geological controls and rejuvenation in river landform development. It demonstrates features unique to rivers in karstic environments including underground drainage, dry valley and unroofed cavern gorge sections. Rejuvenation has contributed to development of the landforms while faulting has juxtaposed rocks of varying resistance and influenced the form and evolution of waterfalls. Thus the landforms of this

area reflect a variety of interacting controls and both the total assemblage as well as the individual features are important.

GCR Block: Variscan Structures

Name of site: Craig y Ddinas

The old quarry faces and rock outcrops at Craig y Ddinas and Moel Penderyn provide important exposures of geological structures formed during the Variscan Orogeny, late in the Carboniferous and early in the Permian periods of geological history. The Carboniferous Limestone layers are steeply tilted on Craig y Ddinas, as a result of folding, and small tight folds can be seen in the banks of the River Sychryd. The exposed Dinas Fault, a major dislocation of the crust, is marked by a belt of shattered limestone associated with several minor fractures. Numerous other small structures occur, including faults, fractures, veins and folds. This complex assemblage of structures makes up a narrow belt called the Neath Disturbance, which extends from the Welsh Borders to the Swansea Bay. The Disturbance probably lies above an ancient line of weakness in the deep crust active during Caledonian Orogeny and reactivated during the Variscan Orogeny. These localities provide the best exposures of this important feature of the geological structure of South Wales.

GCR Block: Caves

Name of site: Little Neath River Caves

The site contains nearly 10 kilometres (6 miles) of cave passages, most of which lie in the Little Neath River Cave itself. This is an extremely fine system with a large and dramatic main river passage mapped most of the way from the sinks to the resurgence - both located in the main valley riverbed. The caves show a close response to geological structure and demonstrate a complex history of development through underground diversion of a major surface river. The site includes the gorge of the Nedd Fechan which is notable for its sinks and risings, disappearing river and associated karst features.

GCR Block: Namurian

Name of site: Nedd, Mellte & Sychryd

The Nedd, Mellte and Sychryd, forming the headwaters of the River Neath, provide extensive and spectacular exposures of the whole Namurian of the North Crop. The Basal Grits are particularly well exposed and present the best available section in the Main South Wales Basin. The predominantly shaley sequences of the higher Namurian are also well exposed here and their study has been of great importance in the elucidation of the stratigraphy of the Namurian. Additional importance attaches to the presence of a varied and abundant Basal Grit flora. It displays outstanding, nationally important sections of Carboniferous rocks.

GCR Block: Karst

Name of site: Hepste-Mellte Valleys

The site covers the finest sections of the limestone valley floors traversed by the Rivers Hepste, Mellte and Nedd. These areas contain an exceptionally fine and varied collection of limestone gorges, sinkholes and risings, and associated caves, with the Hepste showing most complex hydrology in response to the geological structure. Additionally the site covers the Hepste-Mellte interfluvium with a

variety of karst features including many large dolines some of which occur in the outcrop of the grit due to solution in the underlying limestone.

2.3.6. Open Access provision

There are a number of places within the plan area where the public enjoys access to all land and are not limited to the line of a public path. See Appendix I for a map of open access land in the plan area.

Largely as a result of the CRow Act of 2000 the public now enjoy a statutory right of access on foot to all land mapped as 'access land'. Access to Porth yr Ogof and the Gunpowder Works remains with the permission of the BBNPA.

People enjoying the right of access must do so within the general restrictions of the CRow Act (schedule 2) e.g. they should not intentionally remove or destroy any plant, shrub or tree, kill or injure any animal bird or fish, obstruct the flow of any watercourse etc.

The FCW estate was 'dedicated' as access land under the CRow Act in 2005. This means that the public enjoy a statutory right of access conferred by section 2 of the CRow Act in perpetuity (subject to temporary restrictions that may be necessary for management for e.g. harvesting, nature conservation etc.) Because this estate is predominantly woodland the 'Relevant Authority' (responsible for administering access restrictions) is FCW.

If the BBNPA wished to dedicate its estate as access land in this area it would need to consult with CCW as the area is a SSSI and SAC (Richard Ball, Access Officer, BBNPA, 2009).

2.3.7. Schedule Ancient Monuments (SAMs)

Gelli-nedd Iron Age Hillfort - SN91741399

"Gelli-nedd univallate fort is located on the summit of a limestone ridge. The plan is oval in form measuring internally 60m northwest to southeast by 45m, an enclosed area of approximately 0.41 ha. Most of the west side is formed by a precipitous cliff where no artificial defences were required, whereas the remaining sides comprise a rampart of limestone rubble, partly grass-grown, with an external rock-cut ditch around the north and south. The rampart is strongest on the north where the outer scarp rises to 3m, the inner scarp to 0.9m. The entrance is a simple gap measuring 3m wide on the northeast".

D.J.Percival, RCAHMW, March 1985.

Dyffryn- Nedd Settlement Remains – SN913127

"A group of enclosures, banks, stone piles and a possible platform lie along a low ridge above, and to the E of, Afon Nedd on farmed land at 290m O.D. The features are of uncertain date.

SN91371279: the best defined feature in the group is an enclosure measuring 23m (N-S) by 21m internally. It is bounded on the N by orthostats and rubble c.2m wide and 0.6m high (partly

incorporated in a later wall), on the W by an outcrop scarp 1.5m high (edged with 0.5m high boulders at the N end), on the S by a rubble bank 2.5m wide (faced on both sides with 0.5m high orthostats) and on the E by an ill-defined stone bank up to 3m wide and 0.3m high. A likely entrance gap 2m wide lies in the SE corner. Some 30m W of the above a bank composed of small boulders and measuring 1.5m wide and 0.4m high can be followed for a distance of c. 65m in a N direction. It forms the W limit of a cleared area. Its S extension, beyond a modern field wall, is vague and discontinuous.

SN91361276: a possible building platform consists of a level area measuring c.7m (N-S) by 3.5m. It is bounded on the E by a natural scarp, on the W by a stony bank (possibly natural) up to 3.5m wide scarped to a height of 1m, and on the S by a stony bank c.1m wide and 0.5m high.

SN91351266: a rectangular enclosure measures internally 38m (E-W) by 27m. It is bounded on the N by a boulder bank 2m wide and 0.7m high which continues to form the E side at a height of 0.3m, and on the S and W by vague lines of stones.

SN91331259: a crescentic stony bank measures 17m long, 1.5m wide and 0.5m high and terminates on the E in a stone pile 3m across and 0.6m high. A boulder pile lies close by. It measures 9m (E-W) by 3.5m and 0.3m high”.

Cofelin, 2010

Craig y Ddinas Iron Age Hillfort – SN915080

“Craig-y-Ddinas promontory fort is situated on a long narrow limestone ridge north east of Pontneddfechan; the remains consist of two banks. The site is naturally defended by sheer cliffs, however, there has been much quarrying for silica, particularly at the west end and on the north edge of the ridge”.

Site visited B.A.Malaws, RCAHMW, 1978.

Source: RCAHMW Brecknock Inventory, Part ii, 1986, p. 24.

Dinas Silica Mine Tramroad – SN914080

“The route of a former tramroad carrying silica from the mines and quarries around SN91680797 (NPRN 275634), down the gorge of the Afon Sychryd, to an incline formerly suspended above the river and a hopper at SN91450800. The head of the former incline is constructed of mass concrete and still bears the marks of wear by wagons. The tramroad continues to the east from here along the river bank, which has been consolidated by placing wrought iron aerial ropeway tubs, pinned in position by old water-cooled drilling bits. A shelf has been cut into the riverbank to support the tramroad, with culverts over small side streams. It rises steeply to the area of the crushing plant, which it crosses to quarries at its eastern end.

A substantial tramroad embankment enters the upper quarry area and crosses between quarries and spoil tips to a rock cut adit entrance; this gives on to a long tunnel into the workings”.

Cadw scheduling details 18/10/1996.

“An earlier tramroad formation followed a line above the gorge and served the early quarries”.

The Glyn Neath Gunpowder Works and associated buildings and structures

“The Glyn Neath Gunpowder Works (Glyn Neath Powder Mills) was situated on a site of about 73ha in the valley of the Afon Mellte, above Pontneddfechan. For reasons of safety it spread along the valley for about 2 kilometres, most of the various units being connected by an internal tramway. The works was established in 1857 by the Vale of Neath Powder Co. for the manufacture of blasting powder (black powder) for use in the South Wales coalmining industry. In 1862/3 it was taken over by Curtis's and Harvey and later merged into Nobel's Explosive Co. which became part of Imperial Chemical Industries in 1926. The works ceased production of black powder on 31 December 1931, following the decision of the Home Office to remove it from the 'Permitted List of Explosives'. The works continued in use for the storage of explosives until final closure in 1940. Many of the structures were demolished for safety reasons, shortly after closure.

The function of individual structures is described under their entries, but a brief resume is given here.

The main ingredients for gunpowder: saltpetre (potassium nitrate), sulphur and charcoal were each ground down into a powder before being mixed together. The mixture was known as the 'Green Charge'. This was then compacted into a homogenous mass in the Incorporating Mills and then highly compressed into slabs in the Cake Press Houses, following which it was broken into smaller pieces. The pieces were reduced to grains by crushing in the Corning Houses, and sieved into various sizes. The grain powder was dried in the Stove House and then sieved again to extract dust in the Dusting House. Some of the powder then went to the Glazing House where it was polished and made suitable for blasting powder; the remainder was compressed into pellets in the Pellet Press Houses. Both products were then packed and then sent for storage in the Magazines to await distribution”.

D.J.Percival, 18 October 2006

Cadw list the following buildings and structures within the area:

Hydraulic Pump Hose
Steam engine
Ride charge magazine storage building
Watch house and wash house
Grind and charge mixing house
Charcoal store
Sulphur store
Charge barrel store
Incorporating mills
Fire engine house
Tramway and tramway bridge, aqueduct, leats and weirs
Old corning house

Hydraulic pellet press house
Hydraulic accumulator
Bagging house
Barrel shed
Stove and boiler house
Cartridge packing house

2.4. Management Organisations and Management Units

One of the key tasks laid out in **Section 5** is to divide the area into management units.

2.5. Previous Management History

This management plan supersedes the 'Waterfall Country Project Management Plan' prepared by the BBNPA Committee in 1994. This in turn superseded various documents written or commissioned by the BBNPA. These are all summarised in Appendix 8.

3. The Issues Facing Waterfall Country

The area defined as Waterfall Country (see section 3.1 below) faces many and numerous pressures. These issues are discussed and summarised in this section of the plan.

3.1. Location and Landscape

3.1.1. Area Description

The area covered in the management plan is approximately 3350 ha in extent, located close to the south-western boundary of the BBNP. There are several names used for the area including 'The Waterfalls Area', 'Waterfall Country', 'The Waterfalls' and 'Waterfall Country'. These names are all informal and derived from the famous waterfalls on the rivers Nedd, Nedd Fechan, Pyrddin, Sychryd, Mellte and Hepste. In order to maintain consistency it has been decided by the partners involved in this plan that the name used for the area should be 'Waterfall Country' with the agreed Welsh name being 'Bro'r Sgydau'.

The vast majority of the plan area lies within the national park with a few small sections (parts of the Dyffrynoedd Nedd a Mellte SSSI and Coedydd Nedd a Mellte SAC and the Waterfalls Centre) falling outside the boundary. In the 1994 management plan the plan area was defined, this area has been revised slightly for this plan to include all of the Dyffrynoedd Nedd a Mellte SSSI and Coedydd Nedd a Mellte SAC boundaries as well as the newly refurbished Waterfalls Centre in Pontneddfechan. See Appendix I for a map of the plan area.

The three villages within the plan area - Ystradfellte, Penderyn and Pontneddfechan - mark the northern (SN929134), eastern (SN947088) and southern (SN902075) boundaries of the area respectively. The western boundary of the plan area (SN873113) is marked by the point where Sarn Helen (the old Roman road) leaves the western edge of Coed y Rhaiadr.

The plan area includes popular tourist destinations, sites of rare plants, two SSSIs and an SAC, three villages greatly affected by recreational activities, ancient semi-natural woodland gorges and two commons. The plan area was defined to facilitate integrated management of all features and activities associated with the area.

3.1.2. Landscape Character Assessment

The LANDMAP visual and sensory layers classifies the Nedd Fechan and Mellte Valleys as **Outstanding**, with the Hepste valley as **High** and other areas as **Moderate**.

3.1.3. Settlements and Roads

The nearest large settlements are Glyn-Neath (2km south-west of Pontneddfechan), Neath (15km south-west of Pontneddfechan), Aberdare (11km south-east of Pontneddfechan) and Merthyr Tydfil (10km east of Penderyn). As mentioned earlier the villages of Ystradfellte, Penderyn and Pontneddfechan fall within Waterfall Country (Whitfield October 1994).

Roads in Waterfall Country are mainly minor roads. The A465 Heads of the Valleys Road passes close to the southern boundary, linked to Pontneddfechan by the B4242. The A4059 Hirwaun to Beacons Reservoir road passes through Penderyn and forms part of the eastern boundary of Waterfall Country.

3.1.4. Community

The population of the plan area is approximately 600, mainly located in the villages. Ystradfellte community which covers the villages of Pontneddfechan and Ystradfellte and the majority of the study area) has a population of 549. Of these less than 3% are unemployed and 16% work from home, whilst 37% were economically inactive (Office of National Statistics 2001).

Many of the pubs and shops in the area have their income enhanced significantly by tourists, particularly during the summer months.

The BBNPA and FCW have been working with representatives of Pontneddfechan Village Hall in their grant application to improve facilities at the hall. The centre currently has toilets and a small kitchen as well as big hall and opens on request. It also has a small parking area. The grant aims to improve these facilities particularly for local children and outdoor activity groups.

The views of the residents on issues relating to Waterfall Country were highlighted in the 1994 management plan. Information was gathered from a community appraisal, the local plan consultation process, public meetings and representatives on the project steering group (Whitfield October 1994). No recent information has been gathered in relation to residents' views though from casual observations it is understood that many of the issues highlighted in 1994 are relevant today. Additionally some members of the community feel that not enough benefit is gained from the huge influx of tourists to the area. There is however a need to gather more detailed up-to-date information on the issues that concern local residents of the area. The main concerns highlighted in the 1994 plan were:

- Illegal parking of visitors and congestion and speeding in the villages.
- Outdoor activity groups getting changed in the car parks and in particular groups on weekends being very rowdy.
- Intentional and inadvertent trespass across farmland, and occasional damage to crops, field boundaries and disturbance of stock.
- Concern at erosion of footpaths at Craig y Ddinas.
- Safety is a concern at Craig y Ddinas.
- Evening and overnight activities at Craig y Ddinas causing noise, litter and fouling of area.
- The need for improved toilet facilities in Pontneddfechan and Penderyn.
- Better information, sign posting and maintenance of public rights of way to avoid trespass.

3.1.5. Unitary Authorities and Community Councils

Waterfall Country falls within three counties, Powys, Rhondda Cynon Taff and Neath-Port Talbot. The village of Pontneddfechan at Craig y Ddinas is where the three counties meet and the county boundaries run down the Nedd, Nedd Fechan, Mellte, Hepste and Sychryd rivers, with Rhondda Cynon Taff to the south, Neath-Port Talbot to the west and Powys to the north. Waterfall Country falls mainly in Powys. See Appendix 14 for a comprehensive list of councils and councillors.

Waterfall Country falls mainly within the Tawe Uchaf ward of Powys which in 2001 had a population of 2,065. The unemployment rate is 3.44%, and 11.46% are self-employed. 77% of households are owner-occupied. The main industries of employment are health and social work (16%), wholesale and retail trade and repairs (14%), manufacturing (17%), 5% of the population are employed in agriculture and forestry. 30% of the population speak Welsh. 20% of the population claim benefits (2005) which is average for Wales. The average age of a person in the area is 45 (Office for National Statistics 2001).

Ystradfellte Community Council represents the majority of the subject area, whilst Hirwaun Community Council represents the south-east area, including Penderyn. Community boundaries follow county and borough boundaries.

Key Issues and Actions (Section 3.1 – Location and Landscape)	
Key Issues	Key Actions
i. Several different names are used to describe the area, such as Waterfall Country, The Waterfalls Area etc and there is no formally agreed welsh name for the area - if there is it needs to be a name relevant to local language traditions.	i. Decide on a formal brand for the area – both English and Welsh – and consult with key partners to agree – especially the local community and Neath Port Talbot.
ii. There is no detailed landscape assessment for the area.	ii. Produce a landscape assessment for the plan area.
iii. Members of the community feel that not enough benefit is gained from the influx of tourists to the plan area.	iii. Develop a plan to ensure effective communication is maintained / developed with the local community that demonstrates to them the benefits of the designation and of tourism.
iv. There is no up-to-date information on the views of residents regarding issues affecting the area.	iv. Gather information on community concerns by attending community council meetings and act on any relevant issues that are brought up.
v. Illegal parking of visitors/outdoor groups and congestion and speeding in the villages.	v. Request that the local police force patrols the area and addresses any illegal parking and speeding issues. Work with the local community and local authority to develop a long term solution for managing parking at Pontneddfechan.
vi. Outdoor activity groups getting changed in the car parks and in particular groups on weekends being very rowdy.	vi. Wardens to have regular contact with police in relation to patrolling the area on weekends and busy periods, with particular focus on anti-social behaviour around the Craig y Ddinas area. Work with the village hall to provide better changing facilities for groups. Continue to liaise with SWOAPG.

vii. Concern at erosion of footpaths at Craig y Ddinas.	vii. Ensure that footpaths are well waymarked and maintained through the Footpath work plan (see Appendix 2).
viii. Safety is a concern at Craig y Ddinas.	viii. Ensure that the Waterfalls Area Safety Advisory Group (WASAG) meets at least twice a year and that safety concerns at Craig y Ddinas and the surrounding area are addressed at these meetings.
ix. Evening and overnight activities at Craig y Ddinas cause noise, litter and fouling of area.	ix. Ensure that the Gorge-walking Code of Conduct Group continues to meet regularly and that concerns relating to anti-social behaviour are addressed at these meetings through the production of an access code of conduct agreement.
x. There is a need for toilet facilities at Craig y Ddinas.	x. FCW to enter into an agreement with the village hall which will involve the village hall collecting parking fees in exchange for the provision of toilet and changing facilities as well as closing the barrier in the evenings.
xi. Recreational groups carry out bolt inspections at Craig y Ddinas on an annual basis but FCW do not receive a copy of the inspection.	xi. FCW to ensure they receive a copy of the annual bolts inspection at Craig y Ddinas.

3.2. Natural Features

3.2.1. Geology

Virtually all of the rocks that outcrop in the Brecon Beacons National Park are sedimentary in nature and were laid down over a period of about 180 million years during the Palaeozoic era. The older rocks, of Ordovician and Silurian age, are to be found in the northwest of the Park and encompass a range of sandstones, mudstones and siltstones. These are overlain by a thick sequence of mudstones and sandstones deposited during the succeeding Devonian and which are traditionally referred to collectively as the 'Old Red Sandstone'. Above these are a succession of coarse sandstones, limestones and mudstones which date from the Carboniferous period and which constitute the youngest solid rocks of the area.

This entire sequence of Devonian and Carboniferous rocks within the National Park dips gently southwards into the South Wales Coalfield Basin. Waterfall Country lies on this southerly directed

dip-slope and is sculpted largely from mid Carboniferous rocks of uppermost Viséan, Namurian and lowermost Westphalian age. See Appendix II for the outline of this sequence.

The simple 'layer cake' sequence of rocks described above is complicated by the presence of two suites of faults which affect the area. Most numerous are a swarm of faults oriented north-northwest to south-southeast and which form part of a much larger family of similarly aligned structures traversing the entire South Wales Coalfield and its margins.

A second set of faults runs east-northeast to west-southwest, the most significant of which is the Dinas Fault, erosion along which has led to the formation of the Vale of Neath. The Coed Hir Fault parallels it to the north as do two or three other un-named faults. The Dinas Fault in particular is associated with tight folding of the Carboniferous strata through which it runs. The resulting structures are spectacularly seen at Craig y Ddinas and Bwa Maen east of Pontneddfechan. These and similar structures are collectively referred to as the Neath Disturbance – a regional scale structure usually ascribed to the Variscan Orogeny though likely originating during the earlier Caledonian Orogeny.

Several locations in the area have been identified as being of national or international interest for geology and have been highlighted as GCR's in the Geological Conservation Review volumes. Some of these GCR's have been incorporated into the SSSI's in the plan area, whilst others lie outside the SSSI boundaries.

Geology and Rivers

With the exceptions of the Sychryd and Pyrddin, each of the rivers which combine to form the River Neath rise on the long southerly dip-slopes of the Old Red Sandstone outcrop which forms the individually distinctive hills of Fforest Fawr. As the rivers flow southwards they cross rocks of decreasing age; Old Red Sandstone, Carboniferous Limestone, Twrch Sandstone, Bishopston Mudstone, Coal Measures (see Appendix II for a complete description of these rock types in relation to Waterfall Country). These streams and rivers appear on the map almost like a hand with fingers outstretched. They encompass an area of land which in terms of the variety and beauty of its scenery is hard to match anywhere in Britain. See Appendix I for a map of the rivers and waterfalls of the area.

The Hepste has its source on the eastern slopes of Fan Fawr. A beautiful river, it flows across the open grasslands of the common above Penderyn before entering the steeply wooded gorge which brings it to its confluence with the Mellte.

The Dringarth and Llia rivers rise respectively to the east and west of Fan Llia. Their courses converge to the north of Ystradfellte and the single river which is the product of the confluence is then known as the Mellte.

The Nedd Fechan rises between Fan Nedd and Fan Gyhirych; it flows southward and after being joined by its tributary, the Pyrddin, it continues to a confluence with the Mellte to form the Afon Nedd (Neath).

Joining the Mellte near Craig y Ddinas is the Sychryd. The Sychryd rises on the slopes beneath Craig y Llyn to the south of Waterfall Country and flows northward past Rhigos. The river executes an almost 90 degree turn and then tumbles through a steep boulder-strewn ravine to its junction with the Mellte (Whitfield October 1994).

Geology and Waterfalls

The main natural features that attract most walkers to the area are the waterfalls. These waterfalls are relatively accessible and sufficiently close together to enable their easy exploration. They are neither the highest in the country nor the ones carrying the greatest flow, however, they are valuable not only for their aesthetic appeal but also as an educational resource. In terms of access these can usefully be considered as two groups:

- The Clun-Gwyns, Sgwd y Pannwr and Sgwd yr Eira on the Mellte and lower Hepste. The most direct access to this area is via the Clun Gwyn car park; however the promoted route for this area – the Four Falls Trail - starts at Gwaun Hepste car park. Other popular longer walks start at the Cwm Porth, Penderyn and Craig y Ddinas car parks.
- Sgwd Gwladus, the Horseshoe Falls, and the Upper and Lower Ddwli on the Nedd Fechan. The easiest access to these falls is from the Waterfalls Centre at Pontneddfechan although a fewer number of people walk south from the car park at Pont Melin-fach.

Whilst each of the waterfalls has its own particular origins, there are certain aspects which are common to the formation of many or all of the main falls. All have a cap rock of one of the bands of erosion-resistant sandstone and most are associated with one of the NNW-SSE trending faults.

During successive ice ages in the last couple of million years the Vale of Neath has been gouged out by glacial ice so that its floor is hundreds of metres lower than it would have been prior to the ice ages. This has resulted in the various tributary rivers of the Neath (Mellte, Hepste, Nedd Fechan etc) being rejuvenated i.e. cutting down into their beds to form the deep gorges characteristic of Waterfall Country. Down cutting has been most effective where the bedrock is mudstone whilst sandstone beds offer more resistance and are responsible for the falls and rapids. Where much older faults have brought the two rock types into conjunction, down cutting by rivers in the mudstone has normally left a projecting lip of sandstone which in the most extreme cases is tens of metres high.

With continued fracturing of the underlying exposed mudstones and their removal, the stresses on the protruding sandstone cap-rock above leads to its collapse. Severe weather conditions – high flow rates and severe frosts can be expected to accelerate the process. By this process the waterfalls migrate slowly upstream at a rate which can be determined by the distance between the current location of each individual fall and the fault which often lies some metres downstream of it. Sgwd yr Eira provides a good example of this process, one which continues to this day, as evidenced by the problems experienced with loose rock in 2008.

Geology and Caves

Following numerous spectacular discoveries of cave passage in recent years the north crop of the Carboniferous Limestone in South Wales is now acknowledged as one of the premier caving areas of Britain and indeed Europe. However unlike the upper Swansea Valley and the Llangattock and Clydach areas, no long and complex cave systems have yet been recognised in the Ystradfellte / Pontneddfechan area, though there are a handful of caves of interest.

There are four systems whose known networks of passages extend to 1km or more including the 7.9km of Little Neath River Cave (OS Grid ref SN 9118 1420), 2.22km at Porth yr Ogof (SN 9281 1241), 1.4km at Ogof Afon Hepste (SN 9383 0968) and just over 1km each at Pant Mawr Pot (SN 8909 1612) and Ogof Fechan (SN 9707 0972).

By far the most well-used of these is Porth-yr-Ogof - which has been designated as a GCR. Here the river flows into a wide, low cavern beneath a high limestone cliff. At cliff-top level running south above the cave entrance is the route of the ancient surface river which can still be clearly followed. The mouth of Porth yr Ogof is the largest cave entrance in Wales. The Mellte resurgence, which can be quite spectacular under flood conditions, is some 300 metres to the south of the cave mouth. It discharges into what local people refer to as 'The Blue Pool'.

The Nedd Fechan has a similar feature. Near the Blaen-nedd Isaf Farm, the bed of the Nedd Fechan can be dry under normal conditions. After heavy rain however, the underground component of the river reaches capacity and the overflow reclaims the dry bed. Further along the section of the river the bed is crossed by a deep fissure known locally as Pwll y Rhyd. Here the swollen river plunges into the fissures often in a great boiling turmoil. This cave is a SSSI feature. Little Neath River Cave connects to Bridge Cave. Other caves in the area include Town Drain which is an isolated site on the same side of the river as LNRC. White Lady Cave and Pwll Y Rhyd are connected Caves which are both a part of the Western System that extends towards Pant Mawr.

Limestone landscape

Anyone flying over the southern edge of the Brecon Beacons will see below them a land surface pock-marked with circular depressions which look remarkably like bomb craters. These are shake holes or swallow holes, caused by solution in the limestone resulting in surface collapse. If the underlying limestone is dissolved away the gritstone above collapses into the caves and passageways beneath.

Glaciation

The solid geology comprising the suite of Palaeozoic rocks is often overlain by a variety of superficial deposits laid down during the last ice age and in the succeeding post-glacial period. Glacial till (boulder clay) mantles much of the higher ground and incorporates much material from the Old Red Sandstone rocks to the immediate north of Waterfall Country. It was deposited as a discontinuous sheet by the ice which over-rode the area from the north and serves now to soften the contours. Where eroded by rivers and streams it serves as a plentiful source of material which is often seen in river beds and gravel banks and the finer elements of which may be redeposited as alluvium on floodplains.

Alluvial deposits occur in wider sections of the valleys of the Mellte and Nedd Fechan and of course across the flat floor of the Vale of Neath itself from Pontneddfechan seawards. In addition one or two river terraces can be discerned both around the village of Ystradfellte and again in the Vale of Neath. Indeed substantial parts of both Ystradfellte and Pontneddfechan are built on river terrace deposits.

Another significant feature of the area is the spread of isolated peat deposits which have accumulated through the growth of sphagnum bogs in rock hollows and areas with poor drainage and where mineral soils are thin or absent.

Key Issues and Actions (Section 3.2.1 – Geology)

Key Issues	Key Actions
i. Vegetation growth is obstructing some of the key geological features in the area.	i. Produce and prioritise a list of key sites that require regular condition assessments and a maintenance program including ones that: <ul style="list-style-type: none"> - are important to conserve/ require regular condition assessments - illustrate key stories/themes and/or are of interest to the audience - link to the National Curriculum - are currently promoted in interpretation and education materials
ii. Viewpoints for many of the geological features (especially waterfalls) are severely eroded.	ii. Form an action plan for the management of viewpoints of geological features (including waterfalls).
iii. Rock-faces and cliffs – particularly around the waterfalls are subject to continual erosion and can pose a danger to the public due to rock-fall.	iii. (a) Carry out regular safety inspections of owned land within the waterfalls area: <ul style="list-style-type: none"> - Sgwd yr Eira (FCW) - Cwm Porth area (BBNPA) - Clun Gwyn (BBNPA & FCW) (b) Agree on mechanisms for imparting information on closures. This needs to include clear and obvious signage in the car park and accessible information on our websites. Ensure that when reporting through the website the correct contact details are supplied for the lead body. (c) Implementation and review of Porth yr Ogof Safety Statement.
iv. Although most geology is quite robust, in some areas it is quite friable and easily damaged by trampling.	iv. Identify and address areas of geology that are being damaged by footfall.

3.2.3. Climate

The high humidity and shelter that typifies the gorges of Waterfall Country is influenced by the local climate. The climate for the west and centre of the Brecon Beacons National Park can be summarised as follows:

Lowlands

West of Park:

Moderately cool (1375 – 1650 days °C above 5.6°C (the minimum temperature at which grasses begin to grow)) – this is also observed along the southern part of the Park, roughly co-incident with the limestone outcrops southwards.

Moderately wet (< 40mm average maximum potential soil moisture deficit), exposed (4.8 – 6.6m/s approximate average annual wind speed). Further north it is moderately cool again but slightly wet (40 – 60mm average maximum potential soil moisture deficit)

Centre of Park:

Moderately cool, moderately wet and exposed in the south to moderately cool, slightly wet and unexposed (< 4.8m/s approximate average annual wind speed), to moderately moist and unexposed from Sennybridge eastwards along the Usk Valley and NE towards the valleys beneath the Black Mountains.

Uplands

West and centre of Park:

Moderately wet (< 40mm average maximum potential soil moisture deficit) and exposed to slightly cold (825 – 1375 days °C above 5.6°C), moderately moist (60 – 100mm average maximum potential soil moisture deficit) and very exposed (> 6.6m/s approximate average annual wind speed), too slightly cold (825 – 1375 days °C above 5.6°C) moderately moist and very exposed (> 6.6m/s) further north.

Highest points are moderately cold (< 825 days °C above 5.6°C), moderately wet and very exposed.

Climate change and Waterfall Country

Woodlands and forests are vulnerable to climate variability and change, particularly through wildfire, pest and disease infestations, and wind damage. Recent changes in climate are already affecting forest species, e.g. earlier leaf-unfolding in spring, changes in the viability of species and changes in the incidence of wildfires. The woodlands in Waterfall Country, in particular the broadleaved woodlands within the SAC, rely upon the permanently moist, highly humid environment within the gorges, which are also sheltered from the prevailing south-westerly winds by the gorges and additionally by the coniferous plantations that surround them. Changing weather patterns and temperatures that affect the plantations will affect plantation management within the Forest Design Plans and in turn this may affect the humidity and shelter that the broadleaved woodland areas rely on. In turn, the changing temperatures, rainfall patterns and river levels in response to rainfall, may affect the humidity of the gorges, for example with less water spray from weaker waterfalls during summer months. Maintaining and enhancing a high and dense tree canopy whilst also improving the understorey may be an effective way of retaining a highly humid woodland micro-climate. There is not any real geographic scope for helping the gorge woodlands to shift and expand to new locations in response to a changing climate because the gorges are essential to the woodland. Understanding the genetic variation within the gorge woodlands might be another means of understanding their

adaptive capacity in situ, i.e., understanding those genetic traits of each tree species that enable individual trees to persist within changing conditions.

Projected changes in climate will affect the competitive relationships among woodland species and their reproductive viability. This is particularly important long-lived woodland species such as trees may be less able to adapt than those with a short life cycle. Therefore tree survival and persistence, as well as the persistence of the woodland ground cover, will need to be monitored effectively.

Both the coniferous plantations and the broadleaved woodland might also be at increased risk from insect pest species that affect tree growth, with pests such as bark beetles and defoliators benefiting from accelerated growth and lower death rates during milder winters. Drought-stressed trees may be affected by fungi living within them. In addition, Sitka spruce is anticipated to be at an increased risk from biological attack (European Commission 2008) and all forest plantations are anticipated to be at increased risk from damage from wild fires. Therefore increasing the range and age of tree species as well as structural diversity are recommended. Conversely, projected changes in climate may modestly increase timber productivity over the next 20-30 years.

The Forestry Commission has published a range of guidance notes on how forests interact with a range of sectors and issues, including “Forests and Climate Change Guidelines”. These were consulted on during 2009 and final guidelines will be published after this.

Key Issues and Actions (Section 3.2.3 – Climate)	
Key Issues	Key Actions
i. Increased summer rainfall is causing footpaths to degrade at an accelerated rate.	i. The Footpath Work Plan (Appendix 2) needs to account for worsening weather conditions - add climate change impacts and annual local weather station data to the plan.
ii. Tree health in a changing climate.	ii. Undertake a sample tree condition survey; establish tree condition monitoring based on this.
iii. Lower plant distribution in a changing climate.	iii. Add climate change impacts to lower plant monitoring plan.
iv. Public awareness of climate change.	iv. Provide information about the effects of past and present climate change on Waterfall Country and the Fforest Fawr Geopark.

3.2.4. Habitats and Species

Habitats

Woodlands and Forestry

Broadleaf Woodlands

The native broadleaved woodlands which mainly occur in the SAC part of Waterfall Country are mainly ancient semi-natural¹¹ and additionally much lies within the SAC. The SAC supports one of the most extensive and diverse areas of semi-natural woodland in South Wales, and is the largest and best example of western oak woodland in Wales. The predominant woodland vegetation communities are more characteristic of the uplands of north and western Britain, with extensive areas of oak woodland (*Quercus* spp.), and smaller areas of ash woodland (*Fraxinus excelsior*). Much of this area of woodland is owned by FCW, whilst smaller sections are owned by the BBNPA.

The distribution of the types of woodland reflects the distribution of soils of acidic, circum-neutral and base-rich status, respectively.

Large areas of the site have a woodland canopy dominated by oak (*Quercus* species) on more acidic soils, with downy birch (*Betula pubescens*) and rowan (*Sorbus aucuparia*) in places. The field layer is typically dominated by wavy hair-grass (*Deschampsia flexuosa*), with bilberry (*Vaccinium myrtillus*), ferns and bluebell (*Hyacinthoides non-scriptus*) common in some areas. The ground layer often has a very high cover of mosses, including *Rhytidiadelphus loreus*, *Polytrichum formosum*, *Dicranum majus*, *Plagiothecum undulatum*, *Hypnum cupressiforme*, *Mnium hornum* and *Sphagnum quinquefarium*.

Smaller stands of woodland, particularly along the steep tributary stream valleys and in limestone areas are dominated by ash (*Fraxinus excelsior*) on base-rich soils, sometimes with small-leaved lime (*Tilia cordata*) with a dense shrub layer of hazel (*Corylus avellana*), a little hawthorn (*Crataegus monogyna*) and locally frequent field maple (*Acer campestre*). The field layer may consist of wood-sorrel (*Teucrium scorodinia*), false brome (*Brachypodium sylvaticum*), herb-Robert (*Geranium robertianum*), dog's-mercury (*Mercurialis perennis*), common bent (*Agrostis capillaris*), lady-fern (*Athyrium filix-femina*), hart's-tongue fern (*Phyllitis scolopendria*) and rough meadow-grass (*Poa trivialis*). The mixture of woodland flowering plants in Waterfall Country can be extremely rich and include species that are scarce in mid and South Wales, such as wood fescue (*Festuca altissima*).

Where drainage is impeded and along valley bottoms, stands of alder (*Alnus glutinosa*) grow, some of which have a deep carpet of *Sphagnum* mosses. Bank side flushes support the most southerly populations of marsh hawk's-beard (*Crepis paludosa*) in Wales (CCW 2008).

These woodlands are not easily accessed for management, extraction routes are virtually non-existent and past management appears to have been limited to coppicing and utilisation by way of charcoal and other small-sized products. Existing standing timber is old coppice derived of wartime felling and stability varies depending on gradient, wetness and soil type. This area is currently managed through non-intervention management within the high forest structure. Most of the active management of these areas will be ensuring that the grazing pressure from stock trespass is reduced to allow canopy regeneration where gaps appear naturally.

¹¹ Ancient semi-natural woodland is woodland that has been recorded on a map such as a parish or community map and latterly on Ordnance Survey map since at least the 1600s.

Coniferous Plantations

Most of the coniferous woodland within the plan area is owned by FCW. The area tends to be very wet with high wind throw and fire risk presenting difficult working conditions. The softwood species most suited to the conditions is Sitka Spruce.

The ring of conifers north of the Hepste river are due to be clear felled between 2012-2016 and replaced by native trees, extending the area of native trees higher up the slopes of the Mellte and Hepste valley.

The upland forest plateau area will remain mostly Sitka Spruce with some small areas of pine, larch and native trees along the forest boundaries.

Having been grown and managed for timber, plantation coniferous woodland is generally very poor in wildlife. Therefore it is relatively robust and can withstand higher levels of recreation than most areas of semi-natural woodland. However, continuous cover forestry management can encourage larger and smaller trees, rides and glades, which improve their value to wildlife and visitors. Forest centres such as those at Garwnant and the Forest of Dean are able to offer a wide range of managed outdoor activities. This can help to reduce the pressure on more sensitive habitats in addition to providing a supplementary income for both FCW and the local community.

Management of the coniferous plantation needs to be mindful of the conservation objectives for the SAC and SSSI's (see Appendix 12), including maintenance of a sheltered, high humidity environment.

Ravine Woodlands Handbook

The Ravine Woodlands Management Handbook (Ravine Woodlife Partnership 2007) includes advisory notes on the following topics of relevance to ravine woodlands:

- Sycamore management
- Grazing management
- Coppice management
- Conservation management
- Timber and non-timber projects.

It also includes a number of case studies:

- Coppice and coppice protection
- Sycamore management
- Scrub management
- Deer management
- Farm woodland conservation
- Use of GPS data collection techniques
- Use of historical map data
- Management for the conservation of *Tilia* species
- Awareness raising, consultation and engagement

All of these are useful reference sources for detailed habitat, people and timber management advice within Waterfall Country. A copy of the Handbook plus a CD-ROM of the same, are held in the BBNPA offices (Ecology and Biodiversity).

Other Habitats

The wooded gorges are interspersed with more open habitats that provide additional interest. As well as the cliffs, rock scree and rivers there are areas of dry acidic and calcareous grassland and wet grassland dominated by purple moor-grass (*Molinia caerulea*) or rush (*Juncus*) species and mosaics of heather (*Calluna vulgaris*) and grasses. Wet flushes and bracken-dominated glades are widespread. (CCW 2008)

Species

Flora

The high humidity of the wooded valleys has a strong influence on its botanical diversity. Trees and rocks support a diverse assemblage of plants largely confined in their distribution to the Atlantic seaboard of Europe. Overall, the botanical diversity of the site is outstanding, with more than 600 species of plant, including bryophytes recorded.

The regionally rare hay-scented buckler fern, *Dryopteris aemula* was first recorded on the Pyrddin in 1974 and the regionally rare Marsh Hawk's beard, *Crepis paludosa* was recorded in 1980, whilst wood fescue was recorded in the river gorges and *Festuca altissima* was recorded on the Nedd in 1974.

