

Management Plan for

Wicklow Mountains National Park

2005-2009



National Parks and Wildlife Service

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FOREWORD

The Wicklow Mountains National Park extending to some 17,000 hectares, is a national asset of great ecological, social, educational, recreational and aesthetic value.

The primary aims of this Wicklow Mountains National Park Management Plan for the 2005-2009 period are to develop and maintain the highest standards of conservation management and development, and to facilitate appropriate educational, recreational and community interests and activities, consistent with the conservation imperative. These aims are to be achieved in co-operation with local interests and statutory agencies.



Responsibility for the overall management of Wicklow Mountains National Park rests with me, as Minister for the Environment, Heritage and Local Government, and is delivered through the National Parks and Wildlife Service of my Department. It is my task to ensure that Wicklow Mountains National Park is developed as a protected habitat for wildlife and an amenity of the highest international standards for the residents of Wicklow, for all our visitors and for the generations to come.

As the Minister directly responsible for the Park, and as a T.D. representing Wicklow I am particularly keen to ensure the welfare of Wicklow's greatest natural asset and amenity. I welcome the particular emphasis in this Plan which is placed on the importance of improving access, including visitor facilities, and of defining the Park boundary itself. I support the commitment to a wide-ranging education programme, together with the emphasis on the replacement of conifer plantations with native trees as part of a comprehensive programme of woodland management. The commissioning of a vegetation map for the whole Park, coupled with specific surveys on rare and protected plant species, are important to the future effective conservation management of the Park.

This Management Plan is the product of a long and detailed consultative process, initially between my Department and the Wicklow Mountains National Park Council – representing the principal "frontline" stakeholders of the Park – and subsequently with the wider public. I would like to convey my warm appreciation to the members of the Council for the enduring and valued contribution which they have made to the elaboration of this Plan and which they continue to make to the National Park. I also acknowledge the input of those organisations and individuals who took part in the public consultation process.

I believe that this Plan lays a firm foundation for the development and success of Wicklow Mountains National Park over the coming years.

Dick Roche T.D. Minister for the Environment, Heritage and Local Government

INTRODUCTION

In 1999 I was asked by the Manager of the Wicklow Mountains National Park to chair a public meeting in order to set up a Council which would be the interface between the National Park management and the local communities, users and other interest groups.

In excess of 300 people attended that first meeting, in Glendalough, and agreed a process which would set the guidelines for the formation of the Council. A series of meetings identified and agreed groups which would nominate their representatives to the Council.



The breakdown of representatives was agreed as follows: Farming organisations 9; Local community groups 4; Recreational users 4; and Socio-Economic 2. In due course, each group elected their nominees which I submitted to the Minister, who duly appointed them to the Wicklow Mountains National Park Council. At the inaugural meeting of the Council, the members requested that I remain as an independent Chairperson.

The main task assigned to the Council from the outset was to work with the National Parks and Wildlife Service (NPWS) of the Department of the Environment, Heritage and Local Government on the formulation of a 5-year Management Plan for the National Park. In undertaking this task, the Council set out to articulate the views and concerns of all interests in a spirit of constructive engagement with NPWS and the central Government Department to which it reported.

While the overall process in finalising the Plan has taken longer than we had expected, I can say that the Council members have given tirelessly and selflessly of their time in refining and improving the content of the Plan. As a result, the Council now believes that this final document - which has been further enriched by the outcome of the public consultation process – represents a sound basis for the future conservation management of our National Park, consistent with the principles of sustainable development.

On behalf of the Council, I would like to express our thanks to two NPWS personnel in particular – Seán Casey, National Park Manager and Monica Byrne, Secretary to the National Park Council. Both worked tirelessly to ensure that the concept of public participation in National Park management would work, and is the way forward. Their patience and perseverance was and still is exemplary.

I would also like to convey our thanks to Minister Roche for his appreciation of our work and for his assurance that the aims of this Plan are to be achieved in co-operation with local interests and statutory agencies. For our part, we intend to continue the constructive engagement with the Minister's Department in ensuring the effective implementation of the Plan over the next 5 years.

Speaking on behalf of the Council, I can say that we are proud to be involved and hope we have set standards for other National Park Councils to aspire to.

Speaking for myself, it has been a great voyage.

Tom Gregan, Chairperson of the Wicklow Mountains National Park Council

SUMMARY

This summary is intended only to highlight important points and is not comprehensive.

- Wicklow Mountains National Park (WMNP) is managed by the National Parks and Wildlife Service (NPWS) of the Department of the Environment, Heritage and Local Government (DEHLG), in accordance with international criteria set down by the World Conservation Union (IUCN). The Park is included in the United Nations List of National Parks and Equivalent Reserves.
- 2. National Parks are areas that "exist to conserve natural plant and animal communities and scenic landscapes which are both extensive and of national importance and, under conditions compatible with that purpose, to enable the public to visit and appreciate them."
- 3. The basic aims of WMNP are:
 - To Conserve Nature within WMNP
 - To Conserve other Significant Features and Qualities within WMNP
 - To Encourage Public Appreciation of WMNP through the Provision of Interpretative Materials and the Development of the Education Programme
 - To Develop a Harmonious Relationship between WMNP and the Surrounding Community, taking into account the social and economic needs of local communities
 - To Promote Research and Environmental Monitoring in WMNP and thus Contribute to Scientific Knowledge
- 4. WMNP, currently about 17,000 ha in area, encompasses large expanses of blanket bog and heath of the Wicklow Uplands. The National Park was established in 1991 with a core area comprising Glenealo Valley and Glendalough Nature Reserves. Further land has been purchased from private owners or transferred from Coillte Teoranta since then.
- 5. The geology of the site is dominated by granite which was intruded into sedimentary rocks during the Caledonian Orogeny. Today's landscape has been sculpted by glaciation, which formed steep U-shaped valleys and high altitude corrie lakes.
- 6. The dominant habitats of WMNP are blanket bog and heath while woodlands, exposed rock, lakes and rivers also form important components of the National Park.
- 7. The National Park contains a number of notable plant and animal species. These include protected species as well as those listed in the Irish Red Data Books and the EU Habitats and Birds Directive, such as Lanceolate Spleenwort, Parsley Fern, Small White Orchid, Bog Orchid, Peregrine Falcon, Merlin, Otter and a number of Bat species. The best known mammals of the National Park are probably Deer, the majority of which are Red/Sika hybrids.
- 8. Cultural resources include the early Christian settlement at Glendalough, which was founded by Saint Kevin in the 6th century. While the main monastic site is outside the National Park boundary, the Glendalough Valley contains a number of important remains. A number of prehistoric remains are also found within the National Park.

- 9. Visitor facilities at Glendalough include an education centre, information point, nature trails and picnic facilities. Tóchars (boarded-walks) have been constructed across areas of sensitive habitats in other areas of the National Park. A new WMNP headquarters has just been completed at Kilafin, just outside Laragh.
- 10. The main agricultural activity on the uplands is sheep grazing. Over half the National Park lands are mountain grazing in common, with grazing rights being held by others. Deer and Goats also graze throughout much of the National Park. Other activities on heath and bog include burning and peat cutting.
- 11. NPWS carries out various conservation management measures including Deer and Goat culls, fencing, removal of invasive species, bog restoration works and rehabilitation of former commercial conifer plantations.
- 12. WMNP is an important recreational resource for a large catchment area including Dublin, and also attracts considerable numbers of visitors from further afield. Active recreational activities include walking, sight-seeing, cycling, fishing, rock climbing, orienteering and horse riding. Other recreational activities, such as painting, photography, bird watching and historical interests are also important.
- 13. The principal objectives for the management of WMNP are:
 - To maintain and where possible enhance the ecological value of all natural and seminatural habitats and geological features within WMNP – blanket bog, heath, lakes and rivers, woodlands, exposed rock, grasslands and scrub.
 - To maintain and where possible increase the populations of rare and protected plant and animal species including Lanceolate Spleenwort, Parsley Fern, Small White Orchid, Bog Orchid, Peregrine Falcon, Merlin and Otter.
 - To establish and continue effective liaison with all interested parties in order to effectively manage WMNP.
 - To encourage sustainable recreational and educational use of WMNP, to provide information and facilities for visitors and to improve public awareness of the natural heritage of the area, taking into account the social and economic needs of the communities in the area.
 - To maintain cultural features within WMNP, particularly those associated with the monastic settlement at Glendalough.
 - To maintain landscape, aesthetic and other qualities in the environs of WMNP, through liaison with neighbouring landowners and others concerned.
 - To undertake or facilitate research necessary to achieve the conservation objectives.
 - To purchase, if desirable, lands and rights, by mutual agreement, in areas adjacent to WMNP, should they become available, in order to consolidate existing WMNP lands.

- 14. The main strategies that will be implemented to achieve these objectives include:
 - The establishment of sustainable grazing regimes which have been outlined in the commonage plans and control of burning and peat cutting on bog and heath habitats
 - Bog restoration works at Liffey Head
 - Control of erosion on sensitive habitats
 - Control of grazing and removal of invasive species in woodlands
 - Establishment of native species in areas of former commercial conifer plantations
 - Prevention of pollution of aquatic habitats
 - Work towards a partnership approach through the National Park Council, based on consensus with the local community and interested parties on the management of the Park, including right holders and community groups
 - Facilitation of public access for recreational and educational purposes
 - Development of visitor facilities at Glendalough
 - Provision of information to visitors and other National Park users
 - Development of monitoring and research programmes
- 15. Management zones have been identified within the National Park as follows:
 - A Zone (Natural Zone) Areas of high conservation value which require little or no management intervention. This includes undamaged bog and heath, and aquatic habitats.
 - B Zone (Active Management Zone) Areas of high conservation value where management input is needed to return them to a more desirable state. This includes woodlands, over-grazed and over-burned heath and bog that is being restored.
 - C Zone (Intensive Use Zone) Areas used intensively by visitors, National Park administration, or areas subject to intensive landscaping.
- 16. WMNP is part of the larger Wicklow Uplands candidate Special Area of Conservation (cSAC) and is also designated a Special Protection Area (SPA). A draft conservation plan has been drawn up for these designated areas. Management of this larger site for conservation purposes will have a positive impact on the National Park.

READER'S GUIDE

The purpose of this document is to communicate to stakeholders and members of the public about the management of Wicklow Mountains National Park (WMNP). Sometimes, nature conservation can be highly technical, and needs explanation. For example, there are some scientific and legal terms that are not readily understood by lay people, and these need to be described in lay terms. The more detailed scientific information, such as the inventory of National Park resources and scientific names of plants and animals recorded in WMNP, is included in the Appendices. In this way, the document can also be used as a reference source for the more technically minded.

The Foreword puts this Management Plan in context, both on a local and national scale.

Section 1 is the Introduction, which includes an account of the origin of the Park. This is followed by a brief description of the management plan and the objectives of the Park, in Section 2.

Section 3 describes the international guidelines and standards by which WMNP is managed. It also gives an outline of WMNP in a global context. WMNP is part of a network of hundreds of parks worldwide operating to similar standards.

Section 4 gives the reader an overview, in lay terms, of the EU and national legal instruments that play an important part in how the Park and surrounding areas of ecological value are managed.

Ownership and rights are described briefly in Section 5.

Section 6 gives an account of how the Park is currently used and managed. This sets the scene for the following Section, Section 7, which plots the course to be taken in managing the Park over the next 5 years, in the period 2005-2009. For each of the Objectives for the Park, listed in Section 2, strategies have been proposed to implement them, with targets set where appropriate. The final zoning section indicates where in the Park the various strategies will be carried out.

The appendices include a detailed inventory of the wealth of WMNP's resources, natural and manmade, and lists of species of animals and plants recorded in the Park. A summary table listing management strategies and zoning is given in appendix 4. The appendices also include a list of habitats and species protected under EU conservation legislation (Appendix 2) and a list of Park Council members (Appendix 8).

BOX 1. SOME TECHNICAL TERMS EXPLAINED

'Habitat' means a place where wild animals and plants live. Particular plants and animals live in different places. For example, an oak wood is a habitat. The oak trees provide homes for a range of wild plants and animals which are characteristic of that habitat.

A **'natural'** habitat is one that is substantially unmodified by the activities of people. For example, the vegetation on cliff sides is likely to be natural because it is inaccessible to people and domestic animals.

A '**semi-natural**' habitat is one that is close to nature but modified by people. For example, some grasslands are semi-natural because they have a variety of wild plants that are typical of the natural situation, but yet they are maintained as grasslands because they are farmed in a way which is close to nature. Many of Ireland's most valuable habitats are semi-natural.

'Biological diversity' refers to the variety of living things. In the same way as a rich diversity of cultures enhances the quality of our lives, so does a rich diversity of plants and animals. Biological diversity is now known to be important for the proper functioning of the planet's life support system. Conservation of biological diversity has, therefore, become one of the key aims of governments throughout the world.

'Invertebrate' refers to those animals with no backbones. The vast majority of the world's animal species, including the insects, are invertebrates. 'Vertebrates' include fish, amphibians (e.g. frogs), reptiles (e.g. lizards), birds and mammals.

ABBREVIATIONS USED IN THIS MANAGEMENT PLAN					
ACA	Architectural Conservation Area				
cSAC	candidate Special Area of Conservation				
DAF	Department of Agriculture and Food				
DEHLG	Department of the Environment, Heritage and Local Government				
EPA	Environmental Protection Agency				
ERFB	Eastern Regional Fisheries Board				
ESB	Electricity Supply Board				
EU	European Union				
На	Hectare				
IAA	Irish Aviation Authority				
IKC	Irish Kennel Club				
IMRA	Irish Mountain Rescue Association				
IUCN	International Union for the Conservation of Nature, now known as the World				
	Conservation Union				
I-WeBS	Irish Wetland Bird Survey				
MCI	Mountaineering Council of Ireland				
NGO	Non Governmental Organisation				
NHA	Natural Heritage Area				
NMAP	National Monuments and Architectural Protection				
NPWS	National Parks and Wildlife Service				
NWS	Native Woodland Scheme				
OPW	Office of Public Works				
pNHA	proposed Natural Heritage Area				
REPS	Rural Environment Protection Scheme				
RPS	Record of Protected Structures				
SAC	Special Area of Conservation				
SAR	Search and Rescue				
SARDA	Search and Rescue Dogs Association				
SPA	Special Protection Area				
UN	United Nations				
WGCC	Wicklow Game Conservation Council				
WWMC	Wicklow Way Management Committee				

Section 1 Introduction



Wicklow Mountains National Park hereinafter referred to as WMNP encompasses just over 17,000 hectares (ha) of the Wicklow Uplands, including blanket bog, heath, woodlands, lakes and exposed rocky habitats. Its location, just south of Dublin, attracts large numbers of local visitors, as well as those from further afield.

1.2 ORIGIN

WMNP was established by Government decision in 1991, with an initial core area of over 3,700 ha. This original area comprised the statutory Nature Reserves of the Glendalough Woods and the Glenealo Valley, both of which were established in 1988, as well as lands that were transferred from the Forest Service. These plots of land which were no longer required for planting purposes, but of high conservation value, amounted to more than 2,900 ha. Lands around the Liffey Head Bog complex, which were purchased from the Powerscourt Estate at the time, were also included.

Certain lands held by Coillte Teoranta in the Wicklow uplands have also been transferred to the National Parks and Wildlife Service (NPWS) for inclusion in WMNP. Land purchase has continued since the original establishment of the National Park with the main areas being at Ballingonneen, Kippure East, Ballinabrocky, Lough Bray, Derrybawn, Glencree and Ballinastoe.

Much of the lands within the site are commonage where traditional landuse rights such as grazing, turbary and estovers occur (see Section 5.2 -Rights, page 13). These rights are recognised and a liaison process with rights holders has been established to achieve the conservation objectives for the National Park.

The boundaries of the National Park as it exists at present, are based on previous land ownership patterns, rather than on an ecological unit.

1.3 ADMINISTRATION

WMNP is administered by the NPWS, part of the Water and Heritage Division of the Department of the Environment, Heritage and Local Government (DEHLG), which has headquarters in Dublin. The Regional Manager is responsible for overall management. However these duties are delegated to the Deputy Regional Manager based at the Eastern Region Headquarters in Kilafin. He heads the National Park staff, which comprises: a District Conservation Officer, 4 Conservation Rangers; 7 Guides/Education officers who run the Education Programme and staff the Information Office; 5 General Operatives, and an Administrator.

1.4 NATURAL HERITAGE

The Wicklow Mountains are composed of a large mass of granite that reached the earth's upper crust approximately 400 million years ago. This mass of igneous rock compressed and heated the adjacent slates and mudstones, forming metamorphic mica-schists. The boundary between the igneous and metamorphic rocks holds concentrations of lead, iron and zinc, which have been mined in the past in areas such as Glendalough, Glenmalure and Glendasan.



Lower Lake and Glendalough Valley from the Green Road The landscape seen today has been shaped by ice, with glaciers carving out deep U-shaped valleys such as Glendalough. Corrie lakes such as Loughs Ouler and Upper Lough Bray were excavated by glaciers forming on north facing mountain slopes.

The majority of the area of WMNP is covered by varying depths of peat or peaty soils. Steeper, drier slopes with thin peat tend to support upland heath vegetation, dominated by Ling Heather, Bell Heather and Bilberry. Blanket bog develops in wetter areas, where peat depth is greater. Typical plants include Bog Mosses, Sedges and Heather. Liffey Head Bog is the best example of deep bog within the National Park (see Map 3, gross habitat map).

WMNP also contains important areas of semi-natural oak woodland, mainly around Glendalough, as well as old conifer plantations, dominated by mature Scots Pine trees. Other important habitats include rivers and streams and exposed rock and scree.

Most of Ireland's mammal species can be found in the National Park, including Deer, Otter, 8 Bat species, Pine Marten, Badger, Hare, Red Squirrel, Goat and Fox. Over 100 bird species have been recorded in the Park. Birds

of prey such as Peregrine Falcon, Merlin and Kestrel hunt over the open upland habitats. Other upland birds include Red Grouse, Ring Ouzel and Skylark. Species including Wood Warbler, Garden Warbler, Redstart and Crossbill breed and/or feed in the various woodland habitats. Species associated with aquatic habitats include Dipper and Goosander.

(More detailed descriptions of the natural and cultural resources of the National Park are contained in Appendix 3.)



Section 2

2.1 THE MANAGEMENT PLAN

This Management Plan provides a framework for the conservation and enhancement of the special features that make up WMNP. It states policies and practical actions in relation to all aspects of management as well as other functions such as consultation with interested parties.

The life span of this plan is 5 years, from 2005 to 2009.

The Plan sets out the objectives and the management strategies, which will be implemented over the 5 year period of the Plan. Because of uncertainty at this stage about precise Exchequer financial allocations, it is not possible to indicate precise deliverables for each strategy on a phased basis over the 5-year implementation period.

However, under the Government's Strategic Management Initiative for all Government Departments, expenditure allocations for each year will be the subject of Business Plans which will outline the objectives and the deliverables for each year. It is the intention to make these Business Plans available to each Park Council member so that they can represent an important input to the Council's deliberations on the implementation of the Management Plan.

2.2 AIMS AND OBJECTIVES OF WMNP

The ideal aims to which management is committed are set out below. They may not all prove practically or economically viable. These are the aims that the conservation manager would strive for if s/he had complete control over the site and the activities and land uses adjacent to it. They admit no constraints and are an indication of the potential of the site.

To Conserve Nature within WMNP:

WMNP contains ecosystems, species and features which are of national or international importance. Conserving them means protecting and, if necessary, managing them in such a way as to ensure their survival, to permit the fullest possible operation of natural processes and to minimise the effects of past and present human interference other than those involving traditional usage or archeological remains.

To Develop a Harmonious Relationship between WMNP and the Surrounding Community Taking into Account the Social and Economic Needs of Local Communities:

WMNP will benefit, both directly and indirectly, from the goodwill of the local community in the vicinity of the Park and the surrounding countryside, as well as the wider national and international communities. The local community can gain tangible benefits from the National Park, such as employment opportunities, rural development opportunities, development of the tourist industry and other downstream economic benefits. Other benefits include access to recreational facilities and, more importantly, the intangible benefit of being able to take pride in the National Park in their locality.

The Wicklow Uplands Council has played an important role in working with local interests to achieve consensus. Interaction and co-operation with this organisation will be beneficial to building good relationships.

A Council for WMNP has been appointed by the Minister. The role of the Council is to represent local communities and interest groups, and to work with NPWS on finalising the management plan for the National Park. The Park Council will play an important and continuing role in the future of WMNP. The Council will also review the implementation of the plan.

To Encourage Public Appreciation of WMNP:

This entails admission of visitors to the National Park; provision of facilities and services to inform visitors about the special qualities of the National Park, whether by informal methods or as part of the formal education system; and provision of recreational facilities compatible with other aims, that will enable visitors to enjoy the National Park. Such facilities and services may be located within existing communities on the outskirts of WMNP. These services and facilities will complement and promote other tourism facilities within the county as well as providing information on WMNP. It implies developing support for environmental and heritage conservation generally through public awareness and the education and training of particular groups of people.

To Conserve other Significant Features and Qualities within WMNP:

WMNP includes buildings and other significant features resulting from human activities, including National Monuments and other noted archaeological remains. It also forms part of a region noted for its scenic beauty, tranquillity and other aesthetic qualities. Conserving these features and qualities means doing all that is necessary to ensure their continued existence.

To Promote Research and Environmental Monitoring in WMNP and thus Contribute to Scientific Knowledge:

Research has immediate applications in the management of National Park resources and the preparation of interpretative programmes. In addition, areas where environmental monitoring or research on biological systems can be carried out under relatively natural conditions are scarce. WMNP can make a valuable contribution to scientific knowledge and understanding which is essential for the maintenance of ecological processes, the preservation of genetic diversity and the sustainable utilisation of natural resources.

Arising from the general aims for conservation of the site, the principal management objectives are outlined below. (Specific strategies outlining how these objectives will be implemented are described in Section 7).

- **Objective 1:** To maintain and where possible enhance the ecological value of all natural and semi-natural habitats and geological features within WMNP blanket bog, heath, lakes and rivers, woodlands, exposed rock, grasslands and scrub.
- **Objective 2:** To maintain and where possible increase the populations of rare and protected plant and animal species including Lanceolate Spleenwort, Parsley Fern, Small White Orchid, Bog Orchid, Peregrine Falcon, Merlin and Otter.
- **Objective 3:** To establish and continue effective liaison with all interested parties in order to effectively manage WMNP.
- **Objective 4:** To encourage sustainable recreational and educational use of WMNP, to provide information and facilities for visitors and to improve public awareness of the natural heritage of the area, taking into account the social and economic needs of the communities in the area.
- **Objective 5:** To maintain cultural features within WMNP, particularly those associated with the monastic settlement at Glendalough.
- **Objective 6:** To maintain landscape, aesthetic and other qualities in the environs of WMNP, through liaison with neighbouring landowners and others concerned.
- **Objective 7:** To undertake or facilitate research necessary to achieve the conservation objectives.
- **Objective 8:** To purchase, if desirable, lands and rights, in areas adjacent to WMNP, should they become available, by mutual agreement, in order to consolidate existing WMNP lands.

In summary, the conservation of nature and the encouragement of public appreciation are the primary objectives for the management of WMNP. In practice, natural heritage cannot be appreciated by future generations unless it is effectively conserved in the meantime. Therefore, if any conflicts arise between different objectives, nature conservation must be treated as the overriding one.



