CONSERVATION AND AMENITY ADVISORY SERVICE

A PRELIMINARY REPORT ON AREAS OF SCIENTIFIC INTEREST IN COUNTY CLARE

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April, 1972.

B. See <u>Areas of Scientific Interest in Ireland</u>, An Foras Forbartha, 1981 for updated list of sites.

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| y Conservation Order Tree Preservation | | | | | | | |
|--|---------------|-------------------|-----------------|--------------------|--|--|--|
| Special Ameni Area Order | | | | | | | |
| General Planning Control | * | * | * | * | | | |
| No Protection necessary | | | | | | | |
| | Rinskea Shore | St. Senan's Lough | Wood near Ennis | Wood west of Tulla | | | |

>+es that a management agreement might be preferable to a statutory order. >--allow limited exploitation if desired.

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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 scientific or educational grounds. The Conservation and Amenity Advisory Service is attempting to identify a representative range of natural or 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 selected examples it will allow more people to obtain meaningful recreation in the countryside.

However, scenically attractive areas which appeal because of the combination of hills, and water with woodland or rock may introduce conflicts. They are naturally sought after by housing or recreation interests but, at the same time, they 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 these interests but occasionally development will have to be curtailed to preserve the scientific interest in the area. Thus over much of the Burren, especially away from the coast, there can be no serious scientific objections to development though the area as a whole is of great interest. There are three areas however, which are of greater status. Here land use should be maintained in its present form until research has shown that a change will not be damaging, and any new development, excepting reconstruction, prevented.

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 that 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, other than by rice growing, 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.

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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 towndwellers that now form most of our nation.

SECTION A

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; they may be obliterated by development or can suffer insidiously through pollution, fertilization, grazing or over use in recreation.

Of these various instances, 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, co-operation to maintain the county's deciduous woodland at all levels of landowner, forester and the general public must be actively sought. It will seldom be sufficient to put a protection order on an area which would lose its value immediately the trees are felled, though it is an important first step. The voluntary organisations have a role to play in this, acting as observers throughout the county.

Drainage schemes of all sorts have serious consequences for the scientific interest of aquatic sites. The rock-bound lakes, such as Lough Bunny, are relatively secure being deep, but the shallow grassy lakes are especially vulnerable. Many of these are turloughs and their natural fluctuations cause good grass growth. In the winter this is utilised by wild swans and dabbling ducks, in the growing season by cattle. It is, in fact, a fine example of multiple usage. Drainage destroys the shooting resource and the more permanent grassland so formed, requires fertilisation. Thus it is seldom economically justified quite apart from the complete destruction of the scientific importance.

Lakes on impervious rocks such as those in south-west Clare can be lowered, doing only the most limited damage to the scientific heritage provided extensive marshes do not exist at their edges. This was the case with Lough O'Grady, which is not listed in this report; it is presently the situation at Tullaher Lough and St. Senan's Lough.

As is well known, pollution of lakes or rivers changes their character to begin with, and if it is continued has bad effects on water quality and fish life. For this reason, development upstream of important areas must be carefully controlled and alternative sites for domestic or agricultural installations, or drainage routes from them, must always be considered if such an area is involved. Where a greater distance of stream bed is available, it can be used within reason to deal with larger quantities of effluent.

Several farming operations are potentially destructive in other ways. Excessive fertilisation produces run-off of nutrients, especially nitrates and these are particularly bad for nutrient-poor ecosystems such as acid lakes and bogs. Introducing such run-off into any natural community will change the species composition. Fertilisation at any intensity changes the plants of grassland and where grassland is scientifically important, as on the thin soils of parts of the Burren, it should be actively restricted.

The last influence to be mentioned is that of recreation, which has two facets: excessive use of fragile ecoystems and the collecting of noticeable plants. Without management, sand dunes that have a high density of usage undergo self-destruction by wind erosion. Altering access paths to the beach and fencing off the bare sand of blowouts are often effective ways of combating this. The dunes at Fanore need such attention. Opening up an area with a rare noticeable plant may damage that species but, in general, enough individuals escape so that it persists from year to year. The Burren has so many species of this type that it is scarcely 'opening it up' to put conservation orders on individual areas. This would, however, provide some measure of control. SECTION B

INTRODUCTION TO THE AREAS OF SCIENTIFIC INTEREST IN CO. CLARE

County Clare is a varied and biologically rich area probably ranking second among the counties of Ireland. The county is based on only three rock types, each occurring over large areas. Consequently the basic geology is monotonous with a few exceptions and the structural interest is derived from the forces that have acted on the carboniferous limestones and grits. These include glaciation, solution and marine action.

The Burren is probably the best developed glacio-karstic region of bare limestone in Europe. All the typical features occur and are discussed by *Williams (unpub) The surface interest is matched by a series of underground caves. Though they are relatively recent in origin - there seem to be no endemic animals nor dry series of caves - they are nevertheless well developed containing many stalactites, one of which is possibly the longest in Europe.

The most well-known part of the Burren is its flora. Plants occur here in abundance that are almost or totally unknown in the rest of Ireland. Alpine species are mixed with arctic-alpines and purely arctic types, and amidst these groups, Mediterranean species also find a suitable climate. The invertebrate fauna is only just beginning to be examined, but the same trends have been discerned it it. It includes several species unknown in Great Britain. It is the mixture of geographical types that makes the Burren unique in Europe and of the greatest interest. The mode of migration of these populations is one of the many questions that arise.

The coastline of the Burren has been relatively little worked, but also merits attention. Lewis (1964) states that truly exceptional conditions occur in the water temperature and rock type. "The interior of the county has long been famous botanically; its shores deserve equal praise and study".

*Ph.D. Thesis. University of Cambridge.

The rest of the Clare coastline is also punctuated by areas of scientific interest. These include the shore south of Spanish Point for its marine biology. of Moher and to a lesser extent of Loop Head support large nesting populations of seabirds, while on the south coast several estuaries, most notably the Fergus, are visited by huge numbers of wildfowl and wading birds. Inland there are also wildfowl resorts, Loughs Atedaun and Cleggan are good examples. These, like two of the estuaries, are of great importance and the Council has responsibility on a national scale for their survival. Many of the limestone lakes of Clare are surrounded by an interesting flora. Two of these are in the south, Ballycar Lough and Dromoland Lough, and as one goes north, elements of the Burren flora appear in the community. is best developed by Lough Bunny. To the east, the old red sandstone stretches over to Lough Derg and above the drift is much covered by blanket bog, except where natural woodland has persisted. There are three areas of oakwood near Crusheen which are regenerating again after a period of misuse and show a tendency to spread. They form part of the

> Conservation plans within the county must centre around the maintenance of The rarest element in this is presently deciduous woodland habitat diversity. and it is suggested that several areas of it be protected by Tree Preservation Some of these are far from roads and not utilised at the moment. Orders. Other woods would be ideal for limited exploitation. The Burren area in its entirety is an area of scientific interest and there have been frequent calls for its preservation. It is clear, however, that land use cannot be stabilised in the whole region and that future changes may be detrimental to the variety of the plant cover. Thus it is essential to conserve parts of the terrain in the condition they are in at present. Three areas have been chosen with a good representation of the Burren communities as well as the majority of the rare species. These are Black Head, Ballyryan and Mullagh More. As much

oakwood series of the west of Ireland and are therefore valuable. Glenomera

wood must have resembled them before it was clear felled. It is now at an

interesting recovery stage. Lough Derg itself has an interesting flora, well

shown at the mouth of the Scarriff river and including some juniper scrub.

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The Cliffs

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as any other sites in Ireland these three areas deserve to be protected by Conservation Orders. Though the visitor is admonished not to destroy plants when entering the Burren, some stricter protection is needed, especially along the coast road.

In planning terms, the notices just mentioned mark the boundary of an area of special amenity which would include three or more conservation areas. In the absence of a national policy on what a national park should be, serious consideration should be given to naming the Burren a statutory area of special amenity, in view of its extremely high scenic value. Agricultural practices are exempted from control under this and would only be affected in a conservation area.

In future it is likely that undrained lakes, expecially of the fluctuating turlough type, will become increasingly rare. It would be much easier to take action now with for example, Lough Atedaun, that to wait until it is one of much fewer undrained lakes.

A definite statement of intent is required with regard to this and in fact to all areas of scientific interest. They 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 arised 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-assurance did not allow any graceful retreat from his stand. This could be largely avoided if the areas of scientific interest were widely publicised. Such firm 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. Where permission has to be refused for a certain development, it should be qualified by suggestion of an alternative course of action.

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 so; if not, recommendations of slightly varying stocking densities 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, the possibilities of a co-operative scheme on a different piece of land should be fully examined. In the instance 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 particularly interesting organism 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 ... C.

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

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- 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.

| Name of Area | Grid Refere | l sting | Priorit | Y Scientific Interest |
|--|-------------|---------------|---------|---|
| Black Head | M. 14, 11 | International | R | <pre>&Montal cological, sedimentological. Botanical, zoological, sedimentological. Encompasses complete range of rocky habitats from coastal glacially planed limestone pavements to high level heaths supporting a large variety of rare and uncommon plants.</pre> |
| Coast line from Lurga PtSpanish Pt. coasts | r. 00, 75 | International | m | Botanical, zoological. Wide variety of seaweeds which with dense mussel beds form a most luxurient and charachteriotic community of the west of Ireland. |
| Mullagh More | R. 31, 94 | International | m. | Botanical, zoological, structural, sedimentological. Exceptionally well developed Burren flora occurring in wide range of habitats and plant communities. Rare beetles are present. Some of the only folding of carboniferous limestone in the Burren. |
| Poulsallagh | м. 08, 02 | International | R | Botanical, zoological, geomorphological. Characteristic Burren communities, locally modified by maritime conditions. A variety of interesting and uncommon invertebrates occur here. Limestone scarps and blocky drift hillocks. |
| Cliffs of Moher | R. 03, 91 | National | U | Botanical, ornithological. Doe of the largest seabird colonies in the country with some plant communities of interest at the summit. Nationally important for razorbills, guillemets and puffins. Other nesting species include knittiwakes, fulmars, herring gulls, great black-headed gulls, shags, ravens, choughs, rock doves and wheatears. |
| Clanderalaw Estuary | R. 12, 53 | National | A | Ornithological. Wintering ground for wildfowl, especially wigeon and waders. |
| Cratloe Creek | R. 50, 58 | National | U | Botanical. Tidal river with a variety of plant communities and the rare triangular clubrush, a plant restricted to the upper Shannon estuary in Ireland. |

| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|---|---|---------------|----------|--|
| Derryvinnaun Wood | R. 419, 856 | National | щ | Botanical. Small oak wood with only a few large individuals but many younger trees. Some oak regenerating on blanket bog to south amongst birch. Typical ground flora. |
| Fanore Dunes | M. 13, 08 | National | A | Botanical, zoological. Best developed and most valuable sand dune system in the county. Varied flora, dominated by marram grass, but including several rare species. Varied and interesting invertabrate fauna. |
| Glenomera Wood | R. 61, 67 | National | щ | Botanical, ornighological. Sessile oakwood regenerating naturally amongst dense holly and birgh. Sparse ground flora. Pheasants numerous and woodcock are probably also present. |
| Marine Islands Mutton I. & Mattle Illaunonearaun Deer Island | Q. 97, 72 Q. 57, 82/83, M. 28, 15 | NatReg. 57 | υ | Ornithological, zoological. Important for wintering wildfowl particularly barnacle geese (500), teal (150), mallard (58), and gadwall (20). Large population of hares. Breeding seabirds. |
| 3len of Clab & Poulavallan | м. 29, 02 | National | щ | Botanical. Young woodland dominated by hazel, with rowan, birch, ash, goat willow and hazel. Typical, fairly rich, ground flora. |
| R. Fergus Estuary | R. 35, 70 | National | щ | Zoological, ornithological, botanical. The most important and valuable estuarine habitat in the country. Rich in invertebrates which serve as food for many thousands of wintering waders and duck. Typical salt-marsh flora with at least one rare species. |
| rullaher Lough & Bog | 0. 95, 61 | National | æ | Botanical, zoological, ornithological. Diverse acquatic and bog flora and fauna including rare plant |

| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|-----------------------------|----------------|----------|----------|---|
| Abbey Hill | M. 31, 10 | Regional | щ | Geomorphological Májor scarp feature, forming the north-east boundary of the Burren hills. |
| Ballyallia Lough | R. 34, 81 | Regional | υ | Ornithological. Small lake on the River Fergus. Important for wintering wildfowl, shoveler (450) and gadwall (38) being of national importance, some of which feed on the surrounding grassland. |
| Ballycar Lough | R. 41, 68 | Regional | m | Botanical. Reedswamp on north and west side, grazing land to south. Northern limb overgrown by a mat of sedges. Here, bog vegetation is invading the fen community. Two plant species fairly rare in Clare. |
| Ballycullinan Lough | R. 29, 85 | Regional | а | Botanical. Important for an alga, <u>Cladophora sauteri</u> , which has only been observed in three other Irish localities. |
| Ballyvaughan Saltî Marsh | M. 21, 09 | Regional | ш | Botanical, Ornithological. Rich saltmarsh vegetation and locally important for wintering waders and wildfowl, particularly brent geese. |
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| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|-----------------------|----------------|-----------|----------|--|
| Ballyvaughan turlough | M. 22, 06 | Regional | æ | Botanical. One of the few sites in the country where shrubby cinquefoil occurs, Otherwise, it has a typical turlough flora. |
| Craglea Quarry | R. 688, 756 | Regional | O | Petrological, Structural. Quarry section showing features of the Slieve Bernagh inlier. |
| Deer Island | Q. 28, 15 | Regional | U | Ornithological. Breeding seabirds, particularly cormorants. |
| Derrymore Wood | R. 420, 844 | Regiona l | Ą | Botanical. Almost pure oak - holly woodland with some birch and hazel and a typical ground flora. |
| Dromo land Lake | R. 39, 70 | Regional | ß | Botamical. Supports a diverse flora and fauna, somewhat typical of the Burren, including a number of uncommon sedges. |
| Fln Lough | R. 43, 69 | Regiona l | U | Ornithological, Zoological. Typical east Clare lough used by wintering wild fowl. The only recorded Irish station of a beetle. |
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| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|--------------------|----------------|----------|----------|--|
| Gortglass Lough | R. 22, 59 | Regional | σ | Botanical, Zoological. Typical acid lake vegetation. Surrounded by acid grassland and patches of bog. Important because of the presence of Cole's Char, a glacial relict species of fish. Brown trout introduced last century. |
| Inchicronan Lough | R. 39, 85 | Regional | щ | Botanical. Supports interesting lake and fen communities. It is the most westerly station in Ireland for common meadow-rue. |
| Inchiquin Lough | R. 26, 89 | Regional | щ | Botanical, zoological Shoreline communities, including mud flora, of interest. Woodland on west side contains planted sycamore and bee and many native sqecies. Wildfowl use the lake in winter. Highest natural stocking of wild brown trout in the country. |
| Knockauns Mountain | M. 122, 035 | Regional | U | Stratigraphical, Petrological. Soft shales/Carboniferous limestone junctions creating striking differences in topography, drainage and vegetation. |
| Loop Head | Q. 68, 46 | Regional | U | Botanical, Ornithological. Typical maritime plant communities and fairly large numbers of nesting seabirds. Land above cliffs has two interesting plant communities which are characteristic of exposed parts of the west coast. |
| | | | | |

| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|-------------------|----------------|-----------|----------|---|
| Lough Bunny | R. 37, 96 | Regiona l | ш | Botanical, Ornithological. Deep lake with aquatic vegetation confined to sheltered bays and inlets. Eastern shore with fen dominated by bog rush, but also supporting several rare orchids. Western shore partly peat covered with more typical plant communities. Regular haunt for water birds and wintering wildfowl and waders. |
| Lough Cleggan | R. 31, 80 | Regional | ш | Ornithological. Important for wintering wildfowl and on occasions, may support the greatest density of duck in south Clare. |
| Lough Graney wood | R. 57, 91 | Regional | ش | Botanical. Site of former oakwood which was clear-felled. Birch is dominant but oak is regenerating and succession to the former state is proceeding. Holly, hawthorn, hazel, ash and a diverse ground flora are also present. |
| Poulnasherry Bay | R. 94, 57 | Regional | В | Ornithological. Diversity of habitats makes this an important wintering site for wildfowl. |
| Lough Atedaun | R. 29, 88 | Regional | Ą | Omithological Turlough-like lake with large wintering bird populations. |

| Woods on Slleve CarranM. 32, 03RegionalCBolanical. Consisting of hazel, ash, birch, row diverse ground flora.Aughlnish IslandM. 28, 12LocalBBolanical. Characterised by a few plants specie recinsisting of hazel, ash, birch, row diverse ground flora.Aughlnish IslandM. 28, 12LocalBBolanical. Characterised by a few plants specie recinsisting of hazel, holly and havibund.Aughlnish IslandM. 28, 12LocalBBolanical. Characterised by a few plants specie recinsistor and incommon links plantAughlnish IslandM. 28, 12LocalBBolanical. Unusual scrub community with regen hazel, holly and havithorn.Ballyeighter WoodR. 34, 93LocalBBolanical. Unusual scrub community with regen hazel, holly and havithorn.Ballyogan LoughR. 37, 90LocalCBolanical. Dotanical.Bolanical. Bolanical.Ballyogan LoughR. 12, 95LocalBBolanical. Bolanical.Smalls sesile oskwood with hazel, h trown finge of oskwood with hazel, h trown finge of oskwood along the i unusual sesile oskwood with hazel, h trown finge of oskwood along the i unusual sesile oskwood with hazel.Cahtracon WoodR. 12, 95LocalBBolanical. Bolanical.Cahtracon WoodR. 23, 54LocalBBolanical. Bolanical.Cahtracon WoodR. 23, 54LocalBBolanical. Bolanical. | Name of Area | Grid Re | erence | Rating | Priority | Scientific Interest |
|--|------------------------|---------|--------|----------|----------|--|
| Aughinish IslandM. 28, 12LocalBBotanical.Aughinish IslandM. 28, 12LocalBBotanical.Ballyeighter WoodR. 34, 93LocalBBotanical.Ballyeighter WoodR. 34, 93LocalBBotanical.Ballyogan LoughR. 37, 90LocalCBotanical.Ballyogan LoughR. 37, 90LocalCBotanical.Ballyogan LoughR. 12, 95LocalCBotanical.Caherkinallia woodR. 12, 95LocalBBotanical.Caherkinallia woodR. 12, 54LocalBBotanical.Cahrekinallia woodR. 23, 54LocalBBotanical.Cahrekinallia woodR. 23, 54LocalBBotanical.Cahrekinallia woodR. 23, 54LocalBBotanical.Cahrecon WoodR. 23, 54LocalBBotanical.Cahrecon WoodR. 23, 54LocalBLocalBBotanical.Narrow finge of oakwood along the lungemental. | Woods on Slieve Carran | M. 32 | 03 | Regional | U | Botamical. One of the most natural tracts of woodland in the Burren consisting of hazel, ash, birch, rowan, spindle and a diverse ground flora. |
| Ballyeighter Wood R. 34, 93 Local B Botanical. Ballyeighter Wood R. 37, 90 Local C Botanical. Ballyogan Lough R. 37, 90 Local C Botanical. Caherkinallia wood R. 12, 95 Local B Botanical. | Aughinish Island | M. 28 | 8, 12 | Local | œ | Botanical. Characterised by a few plants species each covering an extensive area. Heavy rabbit grazing has resulted in the inedible moss <u>Tortula ruraliformis</u> becoming dominant. Sea radish is an uncommon Irish plant which occurs here. |
| Ballyogan Lough R. 37, 90 Local C Botanical. Shallow peat has developed on pure giving rise to acid plant communities alkaline area. The peat community i bog rush and purple moor grass. Botanical. Shallow peat has developed on pure giving rise to acid plant community i bog rush and purple moor grass. Caherkinallia wood R. 12, 95 Local B Botanical. Small sessile oakwood with hazel, h rowan. Typical ground flora. Cahiracon Wood R. 23, 54 Local B Botanical. Narrow fringe of oakwood along the runusual species growing in ti. | Ballyeighter Wood | R. 34, | 6, | Local | В | Botanical. Unusual scrub community with regenerating oak amongst the hazel, holly and hawthorn. |
| Caherkinallia wood R. 12, 95 Local B Botanical. Small sessile oakwood with hazel, h rowan. Typical ground flora. Cahiracon Wood R. 23, 54 Local B Botanical. Narrow fringe of oakwood along the unusual species growing in ft. | Ballyogan Lough | R. 37, | 06 | Local | U | Botamical. Shallow peat has developed on pure calcareous marl, giving rise to acid plant communities in a predominately alkaline area. The peat community is dominated by black bog rush and purple moor grass. |
| Cahiracon Wood R. 23, 54 Local B Botanical. Narrow fringe of oakwood along the unusual species growing in It. | Caherkinallia wood | R. 12, | , 95 | Local | В | Botanical. Small sessile oakwood with hazel, holly, birch and rowan. Typical ground flora. |
| | Cahiracon Wood | R. 23, | , 54 | Local | В | Botanical. Narrow fringe of oakwood along the shore with several unusual species growing in it. |

| Name of Area | Grid Reference | Rating | Priority | ScientIfic Interest |
|-------------------------------------|----------------|--------|----------|--|
| Cloonamirran Wood | R. 72, 87 | Local | ß | Botanical. Remnants of natural oakwood are regenerating freely and invading surrounding areas including wet birchwood. Willow, holly and a typical ground flora are also present. |
| Jerryhumma Wood | R. 43, 85 | Local | Ą | Botanical. Remnants of natural oakwood are regenerating freely and Invading surrounding areas including wet birchwood. Willow, holly and a typical ground flora are also present. |
| Garrannon Wood | R. 49, 60 | Loca l | A | Botanical, Zoological. An almost pure stand of oak with some birch, alder and hawthorn towards the east. Typical ground flora. Six uncommon beetles have been recorded here. |
| llaunonearaun iee Marine Islands | Q. 83, 57 | Local | Ö | Ornithological. Wintering area for barnacle geese and breeding seabirds. |
| ough Donnell | R. 00, 70 | Local | а | Ornithological, Lake impounded by a large storm beach, used by wintering wildfowl and waders. |

| Name of Area | Grid Reference | Rating | Priority | Scientific Interest |
|-------------------------------------|----------------|-----------|----------|---|
| Lough Murree | M. 26, 11 | Local | В | Botanical, Ornithological, Zoological. Aquatic flora dominated by pondweeds. Important for wintering resort for pochard and, occasionally other water birds. Supports a rich invertebrate fauna. |
| Mattle Island see Marine Islands | Q. 97, 72 | See P. 13 | | Ornithological. Breeding seabirds, particularly cormorants and shags. |
| Rineanna Point | R. 35, 59 | Local | υ | Botanical, Geomorphological, Sedimentological. Creeping red fescue saltmarsh with some typical Clare plants and a grass rare to the west coast. Fluvial deposits of pure shell-banded clay deposited on a sloping limestone platform. |
| Rinskea Shore (L. Derg) | R. 78, 89 | Local | В | Botanical. Dominated by gorse and juniper with an associated community of common herbaceous plants. |
| St. Senan's Lough | R. 049, 540 | Local | В | Botanical. Shallow acid lake with unusual floating community of mosses. Typical marsh flora occurs around the lake. |
| Woods near Ennis | R. 31, 75 | Local | а | Botanical, Ornithological. Predominatly ash with hawthorn, hazel, sycamore, elder, birch, beech and blackthorn. Rich herb flora containing most characteristic woodland plants. |
| Woods west of Tulla | M. 34, 01 | Local | В | Botanical. Birch wood community which is rare on limestone. |
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SECTION E

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DESCRIPTION OF AREAS SURVEYED IN SUFFICIENT DETAIL

These are written under the following sub-headings:-

· Name of Area

Acreage

Grid Reference

Scientific Interest

Rating

Priority

Description of Area

Evaluation

Vulnerability or Threats to the Area

Recommendations

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

| a | = | abundant |
|---|----|-----------------------|
| С | = | common |
| f | = | frequent |
| ο | == | occasional |
| ŗ | 11 | rare |
| 1 | 53 | locally (as a prefix) |

Botanical nomenclature follows that of 'Flora Europaea', the standard work of which the first two volumes have so far been published. (1964 & 1968).

Name of Area:BLACK HEADAcreage:C. 8 Km²Grid Reference:M 14 11Scientific Interest:Botanical, Zoological, Sedimentological.Rating:InternationalPriority:A

Description of Area:

The Black Head area contains a greater variety of communities than any of the other sites listed. These run from rock crevices by the sea, through limestone pavement and grassland to upland heaths and rocky summits: from sea level in fact to over 1,000 feet. There is an absence of surface water except for several seepage lines and springs.

The northern slope of these hills is a smoothed surface where the naturally stepped landform has been planed by Galway ice moving south. Erratics of Galway granite are found in places and it is the main glaciated area of the Burren. Elsewhere, except locally to form cliffs or valleys, the ice seems to have deposited drift rather than to have removed rock.

The sea shore is of interest and a luxuriant growth of the seaweed, <u>Bifurcaria</u> <u>bifurcata</u> has been noted (See de Valera (1962) Proc.R.I.A. 62 B, 77).

The level rocks nearby support communities which include <u>Armeria maritima</u> (sea pink) as a constant species. It is joined in one recognisable association by:-

| Festuca rubra | creeping red fescue | а |
|----------------------|---------------------|------|
| Plantago coronopus | buckshorn plantain | с |
| Carex distans | a sedge | с |
| Agrostis stolonifera | common bent | f |
| Cerastium diffusum | mouse-ear chickweed | f |
| Trifolium repens | white clover | f |
| Plantago maritima | sea plantain | 1.f. |
| Euphrasia nemorosa | eyebright | о |
| Silene maritimum | sea campion | о |
| Sagina maritima | pearlwort | r |

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In crevices in this pavement two fern communities occur. Closer to the sea these are dominated by <u>Asplenium marinum</u> (sea spleenwort) with <u>A.ruta muraria</u> (wall-rue), <u>Cochlearia scotica</u> (scurvy grass) and occasionally <u>Eupatorium</u> <u>cannabinum</u> (hemp agrimony) and <u>Samolus valerandi</u> (brooklime). Further inland <u>Adiantum capillus-veneris</u> (maidenhair fern) replaces the <u>Asplenium</u>, growing with <u>Teucrium scorodonia</u> (wood sage), <u>Brachypodium sylvaticum</u> (false brome-grass), with scattered <u>Hieracium anglica</u> and <u>Hypericum androsaemum</u> (tutsan). The Adiantum is sometimes associated with a band of dolomitic rock: The pavement and grassland communities are described elsewhere (see p.27)

and only a few differences will be picked out here. The mossy saxifrages, <u>S. rosacea</u> and <u>S. hypnoides</u> are extremely abundant and grow in proximity to each other. <u>S. rosacea</u> is restricted to the west coast and has its centre south of Black Head. *Here it grows even to the seaward limit of vegetation, intermingled with <u>Armeria</u> (sea pink) and <u>Parietaria diffusa</u> (wall pellitory).

The hills in this area show the fine development of <u>Empetrum</u> (crowberry) and <u>Arctostaphylos</u> (bearberry) heaths. The former replaces the community dominated by <u>Dryas</u> (mountain avens) on exposed slopes and merges into it. Habitat conditions are dry and many of the plants have a xerophytic habit. The main elements of the community are as follows:-

| Dryas o c topetala | mountain avens | a |
|---------------------------|----------------------|-----|
| Empetruminigrum | crowberry | С |
| Sesleria caerulea | blue moorgrass | а |
| Festuca ovina | sheep's fescue | C |
| Calluna vulgaris | heather | f |
| Succisa pratensis | devil's bit | f |
| Thymus drucei | wild thyme | f |
| Neckera crispa | a moss | l.c |
| Rhacomitrium lanuginosum | a moss | l.c |
| Tortella tortuosa | a moss | l.c |
| Campanula rotundifolia | harebell | 0 |
| Carex pulicaris; | a sedge | 0 |
| Epipactis atropurpurea | dark-red helleborine | о |

*Webb, D.A. (1962) Proc. R.I.A. 62 B, 117

Above this level (600 ft) <u>Arctostaphylos uva-ursi</u> (bearberry) largely replaces <u>Calluna</u> (heather) though <u>Dryas</u> remains common. <u>Juniperus communis</u> (juniper) forms low-growing plants of the same height as the other shrubs. Many of the smaller herbs and mosses are excluded by this cover, but there is a record of <u>Arenaria norvegica</u> (sandwort) from rocks at this height. Where a depth of peat or leached soil has developed a <u>Calluna</u> heath is prevalent with much <u>Erica cinerea</u> (bell-heather), <u>Molinia caerulea</u> (purple moor-grass) and <u>Carex binervis</u> (a sedge). This community occurs often in discreet patches suggesting that it is the remnants of a former more widespread cover. <u>Pyrola</u> <u>media</u> (winter-green) is scattered near the summits where <u>Cotoneaster microphyllus</u> (cotoneaster) is also found in one place.