Limestone pavements in Ystradfellte area support several species of interest. Limestone fern, *Thelypteris robertiana* (*Gymnocarpium robertianum*) a nationally scarce species found in only 80 tetrads (10km²) in Britain. Species of more local interest on the pavements include small scabious, *Scabiosa columbaria* found in 46 tetrads (2km²) in Wales, stone bramble, *Rubus saxatilis* found in 38 tetrads in Wales and Dovedale moss, *Saxifraga hypnoides* which occurs in 48 tetrads in Wales. Soft leaved sedge, *Carex montana* a nationally scarce species of sedge is relatively abundant in the limestone grassland surrounding the pavement (Whitfield October 1994).

Green spleenwort (*Asplenium viride*), Tunbridge filmy-fern (*Hymenophyllum tunbridgense*), hay-scented buckler-fern (*Dryopteris aemula*), all of which are rare in south Wales are all known to the site. A wide variety of western/Atlantic liverwort and moss species include Greater Whipwort (*Bazzania trilobata*), *Jubula hutchinsiae*, Heller's Notchwort (*Anastrophyllum hellerianum*), Fingered Cowlwort (*Colura calyptrifolia*), Autumn Flapwort (*Jamesoniella autumnalis*) and Horsehair Threadwort (*Sphenolobopsis pearsonii*); *Isoetecium holtii*, *Dichodontium denudatum*, Haller's Apple Moss (*Bartramia hallerana*), *Seligeria acutifolia* and Scarce Turf-moss (*Rhytidiadelphus subpinnatus*).

There are also good lichen communities and five nationally scarce lichen species have been identified in past surveys – the bright yellow *Chrysothrix chlorina* can be locally abundant on drier cliffs and *Micarea pycnidiophora* on bark, *Micarea stipitata*, *Phyllopsora rosei*, and *Polyblastia allobata*. Other known lichen species include *Enterographa hutchinsii*, *Micarea alabastrites* and *Micarea hedlundii*.

The rivers, with their fine waterfalls, are an integral part of the site with the splash zones and spray providing wetness and humidity necessary for many species. Waterfalls and adjoining areas influenced by spray can be particularly rich in lower plants, with ferns, such as beech fern and royal fern, being particularly prominent. River courses support a notable riparian flora dominated by liverworts, and mosses, including the scarce species such as *Fissidens rufulus*, *F. rivularis*, *Grimmia hartmannii* and *Jubula hutchinsiae* (Countryside Council for Wales April 2008).

Boulder screes, cliff faces, grassy banks, springs, seepages, decaying logs and mature and overmature trees provide some of the specific habitats required by lower plants demanding conditions that are subject to little change with time. The high prevalence of lower plants, lichens, liverworts, fungi indicates good air quality, the epiphytic *Lobaria* lichen community persists in these sheltered valleys and includes species such as *Lecanactis premnea*, *Biatora sphaeroides*, *Parmeliella triptophylla* and *Dimerella lutea*.

The shape of Waterfall Country, with ravine woodlands, river gorges and the high humidity this creates helped to shelter these sensitive plants from the worst effects of air pollution during and since the Industrial Revolution, and this has contributed to the area's extraordinary richness in plants, the conservation of which remains of the highest priority.

The flowering plants, the ferns, mosses, liverworts and lichens on the ground, trees and rocks, waterfalls and cliffs within the SAC are very fragile and susceptible to disturbance, particularly to damage caused by repeated footfall of people and animals or rubbing of rocks. Removal of plants in this way reduces the protection given to neighbouring plants, exposing them to desiccation and further damage. Repeated damage rapidly leaves riverbanks, trees and rocks scraped clean of these fragile plants and vegetation in some areas can become denuded which in turn can lead to soil erosion. The loss of soils reduces the opportunity for trees to regenerate, which could ultimately lead to a loss of tree cover in some areas, which in turn would reduce the amount of shelter and high humidity to which tree cover contributes and upon which the rich floral and lower plant interest is dependent. The vulnerable nature of the ecosystem within the SAC/SSSIs means that it can take many years for the vegetation to recover from damage (Countryside Council for Wales April 2008).

Previous botanical surveys include Martha Newton's Phase 2 botanical survey and Charles Hipkins "*The Flora of the Waterfall District in the Vicinity of Pontneddfechan and Ystradfellte*".

Fauna

Invertebrates

Little is known about invertebrates in the area as few surveys have been carried out. The rivers appear to support healthy populations of stoneflies, mayflies and caddisflies. Butterflies such as the small heath and meadow brown are common in the more open areas (Whitfield October 1994). In his novel "*My Life*," Alfred Russell Wallace wrote of a beetle he found on a field visit near Sgwd Gwladus on the Pyrddin river. It was the *Trichius fasciatus* or bee beetle – and he described it as "*one of the most beautiful British beetles*" (Wallace 1905).

Birds

The birds of Waterfall Country are slightly better recorded especially in the river valleys. In 1993 the BBNPA carried out a survey of dipper (*Cinclus cinclus*) breeding territories on all four rivers. The dipper is an important species, its presence as a breeding species being a good indicator of the health of the river system. It is very sensitive to changes in water quality which affect the diversity and abundance of prey species. The 1993 survey identified 10 territories on the Mellte, 11 on the Nedd Fechan, 3 on the Hepste, and one on the Pyrddin. However no surveys of dipper territory have been carried out since this date.

Other bird species recorded along the river valleys include Kingfisher *Alcedo atthis*, Grey Wagtail *Motacilla cinerea* (Mellte - 33 birds; Nedd Fechan – 43 birds), Merganser *Mergus sp.*, Yellow Wagtail

Motacilla flava, Peregrine falcon *Falco peregrinoides*, Goshawk *Accipiter brevipes*, Redstart *Phoenicurus phoenicurus* and Pied Flycatcher *Ficedula hypoleuca*. On open land Wheatear *Oenanthe oenanthe*, Skylark *Aluda arvensis* and Meadow Pipit *Anthus pratensis* are common whilst Snipe *Gallinago sp.* and Curlew *Numenius arquata* have been recorded on Comin y Rhos (Whitfield October 1994).

Mammals

Mammal survey records are poor for the area. Otters *Lutra lutra* are believed to pass through the area although no records of breeding are available. The Environment Agency carried out a survey of otter populations in Wales in 2002, the rivers Nedd-Fechan, Upper Nedd-Fechan, Pyrddin, Mellte and Hepste were surveyed but no signs of Otters were found in any of these areas (Environment Agency Wales 2002). Bat roosts are known in Waterfall Country to be found principally in buildings, undoubtedly other roosts will exist in trees, caves and other derelict and used buildings (Whitfield October 1994).

EAW water quality indicators for the area

In 2008 (Environment Agency figures): -

Biological water quality was recorded as good to “fairly good”.

The chemical quality of the rivers Pyrddin, Nant y Moch, Nedd Fechan, Camnant, Sychryd, Mellte, Hepste, Hepste Fechan, Afon y Waun, Llia, Dringarth, Rhyd Uchaf and also the Ystradfellte Reservoir was “very good” (similar to that expected for an unpolluted river).

The biological quality of the rivers Pyrddin, Nant y Moch, Nedd Fechan, Camnant, Sychryd, Mellte, Afon y Waun and Hepste Fechan was “good” (a little short of that expected for an unpolluted river). The biological quality of the Hepste, Llia, Dringarth and Rhyd Uchaf and also the Ystradfellte Reservoir was “fairly good” (worse than expected for an unpolluted river).

Key Issues and Actions (Section 3.2.4 – Habitats and Species)	
Habitats:	
<i>Woodlands and Forestry</i>	
Key Issues	Key Actions
i. The area tends to be very wet with high wind throw and fire risk presenting difficult working conditions.	i. Manage broadleaf woodland areas through non-intervention management within the high forest structure.
ii. The broadleaf woodlands are not easily accessed for management, extraction routes are virtually non-existent and past management appears to have been	ii. Active management of broadleaf areas will be ensuring that the grazing pressure from stock trespass is reduced to allow canopy regeneration where

	limited to coppicing and utilisation by way of charcoal and other small-sized products.		gaps appear naturally.
iii.	The ring of Conifers north of the Hepste river are due to be clear felled between 2012-2016 and replaced by native trees, extending the area of native trees higher up the slopes of the Mellte and Hepste valley. Broadleaf species could be susceptible to windthrow as a result of being exposed to the elements.	iii.	Management of the coniferous plantation should be mindful of the conservation objectives for the SAC and SSSI (see Appendix 12), including maintenance of a sheltered, high humidity environment.
iv.	Sheep grazing during winter prevents tree seedlings from growing.	iv.	(a) Invite school groups to plant trees in felled areas. (b) Replace/repair/maintain boundary fencing to prevent sheep entering the SAC and SSSI sites. (c) Remove any sheep that have strayed onto site.
v.	Lack of standing and fallen dead wood in some areas for example the lower Nedd valley, and cutting of trees for firewood on make shift camp fires.	v.	(a) Patrol the site regularly to ensure that no illegal felling takes place. Also ensure that visitors are aware that camp-fires are not allowed in the SAC and SSSI. (b) Any felling of broadleaf trees (due to safety) that takes place should be cleared with CCW and timber should be put in log piles in-situ.
vi.	Insufficient mixture of different aged trees (even-aged canopy) susceptible to widespread destruction due to catastrophic events such as storms or eventual die-back with no younger replacement trees, which would have severe implications for the micro-climate of the site.	vi.	(a) Write a Woodland Plan to develop/preserve local provenance trees - Identify areas where erosion control and assisted natural regeneration can take place. (b) FCW to look into potential for project similar to Scottish FCW project that follows the Beinn Eighe model. (c) Carry out selective thinning and bark ringing to improve woodland structure and increase the quantity of fallen and standing deadwood.
vii.	Coniferous plantation species and other non-native species invading ancient woodland.	vii.	Wardens to remove any coniferous species invading ancient woodland. As well as removing other invasive species such as Japanese Knotweed, Rhododendron etc.

viii.	Uncertain what the effects of climate change will be on the SAC woodlands.	viii.	Monitor the ecological status of the woodlands and include findings in public information updates.
<i>Common Land</i>			
i.	Common land is being invaded by rush and gorse species and lacks floral diversity.	i.	Work with graziers to establish an action plan for the management of Comin y Rhos.
<i>Species:</i>			
<i>Flora</i>			
i.	Recreation pressure (gorge-walking/ walking) causing soil erosion, dislodging and trampling of flowering plants, ferns, mosses, liverworts and lichens as well as damage to tree roots and bark.	i.	Ensure that the Footpath Work Plan (Appendix 2) includes measures to keep footpaths in sufficient quality that walkers do not stray from the path. Also include plans to block off unofficial paths with brash and plans for soil conservation objectives in all forestry operations and footpath management plans and involve SWOAPG in decision making.
ii.	<p>Filmy ferns, <i>Hymenophyllum tunbrigense</i>, <i>Hymenophyllum wilsonii</i> are part of a cyclical revegetation of acidic rocks. Any factor which interrupted this cycle such as the accidental displacement of filmy fern mats or their bryophyte precursors or the loss of humidity would threaten their survival.</p> <p>River and river-side species are particularly susceptible due to gorge-walking and species on footpath edges are highly vulnerable also. Areas particularly sensitive to this kind of pressure due to the species they support include:</p> <ul style="list-style-type: none"> (a) Woodland along Afon Mellte which supports bryophyte assemblages. (b) Area around Hepste and Mellte confluence supports important bryophyte assemblages including notable species. (c) Sgwd yr Eira to the Mellte confluence where there are 	ii.	Through the SWOAPG work with outdoor providers to encourage good practice in the use of the gorges – particularly in sensitive areas.

<p>nationally scarce species.</p> <p>(d) The section of the Nedd-fechan between Pyrddin confluence and Pont Melin-fach supports important aquatic bryophyte species (<i>Fissidens</i> sp.) which are vulnerable to water-based recreation.</p> <p>(e) The Nedd fechan river gorge above Pont Melin-fach is relatively undisturbed at present and supports important assemblages of lime-tolerant and lime-intolerant bryophyte species. An increase in recreational usage of the area would threaten some of these communities.</p> <p>(f) The bryophyte community on north facing bank of the Pyrddin near Sgwd Gwladus is fragile and therefore could be considered vulnerable to changes in recreational activities in the area.</p> <p>Removal of plants in this above way reduces the protection given to neighbouring plants, exposing them to desiccation and further damage.</p>	
<p>iii. The loss of soils through soil erosion reduces the opportunity for trees to regenerate, which could ultimately lead to a loss of tree cover in some areas, which in turn would reduce the amount of shelter and high humidity to which tree cover contributes and upon which the rich floral and lower plant interest is dependent. Species which require humid, shaded conditions include <i>Anastrophyllum hellerianum</i>, <i>Plagiochila punctata</i>, <i>Pagiochila spinulosa</i>, <i>Sphenolobopsis pearsnoii</i>, <i>Amblystegium jungermannoides</i>.</p>	<p>iii. As (i) above.</p>
<p>iv. Grazing and footfall of sheep prevents regionally rare woodland flowers from growing, as well as trampling and dislodging plants, and causing soil</p>	<p>iv. As (v) in 'Woodland and Forestry' issues section.</p>

erosion.	
v. Lack of dead wood – as discussed in the Woodland and Forestry section (especially in the lower Nedd valley) threatens the survival of species which are dependent on dead wood habitats (e.g. <i>Jamesoniella autumnalis</i> , <i>Odontoschisma denudatum</i> , <i>Scapania umbrosa</i> , <i>Tritomaria exsectiformis</i> , <i>Dichodontium tauricum</i>).	v. As (i) above. And CCW to investigate the current resource and extent of standing deadwood.
vi. Species which occur at only one or two sites more likely to suffer local extinction (eg. <i>Bartramia halleriana</i>).	vi. (a) Complete higher and lower plant surveys of each management compartment, using the information to refine visitor management. (b) Establish monitoring plans for ecological condition of different components of Waterfall Country: - 5 yearly plan for woodland, 3 yearly plan for footpaths, annual plans for lower plant hotspots and recreation pressure points. (c) Identify species that are vulnerable to local extinction and ensure that code of conduct map and leaflet and the Footpath Work Plan (Appendix 2) take these into account.
vii. Limestone pavement species including national and local notable species (<i>Gymnocarpium robertianum</i> , <i>Scabiosa columbaria</i> , <i>Rubus saxatilis</i> and <i>Saxifraga hypnoides</i>) susceptible to grazing particularly where grikes have been made less deep due to clint removal ² .	vii. Identify potential solutions.
Fauna	
i. Little is known about invertebrates in	i. Recruit volunteers to carry out

² Limestone pavement is characterised by ‘clints’ – blocks of weathered limestone exposed at the land surface, and ‘grikes’ – the linear gaps between them, where water has eroded the limestone away along fissures and cracks. These moist, sheltered grikes play host to the flowering plants that make limestone pavement a valuable habitat.

the area as few surveys have been carried out.	invertebrate surveys.
ii. No dipper breeding surveys have been undertaken since 1993 and they could be susceptible to disturbance in the breeding season.	ii. Carry out an annual breeding birds surveys and use the information to refine visitor management.
iii. Mammal survey records are poor for the area.	iii. Recruit volunteers to carry out mammal surveys of each management compartment and use the information to refine visitor management.

3.3. Man-made Features and Factors

3.3.1. *Historic and Industrial Land-use*

There are around 130 known historic sites within the plan area, ranging from prehistoric to industrial, five of which have statutory protection as Scheduled Ancient Monuments – an enclosure at Dyffryn Nedd, a hillfort above Ystradfellte, a silica mine tramway, the Glyn-neath Gunpowder Works (see Appendix 7 for more detail on this site) and the hillfort at Craig y Ddinas . There are also around 10 Grade II listed buildings within the Plan Area including the following:

- Bridge at Pont Melin Fach
- Berthlwyd farmhouse
- Plas-y-darren farmhouse
- St Marys Church in Ystradfellte
- St Cynog's Church in Peneryn
- 17th century house in Pont Pren
- Bodwigiad 18th century country house
- Siloa Baptist Chapel in Penderyn
- 19th century rectory in Penderyn
- Milestone at the Lamb Hotel in Penderyn

The two recorded Roman sites are both routes of former roads. The one skirting the north-western side of Waterfall Country is the stretch of Sarn Helen running between Coelbren and Brecon Gaer forts, its existence and its approximate route are well documented. The other road however, a putative one between Coelbren and Pendarren Roman forts, is unlikely to exist.

The industrial remains of the area are relatively rich; the southern fringe of the Park is geologically varied and it is this and the topography of the area that allows for a variety of historic sites and remains. Extractive industries included two silica mines and associated features, limestone burning and millstone quarrying (see appendix 3 for more detail). Those that used the rivers as power sources were the corn mill and the Gunpowder Works. The latter is thought to be unique in Wales. Nineteen remnant post-mediaeval buildings are for the most part listed included in Brycheiniog XVI, and are of some architectural interest.

The industrial sites were located close to their source of material or power. The lime kilns, probably producing for local agricultural use, were located on areas of enclosed limestone; silica was mined where found and the corn-mills and Gunpowder Works were situated to take advantage of the water power provided by the rivers, and in the case of the latter the enclosed and isolated location was a safety consideration.

The distribution of sites leaves no doubt that many sites still await discovery and/or recording. Some of these may be major, comparable to the large scale quarrying complex on Moel Penderyn, which includes features such as quarries, inclines and tramways. The majority of the unrecorded sites however may be small, but that is not to say unimportant. During visits to the area, other unrecorded sites that were noted included historic bridges, limekilns and charcoal hearths. No systematic fieldwork has been carried out in any part of the area. Present known sites have been recorded in an ad-hoc fashion over the past 100 or so years. Cadw Field Monument wardens also visit the SAMs on a cyclical basis.

The eroded footpaths around the Waterfall Country do not appear to have directly affected historic sites, some dry stone field boundaries are crossed by paths but damage is limited. Recreational pressure generally however is having an effect on the sites. Activities on Craig y Ddinas are affecting the hill fort on its summit. Erosion from activities associated with climbing and abseiling is affecting the scheduled area.

Visitor numbers do not appear to be seriously affecting the Scheduled Ancient Monument (SAM) features at the Gunpowder Works though human interference is likely to be accelerating the natural decay of the site. Deliberate vandalism is a problem at this site. Upstanding structures will inevitably decay without positive management. Rates of erosion have not been monitored in the past so an objective assessment of the problem is difficult. In the past 5-6 years BBNPA, FCW and Cadw have been working closely to conserve selected features of the Gunpowder Works.

The remains of the silica works at Cwm Gored appear to be fairly stable, the current overgrown state of the site is very atmospheric but this balance is fragile and increased visitor numbers could lead to the rapid deterioration of the site.

Forestry operations in the past have damaged and encroached upon sites such as Carn yr Arian and elements of the Gunpowder Works. A number of farmsteads and former field systems have disappeared under or within forestry plantations and other previously unrecorded sites may have suffered the same fate (Whitfield October 1994).

Key Issues and Actions (Section 3.3.1 – Historic and Industrial Land-use)	
Key Issues	Key Actions
i. Lack of systematic recording of archaeological sites.	i. (a) Investigate whether there are any students/universities that wish to carry out studies in the area. (b) Develop a historic survey and management project for Waterfall Country with Clwyd Powys Archaeological Trust and Cadw.

	(c) Produce list of key sites within the Waterfalls area
ii. Sites within coniferous forestry vulnerable to damage from forestry operations.	ii. Thoroughly investigate any potential to cause damage to archaeological sites before carrying out any forestry operations.
iii. Potential damage to sites by recreation pressures particularly; Craig y Ddinas hillfort, Cwm Gored Silica Mine and the Gunpowder Works.	iii. (a) Investigate potential damage being caused to archaeological features by recreational pressure at Craig y Ddinas and act on any concerns. (b) Develop a plan for stabilising the remaining structures within the Gunpowder works SAM.
iv. There is no conservation/maintenance plan for features promoted in interpretation and education materials.	v. (a) Develop a maintenance / conservation plan that prioritises those features which are currently promoted in interpretation and education materials. (b) Develop criteria for identifying priorities for promoting understanding and enjoyment of these features (for example links with audience, interpretation, education and Geopark strategies and resources that would be needed to create access and maintain features) (c) Develop action plan for promoting understanding based on these priorities.
v. Effects of climate change on the historic environment.	vi. Monitor the status of historic environment sites and features and include findings in public information updates.

3.3.2. Agriculture

There are 15 farm holdings in Waterfall Country falling within the parishes of Ystradfellte and Penderyn (Hirwaun). Farming is severely limited by soils and climate, and with some exceptions the land is given over to permanent grass and rough grazing.

Most of the farms are 'mainly sheep' enterprises and common land plays an important role in the sheep farming system, with most farms in Waterfall Country including grazing rights on the Great

Forest or Manor Mawr. Comin y Rhos, in the centre of Waterfall Country is a smaller Section 9³ common.

There are 10 or more farms in Waterfall Country under Tir Gofal grants from the Welsh Assembly Government to carry out environmentally-friendly farm management. This picture may change with the introduction of the Glastir Sustainable Land Management Scheme in 2012/2013.

Key Issues and Actions (Section 3.3.2 - Agriculture)	
Key Issues	Key Actions
i. At present no form of management exists for Comin y Rhos.	i. Carry out habitat restoration work on Comin y Rhos and develop a grazing agreement with the graziers.
ii. Contact information for landowners is limited.	ii. Gather and compose a database on contact names and details for all farm holdings in the plan area.
iii. Intentional and inadvertent trespass across farmland is reported by the farming community and observed by Wardens in the area. Occasional damage to crops, field boundaries and disturbance of stock also occurs.	iii. In the Footpath Work Plan implement a structured plan for improving waymarking in the area.

3.3.3. Recreation

History of Recreation

Historically, Waterfall Country was a favoured haunt for small bands of academics and adventurers, particularly cavers. A journey from Neath to the terminus at the Angel Hotel, Pontneddfechan was a sedate experience. The only 'crowds' likely to be experienced were local children swimming in the deeper pools of the Nedd Fechan and Mellte during the summer holidays (Whitfield October 1994).

The early map makers made significant errors in their portrayals of the Neath catchment area. Unfortunately, later cartographers who were unable or unwilling to verify the earlier maps compounded the errors. Saxton for instance, in his 1578 map, named the Llia the Dringarth. His Nedd Fechan is incorrectly drawn, he makes no mention of the Pyrddin and he manages to put Ystradfellte on the wrong side of the river. John Speed repeated the errors in 1610 (Whitfield October 1994).

Notable visitors to the area included:

³ 1965 Commons Registration Act

- Michael Drayton in his *Poly-oliban* of 1612: “Nimble Nedd to all the neighbouring nymphs for her rare beauties known...” (Drayton 1612):
- Rev Richard Warner- published books describing his walks through Wales (1798): Of Porth yr Ogof – “A lofty praecipe...at its foot appears a gaping fissure, arched high into which the River Fellda rushes with foaming impetuosity” (Warner 1798).
- Benjamin Malkin wrote of Porth yr Ogof – “I penetrated about a hundred yards, as far as any glimmering daylight from the mouth directed: and this specimen of Stygian horror was amply sufficient to satisfy all rational curiosity” (Malkin 1807).
- William Buckland and Edward Lhuyd (scientist) came to study the geology of the area.
- Artists such as Hornor and Watson came to paint and draw.
- Alfred Russel Wallace (the naturalist who co-authored the seminal paper on natural selection with Darwin) wrote in 1905: “I cannot call to mind a single valley that in the same extent of country comprises so much beautiful and picturesque scenery and so many interesting special features as the Vale of Neath” (Wallace 1905).
- F J North from the Department of Geology, National Museum of Wales - “The River Scenery at the Head of the Vale of Neath: Lying, as it does, next door to the South Wales coalfields, with its dense populations and its urban landscapes, the region is one that cannot be too jealously guarded against avoidable spoliation; but mere lip service, at times when for some reason or other such a region appears to be threatened, is not enough. As a nation we have been strangely indifferent to the preciousness of our scenic heritage, and even now there are many who fail to recognise the urgency of action to save as much as possible of what is left.”

The words of FJ North have incredible significance today. With the building of the A465 Heads of the Valleys Road in the 1960s and the duelling of the Glyn-Neath and Aberdulais stretch in 1992 ease of access to the area was significantly improved and visitor numbers have dramatically increased with these road improvements. The roads have not only made this destination more attractive to day visitors but to outdoor groups as well, and with this has come an immense increase on the area's communities as well as the important and fragile natural habitats. Several brown tourist information road signs direct people into Waterfall Country – on the Heads of the Valleys Road there is a directional 'tourist information' road sign and from the Glyn-neath traffic lights there are brown road signs directing people to the Waterfalls Centre. On the Penderyn side there are road signs directing visitors to the 'Waterfalls'.

Information on Visitors

Visitor Numbers

Between 1993 and 2009 data to estimate visitor numbers has been gathered from data-logger information as well as car park ticket selling figures at Cwm Porth and Gwaun Hepste.

In 2006 there were an estimated 144,000 visitors to Waterfall Country. Actual numbers are expected to be slightly higher than this.

Visitors to the area have been increasing steadily year on year since data gathering began in 1993 although a drop in visitors was seen in 2001 of 15% - largely thought to be related to the effects of foot and mouth disease on tourism across the UK. Over the period 2000-2006 there was an overall increase of 79% in visitor numbers to the Waterfall Country. The most significant increase in

numbers was in 2004 when there was an increase in numbers to Cwm Porth of 133% due to major improvements made to the car park. There were smaller increases seen elsewhere during this same year. More recent annual increases in visitor numbers are estimated at around 11%.

Results gathered from the data loggers have not been consistently reliable with some counters often going unrepaired for more than a year. The most un-reliable forms of data logger appear to be the pressure pads which gave consistently unreliable results, whilst the most consistently reliable form of logger was the Porth yr Ogof pyro sensor. See Appendix 3 for a summary table of data gathered. In 2009 all the data loggers that were faulty and could not be repaired on site were removed and taken to Brecon for repair.

Visitor and Access Surveys

The most recent visitor survey of Waterfall Country was conducted in summer of 2007 by the BBNPA, building on a survey of a similar kind conducted between spring 1993 and spring 1994 (Brecon Beacons National Park 1994) a copy of which is held in BBNPA library in Brecon. Although both surveys slightly differed in structure and content, both aimed to capture information and data on recreational activities, visitor actions and movements, as well as visitor satisfaction and numbers to guide management decisions and assess their effectiveness. The 2007 survey was repeated in the summer of 2009.

The main factors highlighted by the 2007 survey were as follows:

- 22% of visitors came ill-equipped for the terrain, wearing sandals or flip-flops.
- The vast majority of people came to the area to visit the waterfalls.
- Visitors found out about the area mainly through friends and family, guidebooks and the internet and word of mouth.
- Around half the people interviewed were visiting for the first time and 83% of all visitors voiced a high likelihood of returning to the site.
- 57% of visitors were from Wales whilst 38% were from England.
- Negative experiences related to the closure of Sgwd yr Eira and the quality and waymarking of footpaths.
- 19% of visitors to the site became lost or disorientated whilst visiting the site.
- The Waterside Places leaflet and map – the primary information leaflet for the area – only received average ratings.

For a detailed summary of the results see Appendix 3. A full copy of the report can be found in the BBNPA library in Brecon.

Several other access and recreation surveys have been carried out since the 1990s, which are summarised in Appendix 4. The main trends to emerge from these surveys were as follows:

- Increased promotion of the area from 1980s onwards has caused a significant increase in visitor numbers (Corscadden Associates 1992).
- Increased visitor pressure coupled with lack of regular maintenance and poor signage and waymarking has caused significant erosion in the area (Corscadden Associates 1992).
- Visitor pressure causing erosion to the area was also highlighted in the 2008 survey carried out by CCW (CCW 2008).

- Alternative sites for recreation should be promoted to reduce the impact on Waterfall Country (Brecon Beacons National Park 1993).
- A quarter of visitors became lost or confused when visiting the area in a 1994 survey (Brecon Beacons National Park 1994). This trend was again observed in the 2007 visitor survey (BBNPA 2007).
- The majority of visitors come to the area to visit the waterfalls (Brecon Beacons National Park 1994).
- The majority of people visiting the area lived within one hour's drive of the site (Brecon Beacons National Park 1994)
- Estimates for numbers of gorge-walkers visiting the area per year in 1995 was around 1860 (Brecon Beacons National Park Authority 1995), however this figure may have been far higher as it was based on questionnaire responses received through a mailing survey. This number is thought to have increased dramatically over the past decade with numbers more likely to be nearer 30,000 – this is based on casual observations on the lower estimates of at least ten minibuses being in the area each day for 80% of the days of the year, with each minibus carrying 10 people.
- In an interpretation survey in 2008, visitors wanted mainly to find out more information about: the area in general; walking routes; plants and animals and the National Park. The majority wanted mainly to find out their information from: leaflets; information centres; the internet and information panels (Brecon Beacons National Park 2008).

User Groups

There are two primary user groups that use the waterfalls area – adventurous activity groups and walkers:

Adventurous Activity Groups

Activity groups are Outdoor Education Centres (OEC's), commercial providers, local council groups and not-for-profit/charity organisations that bring groups of people into the area for recreation activities. These activities include sedate walk, through to gorge-walking with immersion. The age structure typically ranges from young adult to middle aged (11 to 40). Many of these participants often have little or no experience of the countryside and although well equipped with appropriate clothing, rely on the quality of their leaders to ensure their safety and well being (Forestry Commission Wales Jan 2006). Their key access points are summarised in Appendix 5.

By far the most popular adventurous activity in the area is **gorge-walking**. Use of the area for gorge-walking has steadily increased since around the early nineties to such a level that there is a real need for management of the activity. This activity tends to be organised and lead groups of 10-15 individuals. Gorge-walking activities in the main are centralised around Craig y Ddinas car park where the groups use the lower Sychryd and 'Looney's Leap'. Numbers increase dramatically in the summer months with as many as 15 minibuses parking at Craig y Ddinas in the week and as many as 25 minibuses using the site on the weekends. Weekend groups are more likely to be groups of lead adults – many on stag and hen weekends – whilst weekday groups tend to be groups of children lead by activity centres. Groups also use the Mellte and Hepste gorges to a lesser extent and will park at Clun Gwyn to access the gorge here.

The BBNPA, CCW and FCW are working together with the outdoor providers to produce a code of conduct for the use of the area for gorge-walking and have established a working group to

address access issues for this and other organised activities. The **Gorge-walking Code of Conduct Group** was initially set up in 2007 to address concerns held by FCW, CCW and the BBNPA that the volume and behaviour of gorge-walking groups using the site was causing damage to the SAC. In January 2009 a seminar was held for all parties involved to increase awareness of the issues in the area and to address the problems identified. From this a code of conduct and concordat have been developed along with a map of the site showing agreed access routes to the river and areas that are sensitive in terms of biodiversity. See Appendix 13 for more detail about the group and the code of conduct.

Caving is the other main adventurous activity carried out in the area. The most significant caves in terms of visitor numbers are thought to be:

Porth yr Ogof, Mellte valley	SN928124
Little Neath River Cave, Nedd Fechan	SN912142
Bridge Cave, Nedd Fechan	SN912140
Pwll y Rhyd, Nedd Fechan	SN911138

Porth yr Ogof is the most visited site and is particularly popular with youth groups and outdoor education establishments. Several fatalities have occurred in Porth yr Ogof, these have all been drowning incidents and most have occurred at the cave resurgence. There have also been occasional incidents of injury or entrapment by flood waters or rock falls at the other caves in the area. The mouth of Porth yr Ogof is the largest cave entrance in Wales. The caves associated with the Nedd Fechan are visited to a lesser extent by youth groups but are popular with more experienced cavers. The silica mines near Craig y Ddinas SN918079 also serve a recreational function and are visited by training groups, cave divers and more experienced cavers, though lead groups are advised by their technical advisors not to use some of these mines and certain areas within others due to some sections being unstable. Cambrian Caving Council (CCC) is the regional caving body that operates in the area.

Sport climbing, top-roping and bouldering are significant activities in the Craig y Ddinas area. This area is one of only two within the Park where rock outcrops suitable for these activities are to be found. There are several bolted sports routes to be found up the Sychryd those these areas tend to draw the more experienced climber whilst group climbing is confined to the main face of Craig y Ddinas in the car park.

The rivers and waterfalls are also used for **kayaking**. Only experienced kayakers use these Grade 4-5+ rivers and only when the rivers are at a suitable water-level. Use by kayakers is very sporadic due to the fast rise and fall of the water-levels though the rivers in the area are seen as some of the best quality white water rivers in South Wales – all given 4* ratings in the Canoe Wales online-guide. User numbers are thought to be in the region of 1000+ per year due to the quality of the run and the ease of access from the M4. As well as high water runs by more experienced paddlers, both the Mellte and Hepste see use from groups wanting to practice their skills on drops (waterfalls of 3m +) and for this less water is desirable. The Area is also frequently used for shooting publicity material for European kayak manufacturers due to the visual asset and quality of paddling. There may be issues of access and commercial ownership of images arising from this activity (Charlwood 2009). Additionally there are no known access agreements between kayakers and landowners, and there is the potential for damage to the SAC and SSSI from portaging and access and egress points.

Given the sheer volume of adventurous activity groups using the plan area there is a real concern for safety. The **Waterfalls Area Safety Advisory Group (WASAG)** was set up jointly by FCW and the BBNPA with the primary aims of promoting best practice amongst organized groups visiting Waterfall Country and to discuss recent accidents and seek ways to mitigate similar accidents in the future. More details on this group can be found in the Waterfalls Area Health and Safety Policy Document (WASAG 2010), a copy of which is held in the BBNPA library.

Walkers

Several different types of walkers visit the area, from the individual visitor or family group, to organised guided groups of experienced walkers.

Typically guided walks are day long walks of sometimes 12 miles. The age structure of these walkers typically ranges from 30s upwards. Their key access points are summarised in Appendix 5.

Dog walkers also use the area and unlike most FCW woodlands, dog walkers are in the minority in Waterfall Country, possibly due to the geographical remoteness of the site. According to the 2007 visitor survey they made up only 7% of users. Those dog walkers who have been observed using the area tend to use the key access points summarised in Appendix 5

Several walkers have been seriously or fatally injured following falls on the steep ground near the waterfalls.

Key Issues and Actions (Section 3.3.3 - Recreation)	
Key Issues	Key Actions
i. Many of the paths are unable to support the high degree of use to which they are now subject. Eroded paths are unsightly and cause visitors to stray off paths and poor quality of waymarking/signage and footpaths has visitors to leave the area with a negative experience.	i. The Footpaths Work Plan (Appendix 2) should include plans to address erosion issues and improve waymarking and signage as well as rationalising the path network and encouraging visitors to use promoted routes rather than old PRoW. The means of measuring the success of improvements will be through the visitor survey carried out every two years.
ii. Many visitors come to the area ill-equipped for the terrain and conditions likely to be encountered on a walk in the area.	ii. (a) Promote a safety and 'appropriate equipment' message through media; visitor centres leaflets, information panels and the internet. (b) Ensure that all articles on our websites contain the safety and 'appropriate equipment' message.
iii. A large proportion of visitors find out about the area through the internet.	iii. Ensure that the BBNPA, CCW and FCW websites have up-to-date information on Waterfall Country and

	that these pages are can be easily found by navigating the website or by a search on Google – when any of the following are typed into Google our websites should come up on the first page: Waterfall Country, the Waterfalls Area, waterfalls Wales etc.
iv. In the past closure of Sgwd yr Eira along with lack of information on the closure has cause visitors to leave the area with a negative experience.	iv. Establish a plan for updating the public if Sgwd yr Eira or any other visitor ‘hot spot’ in the area has to be closed. This needs to include clear and obvious signage in the car park and accessible information on our websites.
v. An unacceptably high number of visitors become lost or disorientated whilst visiting the area.	v. (a) Install leaflet dispensers (for the ‘Woods of the Waterfalls’ leaflet) at key access points – particularly Gwaun Hepste and Clun Gwyn car parks. (b) Improve signage and waymarking through the Footpaths Work Plan. (c) Ensure that information panels include clear and accurate maps.
vi. Visitor numbers continue to increase year on year in the area.	vi. (a) The Footpaths Work Plan should take into account projected increases in visitor numbers. (b) Information centres should be given guidelines/training on promoting the area i.e. suggests alternative sites if there are suitable alternatives.
vii. A structured plan needs to be put in place to monitor the impact on quality of visitor experience as a result of the actions that come from this management plan.	vii. Repeat the visitor survey every two years and compare results to action carried out as a result of the management plan. Act on any unresolved issues flagged up in the surveys.
viii. People counter data is essential for directing the management of the site but consistency in gathering data in the past has been poor and the reliability of data-loggers is variable.	viii. Implement a standard reliable system for monitoring visitor numbers in the area, in particular: (a) Establish a system of monitoring visitor numbers. (b) Establish a system for monitoring gorge-walking numbers.
ix. Visitors want to find out specific information when in the area.	ix. Ensure that interpretation panels focus on the key areas visitors want to know

	about: information on the area in general, walking routes, plants and animals and the wider National Park.
x. The practice of gorge-walking damages habitats and the significant plant interest associated with the water courses and gorges, as well as cause disturbance to the fauna that frequents the same habitats. Gorge-walking conducted by poorly informed groups can be visually intrusive and noisy.	x. Continue work with the gorge-walking code of conduct group and SWOAPG including: <ul style="list-style-type: none"> (a) Produce a map and leaflet of the Sychryd and Melte to guide the use of these areas for gorge-walking. (b) Include in the leaflet a 'code of conduct' which will guide behaviour – particularly around the Craig y Ddinas area. (c) Ask the police to patrol the Craig y Ddinas area on busy weekends to deal with anti-social behaviour. (d) FCW and village hall to reach an agreement on the management of Craig y Ddinas car park. (e) Hold an annual seminar on recreation activities in the waterfalls.
xi. Members of the public often enquire about gorge-walking activities at information centres – the message/information we give them needs to be consistent.	xi. Gorge-walking groups that sign up to the gorge-walking code can be put on a list of 'approved providers' which can then be given to visitors at the information centres along with a leaflet giving them information on the code of conduct.
xii. The use of Craig y Ddinas for climbing and abseiling has potentially caused damage to an archaeological feature, and also has the potential to damage the botanical and geological interest of the area. Direct effect on the rock faces themselves is limited to some erosion and the effects of placing artificial rock anchors.	xii. Investigate potential damage caused by climbing at Craig y Ddinas.
xiii. Many of the more active pursuits followed in the area support an element of risk, this has been evidenced by a number of accidents – in particular climbing and caving. Additionally there are no access agreements for climbing and kayaking.	xiii. Continue work with the WASAG group including: <ul style="list-style-type: none"> (a) Ensure that any gorge-walking, caving and climbing safety issues are addressed through this group. (b) Address any access issues for climbing and caving through the group.

	<p>(c) Review and update the Porth yr Ogof safety statement every two years.</p> <p>(d) Review and update the Waterfalls Health and Safety document every two years.</p>
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3.3.4. Footpaths and Car-parking

Footpaths

An extensive network of paths exists within Waterfall Country, many of which are public rights of way. The county highway authority is responsible for ensuring the proper management of public paths. For most of Waterfall Country this responsibility has been taken on by the BBNPA. There are around 40km of public footpaths, 13km of public bridleways and 21km of other types of rights of way in Waterfall Country. In addition to the public rights of way network a number of other paths exist, these total some 15km in length.

