

**The National
Institute
for Physical
Planning and
Construction
Research**

CONSERVATION AND AMENITY
ADVISORY SERVICE

A PRELIMINARY REPORT ON AREAS
OF SCIENTIFIC INTEREST IN
COUNTY SLIGO

R. Goodwillie,
Research Assistant,
An Foras Forbartha.

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St. Martin's House
Waterloo Road
Dublin 4

COSAC - The National Council for Sport and Physical Recreation

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This report is based on data abstracted from the files of the Conservation Unit, An Foras Forbartha, from the published literature and from several periods of field observations in November, 1972 - January, 1972. It is a provisional document subject to future research.

The report consists of the following parts:-

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SECTION A

PREFACE

This report concerns country-planning. It should enable the County Council to pick out those areas that are important on a national or local level and whose conservation can be based on strong grounds, either scientific, educational or amenity. The Conservation and Amenity Advisory Service is attempting to identify a representative range of natural and semi-natural habitats throughout Ireland and also to list sites of special significance, usually containing a rare species or a rare natural phenomenon. Around these areas development can proceed with relative impunity, once amenity and waste-disposal problems have been surmounted. It may be stressed that the amount of land available is such that development will very seldom mean the impoverishment of the national heritage, if it is properly planned. On the contrary, in particular examples it will allow more people to obtain meaningful recreation in the countryside.

However, conflicts will arise in scenically attractive areas where some or all of the elements of water, hills, woodland and rock are combined to make a desirable landscape, sought after by housing or recreational interests. At the same time such places often contain communities of plants and animals interesting because of their isolation from rural or urban development. Usually it will be possible to compromise between the opposing forces but occasionally development will have to be curtailed to preserve the scientific interest in an area.

Conservation of natural communities may be important for amenity, scientific or recreational reasons or any combination of the three. Frequently, the natural vegetation of an area gives to it a characteristic atmosphere, an indefinable value but very real to those who walk or drive through it. Diversity is the key quality of the environment that attracts people to an area or that makes them find relaxation there: the contrast between cultivation and wilderness, between water and land or between trees and grass. Fortunately, diversity is also the sine qua non of rich biological communities.

Examples of all habitats must be preserved for scientific research. Uncultivated areas are essential as reservoirs for organisms that may be useful for soil conditioning or pest control in the future. Quite apart from their inherent interest and complexity they are needed also as control areas. Without them it would be impossible to judge the effectiveness of, or to improve man's attempts at land management. For example, how can pollution be controlled if no unpolluted watercourse or lake remains in which to decipher the natural breakdown processes? Or how can the great productivity of marshes and seasonally flooded land be harnessed, if no natural swamps are left? Finally, how can cutover bog be best used for tree growing if no natural self-sustaining bog community or no wooded peaty areas exist? These questions are of growing importance in a competitive world that demands efficiency and an optimum level of food production compatible with little damage to the ecosystem.

In education, field studies of all sorts are of immense value, and biological field studies are a stimulus that many other disciplines envy. Natural communities provide some of the clearest expositions of the ecological principles that operate through all growing and harvesting methods. In addition, there is the challenge of identifying and getting acquainted with numerous and very different species. Field work attracts practically all children at some stage and enables everyone to better appreciate being in rural surroundings. Already, since the introduction of biology teaching, there is greater awareness of the environment and interest in wildlife. Such constructive recreation should be encouraged by the maintenance of variety in the countryside.

It is the intention of this survey to encourage the use of the countryside by drawing attention to scientifically interesting places. All of those mentioned can support much greater numbers of people - less so in certain cases of marshes and bogs, or at certain times of the year. But the carrying-capacity of each site will eventually have to be analysed. How much recreational use can co-exist with a nesting wildfowl population? How many people can walk a woodland floor without damaging the plant cover?

Or what number of trees can be felled each year while preserving the attractive features of the wood? The idea of preserving any but the smallest areas intact and without change is unrealistic and multiple use should be encouraged. Many of the areas would respond to sound management and become much more productive. The majority of the sites listed are now productive in the crude sense of producing fish, game birds or timber. All are productive if they encourage people to visit the area and make use of services nearby, and we believe that all contribute to the relaxation, mental health and happiness of the community, especially the generation of town-dwellers that now form most of our nation.

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, and would damage Bunduff and Templehouse Loughs significantly. With the larger lakes the damage would be temporary, until the present shore communities 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. 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 degradation. 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. This would be especially damaging on sand dunes and the Council in its capacity to preserve open spaces must show its concern where overgrazing is occurring.

The last influence to be mentioned is that of public pressure on land which deserves a place for its destructive aspects of plant or animal collecting and overuse of fragile systems, especially sand dunes. Though dune erosion and movement are natural processes, equally natural is the repairing action of plant growth and the migration of foredunes to fill gaps. These latter processes are those prevented by public overuse which therefore aggravates erosion.

SECTION C

INTRODUCTION: THE AREAS OF SCIENTIFIC INTEREST IN CO. SLIGO & THEIR CONSERVATION.

The outstanding geological feature of Co. Sligo is the limestone plateau formation in the north-east. The type of landform here is unique in Ireland: it has outliers across Sligo Bay in Knocknarea and further south in Keshcorra and the Bricklieve Mountains. The latter lie on lowland drift-covered limestones which otherwise give to the southern part of the county a central plain character. They are cut off from the rest of the limestone mountains by the granite ridge of the Ox Mountains which extend north-eastwards to the south shore of Lough Gill. North of this range the limestone lowlands reappear and this area supplies several of the geological sites mentioned in the report.

The richest mountain flora in Ireland is associated with the cliffs of the Dartry Mountains and is almost equally shared by Sligo and Leitrim. Here many rare species grow in abundance including mosses, ferns, and higher plants. In such a rich community there is also likely to be a diverse invertebrate fauna but little work has been done on it. The cliff area is of such value that it is essential that some measure of protection is given to it. A Conservation Order would remove somewhat 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 important in showing the way to the protection of a vulnerable but neglected part of the natural heritage.

The same flora, but reduced in variety, occurs on the south side of Glencar, and further reduced on Keshcorran and the Bricklieve Mountains while a related but acidic community is found on Knockacree in the Ox Mountains. The Bricklieve range forms an important unit of unusual amenity value. It has a complex topography, interesting and rich plant communities, and includes a well-known prehistoric settlement. The fact that it is largely grazing land without forestry development gives it a further distinctive

character. In many respects the area is ideal for consideration as a national park, or area of special amenity.

Several areas of woodland are included in the report. Most of them are controlled by the forestry division and discussion over them should be initiated by the council. In some there is a danger of underplanting with conifers and in this case a conservation order could be made. In the smallest ones, especially Knocknarea Glen a Tree Preservation Order would be as effective.

Co. Sligo has a rich hedgerow flora, especially close to Lough Gill and in the rest of the northern part, and this should be realised in any scheme of roadside management. Spraying the verges in this, or in fact in any area is most damaging and cutting is preferable to maintain as much diversity as possible. If no traffic hazard is involved mowing should be seriously questioned as natural verges are in many ways the most attractive.

The verges and hedges around L. Gill with the frequent patches of woodland give to it a wooded appearance unlike anywhere else in the country and it is essential to preserve this. To make the lake and its environs an Area of Special Amenity would show that the Council was firmly committed to preserving its character. Such an order should be made before it is forced upon the Council by the pressure of planning applications. Most Irish people think of a holiday 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 will be much greater demands for housing in the area.

Sand dunes pose one of the greatest conservation problems in the county, as many of the systems are eroding. A large part of this damage stems from overgrazing either now or in the past. It is perpetrated by recreational use at Strandhill and at Rosses Point may have been initiated by it. To

deal with the problem effectively each dune system should be treated as a unit in order not simply to divert the problem to a different area. Management will include some restrictions of grazing and of public access as people prefer to walk on the bare eroding areas than on the intact vegetation. Such areas then have no chance of attaining an aerodynamically stable shape and consequently of being revegetated. Controls may be more easily made if the dune systems are already areas of special amenity while grazing controls might require a Conservation Order. It would be much more desirable to come to an agreement with the owner of the grazing rights at Inishcrone but action is essential at this stage if they are to survive.

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 knowledge. The developer did not know that his chosen site had any scientific 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 environment. A developer would be inclined to work more closely with the planning authorities: rather than against them.

As a first step the landowners should, in almost all instances, be told of the importance of their land. 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, eg. the possibility of a co-operative scheme on a different piece of land and in the case of recreational building, clustered development separated by natural areas, should be favoured.

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.

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,
3. 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.

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 SCIENTIFIC INTEREST IN COUNTY SLIGO

Name of area (page no. in text)	Grid reference	Rating	Priority	Scientific interest
Ben Bulbin uplands p 16	G. 69, 43	International	B	Ecological; botanical. High level communities; many alpine and arctic-alpine species, including higher and lower plants.
Streedagh Point p 20	G. 63, 51	National	A	Geological; Critical rock section exposed
Cullenamore p 23	G. 60, 36	National	A	Geological; Raised beach and oyster bank in position of growth
Union Wood p 25	G. 68, 28	National	B	Botanical; ecological. Well-developed oak woodland. Interesting lower plants.
Serpent Rock p 28	G. 56, 45	National	C	Geological; Critical Carboniferous rock section
Ballygilgan (Lissadell) p 30	G. 64, 44	National	A	Ornithological; Mainland wintering area for barnacle geese
Bonet R. wood p 33	G. 78, 34	National	B	Botanical, ecological. Herb rich natural woodland on limestone and gneiss
Lough Gara p 36	G. 71, 00	Regional	B	Ornithological, botanical. Wildfowl wintering area. Also nesting populations. Shore communities of interest
Inishmurray p 40	G. 57, 54	Regional	C	Ornithological. Important for breeding and wintering species of birds

Name of area	Grid reference	Rating	Priority	Scientific interest
Templehouse L. p 42	G. 62, 17	Regional	B	Ornithological. Wildfowl wintering and nesting area
Slish wood fringe p 45	G. 75, 33	Regional	B	Botanical. Lakeside fringe of interesting woodland but including some planted species. Rare lower plants
Aughris Head p 48	G. 50 37	Regional	C	Geological. Lower Visean (Carboniferous) rocks including a fossil fauna
Mullaghmore area p 50	G. 69, 56	Regional	C	Geological. Type area for a sandstone. Also structural variety
Inishcrone spit p 52	G. 26, 29	Regional	A	Botanical, ecological. Very varied dune flora including calcareous marshes. Badly eroded in part.
Glencar cliffs p 56	G. 73, 41	Regional	C	Botanical, ecological. Cliff communities resemble those of Ben Bulbin. Some different species
Ballisadare Bay p 58	G. 6, 3	Regional	C	Ornithological, botanical, zoological. Important feeding area for wildfowl and waders. Interesting plant and animal species.
Belvoir and Stony Point p 60	G. 713, 328	Regional	B	Botanical. Interesting native tree species occur by lake.
Bricklieve Mts. and Keshcorran p 63	G. 71	Regional	C	Geological, botanical. Karst topography well developed. Outlier of Ben Bulbin flora.

Name of area	Grid reference	Rating	Priority	Scientific interest
Strandhill dunes (Carrowdough) p 67	G. 59, 34	Regional	A	Ecological, botanical. Eroding dune system mostly ungrazed Some unusual species
Abbeytown mine p 70	G. 66, 30	Regional	B	Geological. Minerals occur in lower Carboniferous limestone
Ardboline I. p 72	G. 55, 44	Regional	C	Ornithological. Large nesting colony of some seabirds. Some barnacle geese winter in area
Knockachree cliffs p 74	G. 52, 28	Regional	C	Botanical. Reduced alpine flora on gneiss
Knocknarea Glen p 77	G. 63, 34	Regional	B	Botanical, ecological. Ash woodland in dry valley. Great luxuriance of lower plants, including rare species
Easky River p 80	G. 38, 36	Local	B	Botanical, ecological. Calcareous marsh community with rare species. Woodland important for nesting bird species
Bunduff L. p 83	G. 72, 56	Local	A	Ornithological. Wintering wildfowl include geese
Deadman's Pt. (Rosses Point) p 86	G. 62, 39	Local	A	Ecological. Unusual grassland type in small area on limestone
Cummeen Wood p 89	G. 64, 36	Local	C	Ecological, botanical. Naturally recolonised by hazel wood. Almost all native species
Colgagh Lough p 92	G. 74, 35	Local	C	Ecological. Limestone marl lake unusual in this area

Name of area	Grid reference	Rating	Priority	Scientific interest
Derinch Island p 95	G. 60, 30	Local	B	Ecological. Interesting aquatic site with varied marsh communities
'Ardtermon fen' p 98	G. 588, 436	Local	B	Ecological. Calcareous and acidic marsh floras mixed
Doonee Rock p 101	G. 72, 32	Local	A	Ecological. Accessible limestone outcrop by Lough Gill with characteristic flora
Dunneill R. below Dromore West p 104	G. 43, 34	Local	C	Geomorphological, botanical. Water-cut gorge with shade communities
Rinn p 106	G. 62, 36	Local	B	Geological. Raised beach feature
Lough Arrow (parts) p 108	G. 71	Local	B	Ornithological. Wildfowl breeding and wintering areas
Horse Island p 110	G. 56, 45	Local	C	Ornithological. Small seabird populations including shags. Visited by barnacle geese
(Raghy) Yellow strand p 111	G. 57, 44	Local	B	Ecological. Shell sand blown inland, has interesting plant communities
Wood near Five mile Bourne p 114	G. 77, 45	Local	C	Ecological. Good example of hazel wood with rich ground flora

SECTION F

<u>Name of Area</u>	BEN BULBEN UPLANDS
<u>Acreage</u>	c. 3450 acres
<u>Grid Reference</u>	G 69 43
<u>Scientific Interest</u>	Ecological, botanical, geological
<u>Rating</u>	International
<u>Priority</u>	B

Description of Area

Ben Bulben and the Dartry Mountains are basically a plateau of carboniferous limestone capped on places by shales and more recently by a covering of peat. The mountains are surrounded by cliffs varying from 30-500 feet in height and below this level a steep slope of block scree occurs at an angle of 40-50 degrees. This is usually vegetated.

The type of erosion giving rise to this landform (mesa-type) is of interest as are the upper viséan reefs exposed in the cliffs and on some of the summits. This region is also the type locality for the Ben Bulben shale, Glencar Limestone, and Dartry limestone.

For ecological and botanical interest the cliffs, especially those in the Gleniff Valley, are of chief importance. A wide variety of alpine plant species occur and they are of such abundance in places as to give rise to a distinct community.

The higher plants of interest include:-

<i>Cystopteris fragilis</i>	Brittle bladder fern
<i>Polystichum lonchitis</i>	holly fern
<i>Asplenium viride</i>	green spleenwort
<i>Hymenophyllum wilsonii</i>	filmy fern
<i>Juniperus communis</i>	juniper
<i>Taxus baccata</i>	yew
<i>Thalictrum minus</i>	meadow-rue

<i>Thalictrum alpinum</i>	alpine meadow-rue
<i>Meconopsis cambrica</i>	welsh poppy
<i>Arabis hirsuta</i>	hoary rock-cress
<i>Draba incana</i>	hoary whitlow grass
<i>Silene acaulis</i>	mossy campion
<i>Arenaria ciliata</i>	fringed sandwort
<i>Rubus saxatilis</i>	stone bramble
<i>Dryas octopetala</i>	mountain avens
<i>Epilobium angustifolium</i>	fireweed
<i>Rhodiola rosea</i>	roseroot
<i>Saxifraga oppositifolia</i>	purple saxifrage
<i>S. nivalis</i>	alpine saxifrage
<i>S. aizoides</i>	yellow mountain saxifrage
<i>S. hynoides</i>	mossy saxifrage
<i>Campanula rotundifolia</i>	harebell
<i>Oxyria digyna</i>	mountain sorrel
<i>Polygonum viviparum</i>	viviparous bistort
<i>Salix phylicifolia</i>	a willow
<i>Leucorchis albida</i>	small white orchid
<i>Carex bigelowii</i>	a sedge
<i>Sesleria caerulea</i>	blue moor grass
<i>Koeleria cristata</i>	crested hair-grass
<i>Poa alpina</i>	alpine meadow grass
<i>Festuca vivipara</i>	a fescue

Several maritime species, eg. *Silene maritima*, (bladder campion) *Cochlearia officinalis* (scurvey grass) and *Plantago maritima* (sea plantain) also occur on the cliffs while the peaty summits bring in *Listera cordata* (lesser twayblade) *Empetrum nigrum* (crowberry) etc.

The bryophytes are no less interesting and the area has been visited by many expeditions. Species of *Timmia*, *Encalypta*, *Mnium*, *Amblystegium*, *Reboulia*, *Blasia* and *Madotheca* are among the more important species to occur.

Associated with these high-level communities it may be expected that many interesting invertebrates occur, including spiders and a variety of insects. No work has as yet been done here.

Evaluation

This plateau area and its extension into Leitrim has been called "botanically the richest in Ireland". It certainly is the best example of a high level community in the country containing strictly alpine or arctic-alpine species. For one or two species it is the only station in Great Britain or Ireland and several others are recorded nowhere else in this country.

Vulnerability

The cliff communities have been restricted to these sites by grazing and competition with the other plants and are thus secure from everything but unscrupulous collectors.

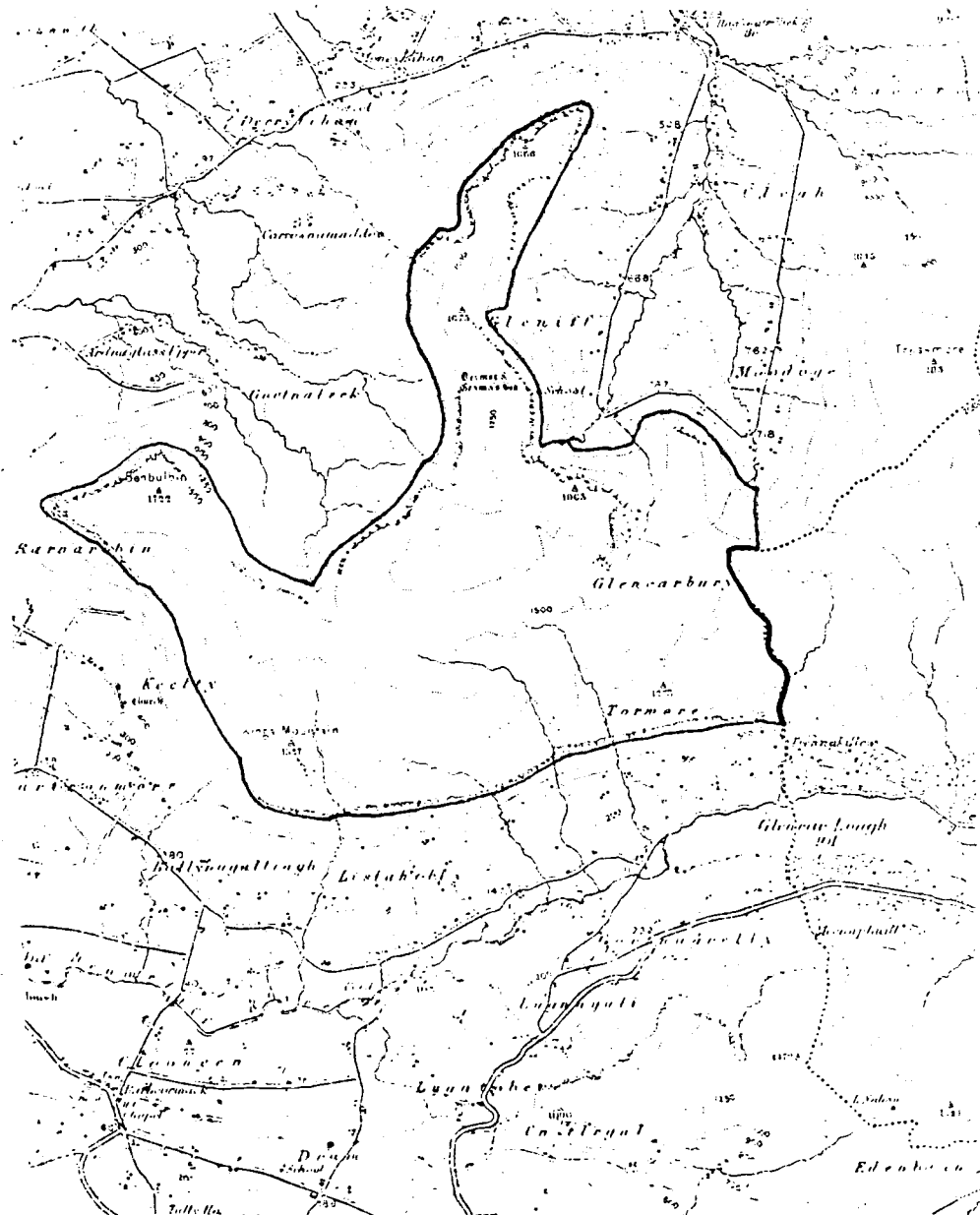
Recommendations

Land use should remain in its present form. The status of the area should be recognised by the passage of a Conservation Order on the cliffs and land above. In the event of destructive collecting some powers would then be available for its prevention.

In the context of amenity a clear aim should be to limit afforestation to only the lowest slopes of the mountains and to prevent it on the more visible ones. Part of the scenic attraction of the area covers from the clear, angular lines of the mountains and the present colouring of the talus slopes below the cliffs. Both would be concealed by forestry plantations.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 inch to 1 mile



The area is enclosed by the 1250 ft contour except in Gleniff where the lower limit is at 900'.

<u>Name of Area</u>	Streedagh Point
<u>Acreage</u>	344 acres
<u>Grid Reference</u>	G 63 51
<u>Scientific Interest</u>	Geological; Ecological
<u>Rating</u>	National
<u>Priority</u>	B

Description & Evaluation

The Streedagh Point sucession is identical to the lower part of Serpent Rock. It too contains very abundant caninoid(coral) fossils but many other species also. The rock types include argillaceous limestones, olitic limestones, conglomerates and thin cherty bands. The ecological interest stems from the slightly unusual structure of the sand dunes and shore communities. These appear to be based on a shingle spit which runs north-east up to Conor's Island. Along the beach a storm beach appears to line the base of the sand-dunes while in the dune-stack areas, shingle is again exposed. This means that they are relatively dry. The sand-dunes support a typical flora including winter annuals, mosses and perennials but no peculiar feature has yet been found in it.

Close to Streedagh Point a short turf, sloping towards the sea, is composed of Festuca ovina (sheep's fescue) with much Armeria maritima (sea pink), Anagallis tenella (bog pimpernal) and Primula vulgaris (primrose). It is a fine example of the oceanic conditions prevailing with moisture loving plants growing in an otherwise dry habitat. Otherwise, the sand-dunes would be considered as only of local importance.