Section 3 WMNP: The International Context



Winter morning at the Upper Lake, Glendalough

3.1 WMNP AND THE WORLDWIDE NETWORK OF NATIONAL PARKS

WMNP is part of a network of hundreds of national parks worldwide that are managed to similar standards. The IUCN (also called the World Conservation Union) is an international body which sets criteria and management guidelines for national parks throughout the world. Based in Switzerland, its membership is voluntary and includes many governments and non-government organisations. Ireland is a member, and has agreed to adhere to the IUCN guidelines as they apply to WMNP and will continue to do so under this Management Plan. Further information on the IUCN guidelines for national parks can be found in Appendix 1.

3.2 INTERNATIONAL STANDARDS FOR NATIONAL PARKS

The guidelines for the IUCN protected area management categories were published in 1994. Since then, they have been widely applied and referenced at national and international levels, including the latest United Nations (UN) List of Protected Areas in 2003.

WMNP along with Killarney National Park, Glenveagh National Park, Connemara National Park, the Burren National Park and Ballycroy National Park, Co. Mayo is classified as a Category II National Park (Protected Area Managed Mainly for Ecosystem Protection and Recreation). The criteria for this category are listed in Box 2.

The IUCN guidelines include the recognition that traditional practices by local people can maintain and enhance natural features and biological diversity. This is relevant to Ireland and Europe where many so-called 'natural' landscapes owe their very existence to the activities of people working harmoniously with nature over thousands of years. Many of these landscapes are not natural, but semi-natural (see Box 1: Technical Terms Explained). Therefore, it is becoming accepted practice that park authorities must take people into account when considering what activities are appropriate in national parks.

BOX 2. CRITERIA FOR IUCN CATEGORY II NATIONAL PARKS (E.G. WMNP)

Definition:

Natural area of land and/or sea designated to:

- protect the ecological integrity of one or more ecosystems for present and future generations
- exclude exploitation or occupation inimical to the purposes of designation of the area
- provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

Objectives of Management:

- To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational and tourist purposes.
- To perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources and species, to provide ecological stability and diversity.
- To manage visitor use for inspirational, educational, cultural and recreational purposes at a level which will maintain the area in a natural or near natural state.
- To eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation.
- To maintain respect for the ecological, geomorphic, sacred or aesthetic attributes which warranted designation.
- To take into account the needs of indigenous people, including subsistence resource use, in so far as these will not adversely affect the other objectives of management.

Guidance for Selection:

The area should contain a representative sample of major natural regions, features or scenery, where plant and animal species, habitats and geomorphological sites are of special spiritual, scientific, educational, recreational and tourist significance.

The area should be large enough to contain one or more entire ecosystems not materially altered by current human occupation or exploitation.

Organisational Responsibility:

Ownership and management should normally be by the highest competent authority of the nation having jurisdiction over it. However, they may also be vested in another level of government, council of indigenous people, foundation or other legally established body which has dedicated the area to long-term conservation.

In summary, the following statement of the essential purposes of National Parks is appropriate to the circumstances of WMNP:

"National Parks exist to conserve natural plant and animal communities and scenic landscapes which are both extensive and of national importance and, under conditions compatible with that purpose, to enable the public to visit and appreciate them."

This definition allows other desirable activities such as conservation of historic and cultural sites, promotion of research and contribution to the economic and social development of the local community.

3.3 NATIONAL POLICY ON IUCN GUIDELINES

WMNP and Ireland's other National Parks will be managed in accordance with their management plans. If there is any conflict between the management plan for an Irish National Park and its existing category as recognised by IUCN, the IUCN is free to change the categorisation but not the management policy.

3.4 STATUS OF WMNP IN IRISH LAW

WMNP was established by Government decision in 1991. The lands which constitute the National Park were acquired for the State under the provisions of the State Property Act, 1954 and the State Authorities (Development and Management) Act, 1993. The National Park is managed by NPWS, of the Department of the Environment, Heritage and Local Government.

There is, as yet, no dedicated national legislation governing National Parks in Ireland. DEHLG will consider the merits of such legislation as part of its commitment to regulatory reform.



Section 4 WMNP in Relation to National and EU Environmental and Planning Policy

4.1 EU & NATIONAL CONSERVATION DESIGNATIONS

WMNP is the subject of a number of environmental designations which entail important legal responsibilities. These are outlined in the main text below and in more detail in Box 3.

Two significant designations affect WMNP. They are:

- Special Area of Conservation (SAC) and
- Special Protection Area (SPA)

These are EU legal designations which require the authorities to protect and manage the wild plants, birds and animals, and their habitats, therein. SACs are designated to conserve a number of important wildlife habitats and certain species of plants and animals. The Wicklow Uplands candidate SAC (cSAC) encompasses a large area (approximately 32,500 ha) including WMNP. SPAs are designated to protect a number of rare or threatened wild birds and their habitats (e.g. Merlin and its blanket bog and heath habitat). The Wicklow Mountains National Park SPA includes the National Park and adjacent conifer plantations. More details on the designations as they apply to WMNP and surrounding areas are included in Appendix 2.

WMNP is also subject to national designations. The National Park is part of the Wicklow Uplands **proposed Natural Heritage Area (pNHA)**, which is a designation covering areas of high ecological value in Ireland. It will confer some similar legal responsibilities as the SAC and SPA designations. The pNHA designated for Wicklow Mountains covers the same area as the cSAC – over 32,000 ha.

The National Park Lands also include two Nature Reserves, namely Glendalough Nature Reserve and Glenealo Valley Nature Reserve.

In SACs, SPAs, NHAs and Nature Reserves, damaging or potentially damaging activities (e.g. industrial or agricultural pollution, overgrazing, etc.) are not allowed. Activities that add to the value of SACs and SPAs are encouraged. It should be noted that some lands already acquired within the WMNP carry legal rights, such as grazing and turbary rights. These rights pre-date their acquisition by the State and are still operational.

Box 3 describes these designations as they apply to WMNP in further detail.

BOX 3. WMNP: SIGNIFICANCE OF EU AND IRISH ENVIRONMENTAL DESIGNATIONS

Special Areas of Conservation: Throughout Europe, wild nature has been pushed back into smaller and smaller areas. The EU 'Habitats' Directive was passed in 1992 with the objective of conserving a network of such areas in the EU. One of the key requirements of the directive is that Member States designate and protect those areas which are of European importance for wildlife. These designated areas are termed 'Special Areas of Conservation' or SACs. SACs are designated to conserve a range of habitats such as bogs, woods and wetlands, and to conserve certain listed wild plants and animals (e.g. Otter, Salmon). Ireland has proposed for designation over 400 SACs, covering around 10% of the country. (See Appendix 2 for details of habitats and species protected by SAC designation).

Special Protection Area: In 1979, the EU passed the 'Birds' Directive, the aim of which is to protect a number of rare and threatened species of European birds, and the places (or habitats) where they feed and breed. One of the key requirements of the directive is that Member States designate areas which are important for rare and threatened European birds. These areas are termed 'Special Protection Areas' or SPAs. The directive contains Annexes which are lists of birds which require particular conservation measures (Annex I), and also species which may be hunted, and species which may be sold. Ireland has designated SPAs throughout the country. WMNP is one of these SPAs, occupying about 17,000 ha.

Natural Heritage Area: This is a national designation for areas of high ecological value, made under the Wildlife (Amendment) Act, 2000. In the case of Wicklow Uplands, the boundaries of the NHA correspond with the SAC. It is expected that official designation will follow at an unspecified date in the near future.

Nature Reserve: This is a national designation in which nature is given priority over any other use, and is the most strict of all the nature designations. Glendalough Nature Reserve and Glenealo Valley Nature Reserve were established under section 15 of the Wildlife Act, 1976 by Statutory Instruments 68 and 69 of 1988.

4.2 THE NATIONAL PARK AND ITS SURROUNDINGS

The WMNP is not an isolated area of interest and beauty but is part of the wider Wicklow Uplands, which also include the dramatic peaks of Luggala, Mullaghcleevaun, Lugnaquilla Mountains and northern slopes of Kippure Mountain. This means that the National Park cannot be seen as an isolated island but as part of a larger landscape that is one of Europe's great natural treasures. The majestic open hill landscapes of blanket bog and heath contrast with the patchwork of other habitats such as woodland, lakes, streams, waterfalls and scree, all of which add to the aesthetic qualities of the area.

The Wicklow Uplands, including the National Park, are classified as an 'Area of Outstanding Natural Beauty' in the Wicklow County Council County Development Plan (1998). The spectacular scenery of the National Park is well known and many panoramas, such as the views of Glendalough, Glenmacnass and the Coronation Plantation have been famous for hundreds of years. Upland routes, such as the Military Road reveal stunning views of mountain peaks and glacial valleys. Views from mountain tops extend from the midland plains to the Irish Sea. On a clear day, the Welsh coast can even be seen.

The special economic and social interests of those who live in the area and those with legal rights are recognised and supported.

Special Area of Conservation: Wicklow Uplands cSAC

As already mentioned, WMNP forms part of a much larger protected area, designated as cSAC and pNHA. The protection of the nature conservation interest of this designated area is the responsibility of the NPWS.

The areas within the cSAC but outside the National Park are either privately owned or owned by Coillte, the Department of Defence or the ESB.

Activities that cause damage or degradation to habitats or species listed on Annexes of the Habitats Directive (e.g. burning, peat cutting,

drainage, planting and harvesting of conifers, dumping of waste, etc.) are subject to control within the boundaries of the designated area. These are Notifiable Actions: NPWS must be notified and consent must be given by the Minister before any of these actions can be carried out.

Management of the cSAC for conservation purposes will have a positive impact on the National Park as the greater the area designated for protection, the more chance there is of protecting it from negative external influences. The size of the cSAC greatly enhances its value as an ecologically important area composed of a mosaic of habitats.

Special Protection Area: WMNP SPA

The designation of the National Park as an SPA will afford added protection to those bird species for which the SPA is designated, such as Peregrine Falcon and Merlin.

Development control around WMNP

NPWS has no control over development of adjoining lands. Such controls over development are vested in the relevant Local Authorities under the Planning Acts. NPWS does not have any special rights regarding developments adjoining the National Park.

Urban Pressures

WMNP adjoins and is closely associated with the city of Dublin and its smaller satellite towns and villages, such as Laragh, Enniskerry, Bray, Blessington and Roundwood. This brings benefits such as the provision of accommodation and services for National Park visitors, but it also poses problems not experienced by National Parks in more remote places. These include pressure from recreational use and visitor access at particular locations. It is essential that the significance for WMNP of developments within adjacent areas are recognised and taken into account.





Liffey Head Bog from the Military Road

Peregrine Falcon and young



4.3 LEGISLATION RELATING TO BUILT HERITAGE

Legislation relating to archaeological heritage

The legal framework for the protection of National Monuments and Archaeological heritage is covered by the following Acts:

National Monuments Act 1930	(2 / 1930)
National Monuments Amendment Act 1954	(37 / 1954)
National Monuments Amendment Act 1987	(17 / 1987)
National Monuments Amendment Act 1994	(17 /1994)

A number of sites within the National Park are entered in the Record of Monuments and Places and are subject to the provisions of the above National Monuments Acts.

Legislation relating to Architectural Heritage

A new legal framework to protect architectural heritage was introduced in 1999. The Local Government Planning and Development Act 1999, the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999, have been put in place in order to strengthen the protection of architectural heritage. In particular they introduce 2 new mechanisms – Record of Protected Structures (RPS), and Architectural Conservation Areas (ACAs).

From January 1st 2000, all buildings and structures listed for protection/preservation in county development plans became the RPS for that local authority.

Architectural Conservation Areas (ACAs)

An ACA is defined in the 1999 Planning Act as a place, area, group of structures or townscape, taking account of building lines and heights, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest, or which contributes to the appreciation of protected structures. This applies to the National Park landscapes and most of their features and structures.

Records of Protected Structures (RPS)

All planning authorities must include an RPS in their development plans, comprising every structure which, in its opinion, is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

According to the 1999 Planning Act, a protected structure may also include land or other structures lying within the curtilage of that structure. The effect of this legislation is that planning permission is now required for works (previously excluded in many cases) which take place in or around an ACA or Protected Structure within the National Park.

Grenada Convention

Ireland has also signed The Convention for the Protection of the Architectural Heritage of Europe (the Granada Convention, 1985). This convention covers the protection of monuments, groups of buildings and sites of historical, archaeological, artistic, scientific, social or technical interest.



Section 5 Ownership and Rights

5.1 OWNERSHIP

All WMNP land and buildings are owned by the State.

Certain Coillte lands, which have been planted with commercial forestry, are to be transferred to the Park once the timber crops have been harvested (see Map 1).

5.2 RIGHTS

Rights of common refer to communally held landuse rights. Such rights include grazing rights, rights to harvest turf (turbary) and rights to cut material such as heather, bracken and gorse for fuel or animal bedding (estovers). All right holders will continue to exercise their entitlements as of right.

Historical Background to current ownership and rights

Historically, the majority of un-enclosed land in the Wicklow uplands, as in other Irish mountain ranges, has consisted of commonage. Traditionally, the owner of a holding of enclosed land in a townland within a valley held grazing rights in the common mountain grazing belonging to that townland. This also applied to other rights, such as turbary. Before the Land Acts of the late 19th and early 20th centuries, landlords owning mountain estates regulated the exercising of these various rights on the open hills by their tenants who rented enclosed holdings from them.

Land purchase schemes were introduced for tenant farmers under the pre-Independence Land Acts. In some cases this meant that turbary and grazing rights on mountain commonages were transferred to the former tenants, while the ownership of the actual land (fee simple) remained with the landlord. In other cases, shares in the commonage land itself (fee simple and rights) were transferred to the tenant farmers. Both these types of commonage still exist in Wicklow.

The 1923 Land Act (post-Independence) provided for the compulsory purchase of all tenanted land in the country, and its transfer to tenant farmers. However, in the Wicklow and Dublin Mountains, the great majority of the commonages were classified as un-tenanted and thus remained in the possession of the landlords with only grazing and turbary rights being transferred to the former tenants. Since then, transfer of ownership of the actual land (fee simple) of these commonages has been widespread, with a number being partially or entirely bought by Coillte for afforestation. Other lands have been bought by NPWS and form part of WMNP (See Map 1).

5.3 FUTURE EXPANSION OF WMNP

The area of WMNP may increase in the future in order to include ecologically important areas. However, no private land will be included and no compulsory purchase will occur. Land may be purchased on the open market, should it be of suitable quality.



Section 6 How WMNP is Used and Managed

6.1 PAST HUMAN USE

Farming

There is evidence that humans have had a significant influence on the Wicklow landscape since Neolithic times. A peat profile taken between Seefin and Seefingan, suggests land clearance by early farmers, indicated by a sudden decline in the pollen record of Elm and Pine and a rise in Hazel and grasses. This early land clearance has been associated with the builders of the passage tombs. Such tombs form the largest megalithic tomb type in Co. Wicklow and occur within the National Park.

The remains of farming settlements of later ages, particularly from pre-Famine times can be found throughout the National Park

Mining

Mining for metal ore (principally lead) began at Glenmalure, Glendalough and Glendasan in the mid 1700s. By the 1830s, the mines were employing several thousand people. However, all that remains today are mine-shafts, spoil heaps, discarded machinery and abandoned settlements. The mining and smelting operations influenced deforestation in the area, as well as the establishment of the Scots Pine plantations around Glendalough.



Crushing mill at the disused mine workings at Glendalough

Woodland Management

Evidence of charcoal works, dating from the 13th century has been found in the Glendalough valley and charcoal making continued into the 18th century. Wood was also used for coopering, tanning and construction. Areas of woodland were coppiced in the 18th century, however, as this was carried out at unsustainable levels, it led to a decline in woodland area. Some planting of Oak occurred during the 18th century and as mentioned above, significant areas were planted with Scots Pine in the mid-19th century to provide timber for the burgeoning mining industry.

Monastic Settlement

The monastic city of Glendalough was founded by Saint Kevin in the 6th century. It flourished until the 12th century as a centre of learning and a focus for pilgrims and survived repeated attacks by both natives and foreigners.

The monastery started to decline in the 13th century with the development of continental orders of monks throughout Ireland and the unification of the diocese of Glendalough with that of Dublin. The buildings fell into disrepair in the early 1600s and were abandoned, except as a site of pilgrimage.

The diocese remained the landlord of huge tracts of land in the area until it was sold in the 1830s and the monastic church buildings were passed to the State under the Irish Church Act 1869.

6.2 CURRENT HUMAN USE

The following sections describe current activities. Strategies, including National Park policies – relating to such activities, are laid out in Section 7.

Agriculture



Wicklow Cheviot and Cheviot crosses grazing in WMNP

The principal farming on the Wicklow Uplands is sheep grazing, using mainly Wicklow Cheviots and crosses with other sheep breeds. Annual grazing licences are given to local farmers for areas of National Park-owned mountain grazing. These usually run from April 1st to October 31st. Other areas are grazed in common by a number of shareholders, with the National Park holding the land in fee simple. Approximately 56% of WMNP lands have such grazing rights attached (see Map 1).

Burning

Burning is a major agricultural practice by sheep farmers on the Wicklow Uplands. This practice is carried out in order to improve the upland vegetation for sheep grazing. These fires are not always managed and can get out of control. In many areas the frequency of burning is too high and has led to damage to upland habitats in the National Park. Burning of growing vegetation is illegal between March 1st and August 31st in any year.

Peat Extraction

Cutting peat for fuel has been carried out in the National Park area for centuries. Owners of turbary rights may hand-cut turf for domestic use. These rights are usually exercised in the same general area.

Old turf banks, where turf is no longer cut, are a common sight along roads and tracks, particularly around the Sally Gap.

Mechanical peat extraction no longer occurs within the National Park boundary.

Recreation/Tourism

The Wicklow Mountains and surrounding area is an important recreational resource located close to the greater Dublin area (a catchment of more than 1 million people). While a number of studies have examined recreational and visitor patterns in various areas, it is difficult to assess the numbers of people using WMNP, particularly for activities such as walking.

Recreation can be both passive and active and is good for health and well-being. Recreation should be encouraged and facilitated in the National Park as an important contribution to health awareness and promotion. The following activities currently take place within WMNP:

Walking

Walkers include those who take short walks as well as those who go hill walking, often along routes, such as the Wicklow Way. This way marked route passes through National Park lands along the eastern side of Djouce and at Glendalough. Most people who take short walks (less than o.5 km) do so in the vicinity of Glendalough. The whole National Park is extensively used for hill-walking.

Fishing

A number of rivers and lakes within the National Park are occasionally fished. The most common species caught is Brown Trout. The principal fishing waters in the Park are: the Upper River Liffey, parts of the Avonmore River, Glendalough Upper and Lower Lakes, together with the state-owned parts of Lough Dan and Kelly's Lough.

Camping

There are no facilities for campers within WMNP.

Cycling

The public roads running through the National Park are used for competitive cycling, as well as for touring. Cyclists also use some un-surfaced forestry-type roads and wider surfaced tracks, but are not permitted off-road.

Rock Climbing

Rock climbing is carried out by individuals, climbing groups and adventure centres, especially on the crags along the Miners' Road at Glendalough, Upper Glendalough and in Glenmalure.

Canoeing

Canoeing takes place on the periphery of the National Park, on the Avonmore and Avonbeg Rivers.

Motorbike Trials

Motorbike trials are carried out under permit in WNMP. The club must fulfil all the conditions of the permit in order to minimise the impact of these events. Permitted events have taken place at Old Boleys and near the mines at Glendasan.

Other Off-Road Motoring

Un-regulated use of motorbikes and quad-bikes along Kippure Ridge, Table Track and sections of the Wicklow Way has caused erosion problems.

Horse Riding

Limited horse-riding occurs under permit in the National Park.

Orienteering

Orienteering events occur under permit in the National Park. Areas surveyed by the Irish Orienteering Council include Glendalough, Derrybawn and along the Avonmore River.

Swimming and Paddling

Swimming is not common in WMNP, but the mountain lakes are occasionally used by locals and visitors. The lakes at Glendalough are used for paddling and occasional swimming. The east beach at the Upper Lake at Glendalough is a popular spot for paddling during the summer.

Dog Trials

Gun Dog trials are carried out in the National Park under permit. Shooting is not permitted while trialling.

Hunting

Sport hunting is not permitted in the National Park. However, NPWS staff undertake selective deer and goat culls for conservation management purposes.

There is a persistent problem of illegal hunting (mainly of deer) within the National Park area, mostly in areas adjacent to roads. The main breaches of the Wildlife Act are armed trespass and employment of illegal methods of hunting such as lamping and the use of vehicles. Conservation Rangers carry out regular anti-poaching patrols.

SCUBA Diving

SCUBA diving takes place in WMNP under permit, mostly in the Upper Lake, Glendalough. To date, 2 clubs have been granted permits to dive in the Park.

• Power-boating and other watersports

Power-boating, water-skiing and jet skiing are not permitted on NPWS-owned lakes, e.g. Glendalough Upper and Lower lakes, Upper Lough Bray, Lough Ouler. The only boats on these lakes are those used by NPWS for management and rescue purposes. However, in the case of Lough Dan, where NPWS only owns a portion of the lake (Carraig Roe and Carrigeenduff townlands), other landowners have boating and fishing rights on the lake and power-boating and water skiing occurs. Boating access is by landowner/rightholder permission only.

• Touring, Sightseeing and Picnicking

The spectacular scenery of the Wicklow Uplands attracts a large number of tourists and other sightseers. The most popular viewing sites within/adjacent to the National Park are at Glendalough, the Wicklow Gap, Glenmacnass Waterfall, the Sally Gap Crossroads, the Lough Brays and Lough Dan. The National Park maintains picnic areas at Derrybawn and Glendalough. It is also popular for bird watching, painting and photography.

Visitor Attractions and Associated Facilities



St. Kevin's Church, Glendalough

Many visitors are also attracted by the historical and archaeological remains of the area. Glendalough is the focus for such visits and receives approximately one million visitors annually (East West Tourism Consultancy Ltd, 1998). Most of these are day visitors and peak numbers occur on a seasonal and weekend basis and are linked to weather conditions.

WMNP organises a calendar of events annually. These events take place between the months of March–November, and include a 10-week Summer Lecture series (June–August), Specialist Guided Walks, Weekly Guided Nature Walks, Workshops and Art Activities for children. Details are available from February each year. National Park and event information is also available through Dublin and Wicklow Tourist offices. Event listings are posted in local (environs of

the whole National Park) businesses, local and national newspapers, local radio and in various publications such as "The Mountain Log".

WMNP Headquarters are based at the Regional Office, Kilafin (Trooperstown Wood). This new complex comprises office accommodation, workshops and storage sheds. There is no Visitor Centre specifically catering for the National Park.

The Education Centre is housed in recently restored 19th century miners' cottages beside the Upper Lake at Glendalough known as Bolger's Cottage. The Visitor Information Point at Glendalough is also accommodated in a restored cottage (once The Forester's house) near the Upper Lake.

The Education Centre and the NPWS Regional Office at Kilafin are accessible to visitors with impaired mobility.

The shell of a cottage in the Coronation Plantation (Brocky Lodge) has been partially restored and it is planned that it will be used as accommodation for people working in the National Park. Another cottage (Joseph's Cottage) beside the road, opposite the Coronation Plantation, has recently been restored with the intention of using it as a ranger base and a possible information point at the Western Gateway to WMNP.

The National Monuments and Architectural Protection (NMAP) section of DEHLG manage a Visitor Centre based around St. Kevin's Monastic settlement at Glendalough, on the edge of the National Park.

Other management in relation to visitor use includes tochar (boardwalk) construction and the maintenance of car park and picnic facilities.

The Electricity Supply Board (ESB) manages a pump storage generating station at Turlough Hill. This is surrounded by National Park lands and underground power lines run through the National Park from the power station. There are overhead powerlines near Upper Lough Bray.