In recent years many of the footpaths in the area have been suffering severely from erosion and drainage problems caused by the increase in footfall and lack of regular maintenance. Additionally many of the routes taken by footpaths do not match the definitive map and some of the routes marked on the definitive map are dangerous on the ground. There is a significant need to improve the footpaths to a sufficient standard whereby they are able to resist the heavy footfall impact in the long term and divert any footpaths marked on the definitive map that are unsuitable on the ground.. Regular maintenance of footpaths and drainage is also essential. A Footpath Work Plan shall be drawn up to drive improvements and regular maintenance of the paths (see Appendix 2).

Car Parking

The area is served by eight main car parking areas. Four of these additionally provide an informal picnic/games area. See Appendix 6 for a list of car parks, their locations and ownership.

Several footpaths are suffering from severe erosion as a result of the misplacement of car parks. For example, the footpath from Cwm Porth car park to Clun-Gwyn Uchaf waterfall is severely eroded along the riverside as a result of visitors being directed to Cwm Porth. The footpath is incredibly hard to access for maintenance and there is little scope for improvements due to the proximity of the path to the river. The path from Gwaun Hepste car park to Clun-Gwyn waterfall is more suitable for heavy use from visitors accessing the waterfalls, and access is easy for maintenance purposes, although at present the route is too long to be a viable alternative.

The development of interpretation along the route to Sgwd Gwladus and improvements at the Waterfalls Centre has led to Pontneddfechan becoming an increasingly popular starting point for visitors to explore this area of Waterfall Country. Currently the Waterfalls Centre only has parking for a maximum of four cars with most visitors to the centre, or starting a walk to Sgwd Gwladus, parking at the car park at the Angel Inn or, when this car park is full, along the main road. This has created issues for both the Angel Inn business and local residents. The car park at the Angel Inn fills up quickly during the morning which has led to a lack of parking for their lunchtime and afternoon

customers. This has led them to close the car park off until late morning at peak trading periods and erecting signage indicating the car park is for customers only. Road parking is limited and at the busiest periods there are incidents of double parking and local residents are unhappy with the situation. There are limited short term solutions to this problem. In discussions with the Angel Inn proprietor, it has been agreed that if walkers also purchase food and drink they would be able to use the car park and during quieter trading periods the car park won't be closed off to walkers. A closer working relationship is also being sought with the Waterfalls Centre to help support their business. However, a longer term solution is needed and this will need input from all parties including the community and local authorities. Even though facilities at Gwaun Hepste will be improved, more car parking provision is needed for those visiting the Waterfalls Centre and the popular Sgwd Gwladus trail, whilst considering the potential effect this could have of increasing visitor numbers.

Key Issues and Actions (Section 3.3.4 – Footpaths and Car-parking)	
Key Issues	Key Actions
<p>i. Access to the area for most people is via car or minibus. Multiple car parks have directed visitor pressure into nearly all parts of Waterfall Country, adding to the difficulty of visitor management and anxiety for residents. Recreation pressures within Waterfall Country relates not only to the location of the waterfalls and caves, but also to the position and capacity of car parks, and the condition and routing of paths. There is currently no relationship between the 'carrying capacity' of different parts of Waterfall Country and the numbers of people that actually visit those areas. In other words some parts are suffering environmental degradation because they receive too many visitors, whilst other parts have the capacity to receive more visitors without suffering damage. This is particularly true for the high numbers of visitors to the waterfalls via the broadleaf SAC woodlands versus the low numbers of visitors to the coniferous plantation woodlands of Waterfall Country. The Four Falls Trail runs from Gwaun Hepste car park - and this route access point is the one that can withstand most</p>	<p>i. (a) Promote Gwaun Hepste as the main car park for access to the Clun-Gwyn's and Sgwd yr Eira waterfalls. (b) Explore the feasibility of moving Gwaun Hepste car park further along the track into the forestry.</p> <p>Pending the findings of (b) above the desirable outcome would be to:</p> <p>(c) Improve facilities at the relocated Gwaun Hepste car park. (d) Provide additional security at the relocated Gwaun Hepste car park. (e) Include interpretation and information at the relocated car park. (f) Modify the use of Cwm Porth.</p> <p>Elsewhere:</p> <p>(g) Work with the local community and local authority to develop a long term solution for managing parking at Pontneddfechan. (h) Calculate the visitor carrying capacity of Waterfall Country. (i) Design car parking to over-come issues of visitor pressure and crime.</p>

	pressure - but there are limited facilities there, the initial walk in is quite long and cars are susceptible to break in.	
ii.	Vehicle security is an increasing problem. The large number of car parks makes the task of wardening to improve security difficult.	ii. Establish an alternative scheme to replace The Car Park watch scheme.
iii.	Complaints have been made that walkers are parking in the Angel Inn car park.	iii. Address parking issues at Angel Inn in Pontneddfechan.
iv.	Many of the footpaths are in poor condition and have been for some years. They are not maintained on a regular basis due to limited funding and staff availability as well as difficulty in accessing the site.	iv. (a) Carry out initial footpath condition assessment. (b) Review the monitoring form and ensure that it includes a section to record any path widening/spreading. (c) Implement a structured process for addressing issues flagged up in the monitoring forms as well as issues flagged up by the public – e.g. fallen trees. (d) Upgrade key promoted routes and signage as specified in the Footpaths Work Plan (see Appendix 2): - The Four Falls Trail - Waterfalls link paths - Gunpowder works route - Penderyn to Sgwd yr Eira path Cwm Porth to Clun Gwyn path (e) Agree 5 year costing for Footpath Plan between FCW, CCW and BBNPA.3
v.	Waymarking and signposting in the area is poor and visitors often become lost or disorientated – particularly in the Four Falls Trail area.	v. (a) 'Please dial 999 and ask for Mountain Rescue' signs to be attached to numbered waymark posts. (b) Carry out a signs audit to ensure that: - the provision of safety and directional signs are sufficient - to make note of any signs that need replacing or repairing - To ensure that a consistent message is being relayed Produce a form for this. (c) Include a structured plan for the improvement of signage and waymarking in the plan area, and role this program

	out.
vi. Easy access routes in the area are limited to the Sychryd All Ability Trail.	vi. Improve easy access routes and create new ones.
vii. At present only one full time warden covers the area and much time is taken up in managing and co-ordinating projects to improve the area. Another warden patrols the area two days of the week. However this is not sufficient to provide the level of staffing needs required to ensure that the 145,000 visitors p/a to the area leave having gained a positive experience of the area. Issues affecting negative experiences include litter, poor footpaths, thefts from vehicles and lack of staff on the ground to assist the public.	vii. Additional full-time warden to patrol the area, assist in the maintenance of footpaths, assisting the public with enquires and information on the area, patrolling the car parks to prevent thefts and collecting litter.
viii. Many of the routes do not follow the line on the definitive map and/or are unsafe.	viii. Identify routes to be diverted.

3.3.5. Information, Education and Interpretation

Education

The Waterfall Country is widely used for education, key education features being geology and history (industrial heritage of the site). Science work can also be conducted because of the designation as an SAC and the range of habitat types. The area illustrates plantation woodland and forestry against 'natural' woodland processes. The area can also be used for geography in particular for learning and developing mapping skills – mainly because features on the ground can clearly be seen and linked to maps. The updated National Curriculum also requires that Key Stage 2 learners study National Parks.

Other benefits for learning include the fact that parts of the area are easily accessible. Sgwd Gwladus is a particularly useful site because of the range of learning opportunities between Pontneddfechan and the waterfall and ease of access and health and safety management.

Sgwd yr Eira has been used historically as it represents a magical once in a lifetime experience of going behind the waterfall, however until paths are improved it is not being used by the BBNPA education service.

The Waterfalls Centre presents itself as an excellent learning tool for education groups, though use of the centre by groups at present is limited.

The Waterfall Country is used regularly for learning by the BBNPA Education Service in two main areas. One is by residential groups staying at the YHA Danywenallt National Park Study Centre, many of whom choose a waterfalls walk as one activity. This is usually a full day walk to Sgwd y Pannwr/Sgwd Clyn-gwyn, historically to Sgwd yr Eira. The second group is day visit groups mostly walking to Sgwd Gwladus from Pontneddfechan. Both of these groups are led by National Park Education Officers and Wardens.

This year has seen the development of activity rucksacks which can be loaned from The Waterfalls Centre in Pontneddfechan, by school groups and individuals/families. No data exists on their use at this time.

A brief history of learning provision for the Waterfall Country is provided in Appendix 9.

Interpretation

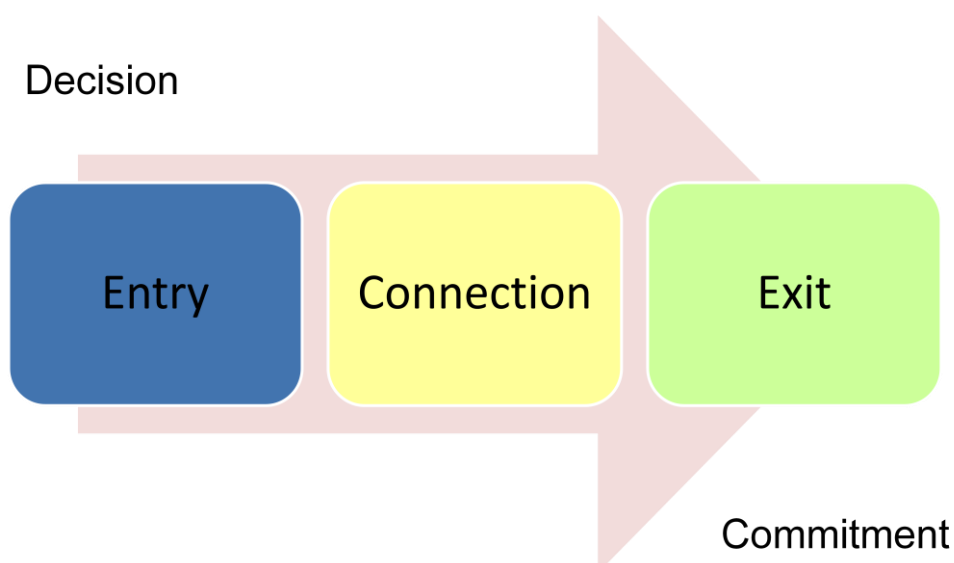
Interpretation is the process of communicating to people the significance of a place or object, so that they may enjoy it more, understand their heritage and environment better, and develop a positive attitude to conservation (Association of Heritage Interpretation).

In order to be effective Interpretation has to be considered as part of the whole visitor experience, from the time visitors decide to visit Waterfall Country to the time they leave and beyond:

- **Decision phase** - The experience from the moment they decide to visit e.g. promotional material
- **Entry phase** - The arrival phase, from clear entry signs, tickets, food & toilets, safety.
- **Connection phase** - Bulk of the experience, participation in interpretative activities, exhibits, trails etc
- **Exit phase** - Time to digest the message and consider the meaning e.g. memorabilia.
- **Commitment phase** - Take away message, purpose of the interpretation e.g. behavioural change

For a complete summary of existing information and interpretation provision in Waterfall Country see Appendix 10.

Figure 1: Visitor Experience model (Brochu, 2003)



Key Issues and Actions (Section 3.3.5 - Interpretation, Information and Education)	
Key Issues	Key Actions
<i>Interpretation & Information</i>	
<p>i. Until the recent ALSF/CCW funded projects in Waterfall Country, provision has historically been delivered on an ad-hoc basis with limited:</p> <ul style="list-style-type: none"> • coordination of themes/stories • links to management objectives • consideration of audiences • resources for project evaluation and monitoring • resource allocation for the on-going maintenance • use of sustainable material, local artists, innovation etc 	<p>i. (a) Develop key themes/stories for Waterfall Country that cross reference with the National Park and Geopark Interpretation Plans.</p> <p>(b) Create a matrix outlining key audiences and their interpretative requirements.</p> <p>(c) Review existing provision to identify if it meets objectives (Section 4) and delivers the identified messages to the target groups.</p> <p>(d) Ensure that the tools of information, interpretation and communication underpin all aspects of the management plan</p> <p>(e) Ensure that actions are phased and implemented once infrastructure and management goals have been agreed Implement the 'View Toolkit' to evaluate the visitor welcome at major access points. Ensure that the results feed into planned future provision.</p>

	<p>(f) Work with partners to create shared interpretive aims and messages and ensure that these are promoted consistently through all new interpretation and information projects.</p> <p>(g) Once the above steps have been implemented, plan so that future Interpretation projects are provided as part of a holistic visitor experience and as an outcome of the interpretive planning process.</p> <p>(h) Evaluate and monitor existing and future provision.</p>
<p>ii. Lack of interpretative training as part of mainstream staff development to key deliverers of interpretation across the Authority (taken from NP Interp. Strategy).</p>	<p>i: ensure information staff and tourism businesses have access to interpretative training through National Park training schemes and the ambassador scheme</p>
<p>Education</p>	
<p>i. The education team cannot use some desirable routes in the area due to poor condition of paths.</p>	<p>i. Identify key routes currently used by the education team and routes that would be used if improved and include these as priority routes to maintain and improve in the Footpaths Work Plan (see Appendix 2).</p>
<p>ii. The Waterfalls Centre presents itself as an excellent learning tool for education groups, though use of the centre by groups at present is limited.</p>	<p>ii. Promote the waterfalls centre to education groups.</p>
<p>iii. Resources and information on the area for schools is limited.</p>	<p>iii. Develop web based resources for GCSE and University courses. This would be factual and management issues, such as Sgwd yr Eira conservation/recreation issues.</p>

4. Aims and Objectives

In this section we will lay out our aims, principles and objectives for the plan:

AIMS

These are our long term aspirations for Waterfall Country.

OBJECTIVES

These are the specific things that will help us on the way to achieving our aims and are drawn down from the Key Issues and Actions summarised in Section 3.

4.1. Aims

- Provide and promote opportunities for safer recreation and a positive visitor experience that fosters understanding and appreciation of the SAC, SAMs, SSSI's and surrounding area and that meets the management plan's objectives.
- Increase our knowledge and understanding of the area, its sensitivities and use.
- Preserve, restore and foster appreciation and understanding for the SAC/SSSI/SAM interests as well as other valuable habitats and sites within Waterfall Country, whilst ensuring that the SAC and SSSI objectives are supported in all projects.
- Implement a successful and sustainable plan.

4.2. Objectives

Below are a summary of our Objectives which are drawn down from the Key Issues and Actions identified in Section 3 of the plan. These Objectives aspire to achieve the Aims set out in Section 4.1 above, and have been developed collaboratively between the relevant organisations. Lead responsibilities have been identified along with timescale and estimated cost. These Objectives will feed into the Five Year Work Plan (see Section 5) which will be discussed and reviewed each year at an annual management review meeting, with new actions drawn from the following list of Objectives and added to the work plan. Lead responsibilities, resources and timetables will be re-clarified during the meeting. The whole plan will be reviewed five years from the date it is adopted.

The Five Year Work Plan (Section 5) will also be available as a separate 'live' document (stored on the National Parks K: drive) which will allow lead officers to update and edit this live document regularly. Projects from the Five Year Work Plan will also be entered onto the Ffynnon Database to ensure that managers can track progress.

Aim Our long term aspirations (see Section 4.1.)	Provide and promote opportunities for safer recreation and a positive visitor experience that fosters understanding and appreciation of the SAC, SAM, SSSI's and surrounding area and that meets the management plans objectives.							
Output What we do	Objective	Project reference code	Related Key Action no. (see Section 3)	Who	Timescale	Cost	Immediate Outcome Immediate short term effects.	Impact Longer-term benefits to the visitors and the SAC environment and its communities.
	Calculate the carrying capacity for Waterfall Country and manage in accordance with this.	AI	3.3.4 (i- g).	BBNPA – postgraduate research project.	By December 2012.	-	Better informed decision-making process	Reduced likelihood of over-promotion of Waterfall Country and under-investment in

							management.
Gorge-walking:							
Monitor gorge-walking numbers: - Investigate a Car park Management Agreement with the community at Pontneddfechan village hall which would allow collection of data on gorge-walking numbers.	A2	3.3.3 (viii-b)	Community, BBNPA and FCW	Initiate once community hall are managing car park. Annual review of data.	Part of CMA (Community management agreement) for car park.	Up to date information on gorge-walking numbers.	Annual change in numbers can be used to determine levels of increase/decrease in impact on the SAC.
Produce access guidance for the use of Craig y Ddinas and surrounding area.	A3	3.1(ix).	FCW, BBNPA and SWOAPG co-ordinator.	Trial draft for summer 09. Final draft by December 2009. Review annually.	FCW provide a financial contribution + splash funding.	Improved working relationship with activity providers. Reduce negative impact of activities on community.	Improved community relations. Reduction in negative impact on area as a tourist destination.
Produce a sensitivity map and attached code of conduct for gorge-walkers using Waterfall	A4	3.2.4 [Species –	BBNPA in partnership with FCW and	Trial draft for summer 09. Final draft by	FCW provide a financial contribution.	Improved working relationship with	Recovery of sensitive SAC species and

	Country.		Flora (ii)]. 3.2.4 [Species – Flora (vi)]. 3.3.3 (x,a). 3.3.3 (x, b).	CCW.	2010. Review annually.	Splash funding for 2009. £1000 for this year from FCW. Review costs when we review management plan.	activity providers. Activity groups will have improved experiences of using the area. Influence change in behavior in terms of use of the SAC. Reduced impact on sensitive SAC species and habitats. Reduction in likely-hood of activity causing local extinctions.	habitats.
	Gorge-walking groups that sign up to the gorge-walking code can be put on a list of 'approved providers' which can then be given to visitors at the information centres (who enquire about gorge- walking) along with a leaflet giving them information on the code of conduct.	A5	3.3.3 (xi).	BBNPA	June 2010. Update annually.	Time and cost of printing.	Improved information for visitors and centre staff.	Activity groups will be encouraged to signs up to the code of conduct and map – which in turn will influence more considerate behavior in the gorge and reduce the impact of the activity on the SAC.

	Hold training days on the use of the sensitivity maps and behavior in the gorge.	A6	3.3.3 (x, g).	BBNPA in partnership with FCW, SWOAPG and CCW.	February 2010 initially (as part of launch of code) then annually in March (prior to the busy summer months).	FCW provide a financial contribution (included in cost of producing code above).	Improved relations with outdoor providers. Enhance understanding of SAC features and influence behavior of groups using the gorge.	Improve effectiveness of map and code in reducing impact of the activity on the SAC.
	Hold an annual seminar on recreation activities in the waterfalls along with a review of the map and code, including scope, ease of use, dissemination etc. First 'seminar' will be launch event for new code of conduct.	A7	3.3.3 (x-e). 3.3.3 (x, f).	BBNPA to lead in partnership with FCW, SWOAPG and CCW.	Annual in January/February	Joint FCW, CCW and BBNPA – as above.	Dissemination of up-to-date information. Networking. Review can determine how effective the code and map is.	Improved relations with outdoor providers. Reduction in impact of outdoor activities on the SAC. Results of code review can drive changes to the map and code that will improve its effectiveness on the ground.
	Promote the code through the website and circulation list.	A8	3.3.3 (x-h).	BBNPA in partnership with FCW, SWOAPG and CCW.	December 2009. Update biannually.	FCW provide a financial contribution	Dissemination of information. Reach a wider audience.	Reduction in impact of outdoor activities on the SAC.

	Provide downloadable information on the web in relation to the code.	A9	3.3.3 (x-i)	BBNPA in partnership with FCW and CCW.	December 2009. Update biannually.	Jointly available on FCW BBNPA and CCW websites	Materials easy to access for outdoor providers. Reach a wider audience.	Lower costs and environmental impact in terms of printing. Reduction in impact of outdoor activities on the SAC.
	Assist in the production and distribution of DVD on how to gorge-walk in responsible way.	A10	3.3.3 (x-j)	BBNPA, FCW and CCW	Have downloadable copy on website by December 2009.	Funded by CCW. FCW provide a financial contribution.	Promotion of code in accessible way.	Reduction in impact of outdoor activities on the SAC.
	<p>Work with Pontneddfechan village hall to provide improved facilities for gorge-walking groups. Village hall to collect parking fees for Craig y Ddinas and new village hall parking area (through agreement with FCW) and to supply the following services:</p> <ul style="list-style-type: none"> - Additional changing facilities at Craig y Ddinas. - Toilet and changing facilities at the village hall. 	A11	<p>3.1 (x).</p> <p>3.3.3 (x,d).</p>	FCW to lead in partnership with BBNPA and Pontneddfechan Village Hall.	Autumn 2009.	Village hall to be self-funded by collecting parking fees.	<p>Better facilities for groups.</p> <p>Reduced impact on local residence.</p>	<p>Improved relations between all involved parties. Sustainable funding for the village hall.</p> <p>Reduction in impact of outdoor activities on the SAC through promotion of map and leaflet.</p>

	<ul style="list-style-type: none"> - Food and drinks (at an additional cost). - Grass cutting. - Closing of barrier. - Promotion of the gorge-walking code and map. 							
	Ensure that the Gorge-walking Code of Conduct Group continue to meet regularly.	A12	3.1 (ix).	BBNPA to lead.	At least twice a year.	Venue hire. Time.	Address any current issues in relation to the activity.	Improved relations with activity providers. Reduction in impact of outdoor activities on the SAC.
	Ensure that when communicating with outdoor activity groups (especially when creating materials), opportunities are identified to deliver promoting understanding and awareness messages which is linked to information, interpretation and education plans	A13	3.1 (ix). 3.3.3 (x,c).	BBNPA	Ongoing	Time.	Ensure that all opportunities are realised to communicate with a key audience	Increased understanding and awareness by future users of SAC which will hopefully lead to enhanced stewardship and support by this target group in future
	Ask the police to patrol the Craig y Ddinas area on busy weekends to deal with anti-social behaviour and illegal parking issues.	A14	3.1 (ix). 3.3.3 (x,c).	BBNPA - warden	Ring to give a reminder every two months or when incidents take	-	Anti-social behavior addressed.	Lessening of negative impact on local residents. Improved environment for other visitors.

				place.			
Access:							
Investigate potential damage being caused to archaeological features by recreational pressure at Craig y Ddinas and act on any concerns.	A15	3.3.3 (xii).	FCW.	Summer 2010	£1000	Safeguard SAM	Maintain in favourable condition
Interpretation:							
Create an Interpretation & Information plan for the Waterfalls area with key partners (FCW, CCW, PNF Community and Neath Port Talbot) which supports the management plan. As part of this process the following projects to take place: A17-A32	A16	3.3.5	BBNPA with NPTBC, FCW, PNF Community, CCW	TBA by group	Time.	Coordinated approach to visitor communication and management resulting in improved experience for visitor and avoid duplication of work by partners	Enhanced visitor experience and maximizing opportunities for promoting understanding and awareness - leading to enhanced stewardship, positive behavioural change and increased support for our work
Develop coordinating group with key partners	A17	3.3.5	BBNPA	December 2009	Time.	Ensure everyone is identified and engaged	As above

	As group, review management plan and develop aims and objectives for interpretation	A18	3.3.5	BBNPA with NPTBC, FCW, CCW	TBA by group	Time.	Agree shared aims for promoting understanding and awareness in area and ensure work meets management objectives	As above
	Identify key audiences and interpretative needs	A19	3.3.5 [Interpretation (i-b)].	As above	TBA by group	Time.	Ensure interpretation/information delivery is effective	As above
	Develop agreed themes to be communicated	A20	3.3.5	As above	TBA by group	Time.	Ensure clear coordinated messages communicated to visitors and enhance visitor experience	As above
	Review current provision to highlight gaps and identify future projects	A21	3.3.5 [Interpretation (i-c)].	As above	TBA by group	Time.	Ensure holistic provision and enhance visitor experience	As above

	Implement the 'View toolkit' to evaluate the visitor welcome at major access points. Ensure that the results feed into the planned future provision.	A22	3.3.5 [Interpretation (i-d)].	BBNPA & FCW	TBA by group	Time.	Review existing welcome to ensure all opportunities are identified	As above
	Based on the above, create joint action plan with lead partners	A23	3.3.5	BBNPA & FCW	TBA by group	Time.	Develop a realistic plan which enhances visitor experience	As above
	Develop and implement evaluation plan	A24	3.3.5	BBNPA with NPTBC, FCW, CCW	TBA by group	Time.	Ensure continuous improvement is made to visitor experience	As above
	Ensure plan is reviewed by steering group and all future information/interpretation projects are jointly planned	A25	3.3.5	BBNPA with NPTBC, FCW, CCW	TBA by group		Ensure plan is always up to date and actions are carried out	As above
	Ensure that all materials are bilingual.	A26	-	BBNPA, CCW and FCW.	Ongoing.	Time. Translation costs.		

	Compile a circulation list of consultees for interpretation projects for the area e.g. Waterfalls Centre staff, wardens, CCW.	A27	-	BBNPA.	March 2010.	Time.	Increased accuracy/relevance of information in materials produced.	Improved working relations. Improved quality in final product.
	Ensure that all interpretation projects consider the objectives of the SAC – produce a code of good practice.	A28	-	BBNPA and FCW	Ongoing.	Time.	Protection of SAC interests.	Protection of SAC interests.
	Promote a safety and 'appropriate equipment' message through information panels and all other interpretation projects in the area.	A29	3.3.3 (ii,a).	BBNPA and FCW.	Ongoing.	Time.	Improved safety of visitors.	Reduction in number of accidents and reduced pressure on rescue services.
	Install leaflet dispensers (for the 'Woods of the Waterfalls' leaflet) at key access points – particularly Gwaun Hepste and Clun Gwyn car parks.	A30	3.3.3 (v, a).	BBNPA	December 2010.	£4500 (two units – one at Gwaun Hepste and one at Clun Gwyn car parks.	Woods of the waterfalls leaflet made available to most visitors.	Improved visitor experience – less people getting lost, less straying from paths.
	Ensure that information panels include clear and accurate maps.	A31	3.3.3 (v, c).	BBNPA	Ongoing	Time.	Carrying out recommendations of visitor	Improved visitor experience.

						survey on interpretation.		
	Ensure that interpretation panels focus on the key areas visitors want to know about: information on the area in general, walking routes, plants and animals and the wider National Park.	A32	3.3.3 (ix).	BBNPA and CCW.	Ongoing.	Time.	As above.	As above.
Information:								
	Decide on a formal welsh name for the area through consultation with expert parties.	A33	3.1 (i).	BBNPA to lead.	June 2010	Time.	Ensure clear coordinated messages communicated to visitors and enhance visitor experience	As above
	Review current walking / information leaflets including NPTBC publication and Wood of the Waterfalls and create joint materials.	A34	3.3.5 [Interpretation & Information (i-c)]	BBNPA and NPTBC joint project.	December 2009	TBC.	Ensure clear coordinated messages communicated to visitors and enhance visitor experience	As above

	Undertake a review of current website information by all partners and develop a coordinated and enhanced web presence.	A35	3.3.3 (iii).	BBNPA, CCW and FCW.	TBA by group	TBA.	Ensure clear coordinated messages communicated to visitors and enhance visitor experience	As above
	Ensure information centre and tourism businesses receive training to support their delivery of high quality information and interpretation	A36	3.3.3 (vi-b).	BBNPA	Ongoing	Time.	Enhanced visitor experience	As above
	<i>The waterfalls centre:</i>							
	Promote the Waterfalls Centre to schools and education groups.	A37	3.3.5 [Education (ii)].	BBNPA	Ongoing.	Time.	Increased use of centre.	Improved understanding of geological subject for schools.
	<i>Education:</i>							
	Produce education plan/actions: - Include policies on how SAC issues and interests are included in education material	A38	3.3.5 [Education (ii)]. 3.3.5 [Education (iii)].	BBNPA to collate information on the SAC. BBNPA and FCW	Education program: After a similar project at Garwnant has been	Time.	Partnership delivery of learning experiences in the Waterfalls Area of the	Better partnerships developed. A more 'waterfalls' aware population who are able to enjoy and

	and provision – have a training day for guided walk leaders and education staff leading walks in the area. - Use of the waterfalls centre for education			Education Officers to work together to plan a joint delivery of 1 education program focusing on the links between the forest and the waterfalls. Deliver some learning from the waterfalls centre.	completed.		BBNPA. Learners have a enjoyable learning experience in the Waterfalls Area	care for the waterfalls in the way the management plan outlines.
	Develop web based resources for GCSE and University courses. This would be factual, and management issues, such as Sgwd Eira conservation/recreation issues.	A39	3.3.5 [Education (iii)].	BBNPA – Warden.	March 2010: Sunita W and Helen P to discuss timeframe and action plan for rolling out this project.	Time.	Increased responsible use of the area by older learners and the learning institutions they attend.	Learning institutions and the learners they serve becoming more 'waterfalls aware' and able to use the area for learning appropriately.
	Community:							
	Work with/consult the community as to how we can	A40	3.1 (iii).	BBNPA – Tourism Officer	May 2010 to run a seminar.	BBNPA to	Improved relations with	Community will benefit from increased

	assist them in gaining maximum benefit from tourism to the area: <ul style="list-style-type: none"> - Workshops - Details of local businesses in publications – collate a list of local businesses - Use community hall as venue. 			and Warden to work with management plan group to discuss the remit.	(TBC with Richard Tyler).	cover.	community.	revenue from tourism. Improved visitor experience.
	Gather information on community concerns by attending council meetings and act on any relevant issues that are brought up.	A41	3.1 (iv).	BBNPA and FCW	Summer 2010	Time.	Issues that arise can be dealt with.	Improved community relations.
	FCW to enter into an agreement with the village hall which will involve the village hall collecting parking fees in exchange for the provision of toilet and changing facilities as well as closing the barrier in the evenings.	A42	3.3.3 (x, d).	FCW	Late 2009	£0	Improve site facilities for Gorge walkers and mitigate against current poor site behaviour	Improve site facilities, increase community ownership and participation in site and visitor experience.
	Ensure when working with community opportunities are identified to increase their role in the visitor experience	A43	3.3.5	BBNPA	Ongoing	Time.	Ensure all opportunities are taken advantage of	Long term engagement with the community and improved visitor experience enhances

	– especially in development of materials in community centre and involvement of community in training						and improve the visitor experience	stewardship and positive behaviour change / support for area by visitors
Agriculture:								
	Gather and compose a database on contact names and details for all farm holdings in the project area.	A44	3.3.2 (ii).	BBNPA - warden	September 2010	Time.	Ability to contact landowners when there's issues.	Improved relations with farming community. More efficient working.
Footpaths:								
	Initial condition assessment of footpaths and as a result make any necessary changes/additions to the Footpaths Work Plan (Appendix 2). Also record baseline of path system affecting SAC/SSSI using GPS against which progress can be assessed.	A45	3.3.4 (iv-a)	BBNPA and FCW – Warden	January 2010	£3500 from FCW towards BBNPA staff costs (Rex's wages). BBNPA staff cost: £27360. Joint funding from BBNPA, CCW & FCW	Identification of all needs for footpath maintenance. Improved prioritization of footpath work.	Major improvements to the footpath network in the area will result in better visitor experience and reduced impact on the SAC. Better management of staff time. More organized work planning.
	Review the monitoring form used by Rex and ensure that it includes a section to record any path widening/spreading. Ensure that the area warden	A46	3.3.4 (iv-b)	BBNPA – Wardens	April 2010.	Time.	Improved monitoring of the footpath network. Better time	As above.

	receives a copy of any forms with issues in their in-tray.						management.	
	Carry out a signs audit to ensure that: <ul style="list-style-type: none"> - the provision of safety and directional signs are sufficient - to make note of any signs that need replacing or repairing - To ensure that a consistent message is being relayed 	A47	3.3.4 (v-b)	BBNPA – Warden to produce form. Joint FCW and BBNPA Warden to carry out monthly audit.	Monthly – ongoing.	Time.	Improved safety. Better management of area.	Improved visitor experience and better safety provision by landowners.
	Easy access routes/access for all projects: <ul style="list-style-type: none"> - Gunpowder-works route (Village Hall to Gunpowder-works) - Clun-Gwyn route (Clun-Gwyn CP to Sgwd Clun-Gwyn). 	A48	3.3.4 (vi).	BBNPA and FCW to fund Gunpowder-works.	Gunpowder-works. Winter 2012. FCW to carry out work on their side. Clun Gwyn – BBNPA - March 2011.	Staff time. £30,000 for materials. £7000 towards FCW side of river.	Good quality access in key destinations which addresses high volume of visitors to the area.	Improved opportunities for access. Improved visitor experience.
	Include section in Footpath Plan (Appendix 2) on management of viewpoints ensure opportunities for	A49	3.2.1 (ii)	BBNPA – Geopark officer and Warden	March 2010	Staff time	Damage to site minimised. Enjoyment maximized.	Damage to site minimised. Enjoyment maximized.

	interpretation/information included in planning process.							
	'Please dial 999 and ask for Mountain Rescue' signs to be attached to numbered waymark posts.	A50	3.3.4 (v-a)	BBNPA – Graphic Designer to design. Warden to install.	Summer 2010.	Time. Manufacturing costs: £200	Improved safety for visitors.	Better co-ordination of rescue efforts. Improved visitor experience.
	<p>Upgrade key promoted routes and signage as specified in the RoW work plan:</p> <ul style="list-style-type: none"> - Pont Melin-fach to Sgwd Gwladus route - The Four Falls Trail - Waterfalls link paths - Sgwd yr Eira to Craig y Ddinas - Penderyn to Sgwd yr Eira path <p>Ensure interpretation/information is planned as part of these upgrades and changes incorporated into future promoting understanding work.</p>	A51	3.3.4 (iv-d)	BBNPA with assistance from FCW.	Winter 2012	<p>FCW could make contribution of machines time/stone from quarry if needed for four fall trail. £35,000+ to create all access loop within 4 four falls trail. Section 15 funding from CCW. Negotiations in September for FCW.</p> <p>Pont Melin Fach to Sgwd</p>	<p>Improved quality of access for visitors. Improved visitor experience. Reduction in impact of footfall on SAC. Reduction in erosion levels. Reduction in trips slips and falls on footpaths. Will ensure that upgrades on the ground match what is communicated to visitors in the long term.</p>	<p>Re-generation of eroded areas. Improved visitor experience. Improve appearance of area. Enhanced visitor experience and maximizing opportunities for promoting understanding and awareness - leading to enhanced stewardship, positive behavioral change and increased support for our work.</p>

						Gwladus route: £10,000. The Four Falls Trail: £20,000. Waterfalls link paths: £15,000. Sgwd yr Eira to Craig y Ddinas: £10,000. Penderyn to Sgwd yr Eira path: £20,000. TOTAL COST EST: £75,000 + staff time.		
	Agree 3 year costing for Footpath Plan (Appendix 2).	A52	3.3.4 (iv-e)	BBNPA and FCW and consult CCW.	Annual review – October 2009	CCW, FCW and BBNPA to discuss on annual basis.	Better work planning.	5 year costing will ensure that planned work does go ahead rather than been forgotten and that funding will be made available.
	The Footpath Plan (Appendix 2) needs to account for worsening weather conditions - add climate change impacts and annual local weather station	A53	3.2.3 (i).	BBNPA	September 2009	Time.	Forward planning. Potential for extra funding.	Impact of changes in weather will be planned for rather than coming as a surprise.

	data to the plan.							
	Ensure that the Footpath Plan (Appendix 2) includes measures to keep footpaths in sufficient quality that walkers do not stray from the path. Also include plans to block off unofficial paths with brash and address erosion issues as well as plans for soil conservation objectives in all forestry operations and footpath management plans.	A54	3.1 (vii). 3.3.3 (i). 3.2.4 [Species-Flora (i)].	BBNPA	September 2009	Time.	Improved visitor experience. Reduction in impact on SAC. Less visitors becoming lost.	Regeneration of eroded areas/desire lines.
	Ensure that the Footpaths Work Plan is carried out in combination with interpretation and information plan projects to ensure key promoted routes are maintained and new routes that are developed can be promoted into future projects	A55	3.3.5 (vi, a).	BBNPA	Ongoing	Time.	Ensure that the visitor receives a coordinated message from pre-arrival to the visit on the ground	Ensure that the visitor experience is managed in the long term minimizing negative effects on the SAC and improvements to the visitor experience will lead to enhanced stewardship by those visiting
	In the Footpaths Work Plan implement a structured plan for improving waymarking and signage in the area.	A56	3.1 (vii). 3.3.2 (iii). 3.3.3 (i).	BBNPA with assistance from FCW.	Winter 2012	Time.	Better waymarking of routes. Reduction in number of	Improved visitor experience. Visitors less likely to wander off the path so reduction in impact on

			3.3.3 (v, b). 3.3.4 (v-c).				visitors getting lost or disorientated.	SAC. Reduced pressure on Mountain Rescue services.
	The Footpaths Work Plan (Appendix 2) should include plans on how visitors can be encouraged to use promoted routes rather than old PRow – investigate the potential for diverting old RoW onto new promoted routes.	A57	3.3.3 (i).	BBNPA	Summer 2010	Time.	Visitors will use robust paths rather than paths that are unable to take the pressure from the sheer volume of visitors to the area.	Reduction in impact of visitors on SAC. Improved visitor experience.
	The Footpaths Work Plan should take into account projected increases in visitor numbers.	A58	3.3.3 (vi, a).	BBNPA	September 2009.	Time.	Better work planning.	Improved footpaths will be robust enough to cope with projected increases in numbers which in turn will reduce the need for extra funding and staff for unplanned maintenance of footpaths.
	The Footpaths Work Plan will need to take into account species vulnerable to local extinction and any works	A59	3.2.4 [Species – Fauna	BBNPA	September 2009.	Time.	Legislational responsibilities covered. Vulnerable	Vulnerable species protected.

	carried out within the SAC/SSSI will need consent from CCW prior to commencement.		(vi)].				species protected.	
	Identify routes currently used by the education team and routes that would be used if improved (as identified by the education team) and include these as priority routes to maintain and improve in the RoW work plan.	A60	3.3.5 [Education (i)].	BBNPA	August 2009 – HP to meet with education team to identify routes.	Time. Material costs – est. £30,000	More choice of routes for education groups. Routes used more robust to pressures of groups and groups will have improved experience.	Improved access for education groups and visitors. Reduction in impact on SAC.
	Identify routes to be diverted.	A60(a)	3.3.4 (viii)	BBNPA	December 2010 – Efon Davies and HP to identify routes.	Time.	Safer routes. Less liability issues.	Easier to navigate using OS map. Easier to manage routes.
	Health and Safety:							
	Carry out regular safety inspections of owned land within the waterfalls area: - Sgwd yr Eira (FCW)	A61	3.2.1 (iii-a)	BBNPA & FCW	Rex to carry out monthly checks. FCW: Sgwd yr Eira: Three	BBNPA & FCW – funded from core budget – look into potential	Improved safety.	Improved long term safety.