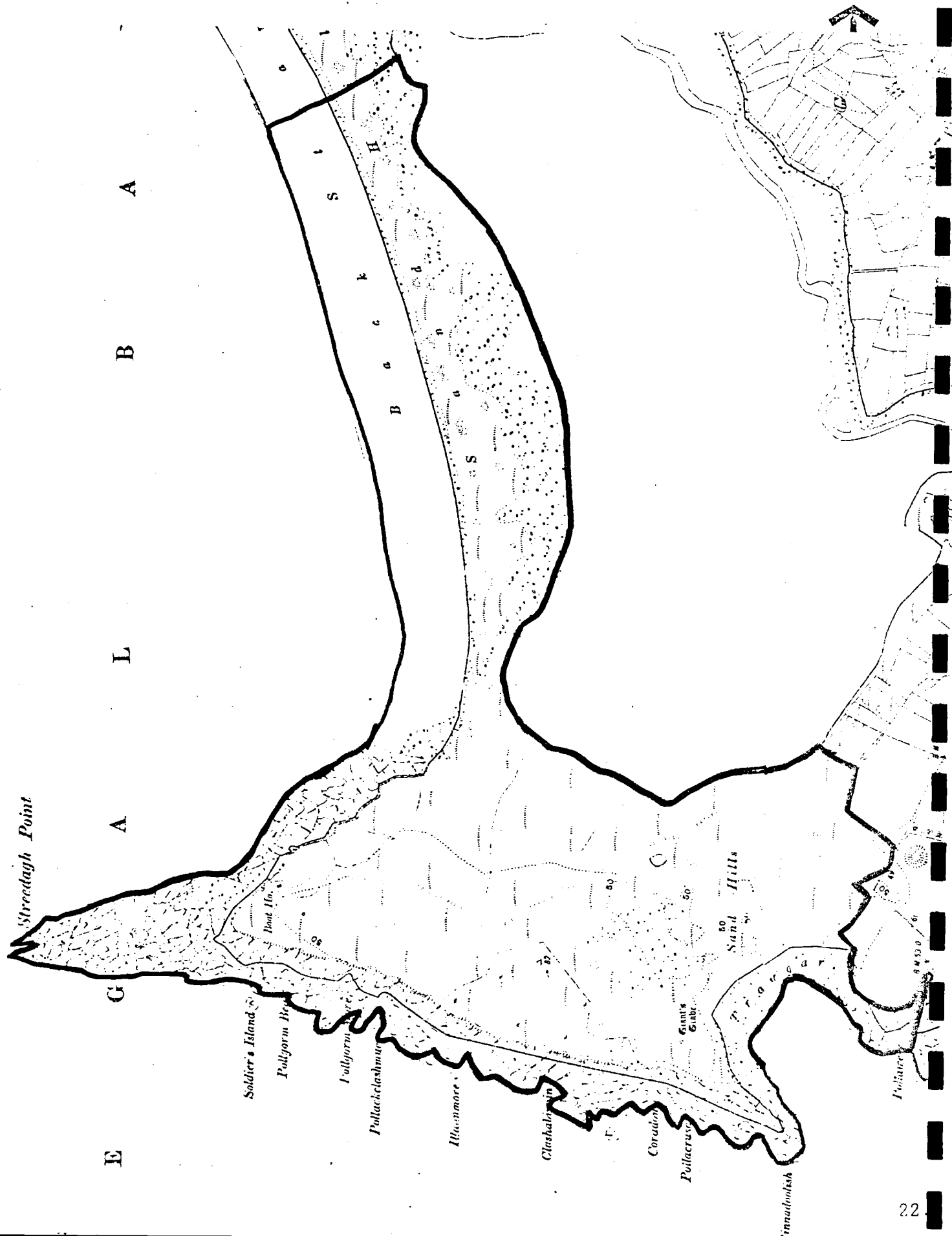
Vulnerability and Recommendations

This area is more accessible than Serpent Rock so is consequently in greater danger from student and other visitor damage. Pointless attempts at fossil collection should be similarly discouraged(see page 28).

The amenity value of the area suggests that little if any development should be allowed on the sand-dunes. It is completely visible from the mainland and development should be restricted to the mainland shore.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	Culleenamore
<u>Acreage</u>	17.8 Acres
<u>Grid Reference</u>	G 60 36
<u>Scientific interest</u>	Geological- zoological
<u>Rating</u>	National
<u>Priority</u>	A

Description of Area

This is the site of a post-glacial oyster-bed with the shells still in the position of growth. They now form a low cliff about 4 feet in height at the back of the beach and the feature is a striking example of a fall in sea-level (a raised beach) in the quite recent past.

Evaluation

This is an important site for the investigation of sea level changes and for the evidence it gives of oyster growth before the influence of modern man. It is one of a series of similar features on the west coast and may be the most significant.

Vulnerability

The shell deposit is not consolidated and so is easily damaged by movements or digging on its surface. It might be removed as a source of lime.

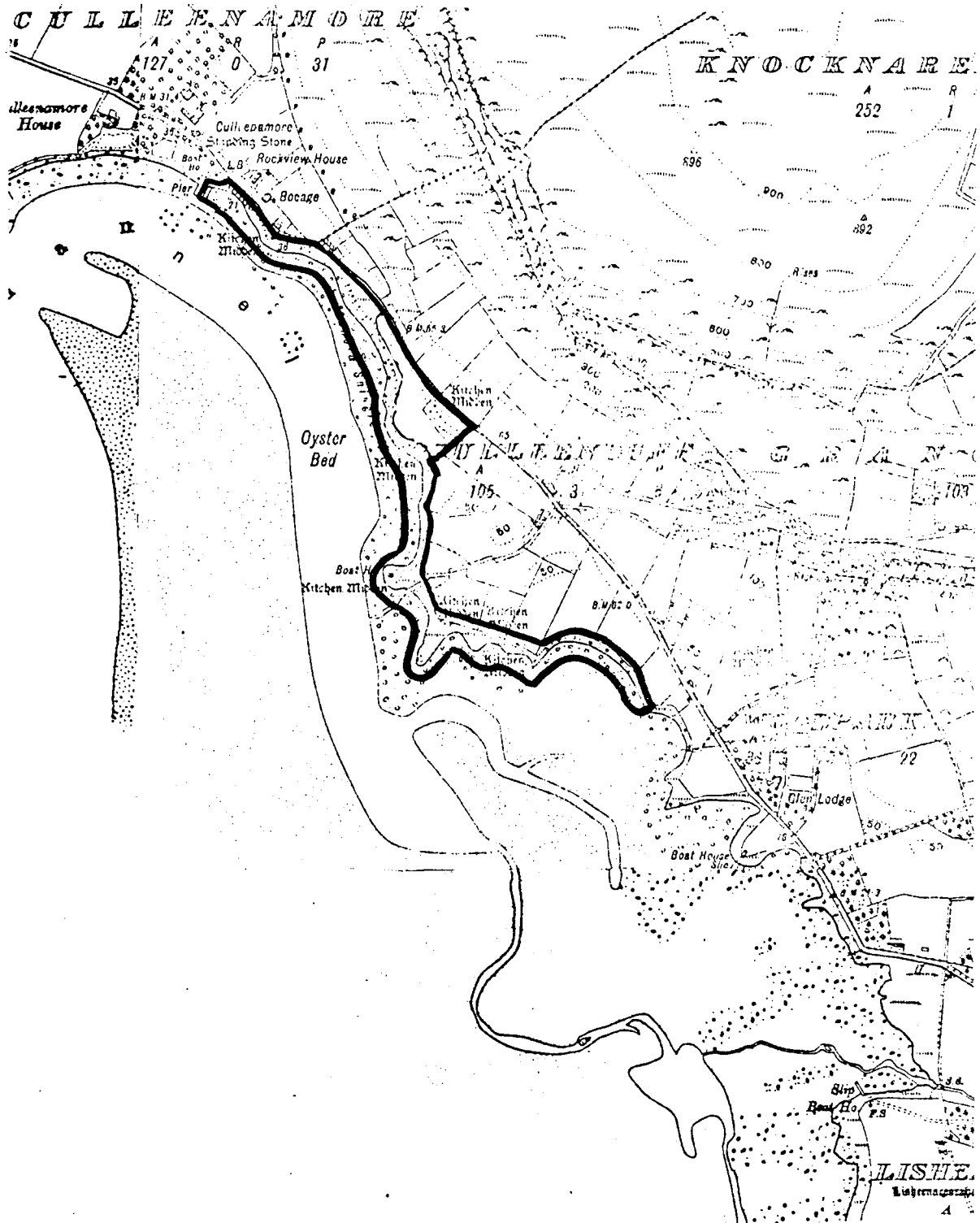
Recommendations

No development should be allowed in this area nor access over it.

The holiday chalets must be prevented from spreading onto the site, but grazing may continue.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	UNION WOOD
<u>Acreage</u>	70 acres
<u>Grid Reference</u>	G 68 28
<u>Scientific Interest</u>	Botanical, ecological
<u>Rating</u>	National
<u>Priority</u>	B

Description of Area

This is an area of well-grown oak trees mixed some Sorbus aucuparia (rowan) of large size and Betula pubescens (birch). A few Fraxinus excelsior (ash) trees occur in hollows in the rocky slope. The understorey is open with a few large hollies and some Corylus (hazel). Little regeneration is taking place but holly seems to be spreading.

The ground flora is typical of acid soils, in this case based on gneiss. Luzula sylvestris (woodrush) is abundant and is the main ground cover plant, with a little Vaccinium myrtillus (frochan) and Erica cinerea (bell heather). In these other species occurred, eg.:-

<u>Oxalis acetosella</u>	wood sorrell	c
<u>Endymion non-scripta</u>	bluebell	f
<u>Stellaria holostea</u>	greater stitchwort	f
<u>Vicia sepium</u>	bush vetch	f
<u>Blechnum spicant</u>	hard fern	f
<u>Dryopteris aemula</u>	crinkled buckler-fern	f
<u>D. dilatata</u>	broad buckler-fern	o
<u>D. borrieri</u>	male fern	o
<u>Athyrium filix-femina</u>	lady fern	o
<u>Digitalis purpurea</u>	foxglove	o
<u>Pteridium aquilinum</u>	bracken	lf
<u>Deschampsia flexuosa</u>	wavy hair-grass	lf

Dicranum majus)	
Polytrichum formosum)	
Mnium hornum)	Mosses and
Plagiothecium undulatum)	liverworts
Calypogeia asplenoides)	

The trunks and rocks are richly covered in bryophytes and lichens; the latter include Lobaria spp. Ramalina, Physcia, Parmelia etc.

Evaluation

With the destruction of Slish Wood except for a narrow fringe, the present area is the most important oakwood known in the County. It is a good example and contains many oceanic species. Further investigation of the lichen flora might produce interesting species but the open character makes this uncertain. The site forms an important link in the western Irish series.

Vulnerability

The land is managed by the Forestry Division so a potential threat is its clearance or underplanting with conifers. In addition Rhododendron grows in a few places.

Regeneration is probably prevented by grazing by fallow deer but other factors may apply.

Recommendations

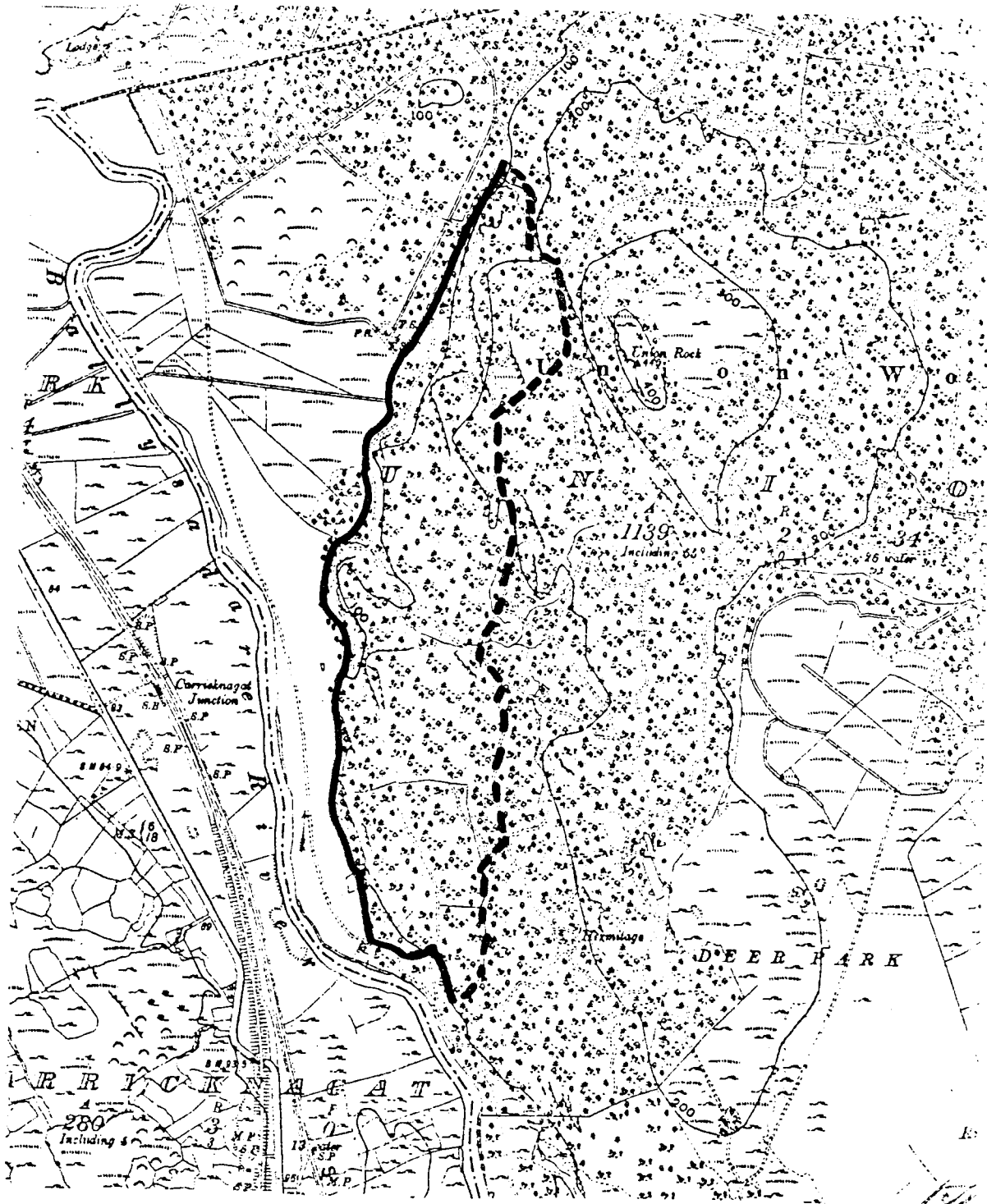
This section of Union Wood should be covered by a Conservation Order. It is felt that the Department of Lands would agree with this move, in view of their more enlightened recent policy on native hardwoods.

Regeneration must be encouraged if the wood is to survive in any natural form.

Rhododendron must be eliminated from the important areas and periodic checks made on any tendency for it to re-invade.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



The area shown includes some conifer blocks. Its eastern margin has not yet been accurately mapped

<u>Name of Area</u>	Serpent Rock
<u>Acreage</u>	158 acres
<u>Grid reference</u>	G 56 45
<u>Scientific Interest</u>	Geological
<u>Rating</u>	National
<u>Priority</u>	C

Description & Evaluation

At Serpent Rock the most complete section of the NW carboniferous strata is exposed. It is thus one of the critical sites for geological research in this area. An excellent fossil series of caninoid corals is found and these stand out of the underlying work in places making them very attractive to collectors.

Vulnerability

This area is not suitable for coastal development and much of the section is inaccessible to the average person. However, at the present access points, substantial damage is done to the fossils by people trying to extract them. This it is impossible to do with ordinary equipment.

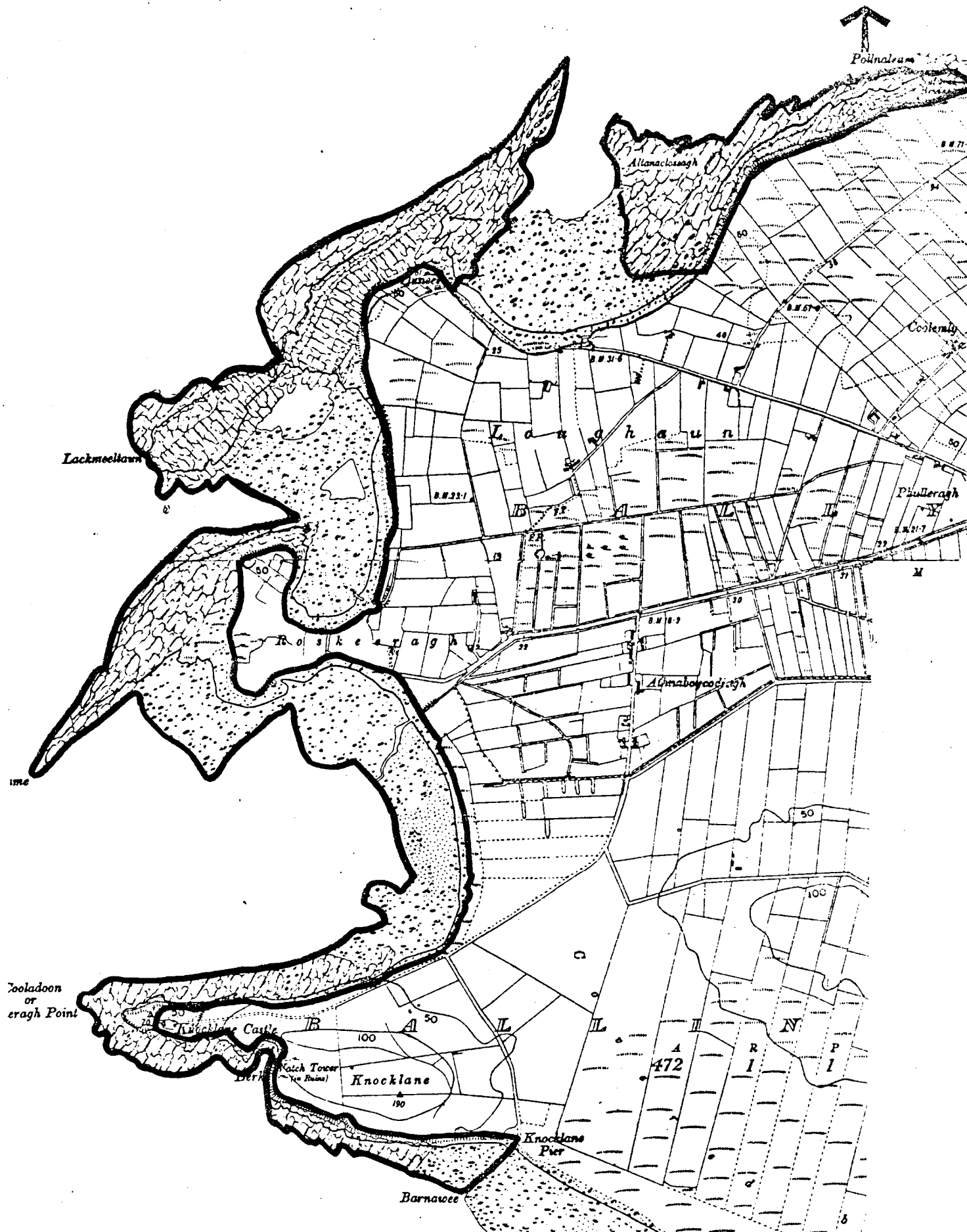
Recommendations

In view of the number of people who visit the area and its local reputation for fossils an effort should be made to prevent their needless destruction. A notice could be erected, not to draw attention to the area, but to discourage people already there from damaging the fossils.

On such a notice the origin and a description of the corals could be given, and it should be pointed out that they are irreplaceable and cannot be taken out with hammers etc. without being broken.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of area</u>	Ballygilgan (Lissadell)
<u>Acreage</u>	70 acres
<u>Grid reference</u>	G. 64, 44
<u>Scientific interest</u>	Ornithological
<u>Rating</u>	National
<u>Priority</u>	A

Description of area

The fields consist of normal grassland species: a Festuca - Anthoxanthum - Holcus sward (fescue - sweet vernal grass - Yorkshire fog) with abundant and increasing weed species, especially Cirsium arvense and C. vulgare (Thistles). The other species include:-

Trifolium pratense	red clover	c
T. repens	white clover	f
Cynosurus cristatus	crested dogs tail	c
Rumex acetosa	sorrel	c
Veronica chamaedrys	germander speedwell	o
Equisetum arvense	field horse tail	o
Potentilla anserina	silverweed	lf.
Lolium perenne	rye grass	f
Myosotis arvense	forget-me-not	o

In one place, a linear hollow which is probably flooded in winter was vegetated with a different community e.g.

Ranunculus repens	creeping buttercup	f
Carex hirta)	f
C. nigra) sedges	
Alopecurus pratensis	meadow foxtail	c
A. geniculatus	marsh foxtail	f
Eleocharis palustris	spike rush	o
Cardamine pratensis	lady's smock	o
Polygonum amphibium	amphibious persicaria	f

Phalaris arundinacea	reed grass	o
Juncus effusus	soft rush	o
Veronica beccabunga	brook lime	r
Rorippa microphylla	water cress	r
Stellaria alsine	bog stitchwort	r

These fields form a mainland wintering area for barnacle geese and numbers vary from 250-400 in most winters.

Evaluation

Ballygilgan is the only regular wintering area of barnacle geese on the mainland in the whole of the west of Ireland and is thus of great educational value. It is easily accessible, unlike the North slob in Wexford which sometimes contain barnacles, and it is also close to Sligo.

Though not of national importance to the maintenance of goose population, the fact that 93% of barnacles winter on offshore islands makes this mainland haunt of great value.

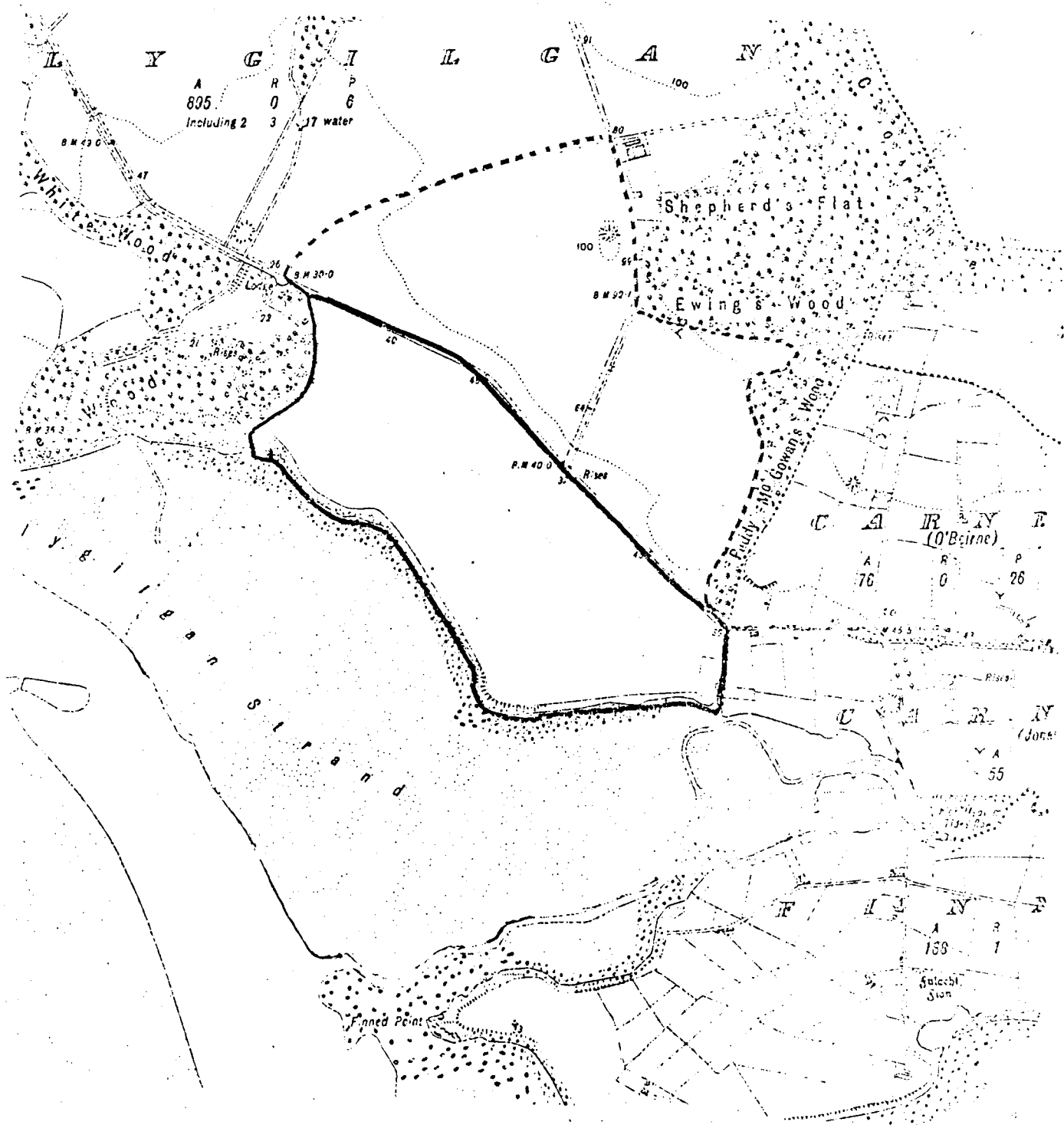
Vulnerability

The geese are susceptible to disturbance of all sorts and efforts should be made to restrict this. They also would be affected by alterations of the agricultural use of the area.