Roads, Tracks & Car Parks

There are number of metalled roads and tracks in WMNP, concentrated around the Glendalough Lakes and Derrybawn. The National Park maintains paths at Poulanass as well as the Miner's Road at Glendalough for public use. A small car park and picnic area beside the Avonmore River at Derrybawn is also maintained by the National Park. There are 2 other car parks within National Park boundaries, 1 at Liffey Bridge at Kippure East and the other at the top of the Wicklow Gap. There are also numerous points where a small number of cars can pull off the road

Tóchars have been laid across certain areas of blanket bog within the National Park, in order to protect the bog from erosion by walkers. These areas are White Hill near Djouce Mountain, Spink and Mullacor.

The tóchar, Cosán Caoimhín, allows access, including wheelchair access, around the Lower Lake at Glendalough for visitors with impaired mobility. The trail network at the Upper Lake is also accessible to visitors with impaired mobility, as is the car park and viewing point above Lough Nahanagan.

Tracks formerly used as access points for turf-cutting plots occur at a number of locations.



Wheelchair accessible tochar between the Upper and Lower Lakes, Glendalough)

The Wicklow Way passes across the eastern slopes of Djouce and through parts of the Park at Glendalough.

Over three quarters of visitors to the Wicklow Mountains arrive by car and approximately half of these visit Glendalough, leading to heavy traffic at times, particularly during the summer. A public transport service, operated by St. Kevin's Bus Service, travels between Glendalough and Dublin, via Bray, twice daily. This serves the needs of both commuters and tourists. There is also a small number of private bus operators working in the region.

Education

The WMNP has a dedicated education facility, operated from Bolger's Cottage, that is open year round. This is a unique facility, which offers programmes in field studies and nature awareness to schools and other interested groups (incl. Adult learning groups, Youthreach, Foroige, Chernobyl Children's Groups, etc). The Education Programme is run by National Park Guides who facilitate a wide range of activities for groups of all ages. The Programme includes:



WMNP Education Centre at Bolgers Cottage, Glendalough Nature awareness activities with primary school groups

- Field studies with secondary school and university groups
- Training courses in nature education for teachers/group leaders
- Art sessions
- Guided walks
- Co-ordination with other centres (e.g. Killarney National Park, Wexford Wildfowl Reserve, the Botanic Gardens)

An outreach programme, on the topic of National Parks – Ecology and Habitats, which brings Education Staff into schools, has been incorporated into our Education programme. Outreach operates during the months of December-February inclusive and has been primarily targeted at the communities living around the National Park. It is envisaged that this programme will be taken further afield to those children who do not have the resources available to them to visit the National Park.

All programmes are offered free of charge.

Certain management practices, such as deer fencing within WMNP are used to illustrate best practice procedures for other landowners.

Research/Scientific Monitoring

A number of research projects have been, and are currently being carried out in the National Park (see Appendix 7). Most of these are undertaken by Academic Institutions and studies are increasingly being directed towards the management needs of the National Park. Members of the Research Branch of NPWS, or personnel contracted by NPWS, occasionally do research in the National Park with help from the Conservation Rangers. A permit must be obtained from NPWS before biological sampling can be carried out within the National Park.

Habitation

There are no inhabited buildings in the National Park.
6.3 CURRENT CONSERVATION MANAGEMENT

Nature Conservation

The following are the main initiatives that are being/have been undertaken by NPWS, specifically for conservation management:

Bog Restoration

Drain blocking has been carried out on Liffey Head Bog, in an effort to halt drainage of the bog system. Ditches were initially dug when the bog was ear-marked for exploitation prior to its inclusion into the National Park. Further work is necessary.

Erosion Control

NPWS has an on-going programme of path maintenance/restoration in order to minimise damage to adjacent sensitive habitats. The Wicklow Way (a way-marked long distance walking route) and other popular walking routes running through WMNP have been prioritised for such work. Approximately 5,000 m of tóchar (boardwalk) have been constructed at a number of locations (Lugduff (Spink), Mullacor, White Hill, and Djouce Mountain) between 1997 and 1999. Boardwalk was used extensively prior to 2002, as this was the most appropriate method, given that most of the remedial works were on blanket bog. Most of the works done in 2002 were over mineral site types, so different techniques were adopted. A monitoring and maintenance programme has been put in place for these and construction is on-going.

Deer & Goat Management

A programme of Deer and Goat census counts and culling is on-going in order to keep populations at sustainable levels. Culled deer on NPWS lands are sent to an EU approved processing facility where they are tested for TB and other diseases on an ongoing basis.

• Woodland Management (see also table under Strategy 1.3.2)

Clearance of invasive species, namely Rhododendron and Laurel, has been undertaken in semi-natural woodlands. Young conifers are also removed from such habitats.

Re-instatement of native tree species into areas of clear-felled conifer plantation (approx. 40 ha) is being carried out at Derrybawn, Glendalough. This work will continue at other locations, such as in the Baravore Valley as areas of clear-fell become available to the National Park. Additional associated works at Derrybawn include fencing to exclude Deer, Goats and Sheep.



Feral Goats in woodland

at Glendalough

• Species Conservation

A programme for management of habitat for Red Grouse has been recently initiated in the National Park. Thus far, an area of heather dominated heath at Powerscourt Paddock has been surveyed for grouse and fire-breaks have been cut in this area in preparation for controlled strip-burning.

Nest boxes have been installed at various locations for Goosander

• Grazing Impact Assessment

The impacts of grazing on commonage areas have been assessed by the Commonage Framework Planning Project. The relevant framework plans are WI 2 to WI 7. Grazing impact assessments have also been carried out for most of the non-commonage areas of the National Park (see Maps 4 & 5). The findings of these assessments are reflected in the management strategies and zoning sections of this plan.



Section 7 The Plan for the Next Five Years 2005-2009 and Beyond

The National Heritage Plan 2002-2006 states that "it is an objective of Government to ensure the protection of our heritage and to promote its enjoyment by all". In the case of WMNP, it is the intention that the practical achievement of this objective will be realised through this Management Plan 2005-2009. The primary objective of National Park management is the conservation of natural resources. The encouragement of its public appreciation and liaison with local communities are also essential elements of National Park management.

While this Plan articulates strategies for action within a 5 year time frame, the reality is that measures designed to protect such a sensitive and diverse landscape as WMNP cannot be realised within a fixed time frame. For this reason, the Minister for the Environment, Heritage and Local Government, through NPWS, envisages a process of "roll-over" planning for Ireland's 6 National Parks, including WMNP, which will be assisted by the solid mechanisms for monitoring and review which are built into this Plan. The intention is that these mechanisms will assist in the elaboration of a follow-on Plan, for a further period of 5 years, designed to build upon the achievements of this Plan and to address the new and emerging challenges that are bound to emerge over the 2005-2009 period.

The substance of the proposed Management Plan for the next five years is contained in this Chapter. Management Issues are listed at 7.1 and management strategies by which the objectives will be achieved are presented in 7.2. Finally, a zoning system for the National Park is presented in 7.3.

It is important that this Plan should be transparent to the users of WMNP and to the State agencies and non-governmental organisations (NGOs) who have an interest in the future direction of WMNP. DEHLG will strive to meet this objective, notwithstanding the fact that detailed multi-annual estimates of expenditure are not possible under current Government financial procedures.

The estimated expenditure on WMNP from funds made available to the Minister for the Environment, Heritage and Local Government for WMNP in 2004 is \in 930,000 in total, comprising \in 355,000 for capital expenditure works – including \in 162,000 sourced from the Office of Public Works' (OPW) accommodation budget for Government Departments – and \in 575,000 for current expenditure, to include such items as wages for National Park personnel, electricity, fuel, telephone, sundry materials and the like. Every effort will be made to maintain an adequate level of funding over the period of the Plan.

Moreover, under the Government's Strategic Management Initiative for all Government Departments, expenditure allocations for each year will be the subject of Business Plans which will outline the objectives and the deliverables for each year. It is the intention of the Minister for the Environment, Heritage and Local Government to make the annual Business Plan in respect of WMNP available to the National Park Council so that they can represent an important input to their remit "to continue to meet NPWS to review the ongoing implementation of the Plan".

7.1 MANAGEMENT ISSUES

Although National Park lands in Ireland are entirely State-owned and their management is under the control of the Minister for the Environment, Heritage and Local Government through NPWS, there are a number of factors that constrain optimum conservation management. The following list outlines some of the principal challenges to management that have to be met.

• Damage to Blanket Bog and Heath

The majority of WMNP comprises the upland habitats of bog and heath. Damage caused by burning and overgrazing from deer, goats and domestic livestock has affected some areas. To a lesser extent, erosion due to natural processes has also led to degradation of certain upland areas. Active conservation management is needed to restore their ecological value.

Peat-cutting and preparation for cutting has also had a detrimental impact on certain areas of blanket bog and heath. While some conservation work has already been carried out on damaged areas, further drain blocking and installation of silt traps on areas that have either been cutover or have had drains cut through them (i.e. Liffey Head Bog) is needed to improve the ecological integrity of this habitat.



Hill fire on Drummin from the Military Road

Damage to Woodlands

Over-grazing by sheep, deer and goats is causing damage in many semi-natural woodland habitats within the National Park. Goat densities are high in some woodlands and they probably impact more than other herbivores due to damage they can do to mature trees. Fencing and culling of deer and goats will prevent over-grazing in such areas. Removal of invasive and non-native species such as Rhododendron, Laurel and Sitka Spruce is also necessary in some areas.

Reinstatement of native tree species into areas of clear-felled conifer plantations, either through planting or natural regeneration, will improve the biological diversity of the woodland resource in the National Park.

• Deer trespass

Increase in deer numbers is the most significant problem encountered by farmers and foresters in Wicklow in recent years. The deer causing the problems are the Sika type animals coming onto farmland from Coillte forests, other woodlands/plantations, sometimes adjoining the National Park.

• Litter, Dumping, Graffiti and Fly Posting

Littering and the dumping of domestic refuse and abandoned vehicles on National Park lands and on adjacent roadsides is problematic. Abandoned and burnt out vehicles are a significant problem in the Wicklow Uplands. Such vehicles are reported to the relevant local authority for removal.

• Unregulated visitor numbers and damage from recreational use

Visitor pressure is focused in specific areas and can cause localised damage such as trampling of vegetation and disturbance to wildlife. Certain tracks used regularly by walkers are under threat from erosion and trampling. In certain areas, management is necessary to minimise the impacts of various recreational activities in the uplands.

• Water quality

Factors that affect the water quality of lakes and rivers within WMNP come from sources that are largely outside the National Park, making their control difficult. One of these factors is the large areas of conifer plantation adjacent to the National Park, within an area of primarily acid bedrock. Afforestation in these catchment areas may be contributing to acidification of surface waters. Liaison with Coillte will aim to minimise the impacts of afforestation, particularly on aquatic habitats.

• Other External Factors influencing WMNP

Activities outside the National Park boundaries may negatively impact on habitats in the National Park and vice versa. Consultation and co-operation with statutory bodies including in particular Wicklow County Council, South Dublin County Council, Dun-Laoghaire-Rathdown County Council and the Eastern Regional Fisheries Board (ERFB) is essential for the successful management of the National Park. The National Park Council will aim to examine and advise on any such issues outside the National Park.

Lack of Baseline Data

Baseline information on habitats, vegetation, and status of important species is lacking. Surveys and monitoring programmes of habitats, and notable plant and animal species are necessary to ensure that any declines in habitat quality or population numbers are detected. Such monitoring will largely be undertaken by Conservation Rangers and the level of resources available will influence the extent to which such work can be carried out.

Ownership

All National Park land is State owned, however certain grazing and turbary rights are owned by individuals. In these cases, it is necessary to work with the right holders to ensure that their objectives are compatible with conservation objectives but equally that the viability of the holders is not put at risk.

WMNP will benefit from the goodwill of local communities around the National Park and the role of the National Park Council is to represent these communities and other interest groups, as well as to work with NPWS on finalising the management plan for the National Park. The Council will also review the implementation of the plan.

7.2 MANAGEMENT STRATEGIES

Specific strategies are methods selected to achieve the objectives, listed in Chapter 2 and re-stated below.

As a general strategy, patrol monitoring by Conservation Rangers will be a key management tool in WMNP. Ranger patrols, on foot and by vehicle, will be carried out in daylight and in darkness throughout the National Park, particularly at weekends. The primary purpose of these patrols will be to deter and detect damaging activities such as illegal burning, littering, unauthorised off-road vehicle use and poaching. Such patrols will also promote the National Park by providing a visible presence on the ground. Along with their monitoring role, Ranger patrols will also fulfil an information/public relations role. The extent of the patrolling programme will be determined by Ranger numbers.

A summary table showing management strategies, targets and zoning is contained in Appendix 4.

Objective 1: To maintain and where possible enhance the ecological value of all natural and semi-natural habitats and geological features within WMNP – blanket bog, heath, lakes and rivers, woodlands, exposed rock, grasslands and scrub.

The ecosystems of the National Park have been altered by activities such as grazing, woodland clearance and burning, thus management involves the regulation and control of such activities.

Strategy 1.1 Protection of Geological Features & Soils

Naturally occurring rock formations, geomorphological features and soils will not be interfered with, other than for essential management purposes. The movement of soil and other landscaping may be permitted in the vicinity of National Park buildings.

National Parks are not exempted under the Mineral Development Acts (1940 and 1960). However, it is government policy that no prospecting licences will be granted in the future for any lands within National Parks in Ireland (See also strategy 1.5, which relates to the protection of rocky habitats).

1.1 Protection of Geological Features & Soils: 5 Year Target

Retain Government policy on not issuing prospecting licences in National Parks – on-going

Strategy 1.2 Conservation & Management of Bog/Heath/Grassland Communities

The main factors affecting these habitats are burning and over-grazing. Other factors include erosion due to natural processes, recreational use, and peat-cutting. The establishment of sustainable grazing regimes and the control of burning are the principal strategies for the ecological improvement of these habitats. NPWS will carry out the following to enhance their ecological value.

1.2.1 Establishment and maintenance of sustainable grazing regimes

Sheep grazing has been practised on WMNP lands for at least 200 years. This traditional management has maintained the open upland landscapes seen today. The National Park policy is to maintain sustainable levels of grazing on such habitats. Stock levels have been set by Commonage Framework Plans and grazing impact assessments. The results of these are shown on

maps 4 and 5. Stock levels are set below those which cause eutrophication, overgrazing and/or erosion, but still high enough to control the encroachment of coarse vegetation and scrub.

These stock levels will be incorporated into REPS plans and/or farm plans produced by NPWS for each right holder grazing livestock within the National Park, who applies for such schemes.

Sheep grazing levels will be set in conjunction with those for Deer and Goats (see below). Where NPWS own the grazing rights, a level of 1 sheep per ha is currently applied. This will be adjusted as necessary. The viability of sheep farmers is an important concern in the region and will be taken into account in this plan.

National Park staff have been carrying out annual deer counts since 1995. These will continue in order to assess population densities and trends. Based on these figures, controlled culls will continue to be carried out in certain areas to reduce densities. Culled deer on NPWS owned land are tested for TB and other diseases. Other management techniques to reduce the impact of deer, such as fencing and removal of conifers, will also continue in relevant areas. The effects of these techniques will be monitored. No fencing shall take place without the agreement of the relevant grazing right holders.

NPWS will co-operate with Coillte to control deer populations in Coillte plantations and continue to participate in the Wicklow Deer Group which addresses the issues of deer management within the County as a whole.

Feral Goats constitute part of the heritage of the Wicklow uplands and their impact on upland habitats is well documented. Goats can reach habitats such as scree slopes that are usually inaccessible to other grazers, thus over-grazing in such areas can usually be attributed to goats alone. Goat densities are also high in some woodlands and damage can be significant, particularly on mature trees. In areas of significant impact i.e. oak woodland, Goat populations may have to be greatly reduced or eliminated, either by exclusion fencing, culling or removal.

It is envisaged that a sustainable population of Goats will be maintained in the Glendalough Valley. Population densities and their impacts on the site will be reviewed, as for deer, on a 5-year basis.

- 1.2.1 Establishment and maintenance of sustainable grazing regimes: 5 Year Targets
- Fulfil requirements of the Commonage Plans and the Grazing Impact Assessments for livestock – on-going
- Establish sustainable grazing regimes for goats and deer (including density targets) 2005
- Continue Deer and Goat population assessments annually
- Conduct deer culling to achieve progress towards target densities annually
- Control goats in woodlands (by shooting and by fencing) in order to allow plant regeneration

 annually, as required

1.2.2 Control of Burning

Controlled strip burning creates suitable habitat for breeding Grouse (see strategy 2.3.1). However, uncontrolled burning can cause significant damage to bog and heath. Burning may be permitted provided that it is carried out in a legal and controlled manner and in consultation with National

Park staff. Burning regimes will aim for a cycle of 8+ years. Burning of growing vegetation is not permitted during the period March 1^{st} to August 31^{st} in any year.

Patrol monitoring during the summer and autumn will check for fires and the National Park has firefighting procedures that are currently being updated. These will be implemented as necessary in conjunction with the Gardaí, Fire Service, Army, Civil Defence and Coillte.

1.2.2 Control of Burning: 5 Year Targets

Review Fire-fighting Action Plan – annually

- Continue fire-fighting training for staff on-going
- Liaise with relevant authorities on-going
- Patrol monitor on-going, as necessary
- Create suitable habitat for Grouse by controlled strip burning as per strategy 2.3.1

1.2.3 Control of Peat Extraction

Cutting of peat by turbary right holders, for domestic purposes in limited areas, will continue as of right. NPWS will liaise with rightholders regarding location and methods of cutting.

1.2.3 Control of Peat Extraction: 5 Year Target

Continue liaison with peat-cutters with a view to minimising impacts – on-going

1.2.4 Drain Blocking on Blanket Bog

Drain blocking at Liffey Head and Shranamuck will continue. Silt traps will be installed where necessary. The effects of this work will be monitored and any necessary maintenance work will be carried out.

1.2.4 Drain Blocking on Blanket Bog: 5 Year Targets

- Compile management plan for Shranamuck 2005
- Complete work on Shranamuck 2007
- Compile management plan for Liffey Head Bog 2006
- Continue restorative work on Liffey Head Bog on-going
- Monitor & maintain all works carried out on-going, as necessary

1.2.5 Prevention of Erosion and Damage from Trampling

Heavily used paths, including the way-marked Wicklow Way and St. Kevin's Way, pass through National Park lands and traverse sensitive areas. The most sensitive areas will continue to be identified and highlighted and appropriate remedial methods specified.

Track erosion will be monitored in order to prioritise areas in need of maintenance. It may be necessary to divert and/or carry out repair work on pathways within WMNP in order to control erosion. Access through certain areas may have to be restricted at certain times in the interests of public safety or conservation. Organised walking/hill-running events involving more than 50 people on the same route on the same day will be subject to permit (other than on managed paths, e.g. the Wicklow Way, St. Kevin's Way and Table Track).

Rehabilitation work may be necessary on such tracks in order to halt erosion, divert water and reestablish vegetation. NPWS will carry out further erosion control and pathwork restoration measures on damaged areas. Existing tóchars will be monitored and maintained through a programme that has been set up by the National Park.

1.2.5 Prevention of Erosion and Drainage from Trampling: 5 Year Targets

- Continue to liaise with Mountain Meitheal regarding the Heritage Council funded Upland Path Survey – 2006
- Continue programme of upland path repair, maintenance & monitoring according to "WMNP Pathworks Principles" document and using results of the above survey – on-going
- Continue to liaise with user groups and individuals regarding best practice on-going
- Continue to liaise with Conservation Volunteers Ireland & Mountain Meitheal regarding path work carried out by volunteers – on-going
- Carry out baseline survey of areas of natural peat erosion 2007
- Investigate methods of restoration/mitigation on a selected hag site 2008
- Control burning & carry out drain blocking see strategies 1.2.2 & 1.2.4

Strategy 1.3 Conservation & Management of Natural & Semi-natural Woodlands

The main issues relevant to the conservation of the woodlands within WMNP are the prevention of over-grazing (see strategy 1.2.1), initiation of natural regeneration of native species and clearance of invasive species.

1.3.1 General Woodland Management

The following are general strategies for woodland management in the National Park:

- A long-term (10+ years) woodland management policy document will be drawn up during the lifetime of this plan.
- Tree surgery work or tree felling will be carried out for safety reasons only. Trees which fall blocking a road, track or path will be cut up and the timber left nearby. In other circumstances where trees fall naturally, the timber will generally be left in situ. However, useable timber may be removed, while all lop and top will be left on the site.

1.3.1 General Woodland Management: 5 Year Targets

- Draw up long term woodland management policy for semi-natural woodlands 2005
- Draw up long term woodland management policy for coniferous plantations 2006
- Set population targets in all woodlands for deer 2005
- Review above targets annually
- Compile management plan for Glendalough woodlands –2005
- Compile management plan for Coronation Plantation 2005
- Compile management plan for Oakwood 2006

1.3.2 Management of Specific Woodlands

The following table lists the main areas of woodland within the National Park and the management actions that will be carried out during the lifetime of this plan.

1.3.2 Management	t of Specific Woodla	nds: 5 Year Targets	
Name/Location	Description	Management	5 Year Targets
Derrybawn	Oak dominated	 Remove exotics (Sitka, Laurel, Rhododendron) 	On-going
Derrybawn	Beech plantations	• Thin (ring bark/fell)	On-going
		• Fence	_ = = :::::::::::::::::::::::::::::::::
		Plant Ash & Oak	
Derrybawn	Conifer	• Thin to 30% cover	By end 2007
,		 Encourage natural regeneration 	, ,
Derrybawn	Clearfell	Plant Oak	By end 2007
,		 Encourage Birch regeneration 	, ,
Between	Birch dominated	Remove exotics	By end 2007
Glendalough		 Encourage natural regeneration 	, ,
Lakes & East of			
Lower Lake			
South side of	Cliff woodland –	 Manage Goats (strategy 1.2.1) 	On-going
Upper Lake	Birch, Rowan,		
	Holly, Aspen		
North shore of	Mixed	Remove Norway Spruce & Sycamore	By end 2005
Upper Lake			
Exclosures south	Larch	 Thin to create open canopy 	By end 2009
of Miners Village			
North side of	Old Larch & Scots	 No intervention 	None
Miners Road	Pine Plantation		
Above Bolger's	Scots Pine	• Thin to 50%	By end 2009
Cottage		Remove exotics	
Western end of	Immature Larch	• Thin to 60-70%	By end 2008
Glendalough			
valley			
St. Saviour's	Mixed conifer	 Clearfell 	By end 2005
Wood		 Restore to native woodland 	
		 Encourage regeneration of native species 	
Coronation	Old Scots Pine &	 Erect deer fencing 	As per
Plantation	Oak Plantation	• Create fire-breaks	management
		 Control Bracken (ponies/cattle/mechanical) Encourse as Costs Dine reconstruction 	plans (see
		 Encourage Scots Pine regeneration, plant if personant 	strategy 1.3.1)
Carrigsbouk	Old Larch		= Py and apor
Carrigshouk	Plantation	Survey Renovate sheen pen	By end 2005
Fair Mountain	Sitka Spruce	Thin heavily to eventual extinction	First felling by
(Turlough Hill)	Sitka Spruce	• min heavily to eventual extinction	end 2000
Northern end	Sitka Spruce	No intervention (keep as shelter for deer)	None
of 7 Churches	Sitka Spruce		None
(side of Lugduff)			
North of Turlough	Sitka Spruce	 No intervention (keep as shelter for deer) 	None
Hill (adjacent to	onna oprace		
Oakwood			
townland)			
Below Derrybawn	Clearfell	Remove exotics	On-going
carpark (beside		 Encourage regeneration of native species 	
Avonmore River)		 Monitor 	
Areas being	Clearfell	 Monitor regeneration of exotics – 	As per policy
transferred from		control if necessary	document (see
Coillte		 Implement most appropriate management 	strategy 1.3.1)
		(planting, natural regeneration etc.)	
To be identified	Small streamside	• Survey	2008-2009
		Erect deer-proof exclosures	

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Strategy 1.4 Conservation & Maintenance of Aquatic Habitats

The Glendalough Lakes and the other upland lakes form important components of the National Park, as do rivers, streams, pools, reedbeds and freshwater marshes. Management of aquatic habitats largely involves the prevention of pollution.