	<ul style="list-style-type: none"> - Porth yr Ogof area (BBNPA) - Clun Gwyn (BBNPA & FCW) 				yearly. BBNPA: Tradesmans entrance and western side of Clun Gwyn to be inspected annual by ARUP.	savings if we co-ordinate. With FCW.		
	Agree on mechanisms for imparting information on closures. This needs to include clear and obvious signange in the car park and accessible information on our websites. Ensure that when reporting through the website the correct contact details are supplied for the lead body.	A62	3.3.3 (iv). 3.2.1 (iii-b)	FCW to put in info board at Gwaun Hepste + BBNPA to provide easy to read maps. Use woods of the waterfalls map. Websites to co-ordinate. BBNPA and FCW join Warden to report on rockfalls.	As and when necessary.	Time.	Improved visitor experience.	Reduction in likelihood of escalated negative public reactions as a result of closures.
	Waterfalls Safety Advisory Group (WASAG):							

	Implementation and review of Porth yr Ogof Safety Statement.	A63	3.3.3 (xiii, c). 3.2.1 (iii-c).	BBNPA.	September 2009 and review every two years.	Time.	Improved communication between outdoor groups and BBNPA. Improved health and safety provision.	Reduction in number of accidents and deaths occurring at Porth yr Ogof caves.
	Implementation and review of Waterfalls Area Health and Safety Policy document.	A64	3.3.3 (xiii, d).	FCW.	Winter 2009 and review every two years.	Time	Improved communication between outdoor groups and FCW. Improved health and safety provision in the waterfalls area.	Reduction in number of accidents occurring in the waterfalls area.
	Ensure that the WASAG group meets at least twice a year to discuss health and safety issues in the area.	A65	3.1 (viii).	FCW and BBNPA	Twice a year.	Time.	Improved communication and relations between outdoor groups and FCW. Improved health and safety provision in the waterfalls area.	As above.

	Ensure that any caving and climbing safety issues are addressed through the WASAG group.	A66	3.3.3 (xiii, a).	FCW and BBNPA	As above.	Time.	As above.	As above.
	Address any access issues for climbing and caving through the WASAG group.	A67	3.3.3 (xiii, b).	FCW - climbing. BBNPA – caving.	As above.	Time.	As above.	As above.
	FCW to ensure they receive a copy of the annual bolts inspection at Craig y Ddinas.	A68	3.1 (xi)	FCW	Annual	Time	Remove the need for groups to clip safety lines on to slip net.	Foster safe use of the site
	Carry out litter picking days with volunteers	A69	3.1 (ix)	BBNPA – contact keep Wales tidy to see if they can help	Twice in summer TBC	Staff time.	Improved environment.	Improved environment.
	Regular litter picks to be carried out by wardens.	A70	3.1 (ix)	BBNPA and FCW joint Warden	Weekly during busy periods.	Staff time.	Improved environment.	Improved environment.
	Car Parks:							
	Promote Gwaun Hepste as the main car park for access to the Clun-gwyns and Sgwd yr Eira waterfalls in order to	A71	3.3.4 (i, a).	BBNPA.	Once Gwaun Hepste has been redeveloped	Minimal Brown signs	Reduced impact on sensitive areas of SAC.	Reduced impact on sensitive areas of SAC.

	direct visitors away from environmentally sensitive areas. Remove signage for Cwm Porth. Brown signs directing to Gwaun Hepste.					£5-10,000		
	Relocate and redevelop Gwaun Hepste car park further along the forest track, and create new 1.5km forest drive and toll gate for this (will require planning permission and Assessment of Likely Significant Effect on the application). Improved visitor facilities would include toilets, information and interpretation, seating etc.	A72	3.3.4 (i, b). 3.3.4 (i, c).	BBNPA and FCW. FCW to produce action plan.	Objective for the next 3-5 years. Outline plan to be produced by September 2010.	Would need significant external funding - £250,000+	As above + improved visitor experience.	As above + improved visitor experience.
	Provide additional security at Gwaun Hepste.	A73	3.3.4 (i, d).	FCW. BBNPA – Tourism Officer.	Provide food franchise – Full time in summer and weekends in the winter.	Income generation in summer	Provide additional security and facilities at Gwaun Hepste.	Provide additional security and facilities at Gwaun Hepste.
	Ensure that an information and interpretation objectives are identified at the start of the planning process for	A74	3.3.5 (i, f). 3.3.5 (i, e).	BBNPA, FCW	September 2010	Time.	Ensures coordinated approach to visitor	Enhanced visitor experience and maximizing opportunities for

	Gwaun Hepste redevelopments.						management, that all opportunities to enhance visitor experience identified and enhanced success of funding all areas of project	promoting understanding and awareness - leading to enhanced stewardship, positive behavioural change and increased support for our work
	Work with partners to agree joint visitor management, coordinated promotion of entry points and car parking especially in Pontneddfechan	A75	-	BBNPA, FCW, NPTCBC, PNF Community	December 2009	Time.	Ensures coordinated approach, a range of options/solutions identified and successful management of visitors	Reduced negative impact on SAC and improved visitor experience
	Restrict use of Cwm Porth to those visiting the cave	A76	3.3.4 (i-i).	BBNPA	Pending Gwaun Hepste improvements	TBC.	Gwaun Hepste promoted as main parking area for visitors.	Reduced impact on sensitive parts of the SAC.
	Work with NPTCBC on a feasibility study to develop car parking / visitor facilities on the land surrounding the	A77	3.3.4 (ii).	BBNPA	March 2010		Create a shared solution to visitor management to	Reduced negative impact on SAC and improved visitor

	Waterfalls Centre						waterfalls centre and local falls improving visitor experience	experience
	Continue to work with the police to manage thefts in the area.	A78	3.3.4 (ii).	Lead body as applicable.	Ongoing.	TBC pending review of scheme.	Improved visitor experience. Reduction in car crime.	Improved visitor experience. Reduction in car crime.
	Provide opportunities for training of Volunteer Car Park Attendants on interpretation / information.	A79	3.3.5	BBNPA	April 2010 then annual.	Time.	Enhance visitor experience	Enhanced visitor experience and maximizing opportunities for promoting understanding and awareness - leading to enhanced stewardship, positive behavioral change and increased support for our work
	Ask car park watch scheme to distribute information on safety/thefts in the area when on patrols.	A80	3.3.4 (ii).	BBNPA	Ongoing.	Included in cost of car park watch scheme.	As above.	As above.

Aim Our long term aspirations (see Section 4.1.)	Increase our knowledge and understanding of the plan area, its sensitivities and use.							
Output What we do	Objective	Project reference code	Related Key Action no (see section 3)	Who	Timescale	Cost	Immediate Outcome Immediate short term effects.	Impact Longer-term benefits to the visitors and the SAC environment and its communities.
	Monitor visitor numbers. <ul style="list-style-type: none"> - People counters (directional radio beam counters at Gwaun Hepste CP, Clun Gwyn CP, Pont Melin Fach CP, Sgwd Gwladus route, Penderyn, Cwm Porth and Craig y Ddinas). - Visual recording. - Waterfalls centre. - Monitoring in car parks – sale of tickets. 	B1	3.3.3 (vii, a).	BBNPA	People counters: Installation by summer 2010 then monthly checks. Visual recording: Initiate by Summer 2010 then monthly. Waterfalls centre: Daily + collate data on annual basis. Monitoring in car parks: Daily + collate data on annual basis.	People counters: £16,000. Visual recording: Staff time. Waterfalls centre: Staff time. Monitoring in car parks: Staff time.	Up to date information on increases/decreases in visitor numbers.	Long term up to date data on visitor numbers.

	Carry out a visitor survey to monitor visitor satisfaction and the success of improvements implemented through the management plan. Act on any issues flagged up in the surveys and add to the plan.	B2	3.3.3 (i). 3.3.3 (vii).	BBNPA – Warden. BBNPA to identify and inform responsible parties when issues are flagged up.	Every two years	Time. Printing costs – est. £50 p/a.	Short term improvements can be measured.	Long term improvements can be measured. Improved visitor experience.
	Recruit volunteers to carry out invertebrate surveys.	B3	3.2.4 [Species – Fauna (i)].	BBNPA, BIS, post-graduates	Annual, spring, summer, 1 compartment per year	Variable; may be a day rate for specialists	Improved understanding of value of WC for invertebrates	Waterfall Country's role as perhaps the Park's richest area biologically is valued highly.
	Recruit volunteers to carry out mammal surveys of each management compartment and use the information to refine visitor management.	B4	3.2.4 [Species – Fauna (iii)].	BBNPA, BWT, post-graduates	Annual, 1 compartment per year	-	Improved understanding of value of WC for mammals	Waterfall Country's role as perhaps the Park's richest area biologically is valued highly.
	Surveys/collaboration of information on birds, botany, invertebrates, bat, other mammals and aquatic species.	B5	3.2.4 [Species- Fauna (iii)].	BBNPA/FCW/volunteers	Annual, 1 compartment per year	FCW could bid for grants to get Brecknock wildlife Trust to carry out the surveys.	Improved understanding of value of WC for wildlife	Waterfall Country's role as perhaps the Park's richest area biologically is valued highly.

	Identify species that are vulnerable to local extinction and ensure that code of conduct map and leaflet and the Footpaths Plan (Appendix 2) take these into account.	B6	3.2.4 [Species – Flora (v)].	CCW to identify vulnerable species. BBNPA to include on code of conduct map and in Footpath Plan (Appendix 2).	October 2009 – CCW to provide details on upper Sychryd to BBNPA. December 2009 – BBNPA to produce Sychryd code of conduct map.	Time.	Prevent local extinction of vulnerable species.	Improve/maintain the condition of the SAC.
	Carry out an annual breeding birds survey and use the information to refine visitor management.	B7	3.2.4 [Species – Fauna (ii)].	BBNPA and FCW joint Warden.	First survey in Spring 2010. Annual but for 1 compartment per year, i.e., entire WC surveyed every 5 years.	Time.	Understanding the changing ecology of WC through trends in breeding bird populations	Rate of change or maintenance of conservation status is understood over a longer term.
	Botanical surveys: <ul style="list-style-type: none">- Lower plant surveys, to develop a better understanding of the location, extent and sensitivity of species,	B8	3.2.4 [Species – Flora (vi-a)].	CCW responsible for all monitoring. BBNPA and CCW to agree objectives of	TBC - arrange separate meeting to discuss.	Joint funding CCW, BBNPA & FCW.	Better understanding of the location, extent and sensitivity of species.	Long term monitoring of any change in SAC habitat and species.

	comparing this with the location and extent of adverse impacts			lower plant monitoring.				
	Add climate change impacts to lower plant monitoring plan.	B9	3.2.3 (iii).	BBNPA and a post-graduate long term project; trends analysis for State of the Park Report	Same as compartment monitoring timetable	-	Understanding the changing ecology of WC through trends in lower plant community affected by climate change	Good data sets to identify significant changes to lower plant ecology in response to climate change.
	Build key issues and management problems between wildlife and visitors and into information, interpretation and education plans.	B10	3.3.5	BBNPA, CCW, FCW, NPTCBC	December 2009	Time.	Ensures key issues to be communicated are identified and built into future work and also projects planned do not conflict with management of the area, i.e. increased walks/interpretation of sensitive sites	Enhanced understanding leads to enhanced stewardship, positive behavioral change and support for our work
	Ensure the above data is reviewed and fed into the	B11	3.3.5	BBNPA, CCW, FCW, NPTCBC	Ongoing	Time.	Keeps visitors and locals engaged in	Enhanced understanding leads

	plans on a regular basis.						issues and ensures plan is successful and up to date	to enhanced stewardship, positive behavioral change and support for our work
	Archaeological surveys:							
	Investigate whether there are any students/universities that wish to carry out archaeological studies in the area.	B12	3.3.1 (i-a).	BBNPA to seek potential volunteers/students to carry out study work.	Summer 2010 for initial surveys.	Time.	Improved knowledge of archaeological sites. Opportunities for students.	Improved knowledge and protection of archaeological sites. Opportunities for students.
	Develop a historic survey and management project for Waterfall Country with Clywd Powys Archaeological Trust and Cadw.	B13	3.3.1 (i-b).	BBNPA Building Conservation Officer to lead on this. FCW has Archaeological survey for features on its land.	September 2012	Time.	Improved knowledge of archaeological sites. Opportunities for students.	Improved knowledge and protection of archaeological sites. Opportunities for students.
	Reporting and reviewing of monitoring.	B14	3.3.1 (i)	Waterfalls Management Plan Steering Group will review progress and adjust	Every October	Time.	Improved knowledge of archaeological sites.	Improved knowledge and protection of archaeological sites.

				work-plans accordingly.				
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Aim Our long term aspirations (see Section 4.1.)	Preserve, restore and foster appreciation and understanding for the SAC/SSSI/SAM interests as well as other valuable habitats and sites within Waterfall Country, whilst ensuring that the SAC and SSSI objectives are supported in all projects.							
Output What we do	Objective	Project Reference Code	Related Key Action no (see section 3)	Who	Timescale	Cost	Immediate Outcome Immediate short term effects.	Impact Longer-term benefits to the visitors and the SAC environment and its communities.
	Site condition and integrity assessments – of SAC and SSSI features, to assess vulnerability to future management actions (for example clear-felling of plantation coups adjacent to the designated features).	CI	n/a	Site owners (FCW and BBNPA) in partnership with CCW	Initial condition assessment (Summer 2010) followed by periodic monitoring assessments: - 5 yearly for woodland, 3 yearly plan for footpaths, annual plans for lower plant hotspots and recreation pressure points.	Staff time plus write up; reporting to annual mgmt liaison meetings		Safeguarding SAC and help achieve favorable status.

Woodland and Forestry management:							
Manage broadleaf woodland areas through non-intervention management and selective felling or bark ringing within the high forest structure.	C2	3.2.4 [Habitats – Woodland & Forestry (i)].	FCW	FDP ongoing	Ongoing		Safeguarding SAC and help achieve favorable status.
Carry out selective thinning and bark ringing to improve woodland structure and increase the quantity of fallen and standing deadwood.	C3	3.2.4 [Species – Flora (vi – c)].	BBNPA – gunpowder-works – Better Woods for Wales plan. FCW to check SSSI objectives.	BBNPA – as laid out in Better Woods for Wales plan. FCW to review.	Cost covered by Better Woods for Wales funding.		Improved woodland structure. Increased quantity of standing dead wood.
Active management of broadleaf areas will be ensuring that the grazing pressure from stock trespass is reduced to allow canopy regeneration where gaps appear naturally.	C4	3.2.4 [Habitats – Woodland & Forestry (ii)].	FCW and BBNPA	FDP ongoing	Ongoing.	Recovering ground flora and better woodland regeneration.	Better woodland structure; better food chains.
Replace/repair/maintain boundary fencing to	C5	3.2.4 [Habitats –	FCW. BBNPA on land they	Annual - April.	Annual needs	Recovering ground flora and	Better woodland structure; better

	prevent sheep entering the SAC and SSSI sites.		Woodland & Forestry (vi-b)].	own.		basis.	better woodland regeneration.	food chains.
	Contact farmer about any sheep that have strayed onto site.	C6	3.2.4 [Habitats – Woodland & Forestry (iv,-c)].	FCW. BBNPA on land they own.	Ongoing.	Time.	Recovering ground flora and better woodland regeneration.	Better woodland structure; better food chains.
	Management of coniferous plantations and SAC habitats should be mindful of the conservation objectives for the Special Area of Conservation (SAC) and Sites of Special Scientific Interest (see Appendix I2), including maintenance of a sheltered, high humidity environment: retain standing deadwood where possible, remove invading conifer sp., check fences, remove sheep, regeneration projects in eroded area.	C7	3.2.4 [Habitats – woodland and forestry (iii)].	FCW to check fences. BBNPA to recruit volunteers.	In accordance with SSSI/SAC mgmt plan	TBC	High humidity maintained and improved	Better woodland structure; better food chains; maintaining the appropriate structure for high humidity irrespective of climate changes (e.g., hotter summers).

	FCW to look into potential for project similar to Scottish FC project that follows the Beinn Eighe model for seed sourcing.	C8	3.2.4 [Habitats – Woodland & Forestry (iv, b)].	FCW	September 2010.	TBC	Preserving local provenance.	Preserving local provenance.
	Patrol the site regularly to ensure that no illegal felling takes place. Also ensure that visitors are aware that camp-fires are not allowed in the SAC and SSSI.	C9	3.2.4 [Habitats – Woodland & Forestry (iv, a)].	BBNPA and FCW joint Warden and Waterfalls Centre staff.	Weekly.	Time.	Protection of SAC and its features.	Protection of SAC and its features. Improve condition of SAC.
	Any felling of broadleaf trees (due to safety) that takes place should be cleared with CCW and timber should be put in log piles in-situ.	C10	3.2.4 [Habitats – Woodland & Forestry (iv, b)].	FCW and BBNPA.	Ongoing.	Time.	Protection of SAC and its features.	Protection of SAC and its features. Improve condition of SAC.
	Identify areas where erosion control and assisted natural regeneration can take place. Look at local seed collection.	C11	3.2.4 [Habitats – Woodland & Forestry (vi - a)].	Joint FCW, CCW and BBNPA project.	Winter 2012 + annual review.	TBC.	-	Regeneration of eroded areas. Improvement in condition of SAC.
	Wardens to remove any coniferous species	C12	3.2.4 [Habitats –	BBNPA and	Monthly.	Time.	Enable SAC species to	Improvement in condition of SAC.

	invading ancient woodland.		Woodland & Forestry (vii)].	FCW.			thrive.	
	Invite school groups to plant trees in felled areas.	C13	3.2.4 [Habitats – Woodland & Forestry (iv, a)].	Joint BBNPA and FCW project	Annual.	Time + cost of trees.	Better relations with local schools.	Improvement in condition of SAC.
	Connectivity of woodlands - through Glas Tir – note any progress made.	C14	-	BBNPA	Ongoing.	Time.	-	Improved connectivity of woodlands.
Agriculture:								
	Carry out habitat restoration work on Comin y Rhos and develop a grazing agreement with the graziers.	C15	3.2.4 [Habitats – Common Land (i)]. 3.3.2 (i).	BBNPA	By 2014	Based upon Glastir entry level scheme	Area of wet heath and rhos pasture recovered on common	Minimal benefit to the SAC but useful benefits to wider biodiversity.
	New infrastructure project plan: HEP potential (from the weir upstream of the Gunpowder Works); electricity to supply the	C16	n/a	BBNPA, EAW	2013	Costs of materials and labour	Renewable energy supply available for Pontneddfechan community; income for	Long term and reliable funding stream for conservation investment

	Community Centre. Fish ladder (on the weir upstream of the Gunpowder Works)						BBNPA. Better passage for migrating fish	
	Ensure that all monitoring data and work is fed into information, interpretation and education plans	C17	3.3.5	BBNPA, FCW	Annual.	Time.	Ensures all opportunities realised and planned in advance and increased success of funding for all areas of the project	Enhanced visitor experience leading to enhanced stewardship, positive behavioral change and increased support for our work
	Ensure this data is reviewed and fed into the plans on a regular basis information, interpretation and education plans	C18	3.3.5	BBNPA, CCW, FCW, NPTCBC	Annual.	Time.	Keeps visitors and locals engaged in issues and ensures plan is successful and up to date	Enhanced visitor experience leading to enhanced stewardship, positive behavioral change and increased support for our work
	Geology:							

	Produce list of key SSSI sites that require regular condition assessments as well as a maintenance program.	C19	3.2.1 (i).	BBNPA – Geopark Officer.	By March 2010	Staff time	Visitors will enjoy site with minimal damage to special characteristics.	Damage to site minimised. Enjoyment maximized.
	Carry out regular vegetation clearance on the sites identified above and ensure that the public are aware of the reasons for this taking place.	C20	3.2.1 (i).	FCW and other landowners.	Ongoing.	Staff time.	Visitors will enjoy site with minimal damage to special characteristics and understand background to measures.	Damage to site minimised. Enjoyment maximized.
	Archaeology:							
	Investigate potential damage being caused to archaeological features by recreational pressure at Craig y Ddinas and act on any concerns.	C21	3.3.1 (iii,a).	FCW	March 2010	Time.	Protection of archaeological features.	Protection of archaeological features.
	Develop a plan for stabilising the remaining structures within the Gunpowder works SAM.	C22	3.3.1 (iii, b).	BBNPA	Winter 2010.	TBC – Cadw potential funding.	Protection of historical features.	Protection of historical features.

	Maintain or improve protected archeological features: <ul style="list-style-type: none"> - Gunpowder works buildings - SAMs plan 	C23	3.3.1 (iii-b).	BBNPA – Turbine renewed. Ongoing plan to maintain buildings. FCW – SAMS in SSSI.	Winter 2012.	BBNPA and Cadw joint funder for Gunpowder Works. FCW – funding through Cadw for maintaining SAMs.	Protection of archaeological features.	Protection of archaeological features.
	Ensure that opportunities for information, interpretation and education are built into works to improve key historical features within the waterfalls area.	C24	3.3.5	BBNPA, FCW	Ongoing.	TBC.	Ensures all opportunities realised and planned in advance and increased success of funding for all areas of the project	Enhanced visitor experience leading to enhanced stewardship, positive behavioral change and increased support for our work

Aim Our long term aspirations (see Section 4.1.)	Implement a successful and sustainable plan.							
Output What we do	Objective	Project Reference Code	Related Key Action no (see Section 3)	Who	Timescale	Cost	Immediate Outcome Immediate short term effects.	Impact Longer-term benefits to the visitors and the SAC environment and its communities.
	Staff training - series of staff training events to identify and clarify roles and responsibilities in the delivery of Five Year Plan	D1	n/a	BBNPA, FCW	At start of plan implementation; at induction of relevant new staff	-	Staff awareness and involvement with plan implementation improved	Right skills and awareness in place to understand the sensitivities of Waterfall Country
	Additional full-time warden to patrol the area, assist in the maintenance of footpaths, assisting the public with enquires and information on the area, patrolling the car parks to prevent thefts and collecting litter.	D2	3.3.4 (vii)	BBNPA and FCW	Start in November 2009.	£27,360 p/a	Desirable for co-ordinated plan implementation	Plan implementation produces an SAC and Waterfall Country in accordance with plan objectives.

	Annual review of resources available between BBNPA and FCW to implement the plan.	D3	n/a	BBNPA, FCW	Annual liaison meeting; September/October meeting will be scheduled to coincide with CCW's, FCW's and BBNPA's bidding processes for the following year. This meeting can then become an annual event where the plan can be reviewed.	-	Essential for co-ordinated plan implementation	Appropriate adjustments made to management actions.
	Establish the Waterfalls Management Plan group + additional partners as the core steering group which ensures initial coordination of plan and partner work.	D4	-	BBNPA, FCW, CCW, NPTCBC	As soon as plan is ready and suggest initially every 2 months	Time.	Will engage NPTCBC and other key partners and make sure we all work together	Long term success for the plan and all partners working on a coordinated basis – vital to future sustainability of area
	Establish management performance indicators e.g., higher and lower limits (This feature will be	D5	n/a	BBNPA, FCW, CCW	Before implementation of plan, i.e., by March	-	Essential for coordinated plan	Immediate, high

	in favourable condition when a minimum/maximum of xyz has been achieved).				2010		implementation	
	Ensure that when annual review takes place that any revised SAC/SSSI management plan information replaces the current information in Appendix 12.	D6	-	CCW	October 2009 then annual.	Time.	Conservation objectives for protected sites are up-to-date.	Conservation objectives for protected sites are up-to-date
	Income generation:							
	Income from commercial and non-commercial photographers and filmmakers including a policy on what types of media promotion we do and don't allow.	D7	n/a	BBNPA and FCW – FCW to produce statement and send to BBNPA. BBNPA to forward to PR team.	By March 2010.	Time.	Consistency in approach.	Protection of the SAC.

5. Five Year Work Plan

This work plan lists all projects planned to take place in the first five year period of the management plan. Projects and ongoing tasks have been drawn down from the Objectives laid out in Section 4 and can be cross referenced using the Project Reference Code, and as such the following pages are designed to be photocopied and used as a means of managing and driving staff time and priorities over the next five years. The year at which each project is to be activated is indicated.

The priorities for projects/tasks are given as *** = essential, ** = important and * = desirable.

Following completion of these tasks, the work plan below will be amended accordingly on an annual basis. A separate copy of the Five Year Work Plan will also be placed on the BBNPA's K: drive (under Documents/all staff/Waterfall Area/Management Plan) and on the Ffynnon Database and should be updated regularly.

Projects marked in blue are projects that should be active and ongoing at present.

Projects marked in yellow are projects that are overdue.

Projects marked in green are completed projects.

Essential Projects

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Car Parking							
Work with partners to agree joint visitor management, coordinated promotion of entry points and car parking.	A75	***	FCW, NPTCBC, BBNPA – HP, RN and JH.	Time.	2010	December 2010	
Work with the local community and local authority to develop a long term solution for managing parking at Pontneddfechan. Work with NPTCBC on a feasibility study to develop car parking / visitor facilities on the land surrounding the Waterfalls Centre and.	A77	***	BBNPA – RN. NPTCBC. PNF community.	£220,000 – VRP and Western Valleys SRA.	2010-2012	December 2012.	
Feasibility study to strive to relocate and redevelop Gwaun Hepste car park further	A72		BBNPA and FCW. FCW to	Would need significant	2012-2014	Objective for the next 3-5	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
along the forest track, and create new 1.5km forest drive and toll gate for this (will require planning permission and Assessment of Likely Significant Effect on the application). Improved visitor facilities would include toilets, information and interpretation, seating etc. In the interim period, look at volunteer information officers – prepare one page report for CMT on this.		***	produce action plan. CCW – likely significant effect by March 2010.	external funding -£250,000+		years. Feasibility study to be completed by September 2012.	
Promote Gwaun Hepste as the main car park for access to the Clun-Gwyns and Sgwd yr Eira waterfalls in order to direct visitors away from environmentally sensitive areas. Brown signs directing people to Gwaun Hepste.	A71	***	BBNPA and FCW. FCW to produce action plan.	Brown signs £5-10,000	2012-2013	2014 - once Gwaun Hepste has been redeveloped	
Provide additional security at Gwaun Hepste through the Volunteer Car park Attendant scheme.	A73	***	FCW and BBNPA.	Funded by takings from Gwaun Hepste ticket machine?	2010-2013	March 2010	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Outdoor Activities							
Implementation and review of Porth yr Ogof Safety Statement.	A63	***	BBNPA – Helen P	Time.	2009-2013	September 2009 and review every two years.	September 2009
Implementation and review of Waterfalls Area Health and Safety Policy document.	A64	***	FCW.	Time.	2009-2013	Summer 2010 and review every two years.	
Promote the gorge-walking code through the website and circulation list.	A8	***	BBNPA – HP in partnership with FCW and CCW.	FCW provide a financial contribution	2009-2013	April 2010. Update biannually.	1/5/10
Hold an annual seminar on recreation activities in the waterfalls along with a review of the map and code, including scope, ease of use, participant behavior, dissemination etc. First 'seminar' will be launch event for new code of conduct.	A6, A7	***	BBNPA - HP, in partnership with SWOAPG, FCW and CCW.	FCW provide a financial contribution (included in cost of producing code).	2009-2013	March 2011 then annual in March (prior to the busy summer months).	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Seek to address concerns relating to climbing at the Craig y Ddinas area.			CCW, FCW, BMC, SWOAPG and BBNPA			Data gathering by March 2011	
SAC, SSSI, SAM and geological interests							
Divide the plan area into management units and add this to the plan.		***	BBNPA – Paul Sinnadurai and CCW – Graham Motley	Time	2010-2011	June 2011	
Surveys/collation of information on lower and higher plants; develop and implement monitoring plan for sensitive locations and circulate data gathered to group members. Monitoring should aim to develop a better understanding of the location, extent and sensitivity of species, comparing this with the location and extent of adverse impacts.	B5 and B8	***	CCW - Graham motley responsible for all monitoring. BBNPA and CCW to agree objectives of lower plant monitoring.	Time, possible survey contracts. Joint funding CCW, BBNPA & FCW.	2009-2013	Monitoring limits and sites set by end of 2010	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Site condition and integrity assessments – of SAC and SSSI features, to assess vulnerability to future management actions (for example clear-felling of plantation coups adjacent to the designated features).	CI	***	Site owners (FCW and BBNPA) in partnership with CCW	Staff time plus write up; reporting to annual mgmt liaison meetings	2009-2013	Initial condition assessment (Spring/before leaf fall 2011) followed by periodic monitoring assessments: - 5 yearly for woodland, 3 yearly plan for footpaths, annual plans for lower plant hotspots and recreation pressure points.	
Produce a sensitivity map for areas where plants are vulnerable to disturbance from walking, gorge-walking and climbing, and	A3, A4, B6		CCW to identify vulnerable	Time and FCW provide a financial	2009-2013	CCW to provide details on upper	GM working on final part of

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
where species are vulnerable to local extinction and ensure that code of conduct map and leaflet and the RoW work plan (Appendix 13) take these into account.		***	species. BBNPA to include on code of conduct map and in RoW plan.	contribution. Splash funding for 2009. £1000 for this year from FCW. Review costs when we review management plan.		Sychryd to BBNPA. April 2010 – BBNPA to produce Sychryd code of conduct map.	this.
Produce list of key geological sites that require regular condition assessments as well as a maintenance programme - as part of RIGs process.	C19	***	BBNPA – Alan Bowring and CCW – Gareth Owen	Staff time	2009-2013	By March 2011 then ongoing.	
Impact assessment on SAM area as part of Heads of Valleys fund.	A15	***	FCW.	£500	2010	Summer 2010.	
Develop a plan for stabilising the remaining structures within the Gunpowder works SAM.	C22	***	BBNPA- HP and JH + conservation officer	CADW potential funding.	2009-2010	Winter 2010.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Income from commercial and non-commercial photographers and filmmakers including a policy on what types of media promotion we do and don't allow.	D7	* * *	BBNPA and FCW – PD FCW to produce statement and send to BBNPA. BBNPA to forward to PR team.	Time.	2010-2013	By March 2010.	Draft prepared by Paul Dann (summer 2009)
Visitor Monitoring							
Carry out a visitor survey to monitor visitor satisfaction and the success of improvements implemented through the management plan. Act on any issues flagged up in the surveys and add to the plan.	B2	***	BBNPA – HP. BBNPA to identify and inform responsible parties when issues are flagged up.	Time. Printing costs – est. £50 p/a.	2009-2013	Analyse and publish 2009 survey data by June 2010. Carry out surveys every two years.	August 2010
Monitor visitor numbers. - People counters (directional	B1		BBNPA – HP/JH/RB to	People counters:	2009-2013	People counters:	Seeking funding

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
<p>radio beam counters at Gwaun Hepste CP, Clun Gwyn CP, Pont Melin Fach CP, Sgwd Gwladus route, Penderyn, Cwm Porth and Craig y Ddinas).</p> <ul style="list-style-type: none"> - Visual recording. - Waterfalls centre. - Monitoring in car parks – sale of tickets. 		***	liaise with PD	<p>£16,000.</p> <p>Visual recording: Staff time.</p> <p>Waterfalls centre: Staff time.</p> <p>Monitoring in car parks: Staff time.</p>		<p>Installation by summer 2010 then monthly checks. Visual recording: Initiate by Summer 2010 then monthly.</p> <p>Waterfalls centre: Daily + collate data on annual basis.</p> <p>Monitoring in car parks: Daily + collate data on annual basis.</p>	
Community							
Senior management to attend council meetings to identify concerns. Establish	A41		BBNPA and FCW – JA and	Time.	2010.	Summer 2010.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
regular series of liaison meetings through Community engagement committee. Claire Parsons. JA to raise issues with planning complaints directed at wardens.		***	head of planning – Chris Morgan and Kevin Jones. Claire Parsons – BBNPA. HP to liaise with JA.				
Education							
Include policies on how SAC issues and interests are included in education material and provision – have a training day for guided walk leaders and education staff leading walks in the area. Use of the waterfalls centre for education.	A38	***	BBNPA to collate information on the SAC. Sunita W and Owen Thurgate (FCW) work together to plan a joint delivery of one education program focusing on the	Time.	TBC.	Education program: After a similar project at Garwnant has been completed.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
			links between the forest and the waterfalls.				
Other							
Staff training - series of staff training events to identify and clarify roles and responsibilities in the delivery of Five Year Plan. Invite reps from NPTCBC, local community and activity reps.	D1	***	BBNPA – officer TBC	Time.	2009-2013	March 2011	
Establish the Waterfalls Management Plan group along with additional partners (NPTCBC, Powys CC, local community and activity reps + SWOAPG) as the core steering group which ensures initial coordination of plan and partner work.	D4	***	BBNPA, FCW, CCW, NPTCBC	Time.	2009-2013	As soon as plan is ready and suggest initially meet every 4 months – Sep/Oct (all members); March/April (just key	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
						members); June/July (key members, people on ground – site visit)	
Decide on a formal welsh name for the area through consultation with expert parties.	A33	***	BBNPA to lead.	Time.	2010.	June 2010.	1/4/10

Important Projects

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Community							
<p>Work with Pontneddfechan village hall to provide improved facilities for gorge-walking groups. Village hall to collect parking fees for Craig y Ddinas and new village hall parking area (through agreement with FCW) and to supply the following services:</p> <ul style="list-style-type: none"> - Additional changing facilities at Craig y Ddinas. - Toilet and changing facilities at the village hall. - Food and drinks (at an additional cost). - Grass cutting. - Closing of barrier. - Promotion of the gorge-walking code and map. 	A11, A42	**	FCW to lead in partnership with BBNPA and village hall.	Village hall to be self-funded by collecting parking fees.	2009-2013	Autumn 2010.	Currently on hold

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Work with/consult the community as to how we can assist them in gaining maximum benefit from tourism to the area: <ul style="list-style-type: none"> - Workshops - Details of local businesses in publications – collate a list of local businesses - Use community hall as venue. 	A40	**	BBNPA – Richard Tyler to work with management plan group to discuss the remit.	Time.	2010	May 2010 to run a seminar. (TBC with Richard Tyler).	
Outdoor Activities							
Provide downloadable information on the web in relation to the gorge code – links on our websites to SWOAPG website once it's up and running.	A9	**	BBNPA in partnership with SWOAPG, FCW and CCW.	Jointly available on FCW BBNPA and CCW websites.	2009-2013	April 2010. Update biannually.	Waiting for SWOAPG website.
Assist in the production and distribution of DVD on how to gorge-walk in responsible way.	A10	**	BBNPA, FCW and CCW. HP to upload video to website.	Funded by CCW. FCW provide a financial contribution.	2009	Have downloadable copy on website by September 2010.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Information/Interpretation							
Create an Interpretation & Information plan for the Waterfall Country with key partners (FCW, CCW, PNF Community and Neath Port Talbot) which supports the management plan. This process will involve the following projects:	A16	**	BBNPA with NPTBC, FCW, PNF Community, CCW	Suzanna Jones & Trish Doree	Start April 2011	March 2012	
Step 1: Compile a circulation list of consultees/stakeholders for interpretation projects for the area e.g. Waterfalls Centre staff, wardens, CCW	A27	**	BBNPA.	Suzanna Jones & Trish Doree	Start April 2011	March 2012	
Step 2 of A16 – As group, review management plan and develop aims and objectives for interpretation.	A18	**	BBNPA with NPTBC, FCW, CCW	Suzanna Jones & Trish Doree time	Start April 2011	June 2011	
Step 3 of A16 - Identify key audiences and interpretative needs	A19	**	BBNPA with NPTBC, FCW, CCW	Suzanna Jones & Trish Doree time	Start May 2011	July 2011	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Step 4 of A16 - Develop agreed themes to be communicated for interpretation and information projects.	A20	**	BBNPA with NPTBC, FCW, CCW	Suzanna Jones & Trish Doree time	Start June 2011	Aug 2011	
Step 5 of A16 - Review current provision to highlight gaps and identify future projects in interpretation and information. This includes: <ul style="list-style-type: none"> Implement the 'View toolkit' to evaluate the visitor welcome at major access points. Ensure that the results feed into the planned future provision. Review current walking / information leaflets including NPTBC publication and Waterfalls Country and create joint materials. Undertake a review of current website information by all partners and develop a coordinated and enhanced web presence. 	A21 A22 A34 A35	** ** ** **	BBNPA with NPTBC, FCW, CCW BBNPA & FCW BBNPA – TD and NPTBC joint project. BBNPA, CCW and FCW.	Suzanna Jones &, Trish Doree time	Start July 2011	Sept 2011	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Step 6 of A16 - Based on the above, create joint action plan with lead partners.	A23	**	BBNPA & FCW	Suzanna Jones & Trish Doree time.	Start August 2011	Oct 2011	
Step 7 of A16 - Develop and implement evaluation plan for interpretation and information.	A24	**	BBNPA with NPTBC, FCW, CCW	Suzanna Jones & Trish Doree time	Start Septemeber 2011	Nov 2011	
Step 8 of A16 - Ensure plan is reviewed by steering group and all future information/interpretation projects are jointly planned.	A25	**	BBNPA with NPTBC, FCW, CCW	Review plan in 5 years. Planning ongoing	2011-20?? 2010	TBC by group.	
Annual reporting of Interp/info efforts to encourage joint working and improved communication.	New project	**	BBNPA / FCW / NPT	Time	2010 - 20??	Annual	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Install leaflet dispenser (for the 'Waterfall Country' leaflet) at key access point – Gwaun Hepste car park.	A30	**	BBNPA - HP	£2100 (Gwaun Hepste car park) – ROWIP.	2010	December 2010.	
Provide opportunities for training of car park attendant volunteers on interpretation / information.	A79	**	BBNPA	Suzanna Jones & Trish Doree	2011 -2013	March 2011 then annual.	
SAC, SSSI, SAM and Geological interests							
Carry out an annual breeding birds survey to provide a baseline for future years monitoring.	B7	**	BBNPA – Rex.	Time.	2009-2013	First survey in Spring 2010. Annual but for 1 compartment per year, i.e., entire WC surveyed every 5 years.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Add climate change impacts to lower plant monitoring plan above.	B9	**	BBNPA and a post-graduate long term project; trends analysis for State of the Park Report.	-	TBC.	Same as compartment monitoring timetable.	
Identify areas where erosion control and assisted natural regeneration can take place. Look at local seed collection.	C11	**	Joint FCW, CCW and BBNPA project.	TBC.	2009-2012	Winter 2012 + annual review.	
Maintain or improve protected archeological features: <ul style="list-style-type: none"> - Gunpowder works buildings - SAMs plan 	C23	**	BBNPA – Turbine renewed. Ongoing plan to maintain buildings. FCW – SAMS in SSSI.	BBNPA and CADW joint funder for Gunpowder Works. FCW – funding through CADW for maintaining SAMs.	2009-2012	Winter 2012.	

Project description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Carry out habitat restoration work on Commin y Rhos and develop a grazing agreement with the graziers.	C15	**	BBNPA	Based upon Glastir entry level scheme	2014	2014	
Education							
Develop web based resources for GCSE and University courses. This would be factual, and management issues, such as Sgwd Eira conservation/recreation issues.	A39	**	BBNPA – Helen Pye and Sunita Welch.	Time.	2010-2011	August 2010: Sunita W and Helen P to discuss timeframe and action plan for rolling out this project.	