Recommendations

The site is already a no-shooting area by order of the Minister for Lands. It should be further protected from development by a Conservation Order, made under Section 46, Local Government (Planning and Development) Act, 1963. In this way new building could be prohibited, as could drastic change in agricultural use. The fields should be kept in permanent pasture with adequate stocks of clover. Some control of thistles is advisable. Development in the surrounding area should be subjected to close study and housing must not be allowed to encroach upon it. This is especially important east and north of the area which should be treated as a buffer zone.

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	BONET RIVER WOOD
<u>Acreage</u>	23 acres
<u>Grid Reference</u>	G78 34
<u>Scientific Interest</u>	Botanical, ecological
<u>Rating</u>	National
<u>Priority</u>	B

Description of Area

What remains of this wood is a fringe along the river and lake shore to the inlet. Mostly based on deposited silt from the river and on limestone the wood is floristically rich with an open canopy of ash, oak and hazel. Close to the river the trees attain large size but they are progressively wind shorn as exposure becomes greater. The ground vegetation includes the following species, among others.

Endymion non-scripta	blue bell
Primula vulgaris	primrose
Carex remota	a sedge
Anemone nemorosa	wood anemone
Oxalis acetosella	wood sorrel
Sanicula europaea	wood sanicle
Ranunculus auricomus	goldilocks
Veronica chamaedrys	germander speedwell
V. montana	wood speedwell
Arum maculatum	cuckoo pint
Viola riviniana	violet
Orchis mascula	early purple orchid
Luzula sylvestris	woodrush
Solidago virgaurea	goldenrod
Alliaria petiolata	garlic mustard
Neottia nidus-avis	birds-nest orchid

A limestone cliff beside the lake allows Sorbus rupicola (whitebeam) and Taxus baccata (yew) to grow while the lake shore flora includes Eupatorium cannabinum, Circaea intermedia (enchanters nightshade) and Scutellaria galericulata (skull-cap).

A sharp geological transition to the base-poor gneissic rocks is matched by a change in woodland type. The trees become mostly oak and birch with holly as an understorey while the ground flora is restricted to Vaccinium myrtillus (frochan), Blechnum spicant (hard fern), Dryopteris aemula (crinkled buckler-fern), D. dilatata (broad buckler fern), Oxalis and Endymion.

Evaluation

This is a most interesting area that shows many ecological processes excellently, especially the control of vegetation by the underlying rock. The flora is rich and it would seem to be the most herb-rich woodland in the county. A lack of disturbance in the lakeside fringe creates semi-natural conditions with adequate regeneration.

Vulnerability

Coniferous planting has encroached on the majority of the area so that the wood is at most a fringe on the sloping ground by the lake.

Underplanting must therefore be seen as a threat to the area as it often happens sometime after the main period of planting.

Recommendations

Agreement should be sought with the forestry division to maintain the present area of deciduous woodland.

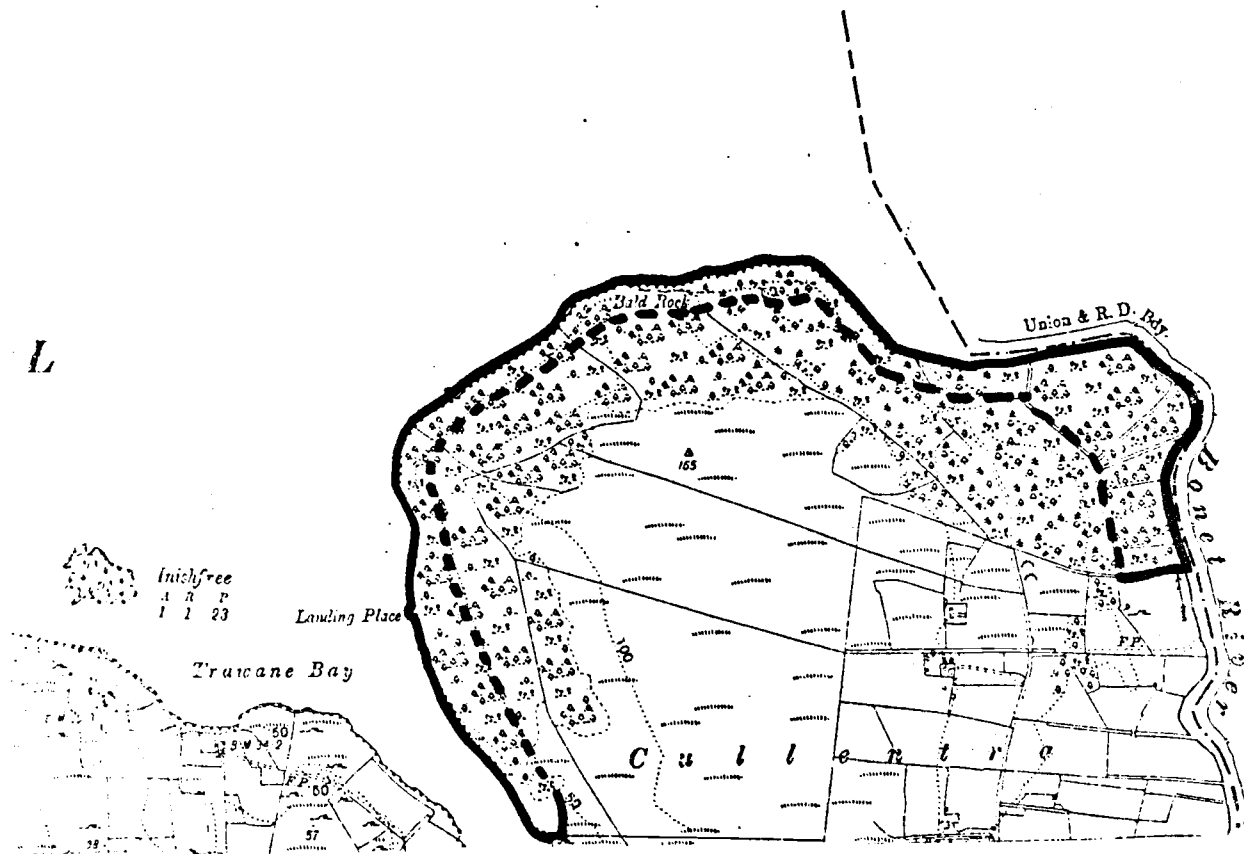
The area fully deserves a conservation order under Section 46, Local Government (Planning & Development) Act, 1963. This would preserve it from unscrupulous exploitation.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



L



<u>Name of Area</u>	LOUGH GARA
<u>Acreage</u>	c. 2300 acres
<u>Grid Reference</u>	G 71 00
<u>Scientific Interest</u>	Ornithological, Botanical
<u>Rating</u>	Regional
<u>Priority</u>	B

Description of Area

Lough Gara is surrounded by flat shores, either well-drained and stony or bog-covered. Lowering of the lake level has resulted in large areas of newly colonised lake-bed. This now includes extensive areas of Eleocharis palustris (spike-rush) in the wetter parts with:-

Carex rostrata	bottle sedge
C. nigra	a sedge
C. lepidocarpa	a sedge
Ranunculus flammula	lesser spearwort
Mentha aquatica	water mint
Caltha palustris	marsh marigold
Cirsium dissectum	meadow thistle
Pedicularis palustris	red rattle
Galium palustre	marsh bedstraw
Samolus valerandi	brookweed

Where the shore becomes peaty Equisetum palustre (horsetail), Potentilla palustris (marsh cinquefoil), Lythrum salicaria (purple loosestrife) and Hydrocotyle vulgaris (marsh pennywort) appear.

The drier parts of the shore are being colonized by a bushy vegetation including Salix (willows), hazel and hawthorn with fewer trees of oak, ash and holly. Hypericum androsaemum (tutsan), Melampyrum arvense (cow-wheat). Eupatorium cannabinum (hemp agrimony) Rosa sherardii (rose) and Epilobium angustifolium (rosebay willow-herb) are established here with some woodland herbs.

The flat stony shores have quite large patches of individual species, characteristic of an early stage of plant succession.

These include:-

<i>Salix repens</i>	creeping willow	l.c
<i>Festuca pratense</i>	meadow fescue	c
<i>F. rubra</i>	red fescue	c
<i>Briza media</i>	quaking grass	f
<i>Bellis perennis</i>	daisy	f
<i>Lotus corniculatus</i>	birdsfoot trefoil	l.f
<i>Tussilago farfara</i>	coltsfoot	f
<i>Leucanthemum vulgare</i>	dog daisy	f.
<i>Galium verum</i>	lady's bedstraw	c
<i>G. boreale</i>	northern bedstraw	f
<i>Linum catharticum</i>	purging flax	f
<i>Schoenus nigricans</i>	black bog-rush	f
<i>Trifolium repens</i>	white clover	f
<i>T. dubium</i>	yellow trefoil	f
<i>T. campestre</i>	hop trefoil	o
<i>Euphrasia brevipila</i>	eyebright	f
<i>Antennaria dioica</i>	pearly everlasting	o
<i>Parnassia palustris</i>	grass of Parnassus	o
<i>Achillea ptarmica</i>	sneezewort	o
<i>Rorippa palustris</i>	marsh yellow cress	o

Lough Gara is well-known as a wintering area for wildfowl and it contains large populations at times. Counts are shown below:

	1965	1967 (aerial survey)
Mute swan	12	
Whooper swan	66) 172
Bewick's swan	16)
White-fronted goose	120	160
Tufted duck	1,500)
Pochard	800)
Mallard	80) 500
Great crested grebe	6)

Other species also occur in small numbers. Many species breed on the lake; the islands have a large colony of lesser blackbacked gulls with a few herring gulls and common terns. Waders nest on the shore and these include snipe, lapwing, redshank, ringed plover and possibly curlew. Nesting wildfowl are thought to be few in number.

Evaluation

Lough Gara is the most important lake in Sligo for wintering wildfowl, and is also regionally important for its nesting birds.

It also has an interesting marginal flora including several species uncommon in the county.

Vulnerability

The lake would be damaged at least temporarily by further drainage but increased pollution is unlikely to affect the bird populations.

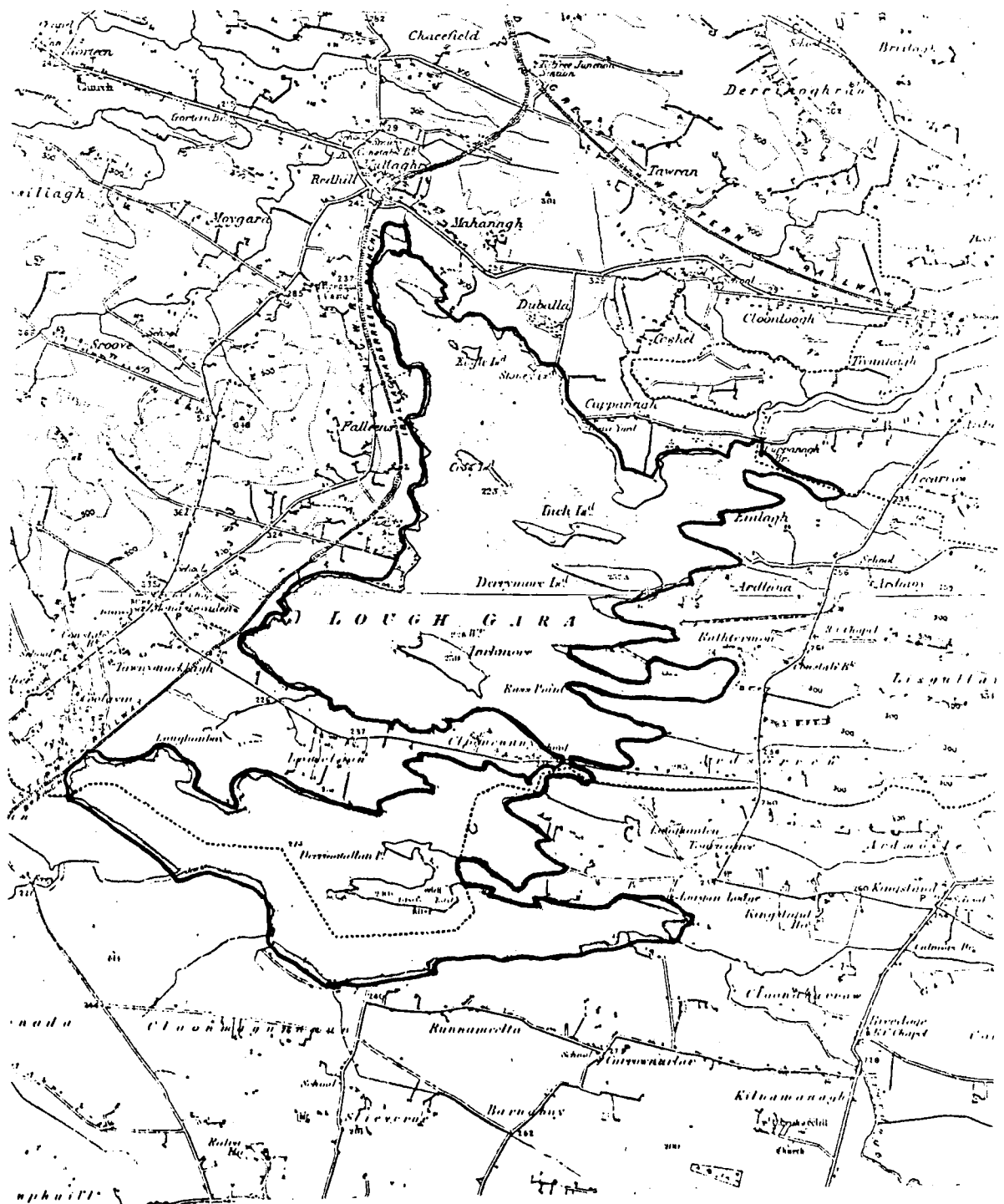
Enclosure and heavy grazing of the marginal vegetation is undesirable.

Recommendations

Land-use should be retained in its present form on the islands, especially Inch Island on which the geese mainly winter. Development should not be allowed close to the present shore of any part of the lakes for reasons of amenity and disturbance.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 Inch to 1 Mile



<u>Name of Area</u>	INISHMURRAY
<u>Acerage</u>	280 acres
<u>Grid Reference</u>	G 5754
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Regional
<u>Priority</u>	C

Description and evaluation

Inishmurray is a low-lying island of sandstone, now largely covered by acidic grassland. A fine close growing turf covers some parts with Trifolium repens (white clover), Festuca rubra (red fescue) etc. but most of the fields are filled with Juncus spp. Lythrum salicaria (purple loosestrife) Senecio aquatica (marsh ragwort) etc.

The island is most important from the ornithological point of view apart from its archaeological value. It has now a fairly large colony of nesting eider and also a tern population, including arctic tern. Eiders have only 3 - 4 colonies of similar size in Ireland and this is at the moment their southern nesting limit.

Inishmurray also supports a wintering flock of barnacle geese of 100 - 200 birds.

Vulnerability and Recommendations

The main threat to the bird population is disturbance and it is suggested that a close watch be kept on numbers of visitors to the island. Terns are especially susceptible to disturbance.

Access should be controlled if there is evidence of harmful disturbance. The island is large enough to accommodate both tourists and nesting sea birds.

<u>Name of Area</u>	TEMPLEHOUSE LAKE
<u>Acreage</u>	434 acres
<u>Grid Reference</u>	G 62 17
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Regional
<u>Priority</u>	B

Description & Evaluation

This lake is of considerable importance as a wintering and nesting area for wild-fowl. It is set in wooded country with many non-native species of trees and shrubs. Swida stolonifera (dogwood) is conspicuous close to the water with Salix cinerea and S. aurita (willows). The wintering populations include:-

Mallard	260
Teal	100
Wigeon	150
Shoveller	2
Tufted duck	40
Goldeneye	30
Shelduck	15
Greylag Goose	13
White-fronted goose	31
Whooper swan	19

These are maximum annual numbers since they change with the current shooting activity nearby. The lake is apparently used to some extent as a refuge area.

Templehouse Lake has been given regional status as it contains two species of goose and a good variety of other wildfowl. It probably has the greatest breeding density of mallard in the county.

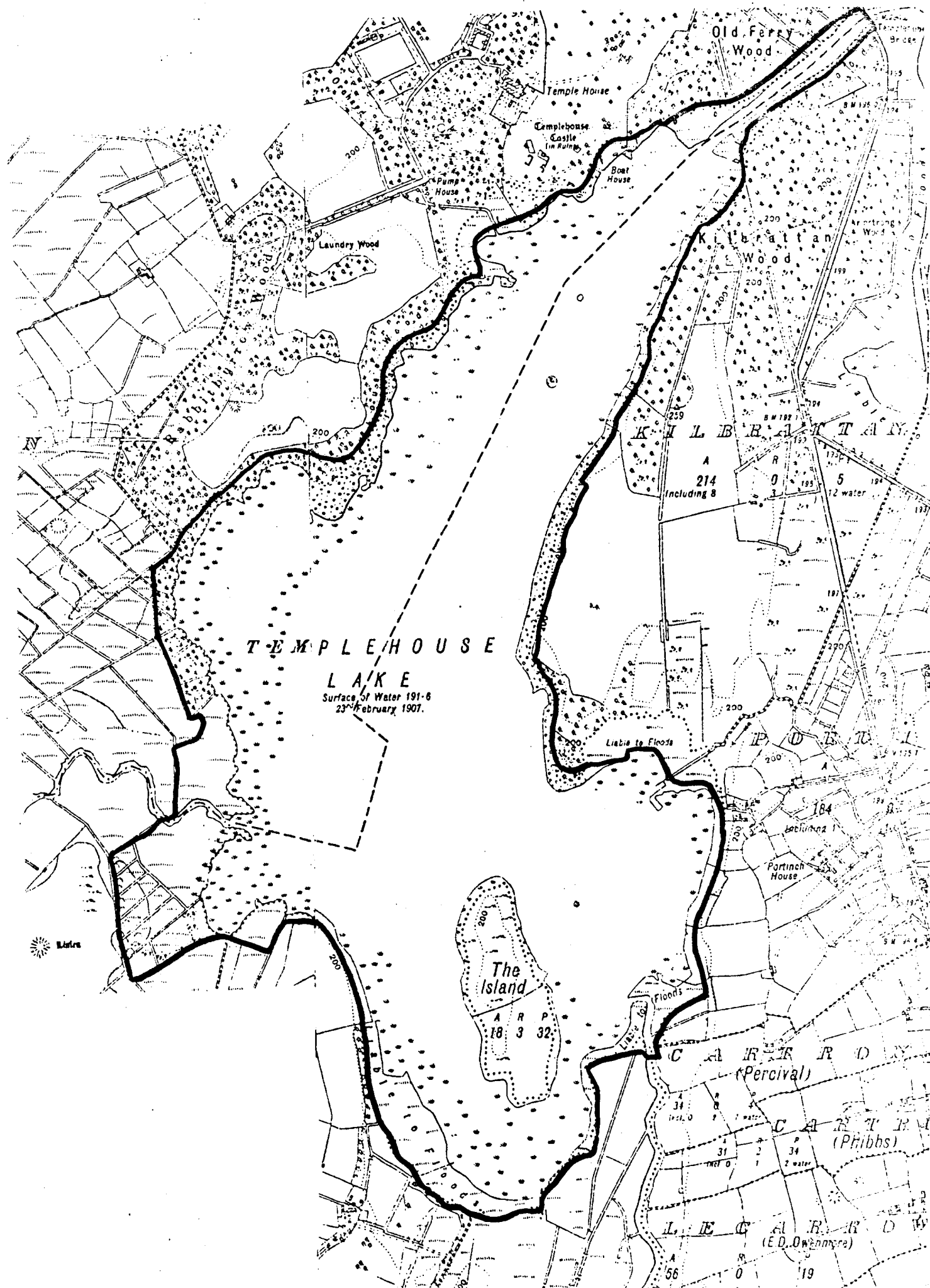
Vulnerability

Shooting is controlled at the moment and it is clearly in the birds interest to maintain this situation. Disturbance is one of the chief limiting factors on a lake of this size.

Recommendation

Land-use should continue along its present lines in this area.

It is important that disturbance levels are not increased.



TEMPLE HOUSE

L A K E

Surface of Water 191-6
23rd February 1907.

Old Ferry Wood

Temple House

Templehouse
Castle
(in Ruins)

Boat House

Laundry Wood

Kilbrattan Wood

KILBRATTAN

A
214
Including 8

R
0
5
12 water

Liable to Floods

Portinch House

The Island

A R P
18 3 32

CARRICK ROAD
(Percival)

CARRICK ROAD
(Pribbs)

LEICARR ROAD
(E.D. O'Connell)

<u>Name of area</u>	SLISH WOOD
<u>Acreage</u>	15 acres
<u>Grid reference</u>	G. 75, 33
<u>Scientific interest</u>	Botanical
<u>Rating</u>	Regional
<u>Priority</u>	B

Description of area

Slish Wood was formerly one of the three or four most important areas of oak woodland in the west of Ireland but it was almost completely planted with coniferous species about 20 years ago. Now only a fringe of mature vegetation extends along the lake shore. Even this has been underplanted with douglas fir in certain places.

Because of this, community development is not extensive and at most a distance of 50 yards remains relatively unchanged from a natural oakwood. In this Quercus petraea (oak) is dominant with much Sorbus aucuparia (rowan) and some Ilex aquifolium (holly). A few tall Betula pubescens (birch) are spread through the wood while on the rocky lake shore, Taxus baccata (yew), Populus tremula (aspen) and Sorbus rupicola (whitebeam) are found. Some introduced examples of Tilia europaea (lime) and Acer pseudo-platanus (sycamore) occur and there are records for Arbutus unedo (strawberry tree) from this area.

The ground vegetation is fully representative of an acidic oakwood : it includes Luzula sylvestris (woodrush), Dryopteris aemula (crinkled buckler-fern), Vaccinium myrtillus (frochan), Lonicera periclymenum (honeysuckle), Oxalis acetosella (wood sorrel), and mosses such as Dicranum majus, Thuidium tamariscinum and Plagiothecium undulatum.

At the east end of the area the narrow fringe of deciduous woodland expands into a grassy oakwood with even aged and tall trees. The ground vegetation here includes Deschampsia flexuosa (wavy hair grass), Endymion non-scripta (blue bell), Pteridium aquilinum (bracken) and some Silene dioica (red campion). There is no regeneration.

Many interesting lichen species were recorded in Slish Wood before its modification and it is likely that some survive in the reduced area.

The mammals of the area include badger and fallow deer.

Evaluation

The remaining area of this wood is of considerable value. Its tree species are notably varied and the ground flora and lower plants characteristic.

It is an excellent area to examine the differences between natural and artificial woodland being on the same rock type.

Vulnerability

The area is threatened by a possible extension of underplanting and by the growth of those conifers already established in it.