1.4.1 *Maintenance of Water Quality*

Under the Local Government (Water Pollution) Acts 1977 and 1990, Local Authorities have a statutory responsibility for preventing water pollution. NPWS will work with the relevant County Councils to protect the National Park catchment systems. Proper management of effluent within the National Park will contribute to the protection of waters within the National Park.

Monitoring of heavy metals in the Upper Lake in conjunction with University College Dublin will continue.

1.4.1 Maintenace of Water Quality: 5 Year Targets

- Implement Catchment Management Plans, as they are introduced by the ERFB and Local Authorities – on-going
- Continue to liaise with EPA, local authorities & universities re water sampling programmes on-going
- Continue mitigation measures to mediate heavy metal inputs to Glendalough Upper Lake on-going, as necessary
- Respond to, and report, pollution incidents as soon as they are identified on-going
- Integrate conservation management for small water-bodies and streams into the wider conservation management strategies for the Park as per strategies 1.2.1; 1.2.4

1.4.2 Control of Forestry Mediated Acidification & Pollution

Application of fertilisers and pesticides, felling and other activities within plantations adjacent to the National Park represent potential threats to water quality within it. Control of these activities, so that they do not negatively impact on aquatic habitats, will be achieved through working co-operatively with Coillte and other forest managers.

1.4.2 Control of Forestry Mediated Acification & Pollution: 5 Year Target

Continue to liaise with Forest Service & Coillte to ensure that best practice guidelines are followed – on-going

1.4.3 Protection of Spawning Beds & Fish Populations

Factors which could be deleterious to fish populations in WMNP include decline in water quality and physical destruction of spawning grounds through gravel removal from stream beds. It is the function of the ERFB and the County Councils to enforce regulations controlling pollution. The removal of gravel from streams will be prohibited. Fallen trees and other debris will be removed from the river between the Lower Lake, Glendalough and the confluence with the Glendasan River to improve spawning grounds.

1.4.3 Protecton of Spawning Beds & Fish Populations: 5 Year Targets

- Remove debris from river between Lower Lake & the Glendasan River 2005
- Prohibit gravel removal on-going

Strategy 1.5 Conservation and Maintenance of Rocky Habitats

While exposed rocky habitats such as scree are generally quite inaccessible, they can often be reached by Feral Goats and are susceptible to damage by burning. There is also a lack of up to date information on the vegetation of these habitats.

1.5.1 Prevention of Damaging Activities

Measures taken to establish sustainable grazing regimes in adjacent habitats (1.2.1) will be implemented in these habitats also. Likewise, regulation of burning will also protect scree and related habitats.

1.5.1 Prevention of Damaging Activities: 5 Year Targets

- Liaise with climbers as per strategy 4.8.9
- Control goats if required by the Action Plan to Conserve Rare Plants (strategy 2.1)
- Control burning as per strategy 1.2.2

1.5.2 Establishment of Baseline Data

Information on the current vegetation composition of these habitats is lacking. In particular, a number of notable plant species have been recorded in the past, but their current status are unknown. Surveys are thus necessary (see 2.1 below).

1.5.2 Establishment of Baseline Data: 5 Year Target

Establish status of rare plants on exposed rock & scree – as per strategy 2.1

Objective 2: To maintain and where possible increase the populations of rare and protected plant and animal species including Lanceolate Spleenwort, Parsley Fern, Small White Orchid, Bog Orchid, Peregrine Falcon, Merlin and Otter.

Strategy 2.1 Conservation of Notable Plant Species

The strategies described above under Objective 1 aim to protect the habitats of rare and protected plant species listed in Appendix 3. Survey work to establish the status of rare and protected plants, particularly species that have not been recorded for a long time will be carried out by the Research Branch of NPWS within the lifetime of this plan.

2.1 Conservation of Notable Plant Species: 5 Year Targets

- Carry out survey to ascertain status of rare plant species 2007
- Establish action plans for the conservation of the above if deemed necessary 2009

Strategy 2.2 Conservation of Native Mammals

The principal mechanism for the protection of native mammal species is enforcement of the Wildlife Acts. It will be necessary to identify breeding and feeding sites of some species within the National Park, as well as to minimise disturbance at such sites. Records of Red Squirrel, Otter and Pine Marten sightings are kept by National Park staff. Bat species, and their roosting and hibernation sites, are also recorded.

2.2.1 Management for Otter

Otter populations will be protected by the maintenance of aquatic habitats throughout the site (strategy 1.4).

	2.2.1 Manaaement	for Otter:	5 Year Targets
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- Undertake Otter survey 2005
- Maintain aquatic habitats as per strategies 1.4.1 & 1.4.2

2.2.2 Management for Red Squirrel

The possibility of managing some areas of conifer dominated woodland for the benefit of Red Squirrels will be assessed. Suitable woodlands should contain a minimum of 20% cone bearing Scots Pine. A survey is necessary to ascertain the status of both Squirrel species within woodlands in the site. In areas where Red Squirrels are successful (e.g. The Coronation Plantation), Grey Squirrel populations will, if necessary, be regulated. This will be carried out within the lifetime of this plan.

2.2.2 Management for Red Squirrel: 5 Year Targets

- Carry out Squirrel survey 2006
- Establish and implement an Action Plan for the Conservation of Red Squirrels 2006
- Control Grey Squirrel as necessary

2.2.3 Management for Bats

There has been recent research into Bat populations within the site. Survey work has shown an abundance of bat species in the region. In order to encourage the bat populations in the National Park, a programme for the provision of bat boxes will be initiated within the lifetime of this plan. NPWS will liaise with the relevant Local Authorities to ensure that any bridge maintenance does not negatively impact on bat roosts.

2.2.3 Management for Bats: 5 Year Targets

- Continue bat box programme on-going
- Continue liaison with local authorities on-going
- Continue education programme on-going
- Continue programme of monitoring bat species on-going

Strategy 2.3 Conservation of Bird Species

Strategies that protect the habitats used by birds for feeding and breeding will contribute to the maintenance of their populations in WMNP. Monitoring of populations, breeding status and locations of nesting and feeding grounds should continue and, if necessary, be expanded. The following table indicates the general habitat requirements of each species shown:

Species	Food	Nesting	Habitat
Hen Harrier	Small birds, rodents	Ground	Immature conifer plantations, upland heath & bog
Peregrine Falcon	Birds, rabbits, small mammals	Cliff edges	Upland
Merlin	Birds, small mammals, insects	Trees/ground	Immature conifer plantations, upland heath & bog
Red Grouse	Heather shoots, flowers & seeds	Ground	Heath & blanket bog
Ring Ouzel	Worms, slugs, insects, berries, seeds	Vegetation on rock/scree	Scree slopes
Redstart	Insects	Tree holes	Mature deciduous woodland
Wood Warbler	Insects, spiders	in cover on ground	Mature deciduous woodland
Goosander	Fish, aquatic insects	Tree holes/Cliffs	Rivers/lakes bordered by mature woodland
Dipper	Aquatic insects	Walls, ledges, under bridges	Streams, rivers

2.3 Conservation of Bird Species: 5 Year Targets

- Carry out survey for Ring Ouzel, Redstart, Wood Warbler & Dipper 2007
- Strategies for specific species are listed below

2.3.1 Management for Red Grouse

In order to create optimum habitat for Red Grouse within the National Park, 100 ha (minimum area) will be managed by strip burning. Initially, it is proposed to strip burn small areas of heather dominated heath at Powerscourt Paddock. Only very mature strips of dry heath will be burnt, with a different strip being burnt each year. It is estimated that it will take 10 years to complete a rotation. Areas proposed for burning will be mapped beforehand.

Monitoring of Grouse populations is on-going and will continue. The Irish Kennel Club (IKC) dog trials, which take place in spring and early autumn provide opportunities to make census counts.

Consultation with the Wicklow Game Conservation Council (WGCC) will take place regarding the achievement of the Red Grouse management strategy.

2.3.1 Management for Red Grouse: 5 Year Targets

- Continue 10 year rotation burning plan for Powerscourt Paddock 50% of rotation complete by 2009 (weather permitting)
- Liaise with the IKC regarding counts on-going
- Liaise with the WGCC on-going

2.3.2 Management for Merlin & Peregrine Falcon

There is currently little disturbance to breeding Falcons within WMNP and this will be maintained by protective surveillance and liaison with groups such as climbers and bird watchers. On-going research is necessary to determine the distribution density and breeding biology of Merlin in the National Park.

2.3.2 Management for Merlin & Penegrine Falcon: 5 Year Targets

- Continue research on Merlin on-going
- Carry out Merlin survey annually
- Liaise with climbers regarding peregrines- as per strategy 4.8.9
- Carry out Peregrine survey annually

2.3.3 Management for Goosander

A programme for the provision of nest boxes along the Avonmore River and around Glendalough has commenced and will continue. The boxes will be placed as far from human disturbance as possible.

2.3.3 Management for Goosander: 5 Year Targets

- Provide, monitor and maintain nest boxes on-going, as required
- Monitor Goosander population annually

Strategy 2.4 Conservation of Fish Stocks

Maintaining fish stocks depends mainly on the prevention of pollution and the protection of spawning grounds. These are covered in strategy 1.4.

2.4 Conservation of Fish Stocks: 5 Year Targets

- Maintain water quality as per strategies 1.4.1 & 1.4.2
- Protect spawning grounds as per strategy 1.4.3

Objective 3: To establish and continue effective liaison with all interested parties in order to effectively manage WMNP

There are several distinct groups, organisations and statutory bodies with specific interests in the National Park. Achievement of the conservation and other objectives requires the co-operation of all interested parties. It is a primary objective of NPWS to establish and continue effective liaison with interested parties and bodies both to give and receive advice on the management of the site. These include in particular right-holders, land users, Wicklow, Dun Laoghaire-Rathdown and South Dublin County Councils, Wicklow Uplands Council, Wicklow Dublin Mountains Board, Rural Environment Protection Scheme (REPS) planners, Teagasc, ERFB, Fáilte Ireland and other interested parties and community groups.

The role of the elected National Park Council is to represent local communities and interest groups, and to work with NPWS on finalising the management plan for the National Park. The Council will also review the implementation of the plan. The Park Council can advise WMNP management on the interaction between site conservation management and local interests. The Park Council is independent of NPWS. It is open to the National Park Council to form sub-committees to address particular issues as they see fit.

Strategy 3.1 Liaison with Local Authorities

Liaison with the County Councils is necessary in order to maintain water quality, to control dumping, and in relation to any other activities carried out by, or under the control of local authorities, such as road maintenance and road closures.

3.1 Liaison with Local Authorities: 5 Year Targets

- Liaise with local authorities to advise on development works/activities carried out by them, that may impact on WMNP – as necessary
- Seek planning permission as necessary

Strategy 3.2 Liaison with the Environmental Protection Agency

Liaison with the EPA is needed regarding the monitoring of water quality. The possibility of more intensive monitoring by the EPA will be explored.

3.2 Liaison with the Environmental Protection Agency: 5 Year Target

Continue liaison with the EPA – as per strategy 1.4.1

Strategy 3.3 Liaison with the Eastern Regional Fisheries Board

Liaison with the Eastern Regional Fisheries Board is required where management activities may have an impact on fisheries in and/or adjacent to the National Park.

3.3 Liaison with the Eastern Regional Fisheries Board: 5 Year Target

Liaise with the ERFB – on-going, as necessary

Strategy 3.4 Liaison with Coillte

Liaison with Coillte is required in order to limit the impact of afforestation on habitats within the Park. Afforestation may affect water quality through increased acidification, nutrient input and increased siltation.

3.4 Liaison with Coillte: 5 Year Target

Continue liaison with Coillte – as per strategies 1.2.1, 1.2.2, 1.4.2, 4.8.4 & 8.1

Strategy 3.5 Liaison with REPS Planners

Consultation is necessary between NPWS staff and any REPS planners who may be developing plans for farmers who are right-holders and/or grazing licensees in WMNP in order to ensure that Farm Plans do not conflict with the recommendations laid out in this management plan.

3.5 Liaison with REPS Planners: 5 Year Target

Liaise with REPS planners – as necessary

Strategy 3.6 Liaison with other Parties

NPWS will liaise with any other parties who are interested in the management of the National Park including community and user groups and NGOs, to both give and receive advice on management of the site.

Every visitor to the WMNP who observes plants, birds, mammals, invertebrates etc. is a potential researcher of the National Park. All such are invited to contribute their observations to NPWS Regional Office. More formal research activities and any research involving the taking of samples, must be carried out under permit issued by the Regional Office and all data must be provided to NPWS.

3.6 Liaison with other Parties: 5 Year Targets

- Hold regular meetings with Park Council to review implementation of plan on-going
- Liaise with groups involved in using and working in the National Park on-going

Objective 4: To encourage sustainable recreational and educational use of WMNP, to provide information and facilities for visitors and to improve public awareness of the natural heritage of the area, taking into account the social and economic needs of the communities in the area.

Strategy 4.1 Provision of General Access to the National Park

WMNP will encourage public use to the maximum extent compatible with public safety, preservation of natural resources and with retention of a quality experience for visitors. It is NPWS policy to make the National Park as accessible as possible (subject to the aforementioned factors) to disadvantaged groups, including those with impaired mobility.

NPWS will examine the possibliity of drafting legislation to put national parks in Ireland on a statutory footing.

Access to the National Park for visitors with disabilities is described in section 6 (Roads, Tracks and Car Parks, page 19) and dealt with under strategy 4.9.2 (page 45).

The Glendalough Visitor Management Study produced by East West Tourism Consultancy for NPWS and Wicklow County Council (1998) provides an integrated approach for visitor management in the Glendalough Valley. Visitor management within the National Park cannot be dealt with in isolation. NPWS will continue to liaise with relevant parties to complement the strategies proposed.

4.1 Provision of General Access to the National Park: 5 Year Target

Examine possibility of drafting legislation to put national parks in Ireland on a statutory footing – 2008

Strategy 4.2 Delineation of National Park Boundaries

NPWS acknowledges that in some areas, the boundary of WMNP is not clearly defined on the ground. Where necessary and in consultation with adjacent landowners, the National Park boundaries will be delineated, using appropriate markers and/or signage (see also strategy 4.5.2 in relation to signage).

4.2 Delineation of National Park Boundaries: 5 Year Target

Delineate National Park boundary, as appropriate – 2006

Strategy 4.3 Visitor Safety and Protection

NPWS and where relevant, its concessionaires and licensees must meet the provisions of the Health and Safety requirements to provide as safe an environment for visitors as possible. Having

regard to the innate wildness of the natural environment, National Park visitors will of necessity, be responsible for conducting themselves in a safe and prudent manner.

Reasonable efforts will be made to provide emergency first aid for visitors who become ill or injured in the National Park. Emergency plans to deal with possible incidents, including building fires, hill fires, drowning, accidental falls, other accidents and medical emergencies, will continue to be drawn up and circulated to staff and kept on display in all offices.

4.3 Visitor Safety and Protection: 5 Year Targets

- Carry out review of visitor Health and Safety requirements on-going
- Sensitise visitors to their own responsibilities through literature and signage on-going

4.3.1 Search and Rescue

National Park staff will make all reasonable efforts to search for lost persons and rescue sick, injured or stranded persons, working in co-operation with the Garda Síochána, who have primary responsibility for the location of lost or missing persons. The use of search and rescue helicopters of the Irish Coastguard Service within WMNP is recognised as an essential service in some circumstances. Their deployment and use is also the responsibility of the Garda Síochána.

The National Park will continue to work closely with Search and Rescue (SAR) organisations in the provision of assistance to persons lost, stranded or injured in WMNP. National Park staff will continue to be encouraged to train in Search and Rescue skills and to participate in SAR organisations. The National Park will support the Irish Mountain Rescue Association (IMRA) and the Search and Rescue Dog Association (SARDA) where possible.

4.3.1 Search and Rescue: 5 Year Targets

- Implement emergency plans on-going as necessary
- Review emergency plans annually
- Continue to facilitate the use of WMNP facilities by Search and Rescue Organisations on-going as necessary

4.3.2 Water Safety

Wicklow Co. Co. maintains life buoys at both Glendalough Lakes. NPWS keeps a safety boat at the Upper Lake to which personnel of the Rescue Services have access. It is NPWS policy to retain this boat within the Park for safety purposes. Members of National Park staff have training in cardio-pulmonary resuscitation. Life-saving training will be facilitated and encouraged.

4.3.2 Water Safety: 5 Year Targets

- Maintain stand-by rescue boat at the Upper Lake on-going
- Continue to facilitate staff training on-going, as necessary

4.3.3 Crime and Security

Liaison between Gardaí, Local Authorities, local communities and NPWS will help to combat antisocial behaviour, such as dumping, joy riding and release of unwanted dogs. National Park staff will continue to co-operate actively with Gardaí and local Community Alert groups to reduce crime in the area.

4.3.3 Crime and Security: 5 Year Target

Maintain contact with Gardaí and Community Alert Groups – on-going

Strategy 4.4 Roads and Car Parks

National Park roads are not generally open to motor vehicles, but will continue to be maintained for management and rescue service vehicles and as high quality walking paths.

The provision of car parks in the upland areas has traditionally been the remit of the County Councils and Coillte. WMNP augments this network with a number of parking areas. These will be maintained by National Park staff. To reduce the car traffic on the narrow roads within the National Park, the use of private shuttle buses to transport visitors from these car parks to popular locations in the National Park at peak times will be examined. This would also ensure that private cars are parked in secure and unobtrusive areas.

4.4 Roads and Car Parks: 5 Year Targets

- Continue to liaise with local authorities regarding the maintenance of public roads that run through the National Park on-going
- Carry out access audit to identify the current and potential access arrangements for visitors to WMNP – 2005
- Implement findings of audit 2006-2009
- Examine feasibility of using shuttle buses 2007

Strategy 4.5 Provision of Information and Orientation to Visitors

It is NPWS policy to provide:

- Information in English, Irish and a number of other languages
- Information and orientation to National Park users so that they can make the most of their visit
- Interpretative programmes so that visitors can gain a deeper understanding of the natural and cultural heritage of the National Park.

WMNP currently provides information at Glendalough during the summer months. This will be expanded to provide a service from Easter to October, and at the week-ends and Bank-holidays during the rest of the year. There is a commitment to create an additional information facility at Joseph's Cottage on the western edge of the National Park if/when planning permission is obtained. Once open, staffing levels will be established according to demand.

4.5.1 Use of Languages

As Irish and English are the two official languages of Ireland, WMNP will ensure that wherever possible, publications, signs and other information are available in both languages.

4.5.1 Use of Languages: 5 Year Target

Continue to produce material in both Irish & English – on-going

4.5.2 Signposting

Two strands of signage are relevant to the National Park. The first is for the greater Glendalough Valley and will be developed as part of the overall visitor management strategy for the valley as a whole. This involves liaison and co-operation with other bodies such as the National Monuments and Architectural Protection (NMAP) Division of DEHLG, Wicklow County Council and local development groups. The second type of signage relates specifically to the National Park and will be in line with NPWS policy. All outdated signs will be removed. The location of all signage will take landscape protection into account.

4.5.2 Signposting: 5 Year Targets

- Liaise with local authorities on the provision of signage flagging the National Park on main routes entering Co. Wicklow – on-going
- Remove & replace all outdated signage as necessary
- Maximise use of nationally and internationally recognised symbols on signs on-going

4.5.3 Information for Tourists at Local Level

NPWS will provide information such as leaflets and posters to the tourism sector for the benefit of visitors to the area. The National Park will ensure that key personnel from this sector are given ample opportunity for orientation visits to the National Park.

4.5.3 Information for Tourists at Local Level: 5 Year Targets

- Initiate programme of orientation events for tourism sector 2005, then annually
- Arrange dissemination of information to tourism sector 2005, then on-going

4.5.4 Information Technology

A web page, that will be part of the DEHLG website(www.environ.ie) is currently being designed. This will allow remote users to access information on WMNP including updated events information, weather reports and current programmes being undertaken. National Park Management views this as a priority objective.

The intention is also to provide sufficient information to enable intending visitors to plan their visit. The web-site will provide links with other relevant web-sites, such as tourist information sites (for information on other sources of information such as guide books, maps etc.).

4.5.4 Information Technology: 5 Year Targets

- Complete website design 2005
- Keep website updated on-going from 2005

Strategy 4.6 Interpretation in WMNP

Interpretation may be defined as an 'informal educational activity which aims to explain the meanings and relationships of the features conserved, rather than to communicate factual information'. The purpose of a National Park interpretative information programme is:

- to develop public understanding and appreciation of the National Park and of its role in conserving the natural and cultural heritage.
- to foster public support for the National Park and its objectives
- to facilitate and encourage sustainable and appropriate use of the National Park while protecting its natural and cultural heritage.

The current interpretative programme is based around:

- Personal communication in the form of guided walks, talks and lectures
- Publications
- Signage

4.6.1 Indoor Interpretation

The National Park Information Office is currently the main location for interpretation of WMNP. However, this facility is very limited in size and cannot facilitate the numbers of people currently seeking information.

The development of visitor facilities will be carried out in consultation with the Park Council and other interested parties, such as the NMAP, who already operate a Visitor Centre at Glendalough. A small area has been set aside in this Visitor Centre to give information on the National Park.

There are no plans to build a visitor centre for WMNP.

4.6.1 Indoor Interpretation: 5 Year Targets

- Consult with Park Council regarding the development of visitor facilities 2005
- Maintain indoor interpretation to highest standards, subject to resources on-going
- Carry out review of indoor interpretation annually

4.6.2 Outdoor Display Panels

Five panels are currently displayed in the vicinity of Glendalough. These will be maintained and upgraded as necessary and further panels will be erected at points of access to WMNP. In addition, new information boards have been erected in the Glendalough valley; at the Upper Lake car park, the Visitor Centre car park and at the Information Office. Information on the National Park and ongoing events are displayed in these locations. Details are also posted in the Information Office, Education Centre and the National Park Headquarters. Interpretative outdoor display panels are planned for 1. Turlough Hill, 2. Coronation Plantation and 3. Liffey Head Bog (Kippure).

4.6.2 Outdoor Display Panels: 5 Year Target

Install information panels at the above listed locations – 2005

4.6.3 Conferences, Seminars and Special Events

WMNP occasionally hosts conferences, seminars, workshops and training courses in conjunction with other local, national and international bodies and will continue to facilitate such events in the future.

4.6.3 Conferences, Seminars and Special Events: 5 Year Target

Continue to facilitate suitable events within the National Park – on-going

Strategy 4.7 Education Programme

Management within the National Park must include the provision of facilities for visitors. The National Park Education Centre and Information Point provide tailor made courses for school and other groups as well as information on the National Park for visitors to Glendalough.

In essence, the Education Programme in the National Park aims to:

- promote respect, understanding and care for our heritage and particularly for the natural world
- encourage the development of environmentally friendly practices
- inform people about NPWS and the National Park and their role in conservation.