Mosses have been collected from Black Head and include eight unusual species. There are also a few invertebrate records, but no systematic collecting has been done.

<u>Evaluation:</u>

This area is ecologically important, since it contains the complete range of rocky habitats from the coastal pavements to the high-level heaths. The peat relics on the summits are a valuable source of evidence on the history of soil cover and the processes operating against it in the Burren.

Several of the plant species occur at Black Head in their finest development; <u>Adiantum</u> (maidenhair fern) and <u>Saxifraga rosacea</u> (mossy saxifrage) are examples while <u>Arenaria norvegica</u> (sandwort) is found nowhere else in Ireland. <u>Cochlearia</u> <u>groenlandica</u> (scurvy grass) is restricted to Black Head and Poulsallagh. Black Head ranks with Ballyryan and Mullagh More as one of the three most important areas of the Burren.

Vulnerability:

As the area does not seem attractive to housing owing to the slopes, the main threat would be from visitors removing plants.

Recommendations:

A Conservation Order is clearly needed in this area and is recommended. Cars should be restrained from stopping by provision of a car park south of the area on

the coast road. As in other areas, the fertilization of the rocky grasslands should not be contemplated as it would be extremely damaging.



Name of Area:COASTLINE FROM LURGA POINT TO SPANISH POINTAcreage:69 haGrid Reference:R 00 75Scientific Interest:Botany, zoology.Rating:InternationalPriority:B

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Description and Evaluation

This part of the coastline is one of Ireland's most outstanding areas for marine biology. The carboniferous grits are bedded at a low angle open to the Atlantic swell, in places subject to surf conditions. The headlands experience some of the most severe conditions of exposure in Ireland.

Because of the North Atlantic Drift, there is a strong warm-water element in the flora and fauna. Red algae are particularly well developed and there are also interesting brown algae. It is a "<u>Mytilus</u> (mussel) shore par excellence" (Lewis 1964) and this with <u>Rhodymenia</u> sp and <u>Porphyra</u> forms the most luxuriant and characteristic community of the west of Ireland. This area is frequently visited by university and student groups.

<u>Vulnerability</u>

Algae are susceptible to all types of water pollution so:

Recommendations

the scientific value of the area is compatible with scarcely any industrial installation. These should be sited, if in Clare, on the lower part of the Shannon estuary, unless very high standards of water purity in the effluent can be met.

MAP SHOWING AREA OF SCIENTIFIC INTEREST -Scale: 1 Inch to 1 Mile C AN B Spanish

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| <u>Name of Area</u> | MULLAGH MORE |
|----------------------------|--|
| <u>Acreage</u> | c. 5.5 Km ² |
| <u>Grid Reference</u> | R. 31 94 |
| <u>Scientific Interest</u> | Botanical, zoological, structural, sedimentological. |
| Rating | International |
| <u>Priority</u> | A |

Description of Area

This extensive area contains two hills showing some of the only folding of the Carboniferous limestone in the Burren, much bare limestone pavement littered in places with glacial erratics, several slopes with fragments of natural woodland, and many turloughs, some more permanent, e.g. Coolreash Lough, than others.

There are at least fifteen recognisable plant communities to be found, of which seven are aquatic and eight terrestrial. In the more permanent turloughs a water-lily community occurs with both species in it (<u>Nuphar</u> <u>lutea</u> and <u>Nymphaea</u> <u>alba</u>), with <u>Potamogeton</u> <u>natans</u> (pondweed). Stands of <u>Phragmites</u> <u>australis</u> (reed) or <u>Menyanthes</u> <u>trifoliata</u> (bogbean) border the deeper water along with scattered <u>Cladium</u> <u>mariscus</u> (saw sedge).

Where the edges are stony, as in parts of Coolreash Lough, <u>Littorella</u> <u>uniflora</u> (shoreweed) assumes dominance with such other constant species as <u>Baldellia ranunculoides</u> (lesser water plantain), <u>Galium palustre</u> (marsh bedstraw), <u>Juncus bulbosus</u> (bulbous rush), <u>Potamogeton gramineus</u> (pondweed) and <u>Scorpidium scorpioides</u> (a moss). In this community the following are also found:-

| Samolus valerandi | brookline | f |
|-------------------|------------|------|
| Carex demissa | a sedge | f |
| C. ŝerotina | 11 11 | f |
| Mentha aquatica | water mint | 0 |
| Chara spp. | stonewort | l.c. |
| | | |

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Teucrium scordiumwater germanderoApium inundatumfloating marshworto

The true turloughs have a characteristic flora around their sinkholes. This includes <u>Potentilla anserina</u> (silverweed), <u>Rorippa</u> 'sylvestris' (yellow cress), <u>Polygonum persicaria</u> (amphibious persicaria), and sometimes <u>P. minus</u> (lesser persicaria), <u>Galium palustre</u> (marsh bedstraw) and <u>Mentha</u> <u>arvensis</u> (corn mint). In places, there are stands of <u>Potentilla fruticosa</u> (shrubby cinquefoil) on the periphery of this, with <u>Agrostis stolonifera</u> (bent grass), <u>Prunella vulgaris</u> (heart's ease), <u>Leontodon autumnalis</u>, (hawkweed), <u>Galium boreale</u> (northern bedstraw), <u>Viola canina</u> (dog's violet) and <u>Frangula alnus</u> (alder buckthorn). Elsewhere, there are extensive sheets of three species of <u>Drepanocladus</u> (a moss), or <u>Salix repens</u>, (creeping willow) and <u>Viola stagnina</u> (fen violet) also occurs.

Fen communities are widespread at the lake edges, the wetter ones with <u>Carex hostiana</u>, <u>C</u>. panicea (sedges) and <u>Cirsium dissectum</u> (meadow thistle) as the commonest plants, the slightly drier dominated by <u>Schoenus</u> <u>nigricans</u> (black bog-rush). <u>Molinia caerulea</u> (purple moor grass) is common here with <u>Succisa pratensis</u> (devil's bit) while <u>Euphrasia scotica</u> (eyebright) and <u>Campylium stellatum</u> (a moss) are characteristic. <u>Antennaria dioica</u>, (cudweed), and <u>Plantago maritima</u> (sea plantain) occur in addition to the more frequent fen plants.

On the drier limestone there are grassland areas with all the Burren species present, including:-

| Sesleria caerulea | blue sesleria | a |
|-----------------------|--------------------|-----|
| Koeleria cristata | crested hair grass | С |
| Pilosella officinarum | mouse-ear hawkweed | С |
| Antennaria dioica | cudweed | f |
| Geranium sanguineum | bloody cranesbill | f |
| Galium pumilum | slender bedstraw | f |
| Asperula cynanchica | squinancy wort | l.c |

| Dryas octopetala | mountain avens | 0 |
|--------------------------|----------------------|---|
| Helianthemum canum | hoary rock rose | 0 |
| Gentiana verna | spring gentian | 0 |
| Gymnadenia conopsea | fragrant orchid | f |
| Epipactis atrorubens | red helleborine | 0 |
| Euphrasia salisburgensis | eyebright | f |
| Gentianella campestris | field gentian | r |
| Neotinea intacta | mediterranean orchid | r |

The fly orchid (<u>Ophrys insectifera</u>) occurs in much drier surroundings than it is usually associated with. <u>O</u>. <u>apifera</u> (bee orchid) also is found.

As one ascends the hills a heathy community dominated by <u>Calluna vulgaris</u> (heather) or locally <u>Dryas octopetala</u> (mountain avens) takes over. It contains many of the above species but also such calcifuges as <u>Lathyrus</u> <u>montanus</u> (heath pea) and <u>Sieglingia decumbens</u> (heath grass). In the more acidic places, <u>Carex binervis</u> (a sedge), <u>Erica cinerea</u> (bell heather) and <u>Agrostis canina</u> (velvet bent) are frequent.

The patches of woodland mentioned above are small and split up by outcrops of rocky grassland. It is a <u>Fraxinus excelsior</u> (ash) - <u>Corylus avellana</u> (hazel) wood containing in addition to <u>Crataegus monogyna</u> (hawthorn) and <u>Sorbus aucuparia</u> (rowan), both <u>Ulmus glabra</u> (wych elm) and <u>Populus</u> <u>tremula</u> (aspen). The ground flora is not very rich but includes <u>Solidago</u> <u>virgaurea</u> (golden rod) <u>Anemone nemorosa</u> (wood anemone), <u>Epipactis</u> <u>helleborine</u> (broad-leaved helleborine) <u>Rubus saxatilis</u> (stone bramble) and <u>Viburnum opulus</u> (guelder rose).

Weevils have been collected from this area and number twenty species. This is the largest total collected by * Morris (1967) at any of the sites he visited.

In view of the general scarcity of large trees in this, or any, part of the Burren, the wooded areas are likely to be of considerable value to the bird population.

^{*} Proc. R.I.A. <u>65</u> B No. 16.
The Burren flora is exceptionally well developed in the Mullagh More area rivalling only the sites on the west coast, but clearly subject to different environmental conditions. It has elements from the west, e.g. <u>Helianthemum canum</u> (hoary rock rose), species mainly restricted to the eastern part of the Burren, e.g. <u>Potentilla fruticosa</u> (shrubby cinquefoil), and is an outlier also of the Shannon flora with <u>Teucrium scordium</u> (water germander). Of special interest is the remnant of natural woodland on some of the terraces of the mountains and lower down. This includes <u>Ulmus glabra</u> (elm) in its tree species and is the only place in Clare where this appears thoroughly native. It was a very widespread tree in prehistoric times.

The beetle fauna is of interest containing one species unrecorded in the rest of Ireland and two others found nowhere else in Clare. It is most likely that this is matched in many of the invertebrate groups.

Altogether the area presents a diversity of habitats all with interesting scientific problems in need of study. It is of extreme importance ranking first or second in the county and even in the whole of Ireland.

<u>Vulnerability</u>

The timber present is not of great value and is far from the road but some of the most interesting herb communities are of easy access. They could be damaged by visitors.

The plant cover would be drastically altered by fertilization.

<u>Recommendations</u>

Though the area is slightly off the most frequented routes it is still vulnerable to plant removal. It is certainly worthy of a Conservation Order. The spreading of fertilizers may increase so as to include sheep as well as cattle pastures. If so, they should be banned from this area. Existing patterns of land use are in equilibrium with the flora and should be retained.





| <u>Name of Area</u> | POULSALLAGH |
|----------------------------|--|
| <u>Acreage</u> | c. 2 Km ² |
| <u>Grid Reference</u> | M 08 02 |
| <u>Scientific Interest</u> | Botanical, zoological, geomorphological. |
| Rating | International |
| <u>Priority</u> | Α |

Description of Area

Ballyryan is the most extensive low-lying area on the west coast of the Burren and is largely composed of limestone grassland. The rock frequently appears through this soil; behind the grassland it rises in steps unlike the glaciated Black Head area, to give low plateaux,while on the seaward side, pavement is excellently developed going right down into the sea. The soil is of blocky drift, sometimes moulded into hillocks.

Many of the most characteristic communities of the Burren are found here and the ecological interest is further enhanced by the admixture of maritime plants into the arctic and alpine groups that are also found elsewhere. Thus, close to the sea coastal vegetation occurs on the flat sheets of limestone, and the Burren flora in the grikes. The former group of plants includes:-

| | Crithmum maritimum | samphire | 1.f. |
|---|---------------------------------|-------------------------|------|
| | Spergularia rupicola | rock spurry | f |
| | Silene maritima | sea campion | f |
| | Cochlearia danica | scurvy grass | f |
| | Carex distans | a sedge | 0 |
| | Armeria maritima | sea pink | f |
| | Plantago coronopus | buckshorn plantain | f |
| | P. marítima | sea plantain | f |
| | Puccinellia sp | salt marsh grass | f |
| | Ce ra stium diffusum | sea mouse-ear chickweed | f |
| | Euphrasia nemer os a | eyebright | 0 |
| * | Limonium transwallianum | sea lavend é r | 0 |
| * | Cochlearia scotica | scottish scurvy grass | 0 |
| | Trichostomum brachydontium | a moss | f |
| | | | |

<u>Festuca rubra</u> (creeping red fescue) and <u>Trifolium repens</u> (white clover) are the grassland plants that descend lowest towards the sea. <u>Lotus corniculatus</u> (bird's foot trefoil) and <u>Linum catharticum</u> (purging flax) soon appear along with such Burren species as:-

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| Minuartia verna | spring sandwort | С |
|----------------------------|-----------------|---|
| Campanula rotundifolia | harebell | f |
| Sesleria caerulea | blue moor grass | С |
| Thymus drucei | wild thyme | С |
| Antennaria dioica | cudweed | f |
| Asperula cynanchica | squinancy wort | f |
| Ajuga pyramidalis | pyramidal bugle | r |
| Adiantum capillis-veneris | maidenhair fern | 0 |
| Aspleniun m ari num | sea spleenwort | f |
| Thalictrum minus | meadow rue | о |

With a slight increase in height the full development of the flora brings in such species as:-

| Dryas octopetala | mountain avens | 1.f. |
|-----------------------------------|--------------------|------|
| Geranium sanguinea | bloody cranes bill | f |
| Rubia pe r eg r ina | madder | f |
| *Helianthemum canum | hoary rock-rose | f |
| Arabis hirsuta | hoary rock cress | С |
| Cerastium arvense | field stitchwort | с |
| Anthyllis vulneraria | kidney vetch | С |
| Rubus saxatilis | stone bramble | f |
| Poterium sanguisorba | salad burnet | f |
| Cornus sanguinea | dogwood | о |
| Gentiana verna | spring gentian | f |
| Galium pumilum | slender bedstraw | f |
| Limosella aquatica | mudwort | r |
| Euphrasia salisburgensis | eyebright | С |
| Orobanche alba | red broomrape | 0 |
| Coeloglossum viride | frog orchid | о |

In the terms of *'Ivimey-Cook and Proctor (1966), a transect from the sea to the margin of the indicated area would have ten recognisable plant associations on it; each having developed under different environmental factors.

Isopodsshave been collected at Poulsallagh and six species recognised including <u>Metoponorthus cingendus</u>, a Lusitanium member of the fauna. This matches a Lusitaniam beetle, <u>Apion dentirostre</u> taken there with thirteen other species of weevil. An ant species is also of some interest.