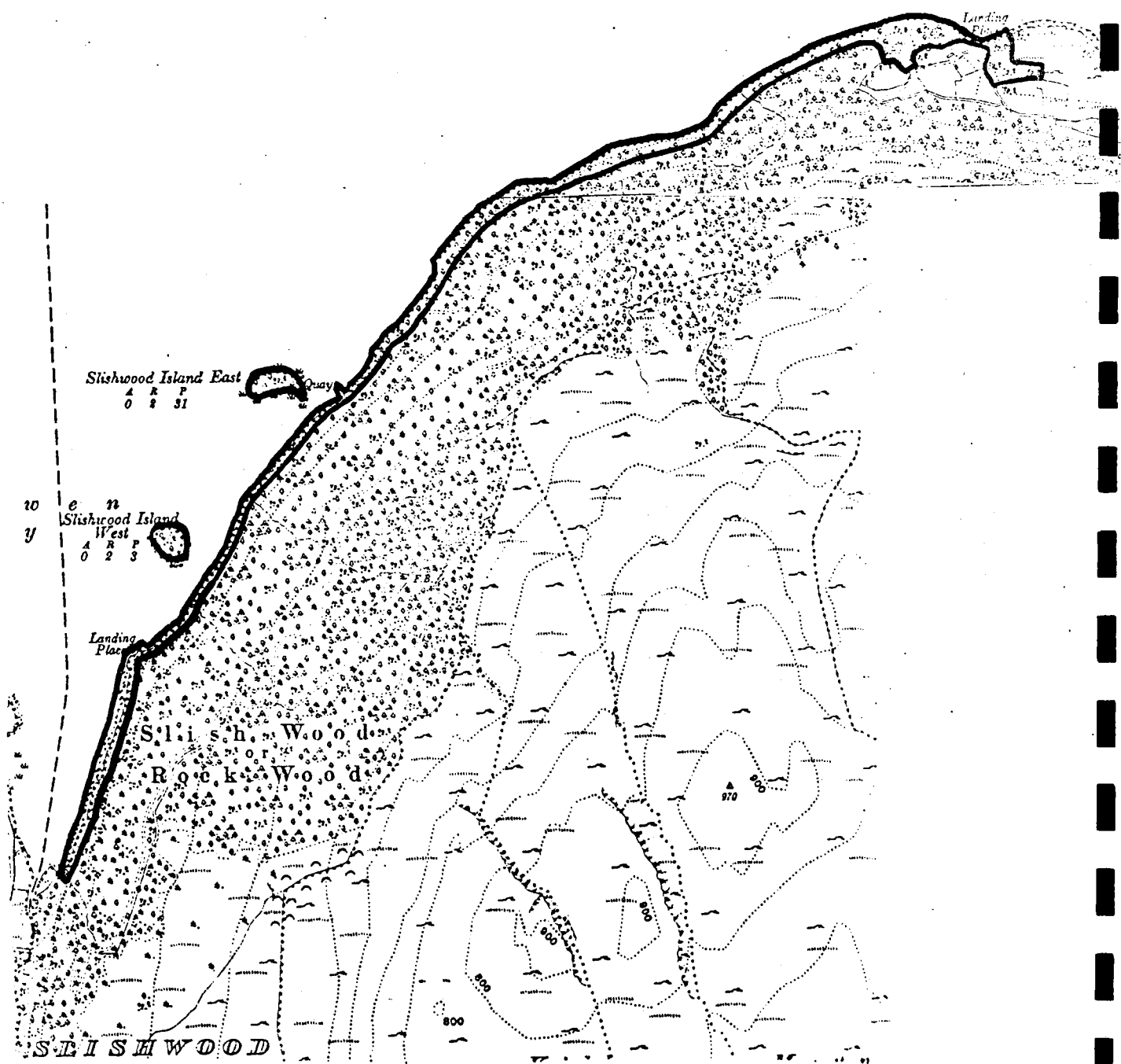
Recommendations

In the interests of amenity and diversity it should be suggested to the Forestry Division that this area is suitable for a nature trail showing the difference between natural and planted woodland. The deciduous fringe to Lough Gill is an attractive feature and must be preserved.

It is clearly detrimental to the scientific interest of the area to allow the further growth of conifers in the wild area, i.e. between the main path and the lake shore. These should be removed before they grow any bigger.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	AUGHRIS HEAD
<u>Acreage</u>	54 acres
<u>Grid Reference</u>	G 50 37
<u>Scientific Interest</u>	Geological: Ornithological
<u>Rating</u>	Regional
<u>Priority</u>	C

Description and Evaluation

This is an upper Carboniferous site of some importance which has a Visean fossil fauna.

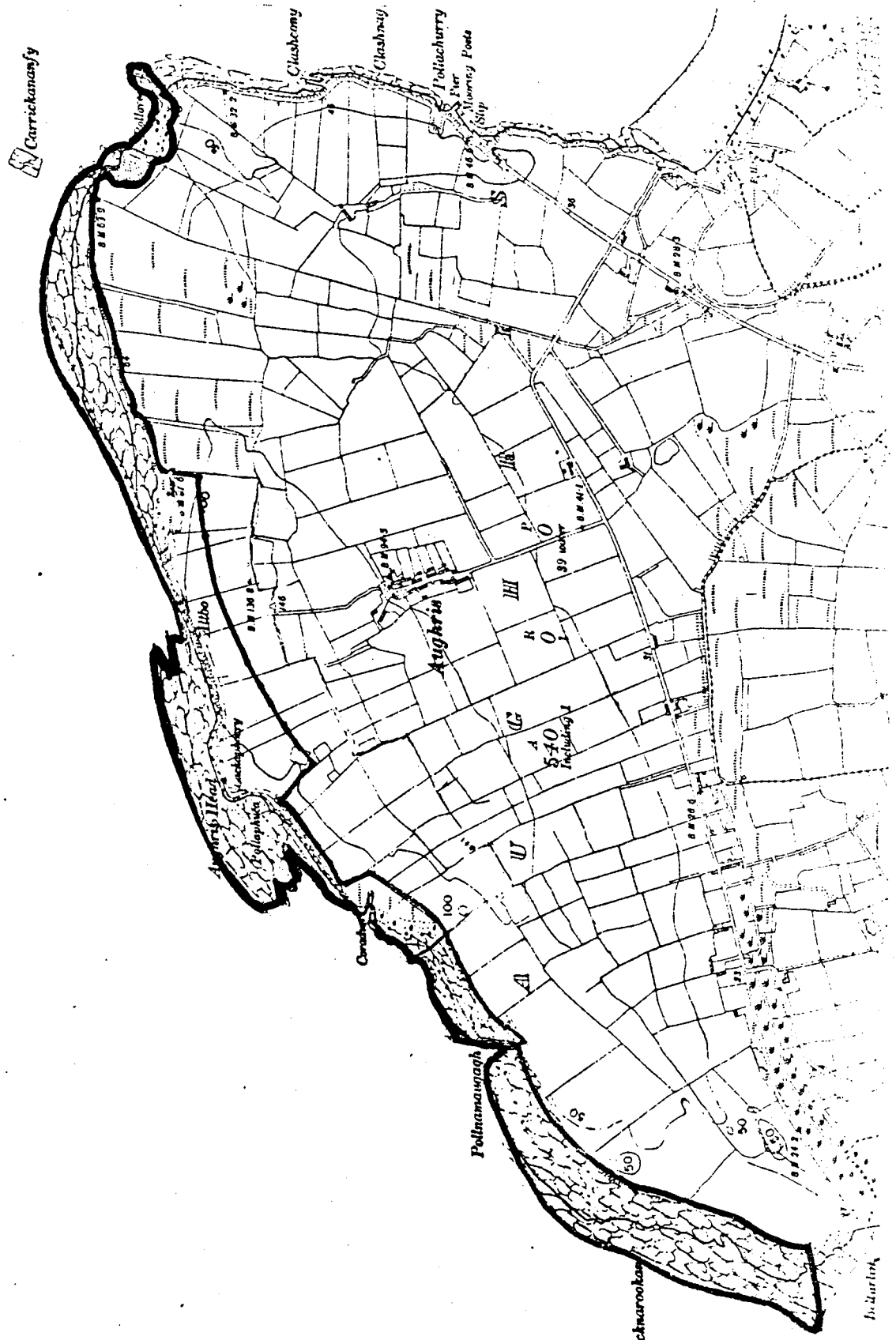
Its other feature is a sizeable seabird colony on the cliffs which includes numbers of auks and gulls as well as cormorant and shag.

Vulnerability and Recommendations

Disturbance is a major threat to seabird colonies and any setting out of a cliff path or observation point must take this factor into consideration. The geological site appears to be secure.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	Mullaghmore
<u>Acreage</u>	88 acres
<u>Grid reference</u>	G 69 56
<u>Scientific interest</u>	Geological
<u>Rating</u>	Regional
<u>Priority</u>	C

Description of Area

Between the road and the sea in this area a variety of sandstones and thin limestones occur, of deltaic facies. The depositional features are also of interest with cross-bedding particularly well displayed, sometimes in three dimensions. Trace fossils occur on some of the strata: these include grazing trails and burrows.

Evaluation

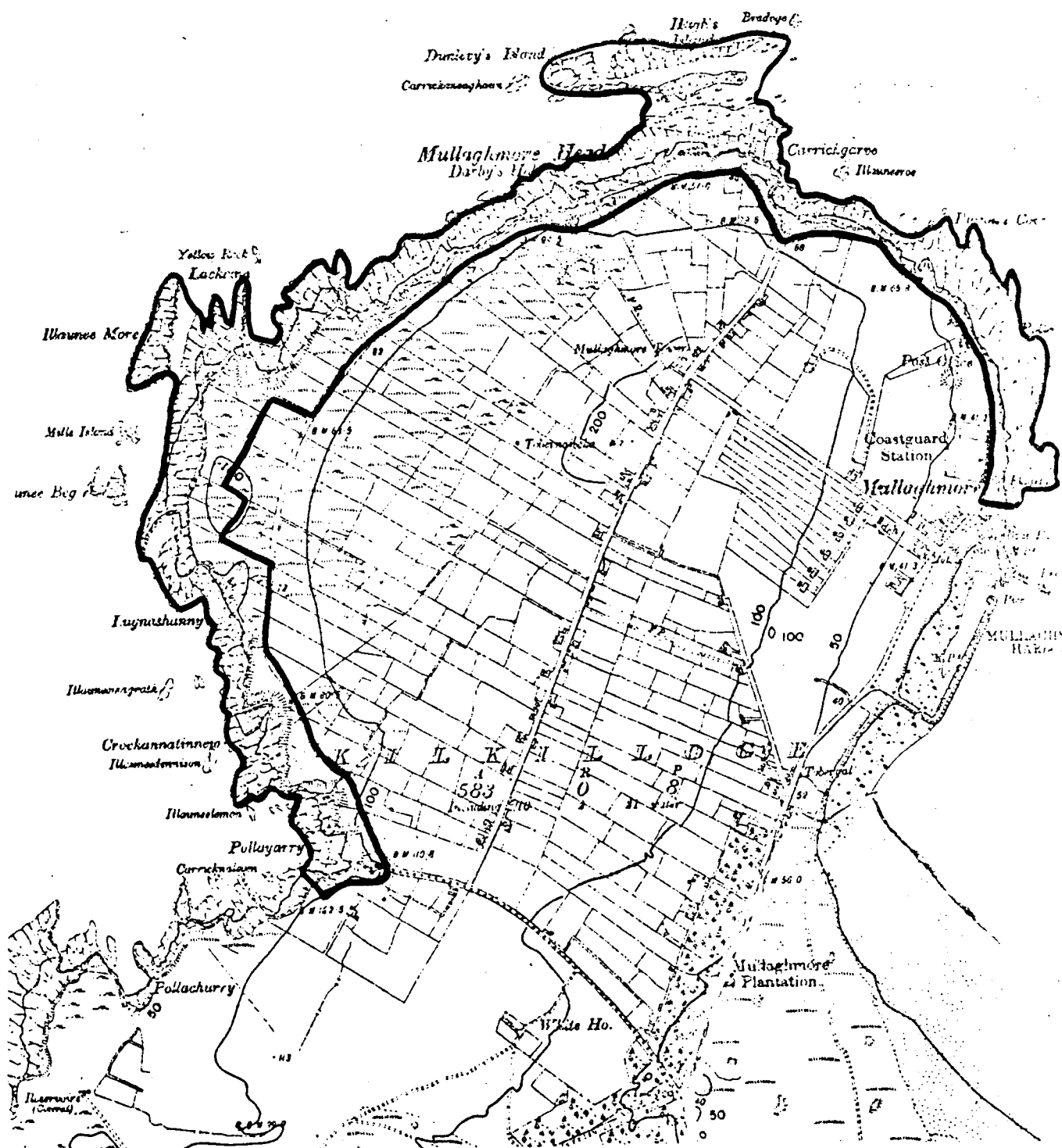
This is the type area for the Mullaghmore sandstones but no type section has been described. The main exposures are in the cliffs and on wave cut platforms

Vulnerability and Recommendations

These sections do not appear to be threatened by any development.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	INISHCRONE SPIT
<u>Acreage</u>	210 acres
<u>Grid reference</u>	G 26 29
<u>Scientific Interest</u>	Botanical, ecological
<u>Rating</u>	Regional
<u>Priority</u>	A

Description of Area

Inishcrone sandhills consist of high dunes at the west end which are badly eroded, and some lower systems closer to the mainland. South of these an extensive marshy flat occurs which is partly taken up with a golf course.

A fore dune ridge occurs all the way along the south coast and on the middle part of the north shore but erosion of the higher dunes is prevalent. These at the west end are now separated by huge blowouts which are extending to align the dunes at right angles to the line of their formation. Loose sand occurs everywhere and covers the lower vegetation. Such species as Anthyllis vulneraria (kidney vetch), Lotus corniculatus (birds foot trefoil), Polygala vulgaris (milkwort) and Phleum arenaria (sand cat's tail) penetrate through it but not the binding species of grasses. Where the original surface is still visible it is richly covered by Tortula ruraliformis (a moss).

All the evidence in this terminal area points to overgrazing as being the destructive influence, which has weakened the plant cover and allowed the present disastrous erosion.

Elsewhere the sandhill vegetation is interesting and quite rich in species. It includes as well as the common species :-

Carlina vulgaris	carline thistle
Viola tricolor	sea pansy
Euphrasia cf. occidentalis	eyebright
Saxifraga tridactylites	rue-leaved saxifrage

Cerastium semidecandrum	a chickweed
C. diffusum	"
Rosa spinosissima	burnet rose

Few dune slacks occur but the flat southern part of the area has a most interesting flora. Salix repens (creeping willow) is abundant with Briza media (quaking grass) Prunella vulgaris (heartsease) Potentilla anserina (silverweed) and Mentha aquatica (water mint). In addition the following occur:-

Koeleria cristata	crested hairgrass
Epipactis palustris	marsh helleborine
Dactylorhiza incarnata	early marsh orchid
Ophioglossum vulgare	adders' tongue
Equisetum palustre	marsh horsetail
Cirsium dissectum	meadow thistle
Schoenus nigricans	black bog rush
Carex hostaina	a sedge
Sieglingia decumbens	heath grass
Pinguicula vulgaris	butterwort
Listera ovata	twayblade

Evaluation & Vulnerability

There are several parts of this dune system that are of great interest: it seems in fact to have a more interesting flora than any other Sligo sandhill area. The whole spit has been described as it must be treated as a unit. The fact that the terminal part is badly eroding at present indicates that this could spread widely if grazing density is not altered, and as formerly vegetated parts lose their cover, the animals will concentrate more and more on the now stable areas.

The flat marshy area is also presently overgrazed and the vegetation is kept very short - eg. Schoenus at 3 - 4 inches. It is also threatened by an expansion of the golf club with possible drainage related to this.

Recommendations

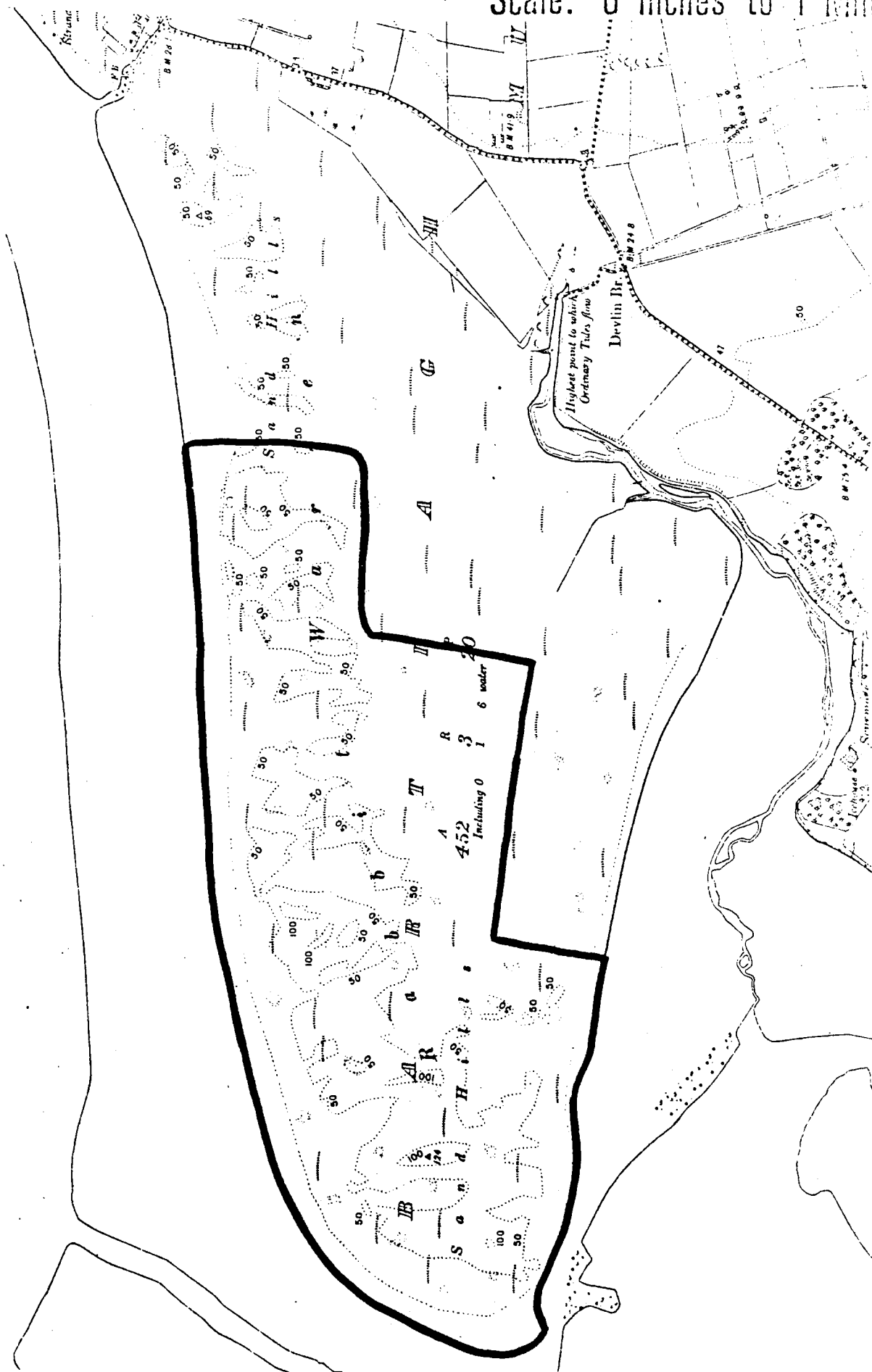
The chronic overgrazing that now occurs will have to be stopped if the sandhill area is to survive in a recognizable form.

The subject might well be discussed with the county committee for agriculture since it is out of the direct jurisdiction of the council. The owner of the grazing rights must be made aware of the damage he is causing - it is obviously in his own interest to reduce cattle numbers for a time to allow as much re-establishment of the vegetation as possible. This should be connected with some fencing off of the blowout areas and high dunes between them.

There is land available for the expansion of the golf course but this must be done in a rational way avoiding the area outlined. There are definite grounds for covering this area with a Conservation Order in fact, but this should only be done as a last resort. There should be constructive co-operation between the golf club officials and the County Council at the planning stage. In view of the tendency for development to occur before application is made for planning permission, the matter should be taken up now.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	GLENCAR CLIFFS
<u>Acreage</u>	78 acres
<u>Grid Reference</u>	G 73 41
<u>Scientific interest</u>	Botanical, Ecological
<u>Rating</u>	Regional
<u>Priority</u>	C

Description of Area

These cliffs are similar to those of the Ben Bulbin uplands but are probably more fragile and wetter. The cliff communities contain fewer interesting species but include several different ones, e.g. Equisetum variegatum (horsetail), Hieracium spp. (hawkweed), Sorbus hibernica (whitebeam), Pinguicula vulgaris (butterwort), etc.

Several tree species occur either on the cliffs or in the slumped hollows below them is Salix caprea (goat willow), Betula pubescens (birch), Corylus avellana (hazel) are common and Acer pseudo-platanus (sycamore) frequent, and regenerating spontaneously.

Evaluation

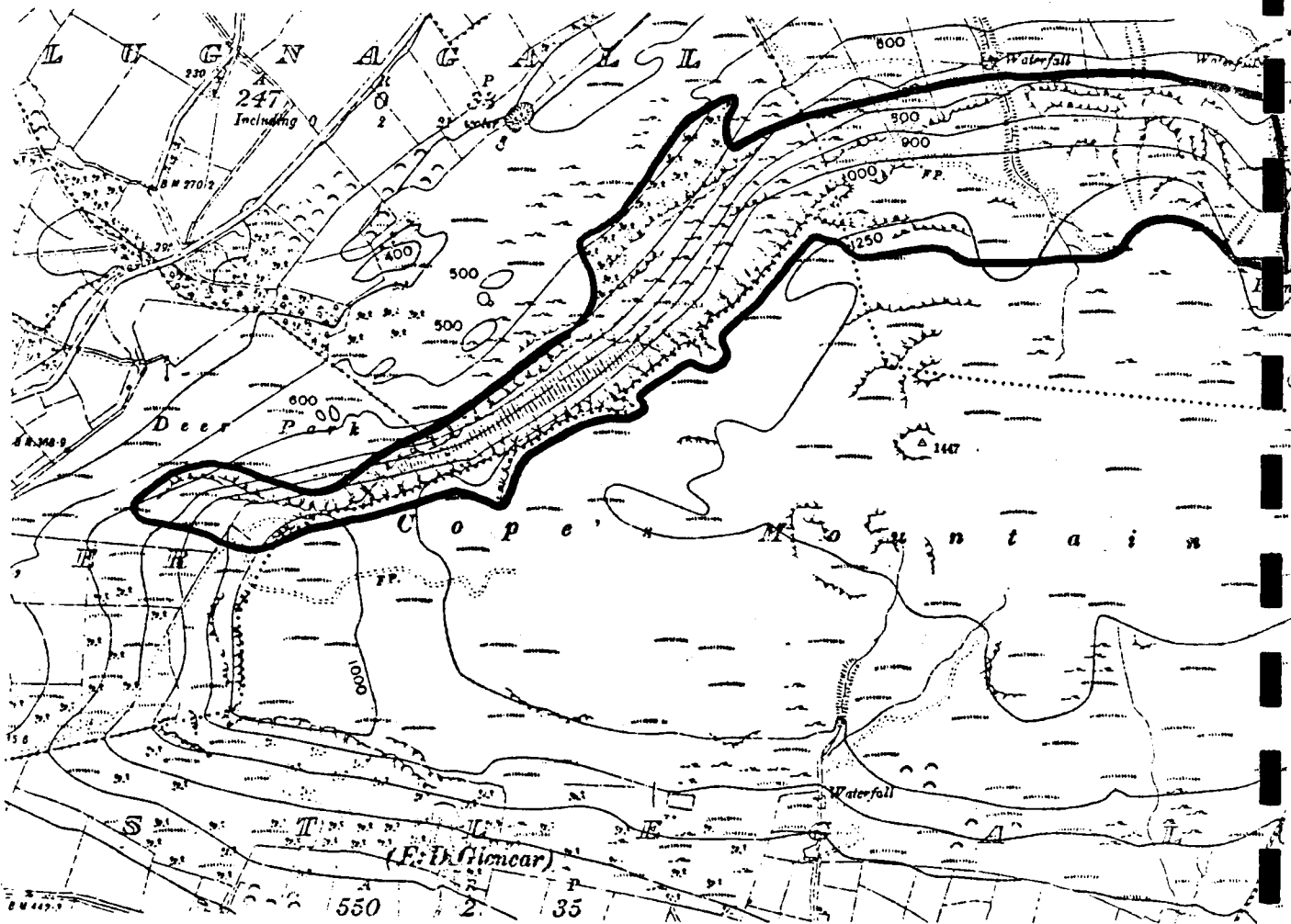
These cliffs are devalued by the presence nearby of Ben Bulbin but have interest in their own right. An interesting species of animal is found.

Vulnerability and Recommendations

As for Ben Bulbin Uplands (see page 18) except that a Conservation Order is less necessary.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	BALLYSDARE BAY
<u>Acreage</u>	c. 3890 acres
<u>Grid Reference</u>	G 6, 3
<u>Scientific Interest</u>	Ornithological, Botanical
<u>Rating</u>	Regional
<u>Priority</u>	B

Description and Evaluation

Ballysadare Bay is a large shallow estuary in which much tidal mud is exposed at low tide. On this an abundance of food occurs for birds, both wildfowl and waders: it includes Zostera (eel grass) and Ruppia maritima (tasselweed). This attracts brent geese (50 - 60 in 1967 and probably more now), wigeon, shelduck etc.

There are substantial total numbers of wildfowl in the area in early winter (1100 in November, 1971) though the species totals are not available. In addition Ballysadare Bay is the most important site in the county for waders.

A saltmarsh at the head of the bay is a good example of this vegetation type. Its plants include Blasmus rufus (red blasmus), and Eleocharis quinqueflora (spike rush) as well as the commoner species. The Ruppia mentioned above is most unusual in occurring out on the mud flats; usually it is found in tidal pools.