Further interpretational facilities, developed in consultation with other relevant bodies in the area will provide additional resources.

4.7.1 Development of the Education Programme

In order to achieve these aims, the current educational programme as described in section 6 (page 20) will continue to be developed and expanded.

4.7.1 Development of the Education Programme: 5 Year Targets

- Undertake comprehensive review of education provision in WMNP 2005
- Strengthen links with other facilities such as Knocksink Wood, so that the Education Programme can be developed in a co-ordinated manner on a regional basis – 2005
- Target primary school children, particularly from local and disadvantaged communities – on-going
- Establish outreach service to local communities and organisations in liaison with the Education Officers of the relevant County Councils, focusing on such areas as Bray, Tallaght and Rathdrum – on-going
- Provide in-service teacher-training course for primary school teachers on-going
- Continue to provide curriculum-based field studies for geography and biology Junior and Leaving Certificate students and support for 3rd level courses and field trips – on-going
- Continue lecture series on-going
- Continue to develop facilities for disabled groups on-going

In order to implement the above programme, staffing levels will need to be substantially augmented

4.7.2 Group Supervision

All groups visiting WMNP are expected to bring their own supervisors and they, not National Park staff are responsible for the safe behaviour of the group. A supervision ratio of not more than 12 children to each adult supervisor is currently enforced.

4.7.2 Group Supervision: 5 Year Target

Continue to enforce existing child: supervisor ratio – on-going

Strategy 4.8 Management of Recreational Activities in WMNP

NPWS will manage recreational activities in order to facilitate public enjoyment and visitor safety, to protect National Park resources and to minimise conflicts with other visitor activities and National Park users. Recreational activities that are organised events involving sponsorship or commercialisation will be treated as special events for which written permission must be sought in advance. Permission may be granted provided that the activity, event or organiser:

- is compatible with the objectives of this plan
- does not present a danger to the welfare or safety of the public
- indemnifies NPWS against any claims against the National Park consequent to such permission being granted

Organised walking events using the Wicklow Way will be permitted only when they are approved by the Wicklow Way Management Committee (WWMC). Organisers of events may obtain advice from the National Park. WMNP will continue to provide a committee member for the WWMC and subgroups thereof, as appropriate.

4.8.1 Trail-walking & Nature Trails

Most of WMNP is only accessible on foot. Walking track standards vary to accommodate the intensity of usage, range of user and the habitat traversed.

A series of walking and nature trails have been developed around the Glendalough area on robust managed routes. These will be monitored regularly and improved where necessary. A leaflet to accompany the walks has been produced.

Certain walking tracks and paths around Glendalough will be surfaced as appropriate for visitor safety and accessibility to people with impaired mobility.

Where paths and tracks cross sensitive habitats, the introduction of surfacing materials will be kept to a minimum. Path restoration works will continue to be developed (strategy 1.2.5). Walkers will be encouraged to keep to managed paths where appropriate.

4.8.1 Trail-walking & Nature Trails: 5 Year Targets

- Monitor, maintain & improve walking tracks & nature trails as appropriate on-going, as necessary
- Continue with upland path programme as per strategy 1.2.5

4.8.2 Hill Walking

Hill walking will continue in the National Park. However, Park authorities may restrict certain activities in particular areas and/or at certain times, but only where essential to protect sensitive areas within the National Park or for reasons of visitor safety. The National Park Council will be consulted before any such restrictions are put in place, except in cases of over-riding health and safety, when the National Park Manager may have to act immediately. It is the responsibility of participants, both groups and individuals, to ascertain from National Park authorities what restrictions are currently in force. Strategy 1.2.5 is also relevant here.

4.8.2 Hill Walking: 5 Year Target

Facilitate hill walking in consultation with the MCI and other users in order to encourage low impact use – on-going

4.8.3 Provision of Picnic Facilities

Picnic areas at Glendalough and Derrybawn will be maintained by National Park staff.

4.8.3 Provision of Picnic Facilities: 5 Year Target	
Maintain existing picnic areas – on-going, as necessary	

4.8.4 Cycling

Cycling will be confined to wider surfaced tracks and cyclists must give way to pedestrians. Cycling off-road will be prohibited as it damages vegetation and accelerates erosion. Some tracks will be considered for use as dedicated cycle tracks in limited areas.

4.8.4 Cycling: 5 Year Target

Consult with Coillte to explore the possibility of providing a cycling route – 2005

4.8.5 Horse-riding

Limited horse-riding occurs in the National Park and will be allowed to continue under permit, on designated tracks. Public safety will always be the deciding factor as to whether permits will be issued.

4.8.5 Horse-riding: 5 Year Target

Continue to facilitate horse-riding under permit – on-going

4.8.6 Camping

The provision of visitor accommodation is a matter for local communities who live close to the National Park. No accommodation services are provided within WMNP itself. A certain amount of "wild camping", in accordance with an agreed Code of Conduct will be allowed, provided that it does not impact negatively on the National Park or on other users.

4.8.6 Camping: 5 Year Targets

- Draw up Code of Conduct for wild camping in consultation with users (i.e. MCI) 2005
- Implement Code of Conduct on a trial basis 2005
- Review the code 2006 & annually

4.8.7 Water Sports

SCUBA diving will continue to be permitted in Glendalough Upper Lake, under permit from NPWS.

Lakes and rivers within WMNP are occasionally used for swimming and as such, it is recognised as an acceptable activity in the National Park. There is however, no provision for swimming in the Park's lakes. Wicklow County Council maintains life-buoys along the eastern and northern shores of the Upper Lake at Glendalough. The National Park has erected signs at the eastern shore of the Upper Lake advising 'Caution, Sudden Depth Changes'. Signage stating that swimming is prohibited will be removed, as it is neither possible nor desirable to enforce such a policy. Jet-skiing will be prohibited on lakes within the National Park.

4.8.7 Water Sports: 5 Year Targets

- Continue to maintain boat at the Upper Lake as per strategy 4.3.2
- Continue prohibition on jet-skiing on-going
- Continue to allow SCUBA diving under permit on-going
- Consider requests for permission for other water sports as necessary

4.8.8 Motorcross, Motorbike Scrambling and other Off-Road Driving

Motorcycling activities can affect habitats by accelerating erosion, damaging vegetation and can also cause direct disturbance to wildlife.

Events which are compatible with National Park objectives may be allowed under permit.

The un-authorised use of off-road vehicles, including ATVs and quad-bikes in the National Park is prohibited.

4.8.8 Motorcross, Motorbike Scrambling and other Off-Road Driving: 5 Year Targets

- Continue to monitor and deter un-authorised use of vehicles on-going
- Continue to monitor the erosion, noise and other impacts of permitted events & respond as necessary – on-going

4.8.9 Rock-climbing

Suitable rock climbing areas in the National Park are outlined in the "Rock-Climbing Guide to Wicklow". Rock climbing may be prohibited in environmentally sensitive areas at particular times.

4.8.9 Rock-climbing: 5 Year Target

Continue to liaise with climbing organisations to ensure impacts are minimised – on-going

4.8.10 Orienteering

Orienteering events occur under permit in the National Park and this will continue.

4.8.10 Orienteering: 5 Year Target

Continue to control orienteering events by permit – on-going

4.8.11 Dog Trials

WMNP will continue to facilitate dog trials under permit as per strategy 2.3.1.

4.8.11 Dog Trials: 5 Year Target

Continue to facilitate dog trials in the National Park under permit – see strategy 2.3.1

Strategy 4.9 Management for Special Categories of Visitor Use

4.9.1 Special Interest Groups

NPWS will continue to maintain close links with various groups such as conservation and educational organisations who have a special interest in the National Park and who have provided assistance and encouragement to National Park management.

4.9.1 Special Interest Groups: 5 Year Target

Continue to maintain links with interest groups – on-going

4.9.2 Facilities for Visitors with Disabilities

The tóchar, Cosán Caoimhín, allows access, including wheelchair access, around the Lower Lake at Glendalough for visitors with impaired mobility. The trail network around the Upper Lake is also accessible to visitors with impaired mobility, as is the car park and viewing point above Lough Nahanagan.

NPWS will welcome any suggestions for the improvement of facilities in the National Park from organisations representing disabled people and from other individuals and groups. Co-ordination of suitable Ranger services will be arranged as far as possible.

An access audit for the National Park will be completed by NPWS and its findings will be progressively implemented during the lifetime of this plan.

NPWS will undertake a study to identify the most appropriate methodology for upgrading the Green Road from the Glendalough Visitor Centre to the Upper Lake car park. Subsequent to this, upgrading will take place as appropriate.

A "Sensory Garden" for visually impaired visitors is currently being developed by NPWS close to the Information Point at the Upper Lake. This will be completed.

4.9.2 Facilities for Visitors with Disabilities: 5 Year Targets

- Carry out access audit as per strategy 4.4
- Draw up action plan drawing on results of audit 2005
- Commence implementation of plan 2006-2009
- Complete study of Green Road 2005
- Complete necessary works on Green Road 2005
- Complete Sensory Garden 2005

4.9.3 Community Use of Visitor Facilities

NPWS will encourage community use of National Park facilities such as Bolger's Cottage for events providing the following criteria are met:

- the event has no unacceptable impacts on National Park resources
- it does not interfere unduly with the enjoyment of other visitors
- it is appropriate in a National Park

4.9.3 Community Use of Visitor Facilities: 5 Year Target

Continue to encourage suitable community use of National Park facilities – on-going

4.9.4 Trading in WMNP

Trading will not be permitted in the National Park.

4.9.4 Trading in WMNP: 5 Year Target

Continue to prohibit trading within the National Park – on-going

4.9.5 Use of WMNP and National Park Facilities for Filming, Advertising or Promotion

The use of the National Park as a film location generates revenue for the local economy and helps to support the Irish film industry. However, filming can disturb the tranquillity of the environment and cause disturbance to wildlife. Filming may be allowed under permit providing that it does not result in damage or significant disturbance to wildlife or to National Park users.

4.9.5 Use of WMNP and National Park Facilities for Filming, Advertising or Promotion: 5 Year Target
Continue to facilitate filming, subject to permit – on-going

4.9.6 Use of WMNP by the Military

NPWS will co-operate with the Defence Forces in areas of security and training, where it is deemed compatible with National Park objectives. Military training activities will be controlled through permits.

4.9.6 Use of WMNP by the Military: 5 Year Target

Continue to control use of the National Park by the military via permit – on-going

Objective 5: To maintain cultural features within WMNP, particularly those associated with the monastic settlement at Glendalough.

Strategy 5.1 Protection of Prehistoric and Early Historic Sites

Sites that have already been recorded, as well any additional sites that may be discovered or acquired in the future will be managed so as to comply with the National Monuments Acts.

The protection of recorded monuments is the responsibility of NMAP. National Park staff will co-operate with this section to ensure that management of all monuments and surrounding Park land is mutually compatible.

Any proposals for facilitating or improving access to any monuments within the Park will be discussed with NMAP and the relevant County Council before work is carried out.

5.1 Protection of Prehistoric and Early Historic Sites: 5 Year Target

Consult with NMAP staff in relation to any works carried out in the vicinity of recorded monuments – on-going

Strategy 5.2 Use of Metal Detectors

Any person found using or in possession of a metal detector, in contravention of the provisions of the National Monuments (Amendment) Act 1987, will be prosecuted.

5.2 Use of Metal Detectors: 5 Year Target

Enforce National Monuments (Amendment) Act 1987 – as necessary

Objective 6: To maintain landscape, aesthetic and other qualities in the environs of WMNP, through liaison with neighbouring landowners and others concerned.

This will be encouraged through consultation with neighbouring landowners and other concerned.

Strategy 6.1 Siting of Aerials

The siting of radio, television, mobile phone or any other telecommunications aerials or masts within the National Park may be permitted only in extreme cases of public health/safety.

6.1 Siting of Aerials: 5 Year Target

Maintain ban on siting of aerials etc within the Park, unless exceptional circumstances arise

 on-going

Strategy 6.2 Overhead Lines

NPWS will seek to have new overhead power and telephone lines in the National Park placed underground or routed to pass through cover.

6.2 Overhead Lines: 5 Year Target

Route power and telephone lines underground or through cover where possible – on-going

Strategy 6.3 Litter, Dumping, Graffiti and Fly Posting

NPWS will seek to educate visitors on the problems caused by casual littering and will encourage them to take away picnic refuse etc. As a matter of policy, litter bins are only provided at Glendalough and Derrybawn.

Where perpetrators can be identified, National Park Staff will issue on-the-spot fines or in serious cases, instigate prosecution under the terms of the Litter Act, 1997. Conservation Rangers are Litter Wardens under this Act. A member of the National Park Staff has been appointed to liaise with the Environmental Officers of the relevant County Councils in relation to this. The National Park expends resources cleaning up litter and dumped rubbish along public roads. This will continue in order to assist Local Authorities and landowners.

Graffiti and fly posters on rock faces, trees and signs will be removed immediately.

6.3 Litter, Dumping, Graffiti and Fly Posting: 5 Year Targets
Liaise with local authorities in relation to dumping – on-going
Encourage staff to be become litter wardens – on-going

Continue to educate visitors regarding the problems caused by littering – on-going

Strategy 6.4 Protection of Tranquillity

The size and relative isolation of parts of the National Park contribute to the sense of tranquillity and solitude. These qualities will be protected through the provision of controls on noise and antisocial behaviour.

NPWS will seek to prevent aircraft flying at unacceptably low altitudes over the National Park.

Applications to provide landing facilities will be refused. NPWS will seek a total ban on civilian aircraft flying over any part of WMNP below a height which is likely to cause undue disturbance to the tranquillity of the National Park. The Irish Aviation Authority (IAA) may be approached to seek a control on over-flights of the National Park over certain areas and/or at particular times.

6.4 Protection of Tranquillity: 5 Year Target

Address the issue of low flying aircraft in consultation with the IAA, the Gardaí, the Air Corps and the Coastguard – 2006

Strategy 6.5 Waste Management & Protection of the Wider Environment

WMNP is not isolated from its surroundings or from outside influences. The National Park will strive throughout to carry out best practice in relation to waste management and energy use, and will work generally to promote the welfare of the wider environment.

6.5 Waste Management & Protection of the Wider Environment: 5 Year Targets

- Examine and promote methods of energy conservation in the management practices of the Park – on-going
- Examine and promote waste reduction and the use of recyclable products in Park management and in the provision of visitor services by the Park or its licencees – 2005
- Refrain from using products which are known to have a detrimental effect on the global environment – on-going

Objective 7: To undertake or facilitate research necessary to achieve the conservation objectives.

Strategy 7.1 Research and Monitoring

Research on management related topics will be encouraged and where appropriate, funded by NPWS and carried out either internally or by external researchers, usually in association with universities, colleges and other research institutions.

Permission may be granted to research workers to use WMNP for scientific studies not directly related to management topics, where such use is consistent with National Park objectives. In general, manipulative or destructive research activities will not be permitted. The results of all scientific activities conducted within the National Park must be made available to National Park management.

7.1 Research and Monitoring: 5 Year Targets

- Commission vegetation map of Park by funding a post-graduate project 2005
- Final version of map completed 2008
- Continue to facilitate appropriate research work in WMNP on-going

Strategy 7.2 Continuity of On-going Projects

Biological monitoring and survey work is currently on-going in a number of areas. This will continue and, where necessary, be improved and extended. Where surveys are not carried out by NPWS (e.g. lichen surveys and some bird surveys), liaison is necessary with the relevant groups/individuals, as per strategy 3.6.

7.2 Continuity of On-going Projects: 5 Year Targets

- Collect weather data in conjunction with Met. Éireann on-going
- Monitor vegetation in woodland and heath exclosures in conjunction with Research Branch and the relevant 3rd Level Institutions – on-going
- Support the Lichen survey on-going
- Monitor Butterflies and Dragonflies on-going
- Carry out bird surveys (Countryside Bird Survey, I-WeBS, Peregrine, Merlin) as per strategy 2.3
- Carry out an annual Deer and Goat census as per strategy 1.2.1
- Carry out bridge survey for Bats as per strategy 2.2.3
- Monitor nest boxes annually, as in strategy 2.3
- Liaise with groups/individuals undertaking survey work on-going

Strategy 7.3 Water Quality Monitoring

Water quality at a number of stations in and around the National Park will continue to be monitored by the Environmental Monitoring and Laboratory Services Division of the EPA. The chemical and biological parameters of water quality in lakes and rivers are monitored.

7.3 Water Quality Monitoring: 5 Year Target

Liaise with EPA – as per strategy 1.4.1

Strategy 7.4 Use of the WMNP for Research Purposes

NPWS will liaise with relevant faculties of academic institutions to promote the National Park as an area with large potential for research projects on a wide variety of topics. NPWS will have a role in approving the design of projects to ensure that the research methods are not harmful or damaging to fragile ecosystems or plant or animal populations. NPWS will encourage research that expands knowledge on species populations and conservation status as well as research which examines the effects of management intervention. Any research project proposed for the National Park requires a permit from NPWS. Permits will be issued on condition that results of research are made available to National Park management.

Relevant research that has been carried out in, or adjacent to the National Park will be collated to ensure that all available information is being utilised. (See Appendix 7 for a list of known research).

7.4 Use of the Park for Research Purposes: 5 Year Targets

- Collate research that has already been carried out by outside contractors/3rd level Institutions - 2009
- Liaise with academic institutions to promote research needs on-going
- Continue to issue permits for appropriate research on-going, as necessary

Strategy 7.5 Topics Identified for Future Work

Baseline information on habitats, for the purposes of management, is generally lacking. Data collected during the Commonage Framework Planning Project, particularly that collected from fixed stations will provide a foundation for the establishment of a more comprehensive monitoring programme.

Other areas that have been identified where further work is necessary are as follows:

- Past and present landuse with special emphasis on turbary rights and grazing regimes, including the establishment of a complete list of right holders.
- Current status of particular species within WMNP.
- Visitor use There is currently inadequate information on the effects of visitors on landscape, vegetation and wildlife. A study of public use of the open mountain habitats, in particular the use of vulnerable areas, subject to erosion, is necessary in order to facilitate the implementation of effective management in these areas.

This work will be undertaken by National Park Staff, other NPWS staff and contract workers, as resources allow.

7.5 Topics Identified for Future Work: 5 Year Targets

- Carry out repeat survey of Wicklow Way usage in conjunction with the Wicklow Way Management Committee – 2005
- Carry out survey of visitor usage of Glendalough Valley 2006
- Identify other areas for visitor usage surveys 2009-2009

Objective 8: To purchase, if desirable, lands and rights, by mutual agreement, in areas adjacent to WMNP, should they become available, in order to consolidate existing WMNP lands.

Strategy 8.1 Acquisition of Land and Rights

Should lands in the National Park target area become available for purchase, NPWS will consider buying them at the market value, depending on the merits of each individual area and its price. NPWS may also consider the purchase of grazing and turf-cutting rights on National Park lands, should they become available. Compulsory purchase will not be used. Considerable areas of Coillte land will be transferred to WMNP once the current crops of trees have been harvested. These will then be managed according to strategy 1.3.2. The location, area and estimated timing of transferral of land from Coillte to NPWS will be clarified.

8.1 Acquisition of Land and Rights: 5 Year Targets

- Identify all lands to be transferred from Coillte to NPWS 2005
- Complete transfer of legal title of lands from Coillte 2005-2009
- Consider land purchases as opportunities arise, subject to the availability of resources on-going

7.3 ZONING WITHIN WMNP

Zoning System

The zoning system for the National Park, based on evaluation and classification of lands and waters and reflecting broad management priorities, provides a framework for achieving objectives and reconciling any conflicting pressures that may arise.

There are 3 categories of management zone identified within the National Park, called A, B and C zones which are explained in the text following. These are further broken down into zones that have individual numbers, i.e., A1 and A2; B1 to B7; C1 to C4 on the Zoning Map (Map 6). Within each of these zones, the relevant management strategies are listed below. See also the table in Appendix 4 which lists the relevant zones alongside each management strategy.

Description of Each Zone

It is important to emphasise that some strategies are relevant to more than one zone, i.e. are relevant to the National Park as a whole.

The main ones are as follows:

- Strategies relating to liaison with a wide range of groups/ agencies (listed under objective 3)
- Strategies relevant to certain aspects of visitor usage of the National Park (listed under objective 4)
- Some of the strategies relating to research and monitoring (listed under objective 7)

Zone A: Natural Zone

Nature conservation is of paramount importance in the A zones. Facilities and activities intended for the attainment of other objectives (e.g. interpretation) are permitted and encouraged, provided they are compatible with nature conservation. High level wardening and monitoring of A zones is essential to detect any damaging factors or changes, and this Management Plan is committed to ensuring that this will take place over the Plan period.

These zones are denoted on the zoning map (Map 6) in green.

A1 Lakes, Rivers, Streams & Other Wetlands

Water quality monitoring, prevention of pollution and protection of fish spawning grounds are relevant in this zone (strategies 1.4 and 2.4). Strategies relating to Goosander (strategy 2.3.3) and Otter (strategy 2.2.1) are also relevant. Glendalough Lakes Upper and Lower and Lough Dan are occasionally used for recreational purposes. The relevant strategy for recreational use is 4.8.7. Water safety is covered by strategy 4.3.2.

A2 Blanket Bog, Heath, Upland Grasslands, Rocky Habitats, Scrub

These are areas which have been identified as undamaged according to the Commonage Framework Plans and Grazing Impact Assessment (see Maps 4 & 5). Maintenance of sustainable grazing levels and control of burning are the main issues relating to this zone (strategies 1.2 and 1.5). Management for Peregrine Falcon and Merlin is also relevant (strategy 2.3.2).

Zone B: Active Management Zone

Areas of high conservation potential where high management input is often needed to return them to a more desirable state. The long term aim is to upgrade the natural value of zone B areas, possibly to the level where they can be re-classified as zone A.

This zone is denoted on the zoning map (Map 6) in red.

B1 Broadleaf & Mixed Woodland, Old Conifer Plantations

Prevention of over-grazing, removal of invasive species and protection from burning are relevant to this zone (strategy 1.3). Management for Red Squirrel is listed under strategy 2.2.2.

B2 Former Conifer Plantation

Promotion of natural regeneration and, where necessary, planting of native species of local provenance are necessary here (included in strategy 1.3.2).

B3 Areas Suffering from Over-grazing

According to the Commonage Framework Plans and Grazing Impact Assessments (see Maps 4 & 5), these areas have been identified as suffering from over-grazing thus, the main management necessary is the implementation of sustainable grazing regimes as laid down in 1.2.1. Deer management is key to over-grazing.

B4 Areas Suffering from Burning Damage

These areas have been identified as suffering from burning. The main management necessary is the control of burning as laid down in 1.2.2 and grazing (strategy 1.2.1).

B5 Bog Restoration Works

This zone covers parts of Liffey Head and Shranamuck Bogs where restoration is being carried out or is proposed. The relevant strategy here is 1.2.4. Peat is actively harvested from small areas on the margins of this zone, where turbary rights are still exercised. Cutting will be permitted for domestic purposes, as per strategy 1.2.3.

B6 Areas for Grouse

Controlled strip burning is the relevant management for Grouse (strategies 2.3.1 and 4.8.11).

B7 Bog/Heath Damaged by Trampling/Erosion

This zone covers areas that have been damaged through recreational use. In addition to the regulation of burning and grazing (strategies 1.2.1 and 1.2.2), management of certain recreational activities in order to prevent erosion is particularly relevant (strategy 1.2.5).

