# CONFIDENTIAL. NOT FOR PUBLICATION.



# An Fores Forbarika Teoramia

The National Institute for Physical Planning and Construction Research

> Teach Mháirtin Bóthar Waterleo Áth Cliath 4 Telefór 764212

St. Martins House Waterloo Road Dublin 4 CONSERVATION AND AMENITY ADVISORY SERVICE

# A PRELIMINARY REPORT ON AREAS OF SCIENTIFIC INTEREST IN CO<u>LEITRIM</u>

Roger Goodwillie,

This report is based on data from the files of the Conservation and Amenity Section, An Foras Forbartha, from the published literature and from several periods of field observations. It is a provisional document subject to future research.

The report consists of the following parts:-

Section		Page
А	Preface	2
В	Vulnerability of the various habitats	4
C	Introduction: Areas of scientific interest in Co. Leitrim & their conservation	6
D	Rating of areas of scientific importance	10
E	Table of Areas of Scientific Interest	12
F	Detailed reports on each area	14
G	Table of recommended action for each site	72

The maps presented in this report are based on the Ordnance Survey, by permission of the Government (Licence No. 3324).

The help of Dr. D. Kelly in the compilation of this report is acknowledged.

## SECTION A

## PREFACE

This report concerns country planning. While at first sight Ireland appears to have a high proportion of natural unspoilt countryside, the reality is that the land is subjected to a high intensity of agricultural use, which we have come to regard as normal. It is interesting by way of comparison to note that in Britain, a greater percentage of the land surface is covered by deciduous woodland than in Ireland, and within this there are much larger areas that are ungrazed. In addition the rural population is lower and the wilderness areas without roads considerably larger.

Thus the Irish landscape is substantially more 'tamed' in character and the main difference between the countries is that Ireland has a low population density and consequently a lack of industrial development in rural areas. This situation has been turned to great advantage by our tourist industry. It must be preserved while at the same time living standards are raised by rational development on the urban and rural scene. Planning is essential in this development and it is the purpose of this report to single out the most valuable areas around which development can be guided by the planning authorities. In this way the areas of countryside that are taken over by development are those of least value in scientific or amenity terms. Hard decisions will have to be taken occasionally and for this reason only those sites where there are strong grounds for conservation are included in the following pages. The sites cover only a tiny fraction of the land, so in the great majority of cases development can proceed without damage to the natural heritage, provided certain obvious precautions are taken with regard to waste disposal, colour of structures etc.

The report attempts to identify a representative range of natural and semi-natural habitats in the county and also to list sites of special

significance, usually containing a rare species or a rare natural phenomenon. Conservation of these may be necessary for reasons of amenity, education or scientific research. The natural vegetation of an area gives to it a definite atmosphere with which its recreational value is intimately tied So much of Ireland is covered by the familiar pasture and hedgegrow up. that any break in this of a marsh, a block of woodland or a rock exposure assumes greater importance than it otherwise might have. Variety is itself attractive as well as the full development of the unusual. Fortunately such variety gives rise to rich and interesting biological communities. The scientific importance of these stems from the parallel of the wild ecosystem with man's cultivated version of it. Often the principles that control crop growth are simpler to unravel and study in wild surroundings. while also, hitherto unknown processes or beneficial organisms may lie waiting to be discovered. The main asset of the wild community is that it is self-sufficient and does no environmental damage. This cannot be said for our present agricultural methods.

The educational value of field studies is well known and they are a stimulus to learning that many disciplines in the life sciences are now taking advantage of.

Conservation must be viewed against this background if it is to be given its real importance in a competitive and changing world. The responsibility for conservation in Ireland lies largely with the County Councils in the workings of the planning office in conjunction with a strong and rational development strategy.

The present report aims to assist in the preparation and implementation of the County Development Plan and additionally to suggest appropriate management methods from which sites would benefit. Development of a certain type can in fact improve the value of some natural areas whether it is through fencing against grazing animals, removing 'weed' species or altering water flows.

#### SECTION B

# VULNERABILITY OF THE VARIOUS HABITATS

Areas of scientific interest can be damaged in many ways. They can be completely destroyed by scrub or tree clearance, by turf-cutting or by arterial drainage, or they can suffer insidiously through pollution, fertilization, grazing or overuse in recreation.

Of these various factors the first poses the greatest threat because of the - rapidity with which it can occur. In the absence of a fine large enough to be a sure deterrent to a developer, cooperation to maintain the county's deciduous woodlands must be actively sought at all levels of landowner, forester and the general public. It will seldom be sufficient to put a prevention order on an area which would lose its value immediately the trees are felled. The voluntary organisations have a role to play in this, acting as observers throughout the country.

Short of tree clearance, underplanting with conifers is the most damaging influence that can overtake a wood. It destroys the intricate communities of the forest floor and tree-trunks which are usually of greater interest than the trees themselves and it also prevents regeneration of the native species.

Drainage schemes of all sorts have serious consequences for the importance of aquatic sites, particularly the smaller lakes with marginal vegetation. These would include Rinn Lough and its two neighbouring lakes, Lough Errew and Lough Sallagh. In the case of the large lakes the damage would probably be temporary; provided the present shore communities could spread to lower levels.

As is well known, pollution of water bodies changes their character to begin with, and if it is continued has bad effects on water quality and fish-life. There are many local examples of this. Aquatic communities are much more vulnerable than terrestrial ones since the incoming matter cannot be localised. Also they require less nutrients than the land. For these reasons, development upstream of important areas must be carefully controlled, and alternative sites for domestic or agricultural developments - or drainage routes from them - must always be considered if such an area is involved.

Several agricultural influences may adversely affect areas apart from straight-forward pollution by silage effluent or intensive livestock units. Fertilization of a natural community, in the attempt to improve its grazing value, will cause great changes in species composition and may in fact, make it more susceptible to degredation. If a blanket bog or dune system is fertilized, grasses and weed species will become dominant and the natural species that are important stabilizers may be destroyed. If this treatment then lapses, the demanding species will not persist and erosion is possible before the native species return. The Council should be mindful of such processes even though they will seldom have power to prevent changes in land use.

Grazing has its most noticeable effect in woodland where it impairs tree regeneration and may completely prevent it. Grazing of grassland also changes the species composition and carried to extremes may not allow a complete cover to persist.

The last influence to be mentioned is that of public pressure on land which only deserves a place for its destructive aspects of plant or animal collecting. Opening up areas with a rare noticeable plant may damage that species but in general enough individuals escape attention so that it persists from year to year. In future, fragile ecosystems such as marshes, or unforested eskers may suffer the excessive use that some sand dunes already receive, but no problems of this sort exist in the county today.

# INTRODUCTION: AREAS OF SCIENTIFIC INTEREST IN CO. LEITRIM AND THEIR CONSERVATION.

Leitrim is basically a limestone county but natural erosion has not had such free rein here as in most of the Central Plain so a substantial amount of the overlying sediments remain. Indeed the carboniferous sandstones and shales of the Lough Allen region are the second largest remnant of these deposits in the country after S. Clare - Kerry. The massive upper limestones of the Glenade plateau are similarly a remnant of strata that once covered the rest of Ireland but have been eroded back to Sligo-Leitrim, north Clare and Kilkenny-Tipperary. The only other rock type of wide extent is the gneiss of the Ox Mountains which extends to Benbo near Manorhamilton.

The lowland parts of the county are drift-covered and include many drumlins and low ridges. Between these, waterlogging gives rise to gleyed soils, peat bogs, or actual lakes. Around Drumod bog alternates with pasture in a quite regular sequence. The bogs are of 'raised' type though now partially dissected and altered by turf-cutting. The glacial deposits extend the influence of the sandstone uplands around L. Allen to the south and east, and since this is a poor and wet type of soil, it makes for little floristic interest. It has, however, a vegetation type peculiar to it and this is alder wood which is extensively developed, not only on lake shores (Lough Allen) but also on valley sides (Owengar R) and hill slopes (near Ballinamore).

The small lakes generally have sloping margins so the vegetation here is not well-developed. There are few enough areas of reedswamp outside the Shannon valley (including its tributary the Rinn R.) usually the land-water transition is marked simply by an increase in rushes and other plants of wet pasture. An exception is the area around Ballinamore where one site (Corduff Lough) is listed and others may be identified in the future. Here marsh development is on a larger scale and the flora and fauna of more interest. St. John's Lough is thought to be of some interest and further information on it may be incorporated in a later report. Lough Melvin is at present the most important

aquatic site because of its fish population. It is as yet unaffected by significant pollution and should be retained in this condition as a contrast to many of the smaller lakes.