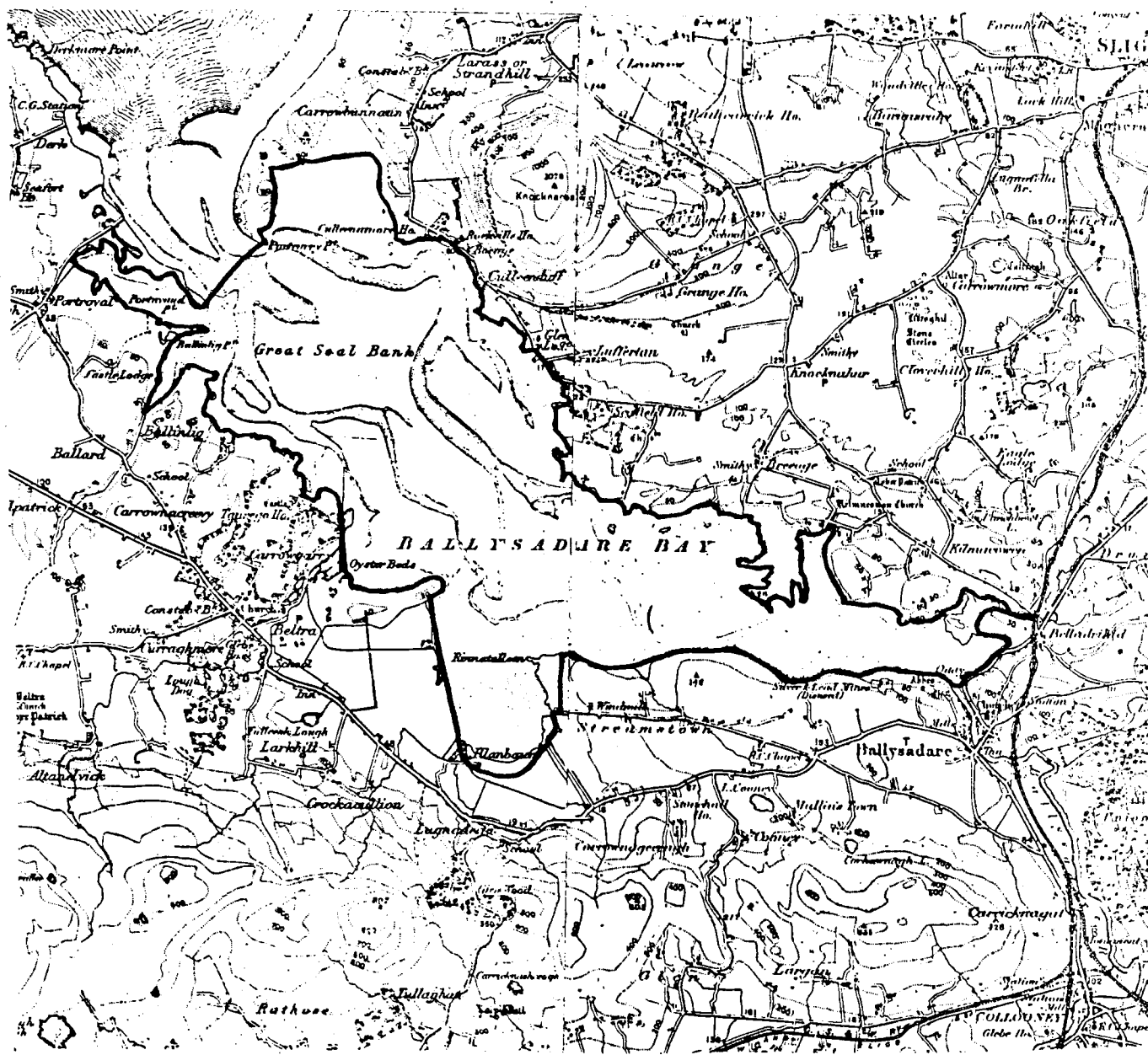
Vulnerability & Recommendations

The birds of this area are susceptible to disturbance and if overshooting is seen to occur, some limiting of guns is essential.

The mudflat ecosystem would be threatened by Spartina (cord grass) and immediate action is necessary if it appears.

Industrial pollution would probably be very damaging to the area though a moderate increase in organic effluent would have little detrimental effect.

Scale: 1 Inch to 1 Mile



<u>Name of area</u>	BELVOIR AND STONY POINT (Lough Gill)
<u>Acreage</u>	10 acres
<u>Grid reference</u>	G. 713, 328
<u>Scientific interest</u>	Botanical
<u>Rating</u>	Regional
<u>Priority</u>	B

Description of area

The lakeshore and the woods behind it are of interest in this area. The sheltered conditions have given rise to good tree-growth and large individuals of Taxus baccata (yew) and Arbutus unedo (strawberry tree) occur. On Stony Point they are backed by Quercus petraea (oak) while at Belvoir this species is mixed with others such as Fraxinus excelsior (ash), Salix cinerea (willow), Acer pseudo-platanus (sycamore) and Corylus avellana (hazel).

In one such hazel-sycamore wood there was a rich ground flora which included:-

Allium ursinum	wild garlic
Endymion non-scripta	bluebell
Brachypodium sylvaticum	wood false-brome
Veronica chaemedrys	germander speedwell
V. montana	wood speedwell
Oxalis acetosella	wood sorrel
Galium odoratum	woodruff
Conopodium majus	pignut
Fragaria vesca	strawberry
Poa trivialis	rough-stalked meadow grass
Circaea lutetiana	enchanter's nightshade
Lysimachia nemorum	yellow pimpernel
Polystichum setiferum	soft shield fern
Athyrium filix-femina	lady fern
Stachys sylvatica	wound wort
Arum maculatum	cuckoo pint
Phyllitis scolopendrium	hart's tongue

<i>Hypericum androsaemum</i>	tutsan
<i>Alliaria petiolata</i>	garlic mustard
<i>Tamus communis</i>	black bryony

The Tamus occurs expecially on woodland edges - roadsides etc.

Evaluation

This part of Lough Gill is important for the relative abundance of Arbutus trees that occur, as well as the amount of Tamus. Outside of Cork and Kerry, Arbutus only occurs naturally on Lough Gill while this is the only station on record for Tamus. It is thus of great value for studies of both species. Apart from this the area is rich in bird-life and many passerines, including blackcaps, nest. The ground flora of the woods is fully representative of limestone woodland and contains several species relatively uncommon in the north-west.

Vulnerability

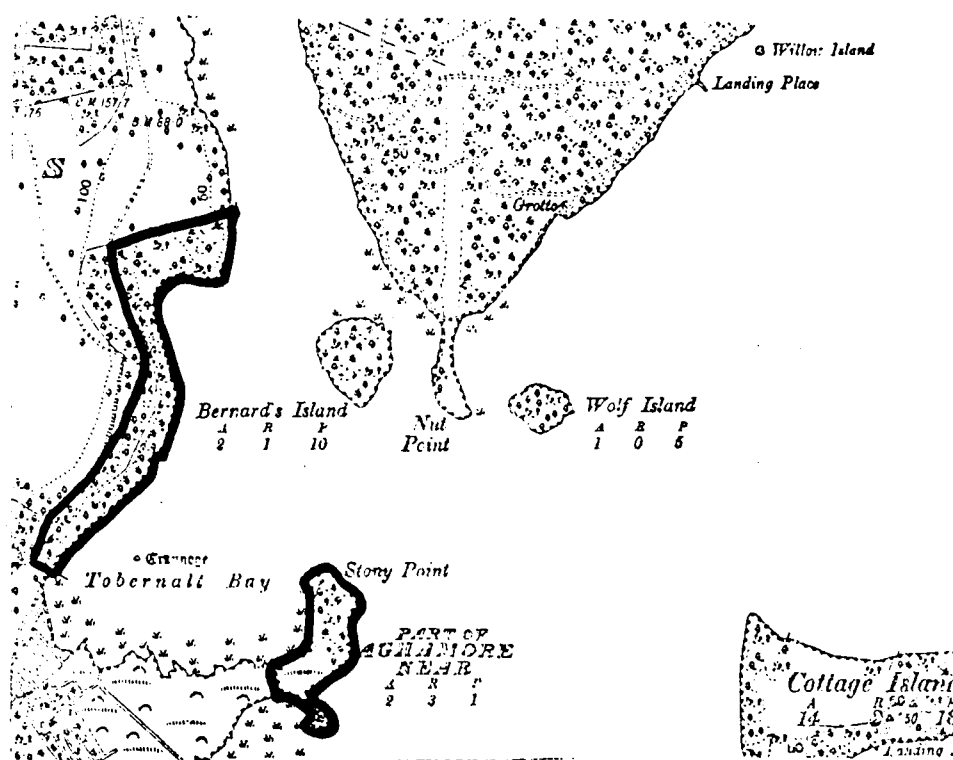
Felling of trees, or other clearance constitutes the greatest threat to this area. Afforestation close to the lake-shore, as has happened at Hazelwood, would also be damaging.

Recommendations

Land-use should remain in its present form in this area and no clearance of the woods should be allowed. The characteristics of the area make it very suitable to be covered by a Conservation Order, Section 46, Local Government (Planning & Development) Act, 1963 which was established for such a situation. This would effectively remove all threats to the future of the area.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of area</u>	BRICKLIEVE MTS. & KESHCORRAN
<u>Acreage</u>	c 7850 acres
<u>Grid reference</u>	G 71
<u>Scientific Interest</u>	Geological,
<u>Rating</u>	Regional
<u>Priority</u>	C

Description of the area

This hilly area is one of great national beauty as well as being most interesting scientifically. It is a region of karst topography with caves, dry valleys, limestone pavements etc. and probably its most striking features are a series of rifts running parallel through the summit plateau. The walls of these valleys vary between 30 ft and 100 ft and on their floors are small peat bogs, or in one place, a lake. Fossil coral reefs of visian age are well exposed and have been called patch reefs by Caldwell and Charlesworth (1962).*

Botanically the area is rich in species and though totally underlain by limestone it is the calcifuge (acidic) flora that is best developed. This is ascribed to humidity by Webb (1947).**

Patches of woodland and scrub are found, usually associated with cliffs and in these hazel is by far the commonest species, followed by ash, rowan, birch, Salix capraea (goat willow) and holly. Ulmus glabra (elm) occurs widely but is only common on the eastern side. The ground flora is rich with all the characteristic species. A prevalence of the neutral or acidic element brings in Digitalis purpurea (foxglove). Dryopteris spinulosa (buckler fern) Geum rivale (water avens) and Vaccinium myrtillus (frochan).

The grassland community is the most widespread with an Agrostis-Cynosurus - Festuca ovina (bent-crested dogstail - fescue) sward. Other grass species in order of abundance are Arrhenatherum elatius (false oat), Koeleria cristata (crested hair-grass), Sieglingia decumbens (heath-grass), Helictotrichon

* Proc. Geol. Ass. (1962)

** Journal of Ecol. 35

pubescens (downy oatgrass). *Trisetum flavescens* (yellow oat) and *Briza media* (quaking grass). Other species are frequent and include:-

<i>Luzula sylvatica</i>	woodrush	l.a.
<i>Prunella vulgaris</i>	heartsease	a
<i>Geum rivale</i>	water avens	l.a.
<i>Conopodium majus</i>	pignut	a
<i>Linum catharticum</i>	purging flax	a
<i>Rhinanthus minor</i>	yellow rattle	c
<i>Primula vulgaris</i>	primrose	c
<i>Galium verum</i>	lady's bedstraw	c
<i>Lathyrus pratensis</i>	meadow vetchling	c
<i>Hypericum pulchrum</i>	St. John's wort	c
<i>Heracleum sphondylium</i>	cow parsnip	f
<i>Gymnadenia conopsea</i>	fragrant orchid	o
<i>Juncus bufonius</i>	toad rush	o
<i>Saxifraga hypnoides</i>	mossy saxifrage	o
<i>Carex ovalis</i>	a sedge	v
<i>Gentianella campestris</i>	field gentian	v
<i>Glechoma hederacea</i>	ground ivy	v
<i>Platanthera chlorantha</i>	butterfly orchid	v
<i>P. bifolia</i>		

There is also a distinctive flora on exposed limestone on the cliff bases and cliff ledges. Some of the more interesting species on the cliffs are *Valerianella officinalis*, (marsh valerian) *Lapsana communis* (nipplewort) *Orchid mascula* (early purple orchid. *Scrophularia nodosa* (figwort), *Geranium lucidum* (shining cranesbill) *Draba incana* (rock cress), *Campanula rotundifolia* (harebell), *Arabis hirsuta* (hoary rock cress), *Cystopteris fragilis* (brittle bladder fern).

Evaluation

An exceptionally diverse area, these hills form a discreet unit of scenic and amenity value. The abundance of archaeological remains is augmented by many caves in which bones of extinct animals have been found.

The most interesting ecological features are the presence of many woodland species in ordinary grassland and the growth of peat on a very alkaline substrate. Both of these are probably related to the prevailing climate.

Vulnerability

The area has probably been grazed since prehistoric times and so is in equilibrium with the present prevailing land use. It would be damaged however by widespread spreading of fertilizers.

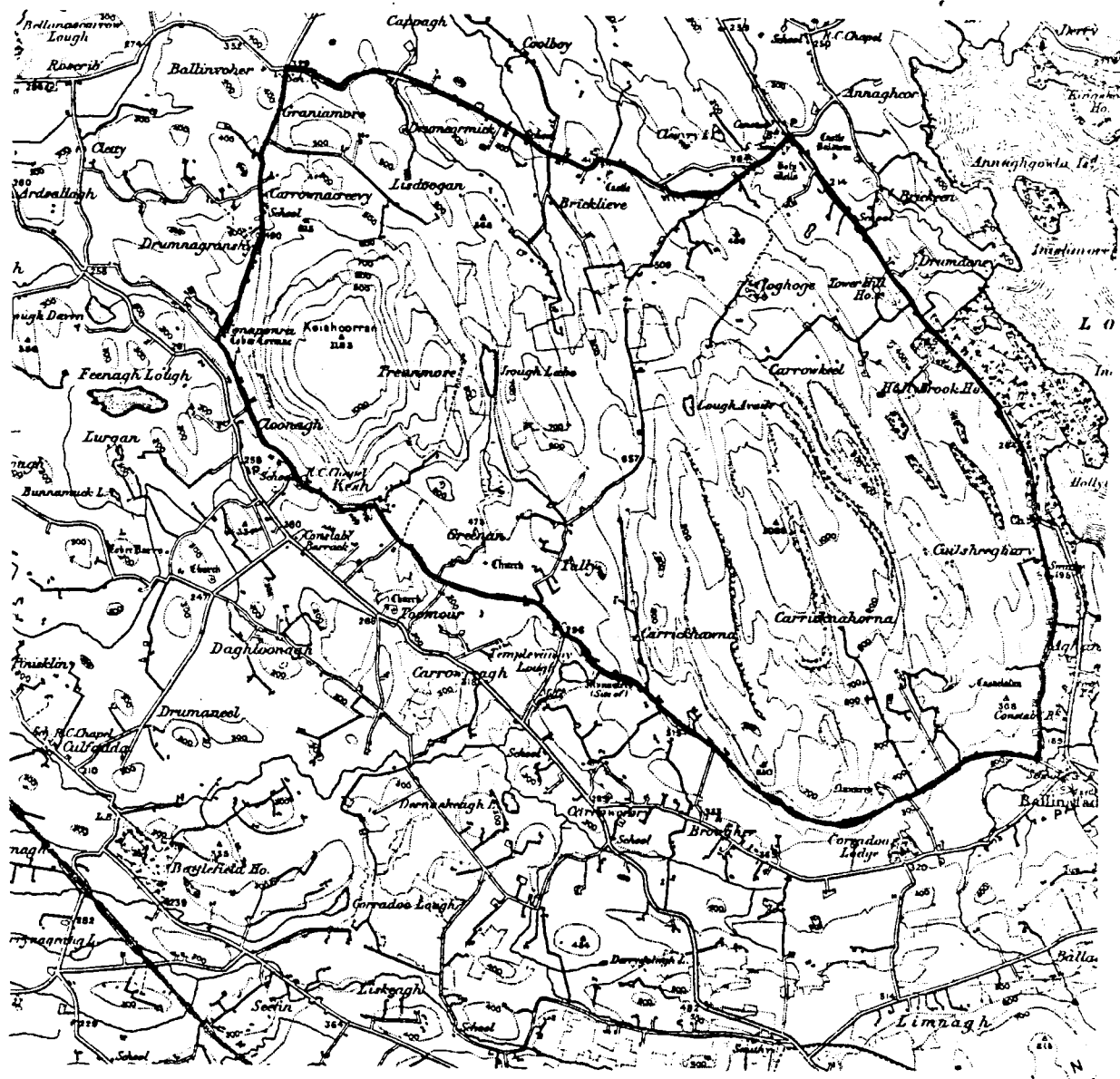
Forestry may encroach upon valuable land and its visual effects might also be harmful.

Recommendations

The area should be treated as a unit in planning terms. In fact it could be made an area of special amenity under Section 42 Local Government (Planning & Development) Act, 1963. It is important to develop the tourist potential of the area with due regard to the scenic quality. Building should not be allowed in the higher parts of the hills and consultation with the Forestry Division should precede any planting of conifers in the area. These must not be put in straight line blocks but moulded into the landscape.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 1 inch to 1 mile



<u>Name of area</u>	STRANDHILL DUNES (CARROWDOUGH)
<u>Acreage</u>	170 acres
<u>Grid reference</u>	G. 59, 34
<u>Scientific interest</u>	Ecological; botanical
<u>Rating</u>	Regional
<u>Priority</u>	A

Description of area

The Strandhill dunes link a moranic outlier to the shore and are typical of west coast dunes in suffering from wind erosion. Indeed at first sight, they would seem to be among the most badly affected. Locally this is so - a huge blowout extends from the west side through the dunes and presents a maximum height of about 12 feet at its margin. This gives off further blowouts and gulleys inland so that bare sand covers a large area.

South of this part however, there is a large area of stable dunes and the absence of any grazing animals except rabbits encourages this. A dense marram grass cover prevails with abundant Festuca rubra (red fescue), Dactylis glomerata (cock's foot) and Arrhenatherum elatius (false oat), and Trifolium repens (white clover).

The vegetation of the less overgrown parts is moderately interesting with such typical species as :-

Thymus drucei	wild thyme
Lotus corniculatus	birdsfoot trefoil
Salix repens	creeping willow
Anthyllis vulneraria	kidney vetch
Anacamptis pyramidalis	pyramidal orchid
Ophrys apifera	bee orchid
Pilosella officinarum	mouse-eared hawkweed
Arenaria serpyllifolia	sandwort
Carlina vulgaris	carline thistle

Phleum arenarium

sand timothy

Sedum acre

biting stonecrop

A variety of mammal species occur in the area.

Evaluation

This is a prime example of a wind-eroded system of dunes including large areas of bare, moving sand close to a stable part that is densely vegetated. The vegetation cover being ungrazed is of interest, as is one of the species occurring in it.

Vulnerability

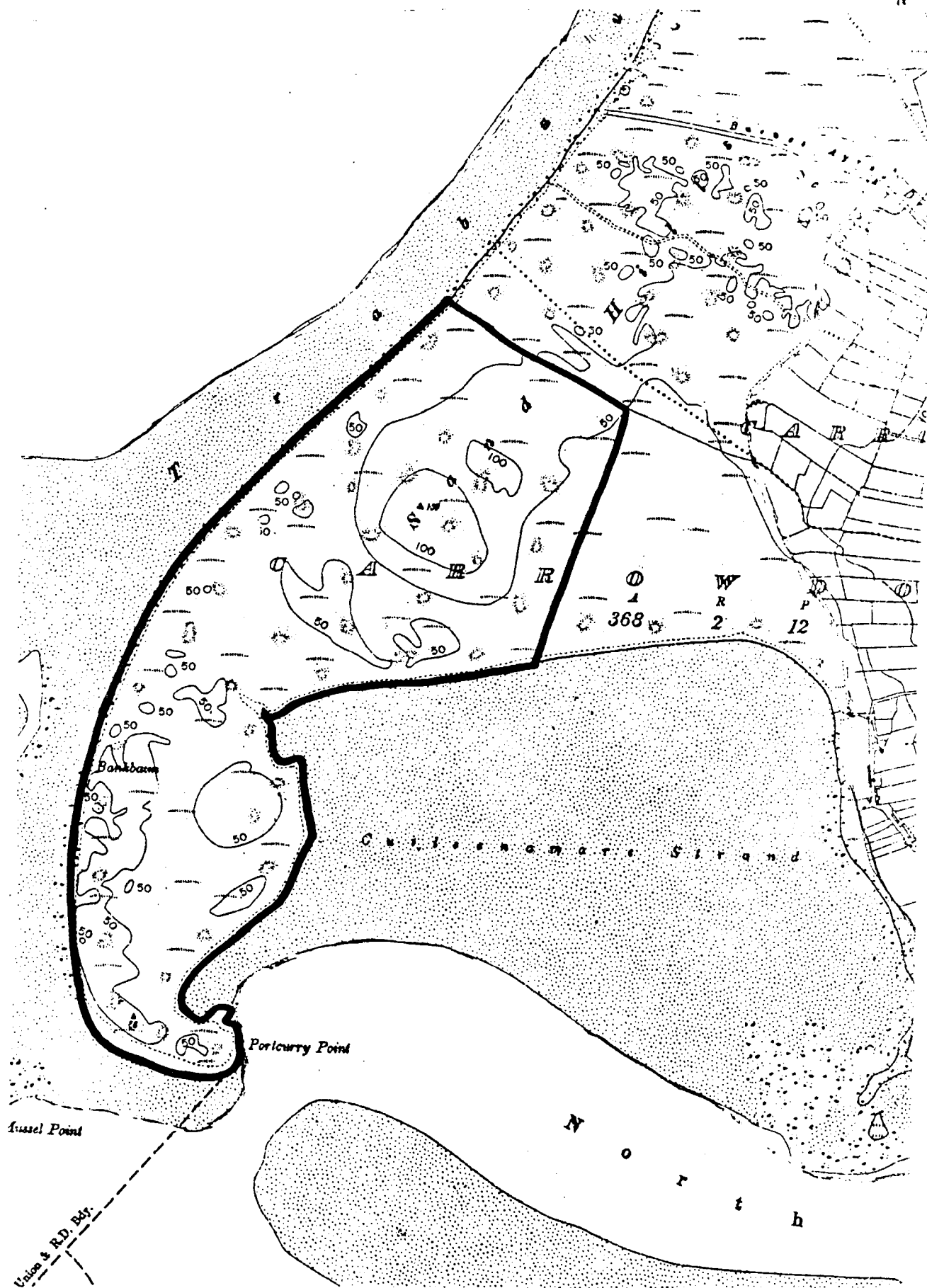
It is obvious that the dunes are threatened by an extension of the present large blowout area. This may have originated through human or grazing pressure but in view of the present absence of cattle, certainly in summer, revegetation will be easier.

Recommendations

Limited planting of marram grass has been done in the area and this should be continued. It must however be done in conjunction with fencing off the area from public use as even one person can start a sand slope moving again that was formerly stable. Some educational notices would be essential in any management policy. This sort of management may be easier in an Area of Special Amenity.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	Abbeytown Mine
<u>Acreage</u>	4 acres
<u>Grid reference</u>	G 66 30
<u>Scientific interest</u>	Geological
<u>Rating</u>	Regional
<u>Priority</u>	A

Description of Area

This is an old mine with exposed ores. Galena and sphalerite occur in lower Visean limestones and significant quantities remain.

Evaluation

Abbeytown is a well-known occurrence of lead-zinc ore, one of about six similar deposits in limestone.