Desirable Projects

Project description	Project code no.	Priority Desirable	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion (if applicable)
Outdoor Activities							
Monitor gorge-walking numbers: <ul style="list-style-type: none"> - FCW/BBNPA to produce tickets for community with section on ticket stub for recording gorge-walking groups sizes. - Community to make note of numbers on ticket stub when selling tickets. - FCW/BBNPA to collate and analyse data. - Potential to produce online form for gorge-walkers to fill out to record numbers. 	A2	*	Community, BBNPA and FCW	Part of CMA (Community management agreement) for car park.	2009-2013	Initiate once community hall are managing car park (following completion of planning permission). Annual review of data.	On-hold at present

Gorge-walking groups that sign up to the gorge-walking code can be put on a list of 'approved providers' which can then be given to visitors at the information centres (who enquire about gorge-walking) along with a leaflet giving them information on the code of conduct.	A5	*	BBNPA	Time and cost of printing.	2010-2013	June 2010. Update annually.	
SAC, SSSI, SAM and Geological interest							
Recruit volunteers to carry out invertebrate and mammal surveys, to provide a baseline and to improve visitor experience.	B3, B4	*	BBNPA, BWT, post-graduates	Variable; may be a day rate for specialists.	2009-2013	Annual, spring, summer, 1 compartment per year	
Investigate whether there are any students/universities that wish to carry out archaeological studies in the area.	B12	*	BBNPA - Alan Bowring, to seek potential volunteers/students to carry out study work.	Time.	2010-2013	Summer 2010 for initial surveys.	
Invite schools and groups to plant trees/acorns in felled areas.	C13	*	Joint BBNPA and FCW project	Time + cost of trees.	2011-2013	Annual starting spring 2011.	
Develop a historic survey and management project for Waterfall Country with Clwyd Powys Archaeological Trust and Cadw.	B13	*	FCW has Archaeological survey for features on its land.	Time.	2011-2012	September 2012	

Interpretation							
Ensure that an information and interpretation objectives are identified at the start of the planning process for Gwaun Hepste redevelopments.	A74	*	BBNPA, FCW	Time.	tbc	Tbc by group	
Other							
Additional full-time warden to patrol the area, assist in the maintenance of footpaths, assisting the public with enquires and information on the area, patrolling the car parks to prevent thefts and collecting litter.	D2	*	BBNPA and FCW	£27,360 p/a	2009-2013		
Calculate the carrying capacity for Waterfall Country and manage in accordance with this.	AI	*	BBNPA – Brad Welsh + postgraduate research project.	-	2009-2013	December 2012	
New infrastructure project plan: HEP potential (from the weir upstream of the Gunpowder Works); electricity to supply the Community Centre. Fish ladder (on the weir upstream of the Gunpowder Works)	CI6	*	BBNPA, EAW	Costs of materials and labor	2009-2013	2013	

Routine/Ongoing Tasks

Description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Notes
Essential (***)							
Interpretation							
Ensure that all interpretation/information materials are bilingual.	A26	***	BBNPA, CCW and FCW.	Time. Translation costs.	2009-2013	Ongoing.	
Ensure that all interpretation projects consider the objectives of the SAC – produce a code of good practice.	A28	***	BBNPA - su and Trish + consult group[Time.	2009-2013	Ongoing.	
Promote a safety and ‘appropriate equipment’ message through all communication efforts by all partners.	A29	***	BBNPA and FCW.	Time.	2009-2013	Ongoing.	
Outdoor Activities							
Ensure that the Gorge-walking Code of Conduct Group continue to meet regularly.	A12		BBNPA - HP.	Venue hire. Time.	2009-2013	At least twice a year.	

Ensure that the WASAG group meets at least twice a year to discuss health and safety issues in the area.	A65	***	FCW and BBNPA – HP and PD	Venue hire. Time.	2009-2013	At least twice a year.	
Ensure that any caving and climbing safety issues are addressed through the WASAG group.	A66	***	FCW and BBNPA	Venue hire. Time.	2009-2013	Ongoing.	
Site Maintenance							
Contact farmer about any sheep that have strayed onto site.	C6	***	FCW. BBNPA on land they own.	Time.	2009-2013.	Ongoing.	
Regular litter picks to be carried out by wardens.	A70	***	BBNPA - Rex	Time.	2009-2013	Ongoing. Weekly during busy periods.	
Resources allocated to the RoW work should match locations affected by visitor numbers and other environmental pressures.	A58	***	BBNPA – Helen P	Time.	2009	Ongoing	
Agree 3 year costing for RoW plan, allocating ROWIP funds on an annual basis to feasible projects in the plan.	A52	***	BBNPA and FCW and consult CCW -JH	CCW, FCW and BBNPA to discuss on annual basis.	2009-2013	Annual.	
Replace/repair/maintain boundary fencing to prevent sheep entering the SAC and SSSI	C5		FCW. BBNPA on land they own.	Annual needs basis.	2009-2013.	Annual - April.	

sites.		***					
Habitat management							
Management of coniferous plantations and SAC habitats should be mindful of the conservation objectives for the Special Area of Conservation (SAC) and Sites of Special Scientific Interest (see Appendix I4), including maintenance of a sheltered, high humidity environment: retain standing deadwood where possible, remove invading conifer sp., check fences, remove sheep, regeneration projects in eroded area.	C7	***	FCW to check fences. BBNPA to recruit volunteers.	TBC.	2009-2013	In accordance with SSSI/SAC mgmt plan.	
Carry out selective thinning and bark ringing to improve woodland structure and increase the quantity of fallen and standing deadwood.	C3	***	BBNPA – gunpowder-works – Better Woods for Wales plan – WAT. FCW to check SSSI objectives.	Cost covered by Better Woods for Wales funding.	2009-2013	Ongoing: as laid out in Better Woods for Wales plan. FCW to review.	
Safety and Security							
Maintain Volunteer Car Park Attendant scheme	A78	***	BBNPA – HP and JP	-	2010-2012	Ongoing.	
FCW to ensure they receive a copy of the	A68		FCW - PD	Time.	2009-2013	Annual.	

annual bolts inspection at Craig y Ddinas.		***					
Ask the police to patrol the Craig y Ddinas area on busy weekends to deal with anti-social behaviour and illegal-parking issues.	A14	***	BBNPA – JA HP to contact every two months or when an incident takes place.	-	2009-2013	Ongoing	
Carry out regular safety inspections of owned land within the waterfall country: <ul style="list-style-type: none"> - Sgwd yr Eira (FCW) - Porth yr Ogof area (BBNPA) - Clun Gwyn (BBNPA) 	A61	***	BBNPA & FCW - JH	BBNPA & FCW – funded from core budget – look into potential savings if we co-ordinate. With FCW.	2009-2013	Rex to carry out monthly checks - ongoing. FCW-Sgwd yr Eira: Three yearly. BBNPA: Tradesmans entrance and western side of Clun Gwyn to be inspected annual by ARUP.	
Funding							
Annual review of resources available	D3		BBNPA, FCW –	Time.	2009-2013	Annual liaison	

between BBNPA and FCW to identify projects for funding and implementation.		***	JA and NS			meeting in sep/oct to identify key projects with CCW to qualify improvements in key areas as examples of cost vs SAC improvement; <u>September</u> meeting will be scheduled to coincide with CCW's, FCW's and BBNPA's bidding processes for the following year. This meeting can then become an annual event where the plan can be reviewed.	
Important Ongoing (**)							

Interpretation/Information/Education							
Ensure that information panels include clear and accurate maps.	A31	**	BBNPA.	Time.	2009-2013	Ongoing.	
Ensure that all monitoring data and key issues/management problems are fed into information, interpretation and education plans	C17, B10, B11	**	BBNPA, FCW, CCW, NPTCBC	Time.	2009-2013	Annual/Ongoing	
Ensure this data is reviewed and fed into the plans on a regular basis information, interpretation and education plans	C18	**	BBNPA, CCW, FCW, NPTCBC	Time.	2009-2013	Annual.	
Ensure that interpretation panels focus on the key areas visitors want to know about: information on the area in general, walking routes, plants and animals and the wider National Park.	A32	**	BBNPA.	Time.	2009-2013	Ongoing.	
Ensure information centre and tourism businesses receive training to support their delivery of high quality information and interpretation	A36	**	BBNPA.	Time.	2009-2013	Ongoing.	
Promote the Waterfalls Centre to schools and education groups.	A37	**	BBNPA.	Time.	2009-2013	Ongoing.	

Ensure that opportunities for information, interpretation and education are built into works to improve key historical features within the waterfalls area.	C24	**	BBNPA, FCW	Time.	2009-2013	Ongoing.	
Outdoor Activities							
Address any access issues for climbing and caving through the SWOAPG and WASAG groups.	A67	**	FCW and BBNPA	Venue hire. Time.	2009-2013	Ongoing.	
Car Parking							
Ask car park watch scheme to distribute information on safety/thefts in the area when on patrols.	A80	**	BBNPA.	-	2009-2013	Ongoing.	
SAC/SSSI							
Active management of broadleaf areas will be ensuring that the grazing pressure from stock trespass is reduced to allow canopy regeneration where gaps appear naturally.	C4	**	FCW and BBNPA	FDP ongoing	2009-2013	Ongoing.	
Ensure that when annual review takes places that any revised SAC/SSSI management plans replace the current ones in the appendix.	D6	**	CCW	Time.	2009-2013	Annual.	
Monitoring							
Reporting and reviewing of monitoring.	B14		Waterfalls Management	Time.	2009-2013	Every October.	

		**	Plan Steering Group will review progress and adjust work-plans accordingly.				
Desirable (*)							
Community							
Ensure when working with community opportunities are identified to increase their role in the visitor experience – especially in development of materials in community centre and involvement of community in training	A43	*	BBNPA.	Time.	2009-2013	Ongoing.	
SAC/SSSI							
In general, manage broadleaf woodland areas through non-intervention management and selective felling within the high forest structure.	C2	*	FCW	FDP ongoing	2009-2013	Ongoing.	
Connectivity of woodlands - through Glas Tir – note any progress made.	C14	*	BBNPA	Time.	2009-2013	Ongoing.	

RoW and Patrol Projects/Ongoing tasks

Description	Project code no.	Priority	Persons/ organisation responsible	Funding/costs	Years active	Deadline for completion/ Timeframe/ frequency (if applicable)	Date of completion or R for routine task
Projects							
Identify routes currently used by the education team and routes that would be used if improved and include these as priority routes to maintain and improve in the RoW work plan.	A60	***	BBNPA – Helen P	Time.	2009-2013	August 2009 – HP to meet with education team to identify routes.	21/8/09
The RoW work plan will need to take into account species vulnerable to local extinction and any works carried out within the SAC/SSSI will need consent from CCW prior to commencement.	A59	***	BBNPA – Helen P	Time.	2009	September 2009	21/8/09
Review the monitoring form used by Rex and ensure that it includes a section to record any path widening/spreading as well as rope swings. Ensure that the area	A46	***	BBNPA and FCW – Rex Eckley, Helen Pye and Paul Dann.	Time.	2010.	April 2010.	Completed 1/6/10. To be implemented Jan 2011

warden receives a copy of any forms with issues in their in-tray.							
'Please dial 999 and ask for Mountain Rescue' signs to be attached to numbered waymark posts.	A50	***	BBNPA – Gary Short to design. Helen P to install.	Time. Manufacturing costs: £200	2009-2010	Summer 2010.	1/7/2010
Initial condition assessment of footpaths and as a result make any necessary changes/additions to the RoW work plan (Appendix 13). Also record baseline of path system affecting SAC/SSSI using GPS against which progress can be assessed.	A45	***	BBNPA and FCW – Rex Eckley.	Time.	2009-2010.	Winter 2010.	
The RoW work plan (Appendix 13) should include plans on how visitors can be encouraged to use promoted routes rather than old PRow – investigate the potential for diverting old RoW onto new promoted routes – in particular area around red route.	A57	***	BBNPA – HP, JH and Eifion Jones	Time.	2010	Summer 2011.	
Upgrade key promoted routes and signage as specified in the RoW work plan: <ul style="list-style-type: none"> - Pont Melin Fach to Sgwd Gwladus route - The Four Falls Trail - Waterfalls link paths - Sgwd Eira steps – FCW securing funding - Sgwd yr Eira to Dinas Rock - FCW 	A51	***	BBNPA with assistance from FCW.	FCW to improve Four Falls Trail. £35,000+ to create all access loop within 4 four falls trail. Section 15 funding from CCW. Negotiations in	2009-2012	Winter 2012.	

<p>- Penderyn to Sgwd yr Eira path Ensure interpretation/ information is planned as part of these upgrades and changes incorporated into future promoting understanding work.</p>				<p>September for FCW.</p> <p>Pont Melin Fach to Sgwd Gwladus route: £10,000.</p> <p>The Four Falls Trail: £20,000.</p> <p>Waterfalls link paths: £15,000.</p> <p>Sgwd yr Eira to Dinas Rock: £10,000.</p> <p>Penderyn to Sgwd yr Eira path: £20,000.</p> <p>TOTAL COST EST: £75,000 + staff time.</p> <p>Update: FCW expenditure so far is as follows - Clun Gwyn access path upgrade 0.5km £16K</p> <p>Toby's path and top of Sgwd Yr Eira £11k</p> <p>Sgwd-Yr-Eira inspection £3k</p>			
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In the RoW work plan implement a structured plan for improving waymarking and signage in the area.	A56	***	BBNPA - HP, with assistance from FCW.	TBC.	2009-2013	Winter 2012.	
The RoW Plan (Appendix I3) needs to account for worsening weather conditions - add climate change impacts and annual local weather station data to the plan.	A53	**	BBNPA – Helen P	Time.	2009	September 2009	21/8/09
Include section in RoW plan on management of viewpoints ensure opportunities for interpretation/information included in planning process.	A49	**	BBNPA –Alan B and Helen P.	Time.	2010.	March 2010.	
Carry out regular vegetation clearance on the sites identified above and ensure that the public are aware of the reasons for this taking place.	C20	**	BBNPA – Alan Bowring and Helen Pye	Staff time	2009-2013	By March 2010 plan work then ongoing.	
Gather and compose a database on contact names and details for all farm holdings in the project area.	A44	**	BBNPA.	Time.	2010	March 2010.	
Easy access routes/access for all projects: - Gunpowder-works route (Village Hall to Gunpowder-works)	A48	**	BBNPA and FCW to fund Gunpowderworks.	Staff time. £30,000 for materials. £7000 towards FCW side of	2009-2013	Gunpowderworks. Winter 2012. FCW to carry out work.	

- Clun-Gwyn route (Clun-Gwyn CP to Sgwd Clun-Gwyn).				river.		Clun Gwyn – March 2011 .	
Ongoing Tasks							
Ensure that the RoW work plan (Appendix 13) includes measures to keep footpaths in sufficient quality that walkers do not stray from the path. Also include plans to block off unofficial paths with brash and address erosion issues as well as plans for soil conservation objectives in all forestry operations and footpath management plans.	A54	***	BBNPA – Helen P	Time.	2009	Ongoing	21/8/09
The RoW work plan will need to take into account species vulnerable to local extinction and any works carried out within the SAC/SSSI will need consent from CCW prior to commencement.	A59	***	BBNPA – Helen P	Time.	2009	September 2009	21/8/09
Patrol the site regularly to ensure that no illegal felling takes place. Also ensure that visitors are aware that camp-fires are not allowed in the SAC and SSSI.	C9	***	BBNPA and FCW – Rex + waterfalls centre staff.	Time.	2009-2013	Weekly – ongoing.	R
Wardens to remove any coniferous species invading ancient woodland.	C12	***	BBNPA and FCW.	Time.	2009-2013	Monthly-ongoing.	R
Any felling of broadleaf trees (due to safety) that takes place should be cleared	C10		FCW and BBNPA.	Time.	2009-	Ongoing.	R

with CCW and timber should be put in log piles in-situ.		***			2013		
Carry out a signs audit to ensure that: <ul style="list-style-type: none"> - the provision of safety and directional signs are sufficient - to make note of any signs that need replacing or repairing - To ensure that a consistent message is being relayed 	A47	***	BBNPA – Area Warden to produce form. Rex Eckley to carry out monthly audit.	Time.	2009-2013	Monthly – ongoing.	R
Ensure that the RoW work plan is carried out in combination with interpretation and information plan projects to ensure key promoted routes are maintained and new routes that are developed can be promoted into future projects	A55	***	BBNPA – include in interpretation good practice guide	Time.	2009-2013	Ongoing.	R
Agree on mechanisms for imparting information on closures. This needs to include clear and obvious signage in the car park and accessible information on our websites. Ensure that when reporting through the website the correct contact details are supplied for the lead body.	A62	***	FCW to put in info board at Gwaun Hepste + BBNPA to provide easy to read maps. Use words of the waterfalls map. Websites to co-ordinate. BBNPA – Rex to	Time.	2009-2013	As and when necessary.	R

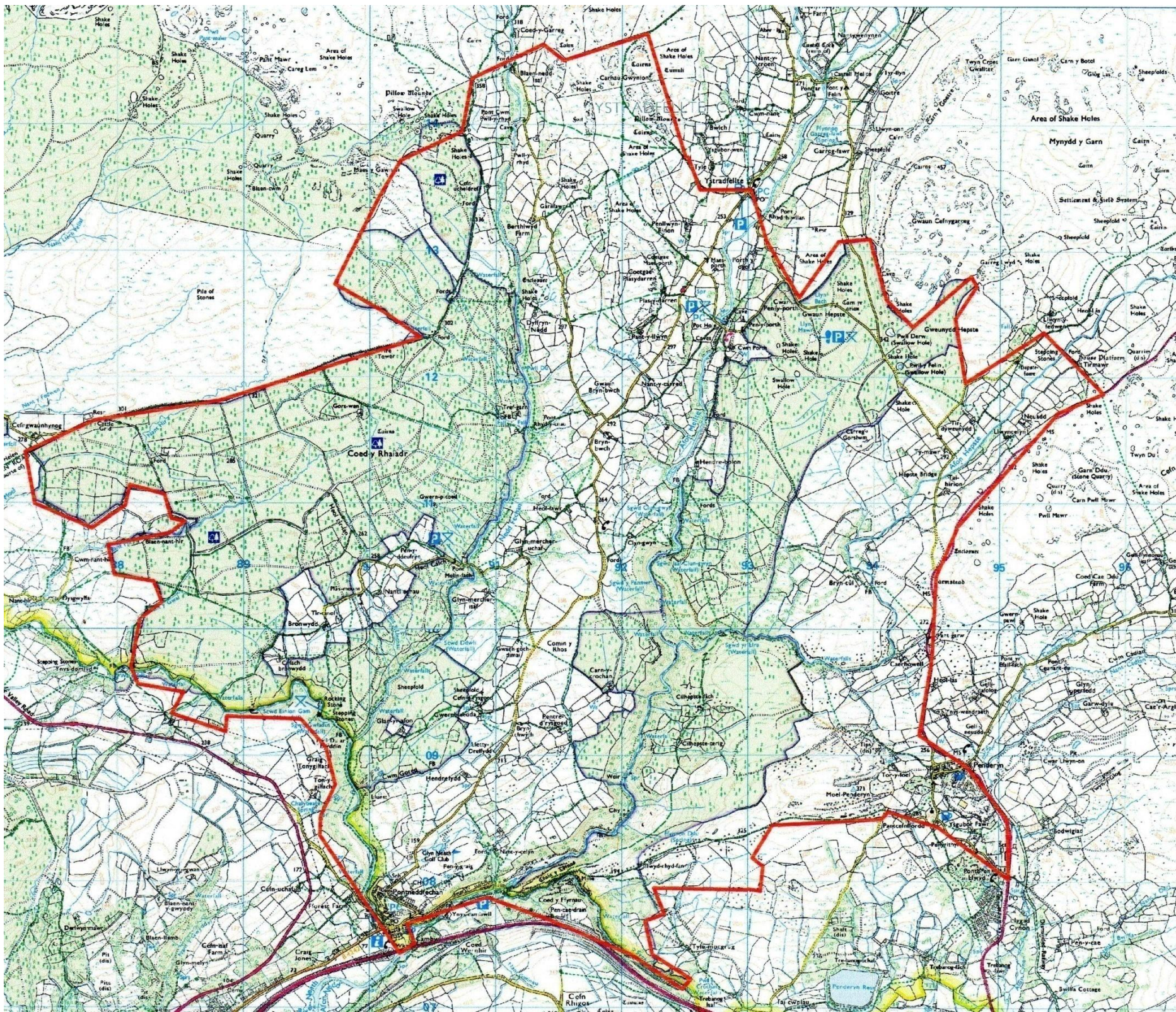
			report on rockfalls.				
Carry our litter picking days with volunteers	A69	**	BBNPA	Time.	2010-2013	Twice every summer.	R

7. Appendices

Appendix 1

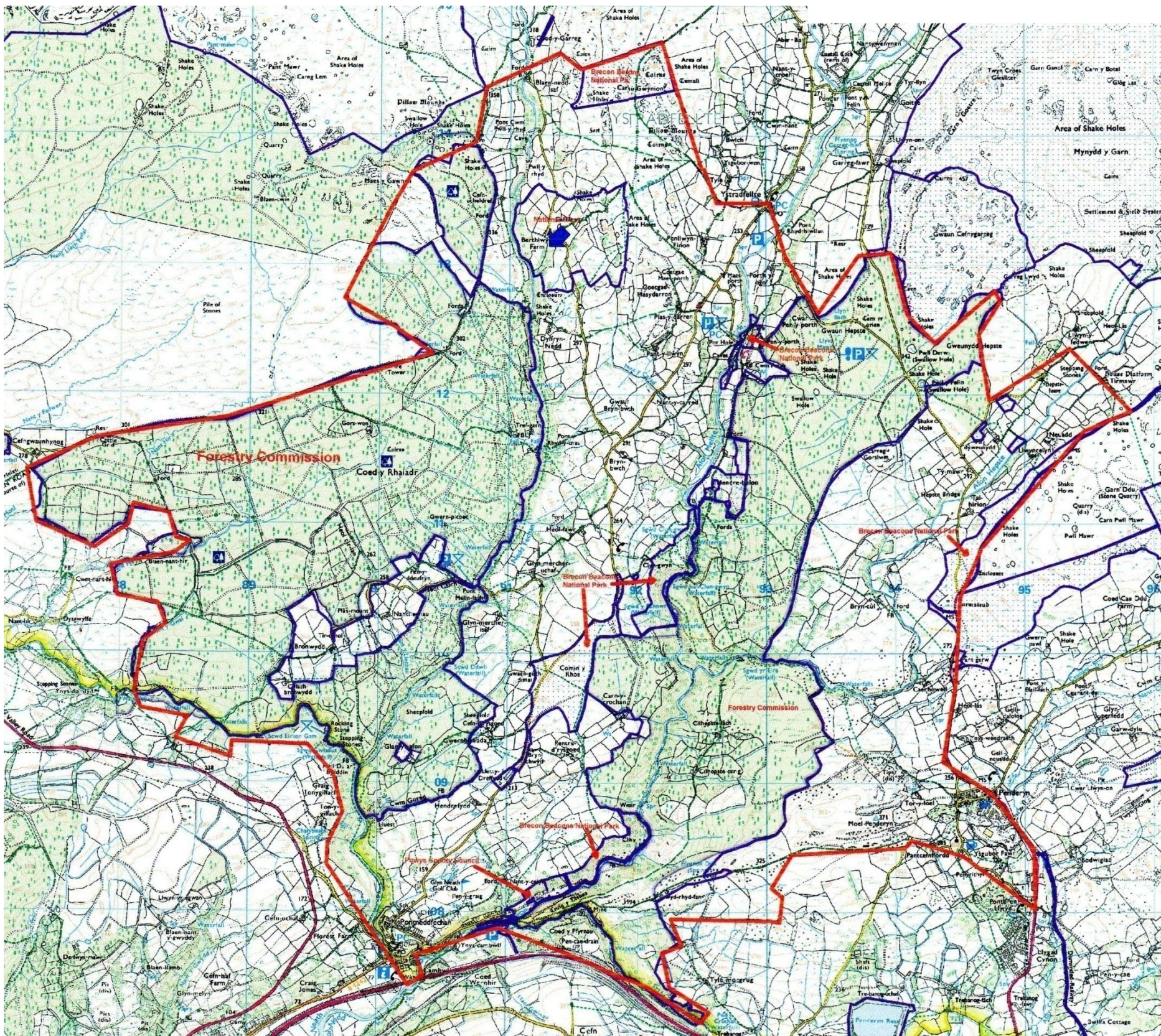
Maps

1.1. Boundary map of Plan Area



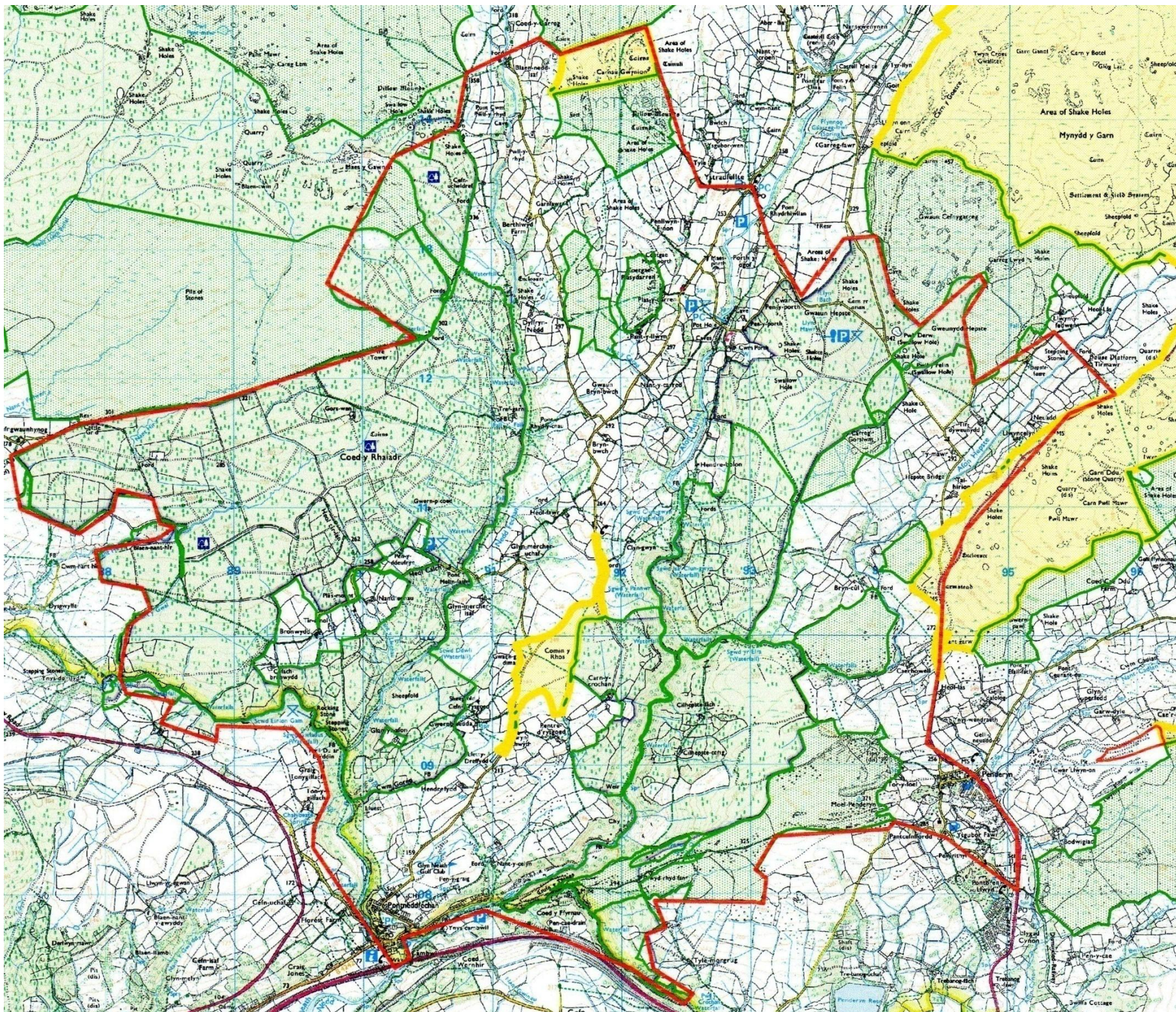
Map I: Boundary of Waterfall Country management plan area marked with red line.

1.2. Map of Landowners/Leaseholders in Waterfall Country

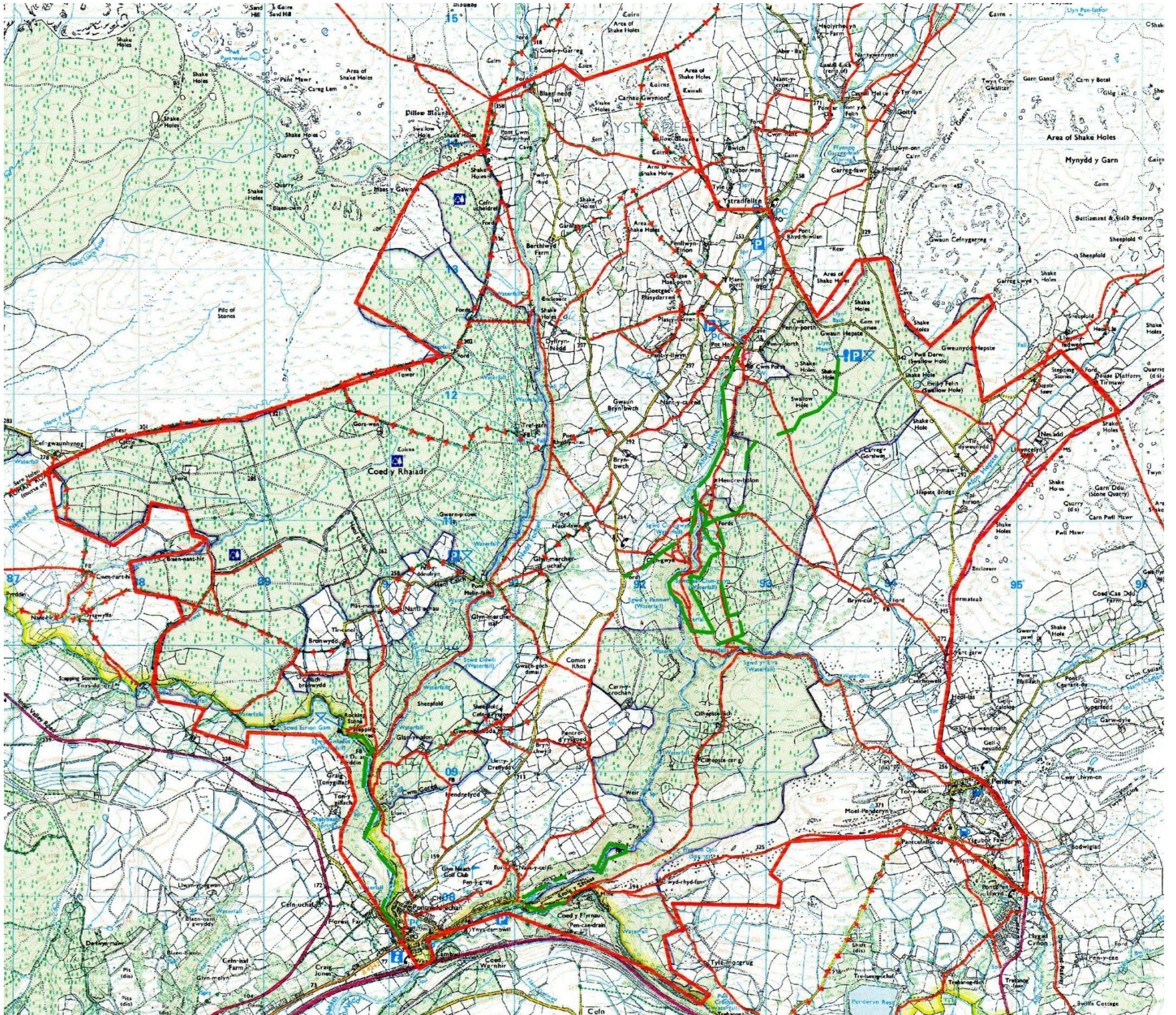


Map 2: Landowner boundaries are marked with purple borders.

1.3. Map of Open Access Land, PRow and Promoted Routes in Waterfall Country

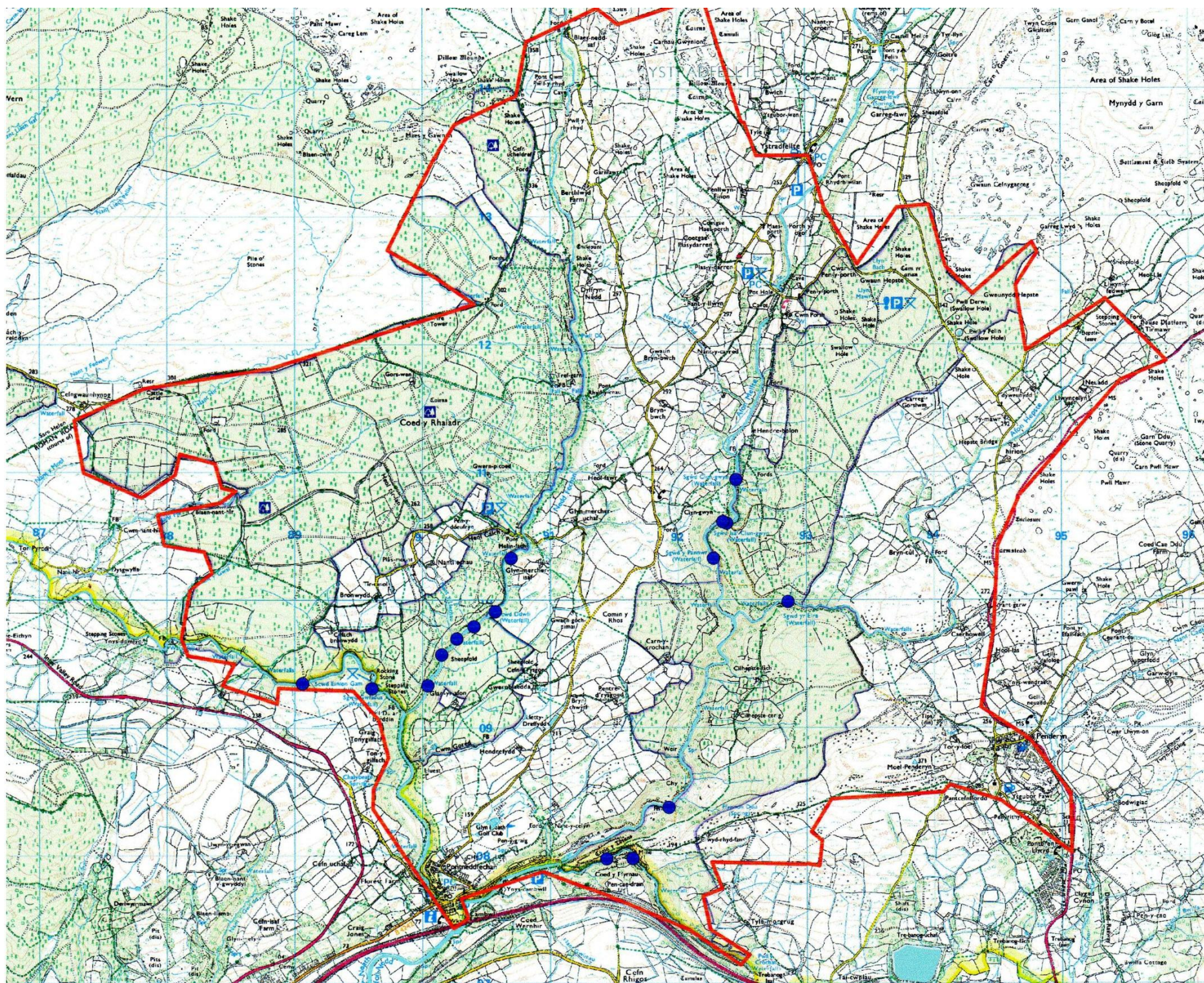


Map 3.1: Open Access Land; land with green border shows FCW Open Access Land, land with yellow border and yellow dotted pattern denotes common land.



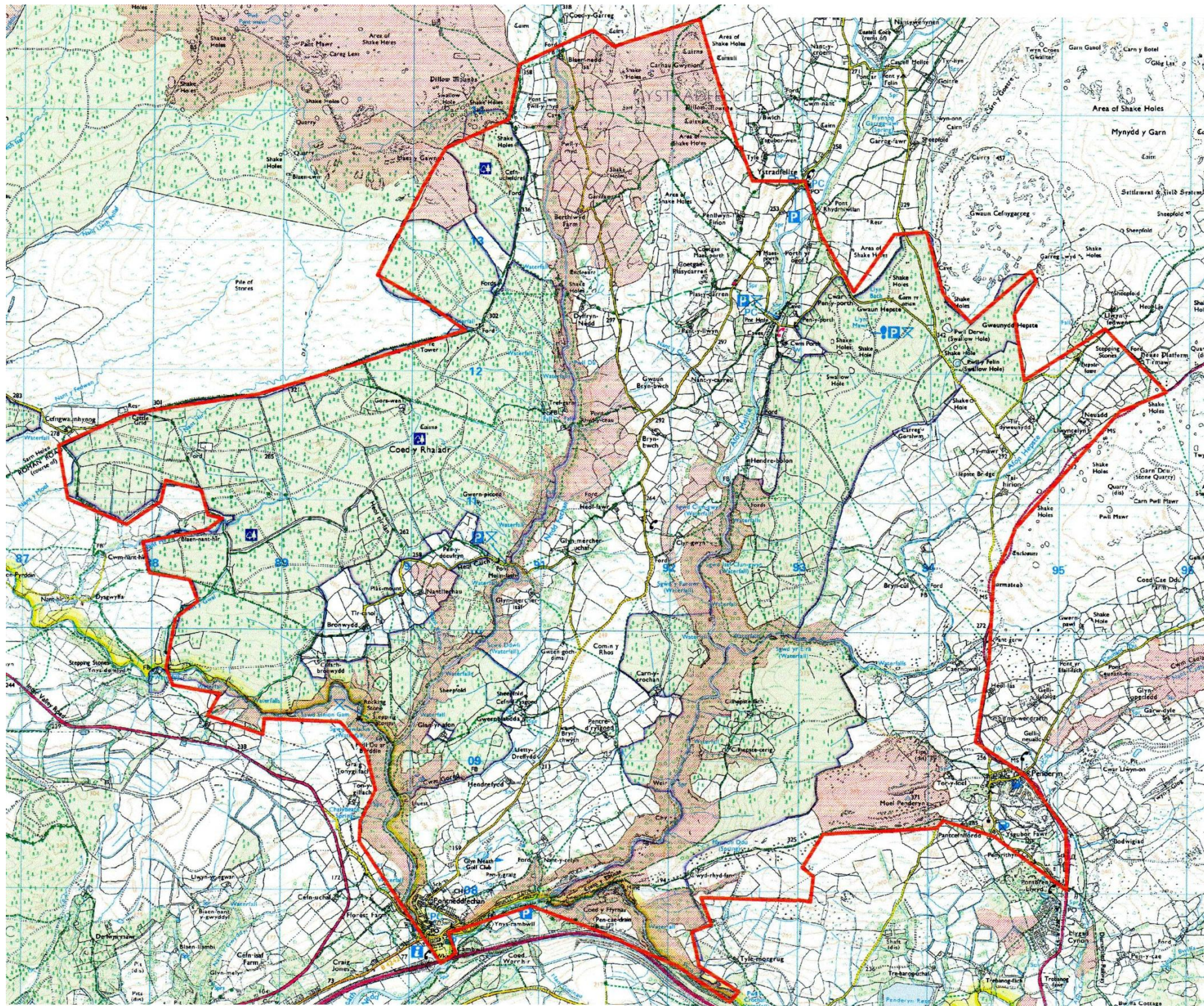
Map 3.2: RoW and promoted routes – red hashed lines denote RoW; green hashed lines denote promoted routes that do not follow RoW(sourced from ProPrinter layer).