The outstanding area of scientific interest in the county is the north and eastfacing cliffs of Glenade. Here the richest mountain vegetation in Ireland exists with a galaxy of rare alpine and arctic-alpine species. It extends partially to Arroo Mt. overlooking Lough Melvin and more importantly into Sligo to the spur of Ben Bulben. The Leitrim part of the system shows some important differences from that in Co. Sligo and is of such value that some measure of protection is essential. A Conservation Order, which could be drafted by An Foras Forbartha, would somewhat remove the dangers of collection which is an influence that is likely to grow in the near future. Since the cliffs cannot be grazed or otherwise used, little opposition to such statutory action is probable. It would be an important example in showing the way to the protection of a vulnerable but neglected part of the natural heritage.

Another area which is shared with Co. Sligo and about which discussions should begin at an early stage is Lough Gill. This has a unique character for an Irish lake in being surrounded by a woodland fringe through which much of the road runs. The Co. Leitrim part is in fact of proportionately greater biological interest due to its exposures of rock and lack of cultivation. The jumbled limestone country of the area around O'Rourkes Table is a most unusual amenity as are the Doons to the north. It seems essential that the present character of this whole area is preserved and the best way of doing this under existing legislation is a Special Amenity Area Order using the provisions of Section 42, Local Government (Planning & Development) Act, 1963, as amended by Section 40 of the Local Government (Planning & Development) Act, 1976. This action would show a firm committment by the Council to maintaining the amenities of the area. Such an order should be made before it is forced upon the Council by the pressure of planning applications and before land values have been inflated by demand. Most irish people think of aholiday house as being beside the sea, but in Europe the definition is much wider. Thus it is likely that in E.E.C. conditions there are going to be much greater demands for housing in the area.

Leitrim has several other woodlands of considerable value. The largest is that

on the hill below O'Donnell's Rock and this area gives a good indication of the type of woodland that would naturally be found on the limestone plateaux of Sligo-Leitrim. Interestingly this wood is on a scree slope - such slopes elsewhere are grass-covered and closely grazed. A similar but wetter forest type occurs in a deep gorge that leads into Lough Melvin near Buckode, while a drier variant is found on Sheemore mountain. The latter is a most interesting site since it is fairly pure ashwood on limestone. It is a rare vegetation type and this may be the largest example in the country.

It should be accepted that firm action is necessary to maintain parts of the natural heritage of the county and that this entails more than a refusal of planning permission in selected areas. All sites of scientific interest should be listed as such in the Development Plan - areas within which the first priority is to maintain or improve the scientific values. Many of the disagreements that have arisen in the past stemmed basically from a lack of The developer did not know that his chosen site had any scientific knowledge. interest and his imagination and self-confidence did not allow any graceful retreat from his stand. This could be largely avoided if the areas of scientific interest were widely publicised. Such definite action by the Council would elicit a response from the public in greater awareness of the A developer would be inclined to work closely with the planning environment. authorities, rather than against them.

As a first step the landowners should be told of the importance of their land except in the case of woodlands which have valuable timber. They should be advised that their present form of land use is that most suited to the maintenance of such interest if this is the case. If not, the recommendations about over-grazing etc. should be passed on.

In general, the Council should be alert to threats to any of the areas listed. These have been outlined in the previous section. Where development has to be curtailed an alternative course of action should be suggested if appropriate, e.g. the possibility of a co-operative scheme on a different piece of land.

As developments occur and as scientific knowledge increases, the importance and priority of various areas will change. Continual reassessment is required to monitor such changes. If a particular site loses its value through pollution or physical disturbance, the others of its type will immediately become more important in the regional context. Likewise, if a new and interesting species is found in an unlisted site, one of the existing ones may be deleted after comparison. Priority for a site's protection may also vary as developments in its vicinity are proposed or begun. The description of 'no planning control' in Section G must be taken as meaning none for the present. As the countryside becomes more intensively used by agriculture, housing and industry and for recreation, action will probably be needed to preserve all sites in their present condition.

9

## SECTION D

# RATING OF AREAS OF SCIENTIFIC IMPORTANCE

This is a measure of the relative importance of areas of scientific importance.

The importance of each area is indicated in terms of the following categories:-

# International Importance

- 1. Only area of its type in Europe.
- 2. One of a few such localities in Europe.
- 3. One of a natural series in Europe.
- 4. Recognised international importance.
- 5. Specialised educational importance.

# National Importance

- 1. Only area of its type in Ireland.
- 2. One of a few such localities in Ireland.
- One of a natural series in Ireland.
- 4. Recognised national importance.
- 5. General or specialised educational importance.

# Regional Importance

- 1. Only area of its type in province
- 2. One of a few localities in Ireland.
- 3. One of a natural series in region.
- 4. Fine example of its kind.
- 5. General or specialised educational importance.

10

## Local Importance

- 1. Only area of its type in county.
- 2. One of a few localities in province.
- 3. Fine example of its kind.
- 4. General educational importance.

#### PRIORITY OF AREAS OF SCIENTIFIC INTEREST

This is a measure of the relative urgency necessary for protection of the areas of scientific importance.

Each site is given a priority rating of A, B or C.

The rating of any area is based on a combination of the following criteria:-

- a) the importance of the area
- b) the vulnerability of the area
- c) the nature and imminence of any threats to the area.

SECTION E AREAS OF SC	JIENTIFIC INTEREST IN	CO. LEITRIM		
Name of area (Page N	Io.) Grid reference	Rating	Priority	Scientific interest
Glenade cliffs and 15 Arroo Mt.	G. 78, 47 G. 83, 52	International	В	Botanical, ecological. High level mountain communities on cliffs. Many rare species occur.
Lough Melvin 19	G. 88, 53	National	В	Zoological, botanical. Limestone lake with rare fish varieties and interesting shores.
Lough Gill woodland 22	G. 79, 34	National	В	Botanical. Semi-natural and planted woods on limestone. Rich in habitats and species. High amenity value.
Lough Scannal 25	N. 03, 90	Regional	В	Botanical, ecological, ornithological. Shannon flora and fauna well-developed, backed by deciduous woodland.
Sheemore wood 28	G. 99, 04	Regional	A	Botanical, ecological. Naturally developed ashwood on dry limestone.
Glencar waterfall and Lake 31	G. 75, 43	Regional	C	Botanical, zoological. Bryophyte and other moisture-loving organisms of interest.
O'Donnell's Rock 33	G. 88, 36	Regional	В	Ecological. Sloping hazel-ash wood with semi-natural character. Some oak colonisation.
Woodland at 37 Garadice Lough	H. 19, 11	Regional	В	Ecological, botanical. Semi-natural oak wood on drumlin showing interesting contrasts between acid and alkaline soll
Lough Allen (parts) 41	G. 96, 17	Local	B – C	Ecological, botanical. Characteristic marginal vegetation of alder. Some unusual species in addition.
Lough Rinn, L. Errew 49 and L. Sallagh	N. 10, 93	Local	В	Botanical, zoological. Outlier of Shannon communities. Swamp and aquatic plants of interest.

12.

ļ

Name of area (Page	e No.)	Grid reference	Rating	Priority	Scientific interest
Gorge of Aghavoghil R.	53	G. 86, 52	Local	υ	Ecological. Hazel wood on very wet site.
Lakeshore near Drumod	55	N. 04, 90	Local	В	Ecological. Contrasting woodlands of interest. Many associated species.
Woodland at Cromlin Bridge	58	H. 10, 14	Local	υ	Botanical, ecological. Pocket of natural vegetation (hazel) in farmland.
Annaghearly Lough	61	Н. 00, 03	Local	В	Botanical. Interesting species occur.
Kinlough Wood	63	G. 82, 54	Local	В	Ecological. Planted deciduous wood. Educational and amenity value.
Uragh Lough	66	G. 776, 537	Local	В	Ecological. Relict blanket bog of interest.
Woodland at Owengar B	sridge 68	G. 91, 23	Local	В	Ecological. Wet deciduous woodland. Some amenity value
Drumk ierny Wood	P. 69	G. 95,05	Local .	A	Ecological, Amenity oakwood on fertile soil. Relatively larg
Corduff Lough	P. 72	Н. 17,12	Local	В	Marsh with rare plant species

. -

-

-

-,

#### SECTION F

## DETAILED REPORTS ON EACH AREA

These are written under the following sub-headings:

Name of Area Acreage Grid Reference Scientific Interest Rating Priority Description of Area Evaluation Vulnerability Recommendations

In the descriptions the abundance of species may be indicated by the following symbols:

a	22	abundant
С	=	common
f	=	frequent
ο	=	occasional
r	=	rare
1	=	locally (as a prefix)

Botanical names follow those in 'Flora Europaea', the standard work of which the first three volumes are now available. English names, in general, are those in "The Concise British Flora in Colour" by W. Keble Martin.