The lepidopteran fauna is rich, including the typical Burren species, absent or rare in the rest of Ireland.

The marine ecosystem is interesting because of the exposure and rock type. It includes <u>Paracentrotus</u>, a burrowing sea urchin, and a good flora of red algae.

<u>Evaluation</u>

This is a valuable area of the same or greater standing as Black Head. The species marked by asterisk above are developed here better than anywhere else or are restricted to Poulsallagh.

It is one of the most accessible parts of the Burren and is frequently visited by school and university groups to study habitat conditions of the flat limestone and grikes, the composition of the flora or the marine flora and fauna.

Vulnerability

The combination of easy access and scientific interest makes this area particularly vulnerable to plant collectors though this threat is sometimes overrated.

Building development would obliterate parts of the area as well as intruding into a natural landscape. The provision of a car park would attract additional visitors to a site that they could damage significantly.

* Ivimey-Cook, R.B. & Proctor, M.C.F. (1966) Proc. R.I.A. 643, 211-301

Recommendations

The Ballyryan area is most attractive especially when come upon by a visitor from the Lisdoonvarna road. It is the first view of the typical Burren scenery, and at the right time of year, very colourful with flowering plants. Consequently the visitor is tempted to leave his car.

However the area is of exceptional scientific interest and any tendency to dig up the plants must be prevented. One partial solution to this would be to maintain the road relatively narrow and hard to park on and make provision for a car park north of the area. This would be signposted in advance. From here people could spread out over the rock pavement. It would be a suitable place for a nature trail or display.

It is desirable to protect the flora by a statutory ban on removal and for this a Conservation Order, under Section 54, Local Government (Planning and Developmen Act 1963, is ideal.

The bulldozing of blocks out of the drift must especially be prevented, as this removes the plant cover as well as changing the habitat.



Name of AreaCLIFFS OF MOHERAcreage1.5 Km²Grid ReferenceR. 03, 91Scientific InterestOrnithological, botanicalRatingNationalPriorityC

Description of Area

The Cliffs of Moher are formed of horizontal beds of coal measure sandstones and shales. Cleavage in the rock is so good that the term flagstone has been applied, and the Liscannor flags is the rock type, best exposed in a quarry near Hag's Head.

The line of cliffs shows faulting and slumping to good effect but they are difficult to observe. In fact, a diagonal fault occurs underneath the present observation point and car park. The flora includes characteristic maritime plants such as:-

| Armeria maritima | sea pink | f |
|------------------------|--------------------|---|
| Cochlearia officinalis | scurvy grass | 0 |
| Spergularia rupicola | rock spurrey | f |
| Crithmum maritimum | samphire | f |
| Silene maritimum | sea campion | f |
| Sagina maritima | pearlwort | f |
| Plantago coronopus | buckshorn plantain | f |

<u>Rhodiola roseum</u> (roseroot) is an interesting member of the cliff flora. It is quite widespread.

Along the top of the cliffs **in** a grazed turf of <u>Agrostis</u> <u>tenuis</u> (bent grass) and <u>Festuca rubra</u> (red fescue), <u>Viola lutea</u> (mountain pansy) occurs frequently and where rocks are exposed <u>Sagina subulata</u> (heath pearlwort). * Several unusual lichens have been collected from the cliffs. These include a rare <u>Lecidea</u>.

*Knowles, M. C. (1929) Proc. R.I.A. <u>38</u> B, 179.

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The main importance of the area is of course the nesting bird population which is large.

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It includes all the auk species nesting in Ireland: the puffin occurs in large numbers on particular areas. It was one of the first areas of Clare colonized by the fulmar which has a large population at present. Rather few gulls nest, with the exception of the kittiwake, due to the steepness of the cliffs. Manx shearwaters probably nest in the ground overlying sections of cliff.

Rock doves and chough nest in addition to the seabirds and peregrines have done so.

<u>Evaluation</u>

This area is by far the most important for breeding seabirds in County Clare and is important nationally for the razorbill, guillemot and puffin.

<u>Vulnerability</u>

Disturbance is the only possible threat to the bird populations. That of helicopters would be the most serious, cliff top walkers being generally too far away to do much damage to the seabirds. These would, however, affect the chough and peregrine.

<u>Recommendations</u>

The fields closest to the cliff edge have been included in the area to emphasize the bad effects of increasing disturbance. New access points to the cliffs should not be introduced without adequate advice as to siting.



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Name of AreaCLONDERLAW ESTUARYAcreagec. 75 haGrid ReferenceR. 12, 53Scientific InterestOrnithologicalRatingNationalPriorityA

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Description of Area

This estuary is a shallow tidal inlet which dries out over more than half of its area at low tide. A small stream, the Cloon R. meanders across the mudflats which bear isolated patches of the cord grass, <u>Spartina townsendii</u>. As yet, this species covers marginal areas mostly but a few patches occur farther out showing that conditions of sedimentation favour its establishment.

On 28th January 1972, the following wildfowl count was made.

| Wigeon | 1200 |
|--------------|------|
| Shelduck | 50 |
| Whooper swan | 15 |

Many waders were present also and larger numbers occur at times of passage.

The edges of the estuary have a few areas that could be called saltmarsh and the gradient seems too steep for larger patches to exist. The species include:-

| Puccinellia sp | sea poa |
|------------------------|--------------|
| Aster tripolium | sea aster |
| Cochlearia officinalis | scurvy-grass |
| Carex distans | a sedge |
| Spartina townsendii | cord grass |

Behind this, hedges and rough ground occur with teasel (<u>Dipsacus fullonum</u>) abundant.

Evaluation

This site contains the main concentration of wigeon in County Clare and in view of the rapid spread of Spartina in other estuaries, its importance will probably increase in the future, provided it also does not become covered with this grass. It would seem to have greater numbers of birds but less diversity than Poulnasherry bay and be second to the Fergus estuary as a coastal resort.

Threats to the Area

As for Poulnasherry bay (see p. 103).

Recommendations

It would be a relatively simple matter to remove at least the patches of <u>Spartina</u> that are far out in the mudflats if this were done now. It is suggested that this should be considered with local conservation bodies and that support be offered to voluntary removal by such people.



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| <u>Name of Area</u> : | CRATLOE CREEK |
|------------------------------|---------------|
| <u>Acreage</u> : | 4 3 ha |
| Grid Reference: | R 50, 58 |
| <u>Scientific Interest</u> : | Botanical |
| <u>Rating</u> : | National |
| Priority: | С |

Description of Area:

The Shannon at this point is tidal with low margins almost flat and backed by a long embankment. The substrate is muddy and is inundated when the river is high. The vegetation fringing the river is a dense stand of <u>Scirpus triquetrus</u> (triangular clubrush) of about four feet in height and mixed with sparse <u>Phragmites australis</u> (reed). The ground is covered by such species as:

| Agrostis stolonifera | common bent | С |
|--------------------------------|------------------------|---|
| Apium nodiflorum | fool's watercress | с |
| Aster tripolium | sea aster | f |
| Cochlearia anglica | scurvy-grass | f |
| Senecio aquaticus | marsh ragwort | f |
| Rumex crispus | crisped dock | f |
| Ranunculus s c eleratus | celery-leaved crowfoot | 0 |
| Carex distans | a sedge | 0 |

On a transect up from the banks, there was then a large amount of high water debris and behind this an area in which <u>Carex riparia</u> (a sedge) was completely dominant. A few plants of <u>Juncus inflexus</u> (hard rush) grew in the clearings while <u>Ranunculus repens</u> (butter cup) and <u>Agrostis stolonifera</u> (common bent) were mixed in a poor understory to the sedge.

Some ponds had apparently been cut and in these <u>Phragmites</u> (reed) was mixed with <u>Scirpus maritimus</u> (sea clubrush). They are probably attractive to dabbling ducktand in fact teal and mallard were seen. There was evidence of shooting in the area.

Evaluation:

It is the presence of <u>Scirpus triquetrus</u> (triangular clubrush) that introduces this area into the list. This species is restricted to the upper Shannon estuary in 47

Ireland and some good stands of it must be preserved. This area was chosen because of the adjacent community of <u>Carex riparia</u> (sedge) and the presence of <u>Cochlearia anglica</u> (scurvy grass): another local species. It would be an excellent area for study of the ecology of the <u>Scirpus</u>.

As regards the rating of the area, <u>Scirpus</u> only occurs in Clare and Limerick and is very rare in Great Britain, only becoming more frequent in central and southern Europe. Consequently the Irish station shows the plant at one of the extreme ends of its range and is internationally important. However, it is reasonably common along the tidal part of the Shannon. For this reason it has been relegated to national status.

<u>Vulnerability</u>.

The plant would suffer from obliteration by shoreline development or from grazing with its associated trampling.

Recommendations:

Though a muddy low lying shore does not seem the best place for industrial or other shoreline development, if a project is suggested it should be zoned away from the present area in the early stages of planning.



Name of AreaDERRYVINNAUN WOODAcreage5 haGrid ReferenceR. 419, 856Scientific InterestBotanical, ecologicalRatingNationalPriorityB

Description of Area

This is a small oakwood far from the road and now relatively untouched. Felling has taken place in the past leaving only a few large individuals but many younger trees exist of about 9" diameter and there is dense regeneration with oak trees colonising the blanket bog especially to the south, mixed as scattered bushes with birch (<u>Betula pubscens</u>). Birches also compose a segment of the wood in almost pure stand, adjacent to this part. The canopy of the wood varies from 10-25 feet above ground level.

In the main, the species list resembles that of Derrymore wood (see p.82) except that <u>Luzula sylvestris</u> (greater woodrush) is an important constituent though not dominant over wide areas. The following species are additional:-

| Ajuga reptans | bugle |
|------------------------|-------------------|
| Ranunculus ficaria | celandine |
| Endymion non-scripta | bluebell |
| Deschampsia caespitosa | tufted hair grass |
| Osmunda regalis | royal fern |
| Umbilicus rupestris | pennywort |

The bryophytes <u>Hookeria lucens</u>, and <u>Plagiothecium undulatum</u> (mosses) and <u>Calypogeia asplenoides</u> (liverwort)were also recorded, as well as abundant <u>Hylocomium</u> spp., etc.

Evaluation

This is probably the most natural of the three oakwoods south-east of Crusheen. Its species list is the longest and contains many of those plants most characteristic of western oakwood. The ecological value of the wood is thus very high forming part of a most important series from Kerry to Mayo and Donegal.

<u>Vulnerability</u>

This wood is probably far enough from roads to be protected from haphazard felling. However, in view of the coniferous underplanting of Derrygoul wood, it may be threatened in the same way.

Recommendations

A conservation order should be passed for the area, in view of the rarity of the oakwood community in Clare. This could be prepared under the Local Government (Planning and Development) Act, 1963 by An Eoras Forbartha.



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Name of AreaFANORE DUNESAcreage30 haGrid ReferenceM. 1308Scientific InterestBotanical, Zoological.RatingNationalPriorityA

Description of Area

Fanore dunes consist of both mobile and stabilised areas. However, there seems to be more redistribution of existing sand than active growth. In this way the fore dunes are small, being covered by a mixture of <u>Ammophila arenaria</u> (marram grass) and <u>Agropyron junceifome</u> (sand couch grass). <u>Calystegia</u> <u>soldanella</u> (sea bindweed) is an associated species. A high dune ridge which is well covered by marram lies next to the beach behind which there is complex of semi-mobile dunes and blow-outs. The dune slacks are correspondingly deep and sometimes the basement limestone pavement is seen in them. Because of its presence the slacks are not as damp as would be expected - in fact there is little marsh vegetation away from the banks of the Caher river. At this point it runs almost parallel to the coast. The high dunes have a more varied flora on their landward side which receives less sand; the seaward slope is almost entirely <u>Ammophila arenaria</u> (marram grass) with <u>Euphorbia paralias</u> (sea spurge), and <u>Eryngium maritimum</u> (sea holly) and <u>Taraxacum officinale</u> (dandelion).

The vegetation of the high dunes contains the following species:-

| Anagallis arvensis | scarlet pimpernel | 0 |
|------------------------------|---------------------|---|
| Senecio vulgaris | groundsel | o |
| Tripleurospermum maritimum. | scentless mayweed | 0 |
| Viola tricolor ssp. curtisii | sea pansy | f |
| Lotus comiculatus | bird's foot trefoil | o |
| Hypochaeris radicata | cat's ear | о |

Behind these mobile dunes, undulating grassland takes over and though this still receives some sand, especially as blow-outs become more frequent, a complete cover of grasses and mosses exists with many herbs in addition. The approximate composition is as follows:-

| Festuca rubra | red fescue | а |
|--------------------------|---------------------|------|
| Lotus comiculatus | bird's foot trefoil | a |
| Agrostis stolonifera | fiorin grass | с |
| Trifolium repens | white clover | С |
| Plantago lanceolata | ribwort plantain | с |
| Carex arenaria | sand sedge | С |
| Tortula ruraliformis | a moss | С |
| Thymus drucei | thyme | f |
| Galium verum | lady's bedstraw | f |
| Camptothecium lutescens | a moss | f |
| Bellis perennis | daisy | f |
| Catapodium marinum | a grass | 0 |
| Gentiana vema | spring gentian | 0 |
| Asperula cynanchica | squinancy wort | 0 |
| Ranunculus bulbosus | bulbous buttercup | 0 |
| Cuscuta epithymum | dodder | 1.f. |
| Sedum acre | biting stonecrop | 0 |
| Campanula rotundifolia | hare bell | 0 |
| Gentianella amarella | felwort | 1.f. |
| Euphrasia salisburgensis | eyebright | 0 |
| Orobanche alba | red broomrape | r |
| Spiranthes spiralis | lady's tresses | l.f. |
| Oph ry s apifera | bee orchid | r |

Six rare mosses grow on the dunes and grassland, this site providing their only stations in Clare.

Isopods have been collected and the replacement of <u>Armadillidium vulgare</u> by <u>Philoscia muscorum</u> is an interesting possibility. Notable insects include the burnet moth, <u>Zygaena purpuralis</u>; also twelve species of weevil have been recorded.

Evaluation

This is the best developed and most valuable sand dune system in Co. Clare. As can be seen, its species list is a long one containing several rare species. Some of these find at Fanore their only station between Kerry and Donegal while the presence of some of the Burren flora on sand is an important ecological site. The invertabrates have been studied to a greater extent than on any other dunes in Clare.