1.4. Map of Rivers and Waterfalls



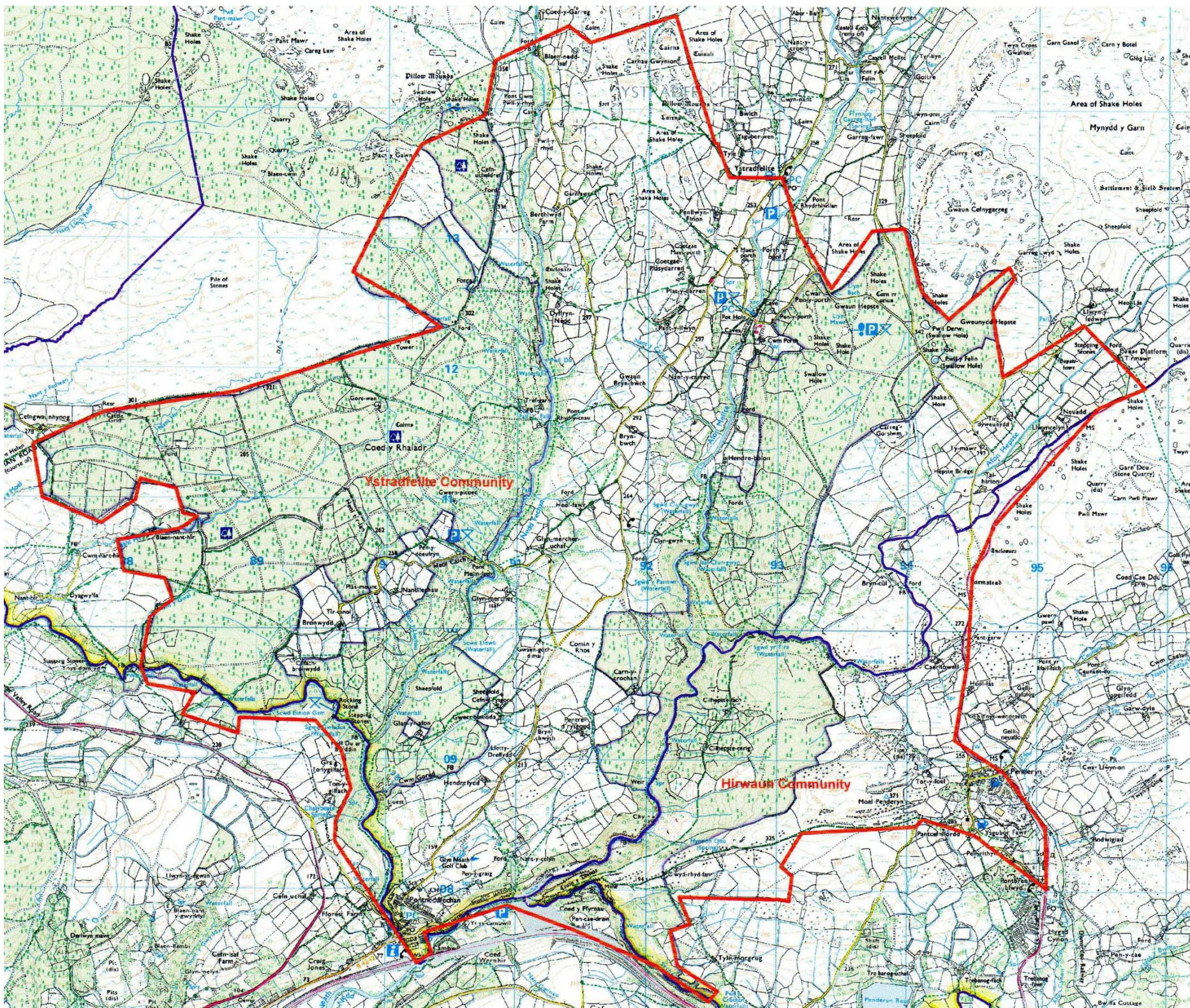
Map 4: Rivers and waterfalls – rivers are marked in blue; major waterfalls are denoted with a blue dot.

1.5. Map of SAC's and SSSI's



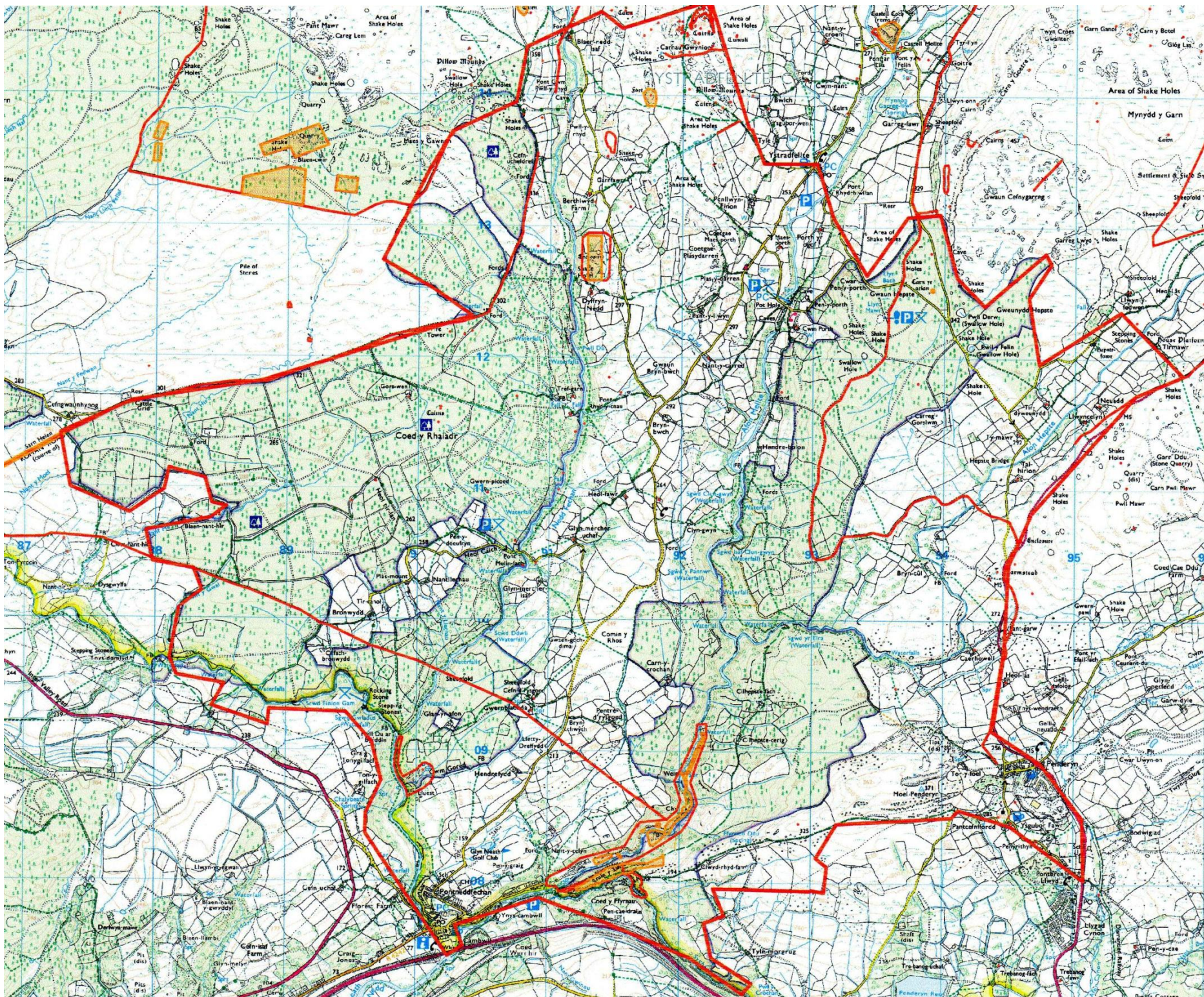
Map 5: SAC and SSSI's in the area – The SAC is marked with a purple border and purple hashed infill; SSSI's are marked by orange border and orange dotted infill. The SAC is difficult to distinguish as it is covered by the SSSI designation as well.

1.6. Map of Community Boundaries and Roads.



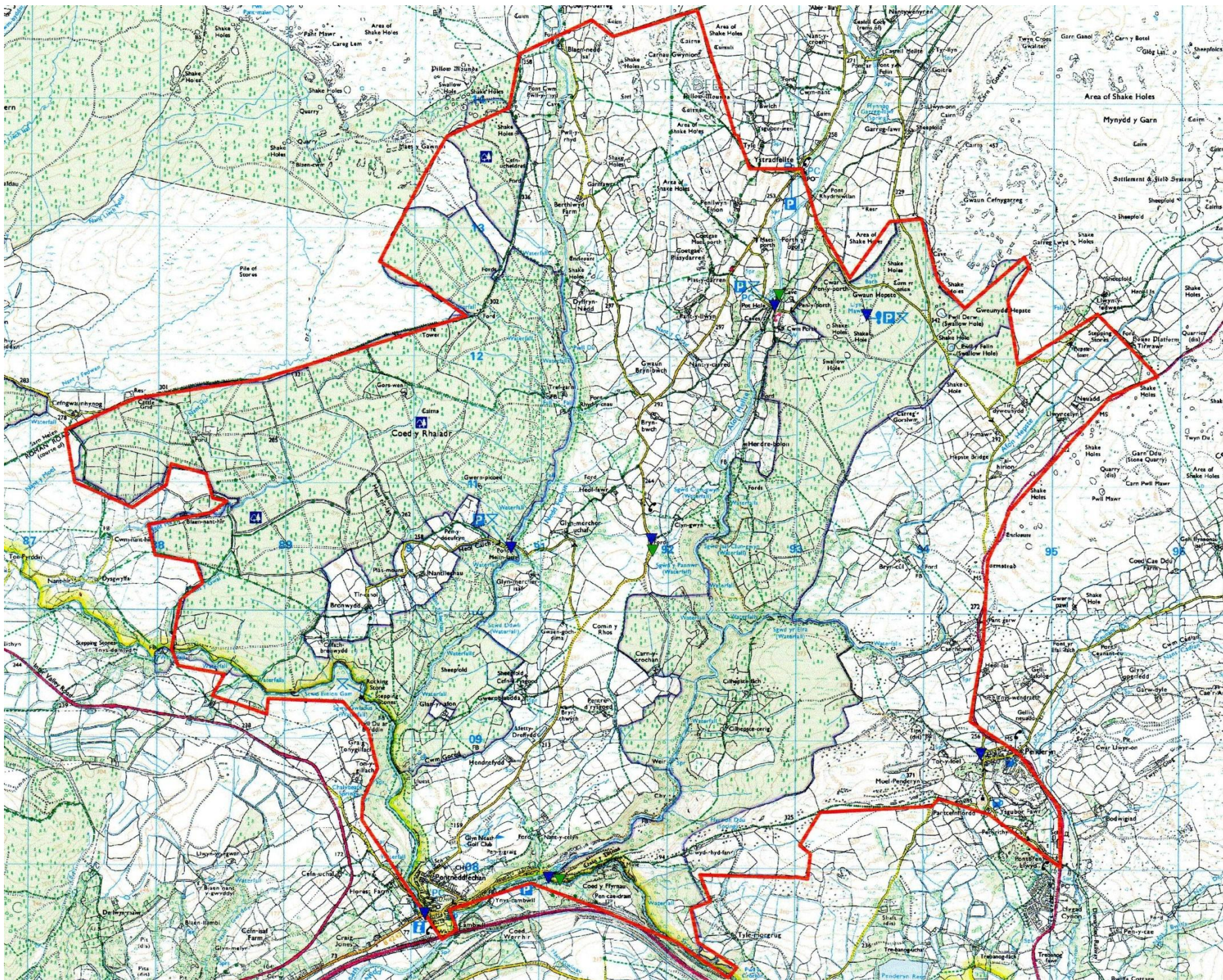
Map 6: Major community boundaries are marked in purple; roads are marked in grey.

1.7. Map of Archaeological Sites.



Map 7: Red lines and borders denote archaeological features; orange borders with an orange dotted infill denoted SAMs.

1.8. Map of Favoured Access Points



Map 8: Blue triangles denote the major favoured access points for walkers; green triangles denote the major favoured access points for activity groups.

Appendix 2

Footpath Work Plan

This plan is designed to ensure that footpaths and signage are maintained to a sufficient standard to withstand the pressures of visitors as well as climate.

Guiding Principles

- Carry out an annual detailed condition survey of routes and act on recommendations (see **Table 1**)
- Carry out a quarterly survey of safety signage and act on recommendations. Surveyor should record the following:
 - Whether provision of safety signs is sufficient.
 - Any signs that need replacing/repairing.
 - That a consistent message is being relayed.
- Regular footpath, fingerpost and waymark post monitoring will be carried out. Copies of survey sheets that flag up issues are to be left in the area warden's in-tray at Brecon HQ and FCW should receive regular copies of all survey sheets (see **Table 3**).
- Any issues flagged up by the public will be passed on to the access and right of way team at Brecon HQ to add to the work list.
- All planned work will take into account the likelihood of worsening weather conditions as a result of climate change (wetter summers).
- Unofficial/un-promoted/dangerous paths will be blocked off or diverted.
- Visitors will be encouraged to stay on the promoted routes.
- Ordnance Survey will be informed of any changes to routes.
- Erosion issues will be addressed.
- Waymarking and signage in the area will be improved.
- Footpath work will take into account the projected increase in visitor numbers of 11% per year.
- Before any work is carried out to paths within or surrounding the SAC/SSSIs, details of the work will be sent to CCW to gain permission. Work will be sensitively designed and take account of the Potentially Damaging Operations outlined in Appendix 12.
- The relative success of improvement works will be measured through the Visitor Survey carried out every two years.
- Routes that are either used regularly by the education team or that the education team would like to use if improvements were made, should be made a priority for maintenance and repair:
 - Angel Inn (Pontneddfechan) to Sgwd Gwladus to Pontneddfechan School.
 - Clun Gwyn car park to Sgwd yr Eira.
 - The Powder Trail (Gunpowder-works).

Annual detailed condition survey guidelines

Equipment:

- Clipboard and survey sheet (see **Table 1**)

- Pen or pencil.
- Measuring tape.
- Camera.
- Lightweight metal bar to probe soil depth.

Method:

- Decide on sections (this should be based on where condition change markedly) – only zones that are in poor conditions need to be added to the survey sheet.
- Record wetness (scale 1-5 – 5 being very wet)
- Record the width of the path (all paths that have become excessively wide should be recorded).
- Record roughness (scale 1-5 – 5 being very rough).
- The sketch map on the form should include:
 - Existing drainage and any issues in particular water flowing onto the path.
 - The condition of the surface i.e. muddy/rocky patches.
 - Any path braiding (the formation of parallel paths).
 - Notes of any nearby material that could be useful for path construction.
 - Points where vehicle access is possible.
- Record all distances.
- For any photographs taken, note the direction and location from which they were taken.
- The 'Work Required' sketch map should include recommendations of work to be carried out in order to address issues identified in the sketch map.

Once the surveys have been completed the path surveyor should meet with the Area Manager and Area Warden to discuss:

- Practical options available for each section
- Sources of materials for any options for each section
- Cost of labour for any options for each section
- Phasing of work e.g. drainage might be an immediate priority

A work plan should then be drawn up (prior to the annual review of the management plan in October) with details of the work required for each section (see **Table 4**) and a copy of this information should be forwarded to CCW for approval.

The budget for the work plan should be discussed in the annual management plan meeting.

Key Actions

- Carry out a detailed condition survey of all routes, waymarking, fingerposts and safety signage that are promoted in the woods of the waterfalls leaflet.
- Using these condition surveys, prioritise the work to be carried out.
- Add all planned work to the **Footpath Plan (Appendix 2)** and identify costings and deadlines for completion of work.
- Carry regular surveys of footpaths, signage and waymarking and act on any issues.

Priority routes for survey and maintenance

High priority routes (surveys to be completed by December 2009):

- Four Falls Trial
- Waterfalls link paths:
 - Sgwd Pannwr and Sgwd Isaf Clun Gwyn link path
 - Sgwd yr Eira link path
 - Sgwd Gwladus link paths
- The Elidir Trail (*already surveyed*)
- Sgwd Gwladus to Pontneddfechan school.
- Pontneddfechan village hall to the Gunpowder-works
- Clun Gwyn car park to Sgwd Clun Gwyn (via footbridge)
- Agreed access routes for gorge-walking – *part funded by SPLASH*

Medium priority routes (surveys to be completed by March 2010):

- Craig – y – Ddinas to Sgwd yr Eira route
- Sgwd yr Eira to Penderyn route

Low priority routes (surveys to be completed by June 2010):

- Craig y Ddinas to Penderyn route (via Moel Penderyn)
- Pont Melin-Fach to Pont Rhyd y Cnau route
- Pont Melin-Fach (Glyn Mercher Isaf farm) to Tays shop route
- Bridleway that heads south-west from Cwm Porth (BW25)
- Cwm Porth to Sgwd Clun Gwyn route (alongside river)
- Cwm Porth to Sgwd Clun Gwyn via Cwm Porth farm (FP42)
- Cwm Porth car park to Porth yr Ogof cave.

All tasks identified above have been added to the 5 year work plan (see Section 5).

Table I Detailed condition survey sheet

SITE..... SHEET NO..... DATE..... WEATHER.....					
DISTANCE TOTAL:	WIDTH:	WETNESS:	ROUGHNESS:	WORK REQUIRED	DECRPTION OF WORK REQUIRED

Table 2 Example detailed condition survey sheet (BTCV 2004)



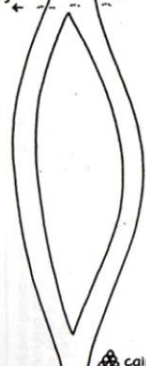
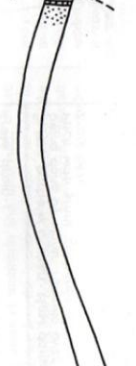


SITE		SHEET NO.		DATE		WEATHER	
31/1059	15°					define line of path	
20/1028	12°	bedrock				reconstruct pitching with one cut-off.	
20/1088	8°	old pitching				define line of path	
24/988	5°	muddy/ill defined section				build up path with locally-dug aggregate. Build 2 cross-drains with ditches. Landscape edges	
61/964	7°	wet and muddy, rocky, spreading ←		←		block off braid and landscape. Define line of path	
		flush					
							
		braid					
903							
		cairn					
DISTANCE	GRADIENT	x SLOPE	WIDTH	WETNESS	ROUGHNESS	WORK REQUIRED	DESCRIPTION
156 TOTAL	5-15°	3°	2-7m	2-3	2		

Table 3 Footpath patrol survey sheet




BRECON BEACONS
NATIONAL PARK

WATERFALLS COUNTRY – PATROL REPORT

ROUTE/ARE A [please circle]:	Four Falls Trail	Gunpowder Works	Dinas Rock	Pont-Melin Fach	Clun Gwyn	Other:
------------------------------------	---------------------	--------------------	------------	--------------------	-----------	--------

WARDEN(S)..... DATE..... WEATHER.....



Comisiwn Coedwigaeth Cymru
Forestry Commission Wales

	Details of Issue(s)	Grid reference	Action Taken [tick if issue was remedied + time taken]	Action required [details]
1. Footpath surface [drainage issues etc]				
2. Overhanging/fallen trees				
3. Encroaching vegetation				
4. Damaged/missing fingerposts				
5. Damaged/missing waymark posts or discs				
6. Benches/bbq's/picnic tables				
7. Bridges and duckboarding				
8. Fences, gates and stiles				
9. Sheep				
10. Litter				

*If more space is required, continue overleaf with details of issues no. e.g. No. 8 (Fences) - rail needs replacing on fence at SN123456 etc.

Issue No.	Continued from overleaf.....

**A PDF version of this form can be found at K:\\Documents\\Allstaff\\Waterfalls area\\Waterfalls man. plan\\Final Draft*

Table 4 **Footpath Work Plans** – to be completed as and when detailed condition surveys of paths have been carried out.

High Priority Routes

Route	Section no. (as detailed on annual detailed condition survey sheet – see Table I)	Eight figure Grid ref.	Task no.	Work required	Estimated costs
Four Falls Trial					
	e.g. section 4	SN91583452	3	Install duckboard over small stream	
				Repair/renew any damaged fencing to prevent sheep from entering the area.	
				Discourage access to Sgwd Clun-Gwyn Isaf from the west.	
Sgwd Pannwr and Sgwd Isaf Clun Gwyn waterfalls link path					
Sgwd yr Eira					

waterfall link path					
		SN92741005 to SN92851000	1	Repair steps and handrails down to falls on north side of river.	
		SN92881000	2	Make clear paths through rocks to waterfall.	
Sgwd Gwladus link paths					
The Elidir Trail					
				Improve signage and waymarking on the above route.	
Sgwd Gwladus to Pontneddfechan school					
		SN90180800	1	Remove stile and replace with wooden kissing gate.	
		SN90180800 to	2	Duckboarding across wet area (aprox. 26m)	

		SN90160804			
		SN90160804	3	Ditch eastern edge of path then double pipes for drainage across path (6m total of pipe).	
		SN90140805	4	Remove stile and replace with wooden kissing gate.	
		SN90140805	5	Ditch to aid drainage.	
		SN90130806	6	Replace old duckboard (2.5m) and surface with non-slip mesh.	
		SN90120822	7	Remove stile and replace with metal kissing gate.	
		SN90120822	8	Culvert and ditch work (directly after above task).	
		SN90100826	9	Duckboard (4m) over small stream.	
		SN90080831	10	Remove stile and replace with metal kissing gate.	
		SN89940856	11	Duckboarding over boggy area (6m).	
		SN89550851	12	Shuttering (7m).	

		SN89950864	13	Steps –approx 5 at 1m wide.	
		SN89940866	14	Shuttering (6m).	
		SN89930869	15	Steps – approx 3 at 1m wide.	
		SN89980878	16	Remove stile and replace with wooden kissing gate.	
		SN89860902	17	Replace duckboard with small bridge (3m).	
		SN89870909	18	Shuttering and handrail (7-10m) and take path away from edge of drop.	
		SN89880911	19	Remove rails from bridge.	
		SN89880911 SN89940854	20	Widen route.	
Pontneddfechan village hall to the Gunpowder-works					

Clun Gwyn car park to Sgwd Clun Gwyn (via footbridge)					
Agreed access routes for gorge-walking (TBC once project is complete)					

Medium Priority Routes

Route	Section no. (as detailed on annual detailed condition survey sheet – see Table I)	Eight figure Grid ref.	Task no.	Work required	Estimated costs
Craig y Ddinas to Sgwd yr Eira					

	e.g. section 4	SN91583452	3	Install duckboard over small stream	
				Renew and reroute steps and handrails down to falls on south side of river.	
				Improve signage and waymarking on this route.	
Sgwd yr Eira to Penderyn					

Low Priority Routes

Route	Section no. (as detailed on annual detailed condition survey sheet – see Table I)	Eight figure Grid ref.	Task no.	Work required	Estimated costs
Craig y Ddinas to Penderyn route (via Moel Penderyn)					

	e.g. section 4	SN91583452	3	Install duckboard over small stream	
Sgwd Pannwr and Sgwd Isaf Clun Gwyn link path					
Pont Melin-Fach (Glyn Mercher Isaf farm) to Tays shop route					
Bridleway that heads south-west from Cwm Porth (BW25)					
Cwm Porth to Sgwd Clun Gwyn route					

(alongside river)					
				Improve signage and waymarking on this route.	
				Repair/renew any damaged fencing to prevent sheep from entering the area.	
Cwm Porth to Sgwd Clun Gwyn via Cwm Porth farm (FP42)					
Cwm Porth car park to Porth yr Ogof cave.					
				Provide steps as necessary and gravel infill on path from double stiles down to main cave entrance.	

Appendix 3

Visitor Data

People Counter Data

Table 5 : Summary of people counter data and visitor numbers in waterfalls area - 1993-2007

Actual	Estimated	Estimations reached through estimating visitors per month and cross comparison with sites showing accurate per annum data.
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Clun Gwyn moving magnet (CLUN)

	1993	2000	2001	2002	2003 (18/10/03 - 30/12/03)	2004	2005 (9/2/05 - 7/6/05)	2006	2007
Totals	n/a	No data	No data	No data	3538	20941	9423	No data	No data
					18459		21900		

Totals visitors pa	n/a	n/a	n/a	9230	10471	10950
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Gunpowder works pressure slab (GUNP)

	1993	2000	2001	2002	2003 (18/10-30/12)	2004	2005	2006	2007
Total	n/a	No data	No data	No data	627	Inaccurate data	Inaccurate data	No data	No data

3271

Totals visitors pa	n/a	n/a	n/a	1636	n/a	n/a	n/a	n/a
--------------------	-----	-----	-----	------	-----	-----	-----	-----

Hendre Bolon riverbank data (Mellte)

	1993	2000	2001	2002	2003	2004 (22/5/04 - 30/12/04)	2005	2006	2007
Total	n/a	No data	No data	No data	No data	23978	no data	no data	no data

41105

Totals visitors pa	n/a	n/a	n/a	n/a	20553	n/a	n/a	n/a
--------------------	-----	-----	-----	-----	-------	-----	-----	-----

Nedd fechan double slab

	1993	2000	2001	2002	2003 (18/10-30/12)	2004 (01/01 - 02/09)	2005	2006	2007
Total	n/a	No data	No data	No data	1651	6437	Inaccurate data	No data	No data

8614 9655

Totals visitors pa	n/a	n/a	n/a	4307	4828	n/a	n/a	n/a
--------------------	-----	-----	-----	------	------	-----	-----	-----

Penderyn

	1993	2000	2001	2002	2003 (18/10-30/12)	2004 (01/01 - 29/03)	2005 (01/10-30/12)	2006	2007
Total	n/a	No data	No data	No data	1082	1535	3065	Inaccurate data	No data

5645 6140 12260

Totals visitors pa	n/a	n/a	n/a	2823	3070	6130	n/a	n/a
--------------------	-----	-----	-----	------	------	------	-----	-----

Porth yr Ogof downstream pressure slab

	1993	2000	2001	2002	2003 (18/10-30/12)	2004	2005	2006	2007
Total	n/a	No data	No data	No data	3851	24258	Inaccurate data	Inaccurate data	No data

20092

Totals visitors pa	n/a	n/a	n/a	10046	12129	n/a	n/a	n/a
--------------------	-----	-----	-----	-------	-------	-----	-----	-----

Porth yr Ogof pyro sensor

	1993	2000	2001	2002	2003 (18/10-30/12)	2004 (01/01 - 02/09)	2005	2006 (01/01-23/5 and 2/11 - 30/12)	2007
Total	n/a	No data	No data	No data	10328	40114	54284	25963	47212

55500

44508

Totals visitors pa	n/a	n/a	n/a	5164	27750	27142	22254	23606
--------------------	-----	-----	-----	------	-------	-------	-------	-------

Porth yr Ogof upstream path

	1993	2000	2001	2002	2003 (18/10- 30/12)	2004 (17/05 - 08/09)	2005 (01/01- 31/08)	2006	2007
Total	n/a	No data	No data	No data	3683	2784	4646	No data	No data
					7917	8300	6969		
Totals visitors pa		n/a	n/a	n/a	3959	4150	3485	n/a	n/a

Gwaun Hepste

	1993	2000	2001	2002	2003	2004	2005	2006	2007
Totals visitors pa	n/a	12185	11048	9554	8114	11555	12089		

Cwm Porth Car park

	1993	2000	2001	2002	2003	2004	2005	2006	2007
Totals visitors pa	26405	32265	21734	31471	33913	79116	76081	88328	

	2000	2001	2002	2003	2004	2005	2006	2007
Total visitor numbers per year:	78692	67024	75267	76269	126401	127439	aprox 141,000	n/a

* Where inaccurate or no data exists for a site numbers have been used from the last year with complete and accurate data.

Percentage increase/decrease from previous recorded year:	22%	-15%	12%	1%	66%	0.82%	aprox 11%
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	Most accurate and complete year			
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Visitor Survey 2007 Summary

A visitor survey to the Waterfall Area was conducted in summer 2007 by the Brecon Beacons National Park Authority, building on a survey of a similar kind conducted between spring 1993 and spring 1994. Although both surveys slightly differed in structure and content, both aimed to capture information and data on recreational activities, visitor actions and movements and numbers to guide management decisions and assess their effectiveness. Comparisons between the two surveys were made whenever possible based data compatibility.

- 57% of the respondents were from Wales. 50% travelled from the South Wales area covering a distance of 30-39 miles. Visitors from England followed closely in rank at 38%. There were very few European and international visitors.
- Most of the visitors to the area came in groups. 38% consisted of couples, 27% of families, 11 % of walkers and another 11% of friends.
- 48% of the respondents came in groups of two, 15% in groups of three and 12% in groups of four. Larger groups were less frequent and were mainly composed of outdoor groups, large groups of friends and extended family groups.
- 74 % of the respondents were fairly equipped. 22% were ill equipped, some wearing sandals, flip flops and casual shoes.
- The primary reasons for visiting the area were given as walking and the waterfalls. Other reasons included picnicking, walking the dog, and having a family day out.
- The main way that the area became known to visitors was through recommendations by family and friends. Another large proportion of visitors had previously visited and was making a return visit. Guidebooks and the internet followed in rank.
- Around half of the respondents were visiting the area for the first time. 22% were on their second visit and 15% were making their third to fourth visit.
- A great majority consensus on the high rating of the visitor experience. The great scenic splendour was given as the main reason behind this. This was followed by the waterfalls and then by the natural beauty and wildlife features. 14 of the reasons given revolved around the theme of enjoying the experience itself. However, negative rating scores of the visitor experience were explained by reasons relating to signage, the closure of Sgwd yr Eira waterfalls and quality and marking of footpaths.
- When asked to rate the standard of the site's management, answers were skewed towards the lower positive end of the scoring scale. Category three received the largest number of votes with 30 out of the 138 respondents scoring at this level on the scale, followed by category two with 20 respondents. 13% gave a negative rating of 7.
- When asked about means of improving the site, most respondents suggested signage improvements. This was followed by better facilities then by footpath improvements, then by dealing with litter problems.
- In 2007, when asked whether if at any point they got lost, 81% of the respondents said no. 26 respondents forming 19% did get lost, 20 of which did not use any maps, while the other 6 used OS maps. Only 7% used the *Waterside Places* leaflet and most of those gave it an

above average rating. In 1994, 25% of the survey respondents reported getting lost. Most people spent around 3 hours on site.

Appendix 4

Access and Recreation Surveys

Survey of Alternative Recreation Sites – Brecon Beacons National Park (1993)

Waterfall Country is known to be used by a large number of visitors. Promotion of alternative sites by local authorities and private owners could lead to a reduction in numbers using the area. A short survey was undertaken in 1993 to assess reaction of some owners of suitable sites to the suggestion that these sites be promoted as alternative venues to the Waterfall Country.

Results and Conclusions:

100% of sites surveyed wished to increase visitor numbers; most are substantially under-utilized.

A number of sites appear to be suitable to promote as alternatives to Waterfall Country. This is especially true for family groups. However the majority of sites do not have the same appeal as the waterfalls.

Alternative sites surveyed by postal questionnaire:

- Aberdulais Falls (NT)
- Bryn Bach Park (Gwent CC)
- Mountain Centre (BBNPA)
- Craig-y-nos (BBNPA)
- Afon Argoed (West Glamorgan CC)
- Gethin Woodland Park (West Glamorgan CC)
- Garwnant Centre (FCW)
- Afan Countryside Centre (FCW)
- Dare Valley Park (Mid Glamorgan CC)

Site Survey of Recreational Use, Brecon Beacons National Park - October 1994

Although it was clear at this time that the area was subject to substantial recreational pressure, insufficient objective data existed upon which management decisions could be based. To correct this a recreation/visitor survey was completed in May 1993. A detailed report of this survey is held at the National Park Authorities Offices in Brecon.

Objectives of survey:

To provide reliable and objective information on the numbers and activities of visitors to Waterfall Country.

To provide a record against which future trends and the effectiveness of management actions can be judged.

Methodology:

A range of surveying systems were employed to collect the information required. The principal system used on-site interviews conducted by paid surveyors. Survey locations were as follows: Cwm

Porth, Pont Melin-fach, The White Horse - Pontneddfechan, Craig y Ddinas, Penderyn and Gwaun Hepste. Surveying began on 23rd April 1993 and continued until 31st August 1993 (Whitfield October 1994).

Discussion of results:

1134 visitors interviewed

70% lived within 1 hr of site

90% arrived in vehicles

60% returning to the area, 40% first time visitors, 20% of which were directed there by information centres

1 in 5 visitors go on a long walk (more than half a day); 70% only on a short walk (half a day).

Activities: majority come to walk to the waterfalls. More 'adventurous pursuits' attract a smaller number of groups, although the size of groups were much larger.

57% of visitors did not learn about the area through any means that could be directly influenced i.e.: publications, information centres etc.

The vast majority of visitors did not object to contributing towards the cost of managing the area for conservation and enjoyment. The example given as a method of money collection was paying a car parking fee.

The vast majority of visitors did not object to areas being temporarily closed in the interest of conservation management.

25% became lost or confused during their visit; this normally decreases their enjoyment and increases time on site, erosion and off-path disturbance.

(Whitfield October 1994).

Gorge-walking Survey – Brecon Beacons National Park (1995)

Below is a brief summary of this survey:

- 43 outdoor centres completed questionnaires
- Average group size was 10
- Other identified areas for gorge-walking were – Blaen-y-Glyn, Clydach, Upper Tawe and Caerfanell below Talybont Reservoir.
- 23% of respondents visited the Waterfall Country >6 times p.a., 16% visited 6 times pa and 19% visited the area < 6 times p.a.
- Estimates for the numbers visiting the area was a minimum of 1860 p.a.

Waterfall Country Visitor Survey- BBNPA (2007)

**A full copy of this report can be found in the BBNPA library in Brecon HQ.*

Objectives of the survey:

In line with its statutory purposes, the Brecon Beacons National Park Authority needs to be equipped with information and data on recreational activities, visitor actions, movements and numbers to guide its management decisions and assess their effectiveness

In order to capture reliable and objective data, a visitor survey to Waterfall Country was conducted during August/September of 2007 – a copy of which is held in the National Park Authorities offices in Brecon. Although the format of the survey differs from the 1993/1994 survey, similar information and data were collated and comparisons were made whenever possible. Both surveys shared similar overall aims and objectives which were to gather information for the purpose of:

Upgrading the Waterfall Country in order to enhance the experience that visitors have there.

Ascertain what aspects of the area need upgrading.

In 2007, more specific objectives fell under three categories.

First was to find out who the visitors were and gather information on their profiles.

The second category was to find out about their expectations before the visit, if the visit was their first and how they found out about the area.

The third category looked at their actual experience and whether that met their initial expectations. This was divided into their general impressions and their specific comments with regards to management of areas that fell within signage and footpath maintenance.

Methodology:

The 2007 survey consisted of structured face-to-face interviews with visitors. . As public transport serving the area is minimal with no railway station and a few bus services, car parks were targeted to capture visitor impressions before and after their visit. This had the implication that the surveys were biased towards car users.

The 2007 survey dates were selected to capture visitor frequency on normal weekends, bank holiday weekends and normal week days. The time that was spent on site was identical on all the days the interviews took place. Overall 138 questionnaires were completed.

Interviews were conducted within the car parks of the 7 main access areas: Cwm Porth, Clyn-gwyn, Craig y Ddinas, Pontneddfechan – near the Angel Inn, Gunpowder Works, Pont Melin-fach, and Gwaun Hepste.

Summary of results:

A visitor survey to of Waterfall Country was conducted in summer 2007 by the Brecon Beacons National Park Authority, building on a survey of a similar kind conducted between spring 1993 and spring 1994. Although both surveys slightly differed in structure and content, both aimed to capture information and data on recreational activities, visitor actions and movements and numbers to guide management decisions and assess their effectiveness. Comparisons between the two surveys were made whenever possible based upon data compatibility.

In 2007, most of the visitors to the area came in groups. 38% consisted of couples, 27% of families, 11 % of walkers and another 11% of friends. In the 1993/1994 survey, around two thirds of the respondents were categorised as 'small group adults', around a third were 'small group adults with children'. The categories '>5 informal' groups and '>5 organised' weighed 3% each.

In 2007, 48% of the respondents came in groups of two, 15% in groups of three and 12% in groups of four. Larger groups were less frequent and were mainly composed of outdoor groups, large groups of friends and extended family groups. There was no information taken directly on group size in the 1993/1994 survey.

In 2007, age groups ranged from late teens to seventies. As only the respondents to the questionnaire gave their age, the data did not completely reflect the whole spectrum and frequency of the visitors' ages.

In 2007, 74 % of the respondents were fairly equipped. 22% were ill equipped, some wearing sandals, flip flops and casual shoes.

In 2007, the primary reasons for visiting the area were given as walking and the waterfalls. Other reasons included picnicking, walking the dog, and having a family day out. Similarly the 1993/1994 survey revealed that walking, visiting the waterfalls and picnicking were the main reasons for visiting the area

In 2007, the main way that the area became known to visitors was through recommendations by family and friends. Another large proportion of visitors had previously visited and were making a return visit. Guidebooks and the internet followed in rank. Similarly in 1994, word of mouth was the prominent means by which visitors had come to learn about the area. This was followed by maps and 'chance'. Leaflets and information centres were in the bottom choices and constituted 9% and 4 % respectively.

In 2007, around half of the respondents were visiting the area for the first time. 22% were on their second visit and 15% were making their third to fourth visit. In 1994, the first time visitors constituted 44%, and were followed by those visiting only once a year with 23%. 18% were visiting more than once a month.

In 2007, 57% of the respondents were from Wales. Visitors from England followed closely in rank at 38%. There were very few European and international visitors. In 1994, respondents were asked about their travelling time to capture similar information. 71% of the visitors travelled from within one hour radius of the site. 13% travelled for 1-2 hours, 8% for more than 2 hours, and 8% used no vehicles.

In 2007, 50% travelled from the South Wales area covering a distance of 30-39 miles.

The 2007 survey revealed a great majority consensus on the high rating of the visit experience. The great scenic splendour was given as the main reason behind this. This was followed by the waterfalls and then by the natural beauty and wildlife features. 14 of the reasons given revolved around the theme of enjoying the experience itself.

Negative rating scores of the visit experience were explained by reasons relating to signage, the closure of Sgwd yr Eira waterfall and the quality and marking of footpaths

83% of respondents voiced the high likelihood of their return to the area and gave ratings between 8 and 11 on the scale of 1-11 to express this.

In 2007, the high appreciation of the area's scenic beauty was reiterated in the responses to a question on their reason to return or not return to the area. 22 out of 138 respondents explained that there was much more to see. Negative responses were mainly attributed to distance and some felt that one visit was enough.

In 2007, when asked to rate the standard of the site's management, answers were skewed towards the lower positive end of the scoring scale. The category that received the largest votes was 3 with 30 out of the 138 respondents followed by 2 with 20 respondents. 13% gave a negative rating of 7. In 1994, 79% agreed with making payments towards parking while 85% were 'ok' about the waterfall closure.