<u>Name of Area</u>	GLENADE CLIFFS & ARROO MT.
<u>Acreage</u>	c. 555 Acres
<u>Grid Reference</u>	G. 78,47 & G. 83,52.
<u>Scientific Interest</u>	Botanical; ecological
Rating	International
<u>Priority</u>	В

#### Description and Evaluation of Site

The north-facing cliffs of Glenade have long been known for an abundance of alpine plant species which are common here but occur very rarely in the rest of the country. Indeed, this is one of the few sites where a true highlevel community can be said to exist, rather than a collection of individual plants. On Arroo Mt. many of the same plants occur though not in such plenty.

The cliffs vary in height from 30 - 500 feet; they are practically vertical and are surrounded by a steep talus slope of rock debris, lying at an angle of about 45°. This landform (mesa-like) is interesting from a geomorpho-logical viewpoint. The vegetation of the cliffs has the following rough form:-

Festuca vivipara Sesleria caerulea Hedera helix Koeleria cristata Thymus drucei Polystichum setiferum P. lonchitis Chrysosplenium oppositifolium Silene acaulis S. maritima Plantago maritima Cochlearia officinalis Euphrasia salisburgensis	viviparous fescue blue moor grass ivy crested hairgrass thyme shield fern holly fern golden saxifrage mossy campion sea campion sea plantain scurvy grass eyebright	a l.a. c c l.c. c c c c
P. lonchitis	holly fern	l.c.
Chrysosplenium oppositifolium	golden saxifrage	С
Silene acaulis	mossy campion	С
S. maritima	sea campion	С
Plantago maritima	sea plantain	С
Cochlearia officinalis	scurvy grass	С
Euphrasia salisburgensis	eyebright	С
"Asplenium trichomanis	spleenwort	С
A. viride	U .	1.c.
Arabis hirsuta	hairy rock-cress	С
Solidago virgaurea	golden rod	f
Dryas octopetala	mountain avens	f
Cardaminopsis petraea	mountain rock-cress	l.f.
Epilobium angustifolium	rosebay willowherb	f

E. alsinifolium	chickweed willowherb	l.c.
Rubus saxatilis	stone bramble	f
Rosa spinosissima	burnet rose	f
Selaginella selaginoides	clubmoss	f
Rhodiola rosea	rose-root	f
Saxifraga aizoides	yellow mountain	f
	saxifrage	
Campanula rotundifolia	harebell	f
Draba incana	hoary whitlow-grass	f
S. oppositifolium	purple saxifrage	l.f.
S. hypnoides	mossy saxifrage	0
Mecanopsis cambrica	welsh poppy	0
Cystopteris fragilis	brittle bladder-fem	l.c.
Crepis paludosa	marsh hawksbeard	0
Hieracium anglicum	hawkweed	0
Circaea intermedia	enchanter's nightshade	0
Moehringia trinervia	sandwort	r
Thalictrum minus	meadow-rue	r
Oxyria reniformis	mountain sorrel	r,
Vicia sylvatica	wood vetch	r

The block scree below provides a site for a mixed assemblage of plants with many fems, (nineteen species including <u>Thelypteris oreopteris</u> (mountain fem), <u>Dryopteris aemula</u> (crinkled buckler-fem) and others, peat-loving plants such as <u>Vaccinium myrtillus</u> (frochan), <u>Pinguicula vulgaris</u> (butterwort) and <u>Empetrum nigrum</u> (crowberry), woodland plants and some from the cliffs above.

The habitat features that allow these juxtapositions deserve study.

The bryophytes in all the area are no less interesting than the higher plants and the dripping rock faces, and general shade encourage a profusion of species.

Associated with these high-level communities, it may be expected that many interesting invertebrates occur including molluscs, spiders and insects. Very little work has as yet been done on them.

The plateau area has been called "botanically the richest in Ireland". Certainly it is the best upland example of a community containing strictly arctic or alpine species. For one of these it is the only station in the country and for another, one of two sites.

#### <u>Vulnerability</u>

The cliff communities have been restricted to these sites by grazing and competition and are thus secure from everything except unscrupulous collectors. The lower levels might be afforested however.

#### Recommendations

The flora and fauna should be protected from collection through legislation under the Wildlife Act, 1976 or by a Special Amenity Area Order and Conservation Order under the Local Government Acts. The latter might be more appropriate since several landowners will be involved and fauna as well as flora should be included. The area is also of high scenic value. In the context of amenity a clear aim should be to limit afforestation to the valley bottom and the lowest slopes of the mountains. Part of the scenic attractions of the area comes from the clear, angular lines of the mountains. Some are already concealed by forestry but this should spread no further.



<u>Name of Area</u>	LOUGH MELVIN
Acreage	<b>c.</b> 5700 acres
Grid Reference	G. 88, 53.
<u>Scientific Interest</u>	Zoological, botanical, ecological
<u>Rating</u>	National
Priority	В

#### Description and Evaluation

Lough Melvin is a clear water limestone lake of large size with an interesting fauna. This includes three types of trout and also Gray's char (<u>Salvelinus alpinus</u> a fish with a relict distribution from glacial times(when it was more widespread.) This is now the only lake in the country with the species.

The flora of certain parts is also interesting and aquatic species of note occur at the mouth of the Ballagh River and off Ross Point.

Marginal vegetation is fenny in character with some peat development giving rise to <u>Calluna</u> (heather), <u>Myrica gale</u> (bog myrtle) and <u>Drosera</u> spp. (sundew). On the lower parts of the shore, however, the calcareous influence usually reappears with <u>Galium boreale</u> (northern bedstraw), <u>Littorella uniflora</u> (shoreweed etc.

At one place on the northern shore the cutover bog has been colonised by willows (<u>Salix cinerea</u>) to give quite a dense tree cover. This was one of the major areas for this vegetation seen, though thinner willow colonisation is widespread and it is included as a representative sample for the county. It requires further investigation as does the east end of the lake and especially the islands.

#### Vulnerability and Recommendations

The lake fauna which is adapted to clear water basic conditions would be adversely affected by pollution. Thus large sources of effluent should not be sited in the locality unless they have tertiary treatment facilities.

The other sites in this area are relatively secure from development.









<u>Name of Area</u>	LOUGH GILL WOODLAND
<u>Acreage</u>	150 acres
Grid Reference	G. 79,34.
<u>Scientific Interest</u>	Botanical
Rating	National
Priority_	В

#### Description of Area

The interest in this area stems from the semi-natural vegetation that covers much of the thin limestone soils. The underlying rock breaks through in places especially as cliffs or along the lakeshore and these sites are particularly valuable.

Most of the area is wooded and the varied heights and ages of the trees are an important characteristic. The most natural wood is on the peninsula north of Sriff Cottage where a hazel(Corylus avellana) canopy prevails with a good admixture of ash (Fraxinus excelsior) and hawthorn (Crataequs monogyna) and some <u>Salix</u> spp. (willows), especially <u>S</u>. <u>cinerea</u> and <u>S</u>. <u>caprea</u>, and <u>Ulmus</u> <u>montana</u> (wych elm). A shrub layer is present also, particularly at the edges where <u>Euonymus europaeus</u> (spindle tree), <u>Viburnum opulus</u> (guelder rose), <u>Rosa canina</u> (dog rose), <u>R</u>. <u>arvensis</u> (field rose) and <u>Swida sanquinea</u> (dogwood) are frequent. The ground flora is rich as would be expected on a limstone site: it includes <u>Orchis mascula</u> (early purple orchid), <u>Moehringia trinervia</u>) (wood sandwort), <u>Galium odoratum</u> (woodruff), <u>Veronica montana</u> (wood speedwell) with <u>Crepis paludosa</u> (hawksbeard) and <u>Circaea intermedia</u> (enchanter's nightshade) on the lakeshore.

The landward side of the road at this point is also of interest especially for comparitive purposes. It is primarily a planted beechwood with some <u>Pinus</u> <u>sylvestris</u> (Scot's pine) in addition. Recent thinning has allowed very dense regeneration of beech, holly (<u>Ilex aquifolium</u>) and ash (<u>Fraxinus excelsior</u>) in different places, and the resulting thickets of young growth will form a most unusual habitat for the county. The ground flora of this region is more acidic in character because of the tree stratum - <u>Luzula sylvatica</u> (greater woodrush), <u>Oxalis acetosella</u> (wood sorrel) and <u>Blechnum spicant</u>(hard fern) occur under

dense beech but elsewhere <u>Carex flacca</u> (a sedge), <u>Viola reichenbachiana</u> (violet) and <u>Ranunculus auricomus</u> (goldilocks) are found among other species. The dominant mosses include <u>Hylocomium brevirostre</u> and <u>Rhytidiadelphus</u> <u>triquetrus</u>.