<u>Vulnerability</u>

The majority of the plant species are resistant to trampling or grazing but where the vegetation cover is broken, the bare sand is only recolonized with difficulty and not at all if it is further disturbed by wind or people. As with most of the Irish sand-dunes blow-outs in the high dunes are active and though this is sometimes a natural process its frequency is increased by human traffic. Thus, many blow-outs start along the line of paths. The occurrence of a large blow-out in the stabilised grassland, leading to barren sand cliffs 8 ft high is unusual and damaging to the most frequenced part of the area.

Such a process of self-destruction is clearly not in the interests of either continued recreation or the maintenance of scientific interest. As dune ridges are penetrated there is a rise in wind force and a likelihood of further erosion.

The other destructive agency is human pressure. The movement of vehicles and people is in places leading to a reduction in plant cover or changes in its composition. Horses also break up the surface community which is fragile compared to normal fields.

Recommendations

If one has not already been drawn up, an integrated plan for the future of the Fanore dune-system should be produced. While it is essential to maintain or encourage the recreational use of the area for economic reasons this should only occur in selected regions and representative examples of the fore dune,

high dune and stabilised areas should be left far enough away from the main concentration of caravans that they are only visited by occasional walkers.

Blow-outs and other areas of exposed sand should be systematically fenced off and replanted possibly behind brushwood barriers for wind protection. This is essential in the stabilized grassland area which should be tackled during the coming growing season. Access routes to the strand should be varied from time to time so that the most direct do not become over-exploited. Signs, explaining the reason for diversion have been successful in other areas in controlling usage of specific paths.

Though the whole of the dune system is an area of scientific interest, part has been selected as the most important; it is recommended that exploitation of this should be minimal and recreation facilities be developed as far as possible away from it. Because of the concentration of people in this area thought might be given to establishing a nature trail or some interpretive system on the periphery of the site.

A Special Amenity Area order would seem the best way to ensure the co-existence of scientific values with limited recreational usage.



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Name of AreaGLENOMERA WOODAcreage38 haGrid ReferenceR. 61, 67Scientific InterestBotanical, OrnithologicalRatingNationalPriorityB

Description of Area

This is an old sessile oakwood (<u>Quercus petraea</u>) that has been clear felled and allowed to regenerate naturally without further attention. It is thus an almost impenetrable area at present with super-abundant holly, (<u>Ilex aquifolium</u>) beneath much birch (<u>Betula pubescens</u>) and some oak.

The holly is packed so closely that about half of it is senescent and there is much dead wood about. So little light penetrates to the floor that the herbaceous plants are etiolated and sparse. Evidence of the younger more open condition is seen in abundant but non-flowering <u>Endymion non-scripta</u>, (bluebell) and <u>Anemone nemorosa</u> (wood anemone). The ground flora now includes:-

| Hedera helix | ivy | l.a. |
|------------------------|--------------------|------|
| Luzula sylvatica | greater woodrush | 0 |
| Vaccinium myrtillus | frochan | 0 |
| Oxalis acetosella | wood sorrel | 0 |
| Ajuga reptans | bugle | l.c. |
| Stellaria holostea | greater stitchwort | l.c. |
| Blechnum spicant | hard fern | 0 |
| Dryopteris dilatata | buckler fern | 0 |
| Polytrichum formasum | a moss | 0 |
| Calypogeia asplenoides | a liverwort | 1.f. |

The general canopy of <u>Betula</u> reaches 40-50 feet and in this the less frequent <u>Quercus</u> (oak) are almost as tall. They are growing strongly with straight stems. The holly is mostly under 20 feet in height.

In places, presumably based on drift, there are patches of hazel (<u>Corvlus</u> <u>avellana</u>) with <u>Viola</u> sp., and <u>Conopodium majus</u> (pignut) beneath. By streams, willows, <u>Salix cinerea</u>, are found, while a few clearings remain with bracken, <u>Pteridium aquilinum</u>, <u>Rubus fruticosus</u> (bramble), <u>Rosa</u> sp. <u>Succisa pratensis</u> (devil's bit) etc.

Pheasants are numerous in the wodd and there are probably woodcock also.

<u>Evaluation</u>

The value of this wood stems from its isolation from human activity after the original clear-felling. It is a superb example of plant succession, a phenomenon which can seldom be studied in woodland without either grazing or tree management as complicating influences. It is thus very valuable for research and education reasons.

Because of the crowded conditions in the wood at present, the oak timber will form a most valuable stand in the future.

Threats to the Area

There are forestry operations in the same valley and it may spread towards the present area.

Recommendations

Land use should be maintained in its present form in this area. The wood is not a static system but is changing towards a climax oak forest. When this has occured it will still have scientific interest, but will probably be able to withstand limited felling.

For the present it is essential to prevent underplanting with conifers or major clearances in the understory. Short-sighted felling of oak should be discouraged by the passage of a Tree Preservation Order on the wood.



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Scientific Interest: Ornithological

| Name | Map Reference | Rating | Priority |
|----------------|---------------|----------|----------|
| Mutton Island | Q 97 74 | National | с |
| Mattle Island | Q 97 72 | Local | С |
| Illaunonearaun | Q 83 57 | Local | с |
| Deer Island | M 28 15 | Regional | с |

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The first three islands support wintering flocks of barnacle geese. These interchange at intervals and sometimes a group visits the mainland.

Mutton Island has the largest flock of 300-350 birds and this makes it an important area coming third or fourth in the country after islands in Mayo and Sligo. There is a nesting colony of storm petrels as well as the following species:

| Herring gull | 400 prs |
|------------------------|---------------|
| Great blackbacked gull | 50 prs |
| Shag | 8 prs |
| Shelduck | l pr |
| Raven | l pr |
| Rock dove | l pr |
| Mallard | 50 birds seen |

This census was done in 1970. In 1971, Mattle Island nearby had a breeding colony of 90 prs of cormorants and some shags also.

Illaunonearaun Island also has a good cormorant colony of about 50 prs. In winter its barnacle goose flock runs at about 60.

Deer Island, in Galway Bay, supports a cormorant colony dating back to 1906. It is one of the largest on the west coast at about 170 nests. These are restricted to the upper boulder beach zone about 15 ft above high water mark. The alga, <u>Ascophyllum</u> is dominant in this area. In addition, the island has a herring gull population of 180 prs and a great black-backed gull one of 25 prs. Mallard occasionally nest.

All the cormorant colonies mentioned are now being studied.

Vulnerability

Wintering barnacle geese seem to require a vegetation that is kept short by exposure or grazing. They would thus be discouraged from using Mutton Island if sheep grazing was stopped on it.

Both the geese and cormorants would be adversely affected by disturbance. There is evidence of interference in some years on Deer Island.

<u>Recommendations</u>

Existing patterns of land use should be preserved on Mutton Island, whereby it provides summer grazing for sheep. There is some suggestion that this may no longer happen so regularly as in the past, but it is the most dependable way of keeping the turf in good condition for geese. There are some hares on the island which would help, but apparently no rabbits. These should not be introduced as overgrazing might easily result from a population explosion with resulting loss of the vegetation cover. Hares have larger territories than rabbits and therefore cannot built up to such numbers.

If local knowledge indicates that disturbance has become an adverse influence at any of the sites, steps should be taken to reduce it.





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Name of Area:POULAVALLAN and the GLEN OF CLABAcreage:20 haGrid Reference:M 29 02Scientific Interest:BotanicalRating:NationalPriority:B

Description of Area

These two areas, the depression of Poulavallan and the dry valley of the Glen of Clab, contain the best developed woodland of the whole Burren region. They are sunk in carboniferous limestone, but in each traces of sandstone are also found, possibly indicating that they were formed by cavern collapse. Both sites are bounded by cliffs on the S.W. side below which is woodland. This is similar in each site though restricted to the southern side of the glen and a general account follows.

Tree species are notably varied and <u>Corylus avellana</u> (hazel) is the most common. It is joined in the upper canopy at about 20 ft by <u>Sorbus aucuparia</u> (rowan), <u>Betula</u> <u>pubescens</u> (birch) <u>Fraxinus excelsior</u> (ash) and <u>Salix caprea</u> (goat willow). Ash and birch overtop this level in places, rising to almost 30 ft. Hazel also forms an understory with <u>Crataegus monogyna</u> (hawthorn) though the division is somewhat arbitary.

In order of coverage, the following ground flora occurs:

| Luzula sylvatica | greater woodrush |
|-------------------------------|------------------|
| Oxalis acetosella | wood sorrel |
| Polystichumsetiférum | shield fern |
| Geranium robertianum | herb robert |
| Dryopteris dilatata | buckler fern |
| Chrysosplenium oppositofolium | golden saxifrage |
| Dryopteris borreri | male fern |
| Carex sylvatica | wood sedge |
| Athyrium felix-femina | lady fern |
| Vicia sepium | bush vetch |
| Fragaria vesca | wild strawberry |

Veronica chamaedrys speedwell Arum maculatum cuckoo pint Rubus fruticosus bramble Geum rivale water avens Rumex acetosa sorrel Lonicera periclymenum honeysuckle Epilobium montanum willowherb Lysimachia nemorum yellow pimpernel Potentilla erecta tormentil Rosa spinosissima burnet rose

The rarer plants include <u>Rubus idaeus</u> (raspberry) and <u>Hynenophyllum wilsonii</u> (filmy fern).

The dominant mosses are <u>Thuidium tamariscinum</u>, <u>Thammium alopecurum</u> and <u>Rhytidiadelphus triquetrus</u> with both species of <u>Hylocomium</u>, <u>Eurynchium</u> <u>praelongum</u> and <u>Fissidens taxifolius</u>. The liverworts were also what would be expected, <u>Frullania</u>, <u>Metzgeria</u>, <u>Calypogeia</u>, etc.

Evaluation:

The youth of the trees and the lack of such species as <u>Ulmus glabra</u> (elm), <u>Sorbus hibernica</u> (whitebeam) and <u>Taxus baccata</u> (yew) suggest that this wood is of comparatively recent origin unlike, for example, that on Mullagh More. However, the large size of the individuals and the active stage of succession that the wood is at, make this area of exceptional interest. The presumed dominance of ash in the Burren has been questioned and this would be an excellent area to compare with patches of hazel scrub elsewhere.

Poulavallan is of interest to the geomorphologist as a doline and it contains the only recorded individual of <u>Hymenophyllum wilsonii</u> (filmy fern) in the whole Burren.

<u>Vulnerability</u>

Though these areas have been cleared in the past, there is little likelihood of this happening again. However, the largest trees might be taken out and as these are ash, it would be disasterous for the community. Regeneration within the wood seems sufficient at present for its survival but would be damaged by an increase in grazing.

<u>Recommendations</u>

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The woodland stands are of sufficient value to be covered by a Tree Preservation Order, under Section 45, Local Government (Planning and Development) Act, 1963. An increase in the grazing density in the area should not be allowed without fencing at least the bottom part of the wood. Goats should not be pastured nearby and indeed their presence is so inimical to that of woodland that the present herd should be reduced, if at all possible.


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Name of AreaRIVER FERGUS ESTURARYAcreage6.5 Km²Grid ReferenceR 35 70Scientific InterestOrnithological, Zoological, BotanicalRatingNationalPriorityB

Description of Area

The Fergus estuary is a broad sweep of almost level mudflats now encroached upon by marginal sloblands that are wet grazing land. These run north from Islandavanna and Ing and are visited by geese. The vegetation is of grassland species with <u>Spartina townsendii</u> (cord grass), <u>Cochlearia officinalis</u> (.scurvy: grass) etc. where spring tides still cover the ground, i.e. in front of the embankments.

Almost all the area shown on map dries out at low tide when numerous groynes and a few patches of <u>Spartina</u> (cord grass) can be seen on the mud. This abounds with invertebrate food, which supports many thousands of wading birds and up to 25500 duck. A count in March 1972 gave the following results and compares with several in previous years:-

| Wigeon | 800 | 1000 |
|------------------------|------|------|
| Shelduck | 27 | 200 |
| Pintail | | 200 |
| Scaup | | 60 |
| Teal | 200 | 600 |
| Mallard | | 300 |
| Shoveller | | 80 |
| Red breasted merganser | | 35 |
| Dunlin | 2100 | |
| Black-tailed godwit | 250 | 1100 |
| Bar-tailed godwit | 250 | |
| Redshank | 180 | |
| Golden plover | | 1800 |

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Sixteen other species occur regularly but numbers are not available.

On the grassland, the flock of white-fronted geese numbers from 35-100, while 24 grey lags have recently occurred.

The north end of the estuary near Clarecastle is also grazed. The river channels are deeply cut and on their banks saltmarsh plants occur. The substrata is mud rather than sand and the plant species include:-

| Scirpus tabernaemontanix | glaucous club-rush | С |
|--------------------------|------------------------|------|
| Cochlearia officinalis | scurvy grass | С |
| Phragmites australis | reed | С |
| Agrostis stolonifera | bent grass | С |
| Bellis perennis | daisy | С |
| Ranunculus repens | buttercup | С |
| Rumex maritimus | dock | f |
| S. maritimus | sea club-rush | l.f. |
| Ranunculus sceleratus | celery-leaved crowfoot | 0 |
| Carex riparia | a sedge | l.f. |
| Trifolium fragiferum | strawberry clover | l.f. |
| Juncus inflexus | hard rush | 0 |
| Ranunculus ficaria | lesser celandine | 0 |

The areas where <u>Carex riparia</u> occurs are characterised by surface subsidence. They resemble swallet-holes and incoming sea water seems to rise in them and overflow over the surrounding field.

<u>Evaluation</u>

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The Fergus estuary is unquestionably the most important and valuable estuarine habitat in Clare. The numbers of birds it supports are greater than any other site and it seems to act as a refuge from the south Clare lakes during the autumn and winter when fishermen or wildfowlers are a disturbing factor. On a national scale it is perhaps more important for waders than for wildfowl and often contains the third or fourth largest flock of black-tailed godwits in the country.

The plant communities are much modified but the presence of <u>Rumex maritimus</u> (golden dock) which is very rare in Ireland, is interesting.

Threats to the area a sho win

Overshooting occurs in the winter and apparently is intense enough to restrict the feeding time of the wildfowl.

Spartina growth on the mudflats threatens their attractiveness to wildfowl.

Recommendations

A no-shooting section should be established in the estuary in conjunction with the landowners and gun-clubs. This 'sanctuary principle' has operated most successfully at Strangford Lough, Co. Down which has maintained or increased its wildfowl populations despite continuing hunting pressure.

The spread of <u>Spartina</u> should be checked on the mudflats. Its presence in the wet grassland is not damaging to the scientific importance of the area but in open mudflat conditions it removes nutrients from the substrate thereby reducing the food available to birds. It also discourages them by its cover.