Zone C: Intensive Use Zone

This zone includes areas used intensively by visitors, National Park administration, or areas subject to intensive landscaping, or suitable for such use or management. It also includes areas of considerable conservation value that are also used for interests other than nature conservation (e.g. active turf cutting).

The human activity cannot be halted in these areas, but the interventions do not completely destroy the conservation values.

These zones are denoted on the zoning map (Map 6) in blue.

C1 Turf Cutting Areas

Areas of active cutting, where peat is hand cut for domestic use. Peat extraction here shall be permitted to continue on this basis, as per strategy 1.2.3.

C2 Walking Routes

These tracks are regularly used by walkers. Tóchars have been constructed along some stretches and this work will continue as necessary. The relevant strategies relate to control of erosion and maintenance of tracks (strategy 1.2.5).

C3 Amenity Areas

This zone is in the Glendalough Valley and is primarily managed by the National Park as an amenity area for visitors. The main strategies that apply here relate to maintenance of paths and picnic areas and other strategies relevant to management for visitors. This zone includes visitor facilities such as the Education Centre and Information Point (strategies 4.6 and 4.7 cover interpretation and education).

C4 Joseph's Cottage, Brocky Lodge

Restoration of Joseph's Cottage has been completed. Brocky Lodge is a project for future development.

C5 Public Roads

Strategy 3.1 deals with liaison with local authorities.



Section 8 Reference Material

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8.2 AERIAL PHOTOGRAPHS

Ordnance Survey	1:40 000 approx.	1995
Flight Line	Frames	
42 1	0753-0755	
43 2	0787	
43 3	0691-0693	
44	6518-6523	
45	6395-6401	



Appendix 1 Origins of the National Park Concept

The term "National Park" dates back to the foundation of Yellowstone National Park in the United States of America in 1872. However, the concept of the preservation of a large area of natural landscape for "public use, resort and recreation" was already in place in the USA, in that Yosemite Valley had been protected by an Act of Congress since 1864. Since then, the term "National Park" has been applied to many other protected areas both in the USA and subsequently world-wide. It has thus become an international concept which has been taken up by international organisations.

The World Conservation Union (IUCN) has developed criteria for National Parks and for other categories of protected area. The IUCN publishes, at the request of the United Nations, a list of Protected Areas meeting these criteria, which is known as the United Nations List of National Parks and Protected Areas. The criteria serve, therefore, as international standards for National Parks and other categories of protected areas.

Ireland's National Parks have been managed in accordance with these international criteria for the past 25 years and are included in the UN list. Ireland has 5 other National Parks: Killarney, Burren, Connemara, Glenveagh and Ballycroy, Co. Mayo, which, like WMNP, are managed in accordance with IUCN Category II, described in the following section.

INTERNATIONAL REQUIREMENTS FOR PROTECTED AREAS CLASSIFIED AS NATIONAL PARKS

In an effort to standardise the guidelines for designation of areas as National Parks, the General Assembly of the IUCN first recommended a set of criteria for the definition of National Parks in 1969, which were later amended. The 1978 guidelines were widely used and formed the organisational structure for the United Nations List of National Parks and Protected Areas. Nonetheless, some shortcomings and anomalies were subsequently identified. In response, revised guidelines to replace those published in 1978 were prepared by the IUCN Commission on National Parks and Protected Areas (CNPPA). These were adopted by IUCN Council in 1994. The criteria for National Parks have been revised to reflect, *inter alia*, the recognition that traditional practices by local people can maintain and enhance natural features and biological diversity. This applies in different situations ranging from the activities of indigenous communities at subsistence level in tropical forests, to European landscapes where some semi-natural ecosystems owe their very existence to harmonious interaction of human activities and natural processes. It is therefore increasingly accepted that national authorities must take such issues into account in considering what may be regarded as natural areas or landscapes and what human activities are appropriate in National Parks.



Appendix 2 Designations Affecting WMNP

Special Area of Conservation and Special Protection Area

WMNP lands form part of the 'Wicklow Uplands' candidate Special Area of Conservation (cSAC) (site code: IE0002122) This has been proposed for designation under the EU Habitats Directive (Council Directive 92/43/EEC) and encompasses a much larger area of land than the National Park. The cSAC boundary is the same as that for the proposed Natural Heritage Area (pNHA). This is a national designation, identifying areas of high ecological value. In Ireland, SACs are a sub-group of NHAs, that is, they are sites that are not only of national importance, but are also significant on a European scale.

In 1992 the Council of the European Communities adopted the Habitats Directive, on the conservation of natural and semi-natural habitats and species of flora and fauna. The Directive seeks to establish "Natura 2000", a network of protected areas throughout the European Community. It is the responsibility of each member state to designate SACs to protect habitats and species, which, together with Special Protection Areas (SPAs) designated under the 1979 Birds Directive (Council Directive 79/49/EEC), form Natura 2000. A site is selected for designation on the basis that it contains habitats and/or species that are of conservation importance in a European context. Annex I of the Habitats Directive lists such habitats, including 'priority' habitats, which require particular attention. Annex II of the Habitats Directive lists bird species which require particular conservation measures. Similar measures are also required for regularly occurring migratory bird species not listed in Annex I.

The Habitats and Birds Directives were transposed into national legislation by the European Union (Natural Habitats) Regulations, 1997 (SI 94 of 1997) and sites are legally protected once they are publicly advertised.

The National Park is designated as a SPA (code: IE0004040).

The following tables list the habitats and species for which the cSAC and SPA were proposed for designation.

Habitats for which the Wicklow Uplands cSAC is designated

Habitats Directive Annex I Habitat Classification	Explanation	Described Under ¹
*Blanket bog (*active only) ²	Actively peat forming blanket bog	Blanket bog
*Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas in continental Europe)	Upland grassland on mineral soil	Grasslands
Old oak woods with <i>llex</i> and <i>Blechnum</i> in the British Isles	Oak woodlands	Broadleaved semi- natural woodland
Northern Atlantic wet heaths with Erica tetralix	Wet heath	Heath
Dry heaths	Dry heath	Heath
Alpine and boreal heaths	Heath of alpine and subalpine zones	Heath
Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsetalia ladani)	Scree	Scree and Exposed Rock
Siliceous rocky slopes with chasmophytic vegetation	Vegetation of fissures of siliceous inland cliffs	Scree and Exposed Rock
Calcareous rocky slopes with chasmophytic vegetation	Scree	Scree and Exposed Rock
Oligotrophic to mesotrophic standing waters with the vegetation of the <i>Littorelletalia</i> <i>uniflorarae</i> and/or <i>Isoete-Nanojuncetea</i>	Lakes with low to moderate nutrient status	Lakes, rivers and streams
Dystrophic lakes	Lakes naturally low in nutrients	Lakes, rivers and streams

¹ In this plan, the Annex I Habitats are encompassed by the following habitat descriptions (see Appendix 3). Further details on habitats within the National Park will be contained within the Conservation Plan for the Wicklow Uplands cSAC

² * denotes a priority habitat

Species for which the Wicklow Uplands cSAC is designated

Species listed in Annex II of the Habitats Directive
Otter

Species for which the WMNP SPA is designated

Species listed in Annex I of the Birds Directive
Peregrine Falcon Merlin
Regularly occurring migratory species
Redstart Ring Ouzel Wood Warbler



Appendix 3 Inventory of Resources and Values

A 3.1 NATURAL RESOURCES

Geological Features and Soils

Rock Formations:

The rocks underlying the National Park were laid down during the Lower Palaeozoic Era, during the Cambrian Period (between 570 and 510 million years ago) and the end of the Silurian Period (around 405 million years ago). The rocks laid down during the Cambrian Period consisted principally of fine-grained sedimentary rocks that were deposited as deep water muds and silts.

Following the deposition of these Cambrian and other sequences during the Lower Palaeozoic Era, a period of mountain building known as the Caledonian Orogeny occurred. This was caused by the closing of the lapetus Ocean resulting in the collision of two tectonic plates, creating movement, heat and pressure. This caused the base of the earth's crust to partially melt, producing a large volume of granitic magma which rose to the earth's upper crust and was intruded in several discrete bodies, known as plutons.

The heat generated by the intruding granite caused metamorphism of the surrounding sedimentary rocks, creating coarse grained schists. The heat also caused metals to be leached from the rocks and concentrated them into veins. These ores were mined from many small workings during the nineteenth century.

Today, the granite generally forms rounded hill tops, such as Kippure and the schists form more irregular rocky summits, such as Djouce Mountain.

Glacial Features & Other Landforms:

The Quaternary Period describes the period from the Ice-Age, which began about 1.6 million years ago, to the present. Since the beginning of this Period, ice fronts have advanced and retreated a number of times, with periods of warmer climate (of 10,000-15,000 years) in between. The Wicklow Mountains were glaciated both by locally derived ice as well as ice sheets from the Midlands and the Irish Sea Basin.

As an ice sheet advances, it grinds and fragments protruding bedrock, producing sediment carried beneath and within the glacier comprising particles of various sizes. This is deposited as un-sorted till or boulder clay. If sediment is carried and sorted in glacial meltwater, it is deposited as graded sands and gravels.

In Wicklow, the ice sheets deposited tills and gravels from their source areas, such as shell-rich gravels dredged from the floor of the Irish Sea. Moraines of smaller glaciers, all of which occur well

within the granite area contain small pebbles derived from schist as well as larger boulders of granite. The lower lake at Glendalough is held up by a moraine.

Glaciers forming in the Wicklow Mountains created spectacular corries that now hold lakes, such as Lough Ouler and Upper Lough Bray. Glaciers also carved the steep, U-shaped valley of Glendalough.

After the Ice-Age, the climate became suitable for peat formation. The expanses of bog found in the Wicklow Uplands have developed in the 10,000 years since the end of the Ice-Age. Alluvial deposits were also laid down during this period.

Soils:

Much of the upland area of the National Park comprises blanket peat. Peat formation is controlled by climatic factors, i.e. high rainfall and humidity and cool summers. Peat accumulation occurs when these factors create waterlogged and anaerobic conditions which impede the decay of surface vegetation. It occurs over rock and glacial drift in mountain and hill land with an average depth of peat of 1.2 m. Other soils include Peaty Podsols and Gleys, Boulder Clays, Lithosols and Brown Podsolics. The soils throughout most of the Wicklow Uplands have been classified as of poor to very poor suitability for tillage or pasture.

Hydrology and Water Quality

The National Park contains the upper catchments of several significant rivers including the Dargle, Liffey, Vartry and Avoca. The mountain streams are often peaty, especially in flood conditions. Many of the rivers, due to the underlying impervious rock of their catchment areas, are prone to flash flooding or 'spates'. A number of upland lakes are also included in the National Park boundaries : Upper and Lower Lakes at Glendalough, Arts Lough, Kelly's Lough, Lough Ouler, Lough Bray and parts of Lough Dan.

Physico-chemical measurements of water quality within some of the rivers in the National Park indicate that water quality is fair to good in most stretches, and the majority of rivers are naturally oligotrophic (low in nutrients). However, toxicity problems exist in some areas, e.g. the upper reaches of the Avonbeg and sections of the Glenealo River between the Upper and Lower Lakes (EPA, 1994 & 2003).

Recent survey data by the Eastern Regional Fisheries Board also suggests that certain upland tributaries of the Avoca catchment are extremely acid sensitive and significant dips in pH occur during high rainfall events (ERFB, unpublished data, 2003). These acid sensitive areas occur in areas underlain mainly by granite and schists bedrock with peaty or peaty podzolic soils, materials that have low buffering capacities and are therefore highly sensitive to acid inputs. Evergreen afforestation within certain catchments also appears to add to acidity (Bowman and Bracken, 1993; Kelly-Quinn, 1996).

Climate, Weather and Air Quality

Ireland has a warm, wet, temperate maritime climate, with frontal depressions moving eastwards from the Atlantic dominating the weather patterns. Mean annual rainfall ranges between 1000 mm and 1500 mm, but reaches 3000 mm in places.

Weather data have been collected at Glendalough by National Park staff since 1993. Longer term records for the Wicklow uplands have been collected by the Meteorological Service as well as by other bodies, such as the ESB.

The climate of the Wicklow Mountains is temperate, with a fairly heavy rainfall. The regional and local climate affects both soil and vegetation, and is thus important in determining the ecology and scenery of the area.

Temperature:

The only extensive recorded temperature data available from the site is that from Turlough Hill ESB station, although NPWS has maintained a daily recording weather station at Glendalough since 1991.

Mean daily air temperature estimates in the upland areas range from averages of 1°C in January to 13°C in July.

Precipitation:

The average annual rainfall in the Wicklow Uplands ranges from 1,300 to 2,400 mm, generally increasing with altitude. The number of days on which it rains is quite high, with 175-200 rain-days (days with more than 0.2 mm) per year. Based on averages taken over a thirty year period (1951-1980), the driest months in the area are April, June and July, while December and January are the wettest months.

The following table shows mean monthly and annual rainfall (1951-1980) for a number of stations in, or close to the site:

Location	Grid. Ref.	Alt.	Rainfa	ıll (mm)											
		(m)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Glemacnass	0117023	238	209	146	144	122	113	88	77	117	129	161	164	213	1673
Brocky Lodge	0094132	305	169	124	119	103	108	78	77	110	109	145	137	177	1455
Djouce Mtn.	0179103	710	184	143	135	118	119	96	78	122	129	156	161	206	1647
Glendalough (Lugduff)	T110942	451	242	183	177	143	151	113	109	161	170	210	207	235	2101
Glenmalure (Cloghernagh)	T091905	436	199	166	164	127	131	103	99	142	162	188	181	230	1892
Lough Dan (Scar Mtn)	0133017	610	236	157	164 1	32	132	111	97	138	151	175	185	243	1921
Sally Gap	0126111	462	212	168	160	123	134	98	91	130	135	171	174	223	1819
Wicklow Gap	0670005	415	223	155	149	124	128	104	97	134	142	179	177	239	1849

Source: Met. Eireann

The pattern of rainfall generally reflects the altitude of the hills, with most rain falling on the highest hills. However, the sheltering influence of topography on rain-bearing winds can result in considerable localised variations in rainfall. Lough Bray and Djouce Mountain, for example, are sheltered from the main effects of the moist westerly air stream and show a rain shadow effect. In contrast, the Sally Gap is very exposed to the wet westerly winds, receiving more rain than Djouce, although it is 248 m lower. Under high rainfall and low temperature conditions, evaporation rates are also low. This can lead to waterlogging of soils and anaerobic conditions, preventing the decay of organic matter leading to the formation of blanket peat.

Over most of the site, the annual average number of mornings with snow cover ranges between 15-20 days per year but can exceed 30 days at the highest altitudes. The frequency and intensity of snow and hail are greater at higher altitudes. In many areas, however, particularly in windswept uplands, the snow does not remain very long on the ground.

Wind:

There are no continually recorded data available for wind speed in the Wicklow Mountains. However, much higher winds occur over the mountains than are experienced over the surrounding lowlands.

Gusts of 65 metres per second have been recorded on Kippure Mountain television mast when gusts of only 36 metres per second were occurring at the nearest recording anemometer, Casement Aerodrome, 18 km away.

Stunted and wind-sculpted trees and shrubs are a familiar site in the Wicklow Uplands and strong prevailing winds are probably a contributing factor to upland peat erosion.

Habitats and Vegetation

Note: See Map 3 for habitats & Appendix 5 for Latin names. Appendix 2 gives the habitats listed in Annex II of the Habitats Directive.)

Blanket Bog:

This habitat occurs in water-logged uplands with high precipitation and is characterised by deep peat. Typical species include Bog Mosses, various grass and sedge species such as Purple Moorgrass, Common Cotton-grass and White-beaked Sedge. Low plants of ericaceous shrubs such as Ling Heather and Cross-leaved Heath also occur. Insect catching plants, particularly Sundews are also widespread in blanket bog areas.

Liffey Head Bog is the best example of Blanket Bog within WMNP. It comprises an area of deep peat with an extensive system of pools, hollows and hummocks. The pools are fringed by Common Cotton-grass, various Bog Moss species and Fir Clubmoss. Silver-haired Moss forms large hummocks while the flatter, very wet areas are dominated by Hare's-tail Cotton-grass and include Bog Asphodel and Cross-leaved Heath. Bog Rosemary, an uncommon species in this part of the country is also found here.

Flushes are integral parts of blanket bog systems, forming natural drainage systems. The accumulation of nutrients along flushes is manifested by the presence of plant species not usually found on mountain blanket bog. Such species include Star Sedge, Rushes and Devil's-bit Scabious. Purple Moor-grass is often dominant along flushes.

Where blanket bog has been affected by burning, over-grazing or drainage, Bog Mosses tend to be less abundant, with species such as Deer-grass, Cotton-grass, becoming dominant. Bilberry, and Cowberry occur in drier areas, as do the Hard Fern, Narrow Buckler Fern and a variety of mosses.

Heath

Heath vegetation is the dominant habitat on open hillsides and is described as being wet or dry heath, depending on depth of peat and drainage.

Heath is generally dominated by a variety of grasses such as Bent Grass, Mat Grass and Wavyhaired Grass as well as Ling Heather. Bell Heather also occurs in drier areas, while Cross-leaved Heath and Heath Rush are common in wetter areas. Other typical species of wet heath include Cotton-grass, Purple Moor-grass and Sedges, including Star Sedge, Green-ribbed Sedge and Common Sedge.

Bilberry grows in association with Heather at more sheltered locations, while heath on the more exposed plateaux is dominated by Silver-haired Moss, Ling and Bell Heather. Two scarce species of Clubmoss, namely Stagshorn Clubmoss and Alpine Clubmoss occur along the highest ridges and at the mountain summits. A variety of lichens occur on bare peat surfaces.

Screes and Exposed Rock:

The main exposures of scree and bare rock occur around Lugnaquillia, the Glendalough Valley, around Lough Nahanagan and to the north-east of Table Mountain. These exposed rocky habitats often support unusual vegetation communities including Arctic-alpine species such as Alpine Clubmoss, Fir Clubmoss, Cowberry, Starry Saxifrage and Parsley Fern.

Lakes Rivers and Streams:

A number of the lakes within the National Park are high altitude corrie lakes, formed by glacial scouring and erosion. Such lakes tend to be relatively deep and low in nutrients (oligotrophic). This factor, combined with low temperatures, results in an impoverished flora and fauna. The larger lakes at Glendalough lie in a glaciated valley and are more diverse in character. Lake vegetation within the National Park includes some rare species. For example, Upper Lough Bray is the only recorded Irish site for a variety of Quillwort (*Isoetes lacustris* var. *morei*).

Many mountain streams rise within and flow through the National Park. The Liffey-head Bog complex encompasses the sources of the River Liffey, River Dargle and the Cloghoge River. The River Dodder also rises within the National Park. Some watercourses within the area have been classified as slightly polluted due to forestry mediated acidification.

Broad-leaved Semi-natural Woodland:

The main area of deciduous woodland within the National Park is the Glendalough/Derrybawn oakwood (approximately 106 ha). Most of this was managed as coppice woodland in the 18th century, which was subsequently largely re-planted. This has led to a rather even-age structure, with the dominant tree species being Sessile Oak. Other species such as Rowan, Hazel, Holly and Birch are also present. The ground flora includes Bilberry, Ling Heather and Woodrush.

Some non-native tree species such as Beech, Spruce, and Douglas Fir, are seeding into areas of this woodland. In some cases, such species were under-planted into the semi-natural woodland itself. Rhododendron and Cherry Laurel have also invaded some areas, however most of the Rhododendron has now been removed.

The cliffs and scree slopes at the western end of the Glendalough valley and in some of the other valleys provide adequate shelter for small pockets of woodland to survive. These include Holly, Rowan, Birch, Aspen and Yew. Other small patches of scrub occur along the upland stream valleys. These often contain species such as Rowan, Willow and Hawthorn.

Coniferous and Mixed Woodland:

Coniferous plantations within WMNP date from the 19th century. These old plantations comprise predominantly Scots Pine. The Coronation Plantation was named in celebration of the coronation of King William IV in 1831. It stretches for approximately two and a half km along the Liffey valley, to the south west of Kippure Mountain. The Scots Pines are interspersed with Sessile Oak and the plantation has an open canopy. The ground layer is dominated by Ling Heather and Bilberry while Purple Moor-grass is the predominant herb layer species.

In the mid-1800s, Scots Pine and European Larch were planted around Glendalough to provide timber for mining activities in the area. When the mines closed in 1889, these trees were not felled and today, mature stands occur along the Miner's Road and on the slopes of Camaderry Mountain. These include other tree species such as Sessile Oak.

Large scale afforestation was initiated by the State in Wicklow in the 1920s. These modern plantations are dominated by Sitka Spruce. Considerable areas of afforested land planted by Coillte will be transferred to the National Park once the trees have been harvested and where appropriate, will be allowed to colonise naturally with native woodland species. Some of these areas have already been transferred to the National Park and are being managed for conservation purposes.

Grasslands:

Small areas of poorly drained, or wet grassland occur on lower mountain slopes, often in mosaic with wet heath. Typical species found in this habitat include Compact Rush, Soft Rush, Purple Moorgrass and Cross-leaved Heath. Wet grassland also occurs along river valleys, where species such as Black-bog Rush, Bulbous Rush, Deer-grass and Common Marsh-bedstraw are common. Thick Bracken also dominates some areas, particularly along roads and river banks and on abandoned pasture.

Scrub:

Small areas of scrub are scattered throughout the National Park. Typically, this habitat includes species such as Rowan, Willow, Bramble and Dog Rose.

Noteworthy Species

Flora:

The diversity and extent of upland and other habitats within WMNP is reflected in the number of rare species found within the site. A number of these are listed in the Irish Red Data Book, as species whose continued status in Ireland is either rare or threatened. Some of these species are also protected under the Flora (Protection) Order (1999) and are marked thus *:

Lanceolate Spleenwort*

This fern grows on banks and walls near south and east coasts. It has been recorded in 12 sites nationwide, but only three since 1970, two of which are in Wicklow.

Parsley Fern*

The Parsley Fern grows in rocky and stony places in mountainous areas of the north and east of the country. There have been nine Irish records in the past, but only three recent ones.

Small White Orchid*

The typical habitats of the Small White Orchid are upland pastures and heaths. In the past, it was recorded in 23 counties, however, only 7 records are post 1970.

Bog Orchid*

This species of orchid generally grows on wet bog, in tufts of *Sphagnum* moss. This species seems to have suffered a decline and Curtis & McGough (1985) consider it to be one of the 2 most threatened European vascular plants found in Ireland.

Alpine Lady's Mantle

This species is found on mountain cliffs in Wicklow and Kerry. It has only been recorded on 3 Irish sites and one of these is in the National Park.

Marsh Clubmoss

This species has been recorded in a total of 22 Irish sites, eight since 1970. It was last recorded in the National Park area in 1920.

Greater Broomrape

This Broomrape species is parasitic on the roots of Gorse and Broom. It was once frequent near the south and east coasts, however, it is now very rare. It has been recorded in 7 sites since 1970 and 2 of these are in Wicklow.

Alpine Saw-wort

This alpine species grows on mountain ledges and cliffs above 300m, mainly in the western half of the country. It has only been recorded in 10 Irish sites since 1970.