Vulnerability

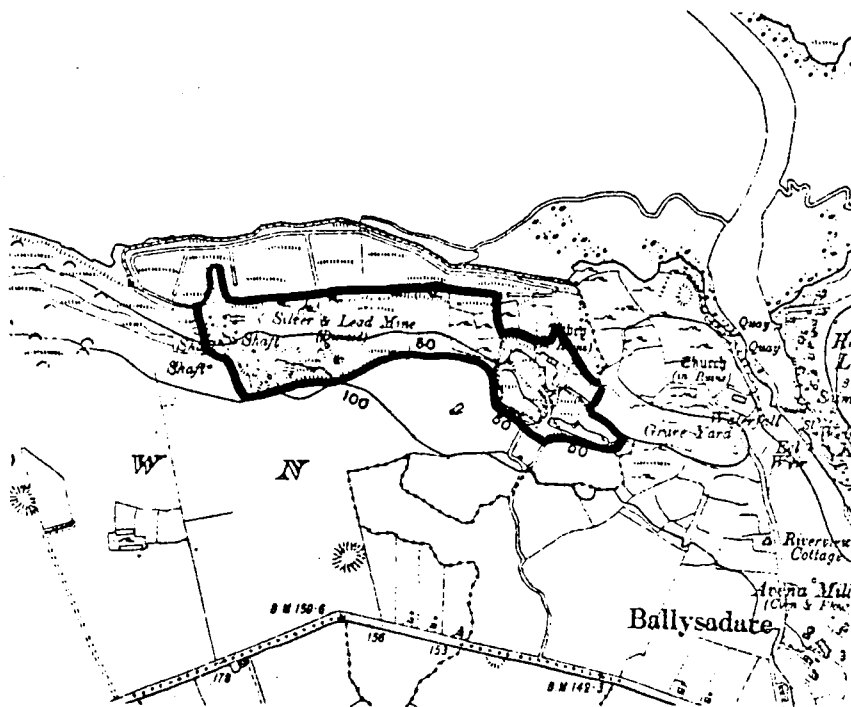
The scientific site is in danger of obliteration through dumping.

Recommendations

Dumping should be prevented and the area cleared and fenced.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	ARDBOLINE ISLAND
<u>Acreage</u>	19 acres
<u>Grid Reference</u>	G 55 44
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Regional
<u>Priority</u>	C

Description & Evaluation

A small offshore island, Ardboline has a western edge of cliffs on which several species of seabirds nest. Chief among these is the cormorant which was estimated at 300 pairs in 1969 but more recently below 100. This makes the island the most important Sligo colony. Shags also nest with great black-backed gulls, herring gulls and a few auks.

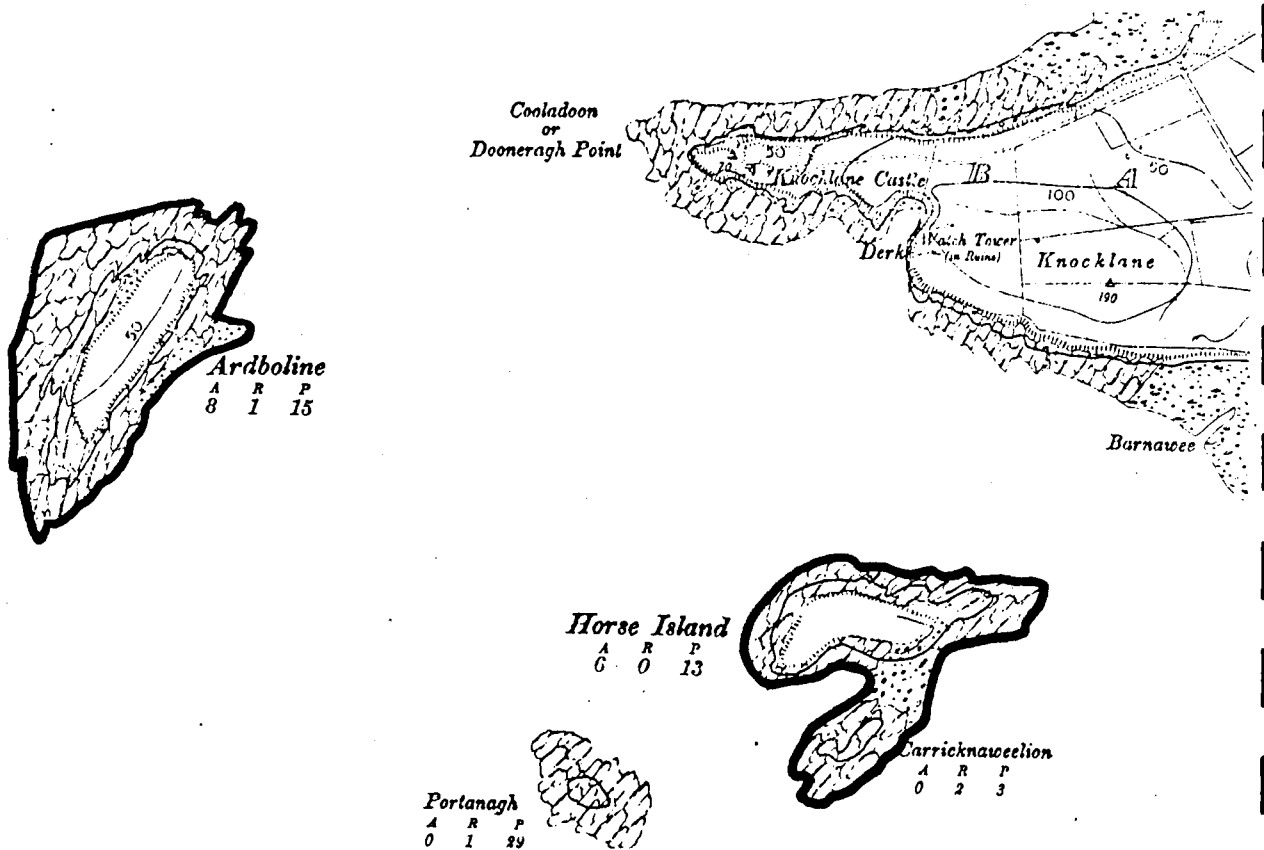
The island is a wintering station for barnacle geese.

Vulnerability and Recommendations

Disturbance is the main threat to seabird colonies but in view of its small size the island is probably secure from this.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	KNOCKACHREE CLIFFS
<u>Acreage</u>	86 acres
<u>Grid Reference</u>	G 52 28
<u>Scientific interest</u>	Botanical
<u>Rating</u>	Regional
<u>Priority</u>	C

Description of Area

This is one of the only cliffs in the Ox Mountains and is further enhanced by a deep gully which runs almost down to the lake. The wet gneissic surfaces bear interesting communities which include several northern and alpine species. In between the rocks a wet heath of Calluna-Sphagnum type is found.

The wetter places include such species as:-

Carex nigra	a sedge
C. panicea	"
C. pulicaris	"
Pinguicula vulgaris	butterwort
Cirsium dissectum	meadow thistle
Erica tetralix	cross-leaved heath

Among the cliffs many mosses occur with woodland species and true mountain plants. Saxifraga aizoides (yellow mountain saxifrage) is especially common and grows in a wide variety of habitats. Other species that occur include:-

Alchemilla vulgaris	ladys' mantle
Viola riviniana	violet
Thymus drucei	wild thyme
Solidago virgaurea	golden rod
Anemone nemorosa	wood anemone
Polystichum aculeatum	hard shield-fern
Hymenophyllum wilsonii	filmy fern
Rubus saxatilis	stone bramble

<i>Vaccinium vitis-idaea</i>		cowberry
<i>Hieractium</i> spp.		hawkweed
<i>Campanula rotundifolia</i>		harebell
<i>Selaginella selaginoides</i>		clubmoss
<i>Acaena anserinifolia</i>)	
<i>Breutelia chrysocoma</i>)	
<i>Neckera crispa</i>)	Mosses and liverworts.
<i>Conocephalum conicum</i>)	
<i>Pleurozia purpureum</i>)	
<i>Preissia quadrata</i>)	

Evaluation

This area shows the major development of mountain communities on acid rocks in the county. Though gneiss is the main rock-type, the presence of some calcicole species like *Neckera* sp. is interesting and indicates that some more basic minerals are present.

Several of the species found here do not occur elsewhere in Sligo.

Vulnerability

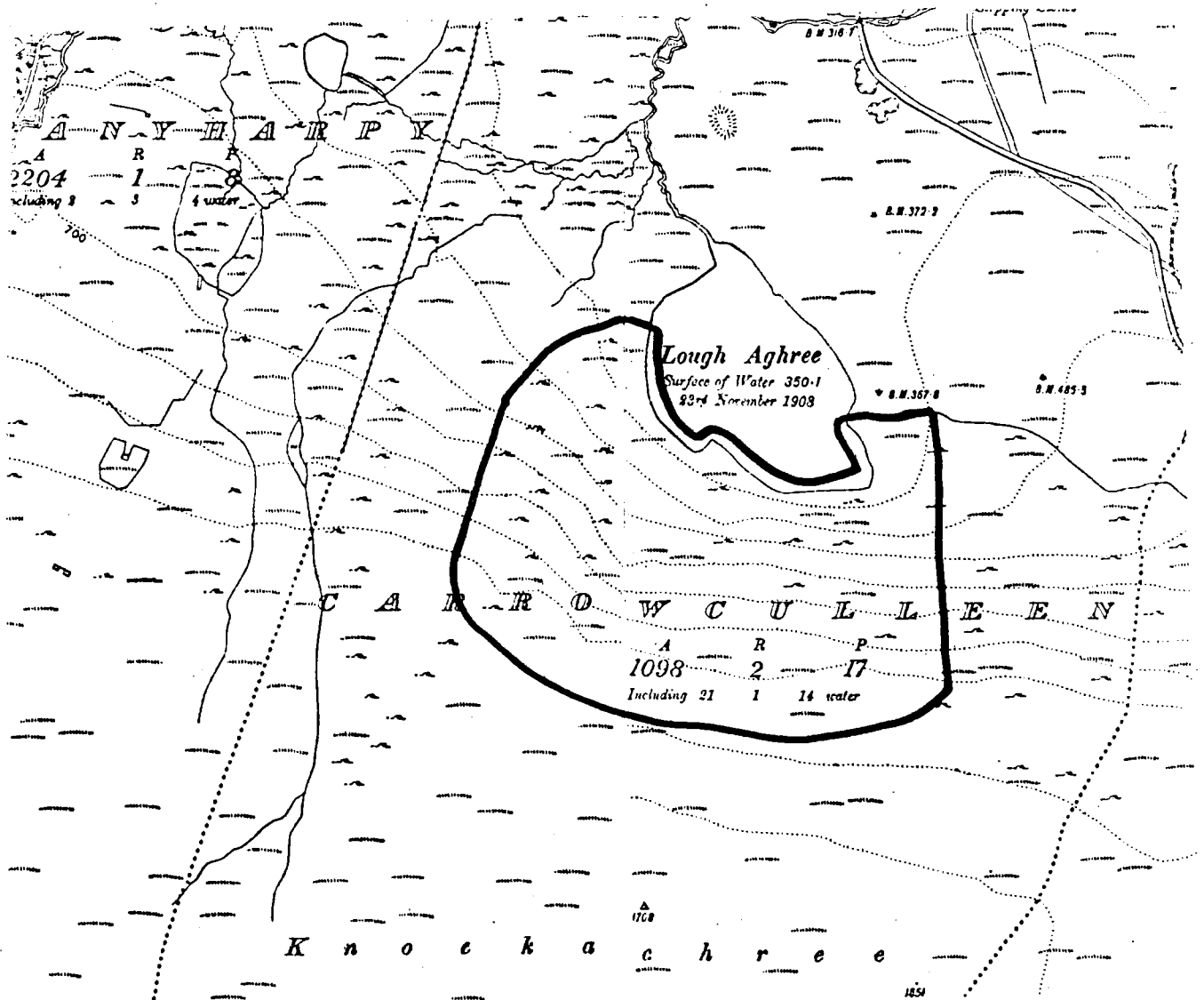
There seems to be little threat to this area except widespread afforestation. An increase in grazing pressure might also have harmful effects.

Recommendations

Land use should remain in its present form and in particular no planting should occur above the lake within the boundary shown.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of area</u>	KNOCKNAREA GLEN
<u>Acreage</u>	19 acres
<u>Grid reference</u>	G. 63, 34
<u>Scientific interest</u>	Botanical, ecological
<u>Rating</u>	Regional
<u>Priority</u>	B

Description of area

This dry valley runs along the southern base of Knocknarea and is filled with oceanic woodland. Ash is a conspicuous tree here, with elm (Ulmus glabra), hazel, Euonymus europaeus (spindle-tree) etc. The ferns and other ground flora are luxuriant and several interesting bryophytes have been found. Seepage from the limestone walls has formed deposits of tufa on which Hypnum commutatum, Weissia verticillata (mosses) are conspicuous. Anomodon viticulosus, another moss, grows on damp rocks while Climacium dendroides and Thamnium alopecurum grow in the wood proper. Species of Lejeunea, Jungermania and Metzgeria are among the most interesting liverworts.

The ground flora is particularly rich in Phyllitis scolopendrium (hart's tongue) but has many higher plants in addition, e.g. Ajuga reptans (bugle), Sanicula europaea (wood sanicle), Circaea spp. Orobancha hederaceae (ivy broomrape) and Festuca altissima (wood fescue) are some of the more interesting.

Evaluation

This is a well-known botanical locality, of interest mainly for its unusually moist conditions which give rise to great luxuriance of lower plants. It also has geomorphological interest as its orientation and origin are uncommon. The invertebrate fauna has been partially examined.

The wood has suffered natural wind damage in the past which is unusual for an Irish woodland. The amount of rotting timber is therefore an important feature of the ecosystem.

* See Irish Naturalist 13, 200 (1904).

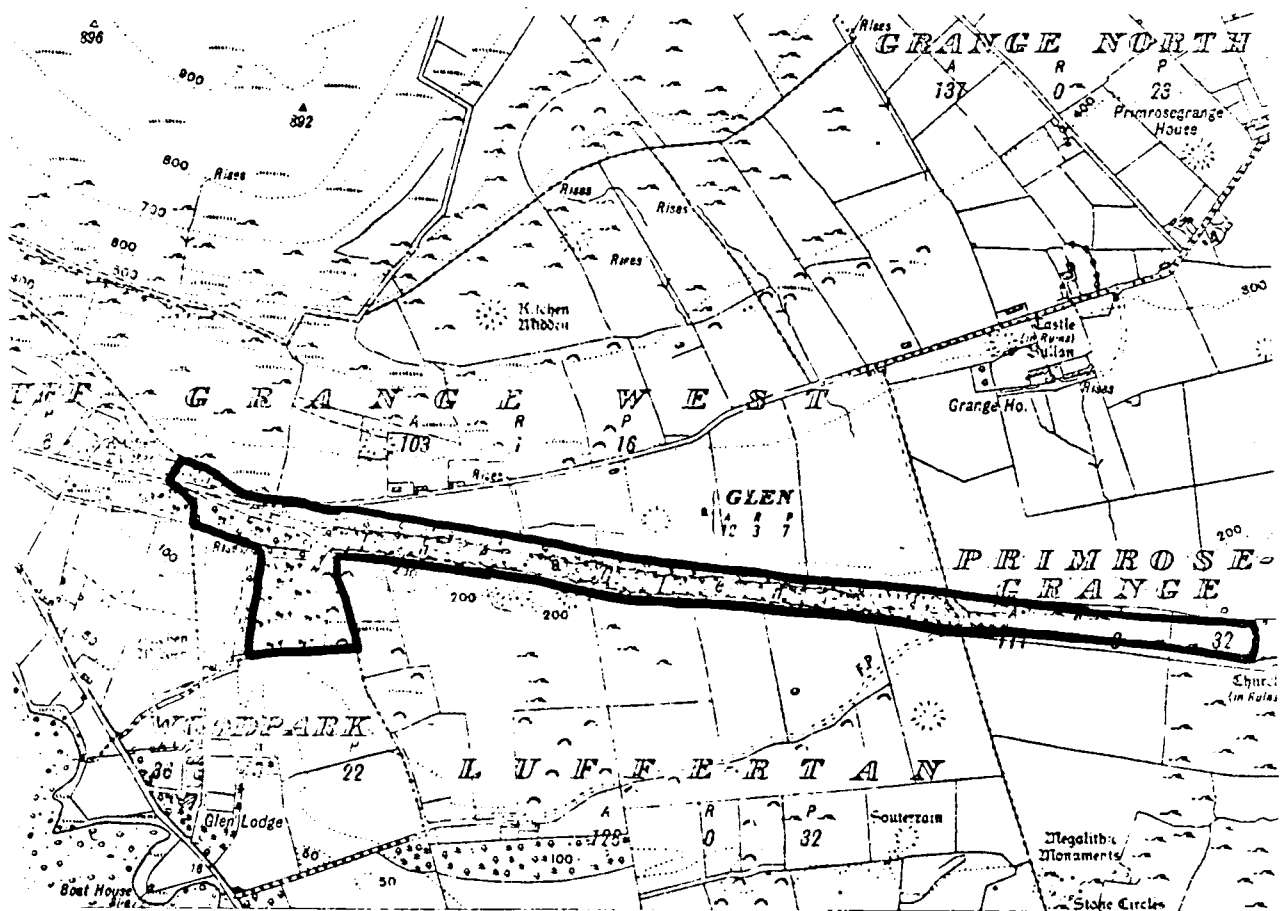
Vulnerability and Recommendations

Felling or other physical disturbance is most undesirable in this area at the moment as is the planting of introduced species.

The area should be covered by a Tree Preservation Order under Section 45, Local Government (Planning and Development) Act, 1963. Public use of the wood does not seem excessive at the moment and it retains most of its natural features.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	EASKY RIVER
<u>Acreage</u>	32 acres
<u>Grid Reference</u>	G 38 36
<u>Scientific Interest</u>	Botanical, Ecological,
<u>Rating</u>	Local
<u>Priority</u>	B

Description of Area

This river is bordered by slopes of glacial drift and where water seeps out of these a most interesting calcareous marsh community frequently arises. This is best developed on the eastern side in the present area. Here the high and low slopes are tree-covered especially by alder, and in between the vegetation is dominated by Schoenus (bog rush) Juncus and Carex species. Juncus articulatus and J. inflexus (rushes) are common while Carex lepidocarpa (a sedge) is very frequent and C. hostiana widespread. Other species which occur include:-

Cirsium dissectum	meadow thistle	f
Carex panicea	a sedge	f
Equisetum palustre	marsh horsetail	f
Triglochin palustre	arrow grass	f
Sesleria caerulea	blue moorgrass	f
Anagallis tenella	bog pimpernel	lf
Eleocharis quinqueflora	spike-rush	o
Euphrasia scotica	eyebright	o
Trifolium medium	zig-zag clover	o
Parnassia palustris	grass of Parnassus	o
Epipactis palustris	marsh helleborine	o
Dactylorhiza spp.	marsh orchids	t
Pinguicula vulgaris	butterwort	t

A line of woodland follows the river for much of the distance and though mostly of planted species such as horse chestnut, sycamore and elm, with ash, oak and hazel, the ground flora is fairly rich. It includes:-

<i>Allium ursinum</i>	wild garlic
<i>Ajuga reptans</i>	bugle
<i>Crepis paludosa</i>	marsh hawksbeard
<i>Hypericum androsaemum</i>	St. John's wort
<i>Carex nigra</i>	A sedge
<i>Arum macalutum</i>	cuckoo-pint
<i>Listera ovata</i>	twayblade
<i>Bromus ramosus</i>	woodland brome
<i>Carex remota</i>	a sedge
<i>Anemone nemorosa</i>	wood anemone
<i>Viburnum opulus</i>	guelder rose

Evaluation

The calcareous flush areas have an interesting community and are some of the only ones found in the county.

The woodland is of some importance to local bird and mammal populations as nowhere else in the vicinity do trees reach such a large size.

Vulnerability

Both the marsh communities and the woodland appear relatively secure but might be damaged by fertilization and/or drainage, or by felling

Recommendations

Land use should remain in its present form in this area. The tree cover should be exploited rationally if at all and felling must be selective rather than complete. The legal basis for this would be a Tree Preservation Order, reviewed every five years and applied to different trees.

<u>Name of Area</u>	BUNDUFF LOUGH
<u>Acreage</u>	218 acres
<u>Grid Reference</u>	G 72, 56
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Local
<u>Priority</u>	A

Description of Area

This is a lagoonal type of lake formed by the damming of the river behind sand-dunes. The margins include much reedswamp of Typha latifolia (bulrush), Phragmites australis (reed), Equisetum fluviatile (water horsetail), and Sparganium erectum (bur-reed) while elsewhere Menyanthes trifoliata (bog bean) and Caltha palustris (kingcup) give way inland to:-

Eleocharis palustris	spike rush
Carex nigra	a sedge
Galium palustre	marsh bedstraw
Mentha aquatica	water mint
Cardamine pratensis	lady's smock
Filipendula vulgaris	meadow sweet

Of more limited extent is a stony edge with Polygonum amphibium (amphibious persicaria) while at the north-east end a floating field community of Equisetum limosum (water horse-tail) Poa trivialis (rough meadow grass), Holcus lanatus (yorkshire fog), Juncus effusus (soft rush), Lotus uliginosus (hairy birdsfoot trefoil), and Potentilla palustris, (marsh cinquefoil) is an interesting feature.

The chief interest in the area lies in the population of wintering wildfowl :-

	1966	1967
Mallard		40
Teal		100
Wigeon	not counted	1
Shoveller		8
Pochard		70
Tufted duck		10
Mute swan	5	10
Whooper swan	72	25
White-fronted goose	16	35

Mallard and teal nest as well as water rail, coot, little grebe etc.

Evaluation

The Bunduff area is probably the third most important haunt of duck and swans in the county. It is chiefly valuable for the variety of species present and forms an important field-trip location.

Vulnerability

Drainage seems to be the only present threat to the area.

Recommendations

Water levels should remain at their present height. This is especially important for the white-fronted geese as these are attracted by wet fields rather than the lake itself.

<u>Name of Area</u>	Deadman's Point (Rosses Point)
<u>Acreage</u>	10 acres
<u>Grid Reference</u>	G 62 39
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	A

Description of Area

The sea cliffs in this area have an interesting vegetation including Asplenium marinum (sea spleenwort), Sesleria caerulea (blue moor grass,) Antennaria dioica (pearly everlasting,) Salix repens (creeping willow,) Anthyllis vulneraria (kidney vetch) and Thymus drucei (thyme) which persist despite intensive trampling.

Along the south side, however, a more important community occurs on shallow soil over limestone. In this Sesleria is the dominant grass followed by Festuca ovina (sheep's fescue) and Helictotrichon pubescens (downy oat.)

A tendency for acidity to develop on this predominantly calcareous substrate is shown by the presence of Calluna vulgaris (heather), Succisa pratensis (devil's bit,) Potentilla erecta (tormentil,) and Dactylorhiza maculata (spotted orchid). In this, the community resembles part of the Burren in Co. Clare. Schoenus nigricans (black bog rush,) Rosa spinosissima (burnet rose) and Koeleria cristata (crested hair grass) occur in places while woodland species such as Endymion non-scripta (bluebell) and Conopodium majus (pignut) appear in one area.

Evaluation

This curious plant community exemplifies certain trends apparent in the vegetation of Western Ireland such as the fading of an acid/alkaline distinction, and the woodland/oceanic factor in herb distribution.

In the absence of grassland studies in this area it seems to be a rare community and one which enhances the already unusual character of the Rosses Point peninsula. (See Irish Naturalist 1904, 8.)

Vulnerability

These fields are threatened by building operations that are spreading westwards from the village. Fertilizer spreading would probably be equally damaging.