Voluntary organisations would probably cooperate in <u>Spartina</u> removal. At this stage it would be relatively simple to control the species as it is restricted in distribution.

MAP SHOWING AREA OF SCIENTIFIC INTEREST -Scale: 1 Inch to 1 Mile Yin B. Ð R R

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| <u>Name of Area</u> | TULLAHER LOUGH & BOG |
|----------------------------|---------------------------------------|
| <u>Acreage</u> | 88 ha |
| <u>Grid Reference</u> | Q .95 61 |
| <u>Scientific Interest</u> | Botanical, ornithological, zoological |
| Rating | National |
| Priority | В |

16

Description of Area

This lake occurs in an extensive area of blanket bog, much modified by turf cutting so some is now acid grassland. In fact, close to the lake there is less peat development and the aquatic and marginal vegetation make it of exceptional interest.

On the east side grassland with abundant bryophytes such as <u>Hylocomium</u> <u>splendens</u>, the liverworts <u>Frullania tamarísci</u> and<u>Lophozia incisa</u>, and various <u>Cladonia</u> sp (lichen), slopes down to the lake which is fringed with <u>Phragmites</u>, <u>Carex rostrata</u>.(bottle sedge) etc. A more interesting area is the west side where a floating mat of vegetation occurs. Based on a wet sheet of <u>Sphagnum</u> <u>subsecundum</u> and <u>Aulacomnium palustre</u> (mosses) this extensive community contains an exceptional abundance of <u>Vaccinium oxycoccus</u> (cranberry) whose stems are so numerous that they give the colour to the surface. Through this cover <u>Potentilla palustris</u> (marsh cinquefoil), <u>Eriophorum angustifolium</u> and <u>M</u> <u>Menyanthes trifoliata</u> penetrate while the following species are established on it.

Calluna vulgaris Erica tetralix Succisa pratensis Holcus lanatus Eriophorum vaginatum Juncus effusus J. articulatus Parmelia sp.

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heather cross-leaved heath devil's bit yorkshire fog bog cotton soft rush jointed rush a lichen

. . .

Hypericum elodes Viola palustris

St. John's wort marsh violet

From this general area, Praeger (1934) records three rare species, <u>Eriocaulon</u> <u>aquaticum</u> (pipewort), <u>Elatine hexandra</u> (waterwort) and <u>Isoetes echinospora</u> (quillwort) all species unrecorded elsewhere in the county. Any of them might grow in Tullaher lake which has been less altered than Moanmore L.

<u>Carex limosa and C. lasiocarpa</u> (sedges), <u>Rhynchospora fusca</u> (brown beak sedge), <u>Scutellaria minor</u> (lesser skull-cap), and <u>Anagallis minimus</u> (chaff weed) are other noteworthy plants in the area. Of these the two bog plants occur in the western part. Here a flat blanket bog is found with surface pools fringed by <u>Sphagnum</u> <u>papillosum</u>, <u>S. cuspidatum</u> (mosses) and the <u>Rhynchospora</u>. <u>Carex panicea</u>, <u>C. echinata</u> (sedges), all three species of <u>Drosera</u> (sundew), <u>Menyanthes</u> <u>trifoliata</u> (bogbean) and <u>Myrica gale</u> (bog myrtle) complete the less widespread species list while the bryophytes number twenty, including <u>Sphagnum imbricatum</u> (a moss).

In the eastern half at the lake edge, <u>Phragmites australis</u> (reed) and <u>Typha</u> <u>latifolia</u> (bulrush) form the dominant vegetation. The lake itself contains <u>Apium</u> <u>inundatum</u> (floating marshwort), <u>Utricularia minor</u> (bladderwort) and <u>Sparganium</u> <u>minimum</u> (least burreed), <u>Lythrum portula</u> (water purslane), <u>Hippuris vulgaris</u> (marestail) and <u>Veronica scutellata</u> (speedwell) grow in marshy places at its edge.

Teal and snipe were seen beside the lake on this visit and an estimate in 1969 for the western part of the area gave the following result:

| Mallard | 65 |
|------------|-----|
| Teal | 200 |
| Snipe | 400 |
| Woodcock | 10 |
| Water rail | 6 |

Many of these birds were centred round the flooded area in the north which is a lake for much of the year. Elsewhere there is good cover. This site is one of the only ones in west Clare still visited by white-fronted geese. Numbers under 50 are recorded most winters and barnacle geese have also been seen. Wild swan and coot make up the wintering birds while corncrake is present as a nesting species.

Evaluation

This is clearly a diverse area and very important for both its flora and fauna. It is the last remnant of the Moanmore bog described by *Praeger (1909) and represents a unique blanket bog type in western Ireland, i.e. without <u>Schoenus</u> <u>nigricans</u> (black bog rush). It has been studied on account of this aspect (e.g. ** Bellamy and Bellamy 1966). Apart from this ecological interest, several rare species occur.

Tullaher is also important for dabbling duck and geese in winter and must contain more snipe than any other area nearby. Its present use as a no-shooting area is realistic as it acts as a reservoir of birds for the surrounding marshes.

<u>Vulnerability</u>

Drainage would pose the most serious threat to the future of the area as neither the marsh community or the duck population would survive a lowering of the water table.

Overshooting used to be common before a sanctuary was declared and it must be guarded against should this status ever lapse.

<u>Recommendations</u>

In view of the importance of the area drainage and disturbance should be prevented, as should peat cutting on the bog, or afforestation.

- * Praeger, R. L. (1909) A tourist's flora of the west of Ireland. Dublin.
- ** Bellamy, D. & Bellamy, R. (1966). Proc. Royal Irish Acedemy 65 B. 237

A Conservation Order under Section 46, Local Government (Planning and Development) Act, 1963 would seem the best solution to this end. It is essential that the no-shooting area be made statutory as it is probably the most important inland area for snipe and teal in west Clare. MAP SHOWING AREA OF SCIENTIFIC INTEREST — Scale: 6 Inches to 1 Mile

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<u>Name of Area</u>: <u>Acreage</u>: <u>Grid reference</u> <u>Scientific interest</u>: <u>Rating</u>: <u>Priority</u>:

ABBEY HILL 70 ha (in Clare) M 30 10 Geological Regional B

Description and Evaluation

Abbey Hill stands to the west of the cross-roads and forms a classic introduction to the Burren. It is at the north end of a major scarp feature forming the north-east boundary of the Burren hills. To one side is gently rolling farmland, to the other a steep slope of bare rock.

From the amenity point of view, the approach from Kinvarra must be carfully preserved, as even a single modern house would detract from the impact of the area. This is a fine example of a scientific site being coincident with an amenity.

<u>Vulnerability</u>

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The unusual surroundings of this area may attract development in the form of holiday homes. This would destroy the amenity value, which stems from the barrenness of the surroundings.

<u>Recommendations</u>

This area should be covered by a Special Amenity Area Order under Section 42, Local Government (Planning and Development) Act, 1963. If such an order is projected for the whole Burren area, which would be the most satisfactory solution, this area should be included.

Co-operation from Galway County Council should be sought so as to include the east face of Slieve Oughtmama in a Special Amenity Area.

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Name of area:BALLYALLIA L.Acreage:c. 35 haGrid Reference:R 34, 81Scientific interest:OrnithologicalRating:Regional ImportancePriority:C

Description and evaluation: Though this is a bird sanctuary it does not appear to be among the most important lakes in Clare for wildfowl, certainly on the occasion of this visit. It is a lake surrounded by grassland except at the north end where planted woodland comes close to the water. The grasses include the following species:-

| Anthoxanthum odoratum | sweet vernal grass |
|-----------------------|--------------------|
| Poa trivialis | rough meadow grass |
| Agrostis stolonifera | fiorin |
| Cynosurus cristatus | crested dogs tail |
| Lolium perenne | rye-grass |

Where small streams enter, <u>Myosotis</u> spp. (forget-me-not), <u>Glyceria</u> spp. (flote grass) and <u>Veronica</u> spp. (speedwell) occur.

On January 28th 1972 the lake held:-

| Wigeon | 70 |
|-------------|----|
| Tufted duck | 20 |
| Teal | 6 |
| Wild swan | 2 |
| Coot | 25 |

The wigeon were resting on part of the grassy margin

<u>Vulnerability</u>: Disturbance and drainage are the two most likely threats that may arise. The former is unlikely in view of the lake's status as a bird sanctuary and the latter would not isolate extensive areas of reed swamp so would not be as damaging as elsewhere.

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<u>Recommendations</u>: Land use should continue as at present

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Name of AreaBALLYCAR L.Acreage18 haGrid ReferenceR 41 68Scientific InterestBotanicalRatingRegionalPriorityB

<u>Description of Area</u> (See Map)

Ballycar lake is surrounded on the north and west sides by reedswamp and on the south by grazing land. Below the railway on the east, willows (<u>Salix cinerea</u>) are well developed around a ditch that also contains <u>Carex</u> <u>paniculata</u> (a sedge), <u>Iris pseudacorus</u> (yellow flag) etc.

The northern limb of the lake is overgrown by a mat of sedges.

| Carex nigra | black sedge |
|--------------------|--------------------|
| Schoenus nigricans | black bog-rush |
| Molinia caerulea | purple moor-grass |
| Myrica gale | bog myrtle |
| Succisa pratensis | devil's bit |
| Cladium mariscus | saw sedge |
| Lythrum salicaria | purple loosestrife |

Elsewhere, the marginal vegetation is more typical of a limestone lake with dense marsh vegetation. <u>Phragmites</u> (reed) and <u>Cladium</u> (saw sedge) are backed by <u>Carex</u> sp, e.g. <u>C</u>. <u>rostrata</u> (bottle sedge), <u>C</u>. <u>lasiocarpa</u>, <u>Schoenus nigricans</u> (black bog rush) and <u>Carex lepidocarpa</u> (a sedge). <u>C</u>. <u>pseudo-cyperus</u> (cyperus sedge) also occurs, in bog-drains, and elsewhere on peat, <u>Osmunda regalis</u> (royal fern) and <u>Carex limosa</u> (mud) sedge).

<u>Epilobium hirsutumn</u> (willow herb), <u>Myosotis scorpioides</u> (forget-me-not) and <u>Bidens tripartita</u> (bur-marigold) are further plants that occur. <u>Utricularia</u> <u>minor</u> (bladderwort) is associated in moderately deep water with <u>Cladium</u> <u>mariscus</u> (saw sedge). Ballycar Lough is of some significance ornithologically but only teal and coot were seen on this visit. A count for mid-winter conditions is not available.

<u>Evaluation</u>

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The ecological interest in this area stems from the transitionary state of the fen vegetation on the northern limb. Here incipient bog vegetation, e.g. <u>Myrica and Molinia</u>, has invaded a fen community so that conditions are finely balanced between the two.

The area would be ideal for experiment into the habitat conditions, for this is a relatively rare phenomenon; although formerly widespread over much of what is now raised bog.

Two of the plant species are fairly rare over Clare as a whole.

<u>Vulnerability</u>

As for other lakes (see p. 4 & 5).

Recommendations

Modifications of the lake detrimental to its present form should not be permitted. These would include additional inflow of nutrients and drainage.

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

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Name of Area:BALLYCULLINAN LAKEAcreage:33 haGrid Reference:R. 29, 85Scientific Interest:BotanicalRating:RegionalPriority:C

Description of Area:

Ballycullinan Lake (see Map) is an irregular lake, which is about split in two by a large area of reedswamp. This is formed of <u>Phragmites australis</u> (reed) and <u>Cladium mariscus</u> (saw sedge), a community that also spreads round much of the lake. Behind it, <u>Carex rostrata</u> (bottle sedge) is frequent, growing in marl deposits with stoneworts (<u>Chara spp</u>), <u>Fontinalis antipyretica</u> (a moss) etc. The marsh vegetation is characteristic of a limestone lake: for example:

| Nuphar luteum | yellow water lily |
|--------------------------------|-------------------|
| Alisma plantago-aquatica | water plantain |
| Ranunculus flammula | lesser spearwort |
| Mentha aquatica | water mint |
| Senacio aquatica | marsh ragwort |
| Myosotis caespitosa | forget-me-not |
| Carex paniculata | a sedge |
| Rumex hydrolapathum | water dock |
| Ac rocl adium giganteum | a moss |

Inflowing ditches in places allow <u>Phalaris arundinacea</u> (reed grass), <u>Veronica</u> <u>beccabunga</u> (brooklime), <u>Iris pseudacorus</u> (yellow flag) and <u>Stellaria alsine</u> (bog stitchwort) etc. The north western shore is formed by sloping limestone pavement and there is scant marginal vegetation. Open hazel scrub is the dominant vegetation here.

The main interest of Ballycullinan Lough is the presence in it of an alga *<u>Cladophora</u> <u>sauteri</u>. This forms spherical aggregations under special conditions called "moor balls" which can be up to six inches in diameter, composed of closely packed strands.

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*Knowles, M.C. (1933) Irish Naturalist's Journal 4, 170

They are found particularly near the exit of the lake lying on the bottom, on marl or rocks. In spring, with active photosynthesis, they sometimes become buoyant and float on the surface.

Evaluation:

This algal phenomenon has only been observed in four Irish localities and of these Ballycullinan is the most southerly. It also produces the largest balls. Though the <u>Cladophora</u> is fairly widespread on the continent, its apparent scarcity here merits active conservation. Knowles (1933) appealed for further localities to be named, but none have so far come to light.

<u>Vulnerability:</u>

Algae are notoriously susceptible to pollution and the addition of only a small additional load to a lake frequently brings about a drastic change in the species found.

Recommendations:

No further sources of pollution should be led into Ballycullinan Lake. This would include any effluent from an installation associated with the car-park on the north shore. Though the alga is mainly found at one end, the whole lake is included as a site of scientific interest because a local increase in pollution would spread throughout the lake.

No other planning restriction need be enforced in the area.

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MAP SHOWING AREA OF SCIENTIFIC INTEREST -

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Name of AreaBALLYVAUGHAN SALTMARSHAcreage1.5 Km²Grid ReferenceM. 21 09Scientific InterestBotanical, ornithologicalRatingRegionalPriorityB

Description of Area

The spit that extends out into Ballyvaughan Bay from the west side is based on a shingle storm beach behind which a shelly sand has accumulated through wind action. In the sheltered water thus cut off mud has been deposited often directly onto flat sheets of jointed limestone. Some of these are still exposed.