In 2007, when asked about means of improving the site, most respondents suggested signage improvement. This was followed by better facilities then by footpath improvement, then by dealing with litter problems.

In 2007, when asked to rate the signposts' effectiveness, the respondents gave mixed reviews. Although some of the higher positive ranks of 7, 8 and 9 were chosen by more respondents, there were many respondents who chose below average rankings.

In 2007, when asked on ways to improve signposts' shortcomings, many respondents chose not to comment. Those that did comment pointed out that clarity and frequency of signs and way marking can be improved. 19 out of the 138 respondents requested more detail. Many respondents pointed out the need for specific information on bridges and expressed the need for maps with specific locations and reference to the nearest waterfall.

In 2007, when asked to rate the footpath surface quality most respondents gave an over the average score of 6 and above. The category 9 came first with 30 out of the 138 respondents' votes.

In 2007, when asked how footpaths can be improved, the reason category 'other' scored the highest and this mainly revolved around the theme of safety with steep drops requiring handrails, fencing and improved access. This was followed by suggestions to improve stiles and bridges, then by more interpretations, then by information on erosion issues.

In 2007, when asked whether if at any point they got lost, 81% of the respondents said no. 26 respondents forming 19% did get lost, 20 of which did not use any maps, while the other 6 used OS maps. Only 7% used the *Waterside Places* leaflet and most of those gave it an above average rating. In 1994, 25% of the survey respondents reported getting lost.

In 2007, most people spent around 3 hours on site.

Visitor Numbers in the Waterfall Country (2008)

In 2008 a review of data collected from visitor counters and sale of car park tickets between 1993 - 2006 yielded the following information:

- Between 1993 and 2000 there was an increase of 22% in visitor numbers to Cwm Porth car park from 26,405 to 32,265 visitors pa (visitor numbers at Cwm Porth generally mimic increases elsewhere so are a fairly accurate indicator of trends across the wider area).
- Over the period 2000-2006 there was an overall increase of 79% in visitor numbers to the Waterfall Country. The most significant increase in numbers was in 2004 when there was an increase in numbers to Cwm Porth of 133% due to major improvements made to the car park. There were still smaller increases elsewhere during this year. More recent annual increases in visitor numbers are estimated at around 11%.
- Between 2000 and 2004 (the year for which the most accurate data is available) there was an increase of 59% in visitor numbers from 78,692 to 124,401.
- The impact of the foot and mouth epidemic is clear – in 2001 there was a drop of 15% in visitor numbers though this recovered the following year.

The most up to date information for visitor numbers to the area is in 2006. This figure is an estimate made from data from Cwm Porth car park in 2006 along with data from 2005 for other visitor counters. The approximate figure is 141,000 visitors per year. Actual numbers are expected to be slightly higher than this.

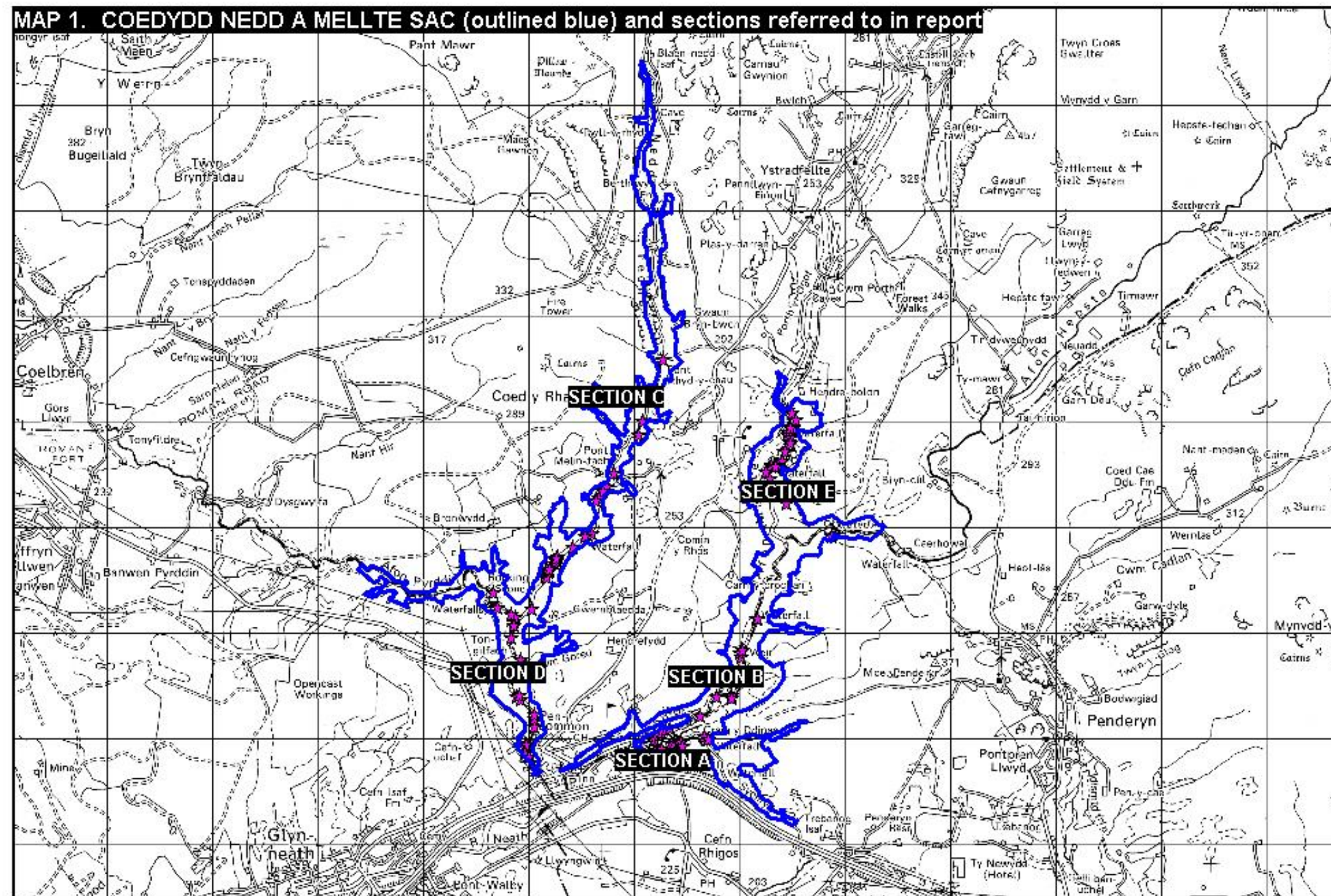
Below is a table showing year on year visitor numbers:

	2000	2001	2002	2003	2004	2005	2006
Total visitor number per year	78692	67024	75267	76269	126401	127439	aprox. 141,000
Percentage increase/decrease from previous recorded year	22%	-15%	12%	1%	66%	0.82%	aprox 11%
* Where inaccurate or no data exists for a site, numbers have been used from the last year with complete and accurate data.							
	: Most accurate and complete year						

Coedydd Nedd A Mellte Special Area of Conservation (SAC) and Dyffrynnoedd Nedd A Mellte A Moel Penderyn Site of Special Scientific Interest (SSSI) - PATH AND RIVER BANK EROSION SURVEY [Interim Report], CCW (2008)

In 2007, the Countryside Council for Wales (CCW) undertook a rapid survey to monitor impacts on habitats due to public pressure and recreational activities in Coedydd Nedd A Mellte SAC/ Dyffrynnoedd Nedd a Mellte, a Moel Penderyn SSSI, within the Brecon Beacons National Park Authority (BBNPA). This survey gave an indication of damage to the SAC/SSSI habitats resulting from high-level usage of the footpath system and also from recreational activities off the footpath system. Damaged areas were illustrated by a series of photographs and captions.

Map I (below) shows the rivers surveyed during each visit and the distribution of the sites with some damage or erosion. Further detail and photographs are available in the full report held at the National Park Authority's offices in Brecon.



Produced by CCW on: 13 March 2008

Scale 1:49131

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Map 1. Distribution of damaged and eroded sites.

Evaluation of Waterfalls Welcome panels 2008-2009 (Interim results)

Total survey size 30 – survey work ongoing (note over 100 surveys now completed but awaiting data processing)

Methodology: questionnaire and observation of users and non users to see if we are supplying the best information for visitors when they arrive in the Waterfall Country. It aimed to evaluate the six orientation panels located at the main gateways.

Question	Answer
Main reason for coming to the site today	80% Waterfalls 80% walking 17% Dog walking 17% Outdoor recreation 3% Facilities
If you looked at the sign:	(53% did look at the panel)
What do you want to know about today?	82% Waterfall Country 62% Local walking routes 59% Site/local information 59% Plants and animals 53% The National Park 18% Safety 6% Geopark

Did you read the panel?	75% Part of it 25% All of it
Did you find the information you were looking for	100% Yes
Will you do anything different as a result of looking at the panel?	100% No
If you didn't look at the sign:	(47% didn't look at the panel)
Why didn't you look at it?	62% Had used it before 23% Hadn't seen it * 15% Not of interest 8% Will use it on my way back Result recorded at Pontneddfechan, Gwaun Hepste & Craig y Ddinas
Which method do you prefer to get information?	86% Leaflet 86% Visitor Centre 71% Internet 64% Panel 29% Other... map/home internet

	7% Information Assistant
On the following scale (11 point scale) how important would you find the following information on a panel here?	86% Information on the Waterfall Country 80% Information on this site/local 80% Local walking routes 77% Information on the National Park 74% Information about plants and animals 55% Safety Information e.g. what to wear, how to stay safe etc 49% Information on the Geopark
Notes	13% asked what a Geopark was 7% said there are too many safety signs in the area.

Appendix 5

Favoured Access Points

Adventurous Activity Groups

Craig y Ddinas FCW car park: With a circular route getting into the lower stretches of the Afon Mellte by the bridge then heading up the Afon Sychryd to Bwa Maen. They then normally scale Sgydau Sychryd before exiting the river at the Silica Mines. From here they will either take the bridleway back down to Craig y Ddinas car park or they will head north towards the Gunpowder Works to a site know as Looneys Leap (SN919083). Here they will jump off various rocks into the water, before heading back to Craig y Ddinas car park along the Powder Trail on the northern banks of the Afon Mellte, or along the narrow path on the southern banks of the Mellte.

Clun Gwyn roadside car park: With a circular route using the Clun Gwyn waterfalls and occasionally Sgwd yr Eira. Frequently they will take the rights of way (RoW) down to Sgwd Isaf Clun-Gwyn and miss out Sgwd Clun-Gwyn. Older groups – such as those on a stag or hen weekend – will sometimes do a linear route all the way down to Craig y Ddinas car park.

Cwm Porth BBNPA car park: Caving groups who also want to do some gorge-walking will use the RoW south of Cwm Porth to the Clun Gwyn waterfalls.

Walkers

The Angel Inn, Pontneddfechan: With a circular clockwise walk, taking in the Nedd Fechan returning alongside the Afon Mellte to complete the walk or with a linear walk up to Sgwd Gwladus.

Gwaun Hepste FCW car park: Using the ‘Four Falls Trail’ to access the waterfalls or using the forest road section of the ‘Four Falls Trail’ for dog walking.

Clun-Gwyn roadside car park: With a shorter walk down to the first waterfalls – Sgwd Clun-Gwyn. Some venture further along the ‘Four Falls Trail’ after getting to this point as they may wish to experience Sgwd yr Eira.

Craig y Ddinas FCW car park: With a circular route using the lower stretches of the Afon Mellte and Gunpowder Works.

Appendix 6

Car Parks

Car Park	Grid Ref.	Current Ownership	Picnic site	Toilets
Cwm Porth	SN928124	BBNPA – on lease	Yes	Yes
Bridge Cave	SN911140	Private - Blaen-nedd Isaf farm	No	No
Pont Melin-fach	SN907104	FCW	Yes	No
Clun-Gwyn	SN918105	Section 9 common	No	No
The Angel Inn, Pontneddfechan	SN901077	Private – Angel Inn	No	Yes
Craig y Ddinas	SN910080	FCW	Yes	No
Penderyn	SN945089	Private	No	No
Gwaun Hepste	SN935123	FCW – managed by BBNPA	Yes	No
Ystradfellte	SN929134	Unknown	No	No

Appendix 7

History of Waterfall Country

The National Museum of Wales holds artefacts from this area dating back to the Neolithic age. A magnificent bronze axe-head has been recovered from a field just outside the Waterfall Country in Pontneddfechan. There is also an important assemblage of Iron Age artefacts discovered in Llyn y Fan Fawr 6km west of the area whilst Sarn Helen road is a reminder of past Roman presence and the Normans annexed Forest Fawr making it a jealously guarded preserve for hunting deer.

In medieval times some local men were recruited by the military, trained at Tretower Court and took part in the Battle of Agincourt.

The Silica Mines

In the 1780s, quartzite (high silica material) was quarried from the Millstone Grit series of rocks near Craig-y-Ddinas, and in 1807 a tram-road, known as Dr Bevan's Tram-road, was built to carry the silica rock to the Neath Canal. The silica Refractory bricks made from very pure silica rock had heat resistant properties which made them ideal useful for lining the furnaces in ironworks and gas retort. In 1823, the Quaker industrialist William Weston Young, having leased an area of land from the Marquess of Bute, invented a process for manufacturing silica bricks (by the Dinas Firebrick Company in Pont Walby (Pritchard 1985)), and the mining of quartzite continued in Craig-y-Ddinas area until eventually an underground area 1000 yards by 500 yards was worked. Brickworks were built in a number of locations around Pontneddfechan and Glynneath and a thriving industry developed. For example, when Young's lease ran out in 1843, the re-named Riddles, Young and Co. Firebrick Company moved to new premises on the Green, Neath (Pritchard 1985). The silica mines were worked right up to the 1960s, their product in the later stages being transported to Swansea brickworks.

Limestone Quarrying

Limestone was also extracted from Craig y Ddinas area and the present face of the rock is a manufactured, not a natural one. One interesting use for local limestone was for the making of firegrate mantels. The limestone from below Bwa Maen contained impurities of iron which meant that when polished the limestone had a marble like appearance. Slabs were exported to London for use in fine houses under construction there.

The Gunpowder Works

In 1857, another industry was established in the area – gunpowder manufacture. Within the deep valley of the Mellte, beyond Craig y Dinas, the Vale of Neath Powder Company built its factory alongside the river, harnessing the power of the river to drive the mill machinery for crushing and mixing the ingredients necessary for black powder manufacture. In 1862, under Curtis and Harvey, it was merged with Nobel's Explosives Co, which became incorporated into Imperial Chemical Industries Ltd (ICI) in 1926 (Pritchard 1985). Many trees were cut down, both as a firebreak and to be converted into charcoal for the gunpowder. About 65 people were employed in the works which operated right through until December 1931 when black powder was taken off the home office 'permitted list of explosives'. Owing to the possibility that the fabric of the building could be

impregnated with gunpowder, the remains were purged with fire for safety reasons. The BBNPA now owns the site and maintains some pleasant walkways along the banks of the Mellte there.

Other Industries

Another industry in the area, probably until the turn of the 20th century, was clog making. Alder trees were harvested by coppice management and blanks were fashioned from the wood to make the soles of clogs. After drying and shaping these were dispatched to the towns and cities where the uppers were added to produce stout, hard-wearing clogs.

Trees were an important raw material for industry and as recently as the Second World War, timber extraction was a feature of the area. During the War, a light railway was built from Penderyn to Scwd yr Eira to extract logs which were needed for the war effort.

At present, industry in the area is limited. At Penderyn there is a large active limestone quarry, whilst on the edge of the South Wales Coalfield, open-cast coal mining still continues at Selar Farm in Glyn-neath, and the deep mine recently closed at Tower Colliery. The Penderyn Distillery and Visitor Centre is now open in Penderyn.

Appendix 8

History of Management Plan and related documents

Coed y Rhaiadr and Ystradfellte Area Study (1982)

This document set down management action for the area based on river valleys and open hill land, the area was roughly twice the size of the 1994 management plan.

Coed y Rhaiadr: Waterfalls Erosion Study – the Corscadden report (1992)

This grew out of the 1982 area study and the designation of “pressure” and “vulnerable” areas in the National Park plan of 1987. Increased promotion in the 1980s increased the popularity of the area and more effective measures to repair and control erosion were being sought. Existing pathways were surveyed; condition and frequency of use noted, general erosion in broadleaved woodland areas and regeneration of canopy species and condition of fences were recorded. Recommendations included physical works to paths and a range of policy measures for consideration by the NPA. A programme of work was developed to bring footpaths up to a high standard. Cost estimates for undertaking work by contract labour was too great and much was unsuitable for unskilled volunteers, the work was therefore not implemented before the 1994 management plan (Whitfield October 1994).

The primary causes of erosion were identified as:

- poor regeneration of woodland due to dense tree canopies
- poor regeneration of woodland due to sheep eating tree seedlings
- pressure of feet which in turn has been increased by:
 - poor waymarking
 - poor routing
 - poor maintenance
- informal paths created by sheep
- water erosion which has resulted in:
 - gulleying
 - sheetwash
 - rain splash
 - landslip.

Recommended solutions to these issues were:

- selective felling to open up the canopies and encourage tree seedlings to grow, thereby creating a more balanced and mixed age structure in woodland
- re-planting clear felled areas with species that reflect native species traditionally found in the area
- eliminate sheep access to the area by repairing and maintain perimeter fences
- improve patrolling of the area to eject sheep which have gained access

Specific works were also recommended for specific areas within the study area. Those recommendations that are feasible and still relevant have been listed in Appendix 2.

Wider ranging policy recommendations were as follows:

- Reduce the number of visitors overall by liaising with the relevant local authorities and other interest groups to reduce advertising.
- Increase the cost of visiting the area by introducing car parking charges.
- Setting up a Trust to assist with raising funds and/or managing the area.
- Improving visitor information and maps.
- Park to employ 2-3 labourers to carry out the works in the waterfalls area over a 2-3 year period.
- Use volunteers to check fence lines and record points where maintenance is required.
- Use volunteers to monitor footpaths.
- Use volunteers to carry out unskilled maintenance/footpath work in the area.
- Use volunteers to assist and advise visitors in the summer months.

Waterfall Country Project Management Plan (October 1994)

The plan acknowledged that there were other management plans in place for the area including: Berthlwyd farm – National Trust (based on objectives for maintaining floristic interest in the hay meadows); Blaenau Nedd a Mellt SSSI – CCW (at the time the SSSI was in the process of being re-notified by CCW therefore there was no current management plan); Coed y Rhaiadr Forest – Forest Enterprise (a management plan produced by FE though details were not available at the time); Craig Tongilach – Neath Borough Council (the council has an agreement with the landowner, the relevant details of which can be found in Chapter 5 and 6 of the 1994 management plan).

Evaluation of Vulnerable and Pressure Area Policies in the Brecon Beacons National Park Plan – S.Elliott, H. Kirkland, F. Waddington and N. Warren (1996)

This report evaluated the effectiveness of Vulnerable and Pressure Area policies as laid out in the National Park Plan of 1993. Part of the report uses Waterfall Country as a Management Case Study. The main points highlighted in the case study were:

- Serious rock and path erosion taking place (particularly around the waterfalls) as a result of the high level of visitors using the area and exacerbated by the 15-20 minibuses arriving in the area each day.
- A variety different types of visitors come to the area meaning that a variety of management techniques are required.
- Illegal parking of visitors and congestion is causing annoyance to the local community.
- Personal contact with outdoor providers and farmers is considered essential.

(S. Elliott 1996)

Forestry Commission and Brecon Beacons National Park Authority Service Level Agreement (June 2010)

This document lays out the services to be provided by both organizations within the National Park. The agreement term is for 3 years from 1st of April 2010 for a period of 36 months. The relevant agreements to this plan are as follows:

- The **FCW car park at Gwaun Hepste** shall be overseen on a day to day basis by the BBNPA who in return shall be able to collect all car parking fees in return for the service. The car park attendants will be based at Cwmporth and will patrol, periodically, through the day. BBNPA will provide FCW with an annual statement of income received from the car park receipts, beginning with the year to 31st March 2008. BBNPA will maintain and repair the pay and display machine. In the event the pay and display machine needs to be completely replaced, the cost of replacement will be shared by FCW and BBNPA on a 50:50 basis.
- BBNPA will work with FCW to provide a **warden service** within the waterfalls area to tackle recreational pressures and to deliver a co-ordinated approach to the management of the waterfalls area's landscapes. The Warden is employed by BBNPA. BBNPA will make available reports summarising activities undertaken when requested by FCW to do so. The wardening service shall include but not be limited to such activities as:
 - Facilities checks on FCW Land
 - Patrolling of FCW sites
 - Litter picking
 - On the ground contact with the public including estimates of visitor numbers
 - Informing partners of relevant issues that the warden becomes aware of such as repairs or maintenance required
 - Undertaking minor repairs
 - Upon request from FCW to assist with such small tasks as acting as banks person, and to aid information sharing and safe management of the public when undertaking remedial works on site.
 - Upon request from FCW to assist in the delivery of survey work in conjunction with FCW, for the safe management of sites. (For example in relation to the need for dangerous tree surveys and trail inspections).
- **Gunpowder bridges** – All inspection and maintenance costs for the lower (new) bridge within the Sychrhyd Gorge will be shared equally between BBNPA and FCW. Inspection of the upper bridge within the Mellte Gorge will be carried out by BBNPA, or by FCW engineers on behalf of BBNPA with any costs incurred being agreed in advance and met by BBNPA.
- Maintenance and monitoring of the **wind-up interpretation boxes** which are situated mainly on BBNPA land with 1 being on FCW land. In the event these boxes are vandalized, BBNPA will work with FCW to identify a more robust and cost effective solution for the future subject to the funding being in place.

Appendix 9

History of Learning in Waterfall Country

(by Ron Layton, Education officer, BBNPA).

Danywenallt opened as a residential study centre in 1977. As the number of school groups increased the waterfalls became a popular location for schools and some adult groups. The school groups walked from Penderyn directly along the old tram road and footpath to Sgwd yr Eira. The walk behind the waterfall was the highlight of the week for many children. In the early years groups returned along a narrow footpath along the south side of the steep valley of the river Hepste as far as a quarry and then followed a footpath south to rejoin the main path back to Penderyn. This path was eventually discontinued as it was becoming unsafe and there were also environmental considerations. There is now a BBNPA notice restricting access along the path. If time allowed groups would also visit the cave at Porth yr Ogof. Adult groups did a circular walk from the road just west of Sgwd Clun Gwyn taking in Sgwd yr Eira, Craig y Ddinas, Sgwd Gwladus, Scwd Ddwli and Pont Melin Fach.

In 2001, with no access along the Penderyn route due to Foot and Mouth disease, groups walked from Gwaun Hepste car park on an established route to Sgwd Clun Gwyn and Sgwd yr Eira waterfalls. With the lifting of restrictions the groups returned to the Penderyn route. Then in 2007 with restrictions on walking behind Sgwd yr Eira in place, the route was changed again as it was considered an anticlimax to walk down to Sgwd yr Eira and then not go behind. The new route started on the Ystradfellte-Pontneddfechan road, continued over the Afon Mellte foot bridge and then followed a circular route taking in Sgwd Clun Gwyn and Sgwd yr Pannwr. An alternative route has also now been established for younger groups and for times when the weather may restrict the main route. The new route starts at Pontneddfechan and follows the main track along the river to Sgwd Gwladus approaching from the north side. The return journey can either be a reverse of the outward journey or cross the river and follow the path on the eastern side past Ysgol Thomas Stephens and return to the car park. Porth yr Ogof can still be visited if time allows.

Appendix 10

Existing Information and Interpretation Provision in Waterfall Country.

	Visitor Experience Model - Successful interpretation is holistic and helps shape visitors decision making from the moment they decide to visit a site, through their arrival, their connection and then their exit (Brochu 2003).				
	Decision phase The experience from the moment they decide to visit e.g. promotional material	Entry phase The arrival phase, from clear entry signs, tickets, food & toilets, safety.	Connection phase Bulk of the experience, participation in interpretative activities, exhibits, trails etc	Exit phase Time to digest the message and consider the meaning e.g. memorabilia.	Commitment phase Take away message, purpose of the interpretation e.g. behavioural change
All sites	Coed y Rhaedr leaflet Waterfalls Centre publicity Audio trails publicity Neath-Port Talbot area leaflet Past experiences/ word of mouth Other Information centres Website		Guided walks programme		
Pontneddfechan		Out of hours panel Welcome panel (to be removed)	Information assistant Waterfall Country & Geopark 'Shaped by Rock' Exhibition Activity rucksacks Downloadable audio trails + podcast (Spring 09) Neath-Port Talbot panels x 2 on route to Sgwd Glawdus (plans to remove)	Gift shop	

			Geology self guided trail		
Cwmporth		Car park name sign Pau & Display machine signage Caving safety panel	Information assistant Porth yr Ogof interpretation panel Geopark Interpretation panel Welcome panel	Gift shop	
Craig y Ddinas		Directional signage on approach Car park name sign	Welcome panel		
Gwaun Hepste		Car park name sign Pay & Display machine signage	Welcome panel		
Pont Melin Fach		Car park name sign	Welcome panel		
Sgwd Clun Gwyn	Car park not actively promoted due to security concerns.		Welcome panel		
Gunpowder works		Directional signage on approach Community cafe when open	Wind up box audio trail Powder trail interpretation panel Downloadable audio trail – Spring 09		

Appendix 11

Geology

Old Red Sandstone

The **Old Red Sandstone** comprises rocks of late Silurian/early Devonian age known as the **Lower Old Red Sandstone Group** – and of late Devonian age, the **Upper Old Red Sandstone Group**. Rocks of middle Devonian age are not known to be present in this part of South Wales. Old Red Sandstone occurs only at depth beneath Waterfall Country itself though blocks of this rock are common in the river beds where they have been washed down from the north. They occur also as erratics and as a component of the glacial till which mantles parts of the area. So far as surface outcrops are concerned, beds of the upper Old Red Sandstone penetrate only as far south as Castell Coch at the confluence of the Llia and Dringarth.

Carboniferous Limestone

The **Carboniferous Limestone** consists of several rock units, each with its own character. Much of it is oolitic in nature i.e. consists of small rounded grains called 'ooliths' from which derives the name the Abercriban Oolite to describe the sequence in this part of the 'North crop' (the outcrop to the north of the South Wales Coalfield).

The Mellte enters a section of limestone gorge before being swallowed in its entirety at Porth yr Ogof where it then runs underground for ¼ mile before resurging at 'Blue Pool'. This cave entrance is the largest in Wales. A long-dry valley on the surface parallels the underground flow of the river. Sections of the Nedd Fechan and Hepste rivers also run underground leaving their surface courses dry in all but the wettest weather. In very wet weather the Nedd Fechan plunges into a deep rift across its rocky bed at Pwll y Rhyd though under normal conditions it sinks into its bed further upstream.

The limestone occurs widely on the higher ground to the east and west of Ystradfellte. Although much of the outcrop is obscured by glacial till, certain areas, such as Carnau Gwynion to the northwest of the village, exhibit limestone pavement development. Individual areas of pavement tend to be restricted in size and the clints smaller than their counterparts in for example northern England. It is the intensity of fracturing and small-scale faulting which is responsible for this pattern.

A further feature of the landscape deriving from the presence of the limestone at or near the surface is the scatter of swallowholes and shakeholes. Spectacular examples can be seen at Pwll Derw and Pwll y Felin. The latter takes a small stream which in wet weather can flood this sizeable depression to its rim. It is commonly observed that the largest shakeholes (such as these) are developed in ground where the Twrch Sandstone forms the surface and the limestone is present only at depth. Alignments of shakeholes will often reveal the presence of cave systems below.

South of the main outcrop, limestone occurs at the surface again along the line of the Neath Disturbance from Craig y Ddinas westwards. It is generally folded and fractured, sometimes spectacularly so as at Bwa Maen which rises above Sychryd. It has been quarried at Craig y Ddinas.

Marros Group

The **Marros Group** is the new name given in south Wales to the succession of rocks traditionally known as the Millstone Grit series. It comprises a lower **Twrch Sandstone Formation** and an overlying **Bishopston Mudstone Formation**.

The Twrch Sandstone (formerly known as the **Basal Grit**) forms a discontinuous north-facing scarp from Carreg Cadno in the west through Maes y Gawnen and Coetgae Plasydarren either side of the Nedd Fechan to Gwaen Hepste and Gwaun Cefnygarreg in the east. Overlying this, and hence to the south given the regional dip of the strata, is the thick sequence of mudstones (shales) and occasional sandstones now known as the Bishopston Mudstone Formation and formerly as the **Shale Group**. The rivers have incised their channels particularly deeply into the outcrops of the Twrch Sandstone and Bishopston Mudstone and it is within these sections of river gorge that the waterfalls which give the area much of its distinct character are to be found. Indeed some of the sandstones within the Bishopston Mudstone Formation are responsible for providing the hard cap-rocks of many of the waterfalls. It is the **Twelve Foot Sandstone** for example, over which the Pyrddin falls at Sgwd Gwladus and which forms the lower part of Sgwd Clungwyn on the Mellte.

The character of the Twrch Sandstone is well seen at Gwaun Cefn y Garreg to the east of Ystradfellte. Extensive gritstone pavements hereabouts show smoothing by ice and display glacial striations or 'striae' which run across their polished surfaces.

Coal Measures

Overlying the Bishopston Mudstone Formation and of a similar nature to the sandstones within it is the **Farewell Rock**. This thick sandstone is the basal unit of the **South Wales Coal Measures Group** and occurs towards the south of the area. It is most readily apparent as a landscape-forming feature behind the Angel public house at Pontneddfechan where it is estimated to be up to 75m thick, at Henrhyd Falls and at Sgwd Einion Gam. It also directly underlies **Comin** y Rhos and surrounding area and the higher ground to the west of the Nedd Fechan. The Farewell Rock was given its unusual name by miners in search of ironstone and, at a later date, coal within the thick sequence of Coal Measures mudstones which overlie it. On reaching this bed they could bid a farewell to any chance of further rewards – there are no significant ironstones or coal seams below it.

Geological structure

The simple 'layer cake' sequence of rocks described above is complicated by the presence of two suites of faults which affect the area. Most numerous are a swarm of faults oriented north-northwest to south-southeast and which form part of a much larger family of similarly aligned structures traversing the entire South Wales Coalfield and its margins.

A second set of faults runs east-northeast to west-southwest, the most significant of which is the Dinas Fault, erosion along which has led to the formation of the Vale of Neath. The Coed Hir Fault parallels it to the north as do two or three other un-named faults. The Dinas Fault in particular is associated with tight folding of the Carboniferous strata through which it runs. The resulting structures are spectacularly seen at Craig y Ddinas and Bwa Maen east of Pontneddfechan. These

and similar structures are collectively referred to as the **Neath Disturbance** – a regional scale structure usually ascribed to the Variscan Orogeny though likely originating during the earlier Caledonian Orogeny.

Superficial deposits

The solid geology comprising the suite of Palaeozoic rocks is often overlain by a variety of superficial deposits laid down during the last ice age and in the succeeding post-glacial period. **Glacial till** (boulder clay) mantles much of the higher ground and incorporates much material from the Old Red Sandstone rocks to the immediate north of Waterfall Country. It was deposited as a discontinuous sheet by the ice which over-rode the area from the north and serves now to soften the contours. Where eroded by rivers and streams it serves as a plentiful source of material which is often seen in river beds and gravel banks and the finer elements of which may be redeposited as alluvium on floodplains.

Alluvial deposits occur in wider sections of the valleys of the Mellte and Nedd Fechan and of course across the flat floor of the Vale of Neath itself from Pontneddfechan seawards. In addition one or two **river terraces** can be discerned both around the village of Ystradfellte and again in the Vale of Neath. Indeed substantial parts of both Ystradfellte and Pontneddfechan are built on river terrace deposits.

Another significant feature of the area is the spread of isolated **peat deposits** which have accumulated through the growth of sphagnum bogs in rock hollows and areas with poor drainage and where mineral soils are this or absent

Geochronology/ chronostratigraphy				Lithostratigraphy				
Period/ system	Epoch/ series (*European)	Age/ stage	Sub-stage	Super-group	Group	Formation	Member	
Carboniferous (359-299 million years ago)	Silesian	Westphalian (part)	Langsettian	Coal Measures (part)	South Wales Coal Measures Group (pt)	South Wales Lower Coal Measures Fmtn	Mudstone with coals	
							Farewell Rock	
		Mudstone						
		Farewell Rock						
	Namurian	Yeadonian				Marros Group (Millstone Grit Series)	Bishopston Mudstone Formation (Shale Group)	Mudstone
								Subcrenatum sandstone
								Mudstone
								Cumbriense quartzite
								Mudstone

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Devonian (416-359 million years ago)			Period	
Upper Devonian	Dinantian		Epoch	
Famennian	Tournaisian	Visean	Age	
	Courceyan to Brigantian		Sub-stage	Pendleian
Old Red Sandstone	Carboniferous Limestone		Super-group	
	Avon Group	Pembroke Limestone Group	Group	
Plateau Beds Form'n	Grey Grits Formation	Abercriban Ollite, Llanelly, Dowlais Limestone, Oxwich Head & Oystermouth Formations	Formation	
			Member	

Appendix 12

Additional SAC and SSSI Information

Appendix 12.1: CCW Conservation Objectives

Taken from (Countryside Council for Wales April 2008)

Background to Conservation Objectives

a. Outline of the legal context and purpose of conservation objectives.

Conservation objectives are required by the 1992 'Habitats' Directive (92/43/EEC). The aim of the Habitats Directives is the maintenance, or where appropriate the restoration of the 'Favourable Conservation Status' of habitats and species features for which SACs and SPAs are designated (see box 1).

In the broadest terms, 'Favourable Conservation Status' means a feature is in satisfactory condition and all the things needed to keep it that way are in place for the foreseeable future. CCW considers that the concept of Favourable Conservation Status provides a practical and legally robust basis for conservation objectives for Natura 2000 and Ramsar sites such as Coedydd Nedd a Mellt SAC. Achieving these objectives requires appropriate management and the control of factors that may cause deterioration of habitats or significant disturbance to species.

Box 1

Favourable conservation status as defined in Articles 1(e) and 1(i) of the Habitats Directive:

"The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' when:

- population dynamics data on the species indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis."

As well as the overall function of communication, conservation objectives have a number of specific roles:

- Conservation Planning and Management

The conservation objectives guide management of sites, to maintain or restore the habitats and species in favourable condition.

- Assessing Plans and projects

Article 6(3) of the 'Habitats' Directive requires appropriate assessment of proposed plans and projects against a site's conservation objectives. Subject to certain exceptions, plans or projects may not proceed unless it is established that they will not adversely affect the integrity of sites. This role for testing plans and projects also applies to the review of existing decisions and consents.

- Monitoring and reporting

The conservation objectives provide the basis for assessing the condition of a feature and the status of factors that affect it. CCW uses 'performance indicators' within the conservation objectives, as the basis for monitoring and reporting. Performance indicators are selected to provide useful information about the condition of a feature and the factors that affect it.

The conservation objectives in this document reflect CCW's current information and understanding of the site and its features and their importance in an international context. The conservation objectives are subject to review by CCW in light of new knowledge.

b. Format of the conservation objectives

There is one conservation objective for each feature listed. Each conservation objective is a composite statement representing a site-specific description of what is considered to be the Favourable Conservation Status of the feature. These statements apply to the whole feature as it occurs within the whole plan area.

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

As a result of the general practice developed and agreed within the UK Conservation Agencies, conservation objectives include performance indicators, the selection of which should be informed by JNCC guidance on Common Standards Monitoring⁴.

There is a critical need for clarity over the role of performance indicators within the conservation objectives. A conservation objective, because it includes the vision for the feature, has meaning and substance independently of the performance indicators, and is more than the sum of the performance indicators. The performance indicators are simply what make the conservation objectives measurable, and are thus part of, not a substitute for, the conservation objectives. Any feature attribute identified in the performance indicators should be represented in the vision for the

⁴ Web link: <http://www.jncc.gov.uk/page-2199>

feature, but not all elements of the vision for the feature will necessarily have corresponding performance indicators.

As well as describing the aspirations for the condition of the feature, the Vision section of each conservation objective contains a statement that the factors necessary to maintain those desired conditions are under control. Subject to technical, practical and resource constraints, factors which have an important influence on the condition of the feature are identified in the performance indicators.