The rest of the area is of mixed character with some planted trees and much <u>Corylus</u> scrub as well. West of Sriff Cottage ribs of limestone support <u>Sorbus rupicola</u> (whitebeam), <u>Hieracium</u> spp. (hawkweed), and <u>Taxus baccata</u> (yew) while three interesting non-green plants occur: <u>Orobanche hederae</u> (ivy broomrape), <u>Neottia nidus-avis</u> (bird's nest orchid) and <u>Monotropa hypopitys</u> (yellow bird's nest).

Associated with this varied habitat which includes shaded depressions, exposed rock and many sorts of woodland, it may be presumed that the invertebrate fauna is similarly large and interesting. Several unusual organisms have been collected on the shores of Lough Gill.

#### **Evaluation**

The Lough Gill area is nationally important for its flora and fauna as well as its scenic beauty. The naturalness of the woods is a prime asset and they also have good educational potential.

#### Vulnerability and Recommendations

Afforestation with conifers probably poses the most significant threat to the area as it is being increasingly done on limestone areas of Co. Leitrim. An understanding should be reached with the Forest & Wildlife Service at the planning stage to protect as many of the natural areas as possible. From an amenity point of view the deciduous tree cover is preferable certainly beside the lake and road.

The wooded peninsula north of Sriff Cottage should be covered by a Tree Preservation Order, under Section 45 Local Government (Planning and Development) Act, 1963.

There also seems to be good reason for making much of the Lough Gill shore and adjacent land an Area of Special Amenity. This would allow the most stringent controls on development and in some parts to prohibit it altogether. 23.



Name of Area	LOUGH SCANNAL
Acreage	120 acres
Grid Reference	W. 03, 90.
<u>Scientific Interest</u>	Botanical, ecological
Rating	Regional
Priority	В

#### Description of area

A variety of habitats occur in this area, from wild lakeshore, through reedswamp and deciduous woodland to fields of permanent pasture. Derrygrasten Wood is now a managed ash-hazel wood with a majority of young trees. There is a little oak and slightly more <u>Sorbus aucuparia</u> (rowan) and <u>Ilex aquifolium</u> (holly) while alder (<u>Alnus glutinosa</u>) occurs in wetter situations. The ground flora is rich and typical of a basic site with <u>Anemone nemorosa</u> (wood anemone), <u>Veronica montana</u> (wood speedwell), <u>Allium ursinum</u> (wild garlic), <u>Viola reichenbachiana</u> (wood violet), <u>Arum maculatum</u> (cuckoo-pint), <u>Conopodium majus</u> (pignut), <u>Rhytidiadelphus</u> <u>triquetrus</u> (a moss) etc. <u>Carex sylvatica</u>, <u>C.strigosa</u> (sedges) and <u>Lathraea</u> <u>squamaria</u> (toothwort) also occur.

To the west this wood becomes more open with alder and birch (<u>Betula pubescens</u>) prominent as the shore is approached. A typical Shannon community occurs here with fens of <u>Moliniacaerulea</u>, (purple moor grass), <u>Myrica gale</u> (bog myrtle), <u>Achillea ptarmica</u> (sneezewort), <u>Angelica sylvestris</u> (angelica) and some <u>Schoenus</u> <u>nigricans</u> (black bog rush). Amongst the waterworn limestone <u>Carex elata</u> (a sedge) occurs abundantly with <u>Littorella uniflora</u> (shoreweed), <u>Cicuta virosa</u> (water hemlock), <u>Ranunculus flammula</u> (lesser spearwort), <u>Baldellia ranunculoides</u> (lesser water plantain), <u>Mentha aquatica</u> (water mint) and <u>Lythrum salicaria</u> (purple loosestrife).

This vegetation continues down to Otter Island and across to Rabbit Island, where a spruce plantation is established on the higher ground. The swampy area is very interesting with willows, including <u>Salix fragilis</u> and <u>S. purpurea</u> and tall reed vegetation of <u>Phragmites australis</u>. Species that grow here include <u>Rumex</u> <u>hydrolapathum</u> (water dock), <u>Potentilla palustris</u> (marsh potentilla), <u>Stellaria</u> <u>palustris</u> (marsh stitchwort), <u>Menyanthes trifoliata</u> (bog bean) and <u>Galium</u> <u>palustre</u> (marsh bedstraw). At the water's edge <u>Veronica scutellata</u> (a speedwell)

<u>Apium inundatum</u> (floating marshwort), <u>Myosotis repens</u> (forget-me-not), and Scorpidium scorpioides ( a moss) occur.

The low woodland in this southern part is rich in <u>Euonymus\_europaeus</u> (spindle tree), <u>Viburnum opulu</u>s (guelder rose) and it also contains <u>Rhamnus</u> <u>catharticus</u> (purgina buckthorn). An extensive willow wood occurs on the east side with the trees making a platform of roots in or above the lake.

Animal life is much in evidence and the diversity of habitat from sheltered reedswamps to rocky shores with much woodland makes for a rich invertebrate fauna as well. Wildfowl nest in moderate numbers in the area which also has a colony of black-headed gulls. In winter a local flock of 60 white fronted geese are oftenfound in here delimited fields. A substantial number of other wildfowl also winter, including 50 wild swans at times.

#### <u>Evaluation</u>

This is undoubtedly the most natural and biologically interesting part of the Shannon in Leitrim with a full representation of its characteristic flora and fauna. The peninsula is also of exceptional amenity value.

#### Vulnerability and Recommendations

The flora would be damaged by any lowering of lake levels, by clearance of the woodland for agricultural usage, by an increase in grazing animals or by a spread of afforestation.

Grazing is perhaps the most likely of these threats and it would be of considerable harm since very little occurs today. This adds considerably to the interest of the area. Likewise a replacement of the predominantly deciduous woodland by conifers would be damaging to the woodland and marginal flora. There are grounds for ensuring the protection of the lakeshore amenities by a Special Amenity Area Order and of the plant communities thereon by a Conservation Order. Consultations with the Forest and Wildlife Service about the woodland should be initiated by the council. The fields outlined have a character attractive to geese because they are partially flooded by rainwater in winter. This should be maintained.



<u>Name of Area</u> <u>Acreage</u> <u>Grid Reference</u> <u>Scientific Interest</u> <u>Rating</u> <u>Priority</u> SHEEMORE WOOD 21 Acres G. 99,04. Botanical, ecological. Regional B

#### Description of Area

A deciduous wood has developed naturally on the eastern side of this limestone hill. Though about twelve large <u>Fagus</u> (beech) trees and one of two larch have existed on the site for the past 60 years, practically all regeneration has been of ash and hazel, giving a <u>Fraxinus</u> (ash) dominated wood. The limestone which is horizontally bedded, outcrops as small vertical cliffs in places but most of the surface is covered by a rich loamy soil. In this a variety of woodland plant species grow, eg:-

Polystichum setiferum	shield fern	С
Oxalis acetosella	wood sorrel	С
Viola riviniana	wood violet	с
V. reichenbachiana	wood violet	f
Potentilla sterilis	barren strawberry	f
Sanicula europaea	wood sanicle	f
Veronica chamaedrys	germander speedwell	f
Silene dioica	red campion	1.f
Geum urbanum	wood avens	f
G. rivale	water avens	о
Endymion non-scripta	bluebell	о
Luzula sylvatica	woodrush	о
Veronica montana	wood speedwell	о
Stellaris holostea	greater stitchwort	о
Ranunculus ficaria	lesser celandine	о
R. auricomus	goldilocks	о
Orchis mascula	early purple orchid	r
Lapsana communis	nipplewort	r
Hypericum androsaemum	St. John's wort	r

Other species occur in addition, including the moses <u>Rhytidiadelphus triquertrus</u>, <u>Thuidium</u>, and <u>Thamnium</u> while associated with the rock outcrops and thin soils are <u>Brochypodium sylvaticum</u> (false brome grass), <u>Melica uniflora</u>, (wood melick grass), <u>Asplenium trichomanes</u> (spleenwort), <u>Agropyron caninum</u> (bearded twitch), <u>Ctenidium molluscum</u>, and <u>Neckera crispa</u> (mosses).

As would be expected in this type of woodland, the associated animal populations are large and diverse. Several interesting bird species nest.

#### <u>Evaluation</u>

This is one of the purest ashwoods on a dry site in the country and may well be nationally important. Many questions exist about this tree species and this site would well repay some research effort on it.

In addition several of the plant species find their only stations on south Leitrim on this hill and it could prove valuable in education with the proximity of Carrick-on-Shannon.

#### <u>Vulnerability</u>

Quite valuable timber exists in the wood and it may be exploited in the future. Rationally done, and allowing for adequate regeneration the wood could tolerate this. At the moment grazing by goats is increasing in intensity and branches are also cut for their winter food.

There is a danger of beech seedlings spreading and upsetting the natural community strucutre of the wood, as they are doing on limestone sites in Co. Kerry.