A rich saltmarsh vegetation now covers most of the area shown on the map. <u>Puccinellia maritima</u> (sea poa), followed by <u>Armeria maritima</u> (sea pink) are the most common dominants, and the other species present include:-

| Plantago maritima | sea plantain | С |
|-------------------------|-----------------|------|
| Spergularia media | sea spurry | с |
| Limonium humile | sea lavender | с |
| Aster tripolium | sea aster | f |
| Glaux maritima | sea milkwort | f |
| Suaeda maritima | saltwort | f |
| Salicornia europaea | glasswort | f |
| Triglochin maritimum | sea arrow-grass | 0 |
| Artemesia maritimum | sea mugwort | l.f. |
| Halimione portulacoides | sea purslane | r |

Above this zone Juncus maritimus, <u>Cochlearia</u> officinalis, <u>C. danica</u> and <u>Carex distans</u> are found and these grade into limestone grassland without an artificial break.

There is some pan development on the saltmarsh and part of this seems intimately related to the joint pattern in the limestone below.

Grassland, closely grazed by rabbits, occurs on the south side of the spit. With <u>Festuca rubra</u> (red fescue) dominant, there grows <u>Erodium cicutarium</u> (storksbill), <u>Cerastium arvense</u> (large mouse-ear chickweed), <u>Sedum acre</u> (biting stonecrop), <u>Ranunculus bulbosus</u> (bulbous buttercup) etc. The moss <u>Tortula ruraliformis</u> is widespread and frequent. At lower levels, <u>Tripleurospermum maritimum</u> (scentless mayweed) and <u>Honkenya peploides</u> (sea sandwort) occur.

Here, much seaweed from the adjacent rocky coasts has been piled up in a zone extending all along the spit, about 6' across, 1' deep.

The area is of some interest ornithologically being visited by many wader flocks, mallard, teal, wigeon and merganser. Up to 40 brent geese have been seen during the winter months.

Evaluation

This is a good example of a west coast saltmarsh, being poor in species. It is an interesting site especially since it is underlain by limestone pavement and its ecological interest is derived from this and from the exceptional abundance of cast up seaweed. This must greatly affect plant nutrition even if it is removed by farmers.

<u>Vulnerability</u>

The saltmarsh is partially grazed and the spit closely grazedgatt the moment. This may inhibit certain species from becoming established or spreading. Excessive usage during the summer might break the vegetation cover and so allow sand removal by wind. This has happened in one or two places.

<u>Recommendations</u>

Land use should continue at its present level and steps taken now to prevent the small blowouts on the spit from spreading.



| TURLOUGH AT BALLYVAUGHAN |
|--------------------------|
| 9 ha |
| M 22, 06 |
| Botanical |
| Regional |
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Description of area: This rather dry turlough is chiefly noted for the remarkable abundance of Potentilla fruticosa (shrubby cinquefoil) that occurs on its floor. It is surrounded by hazel scrub and at the point where this ceases the Potentilla is best developed with bushes up to 4 ft. in height. It extends out to the centre while being reduced to about $1\frac{1}{2}$ ft. <u>Rhamnus catharticus</u> (buckthorn) also occurs.

No clearly associated plants occur and the rest of the vegetation is of a normal dry turlough type, e.g.:-

| Filipendula ulmaria | meadowsweet |
|------------------------|-------------------|
| Carex panicea | carnation grass |
| Potentilla erecta | tormentil |
| Plantago lanceolata | ribwort plantáin |
| Leontodon autumnalis | hawkbit |
| Carex flacca | a sedge |
| Agrostis stolonifera | bent |
| Deschampsia caespitosa | tufted hair grass |
| Galium palustre | marsh bedstraw |
| Mentha arvensis | field mint |
| Prunella vulgaris | heartsease |
| Ranunculus repens | buttercup |
| Galium boreale | northern bedstrav |

A cattle drinking pond marks the springwwhichcocassionallyffloddstthewshole area and here Senecio aquaticus (marsh ragwort), Cardamine pratensis (lady's smock), <u>Caltha palustris</u> (marsh marigold), <u>Fontinalis antipyretica</u> (a moss) and Ranunculus sp. occur.

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Evaluation: Potentilla fruticosa (shrubby cinquefoil) occurs in two main areas in Clare - Galway but nowhere else in the country. In one, by the eastern lakes,

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it is zoned at a particular height above lake level but here at Ballyvaughan the right conditions for it extend over a large area. It is thus an important site for investigating the species ecology, as well as being a remarkable site when the plant is in flower.

<u>Vulnerability</u>: This stand of <u>Potentilla</u> is threatened at the moment by trampling. Cattle find good grazing in any temporarily flooded grassland but here their density is slightly too high and the bases of many of the plants are damaged. It is not known if cattle graze the green shoots but much fewer old flowers were seen in winter than would be expected. Photographs **suggest** the density has decreased since 1930.

Fertilization might change the species composition at the expense of <u>Potentilla</u> but its superior height might not allow grasses to supplant it.

<u>Recommendations</u>: The landowner should be approached to lessen the number of cattle or the length of time they are allowed to graze these fields. It could be pointed out that there is only slightly too much pressure on the plant and that it would require but a small adjustment to preserve this area as a site of scientific interest.



Name of Area:CRAGLEA QUARRYAcreage:2 haGrid Reference:R 688 756Scientific Interest:Geological, Petrological, structuralRating:RegionalPriority:C

Description and Evaluation

The Slieve Bernagh inlier is characterised by a very intense slaty cleavage, which in the finer sediments has produced slate. There are also changes in lithology, from slate to grit to conglomerate. When the slaty cleavage is imposed on a conglomerate with mudstone inclusions, a bizarre effect of apparently intrusive mudstone is produced. This quarry shows the above feature to perfection and is of regional importance in that it represents a phenomenon which is important to the understanding of both the structure and sedimentology of the region.

<u>Vulnerability</u>

The interesting sections could be obscured by dumping in the quarry or by blocks falling from above.

<u>Recommendations</u>

Ideally the quarry should be cleared and left open to the public. It is on a scenic route. Dumping of any sort should be prevented.

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| <u>Name of Area</u> | DERRYMORE WOOD |
|----------------------------|----------------|
| <u>Acreage</u> | 14 ha |
| <u>Grid Reference</u> | R.42,84 |
| <u>Scientific Interest</u> | Botanical |
| <u>Rating</u> | Regional |
| <u>Priority</u> | А |

Description of Area

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This wood, shown on _______ is an almost pure oak-holly community though birch (BetuIa pubescens) becomes more frequent in its north part. A few <u>Corylus</u> (hazel) are scattered in the understory which otherwise is formed of 6-8' <u>Ilex</u> trees (holly). Above this the majority of <u>Quercus petraea</u> trees are 30-40 ft and richly covered by bryophytes and lichens. Many species characteristic of this forest type were seen including:-

| Thuidium tamariscinum |) |
|------------------------|---------------|
| Isothecium myosuroides |) |
| Hypnum cupressiforme |) mosses |
| Isopterygium elegans |) |
| Dicranum scoparium |) |
| Polypodium vulgare | polypody fern |

The ground vegetation also is representative of the community

| Pteridium aquilinun | n | bracken | 0 |
|---------------------|---------|-----------------------|---|
| Calluna vulgaris | | heather | о |
| Vaccinium myrtillus | 3 | frochan | f |
| Oxalis acetosella | | wood sorrel | f |
| Stellaria holostea | | stitchwort | f |
| Chrysosplenium op | positi- | | |
| | folium | golden saxifrage | f |
| Dryopteris aemula | | crinkled buckler-fern | о |
| Blechnum spicant | | hard fem | f |
| | | | |

| Polytrichum formosum | a moss | 0 |
|----------------------------|--------|---|
| Hylocomium splendens | н | f |
| Eurhynchium striatum | 11 | с |
| Rhytidiadelphus triquetrus | н | с |
| Brachythecium rutabulum | п | f |

When this site was visited in January 1972, the holly was being much used by roosting thrushes, though few other species were seen.

Rabbits were seen in the wood itself and there was also evidence of foxes.

<u>Evaluation</u>

This is an important site since it is a natural oakwood, now ungrazed and regenerating freely though this would appear to be a relatively recent process (perhaps 20 years). The species list is characteristic in its composition and brevity.

This wood forms part of the western Irish series of oakwoods and is probably the largest area of natural wood in the county.

Threatstto the area

Felling is taking place in the N.E. part of the area apparently for firewood but quite large areas have **been** cut. There may be the intention of putting conifers in as has happened in Derrygoul.

Grazing has now ceased except for rabbits so regeneration seems assured for the time being.

Recommendations

Selective thinning is the only form of exploitation consistent with the maintenance of the scientific interest of the area. Even this should be only allowed in half the area in that closest to the occupied houses.

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Forestry operations should be prohibited in this wood. There is ample space on the blanket bog nearby and environmental conditions are not so adverse that a 'nurse' crop of mature trees is needed to get conifers established.

A Tree Preservation order, under Section 45, Local Government (Planning and Development) Act 1963, should be passed for the western part of the wood and co-operation sought between local authority and landowner for the preservation of the eastern half as a productive oakwood.



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Name of AreaDROMOLAND LAKEAcreage16 haGrid ReferenceR. 39 70Scientific InterestBotanicalRatingRegionalPriorityB

Description of Area

The area of interest is shown on The lake is fringed with reeds (<u>Phragmites australis</u>) and <u>Schoenoplectus lacustris</u> (lake rush) behind which a large marshy area spreads to the firmer shore. This contains many interesting and representative species and the <u>Carex</u> (sedge) collection is specially fine. <u>Phalaris arundinacea</u> (reed grass) is dominant over large areas with or without <u>Epilobium hirsutum</u> (great willowherb). In this community <u>Solanum dulcamara</u> (bittersweet) occurs. Apart from a <u>Schoenus</u> fringe with such species as:-

| Parnassia palustris | grass of Parnassus |
|-----------------------|--------------------|
| Pedicularis palustris | red rattle |
| Carex lepidocarpa | a sedge |
| Euphrasia scotica | eyebright |

The main area is dominated by sedges, <u>Carex</u> spp. Little idea of relative frequencies could be gained in the winter but the following species are known to be present:-

| Carex rostrata | bottle sedge | |
|-------------------|--------------|--|
| C. lasiocarpa | a sedge | |
| C. elata | н | |
| C. diandra | u | |
| C. riparia | 11 | |
| C. pseudo-cyperus | н | |
| C. appropinguata | н | |

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Two further unusual species that occur here are <u>Lysimachia nummularia</u> (creeping jenny) and <u>Thelypteris palustris</u> (marsh fern) while several pondweeds grow in deeper water (<u>Potamogeton spp.</u>) and also <u>Nuphar luteum</u> (yellow waterlily).

Evaluation

The Dromoland estate has long attracted visiting naturalists so that many organisms have been collected within its boundaries. Many of these are associated with the lake which provides the only station for <u>Carex appropinquata</u> (a sedge) in Clare. Others show that this is an outlying station for the Burren flora and fauna: e.g. <u>Epipactis atrorubens</u> (dark red helleborine) and <u>Alucita tridactyla</u> (a plume moth).

The area is especially important for the variety of Carex species it contains.

<u>Vulnerability</u>

No development has been planned for the area as far as is known. Being in parkland its future is probably secure. However, it might be suggested for recreational boating. This could be accomodated along with the scientific interest if it did not entail the clearing out and deepening of the marginal sedge areas.

Recommendations

Only modifications of the lake that would not affect the marginal areas should be considered.

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

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Name of AreaFIN LOUGHAcreage80 haGrid ReferenceR. 43, 69Scientific InterestZoological, ornithologicalRatingRegionalPriorityC

Description of Area

A typical east Clare lake though less calcareous than those further north, Fin L. is surrounded by a fringe of <u>Phragmites australis</u> (reed). Behind this, certainly on the west side <u>Cladium mariscus</u> (saw sedge) forms patches in pure stand and at the edge of the lake <u>Schoenus nigricans</u> (black bog-rush) occurs. <u>Molinia caerulea</u> (purple moor-grass) is spreading into this and is also prominent on the east side where there has been peat development. Here a raised bog seems to have encroached upon the margins of the lake basin and the resultant <u>Calluna</u> (heather) - <u>Sphagnum</u> (moss) community bears isolated <u>Pinus sylvestris</u> (scot's pine) trees. <u>Littorella uniflora</u> (shore-weed) occurs in the lake.

The middle portion of the west shore is probably the least disturbed and most interesting place; much of the north shore has suffered from recent bulldozing. An extensive marsh has been left after drainage and this is now being invaded by birches (Betula pubscens) and alder (Alnus glutinosa).

A beetle, <u>Panagaeus crux-major</u>, has been recorded twice at Fin Lough. This represents the only Irish station for this conspicuous insect which is not likely to be passed over.

Wildfowl seen on the occasion of this and other visits, were:-

| Coot | 200 |
|-------------|-----|
| Tufted duck | 50 |
| Wigeon | 150 |
<u>Evaluation</u>

Fin L. is only important by virtue of the fact that a beetle is recorded there that has not been seen elsewhere in Ireland. If it is found elsewhere a comparison of the sites might lead to the listing of the other one but at the moment this lake is included.

<u>Vulnerability</u>

The ecology of this species is not well-known but it would appear that short of destruction of the entire shoreline, the species is in no danger from normal development.

<u>Recommendations</u>

Land use should continue as it now is. This could include development of fishing interests provided the basic lake ecology is not upset. MAP SHOWING AREA OF SCIENTIFIC INTEREST – Scale: 6 Inches to 1 Mile



Name of AreaGORTGLASS L.Acreage31 ha.Grid ReferenceR. 22, 59Scientific InterestZoological, BotanicalRatingRegionalPriorityC

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Description of Area

This lake is surrounded by acid grassland and patches of bog, but at the west end it is overhung by small alder and birch trees. These include some <u>Betula pendula</u> (silver birch). It has a stony bottom in which grow <u>Isoetes</u> sp. (quill wort), <u>Lobelia dortmanna</u> (water lobelia), <u>Littorella uniflora</u> (shoreweed), <u>Juncus bulbosus</u> (bulbous rush) and <u>Polygonum amphibium</u> (amphibious persicaria). In deeper water the white water-lily (<u>Nymphaea alba</u>) grows.