Species	Red Data Book	Flora Protection Order
Lanceolate Spleenwort	V	Yes
Parsley Fern	R	Yes
Small White Orchid	V	Yes
Alpine Lady's Mantle	R	No
Bog Orchid	R/V	Yes
Marsh Clubmoss	R	No
Greater Broomrape	R	No
Alpine Saw Wort	R	No

Summary table of Red Data Book and Protected Species:

V = Vulnerable (under the IUCN classification) – most or all populations decreasing/populations seriously depleted/under threat from several factors

R = Rare – small populations that are not at present endangered or vulnerable, but are at risk

Other notable plant species found within the National Park include:

Upland Species:		
Stagshorn Clubmoss	Beech Fern	St. Patrick's Cabbage
Alpine Clubmoss	Brittle Bladder	Harebell
Fir Clubmoss	Dwarf Willow	Stone Bramble
Wilson's Filmy Fern	Starry Saxifrage	Fern Cowberry
Bog Species:	Aquatic Species:	
Bog Myrtle	Quillwort	
Bog Rosemary	Shoreweed	
Lesser Twayblade	Water Lobelia	

Fauna

Note: See Appendix 6 for the Latin names of species mentioned in the text and Table A2, Appendix 2 for species listed in Annex II of the Habitats Directive.

Invertebrates:

Some of the best known invertebrate communities within the area are associated with wetland habitats such as bog pools, streams and lakes. Mayfly and Stonefly larvae live in higher altitude streams while Caddis Fly and Midge larvae tend to occur at lower altitudes.

Most notable of the Midge species are the Biting Midges of the genus *Culicoides*. The biting activity of the female adults of this genus is a significant nuisance to mammals (including humans) in the summer months.

A butterfly survey was initiated in the National Park in 1995 and 26 species have been recorded in the Glendalough area (see Appendix 6). This is an ongoing quantitative survey being carried out by the National Park Staff. Species of particular interest recorded include Purple Hairstreak, a rare Irish butterfly typically found in the upper canopy of oakwoods.

A dragonfly survey was started during the summer of 2000. Eleven species of dragonfly and damselfly have been recorded so far (see Appendix 6).

Fish:

The upper reaches of some rivers are spawning grounds for Salmon and Brown and Sea Trout, both of which are listed in the Red Data Book. Other fish species found include Eel, Minnow, and Stickleback. However, some streams no longer contain fish due to forestry mediated acidification. Lough Ouler contains a population of Brown Trout that breed at a much smaller size than usual, due to the low nutrient levels of the lake. The lower lake in Glendalough has, in the past, been stocked with Trout.

Lough Dan may contain Arctic Charr. This species is a cold climate salmonid found in Ireland only in oligotrophic acid lakes in Wicklow and the west of the country. It may have also occurred in Glendalough but is thought to have been wiped out by the mining activities. Arctic Charr is listed in the Irish Red Data Book as Vulnerable.

Amphibians and Reptiles:

The Common Frog is widespread throughout the National Park. This species is listed in the Red Data Book as being Internationally Important. The Smooth Newt has also been recorded.

Ireland's only native reptile, the Common Lizard, is also found in the National Park.

Birds:

(see Appendix 6 for a list of bird species recorded in the National Park).

WMNP contains habitats that provide foraging and nesting areas for a number of specialised birds, particularly for three rare bird of prey species. It is a stronghold for the Peregrine Falcon, which nests mainly on cliffs. The site also has an important Merlin population, a species which requires extensive blanket bog and heath over which to hunt, although many of the nest sites are now in conifer plantations. The area was also formerly a stronghold for the Hen Harrier but the population has now declined to the current level of one pair and is no longer a regular breeding species. These three species are all listed in Annex I of the EU Birds Directive. Buzzard (another bird of prey) also breed sporadically within woodlands in the National Park.

Ring Ouzel nest in remote rocky places and on scree slopes, however, this species has declined in numbers in recent years and today observations are scarce.

Golden Plover formerly bred in the Wicklow Mountains. Today, they are regularly recorded in the Djouce/War Hill area in the autumn, however there are now no confirmed breeding pairs.

Red Grouse, a characteristic bird of upland heath and blanket bog, occurs in the National Park at relatively high densities, although populations have declined since the early years of the century due to habitat loss. The species depends on the availability of a mosaic of heather of different ages. The Wicklow Uplands are considered to hold the largest and most dense population of Red Grouse in Ireland.

The broadleaf woodlands are important habitats for a range of bird species. In addition to several species of tit, Chiffchaff, Chaffinch and Goldcrest, they also hold Redstart, Garden Warbler and Wood Warbler. These last two species are annual visitors to the Glendalough woodlands. The Pied Flycatcher is very occasional summer visitor.

Coniferous plantations provide additional niches for bird species. Siskin and Crossbill are characteristic species of older plantations such as the Coronation Plantation. Crossbills are rare in Ireland and breeding has recently been confirmed in Wicklow.

Goosander and Little Grebe breed on lakes within the National Park, as do Moorhen and occasionally, Common Sandpiper. Whooper Swan are winter visitors where as Cormorant and Grey Heron are regular year round visitors. Osprey have been occasionally recorded fishing in lakes within the National Park.

Upland streams support Dipper and Grey Wagtail populations while Kingfisher are found along streams at lower altitudes.

Mammals:

Almost all of Ireland's native mammal species have been recorded in WMNP.

The native Red Deer population of the Wicklow uplands died out in the mid 18th century. However, in the 1920s, captive deer escaped from the Powerscourt Estate into the surrounding Wicklow countryside. These escapees were mainly Red-Sika deer hybrids, but may have included pure bred individuals of both species. Sika Deer were originally introduced into Ireland from Japan. Today, approximately 20-30% of the wild population in Wicklow exhibit Red-like physical characteristics, while the remainder are hybrid type or Sika-like. The deer use a range of habitats including heath, blanket bog and woodlands. The open range deer form distinct herds or populations, with discrete feeding ranges.

Feral Goats live in small groups in woodlands and open hillsides. The Glendalough valley holds the largest herd, of approximately 150 animals.

Irish Hares are widespread throughout the National Park, particularly in the open, upland habitats and woodland edges. Rabbits are found at lower altitudes, generally in drier areas, where it is possible to burrow.

Woodlands within the National Park support the two squirrel species found in Ireland. The native Red Squirrel favours coniferous woodlands, particularly those containing Scots Pine and Larch. The introduced Grey Squirrel is making in-roads into Co. Wicklow and its presence has been confirmed in the Coronation Plantation.

Otters have been recorded at several locations in the National Park area. The American Mink, an introduced species from North America, is also present in aquatic habitats in the National Park.

Pine Martens have recently been confirmed as being present in the National Park. This species was once widespread, but became very scarce in the second half of this century, mainly due to trapping. It favours mixed or coniferous woodland.

The Irish Stoat is indigenous to Ireland and is widespread in the National Park. It is adaptable to a wide variety of habitats including woodland and upland habitats.

Badgers, Ireland's largest native carnivore, typically inhabit areas of woodland close to clearings or pastures used as foraging grounds. Badger setts have also been found at higher altitudes in the National Park.

Foxes also occur in a number of habitats throughout the National Park.

Seven of the nine Irish bat species are known to feed in the Glendalough area. The combination of habitats, including woodlands, flowing and still water provide excellent foraging conditions for these species namely Pipistrelle (45 KHz and 55 KHz), Daubenton's Bat, Natterer's Bat, Whiskered Bat, Brown Long-eared Bat and Leisler's Bat.

The Hedgehog and the Pygmy Shrew, Ireland's two native insectivore species are both found within the National Park.

A3.2 CULTURAL RESOURCES

WMNP contains a number of important archaeological and historical features. The most significant of these is the early Christian settlement at Glendalough, which was founded by Saint Kevin in the 6th century. While the main monastic site is outside the National Park boundary, the Glendalough Valley contains a number of important remains, particularly on the eastern and southern sides of the Upper Lake. The Pilgrim's Path, which runs from Glendalough to the Wicklow Gap was constructed between the 6th and 10th centuries and parts of it occur in the National Park. However, much of it is now buried beneath peat.

A number of pre-historic remains are found within the National Park. Neolithic passage tombs occur at Seehan, Scurlocksleap, Sorrel Hill and at Athdown/Shankhill. The Bronze Age is represented by rock art at Scarr Mountain and Brockagh Mountain as well as by stone circles in the Sally Gap area and a standing stone on the eastern slopes of Djouce Mountain.

Artefacts of mining activities, which peaked between 1800 and 1920, can be found at various locations in WMNP. These include spoil heaps and remains of buildings. The most extensive of these is at the head of Glendalough Valley, where the ruins of cottages and a water-powered mill mark the location of 'the mining village.'

A3.3 OTHER VALUES

The spectacular scenery of WMNP is well known and many panoramas, such as the views of Glendalough, Glenmacnass and the Coronation Plantation have been famous for hundreds of years. Upland routes, such as the Military Road reveal stunning views of mountain peaks and glacial valleys. Views from mountain tops extend from the midland plains to the Irish Sea. On a clear day, the Welsh coast can even be seen. The majestic open hill landscapes of blanket bog and heath contrast with the patchwork of other habitats such as woodland, lakes, streams, waterfalls and scree, all of which add to the aesthetic qualities of the area.

Tranquillity is characterised by the relative absence of human generated noise, such as vehicle engines. Low levels of such noise allow the natural sounds of water, wind and wildlife to be heard, thus enhancing the sense of tranquillity. The related quality of solitude is based on the perceived absence of other people and involves a feeling of isolation from others. A feeling of solitude can be influenced by the physical characteristics of the environment and in some settings, such as in woodland, may be more imagined than real. Tranquillity and solitude can both be widely experienced in parts of the WMNP.

A3.4 WMNP INFRASTRUCTURE

Staff

Regional Manager: Mr Eamonn Meskell

Deputy Regional Manager: Mr Wesley Atkinson

District Conservation Officer: Sr Enda Mullen

Head Ranger: Mr Ben McCabe

Conservation Rangers: 3 Conservation Rangers are employed in the National Park.

Guides:

6 full time and 1 part-time Guides/Education officers run the Education Programme and staff the Information Office.

General Operatives:

5 General Operatives are also employed in the National Park.

Administration:

Secretarial and numerous other duties are carried out by 1 person.



Appendix 4 Table of Management Strategies and Zoning

The following table lists the management strategies for WMNP with the corresponding management zones. These are explained in more detail in sections 7.2 and 7.3.

WICKLOW MOUNTAINS	NATIONAL PARK	MANAGEMENT	PLAN 2005-2009
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Strategy	Detailed Strategy	Targets	Management Zones
1.1 Protection of Geological Features & Soils		 Retain Government policy on not issuing prospecting licences in National Parks on-going 	Not zoned
 1.2 Conservation & Management of Bog/Heath/Grassland Communities 	1.2.1 Establishment and maintenance of sustainable grazing regimes	 Fulfil requirements of the Commonage Plans and the Grazing Impact Assessments for livestock - on-going Establish sustainable grazing regimes for goats and deer (including density targets) - 2005 Continue Deer and Goat population assessments - annually Conduct deer culling to achieve progress towards target densities - annually Control goats in woodlands (by shooting and by fencing) in order to allow plant regeneration - annually. 	A2 B3 B4 B7
	1.2.2 Control of Burning	 Review Fire-fighting Action Plan – annually Continue fire-fighting training for staff – on-going Liaise with relevant authorities – on-going Patrol monitor – on-going, as necessary Create suitable habitat for Grouse by controlled strip burning – as per strategy 2.3.1 	A2 B3 B4 B7
	1.2.3 Control of Peat Extraction	Continue liaison with peat-cutters with a view to minimising impacts – on-going	B5 C1
	1.2.4 Drain Blocking on Blanket Bog	 Compile management plan for Shranamuck – 2005 Complete work on Shranamuck – by 2007 Compile management plan for Liffey Head Bog – 2006 Continue restorative work on Liffey Head Bog – on-going Monitor & maintain all works carried out – on-going, as necessary 	B5
	1.2.5 Prevention of Erosion and Damage from Trampling	 Continue to liaise with Mountain Meitheal regarding the Heritage Council funded Upland Path Survey - 2006 Continue programme of upland path repair, maintenance & monitoring according to "WMNP Pathworks Principles" document and using results of the above survey - on-going Continue to liaise with user groups and individuals regarding best practice - on-going Continue to liaise with Conservation Volunteers Ireland & Mountain Meitheal regarding path work carried out by volunteers - on-going Carry out baseline survey of areas of natural peat erosion - 2007 Investigate methods of restoration/mitigation on a selected hag site - 2008 Control burning & carry out drain blocking - see strategies 1.2.2 & 1.2.4 	B7 C2

Strat	egy	Detailed Strategy	Targets	Management Zones
1.3	Conservation & Management of Natural & Semi-natural Woodlands	1.3.1 General Woodland Management grazing regimes in woodlands	 Draw up long term woodland management policy for semi-natural woodlands – 2005 Draw up long term woodland management policy for coniferous plantations – 2006 Set population targets in all woodlands for deer – 2005 Compile management plan for Glendalough woodlands – 2005 Compile management plan for Coronation plantation – 2005 Compile management plan for Oakwood – 2006 Review above targets – annually 	Bi
		1.3.2 Management of Specific Woodlands	As per table	B1 B2
4.	Conservation & Maintenance of Aquatic Habitats	1.4.1 Maintenance of Water Quality	 Implement Catchment Management Plans, as they are introduced by the ERFB and Local Authorities - on-going Continue to liaise with EPA, local authorities & universities re water sampling programmes - on-going Continue mitigation measures to mediate heavy metal inputs to Glendalough Upper Lake - on-going, as necessary Respond to, and report, pollution incidents as soon as they are identified - on-going Integrate conservation management for small water-bodies and streams into the wider conservation management strategies for the Park - as per strategies 1.2.1; 1.2.4 	A1
		1.4.2 Control of Forestry Mediated Acidification & Pollution	Continue to liaise with Forest Service & Coillte to ensure that best practice guidelines are followed – on-going	A1
		1.4.3 Protection of Spawning Beds & Fish Populations	 Remove debris from river between Lower Lake & the Glendasan River – 2005 Prohibit gravel removal – on-going 	A1
1.5	Conservation and Maintenance of Rocky Habitats	1.5.1 Prevention of Damaging Activities	 Liaise with climbers- as per strategy 4.8.9 Control goats – if required by the Action Plan to Conserve Rare Plants (strategy 2.1) Control burning- as per strategy 1.2.2 	A2
		1.5.2 Establishment of Baseline Data	Establish status of rare plants on exposed rock & scree- as per strategy 2.1	A2

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Strategy	Detailed Strategy	Targets	Management Zones
2.1 Conservation of Notable Plant Species		 Carry out survey to ascertain status of rare plant species – 2007 Establish action plans for the conservation of the above if deemed necessary – 2008 	Not zoned
2.2 Conservation of Native Mammals	2.2.1 Management for Otter	 Undertake Otter survey – 2005 Maintain aquatic habitats – as per strategies 1.4.1 & 1.4.2 	A1
	2.2.2 Management for Red Squirrel	 Carry out Squirrel survey – 2005 Establish and implement an Action Plan for the Conservation of Red Squirrels – 2006 Control Grey Squirrel – as necessary 	B1
	2.2.3 Management for Bats	 Continue bat box programme – on-going Continue liaison with local authorities – on-going Continue education programme – on-going Continue programme of monitoring bat species – on-going 	Not zoned
2.3 Conservation of Bird Species		 Carry out survey for Ring Ouzel, Redstart, Wood Warbler & Dipper – 2007 Strategies for specific species are listed below 	Not zoned
	2.3.1 Management for Red Grouse	 Continue 10 year rotation burning plan for Powerscourt Paddock – 50% of rotation complete by 2009 (weather permitting) Liaise with the IKC regarding counts – on-going Liaise with the WGCC – on-going 	B6
	2.3.2 Management for Merlin & Peregrine Falcon	 Continue research on Merlin – on-going Carry out Merlin survey – annually Liaise with climbers regarding Peregrines– as per strategy 4.8.9 Carry out Peregrine Survey – annually 	A2
	2.3.3 Management for Goosander	 Provide, monitor and maintain nest boxes – on-going, as required Monitor Goosander population – annually 	A1
2.4 Conservation of Fish Stocks		 Maintain water quality – as per strategies 1.4.1 & 1.4.2 Protect spawning grounds – as per strategy 1.4.3 	A1

Strategy	Detailed Strategy	Targets	Management Zones
3.1 Liaison with Local Authorities		 Liaise with local authorities to advise on development/activities carried out by them that may impact on on WMNP – as necessary Seek planning permission – as necessary 	Not zoned
 Liaison with the Environmental Protection Agency 		Continue liaison with the EPA- as per strategy 1.4.1	Not zoned
3.3 Liaison with the Eastern Regional Fisheries Board		Liaise with the ERFB – On-going, as necessary	Not zoned
3.4 Liaison with Coillte		Continue liaison with Coillte – as per strategies 1.2.1, 1.2.2, 1.4.2, 4.8.4 & 8.1	Not zoned
3.5 Liaison with REPS Planners		Liaise with REPS planners – as necessary	Not zoned
3.6 Liaison with other Parties		 Hold regular meetings with Park Council to review implementation of plan – on-going Liaise with groups involved in using and working in the National Park – on-going 	Not zoned
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Stra	ıtegy	Detailed Strategy	Targets	Management Zones
4.1	Provision of General Access to WMNP			Not zoned
4.2	Delineation of National Park Boundaries		Delineate National Park boundary, as appropriate – 2006	Not zoned
4:3	Visitor Safety and Protection		 Carry out review of visitor Health and Safety requirements – on-going Sensitise visitors to their own responsibilities through literature and signage – on-going 	
		4.3.1 Search and Rescue	 Implement emergency plans – on-going as necessary Review emergency plans – annually Continue to facilitate the use of WMNP facilities by Search and Rescue Organisations on-going as necessary 	Not zoned
		4.3.2 Water Safety	 Maintain stand-by rescue boat at the Upper Lake – on-going Continue to facilitate staff training – on-going, as necessary 	A1
		4.3.3 Crime and Security	Maintain contact with Gardaí and Community Alert Groups – on-going	Not zoned
4.4	Roads and Car Parks		 Continue to liaise with local authorities regarding the maintenance of public roads that run through the National Park – on-going Carry out access audit to identify the current and potential access arrangements for visitors to WMNP – 2005 Implement findings of audit – 2006-2009 Examine feasibility of using shuttle buses – 2007 	C2
4.5	Provision of Information	4.5.1 Use of Languages	Continue to produce material in both Irish & English – on-going	Not zoned
	and Orientation to Visitors	4.5.2 Signposting	 Liaise with local authorities on the provision of signage flagging the National Park on main routes entering Co. Wicklow – on-going Remove & replace all outdated signage – as necessary Maximise use of nationally and internationally recognised symbols on signs – on-going 	Not zoned
		4.5.3 Information for Tourists at Local Level	 Initiate programme of orientation events for tourism sector – 2005, then annually Arrange dissemination of information to tourism sector – 2005, then on-going 	Not zoned
		4.5.4 Information Technology	 Complete website design - 2005 Keep website updated - on-going from 2005 	Not zoned

Strategy	Detailed Strategy	Targets	Management Zones
4.6 Interpretation in WMNP	4.6.1 Indoor Interpretation	 Consult with Park Council regarding the development of visitor facilities – 2005 Maintain indoor interpretation to highest standards, subject to resources – on-going Carry out review of indoor interpretation – annually 	3
	4.6.2 Outdoor Display Panels	Install information panels at the listed locations – 2005	Not zoned
	4.6.3 Conferences, Seminars and Special Events	Continue to facilitate suitable events within the National Park – on-going	Not zoned
4.7 Education Programme	4.7.1 Development of the Education Programme	 Undertake comprehensive review of education provision in WMNP – 2005 Strengthen links with other facilities such as Knocksink Wood, so that the Education Programme can be developed in a co-ordinated manner on a regional basis – 2005 Target primary school children, particularly from local and disadvantaged communities – on-going Establish outreach service to local communities and organisations in liaison with the Education Officers of the relevant County Councils, focusing on such areas as Bray, Tallaght and Rathdrum – on-going Provide in-service teacher-training course for primary school teachers – on-going Continue to provide curriculum-based field studies for geography and biology Junior and Leaving Certificate students and support for 3rd level courses and field trips – on-going Continue lecture series – on-going Continue to develop facilities for disabled groups – on-going 	Ű
	4.7.2 Group Supervision	Continue to enforce existing child: supervisor ratio – on-going	C3

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Strategy	Detailed Strategy	Targets	Management Zones
4.8 Management of Recreational Activities in WMNP	4.8.1 Trail-walking & Nature Trails	 Monitor, maintain & improve walking tracks & nature trails as appropriate – on-going, as necessary Continue with upland path programme – as per strategy 1.2.5 	C2
	4.8.2 Hill Walking	Facilitate hill walking in consultation with the MCI and other users in order to encourage low impact use – on-going	Not zoned
	4.8.3 Provision of Picnic Facilities	Maintain existing picnic areas – on-going, as necessary	C3
	4.8.4 Cycling	Consult with Coillte to explore the possibility of providing a cycling route – 2005	Not zoned
	4.8.5 Horse-riding	Continue to facilitate horse-riding under permit – on-going	Not zoned
	4.8.6 Camping	 Draw up Code of Conduct for wild camping in consultation with users (i.e. MCI) - 2005 Implement Code of Conduct on a trial basis - 2005 Review the code - 2006 & annually 	Not zoned
	4.8.7 Water Sports	 Continue to maintain boat at the Upper Lake – as per strategy 4.3.2 Continue prohibition on jet-skiing – on-going Continue to allow SCUBA diving under permit – on-going Consider requests for permission for other water sports – as necessary 	A1
	4.8.8 Motorcross, Motorbike Scrambling and other Off-Road Driving	 Continue to monitor and deter un-authorised use of vehicles – on-going Continue to monitor the erosion, noise and other impacts of permitted events & respond as necessary – on-going 	Not zoned
	4.8.9 Rock-climbing	Continue to liaise with climbing organisations to ensure impacts are minimised – on-going	Not zoned
	4.8.10 Orienteering	 Continue to control orienteering events by permit – on-going 	Not zoned
	4.8.11 Dog Trials	Continue to facilitate dog trials in the National Park under permit – as per strategy 2.3.1	B6

Strategy	Detailed Strategy	Targets	Management Zones
4.9 Management for Special	4.9.1 Special Interest Groups	Continue to maintain links with interest groups – on-going	Not zoned
Categories of Visitor Use	4.9.2 Facilities for Visitors with Disabilities	 Carry out access audit – as per strategy 4.4 Draw up action plan drawing on results of audit – 2005 Commence implementation of plan – 2006-2009 Complete study of Green Road – 2005 Complete necessary works on Green Road – 2005 Complete Sensory Garden – 2005 	Not zoned
	4.9.3 Community Use of Visitor Facilities	Continue to encourage suitable community use of National Park facilities – on-going	Not zoned
	4.9.4 Trading in WMNP	Continue to prohibit trading within the National Park – on-going	Not zoned
	4.9.5 Use of WMNP and National Park Facilities for Filming, Advertising or Promotion	 Continue to facilitate filming, subject to permit – on-going 	Not zoned
	4.9.6 Use of WMNP by the Military	Continue to control use of the National Park by the military via permit – on-going	Not zoned

Strategy	Detailed Strategy	Targets	Management Zones
5.1 Protection of Prehistoric and Early Historic Sites		Consult with NMAP staff in relation to any works carried out in the vicinity of recorded monuments – on-going	Not zoned
5.2 Use of Metal Detectors		Enforce National Monuments (Amendment) Act 1987 – as necessary	Not zoned

Strategy	Detailed Strategy	Targets	Management Zones
6.1 Siting of Aerials		Maintain ban on siting of aerials etc within the Park, unless exceptional circumstances arise - on-going	Not zoned
6.2 Overhead Lines		Route power and telephone lines underground or through cover where possible – on-going	Not zoned
6.3 Litter, Dumping, Graffiti and Fly Posting		 Liaise with local authorities in relation to dumping – on-going Encourage staff to be become litter wardens – on-going Continue to educate visitors regarding the problems caused by littering – on-going 	Not zoned
6.4 Protection of Tranquillity		Address the issue of low flying aircraft in consultation with the IAA, the Gardaf, the Air Corps and the Coastguard -2006	Not zoned
6.5 Waste Management & Protection of the Wider Environment		 Examine and promote methods of energy conservation in the management practices of the Park – on-going Examine and promote waste reduction and the use of recyclable products in Park management and in the provision of visitor services by the Park or its licencees – 2005 Refrain from using products which are known to have a detrimental effect on the global environment – on-going 	Not zoned

Strategy	Detailed Strategy	Targets	Management Zones
7.1 Research and Monitoring		 Commission vegetation map of Park by funding a post-graduate project – 2005 Final version of map completed – 2008 Continue to facilitate appropriate research work in WMNP – on-going 	Not zoned
7.2 Continuity of On-going Projects		 Collect weather data – in conjunction with Met. Éireann – on-going Monitor vegetation in woodland and heath exclosures, in conjunction with Research Branch and the relevant 3^d Level Institutions – on-going Support the Lichen survey – on-going Monitor Butterflies and Dragonflies – on-going Monitor Butterflies and Dragonflies – on-going Carry out bird surveys (Countryside Bird Survey, I-WeBS, Peregrine, Merlin) – as per strategy 2.3 Carry out bridge survey for Bats – as per strategy 1.2.1 Carry out bridge survey for Bats – as per strategy 2.2.3 Monitor nest boxes – annually, as in strategy 2.3 Liaise with groups/individuals undertaking survey work – on-going 	Not zoned
7.3 Water Quality Monitoring		Liaise with EPA – as per strategy 1.4.1	A1
7.4 Use of WMNP for Research Purposes		 Collate research that has already been carried out by outside contractors/ 3rd level Institutions - 2009 Liaise with academic institutions to promote research needs - on-going Continue to issue permits for appropriate research - on-going, as necessary 	Not zoned
7.5 Topics Identified for Future Work		 Carry out repeat survey of Wicklow Way usage in conjunction with the Wicklow Way Management Committee - 2005 Carry out survey of visitor usage of Glendalough Valley - 2006 Identify other areas for visitor usage surveys - 2007-2009 	Not zoned
Strategy	Detailed Strategy	Targets	Management Zones
8.1 Acquisition of Land and Rights		 Identify all lands to be transferred from Coillte to NPWS – 2005 Complete transfer of legal title of lands from Coillte – 2005-2009 Consider land purchases as opportunities arise, subject to the availability of resources – on-going 	Not zoned



Appendix 5 Plants mentioned in Text and Appendices

Bryophytes:

Silver-haired Moss Bog Mosses

Pteridophytes:

Lanceolate Spleenwort Hard Fern Parsley Fern Brittle Bladder Fern Alpine Clubmoss Narrow Buckler Fern Fir Clubmoss Wilson's Filmy Fern Quillwort Marsh Clubmoss Stag's-horn Clubmoss Beech Fern Asplenium obovatum Blechnum spicant Cryptogramma crispa Cystopteris fragilis Diphasiastrum alpinum Dryopteris carthusiana Huperzia selago Hymenophyllum wilsonii Isoetes lacustris Lycopodiella inundata Lycopodium clavatum Pheqopteris connectilis

Racomitrium lanuginosum

Sphagnum spp.