#### <u>Recommendations</u>

A Tree Preservation Order, under Section 45, Local Government (Planning and Development) Act, 1963, should be passed on the wood excluding the beech and coniferous trees. These should be the first to be felled. Some agreement should be reached with the farmer to limit the damage done by goats.



<u>Name of Area</u>	GLENCAR WATERFALL & LAKE
<u>Acreage</u>	c. 10 Acres
<u>Grid Reference</u>	G. 75,43.
<u>Scientific Interest</u>	Botanical, zoological.
<u>Rating</u>	Regional
<u>Priority</u>	С

#### Description and Evaluation

The wet glen through which this river descends in a series of waterfalls is the site of a rich bryophyte flora and one which has been fairly well examined. It has several rare species and a good range of western calcicole types, as well as enough peat development for several acidic species to occur. The more interesting species include <u>Pedinophyllum interruptum</u>, <u>Dunmortiea</u> sp. <u>Brachythecium pseudoplumulosum</u>, <u>Lejeunea</u> <u>mackaii</u>, <u>Calypogeia arguta</u> and <u>Pellia calycina</u>. The higher plant flora also contains certain species of interest.

The molluscan fauna is that most examined, and it has one important species as well as a good collection of commoner types.

The north shore of Glencar lake is a station for one lichen that has been found nowhere else in Great Britain and Ireland. It is not a conspicuous form and possibly will be found elsewhere. For this reason the site has only been given regional status.

#### Vulnerability and Recommendations

Land use should remain in its present form in the area especially with regard to the tree cover in the valley.

Lake side developments should avoid exposures of limestone rock.



<u>Name of area</u>	O'DONNELL'S ROCK WOODLAND
Acreage	75 Acres
Grid reference	G. 88, 36.
Scientific interest	Ecological.
Rating	Regional
Priority	B

#### Description of area

This wood has developed on the clayey talus slope at an angle of about 45° below a low limestone cliff. Predominantly it is of hazel with some ash, willow (<u>Salix cinerea</u>) and oak saplings. There are a few standard trees above the overall 15 foot-high canopy, mostly oak (<u>Quercus petraea</u>) with some pine (<u>Pinus sylvestris</u>) and beech, and in one area a group of sycamore. From these remnants it is clear that the area, once felled and planted with estate trees has been recolonized naturally with hazel scrub. The trees now are large and the ground storey is rich in mosses and herbaceous plants.

At the cliff the wood becomes more open as trees are removed by rock falls but throughout most of the area a closed canopy exists with limited regeneration of ash and locally beech. The ground flora is typical of a western base rich wood with some leaching allowing calcifuge species such as <u>Luzula sylvatica</u> (great woodrush) and <u>Blechnum spicant</u> (hard fern) to occur. An unusual feature is the abundance of <u>Allium ursinum</u> (wild garlic). Plant species seen in February include:-

Polystichum setiferum	shield fern	a
Oxalis acetosella	wood sorrel	a
Ranunculus ficaria	lesser celandine	с
Endymion non-scripta	bluebell	С
Rhytidiadelphus loreus	a moss	l.a
Thuidium tamariscinum	И	l.a
Thamnium alopecurum	"	f
Calypogeia asplenoides	a liverwort	f
Carex sylvatica	wood sedge	f

Potentilla sterilis	barren strawberry	f
Geum urbanum	wood avens	f
G. rivale	water avens	0
Viola riviniana	violet	f
Sanicula europaea	wood sanicle	f
Dryopteris dilatata	buckler fern	f
D. pseudomas	male fern <sup>′</sup>	0
Veronica chamaedrys	germander speedwell	0
Rubus fruticosus	bramble	l.f.
R. idaeus	raspberry	0
Galium odoratum	woodruff	0
Phyllitis scolopendrium	hart's tongue	1.f.
Lysimachia nemorum	wood pimpernel	0
Ajuga reptans	bugle	0
Euonymus europaeus	spindle tree	r
Viburnum opulus	guelder rose	r

The cliff flora includes <u>Ctenidium molluscum</u> (a moss), <u>Carex flacca</u>, <u>C. nigra</u> (sedges) and <u>Brachypodium sylvaticum</u> (false brome grass). Mammal numbers appear high in this woodland and the nesting birds include one or two interesting species.

#### Evaluation

This is one of the few naturally developing woods on the Sligo-Leitrim limestone mountains and its youth gives a good idea of the natural succession patterns that occur on this rock type.

It is also a fine amenity area being beside the main road into Manorhamilton, and would be suitable for educational use.

#### <u>Vulnerability</u>

Though on such a steep slope the wood could be cleared for or underplanted with conifers. This would destroy its interest. Beech is a 'weed' species of tree in the area since it can spread spontaneously and come to dominate a formerly natural wood.

## Recommendations

The wood should be preserved in its present form with a Tree Preservation Order made under Section 45, Local Government (Planning and Development) Act, 1963. This order should exclude beech.


<u>Name of Area</u>	Woodland at Garadice Lough
<u>Acreage</u>	12 Acres
Grid Reference	H.19,11
Scientific interest	Ecological, botanical
Rating	Regional
Priority	В

#### Description of Area

Several small areas of woodland occur in the vicinity of Garadice Lough, the best developed being on a drumlin promontory in the north-eastern corner. The central part of the drumlin is rough pasture but the southern and eastern slopes support a wood dominated by <u>Quercus robur</u> (pedunculate oak). There are some fair-sized trees and many large cut stumps are also present indicating felling a few decades ago. On the western side a narrow fringe of a more acidic community occurs, including <u>Q. petraea</u> (sessile oak). The soil type here is a podzol but on the east side a brown earth with mull humus occurs.

The flora of the eastern section is richer than the west. <u>Fraxinus excelsior</u> (ash), <u>Corylus avellana</u> (hazel) and <u>Betula pubescens</u> (birch) are the commonest trees with much <u>Ilex aquifolium</u> (holly). <u>Salix cinerea</u> and <u>S. aurita</u> (willows) and <u>Alnus glutinosa</u> (alder) occur around the lakeshore and on a few low-lying areas inland. The rather clayey soil supports a ground flora in which <u>Aiuga reptans</u> (bugle), <u>Chrysosplenium oppositifolium</u> (golden saxifrage) <u>Oxalis acetosella</u> (wood sorrel) and <u>Circaea lutetiana</u> (Enchanter's nightshade) are major species. The more unusual plants include <u>Silene dioica</u> (Red campion) <u>Veronica montana</u> (Wood speedwell), <u>Viola reichenbachiana</u> (violet) and <u>Plagiothecium latebricola</u> - a moss which has not been recorded elsewhere in the country.

The stand on the western side shows elements of the mountain oakwood community widespread in western Ireland. It has such characteristic species as <u>Dryopteris aemula</u> and <u>Hymenophyllum wilsonii</u> (ferns) and <u>Dicranum majus</u> and <u>Plagiothecium undulatum</u> (mosses). The ground layer is predominantly of <u>Luzula sylvatica</u> (greater woodrush) and <u>Pteridium</u> <u>aquilinum</u> (bracken) with some <u>Calluna vulgaris</u> (heather), <u>Vaccinium</u> <u>myrtillus</u> (frochan) and <u>Melampyrum pratense</u> (cow wheat) on the peaty sites.

<u>Evaluation</u>: The contrast between these two semi-natural woods which have developed on apparently the same parent material is of considerable ecological interest. It deserves some further research including the soil and climatic factors. The more acidic oakwood is one of the only such stands in the county and with the unusual moss species make the site of regional importance.

<u>Vulnerability and recommendations</u>: There is some grazing within the site, chiefly by cattle, and it should be discouraged since it could lead to a failure of tree regeneration. At the moment some young trees do occur in the eastern and southern stands but not in the western.

The felling of timber in the area might be carried out for fuel or for reafforestation with coniferous trees as such soil are suitable for this. So few large trees occur however that it should be strictly controlled so as to avoid damage to the scientific values. A Tree Preservation Order under Section 45 of the Local Government (Planning and Development) Act, 1963 is recommended to permit such management and it could be drawn up by An Foras Forbartha.



Name of AreaLOUGH ALLEN (PARTS)Acreage17 AcresGrid ReferenceG. 96, 17Scientific InterestEcological, botanicalRatingLocalPriorityB-C

# Description of Area

Lough Allen has mostly a sloping shore line which precludes much development of reedswamp except at its northern end. The shores instead generally consist of a stoney beach below wet clayey grassland with an abundance of rushes (<u>Juncus effusus</u>) and usually scattered alder trees. Along much of the shore in fact, an alder thicket has developed, the younger trees extending out into the lake, theolder ones behind mixed with <u>Salix cinerea</u> (willow) <u>Crateagus</u> <u>monogyna</u> (hawthorn) and <u>Fraxinus excelsior</u> (ash). Holly (<u>Ilex aquifolium</u>) sometimes is mixed on the higher shore levels.