Recommendations

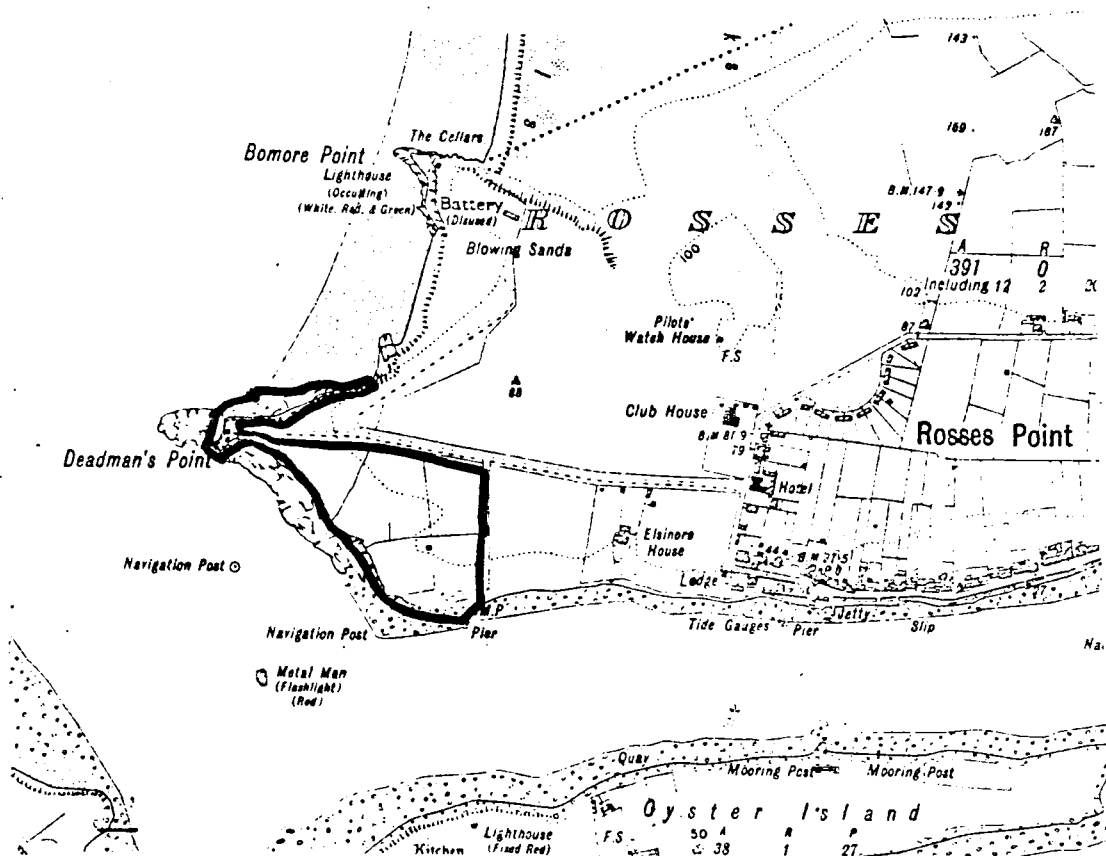
Land use should remain in its present form in the area.

Both from the viewpoint of amenity and scientific interest the site must be preserved from all development. It would not be desirable to encourage access by providing seats or a path but limited use should continue.

If the importance of the area is confirmed by An Foras Taluntais grassland survey, consideration should be given to covering it with a Conservation Order under the Local Government (Planning and Development) Act, 1963.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	CUMMEEN WOOD
<u>Acreage</u>	19 acres
<u>Grid reference</u>	G 64 36
<u>Scientific Interest</u>	Ecological, botanical
<u>Rating</u>	Local
<u>Priority</u>	C

Description of area

This is an area of young woodland on the south shore of Sligo Bay. It occurs on a steep slope and is nicely wind-shaped. All the trees occurring with the exception of Acer pseudo-platanus (sycamore) are of native species. They include:-

<i>Corylus avellana</i>	hazel	A
<i>Prunus spinosa</i>	blackthorn	A
<i>Ilex aquifolium</i>	holly	C
<i>Fraxinus excelsior</i>	Ash	C
<i>Salix capraea</i>	goat-willow	F
<i>S. aurita</i>	willow	F
<i>Viburnum opulus</i>	guelder rose	F
<i>Alnus glutinosa</i>	Alder	O
<i>Crataegus monogyna</i>	hawthorn	F
<i>Euonymus europaeus</i>	spindle tree	O

The slope is made partly of exposed limestone, partly of loose soil and supports a typical ground flora, including Phyllitis scolopendrium (harts tongue) Polystichum setiferum (shield fern,) Arum maculatum (cuckoo pint), Endymion non-scripta (bluebell), Chrysosplenium oppositifolium (yellow saxifrage), Ajuga reptans (bugle), Anemone nemorosa (wood anemone) and Brachypodium sylvaticum (false brome grass). Rosa cannina (dog rose) and R. spinosissima (burnet rose) occur marginally.

Evaluation

The chief importance of this area is that it is a naturally occurring hazel wood. The slope is too steep for grazing animals and recolonisation has probably proceeded without check once it was induced.

The great exposure of this wood makes it an interesting ecological site and poses questions as to the climax vegetation of coastal areas.

Vulnerability

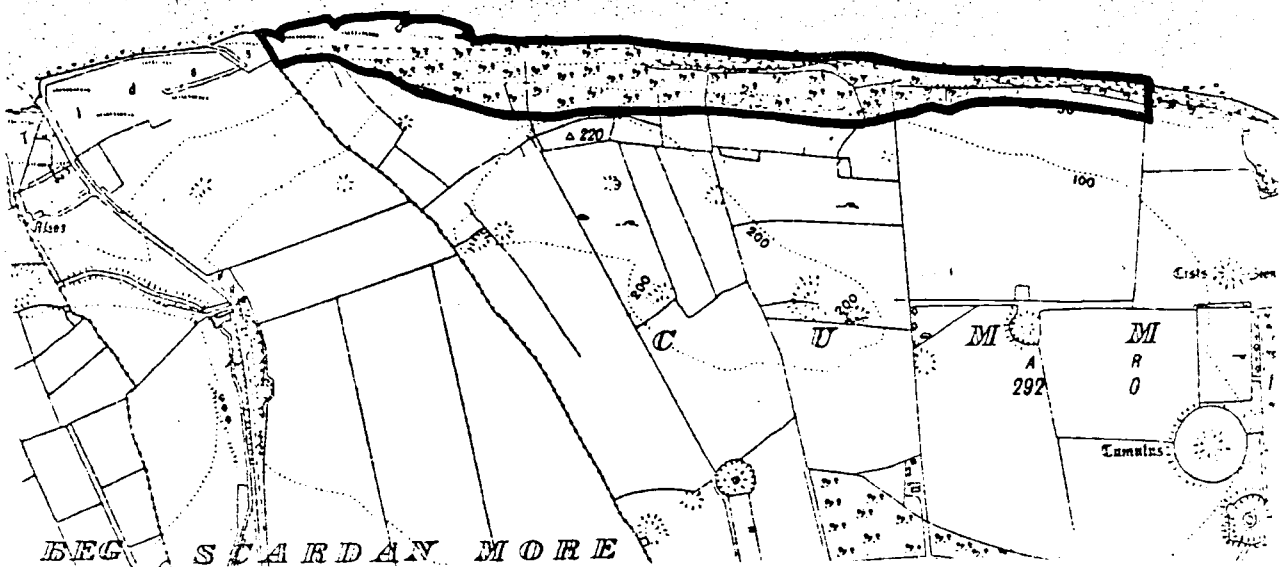
Cumeen Wood appears to be under no immediate threat but felling or other modifications may be considered.

Recommendations

Land use should continue along its present lines.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



BEG SCARDAN MORE

<u>Name of Area</u>	COLGAGH LOUGH
<u>Acerage</u>	90 acres
<u>Grid Reference</u>	GT 74 35
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	C

Description and Evaluation

Colgagh Lough is a limestone lake with abundant marl deposits. This white substance is derived from gelatinous algae and charophytes and accumulates on vegetation and on the bottom of the lake. The marl deposit is characteristically sterile; a few higher plants grow in it, especially:-

<u>Scirpus lacustris</u>	lake rush	l.a.
<u>Polygonum amphibium</u>	amphibious persicaria	f
<u>Potamogeton coloratus</u>	pondweed	f
<u>Mentha aquatica</u>	water mint	f
<u>Caltha palustris</u>	marsh marigold	o

Invertebrate life is richer, mainly with molluscs, a few coleoptera and leeches.

The lake margin is stony and is covered by a grassy vegetation, including:-

<u>Agrostis stolonifera</u>	bent grass	a
<u>Juncus articulatus</u>	jointed rush	f
<u>Carex cf. serotina</u>	a sedge	l.c.
<u>Ranunculus flammula</u>	lesser spearwort	f
<u>Senecio aquaticus</u>	marsh ragwort	f
<u>Climacium dendroides</u>	a moss	f

This type of lake, though common in the midlands, is very rare outside them and the site is probably unique in Sligo. It is at an interesting ecological extreme with unusual habitat conditions.

Vulnerability

Colgagh Lough is in a depression so receives drainage from all sides. Its interest would be damaged by an increase in pollution.

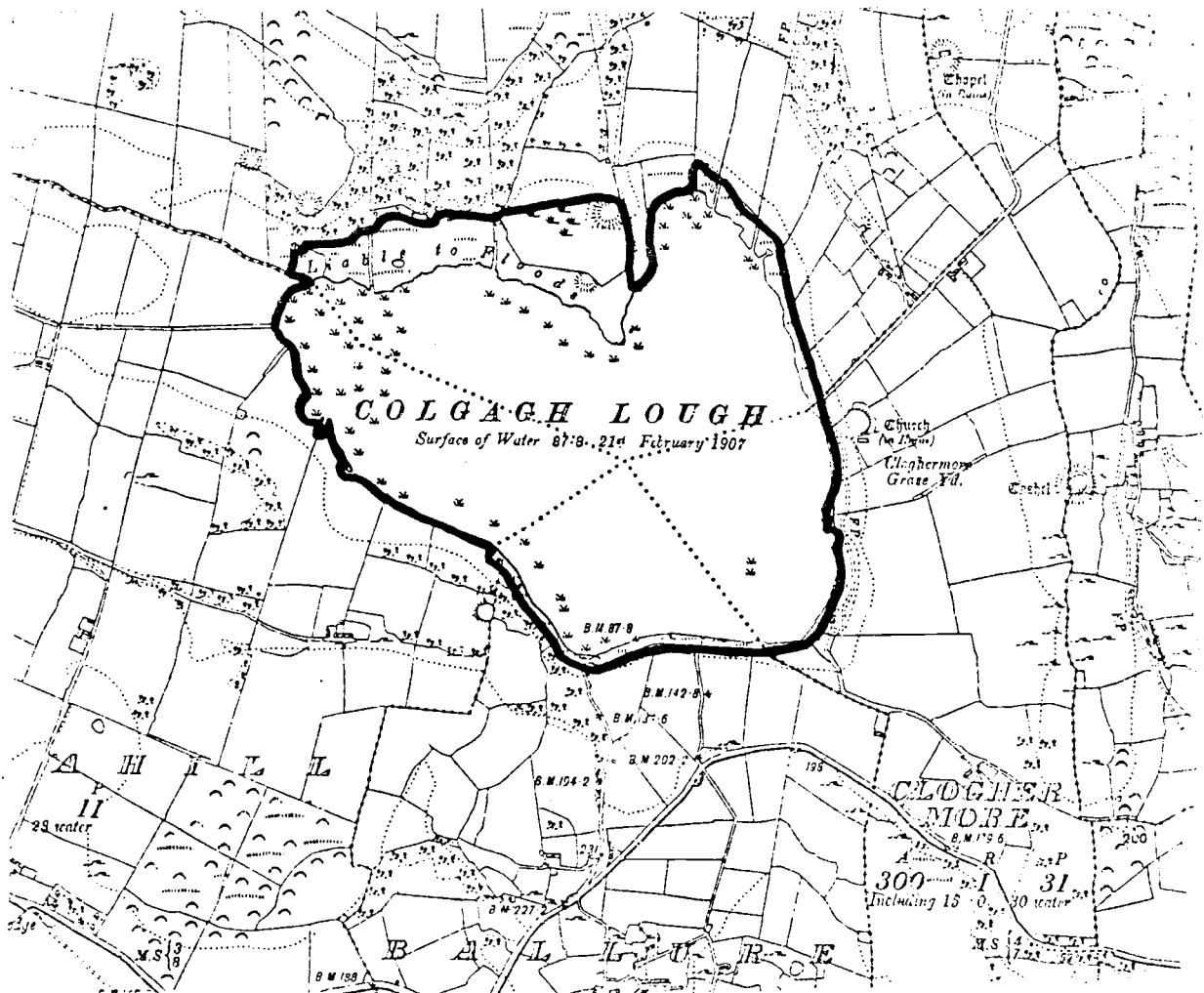
Drainage is also a threat to the area; but a lowering of the lake level would expose only unproductive marl deposits.

Recommendations

Land-use should continue in its present form in the area.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	DERINCH ISLAND
<u>Acreage</u>	264 acres
<u>Grid reference</u>	G 60 30
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	B

Description of Area

This area is a reclaimed saltmarsh now formed of wet meadow with drainage cuts, pools and marsh communities. Close to the sea wall brackish species are common with Ranunculus sceleratus (celery-leaved crowfoot), Samolus valerandi (brook-weed) Carex extensa, C. otrubae (sedges) and Scirpus maritimu (sea clubrush). The last species lines many of the ditches and pool margins and occurs with Carex rostrata, C. nigra (sedges) Caltha palustris (marsh marigold), and the following :-

Ranunculus flammula	lesser spearwort
Galium palustre	marsh bedstraw
Veronica anagallis-aquatica	water speedwell
Sparganium erectum	bur-reed
Eleocharis palustris	spike rush
Triglochin palustre	arrow grass
Myosotis caespitosa	forget-me-not

In the water Hippuris vulgaris (marestail,) Potamogeton berchtoldii (pond weed) and Equisetum fluviatile (water horsetail,) grow.

Evaluation

In summary, this is a diverse marsh system, highly productive with abundant wildfowl and passerine birds, invertebrate life and plant species. The occurrence of a disused oyster farm and its recolonisation is another point of interest.

Vulnerability

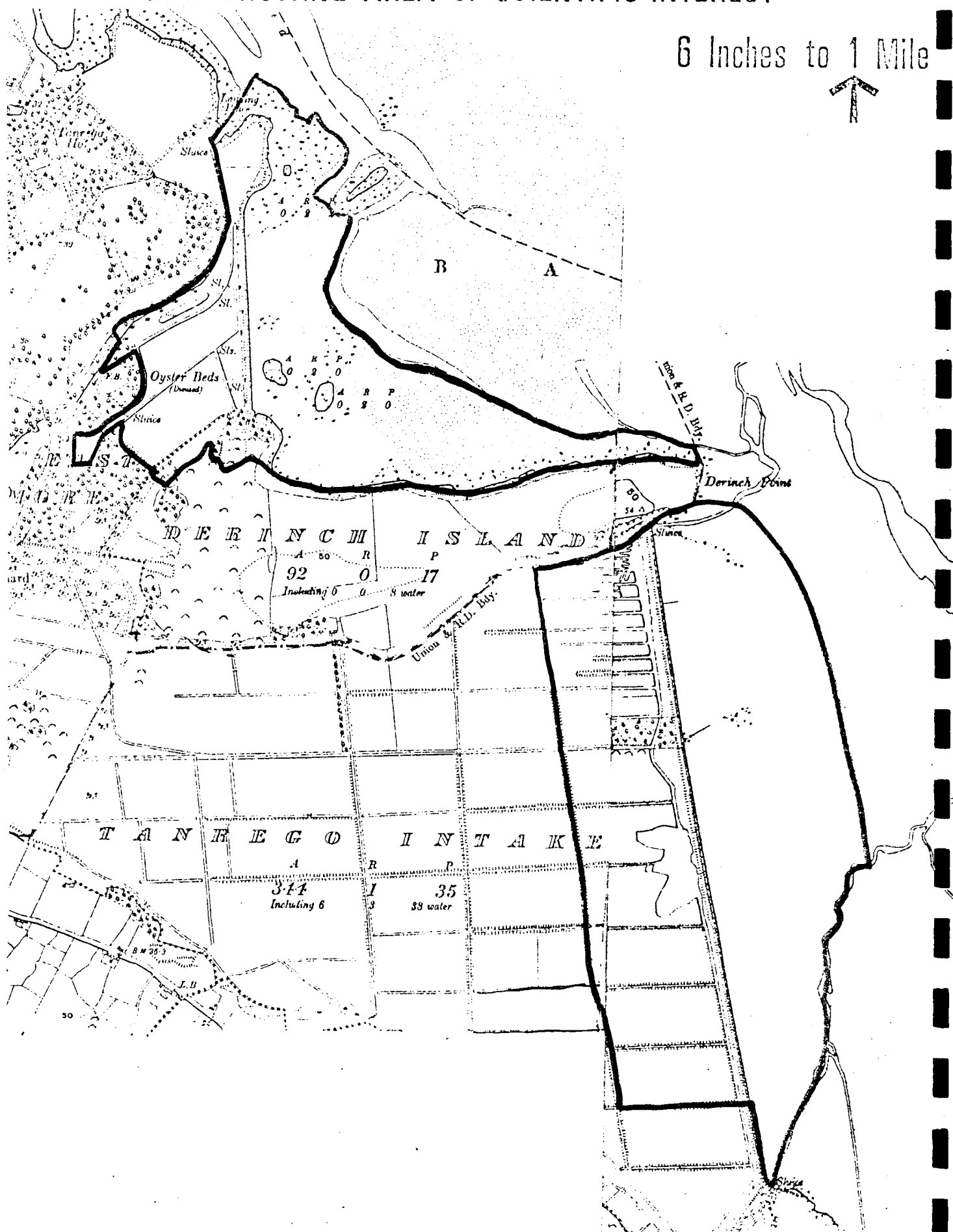
The area could be further drained but this is not very likely, due to its low-lying nature. Overshooting may occur of the wintering mallard, teal and snipe.

Recommendations

Land use should continue in its present form in this area.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

6 Inches to 1 Mile



<u>Name of Area</u>	'ARDTERMON FEN'
<u>Acreage</u>	16 acres
<u>Grid Reference</u>	G. 588,436
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	B

Description and Evaluation

This marshy area includes both base-rich and base-poor communities in proximity. It appears to be a cut-over raised bog from which almost all turf has been removed. The remaining acidic peaty area is dominated by Carex echinata, C. panicea, C. demissa (sedges) with Luzula multiflora (woodrush), Dactylorhiza maculata (spotted orchid) and Potentilla erecta (tormentil).

The larger part of the area is calcareous and partly quaking. Chara spp. (stonewort) are abundant and their remains form a white deposit. In this Carex lepidocarpa, C. rostrata (sedges). Eriophorum angustifolium (bog cotton), Menyanthes trifoliata (bogbean) and Eleocharis palustris (spike rush) are abundant. The following species also occur:-

Carex nigra	a sedge	c
C. flacca	a sedge	c
Pedicularis palustris	red rattle	c
Hippuris vulgaris	marestail	c
Ranunculus flammula	lesser spearwort	c
Hydrocotyle vulgaris	marsh pennywort	f
Phragmites australis	common reed	l.c
Apium nodiflorum	fools watercress	l.c
Iris pseudacorus	flag iris	l.c
Cardamine pratensis	lady's smock	o
Sparganium ramosum	bur-reed	p.f
Dactylorhiza incarnata	marsh orchid	o

A grassy raised area in the middle bears small trees of Alnus glutinosa (alder) with some planted spruce. At its edges grow Carex disticha (a sedge) Juncus subuliflorus (common rush), Listera ovata (twayblade), Climacium dendroides (a moss) and Ophioglossum vulgatum (adder's tongue) in a stand of Poa trivialis (rough-stalked meadow grass).

Altogether this is an interesting ecological site, relevant to the origins of raised bogs throughout the country.

Vulnerability

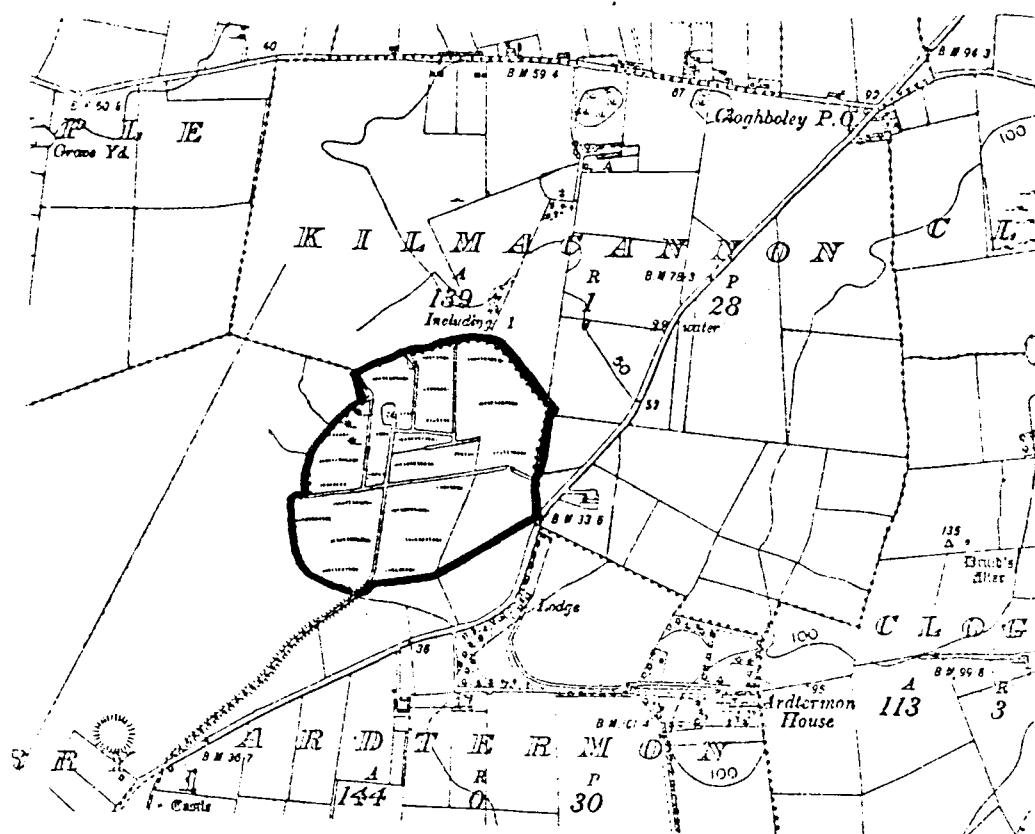
The site would be damaged by any lowering of water levels in the area and also by further tree planting.

Recommendations

Drainage in the area should be discouraged and land-use should remain in its present form.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	DOONEE ROCK <i>WOOD</i>
<u>Acreage</u>	3 acres
<u>Grid Reference</u>	G 72 32
<u>Scientific Interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	A

Description of Area

Doonee Rock is a high limestone cliff near the south shore of Lough Gill. Its northern side is a sheer cliff while elsewhere it is surrounded by steep wooded slopes. Only on the summit and the cliff does natural vegetation occur as forestry plantations encroach closely upon it.

But even this small area contains several interesting species. The hazel wood on the summit includes some ash and oak as well as Oxalis acetosella (wood sorrel), Endymion non-scripta (bluebell), Fragaria vesca (strawberry) Sanicula europaea (wood sonicle), Anemone nemorosa (wood anemone) and Allium ursinum (garlic). Set on the cliff itself are a few trees of Euonymus europaeus (spindle tree) and Taxus baccata (yew) while Rosa spinosissima (burnet rose), Rubus saxatilis (stone bramble), Sesleria caerulea (blue moor-grass), Viburnum opulus (guelder rose) and Carex flacca (a sedge) are more common.

The area of lake shore below, which is included in this area, is an accesible marsh and woodland community. Quercus (oak) has generally been left bordering Lough Gill and beneath it a heathy vegetation containing Dryopteris aemula (crinkled buckler-fern) , Lathyrus montanus (heath pea) and Pteridium aquilinum (bracken) occurs with Melica uniflora (wood melick grass) and Zerna vamosa (brome grass) on the limestone.

The marsh is largely a Molinia - Myrica (purple moor-grass- bog myrtle)

community with some Cirsium dissectum (meadow-thistle) and Lysimachia vulgare (yellow loosestrife). At its edges Carex nigra, C. elata (sedge) Phragmites australis (reed) and Ranunculus flammula (lesser spearwort) occur with Salix repens (creeping willow) in the dryer ground.

Evaluation

The flora of this region is not exceptional though before the area was forested it was better endowed, with, for example Monotropa hypopithys (yellow bird's nest). However it is very accessible and is already the site of a forestry based nature trail. It is a good place to study a cliff community of quite interesting species, and also the lakeshore area.

Vulnerability

What little natural vegetation remains on Doonee Rock is threatened by shading from the maturing forest trees, especially beech and spruce.