*Conservation Objective for Feature 1: **Tilio-Acerion forests of slopes, screes and ravines (EU habitat Code: 9180)***

Vision for Feature 1

The vision for this feature is for it to be in a Favourable Conservation Status, where all of the following conditions are satisfied:

- Upland ash woodland will occupy at least 18 ha of the total site area.
- The canopy should be predominantly ash and the following trees will be common in the woodland:
- Ferns will be common ground flora species.
- Although they may be present in the canopy in small quantities, sycamore and beech should not become dominant at the expense of ash.
- Introduced invasive species will be absent and any conifers seeding in from adjoining plantations will be removed whilst at the seedling/sapling stage.
- Damage to the ground flora and soil erosion due to public pressure will be at a minimum.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 1

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

Performance indicators for feature condition		
Attribute	Attribute rationale and other comments	Specified limits
A1. Extent of upland as woodland	The extent should not fall below the area mapped in 1996. The maximum extent is governed by the underlying geology and soil types.	Upper limit: None (but is naturally limited). Lower limit: 18 ha
A2. Distribution	Should be present in the following units: Blaen Nedd: Units BN7, BN8, BN9. Dyffrynodd Nedd a Mellte: DNM2,DNM4,DNM9,DNM11,DNM16	Upper limit: none Lower limit: Significant presence in all units indicated in adjoining column.
A3. Canopy cover	Continuous canopy cover to be met with in at least 90% of samples over the whole site.	Upper limit : 100% Lower limit:90%
A4. Canopy composition and understorey composition	The canopy and understorey composition will consist of at least 95% native woody species typical of the habitat in at least 90% of samples over the whole site.	Upper limit: None Lower limit:90%
A5. Regeneration	To be met in at least 50% of significant gaps in canopy. Such gaps should be recorded at each monitoring visit.	Upper limit: None

	Gaps should be created naturally and a more varied age structure should develop. Evidence of regeneration elsewhere on the site would be a positive sign that any grazing is sufficiently low. There should also be a note made of regeneration of non-native species like sycamore, beech or conifers.	<i>Lower limit:</i> Presence of viable saplings at least 1.5m high within 10-15 years of gap appearing.
A6. Woodland structure	To be met in at least 75% of samples over the site as a whole.	<i>Upper limit:</i> None <i>Lower limit:</i> Presence of understorey and field layer, consisting of locally native species.
A7. Deadwood	To be met in at least 50% of samples over the site as a whole.	<i>Upper limit:</i> None <i>Lower limit:</i> Presence of standing and/or fallen deadwood with a minimum diameter of 20cm and minimum length of 2m.
A8. Ground flora	At least 80% of woodland flora the cover of typical ground flora woodland plants is 30%. Ferns should be common (see definitions - may need refining).	<i>Upper limit:</i> None <i>Lower limit:</i> 30 % cover
A9. Bryophytes and lichens.	Bryophytes are often abundant in this type of woodland, but are not as important a component in defining the woodland types as they are in defining 'sessile oakwood'. However, the two woodland types often grow in close proximity and it may be sensible to treat the upland ash woodland in the same manner as for the sessile oakwood until limits can be refined following further study and monitoring. Typical ground covering species should be present at high cover in about 80% of the woodland. The range of scarcer species of bryophyte and lichens should continue to have viable populations.	<i>Upper limit:</i> None <i>Lower limit:</i> 80% of woodland ground cover in core areas should have 50 % cover of typical bryophytes (provisional).
Performance indicators for factors affecting the feature		
Factor	Factor rationale and other comments	Operational Limits
F1. Livestock grazing	Grazing to the extent practiced routinely by the farming community prevents regeneration of woodland and damages the field layer. Cessation of all grazing over a long period, however, may be detrimental to the field layer as these may become shaded out. The ideal may be to mimic the very low level within a natural woodland ecosystem, or to periodically vary grazing pressure. It is something that kept under constant review.	<i>Upper limit:</i> grazing levels likely to be in the region of 0.1 LSU/ha/yr or less. <i>Lower limit:</i> None
F2. Non-native species	There will be low tolerance of non-native species. Although some sycamore will be tolerated, it should not be allowed to become dominant over ash. A maximum of about 5% of non-native trees and shrubs, including conifers, will be tolerated.	<i>Upper limits:</i> 5% cover of non-native trees in the canopy. Sycamore - a limit AND: No invasive non-native shrubs in the understorey or shrub layer <i>Lower limit:</i> None.
F3. Woodland Management	Natural ecological processes should be allowed to operate as far as possible. In the majority of units these processes should gradually create greater structural diversity. Any areas can be identified which may benefit from thinning; the thinning should focus on removing the non-native species. As thinning would alter the relative humidity of the site, limits would need to be imposed.	<i>Upper limit:</i> <i>Lower limit:</i>
F4. Access and visitor	Poorly maintained footpaths, coupled with increasing	<i>Upper limit:</i> X% (to be determined) bare ground

management and human and grazing induced bare ground	<p>visitor numbers have resulted in erosion problems in some areas. In addition, the area has proved to be very popular with outdoor groups engaging in such activities as gorge-walking and climbing. Further investigation is required to assess and address impacts from these activities and will be incorporated into a wide ranging management plan for the whole area.</p> <p>Throughout the site the cover of bare soil or denuded rocks due to footpaths, trampling and grazing and other activities undertaken by visitors (but not including natural landslips, naturally bare ground where leaf litter etc), should be less than X % (limit to be determined but likely to be close to the area taken up by footpaths). Additional limits may need to be set to address issues in more sensitive parts of the site.</p>	<p>due to human or animal induced activities.</p> <p>Lower limit:</p>
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Conservation Objective for Feature 2: Old sessile oak woods with Ilex and Blechnum in the British Isles (EU Habitat Code: 91A0)

Vision for feature 2

The vision for this feature is for it to be in a Favourable Conservation Status, where all of the following conditions are satisfied:

- Sessile oak woodland will occupy at least 175 ha of the total site area.
- The canopy should be predominantly oak and locally native trees will be common in the woodland.
- Ferns will be common ground flora species.
- Bryophytes will continue to be abundant and the bryophyte flora will continue to include those western/Atlantic species that mark out this woodland type. A suite of rarer species and species at the edge of their geographical range will continue to be present.
- Heathy species such as bilberry and common heather *Calluna vulgaris* will be common in some areas.
- Introduced invasive species such as rhododendron will be absent and any conifers seeding in from adjoining plantations will be removed whilst at the seedling/sapling stage.
- Damage to the ground flora and soil erosion due to public pressure will be at a minimum.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 2

The performance indicators are part of the conservation objective, not a substitute for it.

Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

Performance indicators for feature condition		
Attribute	Attribute rationale and other comments	Specified limits
A1. Extent of sessile oak woodland	The extent should not fall below the area mapped in 1996. The maximum extent is governed by the	Upper limit: None (but is naturally limited).

	underlying geology and soil types.	Lower limit: 175 ha
A2. Distribution	Should be present in the following units: Blaen Nedd: Units BN7, BN8, BN9. Dyffrynoedd Nedd a Melte: DNM3-11, DNM13-16	Upper limit: none Lower limit: Significant presence in all units indicated in adjoining column.
A3. Canopy cover	Continuous canopy cover to be met with in at least 90% of samples over the whole site.	Upper limit : 100% Lower limit:90%
A4. Canopy composition and understorey composition	The canopy and understorey composition will consist of at least 95% native woody species typical of the habitat in at least 90% of samples over the whole site.	Upper limit: None Lower limit: 90%
A5. Regeneration	To be met in at least 50% of significant gaps in canopy. Such gaps should be recorded at each monitoring visit. Gaps should be created naturally and a more varied age structure should develop. Evidence of regeneration elsewhere on the site would be a positive sign that any grazing is sufficiently low. There should also be a note made of regeneration of non-native species like beech or conifers.	Upper limit: None Lower limit: Presence of viable saplings at least 1.5m high within 10-15 years of gap appearing.
A6. Woodland structure	To be met in at least 75% of samples over the site as a whole.	Upper limit: None Lower limit: Presence of understorey and field layer, consisting of locally native species.
A7. Deadwood	To be met in at least 50% of samples over the site as a whole.	Upper limit: None Lower limit: Presence of standing and/or fallen deadwood with a minimum diameter of 20cm and minimum length of 2m.
A8. Ground flora	At least 80% of woodland flora the cover of typical ground flora woodland plants is 30%. Ferns should be common (see definitions - may need refining). See also under A9 bryophytes.	Upper limit: None Lower limit: 30 % cover
A9. Bryophytes, lichens and filmy ferns	Bryophytes define this woodland type - further work is required to be able to set suitable limits, but typical ground covering species should be present at high cover in about 80% of the woodland. The range of scarcer species of bryophyte, lichens and filmy ferns should continue to have viable populations.	Upper limit: None Lower limit: 80% of woodland ground cover in core areas should have 50 % cover of typical bryophytes (provisional).
Performance indicators for factors affecting the feature		
Factor	Factor rationale and other comments	Operational Limits
F1. Livestock grazing	Grazing to the extent practiced routinely by the farming community prevents regeneration of woodland and damages the field layer. Cessation of all grazing over a long period, however, may be detrimental to the field layer, especially bryophytes, as these become shaded out. The ideal may be to mimic the very low level within a natural woodland ecosystem, or to periodically vary grazing pressure. It is something that kept under constant review.	Upper limit: grazing levels likely to be in the region of 0.1 LSU/ha/yr or less. Lower limit: None
F2. Non-native species	As many of the bryophytes typical of this habitat grow on the trunks of the oak trees, there will be low tolerance of non-native species. In particular there will be zero tolerance of invasive species such as Rhododendron, which has not yet got a foothold in the site. A maximum of about 5% of non-native trees and shrubs, including conifers, will be tolerated.	Upper limits: 5% cover of non-native trees in the canopy. AND: No rhododendron (or other invasive non-native shrubs) in the understorey or shrub layer Lower limit: None.

F3. Woodland Management	Natural ecological processes should be allowed to operate as far as possible. In the majority of units these should gradually create greater structural diversity. Any areas can be identified which may benefit from thinning; the thinning should focus on removing the non-native species. As thinning would alter the relative humidity of the site, limits would need to be imposed.	Upper limit: Lower limit:
F4. Access and visitor management and human and grazing induced bare ground	Poorly maintained footpaths, coupled with increasing visitor numbers have resulted in erosion problems in some areas. In addition, the area has proved to be very popular with outdoor groups engaging in such activities as gorge-walking. Further investigation is required to assess and address impacts from these activities and will be incorporated into the management plan for the whole area. Throughout the site the cover of bare soil or denuded rocks due to footpaths, trampling and grazing and other activities undertaken by visitors (but not including natural landslips, naturally bare ground where leaf litter etc), should be less than X % (limit to be determined but likely to be close to the area taken up by footpaths). Additional limits may need to be set to address issues in more sensitive parts of the site.	Upper limit: X% (to be determined) bare ground due to human or animal induced activities. Lower limit:

Assessment Of Conservation Status And Management Requirements

Conservation Status and Management Requirements of Feature 1: [Tilio-Acerion forests of slopes, screes and ravines](#) (EU habitat Code: 9180)

Conservation Status of Feature 1

The conservation status of the feature within the site is **Unfavourable** (2006)

Further monitoring is required to fully assess the condition as the 2006 assessment used slightly different management units to those in the current plan.

The upland ash woodland is considered to be unfavourable largely because of the presence of non-native species and insufficient understorey cover in parts of the site due to heavy grazing in the past - particularly in Unit DNMI6 and Units BN7 and BN9.

Negative effects as a result of visitor pressure are also affecting the feature, however at this stage (2008), the significance is not clear and further investigation is required. Following some initial monitoring work in 2007, it appears that the main problem areas are in Units DNM4, DNMI1 and Unit BN7.

Management Requirements of Feature 1

Much of Unit DNMI6 has now been fenced under a management agreement, however a sufficient understorey will take time to develop and some thinning may be necessary to remove some of the non-native species. Similar fencing has occurred in Units BN7 & BN9, with some thinning and coppicing initiated to reduce the frequency of sycamore.

Conservation Status and Management Requirements of Feature 2: : [Old sessile oak woods with Ilex and Blechnum in the British Isles](#) (EU Habitat Code: 91A0)

Conservation Status of Feature 2

The conservation status of the feature within the site is **Unfavourable** (2006)

Further monitoring is required to fully assess the condition as the 2006 assessment used slightly different management units to those in the current plan.

The sessile oak woodland is considered to be unfavourable largely because of the presence of non-native species in management Units DNM4, DNM8, DNM14.

The understorey was also considered to be insufficient in parts of the site, usually due to heavy grazing in the past - particularly in Units DNM2, DNM4, DNM8, DNM11, DNM14, DNM15, DNM16.

Negative effects as a result of visitor pressure are also affecting the feature, however at this stage (2008), the significance is not clear and further investigation is required. Sizeable areas of ground, particularly around waterfalls are heavily trampled and denuded with the prospects for tree regeneration greatly reduced. Ultimately, some areas could lose their canopy cover. Following some initial monitoring work in 2007, it appears that the main problem areas are in Units DNM4, DNM5, DNM7, DNM8, DNM11.

Management Requirements of Feature 2

Units DNM2, DNM11, DNM16 are currently (2008) under management agreement but a sufficient understorey will take time to develop. Some thinning may be necessary to remove some of the non-native species in Unit DNM2.

Units DNM14 & DNM15 are largely unmanaged and ungrazed and an understorey should develop in time. Some thinning of non-native trees may be necessary.

Units DNM4 & DNM8 are largely fenced from grazing, although trespassing sheep do enter the wood from time to time, and an understorey should develop in time. Some thinning of non-native trees may be required.

A management plan covering the wider 'Waterfall Country' is being progressed (2008) by the BBNPA, FCW and CCW, which amongst other things will be addressing issues arising from increasing numbers of visitors in the SAC and supporting SSSI (Countryside Council for Wales April 2008).

ACTION PLAN: SUMMARY

This section takes the management requirements outlined in Section 5 a stage further, assessing the specific management actions required on each management unit. This information is a summary of that held in CCW's Actions Database for sites, and the database will be used by CCW and partner organisations to plan future work to meet the Wales Environment Strategy targets for sites.

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
7	000389	Unit BN7	May be some issues with usage of caves by outdoor activity groups - caving fraternity are in process of producing a monitoring report which should highlight problems if any	Yes
8	000390	Unit BN8	This unit is considered to be under appropriate conservation management.	No
9	000391	Unit BN9	This unit is considered to be under appropriate conservation management.	No
15	000397	Unit DNM2	Under Tir Gofal management	No
16	000398	Unit DNM3	Under Tir Gofal Management	No
17	000399	Unit DNM4	Public pressure and pressure from outdoor activity groups appear to be main issue. Some heavy grazing from trespassing stock, but localised.	Yes
18	000400	Unit DNM5	Some small areas where erosion issues.	Yes
19	000401	Unit DNM6	Under Tir gofal agreement	No
20	000402	Unit DNM7	Recreational pressure causing erosion of habitats. Also some of geological structures being obscured by tree and ivy growth. Some illegal engineering works and tipping in SSSI.	Yes
21	000403	Unit DNM8	Recreational pressure and erosion due to poorly maintained footpaths. Some invasive trees and possibly some thinning required.	Yes
22	000404	Unit DNM9	This unit is considered to be under appropriate conservation management.	No
23	000405	Unit DNM10	This unit is considered to be under appropriate conservation management.	No
24	000406	Unit DNM11	Under Tir Gofal management. Some erosion issues.	Yes
25	000407	Unit DNM12	This unit is considered to be under appropriate conservation management.	No
26	000408	Unit DNM13	This unit is considered to be under appropriate conservation management.	No
27	000409	Unit DNM14	Presence of non-native species and poor understorey	Yes
28	000410	Unit DNM15	Poor understorey	Yes
29	002438	Unit DNM16	Poor understorey	Yes

Appendix 12.2: Potentially Damaging Operations (PDOs) and Management Prescriptions.

The following information details operations likely to damage the special interest of the SSSIs within Waterfall Country as well as management prescriptions for both sites.

Dyffrynnoedd Nedd a Mellte a Moel Penderyn SSSI

Potentially Damaging Operations:

- Cultivation, including ploughing, rotivating. Harrowing and re-seeding.
- Grazing.
- Stock feeding.
- Mowing or cutting vegetation.
- Application of manure, slurry, silage liquor, fertilisers and lime.
- Application of pesticides, including terrestrial and aquatic herbicides.
- Dumping, spreading or discharging of materials.
- Burning.
- Release into the wild of any feral, captive-bred or domestic animal, plant, seed or micro-organism.
- Killing, injuring, taking or removal of any wild animals, or the eggs/nests of any wild animal or disturbing, taking, damaging or destroying of any wild animals in its place of shelter, excluding pest control.
- Destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould, turf or peat.
- The introduction of tree and/or woodland management and alteration to tree and/or woodland management, including planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition and removal of fallen timber.
- Drainage including the use of mole, tile, tunnel or other artificial drains.
- Modification to the structure of water courses including rivers, streams, springs, ditches, drains, including their banks and beds, as by re-alignment, regarding, damming, or dredging and the erection of flood protection works.
- Management of aquatic and bank vegetation for drainage purposes.
- Alterations to water level and tables and water utilisation including storage and abstraction from existing water bodies and through boreholes.
- Infilling or digging of ditches, drains, ponds, pools, marshes, caves, swallow holes, quarries and pits.
- The introduction of freshwater fishery production and/or management and alterations to freshwater fishery production and/or management.
- Extraction of minerals including peat, shingle, hard rock, sand and gravel, topsoil, subsoil, lime, limestone pavement and spoil.

- Destruction, construction or removal, rerouting, or regarding of roads, tracks, walls, fences, hardstands, banks, ditches, or other earthworks, including soil and rock exposures.
- Storage of materials.
- Erection of permanent or temporary structures or the undertaking of engineering works, including drilling or the laying, maintenance or removal of pipelines and cables, above and below ground.
- Modification of natural or man-made features (including rock outcrops, limestone pavement, caves and cave entrances) and clearance of boulders, large stones, loose rock, scree and the battering buttressing or grading of geological exposures and cuttings (rock and soil).
- Use of vehicles or craft.
- Recreational activities.
- Introduction of game or waterfowl management and alterations to game and waterfowl management and hunting practice.

Management Prescriptions

FUNDAMENTAL REASONS

- To conserve the geological features.
- To conserve the botanical features.
- To conserve the semi-natural woodland.

OBJECTIVES

- To avoid damage to features of special interest during potentially disturbing activities – notably felling, track construction, planting and other FCW operations.
- To consolidate the structure and diversity of the woodlands.
- To allow access to botanists, geologists and students, wherever possible.
- To take opportunities to restore/enhance features presently not in optimal condition and improve access to features where appropriate. (CCW will make recommendations to FCW, in particular by considering opportunities arising in line with the FCW planned works. FCW will keep CCW informed of all planned work).

PRESCRIBED MANAGEMENT

- As owner of the land FCW will comply with the statutory SSSI consent requirements for all operations covered by the List of Operations Likely to damage the Special Interest.
- Notice of operations should be given prior to the letting of any contract, so that safeguards for the SSSI interest can be incorporated into the contract details. Where a close degree of control over the contractor appears necessary. CCW and FCW will liaise and agree the best way to provide on-site inspection.

- Since part of the special interest is in flora requiring high humidity, tree felling will only take place in the gorges of the Nedd and Mellte where safety is the prime consideration.
- The key wildlife interest in the existing semi-natural woodland are best conserved by a minimum intervention approach. Monitoring will be directed towards retaining a general closed canopy, and allowing to appear and in fill naturally.
- Grazing and its affect on regeneration of the flora will be monitored. Perimeter fence lines will be checked accordingly. Only after other methods of stock control have been attempted will internal fences be considered where they are essential for future regeneration.
- Conifer regeneration in the area of semi-natural woodland will be removed.
- The impact of recreational use on sensitive areas will be monitored. FCW, CCW and BBNPA will agree suitable management response.
- CCW will recommend to FCW any other beneficial works or defeguards that it considers important, so that these can be considered and agreed where appropriate.

Hepste – Mellte SSSI

Potentially Damaging Operations:

- Dumping, spreading or discharging of materials.
- The introduction of tree and/or woodland management and alteration to tree and/or woodland management, including planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition and removal of fallen timber.
- Modification to existing drainage including moor-gripping, and the use of mole, tile, tunnel or other artificial drains.
- Modification to the structure of water courses including rivers, streams, springs, ditches, drains, including their banks and beds, as by re-alignment, regarding, damming, or dredging and the erection of flood protection works.
- Alterations to water level and tables and water utilisation including storage and abstraction from existing water bodies and through boreholes.
- Infilling or digging of ditches, drains, ponds, pools, marshes, caves, swallow holes, quarries and pits.
- Extraction of minerals including peat, shingle, hard rock, sand and gravel, topsoil, subsoil, lime, limestone pavement and spoil.
- Destruction, construction or removal of roads, tracks, walls, fences, hardstands, banks, ditches, or other earthworks, including soil and rock exposures.
- Storage of materials on, in or against caves, cave entrances, limestone pavement and other rock exposures.
- Erection of permanent or temporary structures or the undertaking of engineering works, including drilling or the laying, maintenance or removal of pipelines and cables, above and below ground.

- Modification of natural or man-made features (including rock outcrops, limestone pavement, caves and cave entrances) and clearance of boulders, large stones, loose rock, scree and the battering buttressing or grading of geological exposures and cuttings (rock and soil).

Management Prescriptions:

FUNDAMENTAL REASONS

- To conserve the dolines and associated hydrological features.
- To conserve the morphology of the Hepste valley.

OBJECTIVES

- To avoid damage to features of special interest during felling, track construction, planting and other FCW operations.
- To allow access to geologists and geological students, wherever possible.
- To take opportunities to restore/enhance features presently not in optimal condition and improve access to features where appropriate. (CCW will make recommendations to FCW, in particular by considering opportunities arising in line with the FCW planned works. FCW will keep CCW informed of all planned work).

PRESCRIBED MANAGEMENT

- As owner of the land FCW will comply with the statutory SSSI consent requirements for all operations covered by the List of Operations Likely to damage the Special Interest.
- Notice of operations should be given prior to the letting of any contract, so that safeguards for the SSSI interest can be incorporated into the contract details. Where a close degree of control over the contractor appears necessary. CCW and FCW will liaise and agree the best way to provide on-site inspection.
- Safeguards should be agreed according to the circumstances, but it is envisaged that:
 - Where trees exist within identified features, they will be extracted by methods that will not cause or have significant ground disturbance (e.g. no vehicles within feature but trees being felled away from feature and winched off).
 - When re-planting, one tree length should be kept away from the edge of the feature, to prevent wind-blown trees falling into the feature and to allow a good view of morphology.
 - When replanting and thinning it may be necessary to allow a wider row spacing to provide a route to the feature from the nearest forest track or Public Right of Way.

- CCW will recommend to FCW any other beneficial works or safeguards that it considered important, so that these can be considered and agreed where appropriate.

Appendix 13

Sub-Groups

Gorge-walking Code of Conduct Group

The Gorge-walking code of conduct group was set up in 2007 to drive forward the production of a code of conduct for gorge-walking in Waterfall Country. Concerns had been raised that the activity and the sheer numbers of groups carrying out the activity were causing damage to the SAC. Initially the group consisted of representatives from BBNPA, FCW and CCW. In 2009, following the 'Outdoor Activities in the Waterfalls Area' seminar, the group expanded to include representatives for the gorge-walking providers.

Below is a table detailing the current members of the group:

Name	Organization/Post	E-mail
Joe Roberts	CCW	Joe.roberts@ccw.gov.uk
Steffan Davies	Sbri Cymru	info@SbriCymru.com
Thomas Partridge	Rhondda Cynon Taff CBC	Thomas.R.Partridge@rhondda-cynon-taff.gov.uk
Michael Smith	CCW	md.smith@ccw.gov.uk
Graham Motley	CCW	g.motley@ccw.gov.uk
Juliet Parker Smith	Trewern OEC	Juliet@trewern.org.uk
Mark Soanes	Call of the Wild	mark@callofthewild.co.uk
Gareth Ellis	BBNPA	Gareth.Ellis@breconbeacons.org
Helen Pye	BBNPA	Helen.Pye@breconbeacons.org
Graham Cowden	BBNPA	Graham.Cowden@breconbeacons.org
John Cook	BBNPA	John.Cook@breconbeacons.org
Paul Dann	FCW	Paul.Dann@forestry.gsi.gov.uk
Richard Tyler	BBNPA	Richard.Tyler@breconbeacons.org
Carl Durham	Black Mountain Activities	Carl@blackmountain.co.uk
Andy Meek	Storey Arms - Chairman	AMeek@cardiff.gov.uk
Jethro Moore	Adventure beyond	fun@adventurebeyond.co.uk
Jeff Calligan	Mountain and River Activities	-

Matt Woodfield	Outdoor Matters	mattwoodfield@hotmail.com
Gary Evans	SWOAPG Co-ordinator	swoapg@gmail.com

It was decided after discussions that a map and code would be the most effective way of changing behaviour in the use of the area for gorge-walking. A group was also set up as part of this process to represent outdoor activity providers that use the South Wales area called the South Wales Outdoor Activity Provider Group (SWOAPG). This group also manage an alert system for contacting all their members with important messages relating to outdoor activities in the area. The group coordinator can be contacted on swoapg@gmail.com. A trail map and code (see **Figures 2** and **3** below) was launched in the summer 2010 with additional guidance notes due to be released in December 2010.

Figure 2: Gorge-walking map and code – Page 1

PARC CENEDLAETHOL BANNAU BRYCHEINIOG

Comisiwn Coedwigoeth Cymru
Forestry Commission Wales

Sychryd Gorge

Protected Wildlife Habitats

The woodlands and geology here are of great significance nationally and internationally. They are protected by being designated a Site of Special Scientific Interest (SSSI) under UK law whilst the woodlands have also been designated as a Special Area of Conservation (SAC) under European law.

The land in the SSSI and SAC is owned by the Brecon Beacons National Park Authority (BBNPA), Forestry Commission Wales (FCW) and several private land owners. BBNPA and FCW are keen that people visit, enjoy and understand this special place but they also have a legal responsibility to conserve it and ensure that it continues to be available for future generations to enjoy.

Activity groups entering the area are also bound by the conservation legislation and this code will help you comply with that law.

Access

On the map overlaid there is no public access to the land under private ownership except on the path marked on the Afon Melles northern section. Other parts of the area have been dedicated as Open Access land for the purpose of public access on foot (not including commercial activities), but it should be noted that if SSSIs become degraded as a result of Open Access activities, closures can be introduced to prevent further damage and to allow sites to recover.

Code of Conduct

The South Wales Outdoor Activity Providers Group, BBNPA, FCW and the Countryside Council for Wales (CCW) are working together to minimise the impact of gorge walking whilst still allowing it to continue. It has been agreed that gorge walking should be focussed in the Craig y Ddinas/Afon Sychryd area and the Code of Conduct shows overlaid aims to minimise the impact of the activity and allow damaged areas to recover. Monitoring will be put in place to measure the effectiveness of this code.

Gorge Walking in Waterfall Country

Waterfall Country has become an increasingly popular place to visit over recent years. This has resulted in much wear and tear to the natural fabric of the woodlands, waterfalls and gorges. Gorge walking is mostly undertaken away from the footpaths and therefore adds significant pressure on the wildlife of the area. A programme of footpath repairs is helping with erosion but the Code of Conduct overlaid addresses the impacts of gorge walking in the Craig y Ddinas/Afon Sychryd area.

This poster will help leaders:
Plan activities by showing the parts of the area in which gorge walking is allowed.
Brief groups about the environmental sensitivities.
Minimise the impact on wildlife, habitats and geology, and to allow damaged areas to be restored.

Gorge Walking & Wildlife

The rare plants that grow on river banks, rocky outcrops, boulders, trees and fallen logs throughout the gorge and river channel cannot cope with being regularly trampled or dislodged by passing feet, hands and trailing ropes. So-called 'Dry Gorge Walking' can be particularly damaging as walkers go from rock to rock.

In the woodlands, pressure from gorge walking groups (as well as the general public) can damage vegetation and prevent it recovering, eventually resulting in soil erosion. If bare rock is exposed, then the woodland may lose its ability to regenerate. Therefore group management in the woodlands, particularly when accessing the gorge, needs to be carefully planned and executed. If managed responsibly however, further damage can be avoided and habitat that has already been affected can be restored to its former glory. The map overlaid gives details of the access/egress routes that have been agreed - please help protect the area by avoiding other paths.

Wildlife & Geology

Waterfall Country lies within the Brecon Beacons National Park where the Nidd Fechan, Nidd, Sychryd, Melles and Hepride rivers drain the upland areas of Forest Fawr and Mator Mawr. The effects of geological activity and erosion have created steep-sided river gorges and a series of wonderful waterfalls. These processes are still active, continuing to slowly change the position of rocks and cliff faces and the river valleys.

Oak, ash, hazel and alder woodland has developed along these gorges. Due to the difficult nature of the terrain, this has remained largely untouched and now supports some of the country's best ancient and unmanaged woodland.

Uncommon plants occur throughout the site, often in situations that are vulnerable to trampling such as on riverbanks, rocks and in seepages. Several geological features of national and international importance are also present and all these can be damaged by recreational pressure.

Mosses, Liverworts, Ferns and Lichens

Steep gorges, a long history of tree cover and geographic location combine to form a sheltered, humid environment that is ideal for some of our simplest and most ancient plants. Different substrates and aspects allow a wide range of species to find a home, whatever their individual requirements.

Some of the species found here are restricted to just one or two rock exposures, a rotting log, an oak trunk or are found over just a small area of woodland floor. Others grow on rocks and boulders both within and on the edges of the water courses. A number only exist at a handful of sites in Wales and the UK, or are right at the edge of their geographical range.

The life history of many of these plants is not well understood - many appear to grow slowly or have a poor ability to reproduce. They therefore can be slow to recover from damage and can be vulnerable to local extinction.

Rhytidelaphus subpinetorum
(Source: TreeFemur)
Waterfall Country is the British stronghold for this nationally rare species. It tends to grow in sheltered places such as just above the footpaths by rivers and by footpaths.

Tundridge filix-ferm
(Pteris aquilina) (Source: TreeFemur)
A scarce, single species fern only in the river channel area. It is particularly vulnerable to damage through abrasion.

Demetocarpus minutus
(Source: TreeFemur)
A scarce species of lichen that grows on limestone rocks and is easily dislodged.

Lepidozia caespitosa
(Rock Liverwort)
This uncommon species is at the southern edge of its British range in the Waterfall area.

Hypnum curvifolium
(Wood-moss)
Large logs that fall on the woodland floor are very important for a range of bryophytes, liverworts and fungi. This log is a red colour due to the abundance of the dry rot fungus.

Lepidozia caespitosa
(Rock Liverwort)
This uncommon species is at the southern edge of its British range in the Waterfall area.

Wildlife & Geology

Waterfall Country lies within the Brecon Beacons National Park where the Nidd Fechan, Nidd, Sychryd, Melles and Hepride rivers drain the upland areas of Forest Fawr and Mator Mawr. The effects of geological activity and erosion have created steep-sided river gorges and a series of wonderful waterfalls. These processes are still active, continuing to slowly change the position of rocks and cliff faces and the river valleys.

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Uncommon plants occur throughout the site, often in situations that are vulnerable to trampling such as on riverbanks, rocks and in seepages. Several geological features of national and international importance are also present and all these can be damaged by recreational pressure.

Mosses, Liverworts, Ferns and Lichens

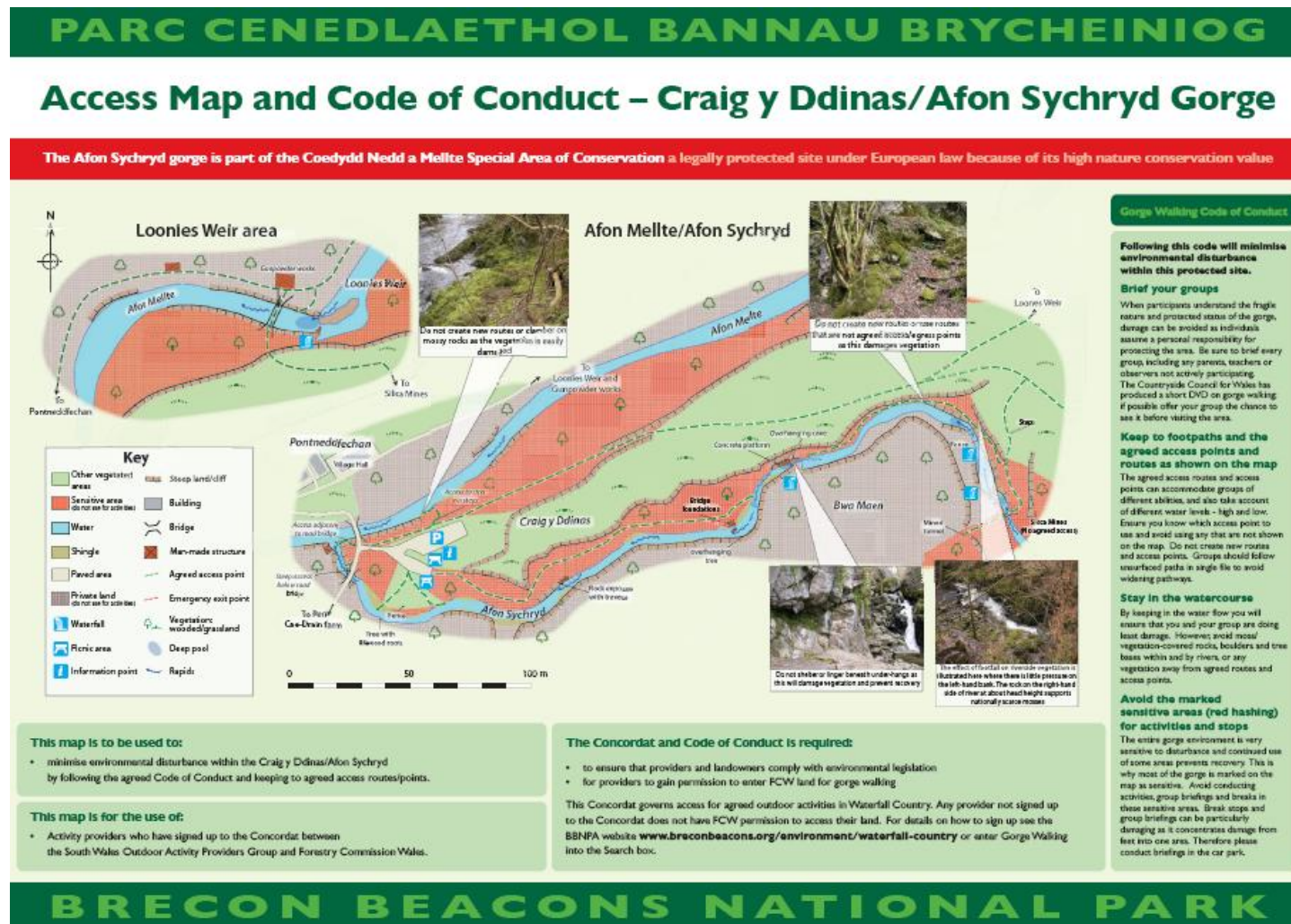
Steep gorges, a long history of tree cover and geographic location combine to form a sheltered, humid environment that is ideal for some of our simplest and most ancient plants. Different substrates and aspects allow a wide range of species to find a home, whatever their individual requirements.

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BRECON BEACONS NATIONAL PARK

Figure 3: Gorge-walking map and code – page 2



Waterfalls Area Safety Advisory Group (WASAG)

The primary aims of the WASAG are:

- to promote best practice safety precautions amongst members of the public visiting the area
- to discuss recent accidents and seek way to mitigate similar accidents in the future

Membership of this group is open to any individual or group with an active interest in developing the aims of the group, however the core stakeholders at present are:

- The Forestry Commission – represented by the Area Manager Brecon Beacons West
- The Brecon Beacons National Park – Represented by the Waterfall Country Warden
- The Association of Heads of Outdoor Education Centres AHOEC
- South Wales Police
- Ystradfellte Community Council
- Cambrian Caving Council
- South Wales Mountain Rescue Committee
- South Wales and Mid Wales Cave Rescue Team – BBNP representative
- Dyfed Powys Police Authority
- SWOAPG – represented by the SWOAPG co-ordinator

Other invited groups on the circulation list of minutes include

- The Health & Safety Executive.

The role of chairman and secretary at each meeting is typically held by one of the following - Paul Dann or Helen Pye, according to availability. The minutes and agenda for each meeting, are circulated by the Brecon Beacons National Park representative.

The Group meets 2-3 times a year, at the start and end of the summer season, and usually at Pontneddfechan Village Hall.

Appendix 14

Councils and Councillors

Council name	Address	Contact number	Councillors
<i>County Borough Councils</i>			
Neath-Port Talbot County Borough Council	Neath Civic Centre, Neath, SA11 3QZ	01639 686868	<i>Glyn-neath Ward Councillors:</i> Horace T Lewis (Plaid Cymru) J Del Morgan (Plaid Cymru – leader of Plaid Cymru Group)
Rhondda Cynon Taff County Council	The Pavilions, Cambrian Park, Clydach Vale, Tonypany, CF40 2XX.	01443 424000.	<i>Hirwaun Ward Councilor:</i> Karen Morgan (Plaid Cymru). 11 Lisburn Rise, Hirwaun, Aberdare, CF44 9TR. Tel. (01685) 812344. E- mail: Karen.Morgan2@rhondda-cynon-taff.gov.uk
Powys County Council	Cambrian Way, Brecon, Powys, LD3 7HR.	0845 602 7030 or 01597 827 460	Tawe Uchaf Ward Councillor: Krishn Pathak (Independent)

Brecon Beacons National Park Authority

Plas y
Ffynnon,
Cambrian
Way,
Brecon,
Powys,
LD3
7HP.

(01874)
624437

Chair: Cllr. Eric Saxon

Community Councils

Hirwaun Community Council:

Village Hall,
Hirwaun, Aberdare,
CF44 9SL.

Tel. 01685
811566

Mr Mike Burke,

Ystradfellte Community Council:

Hepste, Penderyn,
Aberdare, CF44
9QA.

Tel. 01685
813201.

Clerk: Mrs S. Harvey-Powell. *County Councilor:* Krish
Pathak.

Appendix 15

Core Steering Group and List of Consultees

Core Steering Group members

Organization	Job Title	Current Post Holder
FCW	Area Manager	Paul Dann
BBNPA	SPLASH officer	Gerald Richards
BBNPA	Head of Countryside	Julian Atkins
BBNPA	Waterfalls Area Warden	Helen Pye
BBNPA	Geopark Officer	Alan Bowring
CCW	Conservation Officer	Graham Motley
BBNPA	Biodiversity Officer	Gareth Ellis
BBNPA	Conservation Officer	Graham Cowden
BBNPA	Chief Executive	John Cook
BBNPA	Western Area Manager	Judith Harvey
BBNPA	Matthew Williams	Rural Practice Surveyor
FCW	Neil Stoddart	South Wales Area Manager
BBNPA	Patricia Doree	Information Officer

BBNPA	Paul Sinnadurai	Senior Ecologist
BBNPA	Richard Ball	Access Officer
BBNPA	Richard Tyler	Tourism Manager
BBNPA	Ruth Coulthard	Head of Visitor Services
BBNPA	Sunita Welch	Education Officer
BBNPA	Su Meekins	Interpretation Officer

*Key representatives have been highlighted in bold

List of Consultees

Organization	Main Contact	Contact Details
SWOAPG (South Wales Outdoor Activity Provider Group)	Gary Evans	swoapg@gmail.com
BBNPA TIC staff	Waterfalls centre	pontuser@breconbeacons.org
	Mountain centre	TBC
	Llandovery TIC	llanuser@breconbeacons.org

	Abergavenny TIC	aberuser@breconbeacons.org
	Cwm Porth Car Park	
Ramblers Association	TBC	TBC
All BBNPA staff		<i>All staff circulation list</i>
Relevant FCW staff		<i>Via FCW – Paul Dann</i>
NPTCBC	TBC – tourism and RoW officers	TBC
Powys CBC	TBC – tourism and RoW officers	TBC
RCT CBC	TBC - tourism and RoW officers	TBC
Copy to be held at Waterfalls Centre for consultation period.	<i>To be made available to visitors and community members.</i>	<i>HP to arrange</i>
Cadw	TBC	TBC
CCW		<i>Via Graham Motley – to be circulated to relevant staff.</i>
Environment Agency Wales	TBC	TBC
Brecknock Wildlife Trust	TBC	TBC
British Horse Society	TBC	TBC
Clwyd Powys Archaeological Trust	TBC	TBC
Pontneddfechan Historical Society	TBC	TBC

National Trust	TBC	TBC
Sustrans Cymru	TBC	TBC
Biodiversity Information Service	TBC	TBC
Local Access Forums and Access Groups	TBC	TBC
Cambrian Caving Council	TBC	TBC
WASAG group	Helen Pye	HP to circulate via contact list
Central Beacons Cave Rescue team	TBC	TBC
West Beacons Mountain Rescue team	TBC	TBC
Brecon Beacons Park Society	Elizabeth Gibbs/William Gibbs	TBC
Disabled Ramblers	TBC	TBC
Pontneddfechan, Ystradfellte, Hirwaun and Penderyn Community Councils	Via local councillors	TBC

Appendix 16

List of Acronyms

Acronym	Meaning
AONB	Area of Outstanding Natural Beauty
BBNPA	Brecon Beacons National park
BBNPA	Brecon Beacons National Park Authority
CCW	Countryside Council for Wales
CRoW	Countryside and Rights of Way
EAW	Environment Agency Wales
EC	European Commission
FCW	Forestry Commission Wales
GCRs	Geological Conservation Reviews
IUCN	International Union for Conservation of Nature
NPTCBC	Neath Port Talbot County Borough Council
OEC	Outdoor Education Centre
PCC	Powys County Council
PDOs	Potentially Damaging Operations
RoW	Right(s) of Way
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SSSI	Site of Special Scientific Interest
SWOAPG	South Wales Outdoor Activity Provider Group
WAG	Welsh Assembly Government
WASAG	Waterfalls Area Safety Advisory Group

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