Grasses, Sedges & Rushes:

Bents Green-ribbed Sedge Star Sedge Common Sedge Wavy-haired Grass **Common Cotton-grass** Hare's-tail Cotton-grass Sharp-flowered Rush **Bulbous Rush Compact Rush** Soft Rush Heath Rush Woodrush Purple Moor-grass Mat Grass White-beaked Sedge Black Bog Rush Deer-grass

Agrostis spp. Carex binervis Carex echinata Carex nigra Deschampsia flexuosa Eriophorum angustifolium Eriophorum vaginatum Juncus acutiflorus Juncus bulbosus Juncus conglomeratus Juncus effusus Juncus squarrosus Luzula sylvatica Molinia caerulea Nardus stricta Rhynchospora alba Schoenus nigricans Trichophorum cespitosum

Herbs:

Alpine Lady's Mantle	Alchemilla alpina
Harebell	Campanula rotundifolia
Sundew	<i>Drosera</i> spp.
Rose-bay Willowherb	Epilobium angustifolium
Common Marsh-bedstraw	Galium palustre
Bog Orchid	Hammarbya paludosa
Lesser Twayblade	Listera cordata
Shoreweed	Littorella uniflora
Water Lobelia	Lobelia dortmanna
Yellow Cow-wheat	Melampyrum pratense var montanum
Bog Asphodel	Narthecium ossifragum
lvy Broomrape	Orobanche hederae
Greater Broomrape	Orobanche rapum-genistae
Small White Orchid	Pseudorchis albida
Roseroot	Rhodiola rosea
Alpine Saw-wort	Saussurea alpina
Mossy Saxifrage	Saxifraga hypnoides
St. Patrick's Cabbage	Saxifraga spathularis
Starry Saxifrage	Saxifraga stellaris
Devil's-bit Scabious	Succisa pratensis

Shrubs:

Bog Rosemary	Andromeda polifolia
Ling Heather	Calluna vulgaris
Bell Heather	Erica cinerea
Cross-leaved Heath	Erica tetralix
Bog Myrtle	Myrica gale
Cherry Laurel	Prunus laurocerasus
Rhododendron	Rhododendron ponticum
Dog Rose	Rosa canina
Bramble	Rubus fruticosus
Stone Bramble	Rubus saxatilis
Bilberry	Vaccinium myrtillus
Cowberry	Vaccinium vitis-idaea

Trees:

Birch	Betula pubescens
Hazel	Corylus avellana
Hawthorn	Crataegus monogyna
Beech	Fagus sylvatica
Holly	Ilex aquifolium
Sitka Spruce	Picea sitchensis
Scots Pine	Pinus sylvestris
Aspen	Populus tremula
Douglas Fir	Pseudotsuga menziesii
Sessile Oak	Quercus petraea
Dwarf Willow	Salix herbacea
Willow	<i>Salix</i> spp.
Rowan	Sorbus aucuparia
Yew	Taxus baccata



Appendix 6 Fauna Recorded in WMNP

N.B THE LIST OF INVERTEBRATES GIVEN HERE IS NOT COMPREHENSIVE – more than 500 species have been recorded in the National Park

Butterflies:

Small Tortoiseshell Orange Tip Ringlet Silver-washed Fritillary Dark Green Fritillary Green Hairstreak Holly Blue Small Heath **Clouded Yellow** Small Blue Painted Lady **Dingy Skipper** Grayling Peacock Wall Brown Wood White Small Copper Meadow Brown Speckled Wood Large White Green-veined White Small White Common Blue Gate Keeper **Purple Hairstreak Red Admiral**

Damselflies:

Beautiful Demoiselle Banded Demoiselle Common Blue Damselfly Blue-tailed Damselfly Emerald Damselfly Large Red Damselfly

Anglais urticae Anthocharis cardamines Aphantopus hyperantus Argynnis aglaja Argynnis paphia Callophrys rubi Celastrina argiolus Coenonympha pamphilus Colias croceus Cupido minimus Cynthia cardui Erynnis tages Hipparchia semele Inachis io Lasiommata megera Leptodea sinapsis Lycaena phlaeas Maniola jurtina Pararge aegeria Pieris brassicae Pieris napi Pieris rapae Polyommatus icarus Pyronia tithonus Quercusia quercus Vanessa atalanta

Calopteryx virgo Calopteryx splendens Enallagma cyathigerum Ishnura elegans Lestes sponsa Pyrrosoma nymphula

Dragonflies:

Four Spotted Chaser	Libellula quadrimaculata
Keeled Skimmer	Orthetrum coerulescens
Black Darter	Sympetrum danae
Common Darter	Sympetrum striolatum
Common Hawker	Aeshna juncea

Fish:

Eel	Anguilla anguilla
Three-spined Stickleback	Gastosterus acule
Minnow	Phoxinus phoxinu
Salmon	Salmo salar
Sea Trout /Brown Trout	Salmo trutta
Arctic Charr	Salvelinus alpinu

Amphibians:

Frog	Rana temporaria		
Smooth Newt	Triturus vulgaris		

Reptiles:

Viviparous Lizard

Lacerta vivipera

Gastosterus aculeatus Phoxinus phoxinus

Salmo salar Salmo trutta Salvelinus alpinus

Birds:

Species	Status ¹	Habitat ²	BoCCI	Birds ⁴
			Listing ³	Directive
Little Grebe (Tachybaptus ruficollis)	В	L		
Great Crested Grebe (Podiceps cristatus)	В	L	А	
Cormorant (Phalacrocorax carbo)	W	L	A	
Grey Heron (Ardea cinerea)	R	L		
Mute Swan (<i>Cygnus olor</i>)	R	L		
Whooper Swan (<i>Cygnus cygnus</i>)	W	L	А	Annex I
Greylag Goose (Anser anser)	W	LG	A	
Wigeon (Anas penelope)	W	L	А	
Teal (Anas crecca)	B & W	L	А	
Mallard (Anas platyrhynchus)	R	L		
Shoveler (Anas clypeta)	W	L		
Tufted Duck (Aythya fuligula)	B & W	L	A	
Goldeneye (<i>Bucephala clangula</i>)	W	L	A	
Goosander (<i>Mergus merganser</i>)	В	L	A	
Osprey (Pandion haliaetus)	V	L		
Red Kite (<i>Milvus milvus</i>)	V	WF		
Hen Harrier (<i>Circus cyaneus</i>)	В	U	R	Annex I
Sparrowhawk (Accipiter nisus)	R	W		
Buzzard (Buteo buteo)	R	WF		
Kestrel (Falco tinnunculus)	R	UF		
Merlin (<i>Falco columbarius</i>)	R	UC	A	Annex I
Peregrine Falcon (Falco perearinus)	R	U	A	Annex I
Red Grouse (Lagopus lagopus)	R	НВ	R	
Red-legged Partridge (<i>Alectoris rufa</i>)	R	GH		
Grey Partridge (<i>Perdix perdix</i>)	R	G	R	
Pheasant (<i>Phasianus colchicus</i>)	R	GSW		
Water Rail (<i>Rallus aquaticus</i>)	R	L	A	
Moorhen (<i>Gallinula chloropus</i>)	R	L		
Coot (Fulica atra)	R	L	A	
Golden Plover (<i>Pluvialis arquata</i>)	S	НВ	A	Annex I
Lapwing (Vanellus vanellus)	R	G	R	
Snipe (Gallinago gallinago)	R	ВМ	A	
Woodcock (<i>Scolopax rusticola</i>)	R	WC	A	
Curlew (Numenius arauata)	R	В	R	
Redshank (Tringa totanus)	В	GH	A	
Common Sandpiper (<i>Actitis hypoleucos</i>)	S/B	LR		
Black-headed Gull (<i>Larus ridibundus</i>)	W	L	А	
Common Gull (<i>Larus canus</i>)	W	L	A	
Lesser Black-backed Gull (<i>Larus fuscus</i>)	W	L		
Herring Gull (<i>I arus araentatus</i>)	W	-		
Feral Pigeon (<i>Columba livia</i> (domest.))	R	A		
Stock Dove (Columba oenas)	В	WP	А	
Woodpigeon (Columba palumbus)	R	WF		
Collared Dove (Streptonelia decaocto)	R	WPF		
Cuckoo (<i>Cuculus canorus</i>)	S/B	WHF	А	
Barn Owl (<i>Tyto alba</i>)	R	FA	R	

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Birds (cont):

Species	Status ¹	Habitat ²	BoCCI Listing ³	Birds⁴ Directive
Long-eared Owl (Asio otus)	R	W F		
Swift (Apus apus)	S/B	A		
Kingfisher (Alecedo atthis)	R	R	A	Annex I
Skylark (Alauda arvensis)	R	FHB	A	
Sand Martin (<i>Riparia riparia</i>)	S/B	RL	A	
Swallow (<i>Hirundo rustica</i>)	S/B	А	A	
House Martin (<i>Delichon urbica</i>)	S/B	А		
Meadow Pipit (Anthus cervinus)	R	НВ		
Grey Wagtail (<i>Motacilla cinerea</i>)	R	R		
Pied Wagtail (<i>Motacilla alba</i>)	R	PF		
Dipper (<i>Cinclus cinclus</i>)	R	R		
Wren (<i>Troglodytes troglodytes</i>)	R	WS		
Dunnock (<i>Prunella modularis</i>)	R	WS		
Robin (Erithacus rubecula)	R	W		
Redstart (Phoenicurus phoenicurus)	S/B	W	A	
Whinchat (Saxicola rubetra)	S/B	F	A	
Stonechat (Saxicola torquata)	R	НS	A	
Wheatear (<i>Oenanthe oenanthe</i>)	S/B	FH		
Ring Ouzel (Turdus torauatus)	S/B	U	R	
Blackbird (<i>Turdus merula</i>)	R	WF		
Fieldfare (Turdus pilaris)	W	WF		
Song Thrush (Turdus philomelos)	R	W		
Redwing (<i>Turdus iliacus</i>)	W	WF		
Mistle Thrush (<i>Turdus viscivorus</i>)	R	WU		
Grasshopper Warbler (Locustella naevia)	S/B	MS	A	
Sedge Warbler (Acrocephalus	S/B	М		
schoenobaenus)				
Whitethroat (Sylvia communis)	S/B	SW		
Garden Warbler (Sylvia borin)	S/B	W		
Blackcap (Sylvia atricapilla)	S/B	W		
Wood Warbler (<i>Phylloscopus sibilatrix</i>)	S/B	W	A	
Chiffchaff (<i>Phylloscopus collybita</i>)	S/B	W		
Willow Warbler (<i>Phylloscopus trochilus</i>)	S/B	W S		
Goldcrest (Regulus regulus)	R	W C		
Spotted Flycatcher (<i>Muscicapa striata</i>)	S/B	W	A	
Pied Flycatcher (<i>Ficedula hypoleuca</i>)	S/B	W	A	
Long-tailed Tit (Aegithalos caudatus)	R	W		
Coal Tit (<i>Parus ater</i>)	R	W C		
Blue Tit (Parus caeruleus)	R	W		
Great Tit (Parus major)	R	W		
Treecreeper (Certhia familiaris)	R	W C		
Jay (Garrulus glandarius)	R	W C		
Magpie (<i>Pica pica</i>)	R	G W P		
Jackdaw (Corvus monedula)	R	W F		
Rook (Corvus frugilegus)	R	W F		
Hooded Crow (Corvus cornix)	R	W F		

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Birds (cont):

Species	Status ¹	Habitat ²	BoCCI Listing ³	Birds⁴ Directive
Raven (Corvus corax)	R	U		
Starling (<i>Sturnus vulgaris</i>)	R	W F		
House Sparrow (Passer domesticus)	R	A F		
Chaffinch (<i>Fringilla coelebs</i>)	R	W		
Brambling (Fringilla montifringilla)	W	W C		
Greenfinch (Carduelis chloris)	R	W		
Goldfinch (Carduelis carduelis)	R	W C		
Siskin (<i>Carduelis spinus</i>)	В	W		
Linnet (Acanthis cannabine)	R	SH		
Redpoll (Acanthis flammea)	R	W C	А	
Crossbill (<i>Loxia curvirostra</i>)	R	С		
Bullfinch (Pyrrhula pyrrhula)	R	W C		
Snow Bunting (Plectrophenax nivalis)	W	U		
Yellowhammer (Emberiza citrinella)	R	F W H	R	
Reed Bunting (Emberiza schoeniclus)	В	M S		

¹ Status:	 R = Resident (present throughout the year and breeding) W = Winter (winter visitor) B = Breeding (breeding in spring/summer but thought to move to lowlands for the winter) S/B = Summer/breeding (summer visitor and breeding) V = Vagrant
² Habitat:	 A = Artificial structures/Buildings, B = Bog, C = Conifer plantation, G = Grassland, F = Farmland, H = Heath, L = Lake, M = Marsh/Reedbed, P = Parkland, R = River, S = Scrub, U = Uplands (heath/bog/exposed rock), W = Deciduous/mixed woodland
³ BoCCI Listing:	Birds of Conservation Concern in Ireland (Newton, Donaghy, Allen & Gibbons, 1999) R = Red (breeding population or range has declined by more than 50% in the last 25 years; their breeding population has undergone a significant decline since 1900; they are of global conservation concern. A = Amber (their breeding population has declined by 25-50% in the last 25 years; they are rare or sporadically breeding species; their breeding or wintering population is internationally important and/or localised; they have an unfavourable conservation status in Ireland
⁴ Birds Directive:	Annex I = The species listed in Annex I shall be the subject of special conservation measures concerning their habitats; for which SPAs must be designated

Mammals:

Species	Habitats Directive	Red Data book Category	Wildlife Act
Pygmy Shrew (Sorex minutus)	-	-	Р
Hedgehog (Erinaceus europaeus)	-	II	Р
Whiskered Bat (<i>Myotis mystacinus</i>)	IV	I	Р
Natterer's Bat (<i>Myotis nattereri</i>)	IV	I	Р
Pipistrelle (Pipistrellus pipistrellus)	IV	II	Р
Daubenton's Bat (<i>Myotis daubentonii</i>)	IV	II	Р
Leisler's Bat (<i>Nyctalus leisleri</i>)	IV	П	Р
Brown Long-eared Bat (Plecotus auritus)	IV	II	Р
Woodmouse (<i>Apodemus sylvaticus</i>)	-	-	_
House Mouse (<i>Mus musculus</i>)	-	-	_
Brown Rat (<i>Rattus norvegicus</i>)	-	-	_
Red Squirrel (<i>Sciurus vulgaris</i>)	-	-	Р
Grey Squirrel (Sciurus carolinensis)	-	-	_
Fox (Vulpes vulpes)	-	-	_
Pine Marten (Martes martes)	V	П	Р
Badger (<i>Meles meles</i>)	-	II	Р
Otter (<i>Lutra lutra</i>)	II & IV	II	Р
Stoat (Mustela erminea)	-	-	Р
Mink (<i>Mustela vison</i>)	-	-	Р
Irish Hare (Lepus timidus hibernicus)	V	II	Р
Rabbit (Oryctolagus cuniculus)	-	-	_
Red Deer (<i>Cervus elaphus</i>)	-	-	Р
Sika Deer (<i>Cervus nippon</i>)	-	-	Р
Feral Goat (<i>Capra hircus</i>)	_	-	Р

Notes:

Habitats Directive: Red Data Dook Category: Wildlife Act:

Species listed in Annexes II, IV & V

I = Indeterminate, II = Internationally Important

P = Protected under the Wildlife Act



Appendix 7 Research Projects

Subject	Location	Institution	Timescale
Biological assessment of water quality, Chemical & biological monitoring of acidification at Glendalough	Glendalough Lakes, Lough Dan, Lough Bray Upper & Lower, Lough Nahanagan	EPA	On-going from 1970
Impact of heavy metals originating from an abandoned lead-zinc mine on wetland soil and vegetation	Valleys of Glendalough and Lough Dan	Dept. Botany, University College Dublin	1994-1998
Effects of environmental change on river behaviour; dating & character of river flood sedimentation & erosion during the last 500 years; relationship between weathered granite & glacial tills	Upper Liffey Valley, Wicklow Mountains	Dept. Geography, University College Dublin	On-going from 1974
Vegetation history	Glendalough, Liffey Head Bog	Dept. Botany, TCD	
Historic CO ₂ concentrations based in willow stomata		Dept. Botany, TCD	
Ground vegetation in broadleaved woodland	Glendalough	Dept. Botany, UCD	
Vegetation survey of uplands	Wicklow Mountains	UUC	1992-1995
Impacts of grazing on vegetation	Liffey Head Bog; Derrybawn	UUC	1996
Management Plan	Liffey Head Bog	Environmental Sciences Unit, TCD	1992
Status & distribution of lichens	Wicklow Mountains	International Mycological Institute	On-going from 1994
Potential use of Ephemeroptera as indicators of water quality; Factors affecting distribution of key species	Streams within the National Park	Dept. Zoology, University College Dublin	1995-1997
Freshwater macroinvertebrates	Glendalough Upper Lake & tailings pond	Dept. Zoology, University College Dublin	
Invertebrates in in broadleaved woodland	Glendalough	Dept. Zoology, University College Dublin	

Subject	Location	Institution	Timescale
Butterfly population monitoring	Glendalough	NPWS	On-going from 1993
Fish populations	Lough Dan	Eastern Regional Fisheries Board	
Monitoring of Merlin breeding populations	Wicklow Mountains	NPWS	On-going
Monitoring of Peregrine breeding populations	Wicklow Mountains	NPWS/Irish Raptor Study Group	1991
Monitoring of rare breeding birds	Wicklow Mountains	NPWS	On-going from 1991
Red Grouse breeding populations	Liffey Head Bog	Environmental Sciences Unit, TCD	1992
Breeding bird census	Glenmalure; Duff Hill	NPWS	On-going from 1996
Forest deer management	Wicklow Mountains Coillte;	Dept. Zoology University College Dublin	1995-1998
Upland deer management	Wicklow Mountains	NPWS	On-going from 1992
Vocalisations of Red, Sika & hybrid deer	Wicklow Mountains	Dept. Zoology, University College Dublin	1995-1996
Goat population studies	Glenealo & Upper Glendalough	Dept. Zoology, University College Dublin	1995-1997
Squirrel ecology & population dynamics	Coniferous plantations	Dept. Zoology, TCD	1995-1998
Bog vegetation		NPWS	
Woodland regeneration		Dept. Botany, TCD	
Visitor impact		DIT	
Small mammals	Woodlands	Dept. Zoology, TCD	



Appendix 8 WMNP Council Members

Independent Chairperson

Mr Tom Gregan

Farming Interest Groups

Mr Donal Anderson Mr Sean Byrne Ms Saive Coffey Mr Pat Dunne Mr Michael Lynham Mr Frank Maguire Mr Sean Malone Mr John Murphy Mr Murt O'Keeffe

Community Groups

Ms Eileen Cullen Mr Denis Doyle Mr John Doyle Ms Mildred Fox TD

Recreational and Environment Groups

Mr Al Butler Mr Bob Galvin Mr Gerry Martin Prof. Frank Winder

Economic Interest Groups

Mr Denis Carter Mr Pat Casey MCC

Picture Credits:

Front cover	Upper Lake, Glendalough	Con Brogan
	Feral Goats in woodland at Glendalough	Hubert Hedderington
	Winter morning at the Upper Lake, Glendalough	John Griffin
	Glendalough Church	Enda Mullen
Back cover	Peregrine Falcon and young	Richard Mills
	Crushing mill at the disused mine workings at Glendalough	NPWS staff
	Woodland	NPWS staff
page 2	Lower Lake and Glendalough Valley from the Green Road	NPWS staff
page 6	Winter morning at the Upper Lake, Glendalough	John Griffin
page 11	Liffey Head Bog from the Military Road	NPWS staff
page 11	Peregrine Falcon and young	Richard Mills
page 15	Crushing mill at the disused mine workings at Glendalough	NPWS staff
page 16	Wicklow Cheviot and Cheviot crosses grazing in WMNP	Eamon Doran
page 18	Glendalough Church	Enda Mullen
page 19	Wheelchair accessible tóchar between the Upper and	John Griffin
	Lower Lakes, Glendalough)	
page 20	WMNP Education Centre at Bolgers Cottage, Glendalough	John Griffin
page 21	Feral Goats in woodland at Glendalough	Hubert Hedderington
page 23	Hill fire on Drummin from the Military Road	John Griffin