The broken bouldery ground is moss-covered with <u>Thuidium tamariscinum</u>, <u>Hypnum cupressiforme</u>, <u>Thamnium alopecurum</u>, <u>Hylocomium brevirostre</u> and <u>Fissidens</u> spp (mosses) common. The higher plants include <u>Brachypodium</u> <u>sylvaticum</u> (false brome grass), <u>Glechoma hederacea</u> (ground ivy) and <u>Digitalis purpurea</u> (foxglove) in the drier sites and elsewhere such characteristic species as:-

Oxalis acetosella	wood sorrel	С
Senecio aquatica	marsh ragwort	с
Primula vulgaris	primrose	£ 
Geranium robertianum	hard robert	f
Prunella vulgaris	heartsease	í
Ranunculus repens	buttercup	f
Chrysosplenium oppositifolium	golden saxifrage	1.f
Epilobium montanum	willow herb	0
Rubus fruticosus	bramble	1.f.
Carex remota	a sedge	о
C.sylvatica	a sedge	0

Dryopteris filix mas	male fern	ο
D. dilatata	buckler fern	о
Sanicula europaea	wood sanicle	о
Conopodium majus	pignut	о
Fragaria vesca	strawberry	о
Filipendula ulmaria	meadowsweet	o
Hypericum pulchrum	St. John's wort	t

The alder wood is a constant feature of those parts of the eastern shore that have been mapped. In one place <u>Populus tremula</u> (aspen) grows at a low level while at another a single tree of <u>Ulmus glabra</u> (wych elm) was found. In the bay south of Gubcormongan the area covered by alder expands so as to produce a swamp forest often flooded in winter. The ground flora is limited and only species such as <u>Ranunculus repens</u> (buttercup) <u>Senecio</u> <u>aquatica</u> (marsh ragwort) <u>Agrostis stolonifera</u> could be seen above the flood waters. The area was rich in wildfowl however, which may use it as a daytime resting area or for feeding.Upwards of one hundred mallard and teal were seen. The alder trees also provide winter food for redpolls, siskins and chaffinches. The southermost site is on that part of L. Allen which extends onto the limestone rocks near Drumshanbo. It is a limestone outcrop of conglomerate type, deeply eroded and associated also with the sandy till deposits. A very different vegetation is found as shown by the occurance of such species as:-

Pilosella officinalis Pseudoscleropodium purum Ranunculus bolbosus Anthriscus sylvestris Phyllitis scolopendrium Veronica officinalis V. serpylifolia Geranium lucidum Sesleria caerulea Polypodium spp.

mouse-ear hawkweed a moss bulbous buttercup cow parsely harts tongue a speedwell a speedwell shining cranesbill blue moor grass polypody

41.

-

Arum maculatum	cuckoo-pint
Aira praecox	a grass
Ctenidium molluscum	moss
Camptothecium sericeum	moss
Tortella tortuosa	moss

Patches of open grassland on the sand have a calcifuge flora including <u>Digitalis purpurea</u> (foxglove), <u>Rumex acetosella</u> (sheep's sorrel), and <u>Pedicularis</u> <u>sylvestris</u> (louse wort), or <u>Prunus spinos</u>a (blackthom) scrub. In this a few trees of <u>Fraxinus</u> excelsior occur.

Some of the marginal parts of Lough Allen are used for feeding by wild duck, and swan's but they are not identifiable at this stage. Total numbers are quite low and a suitable estimate for the lake would seem to be wild swan 60, wigeon 200, mallard 250, teal 300, tufted duck 150.

# **Evaluation**

The heavy clay soils of this part of Leitrim derived from the coal measures strata have a characteristic flora in which alder seems to be the climax tree. Around Lough Allen these trees are best developed and at one site form a swamp forest of unusual interest. Though poor in species, the community is of considerable ecological interest.

The limestone site has one or two species rare in this area, and is an important contrast with the rest of the shore.

# <u>Vulnerability</u>

Most of the areas described above are relatively secure from development, being large. The exception is the southern site near Drumshanbo and this could be obliterated by any sort of building. Selected felling occurs in much of the older woods and this keeps the stems relatively young. It also probably ensures that some are always left to supply future fencing demands.

# <u>Recommendation</u>s

Land use should be kept in its present form and new building development should be zoned outside the areas mapped.









<u>Name of Area</u>	LOUGH RINN, L. ERREW AND L. SALLAGH
<u>Acreag</u> e	278 Acres
<u>Grid Reference</u>	N. 10,93
<u>Scientific Interes</u> t	Botanical Zoological
<u>Rating</u>	Locàl
Priority	В

# Description of Area

Lough Rinn is an alder-fringed lake on limestone or limestone drift and this proximity to a calcareous source makes it different from many of the Leitrim lakes. In most ways it resembles one of the Shannon lakes to the west. Slightly basic seepage occurs in some places on the west side and amongst seedling alder trees, plant species such as <u>Briza media</u> (quaking grass) <u>Carex flacca</u> (a sedge), <u>Linum catharticum</u> (purging flax), <u>Juncus acutiflorus</u> (a rush) and <u>Pseudoscleropodium purum</u> ( a moss) occur. They are intermixed with species of different (calcifuge) type, eg. <u>Nardus stricta</u> (mat grass), <u>Sieglingia decumbens</u> (heath grass), <u>Hylocomium splendens</u> and <u>Dicranum</u> <u>scoparium</u> (mosses).

The aquatic communities contain interesting species and extensive reedbeds occur at the northern end of the lake and also in Lough Errew and L. Sallagh. As well as the commoner species such as <u>Phragmites australis</u> (common reed) <u>Phlaris arundinacea</u> (reed grass), <u>Epilobium hirsutum</u> (great willowherb) the following are recorded:-

Circuta virosa	water hemlock
Carex diandra	a,sedge
C. vesicaria	n ·
C. pseudocyperus	11
Rumex hydrolapathum	great water dock
Hydrocharfs morsus-ranae	frogbit
Stellaria palustris	marsh stitchwort
Scutellaria galericulata	skullcap
Lycopus europaeus	gipsy-wort.

Some of the woods that surround the lake have arisen naturally but in many places estate planting behind this fringe has added extensive areas of woodland, including beech, sycamore and oak. The flooded alder wood at the south end has a ground flora of such species as <u>Iris pseudacorus</u> (yellow flag), <u>Mentha aquatica</u> (water mint), <u>Caltha palustris</u> (marsh marigold), <u>Angelica sylvestris</u>, (angelica), <u>Carex remota</u> (a sedge), <u>Deschampsia caespitosa</u> (tufted hair grass) and <u>Climacium dendroides</u> ( a moss) and is backed by the remnant of a raised bog, now afforested with conifers.

The aquatic fauna of the lake includes <u>Anodonta</u> (a freshwater mussel) and the normal species of <u>Bithynia, Limnaea</u>, <u>Pisidium</u>. Wintering wildfowl species include tufted duck, teal, mallard, pochard and goldeneye but only in small numbers.

#### <u>Evaluation</u>

This lake has an interesting marsh flora in a region where the majority of lakes are distinctly dull because of their nutrient regimes.

#### Vulnerability and Recommendations

Large scale pollution would alter the aquatic flora but it is less likely to affect the marginal vegetation adversely.

Creation of lake-side facilities should take place with as little damage to the natural vegetation as possible.





Name of Area	GORGE OF 'AGHAVOGHIL' RIVER
Acreage	20 Acres
Grid Reference	G. 86,52
<u>Scientific Interest</u>	Ecological, botanical
Rating	Local
Priority	С

#### Description of Area

The river has cut a gorge in the edge of the limestone plateau at this point, falling over 400 ft. in half a mile. A series of waterfalls, dripping rock faces, and wet clay banks give a wide variety of habitats, chief among which is the hazel scrub which covers much of the west side. In this, hazel is mixed with some hawthorn (<u>Crataegus monogyna</u>), and birch (<u>Betula pubescens</u>) while ash occurs towards the bottom. The shelter has allowed the trees to reach 40-50 ft. Birch above occurs in the heather at the top of the east side where some conifers are thinly scattered, adjacent to a denser plantation. <u>Salix capraea</u> (great willow) and <u>Ilex aquifolium</u> (holly) are other tree species to be found.

The ground flora is rich and similar to other wet woods on limestone (see p. 33) Its more unusual members would include <u>Galium odoratum</u> (woodrugh), <u>Carex nigra</u>, <u>C. pendula</u> (sedges), <u>Stachys sylvatica</u> (hedge woundwort) <u>Iestuca gigantea</u> (giant fescue), <u>Ranunculus auricomus</u> (goldilocks), <u>Rhodobryum roseum</u> and <u>Trichocolea tomentella</u> (bryophytes). Leaching is such that calcifuge species such as <u>Luzula sylvatica</u> (woodrush), <u>Vaccinium myrtillus</u>(frochem) and <u>Dryopteris</u> pseudomas (male fern) occur.