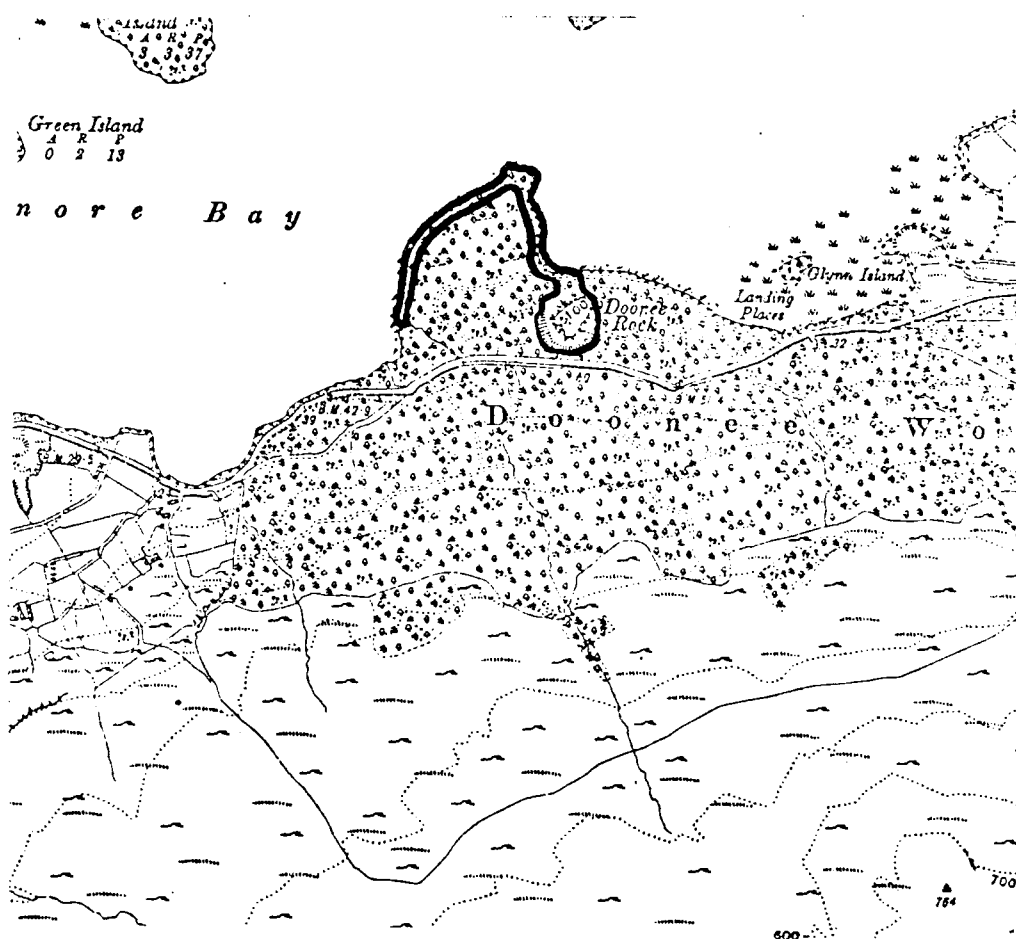
The summit flora is also endangered by too frequent trampling though that on the cliff is relatively secure.

Recommendations

As much vegetation should be retained in the area as possible and the nature trail should be diversified to include it. This could be taken up with the Forestry Division.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of area</u>	DUNNEILL RIVER BELOW DROMORE WEST
<u>Acreage</u>	7 acres
<u>Grid reference</u>	G. 43, 34
<u>Scientific interest</u>	Geomorphological, botanical
<u>Rating</u>	Local
<u>Priority</u>	C

Description and evaluation

The Dunneill River has cut a vertical gorge in the limestone of this area and by moving laterally over different strata has formed concave and convex walls now largely overhung with ivy and tree growth. These shady sites now contain an interesting community, especially of bryophytes, which includes one rare species.

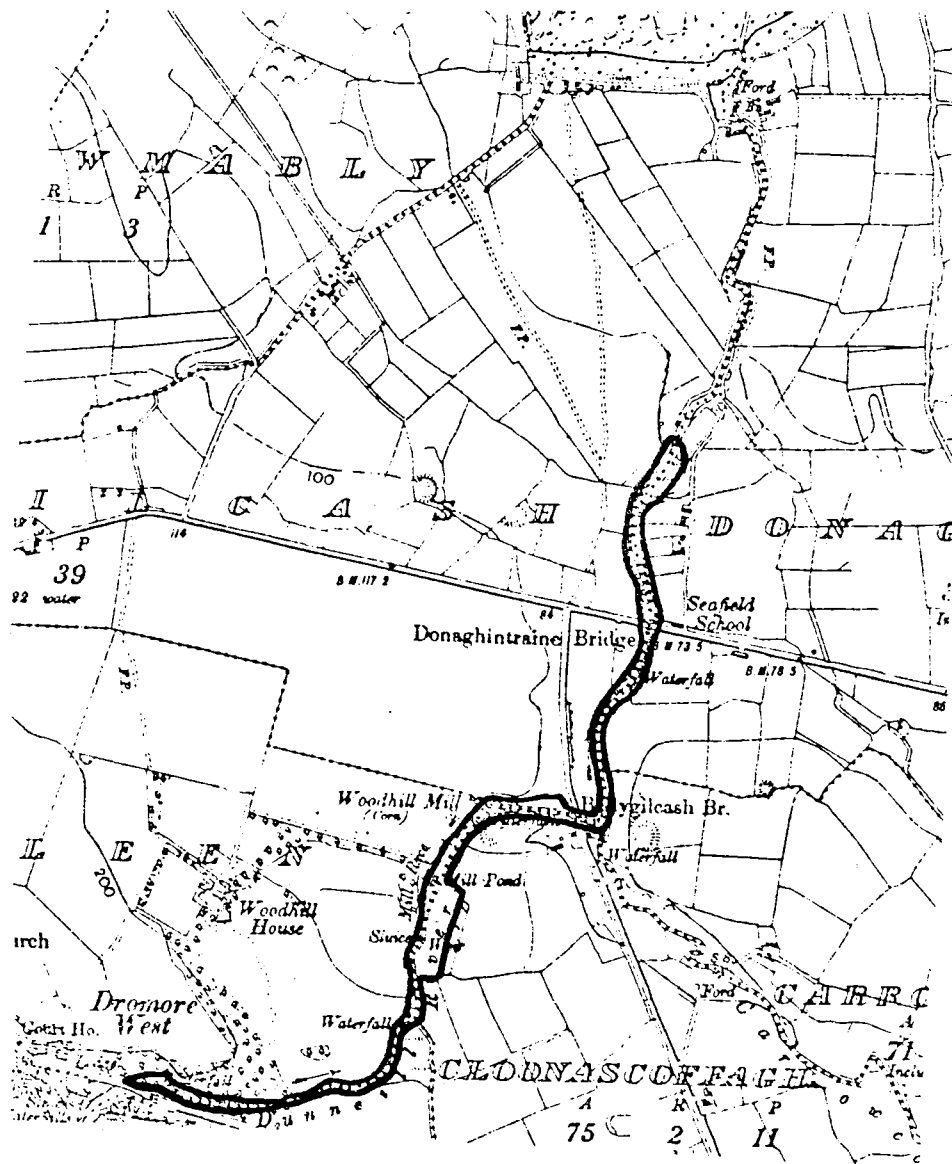
The site is an excellent study area for river processes and water erosion.

Vulnerability and Recommendations

The site would appear to be secure from all developments except perhaps gross pollution of the river.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of area</u>	RINN
<u>Acreage</u>	4.3 Acres
<u>Grid reference</u>	G. 62, 36
<u>Scientific interest</u>	Geological
<u>Rating</u>	Local
<u>Priority</u>	A

Description and evaluation

This is another part of the raised beach found at Cullenamore and is again composed mainly of oyster shells. It is also an archaeological site of importance.

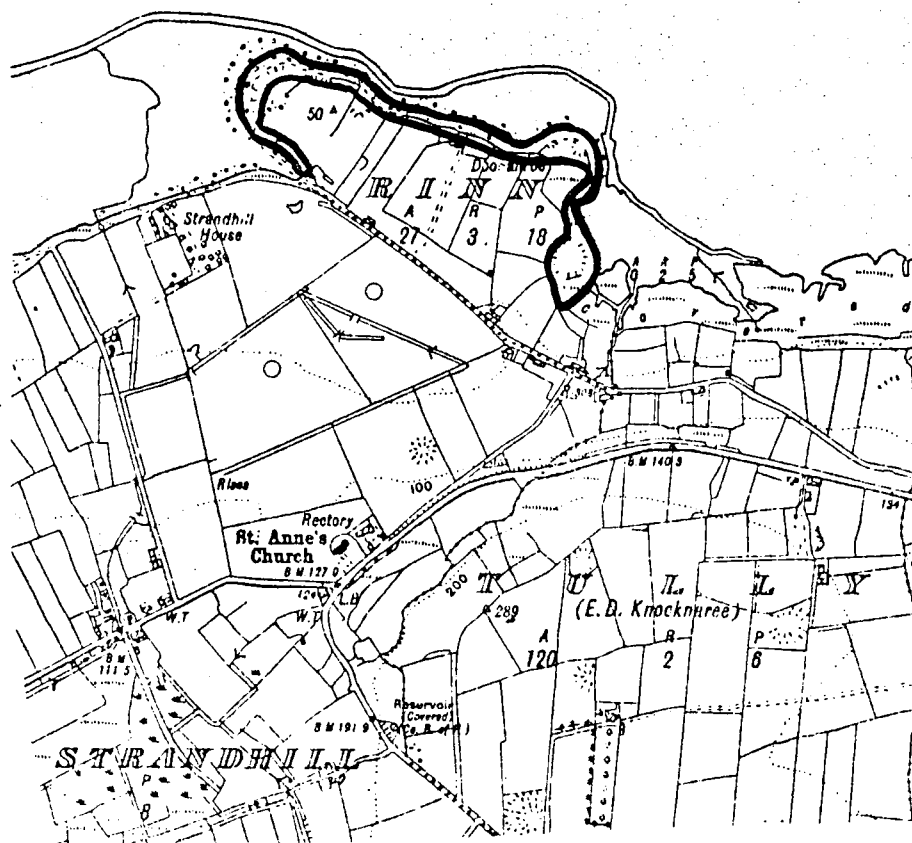
Though of less value than Cullenamore at the moment, Rinn seems relatively secure from development and therefore likely to persist.

Vulnerability and recommendations

Development of any sort should be prevented on this site. This includes removal of material which would be the most damaging influence.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



<u>Name of Area</u>	LOUGH ARROW (parts)
<u>Acreage</u>	c. 450 acres
<u>Grid Reference</u>	G 7, 1.
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Local
<u>Priority</u>	B

Description & Evaluation

Around the shores of this lake there are several sheltered bays with abundant growth of Scirpus lacustris (lake rush), Phragmites australis (reed) etc. and these form important cover for nesting and moulting wildfowl. The inlets near Ballinafad and Ballindoon are probably the most important but there are many smaller areas. The wooded islands and parts of the shore are used by nesting tufted duck while flocks of wintering pochard, tufted duck and some goldeneye use the whole lake. Lough Arrow is less important for dabbling duck in winter because the shore is generally stony. Teal however occur where trees overhang the shore.

No wildfowl counts are as yet available so the lake must be given only local importance at the moment.

Little botanical interest has been demonstrated in this area largely because agriculture extends right down to the shore but a typical calcicole flora occurs on drift deposits on the west side. An interesting lake shore species has been found. Some of the old estate woodlands have a rich bird fauna largely of passerines. Many of them are overrun by Rhodedendron.

Vulnerability & Recommendations

The areas of interest are roughly shown on the map overleaf. In general, woodland close to the lake whether on islands or the main shore should be preserved and recreational or fishing developments should avoid any shallow reedgrown bays. Building should be prevented close to such areas, as it would lead to unnecessary disturbance of the wildfowl.

<u>Name of Area</u>	HORSE ISLAND (Map on page 73)
<u>Acreage</u>	14 acres
<u>Grid Reference</u>	G 56 45
<u>Scientific Interest</u>	Ornithological
<u>Rating</u>	Local
<u>Priority</u>	C

Description & Evaluation

Horse Island resembles Ardboline in its bird fauna having substantial numbers of cormorants and shags nesting. Cormorants were counted at 80 pairs in 1969, and the shags number about 20 pairs.

Barnacle geese visit the island in winter.

Vulnerability & Recommendations

As for Ardboline Island (p. 72)

<u>Name of area</u>	YELLOW STRAND (RAGHLY)
<u>Acreage</u>	52 acres
<u>Grid reference</u>	G. 57, 44
<u>Scientific interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	B

Description of area

There are two parts to this area. One is a dwarf herb-rich community on top of the cliffs south of the yellow strand and the other is the area behind the sand hills which has been smoothed by sand deposition.

The cliff-top sward is closely grazed. It consists basically of a Festuca - Trifolium repens (fescue-clover) community with the following species in addition :-

Bellis perennis	daisy	a
Lotus corniculatus	birdsfoot trefoil	a
Plantago coronopus	buckshorn plantain	c
P. lanceolata	ribwort plantain	c
P. maritima	sea plantain	f
Ranunculus bulbosus	bulbous buttercup	f
Cochlearia officinalis	scurvy grass	f
Luzula campestris	wood rush	f
Carex caryophyllea	spring sedge	f
Armeria maritima	sea pink	o
Cerastium fontanum	mouse-ear chickweed	o
Koeleria cristata	crested hair-grass	o
Glaux maritima	saltwort	o
Centaureum erythrea	centaury	o

Two rarer species have been found nearby in similar vegetation.

The other area has a plant cover of machair type with Carex arenaria (sand sedge) and Poa pratensis (meadow grass) common and such species as Galium verum (lady's bedstraw), Pilosella officinarum (mouse-eared hawkweed), Lotus corniculatus, Polygala vulgaris (milk wort), Viola riviniana (violet), Anthyllis vulneraria (kidney vetch), Antennaria dioica (mountain everlasting), Dactylorhiza fuchsii (spotted orchid), and D. incarnata (marsh orchid).

In the damper places Mentha aquatica (water mint), Carex flacca (sedge) and Schoenus nigricans (black bog-rush) come in with Salix repens (creeping willow) commonly, as well as Anagallis tenella (marsh pimpernel), Cardamine pratense (lady's smock) etc.

Evaluation

The area has two vegetation types of moderate interest and it may be the only site in Sligo for machair - a herb-rich community usually growing on level wind blown sand.

Vulnerability

Grassland communities are relatively immune to trampling but are affected by fertilization. This changes the species composition and removes the main ecological interest in the community.

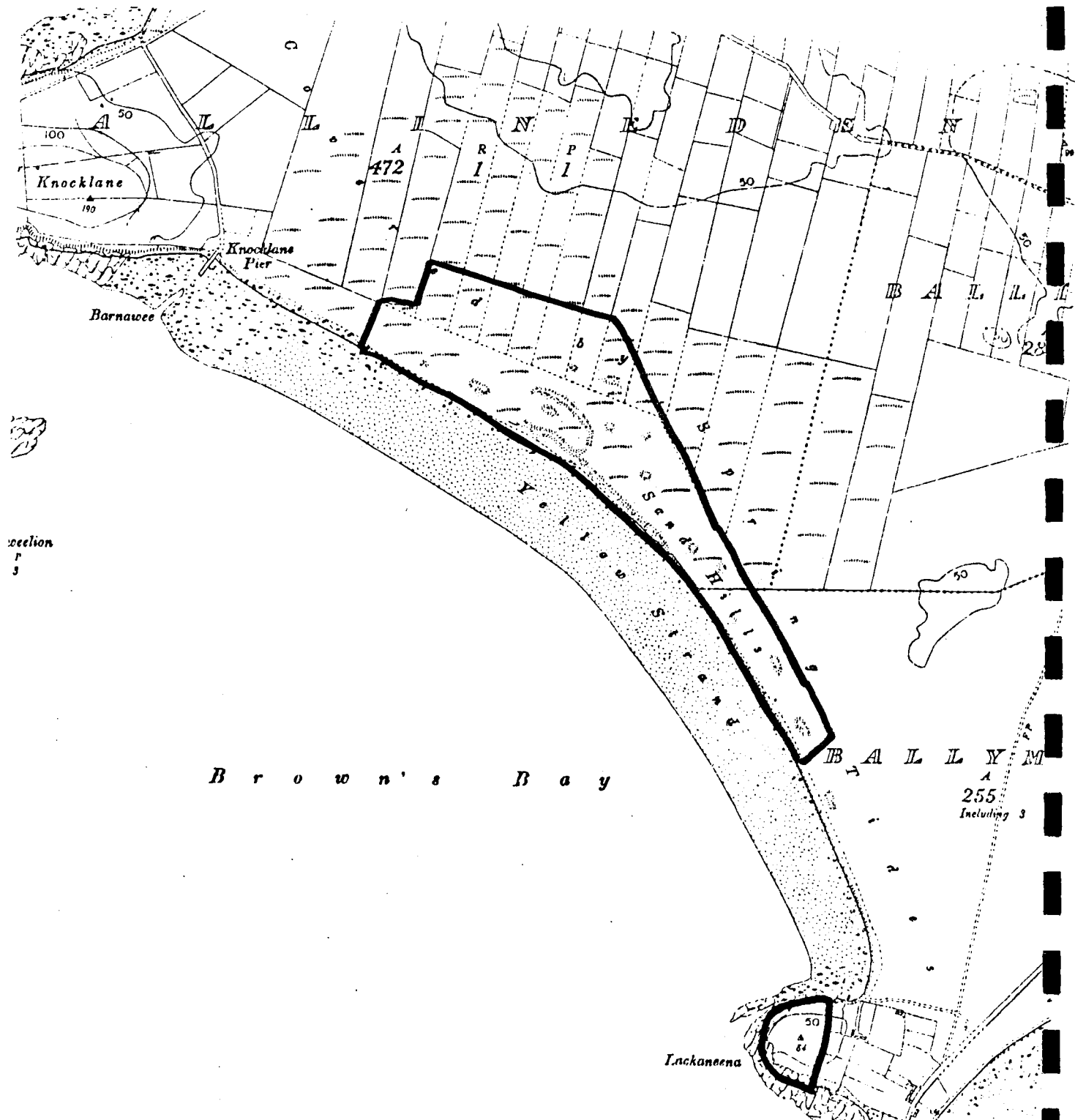
Recommendations

The area could take light recreational use but habitat modification should not be permitted.

It is important to prevent the widespread use of fertilizers.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



Section
1
3

B r o w n ' s B a y

Lackaneena

<u>Name of area</u>	WOOD NEAR FIVE MILE BOURNE
<u>Acreage</u>	5 acres
<u>Grid reference</u>	G. 77, 45
<u>Scientific interest</u>	Ecological
<u>Rating</u>	Local
<u>Priority</u>	C

Description and evaluation

This wood is interesting as it has only been reestablished, on limestone grassland, relatively recently. It is mainly a hazel canopy overtopped by ash, elm (Ulmus montana), Salix cinerea and S. capraea (willows). Ilex aquifolium (holly), Viburnum opulus (guelder rose) and Lonicera periclymenum (honeysuckle) occur in it and the ground flora is relatively rich, e.g.

<u>Sanicula europaea</u>	wood sanicle	f
<u>Dryopteris dilatata</u>	broad buckler-fern	f
<u>D. pseudomas</u>	male fern	f
<u>Athyrium filix-femina</u>	lady fern	f
<u>Anemone nemorosa</u>	wood anemone	l.f.
<u>Carex sylvatica</u>	sedge	f
<u>Circaea lutetiana</u>	enchanter's nightshade	o
<u>Arum maculatum</u>	cuckoo-pint	o
<u>Orchis mascula</u>	early purple orchid	o
<u>Hypericum androsaemum</u>	St. John's wort	o
<u>Lysimachia nemorum</u>	yellow pimpernel	l.f.
<u>Conopodium majus</u>	pignut	o

Since hazel is not a dominant tree in this area the wood is in a transitional stage and active succession will bring about many changes to it in the future. It would be simple at this stage to determine the age of stand and the ensuing timescale of species changes.

Vulnerability

Clearance or undue spread of the few Acer pseudo-platanus (sycamore) now present

appear the main threats to the area.

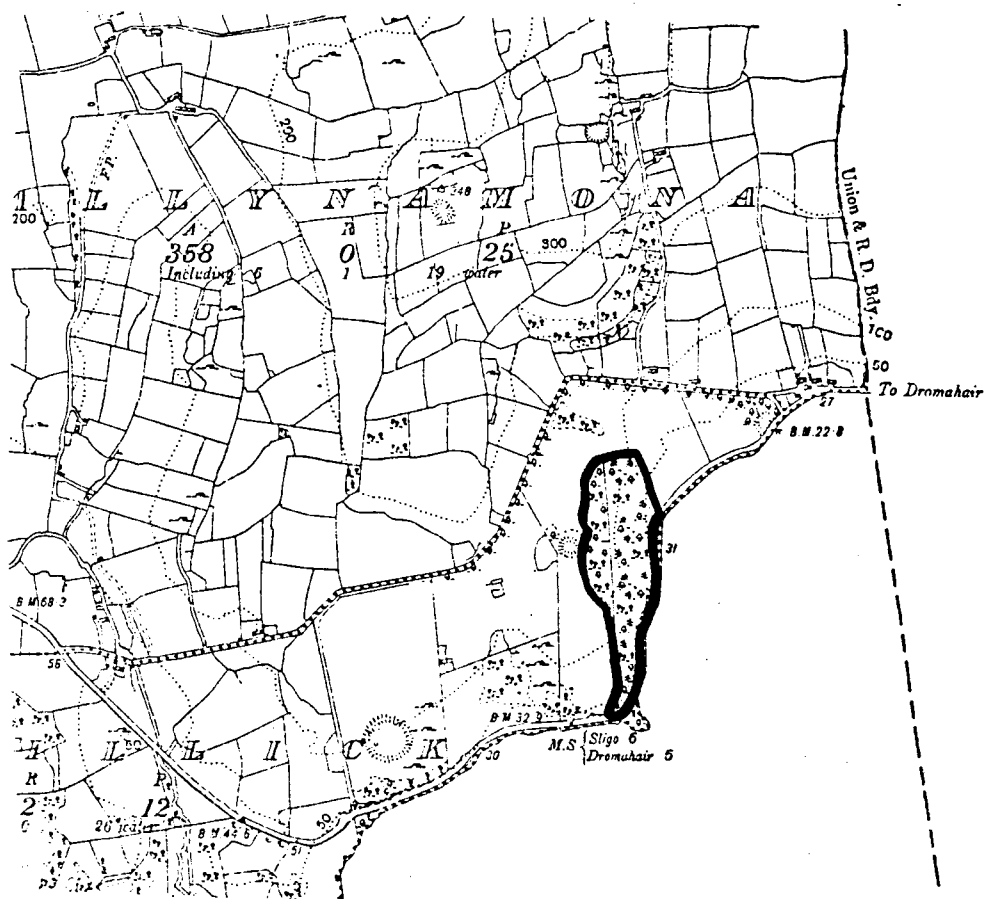
Recommendations

This area is one of those that give Lough Gill its attractive wooded appearance and might well be included in an area of Special Amenity.

Since this does not cover agricultural or forestry usage, it should be the subject of a Tree Preservation Order (Section 45,) Local Government (Planning and Development) Act, 1963. There is little danger of malicious felling at this stage since the trees have little value.

MAP SHOWING AREA OF SCIENTIFIC INTEREST —

Scale: 6 Inches to 1 Mile



	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Presc Order
oncar cliffs	X			
allisadare Bay	X		X	
elvoir & Stony Point				
icklieve Mts. & Keshcorran		X		
randhill dunes		X		
bbeytown mine	X			
rdboline I.	X			
Knockachree cliffs	X			
Knocknarea glen				
Easky River	X			
Bunduff Lough	X			
Deadman's Point	X			
Cummeen Wood	X			
Colgagh Lough	X			

SECTION G RECOMMENDED ACTION FOR EACH OF THE SITES MENTIONED

	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Preservation Order
en Bulben Uplands			X	
treedagh Point	X			
bulleenamore	X			
fnion Wood			X	
erpent Rock	X			
allygilgan (Lissadell)			X	
onet River Wood			X	
ough Gara	X			
ishmurray	X			
emplehouse Lough	X			
lish Wood fringe	X			
ughris Head	X			
fullaghmore	X			
ishcrone spit	X		?	

	General Planning Control	Special Amenity Area Order	Conservation Order	Tree Pr. Ord
Derinch Island	X			
Ardtermon Fen	X			
Doonee Rock	X			
Dunneill R.	X			
Rinn	X			
L. Arrow (parts)	X			
Horse Island	X			
(Raghy) Yellow Strand	X			
Wood nr. Five Mile Bourne				