#### **Evaluation**

This is a rich woodland site, difficult of access but with many interesting features. Associated animal life is likely to be diverse.

## Vulnerability and Recommendations

The gorge is in little danger from any man-made influence but forestry development should encroach no further on the eastern side and preferably be taken back as the trees mature.



•



<u>Name of Area</u>	LAKESHORE NEAR DRUMOD
<u>Acreage</u>	35 Acres
<u>Grid Reference</u>	N. 04,90
<u>Scientific Interest</u>	Ecological, botanical
<u>Rating</u>	Local
Priority	В

# Description of Area

The sites dealt with here are two terrestrial ones on the eastern shores of the lakes, the northern one a semi-natural wood, the southern is more obviously planted 40 - 50 years ago. Around these woods the lake shore is of moderate interest and a representative sample has been included.

Much of the eastern shore of L. Scannal is fringed by alder trees with some <u>Fraxinus</u> (ash), <u>Salix cinerea</u> (willow) behind. The community is quite open and a <u>Schoenus nigricans</u> (black bog-rush) - <u>Carex flacca</u> (a sedge) stratum covers the ground. In this <u>Carex demissa</u> (a sedge), <u>Festuca rubra</u> (red fescue), and <u>Centaurea nigra</u> (knapweed) are common, <u>Lychnis flos-cuculi</u> (ragged robin), <u>Juncus effusus</u> (soft rush), <u>Succisa pratensia</u> (devils-bit), <u>Climacium dendroides</u> (a moss), <u>Prunella vulgaris</u> (heartsease) and <u>Parnassia palustris</u> (grass of Parnassus), somewhat rarac. Where streams enter patches of other species occur, e.g. <u>Veronica beccabunga</u> (brooklime). <u>Apium nodiflorum</u> (fool's watercress), <u>Iris pseudacorus</u> (yellow flag) and <u>Ajuga reptans</u> (bugle).

The wood at the south end of this lake has developed a mature structure with an overstorey of ash (<u>Fraxinus excelsior</u>) and old <u>Corylus</u> (hazel) below which some holly is found with <u>Euonymus europaeus</u> (spindle tree). Individual trees of <u>Salix caprea</u> (goat willow) occur at intervals while <u>Crataegus</u> (hawthorn) and <u>Betula pubsecens</u> (birch) are confined to the shoreline. The ground layer is quite rich including species such as <u>Arum maculatum</u> (cuckoo pint), <u>Lysi-</u> <u>machia nemorum</u> (yellow pimpernel), <u>Endymion non-scripta</u> (bluebell), <u>Cono-podium majus</u> (pignut), <u>Chrysosplenium oppositifolium</u> (golden saxifrage) and <u>Veronica montana</u> (wood speedwell). <u>Rosa canina</u> (dog rose), and <u>Valeriana officinalis</u> (wild valerian) occur with <u>Schoenus nigricans</u> (black bog-rush) at the lake edge.

A good variety of mammals are associated with the wood while the bird fauna is also interesting.

The woodland on Lough Bofin south of Drumod is slightly different being originally planted up with beech and oak. There is a more complete <u>Ilex</u> (holly) layer beneath the tree canopy and a slightly more acidic type of ground flora, including <u>Luzula sylvatica</u> (woodrush). Species additional to those mentioned above are <u>Geum urbanum</u> (wood avens), <u>G. rivale</u> (water avens), <u>Galium odoratum</u> (woodruff), <u>Oxalis acetosella</u> (wood sorrel) and <u>Orchis mascula</u> (early purple orchid).

The river and lakeshore outside the woodland is also quite interesting with a marshy community including <u>Juncus effusus</u> (soft rush), <u>J. acutiflorus</u> (a rush), <u>Deschampsia caespitosa</u> (tufted hair grass), <u>Cardamine pratensis</u> (lady's smock), <u>Lysimachia nummularia</u> (creeping jenny), <u>Pulicaria dysenterica</u> (fleabane), <u>Senecio aquatica</u> (marsh ragwort) and <u>Climacium dendroides</u> (a moss).

#### **Evaluation**

The woods are of considerable local interest since low-lying woodland is rare in the county. Parts of it have redeveloped naturally after original clearance and have some scientific importance.

#### Vulnerability and Recommendations

Largescale felling or afforestation with conifers would be damaging and should be prevented.

Lakeside developments should avoid the outlined areas.



<u>Name of area</u>	WOODLAND AT CROMLIN BRIDGE
Acreage	3.5 Acres
<u>Grid reference</u>	H 10, 14
<u>Scientific interest</u>	Botanical, ecological
Rating	Local
Priority	C
<u>Grid reference</u> <u>Scientific interest</u> Rating Priority	H 10, 14 Botanical, ecological Local C

# Description of area

Above Cromlin Bridge, the Castlerogy stream has cut a deep gorge in calcareous drift deposits so it now cascades on slatey rocks up to 60 ft. below the level of the surrounding land.

On these steep slopes hazel scrub has developed well and some of the trees are of considerable age. A few <u>Ulmus glabra</u> (wych elm) much cut, occur on the edges while <u>Fraxinus excelsior</u> (ash), <u>Salix cinerea</u> (willow) are scattered throughout. <u>Prunus spinosa</u> (blackthorn) is frequent in the understorey while one of two plants of <u>Viburnum opulus</u> (guelder rose) were found.

The ground floor vegetation is rich in this wood, including many characteristic species (about 30 altogether). These include:-

shield fern	С
lesser celandine	с
germander speedwell	С
wood sedge	f
pignut	f
cow parsely	1.f.
bluebell	l.f.
woodruff	ο
male fern	ο
a sedge	0
wood speedwell	0
early purple orchid	r
	shield fern lesser celandine germander speedwell wood sedge pignut cow parsely bluebell woodruff male fern a sedge wood speedwell early purple orchid

Near to the stream the growth of mosses and ferns is very luxuriant and such species as <u>Asplenium trichomanes</u> (wall-rue), <u>Polypodium vulgare</u> agg. (polypody), <u>Rhytidadelphus loreus</u>, <u>Hookeria lucens</u>, <u>Conocephalum conicum</u> and <u>Thamnium alopecurum</u> (mosses and liverworts) attain large size.

At the edges of the area, light demanding species such as <u>Equisetum telmateia</u> (horsetail), and <u>Lapsana communis</u> (nipplewort) occur while <u>Swida sanguinea</u> (dogwood) and <u>Carex pendula</u> (a sedge) have been planted.

# <u>Evaluation</u>

A small area close to the junction of the two drift soils of south Co. Leitrim, this is some of the only natural hazel wood outside Glenade and L. Gill. It has a rich and varied flora.

## <u>Vulnerability</u>

Felling and scrub clearance would adversely affect this area.

# <u>Recommendations</u>

A Tree Preservation Order would be an effective way of maintaining this wood. However it is probably secure due to its precipitous nature.





<u>Name of Area</u> <u>Acreage</u> <u>Grid Reference</u> <u>Scientific Interest</u> <u>Rating</u> Priority ANNAGHEARLY LOUGH 50 Acres H. 00,03 Botanical Local B

#### Description of Area

Annaghearly Lough is typical of many lakes in South and Central Leitrim. It has little marginal vegetation, the fields around run down to the lake, gradually increasing in aquatic plants and there is scarcely any development of alder or willow thickets. The exception in this case is on an island in the lake.

Juncus effusus (soft rush) and <u>Phalaris arundinacea</u> (reed grass) form the most noticeable marginal vegetation mixed with lower-growing species such as <u>Carex flacca</u> ( a sedge), <u>Myosotis caespitosa</u> (forget-me-not) <u>Triglochin</u> <u>palustre</u> (arrow-grass), <u>Cardamine pratensis</u> (lady's smock) <u>Filipendula ulmaria</u> (meadow sweet) and <u>Acrocladium</u> ( a moss). <u>Rorippa</u> (watercress) is submerged for part of the year, <u>Equisetum fluviatile</u> (water horse tail) <u>Carex rostrata</u> (bottle sedge) and <u>Sparganium emersum</u> (bur-reed) for longer periods.

---

Two fully aquatic species that occur are <u>Lemna trisulca</u> (ivy-leaved duckweed, and <u>Potamogeton filiformis</u> (slender-leaved pondweed). This lake seems representative of a common type and has the additional claim of two uncommon species.

# <u>Vulnerability and Recommendations</u>

The aquatic community would be altered by any increase in the pollution load. This should be discouraged therefore by diversion of wastes from any projected project or by resiting developments.



<u>Name of Area</u>
Acreage
<u>Grid Reference</u>
Scientific Interest
Rating
Priority

# KINLOUGH WOOD 98 Acres G. 82,54 Botanical, ecological Local B

## Description of Area

This is a deciduous wood of planted origin on a very wet site. The trees are poorly grown but quite large; they are mostly ash, birch (<u>Betula pubescens</u>), willow (<u>Salix cinerea</u>) and hazel (<u>Corylus avellana</u>). Some low-growing holly occurs also. There is some regeneration at the edges, especially on the north side where alder is growing vigorously but beneath the main canopy the ground layer is rather open due to cattle-grazing. Mosses form most of the cover, eg. <u>Rhytidiadephus triquetrus</u>, <u>Thuidium tamariscinum</u>, <u>Fissidens spp. Hookeria</u> <u>lucens</u>, etc., but there is also a selection of herb species including the following:-

Ranunculus ficaria	lessor colondino	
		C
Oxalis acetosella	wood sorrel	С
Endymion non-scripta	bluebell	lc.
Chrysosplenium oppositi-		
folium	golden saxifrage	f
Carex remota	a sedge	f
C. sylvatica	a sedge	f
Ajuga reptans	bugle	f
Blechnum spicant	hard fem	0
Dryopteris dilatata	buckler-forn	0
Cardamine flexuosa	wood cress	0
Sanicula europaea	wood sanicle	0
Conopodium majus	pignut	0
Viola riviniana	violet	0
Veronica chamedrys	genmander speedwell	0
V. montana	wood speedwell	о
Valeriana officinalis	marsh valerian	r
Carex laevigata	a sedge	r

A few oak trees are found at the eastern edge below which <u>Luzula sylvestris</u> (woodrush) grows.

\*Knowles (1929) records certain lichen species from Kinlough Wood including two relatively rare types.

#### <u>Evaluation</u>

This is a moderately interesting wood but one of considerable educational value in an area where deciduous woodland is quite rare. It would be a suitable place to conduct various controlled experiments (eg. exclosures to prevent grazing) and investigate the insect fauna of this part of Leitrim.

#### <u>Vulnerability</u>

As is normal for a wood, this one is threatened by felling or afforestation with conifers, but grazing is just as important in the longrun as it removes all later generation of trees.

# <u>Recommendations</u>

This wood should be preserved as a deciduous stand but it is important to initate some regeneration at this stage. There should be a relaxation of grazing pressure (by fencing) in small but different parts of the wood on a 10 year cycle so a new crop of trees will be brought in. Only then can selective thinning of the mature trees, which a normal wood can stand, take place.

The area could probably be developed as a small amenity project if the landowner is agreeable.

\*Knowles, M.C. (1929) 'The Lichens of Ireland'. Proc. R.I.A. 38. p.179.



<u>Name of Area</u>	URAGH LOUGH
<u>Acreage</u>	6 Acres
Grid Reference	G. 776,537
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
Priority	В

#### Description and Evaluation of Area

Uragh Lough is small and surrounded by mostly cut-over blanket bog. It receives some mineral flushing however allowing species such as <u>Cladium mariscus</u> (saw sedge) and <u>Juncus obtusiflorus</u> (a rush) to grow in the more normal acidic flora of <u>Carex rostrata</u> (bottle sedge), <u>Phragmites</u> <u>australis</u> (common reed), <u>Eriophorum augustifolium</u> (bog cotton), <u>Potamogeton</u> <u>polygonifolius</u> (pond weed), <u>Juncus articulatus</u> (jointed rush) and <u>Utricularia</u> sp. (bladderwort). The surrounding bog though disected by ditches and turf-banks still has <u>Drosera intermedia</u> (sundew) and probably the <u>Rhynchospora fusca</u> (beak sedge) that formerly grew here.

The site is interesting nutritionally as it forms part of the series of western blanket bogs. Although much modified it seems to differ substantially from those of west Galway and Donegal, resembling Co. Clare more closely.

#### <u>Vulnerability</u>

Any acidic body of water is threatened by eutrophication as the community is normally adapted to very low levels of nutrients. Possible sources of pollution are intensive livestock units or fertilizer run-off from the surrounding fields.

#### <u>Recommendations</u>

Land use should remain in its present form in the area but any new sources of effluent should be led into the stream below Uragh Lough.



<u>Name of area</u>	WOODLAND AT OWENGAR BRIDGE
<u>Acreage</u>	6 Acres
Grid reference	G 91 23
Scientific interest	Botanical, ecological
Rating	Local
Priority	В

## Description of area

A small wood occurs on the steep northern bank on the Owengar River which has cut into the wet clay soils of this part of Leitrim. The dominant trees are alder and has while there is a little beech and some more willow (Salix cinerea). A moderately thick understorey vegetation includes hazel and hawthorn (Crataegus monogyna) with holly through which paths run, used occasionally by cattle.

Plants characteristic of a slightly acidic substrate occur in the ground vegetation which is by no means complete, patches of clay soil being present as well. The plant species include: -

Polystichum setiferum shield fern Dryopteris filix-mas male fern Carex remota a sedge Chrysosplenium oppositifolium Ranunculus ficaria Veronica chamaedrys Oxalis acetosella Potentilla sterilis Carex sylvatica Phyllitis scolopendrium Dryopteris dilatata Primula vulgaris primrose Sanicula europaea Deschampsia flexuosa hair grass Carex nigra a sedge C. laevigata a sedge

golden saxifrage lesser celandine germander speedwell wood sorrel barren strawberry wood sedge harts tongue buckler fern wood sanicle



<u>Name of Area</u>	DRUMHIERNY WOOD
<u>Acreage</u>	
Grid reference	G 9505
<u>Scientific interest</u>	Ecological
Rating	Regional
Priority	A

# Description of Area

This wood occurs on the edge of the Shannon valley close to Leitrim town. The site is a west-facing slope with a maximum of about 40°. The trees are mainly of oak (<u>Quercus robur</u>) and are reasonably even-aged suggesting a planted origin. There are some large <u>Fagus sylvatica</u> (beech) as well as <u>Acer pseudo-platanus</u> (sycamore), <u>Ulmus glabra</u> (wych elm) and <u>Quercus</u> <u>petraea</u> (sessile oak). The main canopy extends to 20 m or so and there is a dense understorey in places, formed of <u>Prunus spinosa</u> (blackthorn), <u>Corylus avellana</u> (hazel), saplings of <u>Fraxinus excelsior</u> (ash) and <u>Rubus</u> <u>fruticosus</u> (bramble).

The soil is a fine-textured glacial drift, relatively base rich but with impeded drainage. Towards the base of the slope such species as <u>Equisetum</u> telmateia, <u>E. sylvaticum</u> (horsetails) and <u>Deschampsia caespitosa</u> (tufted hair grass) are conspicuous around the margins of the wood. Inside it, the species list includes :

Carex sylvatica	wood sedge
Dryopteris dilatata	buckler fern
D. filix-mas	male fern
D. borreri	male fern
Athyrium filix-femina	lady fern
Primula vulgaris	primrose
Brachypodium sylvatica	wood false brome
Geum urbanum	wood avens

Digitalis purpurea	foxglove	
Blechnum spicant	hard fern	
Thamnium alopecurum)	mosses	
Eurhynchium striatum )		

The high canopy and relatively large extent of this wood make it of some value to woodland birds such as treecreeper, sparrow, hawk, mistle thrush, chiffchaff and spotted flycatcher. Garden warblers, which are uncommon birds in the midlands, and blackcaps have also occurred there.

Evaluation : Drumhierny wood is an example of an oakwood on a base rich soil.. This is a rare occurrence in Ireland as most such sites have been cleared for agriculture. The stand has developed various natural features as it has not been intensively managed, at least in recent years. It thus has local if not regional importance and is the only large oakwood discovered in the course of this survey of the county.

It is recommended that a Tree Preservation Order be put on this wood in view of its substantial amenity and scientific value. It is a feature of this Shannon crossing and could be developed with a picnic area and nature trail.

MAP SHOWING AREA OF SCIENTIFIC INTEREST – Scale: 6 Inches to 1 Mile


<u>Name of Area</u>	CORDUFF LOUGH
Acreage	
Grid reference	H 1712
<u>Scientific interest</u>	Botanical
Rating	Local
<u>Priority</u>	В

## Description and Evaluation of Area

The samll marsh at the south end of this lake includes <u>Carex elongata</u> (a sedge) among its flora. This is a rare species restricted to the upper part of the Erne catchment and to Lough Neagh. It has not been found at any other site in Leitrim. Its presence suggests that other unusual organisms may occur here also.

## Vulnerability and Recommendations

Lowering of the lake level or intensive trampling and grazing by cattle are the only significant threats to the community in which the sedge occurs. Since the catchment of this lake is very small it would be possible to leave it undrained even if the adjacent water tables were lowered. This is recommended. MAP SHOWING AREA OF SCIENTIFIC INTEREST – Scale: 6 Inches to 1 Mile

2521



73.