The acid grassland is full of rushes with occasional herbs. The following are the commonest species:-

| Juncus effusus | soft rush |
|----------------------|---------------|
| Agrostis stolonifera | creeping bent |
| Juncus acutiflorus | rush |
| J. articulatus | 11 |
| J. inflexus | hard rush |
| Succisa pratensis | devil's bit |
| Carex binervis | a sedge |

Closer to the lakeshore other species come in, e.g. <u>Achillea ptarmica</u> (sneezewort), <u>Carex rostrata</u> (bottle sedge), <u>Bidens cernua</u> (bur marigold) and <u>Baldellia ranunculoides</u> (lesser water plantain) and where seepage and flowing water appear, these are joined by <u>Rorippa nasturtium-aquaticum</u>((watercress), <u>Myostis caespitosa</u> (forget-me-not), <u>Glyceria fluitans</u> and <u>G. plicata</u> (flote-grass)

The patches of blanket bog have been cut in places; some is modified to drier acid grassland with <u>Sieglingia decumbens</u> (heath grass), <u>Agrostis tenuis</u> (common bent). This contains <u>Ophioglossum vulgatum</u> (adder's tongue). Other parts retain a typical <u>Sphagnum</u> - <u>Erica tetralix</u> (cross-leaved heath) community while <u>Utricularia minor</u> is found in bog drains.

Mute swan and moorhen were seen on the lake, while snipe and water rail occur in the marginal cover.

Several examples of the char (Salvelinus colii) have been taken from this lake.

Evaluation

The main reason for including this lake is the presence in it of Cole's char. This fish is a glacial relict species which has become isolated in usually upland lakes and evolved there **int**à different races. This particular race is thus restricted to three lakes in Clare and four in Kerry.

The vegetation is typical of an acid lake, but has several unusual constituents, e.g. <u>Isoetes</u> sp., <u>Lobelia dortmanna</u>, <u>Bidens</u> <u>cernua</u> and <u>Betula</u> <u>pendula</u>.

<u>Vulnerability</u>

Drainage or pollution might be expected to damage the fish population and the flora but neither seem likely to occur significantly.

Recommendations

Land use should be continued in the same pattern as at present.



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| <u>Name of Area</u> | INCHICRONAN LOUGH |
|----------------------------|-------------------|
| <u>Acreage</u> | 65 ha |
| <u>Grid Reference</u> | R. 39, 85 |
| <u>Scientific Interest</u> | Botanical |
| <u>Rating</u> | Regional |
| <u>Priority</u> | В |

Description of Area

The southern part of Inchicronan Lough presents an extensive area of fens and marshes with some outcrops of limestone and calp beds of impurer rock.

The lake was not visited on this occasion but a list of the more interesting plants would include:-

| Equisetum variegatum | horsetails |
|------------------------|----------------|
| E.x trachyodon | н |
| Thelypteris palustris | marsh fern |
| Thalictrum flavum | meadow-rue |
| Ranunculus peltatus | water crowfoot |
| Betula pendula | silver birch |
| Myriophyllum spicatum | water milfoil |
| Eleocharis multicaulis | spike rush |
| Carex diandra | a sedge |

The communities present resemble those of other east Clare lakes.

The rock outcrops are covered by some <u>Corylus</u> scrub (hazel) or in other places by grassland. Where the non-calcareous rocks occur, calcifuges such as <u>Athyrium felix-femina</u> (lady fern) and <u>Digitalis purpurea</u> (foxglove) are found. <u>Euphrasia salisburgensis</u> (eyebright) is found on both rock types.

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<u>Evaluation</u>

Inchicronan Lough has interesting aquatic communities and its station for <u>Thalictrum</u> forms the western limit of this species in Ireland - a valuable ecological site. The occurrence of <u>Euphrasia salisburgensis</u> (eyebright) on non-calcareous rocks is remarkable for a plant so strictly calcicole in Ireland. In this instance it behaves similarly to its continental (Alpine) range.

Vulnerability & Recommendations

As with other fen areas, drainage of the marginal areas of the lake would be most damaging. It should be prevented except at the northern end of the lake..

A summer visit would locate the position of the calcifuge vegetation if planning permission is sought for building close to the lake. A suitable area for preservation could be outlined at that time.



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| <u>Name of Area</u> | INCHIQUIN LAKE (N. END) |
|----------------------------|---------------------------|
| Acreage | 40 ha |
| <u>Grid Reference</u> | R. 26 89 |
| <u>Scientific Interest</u> | Botanical, ornithological |
| <u>Rating</u> | Regional |
| <u>Priority</u> | В |

Description of Area

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The north part of L. Inchiquin shows the contrast between two carboniferous rocktypes; a sandstone below the Millstone Grit, and the lower limestone formation that forms the Burren scenery. The lake is bounded on the west side by this sandstone which rises steeply to 625 ft on Clifden Hill. Here, estate planting, especially of sycamore (Acer pseudo-platanus) and beech (Fagus sylvatica) has given rise to a well-grown and moderately interesting wood containing many native species. The other trees seen were:-

| Betula pubescens | birch | С |
|--------------------|-------|---------------|
| Corylus avellana | hazel | f |
| Alnus glutinosa | alder | 1 .f . |
| Fraxinus excelsior | ash | O |
| Quercus sp. | oak | 0 |
| Ilex aquifolium | holly | f |
| Sorbus aucuparia | rowan | 0 |

The hillside is very wet and clayey, and ferns are particularly well developed with large and frequent individuals of:-

| Polypodium vulgare | polypody (on rocks and on trees) | С |
|-------------------------|----------------------------------|---|
| Dryopteris borreri | male fern | f |
| D. filix-mas | мп | f |
| Polystichum setiferum | soft shield fern | f |
| P. aculeatum | hard shield fern | 0 |
| Phylittus scolopendrium | hart's tongue | f |

The rest of the ground flora is of typical woodland plants; sometimes they are replaced in clearings by <u>Juncus effusus</u> (hard rush), <u>Holcus lanatus</u> (yorkshire fog) and <u>Ranunculus repens</u> etc. (buttercup). The following are woodland herbs:-

| Ranunculus ficaria | | lesser celandine | , c | |
|---------------------|-------------------|-------------------|-----|--|
| Chrysosplenium opp | positi- folium | golden saxifrage | с | |
| Lysimachia nemorun | n | yellow pimpernel | f | |
| Carex sylvatica | | a sedge | f | |
| C. rémóta: | | 11 | о | |
| Carex ? pendula | | н | f | |
| Arum maculatum | | cuckoo-pint | о | |
| Glechoma hederace | a | ground ivy | о | |
| Potentilla sterilis | | barren strawberry | f | |
| Geum rivale | | wood avens | 0 | |
| Hylocomium brevirc | stre | mosses | а | |
| Thiudium tamariscin | num | н | a | |
| Rhodobryum roseum | | 17 | r | |

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These woods appear ideal for woodcock, both wintering and breeding, and in fact four were flushed. Passerines were also abundant.

The north limb of L. Inchiquin resembles many other Clare lakes in that it is shallow and fluctuating in level. Limestone rocks occur in the marginal grassland on whose faces several semi-aquatic mosses grow; erg. <u>Cinclidotus</u> sp. The shore itself has several plants of interest chief of which is <u>Limosella</u> <u>aquatica</u> (mudwort). <u>aRanunculus peltatuss</u>(crowfoot) and <u>Rorippa</u> <u>isydvestris</u> (pellowdcress) have also been recorded.

Six species of dragonflies have been recognised at the lake and the mollusc fauna is also interesting. When visited in February 1972, the following wildfowl were centred on the area being dealt with:-

| Whooper swan | 6 |
|--------------|-----|
| Tufted duck | 150 |
| Coot | 100 |

Evaluation

This is an important area from a botanical point of view, having the largest area of <u>Limosella</u> in the country. It is notoriously irregular in appearance and has not been seen for a few years.

The trees on the west side are important for amenity reasons and with several waterfalls the bryophyte flora is likely to be rich.

<u>Vulnerability</u>

Wholesale felling on Clifden Hill should not be allowed and the trees could be covered by Tree Preservation Order under Section 53, Local Government((Planning and Development) Act 1963.

Recommendations

The north part of the lake should be maintained in its present condition, especially with its fluctuating level.

Any recreational development should be restricted to the deeper water elsewhere. There is adequate room around the rest of the lake.

ر. 1. بنهادهمان MAP SHOWING AREA OF SCIENTIFIC INTEREST — Scale: 6 Inches to 1 Mile



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| <u>Name of Area</u> : | KNOCKAUNSMOUNTAIN |
|-----------------------|---|
| <u>Acreage</u> : | 40 ha |
| Grid Reterence: | M 122 035 |
| Scientific Interest: | Geological, ecological, stratographical, petrological |
| <u>Rating</u> : | Regional |
| Priority: | С |

31

Description and Evaluation

Soft shales cover the carboniferous limestone on several of the summits of the Burren, especially Slieve Elva and Knockaunsmountain, and their topography, drainage and vegetation form a most striking contrast to it.

The contact is widely exposed, but this area has been less modified than around Slieve Elva. More natural vegetation occurs, <u>Calluna</u> (heather), <u>Juncus effusus</u> (soft rush) on the shale, and the Burren Flora on the limestone. The corrosive power of acid water flowing on to the limestone is well shown by numerous swallets and disappearing rivers. The area is of great educational importance, is of easy access and could well be included also on a tourist itinerary.

<u>Vulnerability</u>

The slope is steep and exposed. It is therefore unlikely to be developed for housing. The present use of rough grazing constitutes no danger to the site.

<u>Recommendations</u>

This particular area of the shale-limestone contact should be preserved intact.



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| <u>Name of Area</u> | loop head |
|----------------------------|---------------------------|
| Acreage | 30 ha |
| <u>Grid Reference</u> | Q.68,46 |
| <u>Scientific Interest</u> | Ornithological, Botanical |
| Rating | Regional |
| Priority | C |

Description of Area

Loop Head is surrounded by cliffs approximately 200 ft in height formed of carboniferous grits. They support fairly large numbers of nesting seabirds and typical plants such as <u>Silene maritimum</u> (sea campion), <u>Armeria maritima</u> (sea pink), <u>Spergularia rupicola</u> (rock spurrey).

Above the cliffs there are two interesting communities: nearest the sea an <u>Armeria swa</u>rd, and adjoining it a <u>Plantago</u> sward which leads up the hills to about 200 ft before giving way to dwarf <u>Calluna</u>. These communities are as usual remarkably pure, forming a close turf perhaps $\frac{1}{2}$ inch high.

The <u>Plantago</u> sward is of two species, <u>P. maritima</u> (sea plantain) and <u>P</u>. <u>coronopus</u> (buckshorn plantain) and in its higher reaches these are joined by <u>P. lanceolata</u> (ribwort plantain), <u>Succisa pratensis</u> (devil's bit), <u>Hypochaeris radiata</u> (cat's ear), and <u>Euphrasia</u> sp. <u>Sagina subulata</u>, (pearlwort) is found on thin soils and the hybrid <u>Juncus diffusus</u> (rush) has been noted.

The estimated bird populations are not, as yet, available though a census has been carried out. They include fulmar, cormorant, kittiwake, razorbill, guillemot, raven, chough, wheatear and stonechat.

Evaluation

Though not as important as the Cliffs of Moher, Loop Head nevertheless has sizeable populations of sea birds.

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It is the area of Clare where the vegetation best shows that form so characteristic of exposed parts of the west coast of Ireland - the <u>Plantago</u> sward. The addition of a considerable area of <u>Armeria</u> sward adds to the ecological value as the change in environmental conditions would be interesting to investigate. It is one of the more accessible areas of this vegetation which is also characteristic of marine islands.

<u>Vulnerability</u>

Sea birds are vulnerable to disturbance especially when they have eggs in May and June. Then, the auks may roll their eggs off the cliff when taking flight and all species expose their eggs to predators.

The vegetation is resistant to trampling provided its intensity is not too great.

Recommendations

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The edge of the area shown has been brought back from the cliff line both to include much of the dwarf vegetation and to show a possible limit for a sightseeing path. One may exist closer to the edge and a visit should be made during the breeding season to ascertain the amount of disturbance and whether it should be reduced.

Isolated observation points on the cliff edge would pose less danger than a continuous path and suitable places could be chosen so as to minimise disturbance.



| <u>Name of Area</u> | LOUGH BUNNY |
|-----------------------|---------------------------|
| Acreage | 1.5 Km ² |
| <u>Grid Reference</u> | R 37 96 |
| Scientific Interest | Botanical, Ornithological |
| Rating | Regional |
| Priority | C |

Description of Area

Lough Bunny is a large and fairly deep lake with aquatic vegetation, confined to the sheltered bays and inlets. The margin is mostly stony and limestone pavement forms the shore on part of the east side.

There are frequent patches of <u>Schoenus</u> fen (bog rush), some grazed and colonised by <u>Prunella vulgaris</u> (heartsease) and <u>Bellis perennis</u> (daisy), but most dominated still by <u>Schoenus</u> with the following characteristic species:

| Carex panicea | a sedge | С |
|---------------------------|-------------------|---|
| Molinia caerulea | purple moor-grass | С |
| Succisa pratensis | devil's bit | f |
| Sieglingia decumbens | heath grass | f |
| Agrostis stolonifera | common bent | f |
| Platanthera : bifolia | butterfly orchid | 0 |
| Anagall is tenella | bog pimpernel | 0 |
| Mentha aquatica | water mint | с |
| Carex hostiana | a sedge | f |
| Cirsium dissectum | fen thistle | f |
| Euphrasia scotica | eyebright | f |
| Campylium stellatum | moss | a |
| Drepanocladus revolvens | П | a |
| Scorpidium scorpioides | 11 | a |

It is in this fen community that the rarer species occur; these include the orchids <u>Ophrys insectifera</u> (fly orchid), <u>O. apifera</u> (bee orchid), <u>Dactylorhiza</u>

<u>incarnata</u> ssp <u>cruenta</u>, and <u>D. traunsteineri</u>. <u>Potentilla fruticosa</u> (shrubby cinquefoil) grows here and on seasonal ly flooded limestone pavement.

In wetter places, either of two fen communities take over. One is dominated by <u>Carex elata</u> (a sedge) with frequent <u>C</u>. <u>lasiocarpa</u>, <u>C</u>. <u>panicea</u> and <u>C</u>. <u>demissa</u> (also sedges). In this the following are found:-

| Baldellia ranunculoides | lesser water-plantain | f |
|-------------------------|-----------------------|---|
| Galium palustre | marsh bedstraw | f |
| Hydrocotyle vulgaris | marsh pennywort | f |
| Phragmites australis | reed | С |
| Ranunculus flammula | lesser spearwort | с |
| Samolus valerandi | brooklime | f |
| Juncus bulbosus | bulbous rush | f |
| J. articulatus | jointed rush | f |
| Potamogeton gramineus | pondweed | 0 |

The other community is a <u>Juncus subnodulosus</u> (rush) stand with <u>Carex nigra</u> (sedge) and <u>Menyanthes trifoliata</u> (bogbean) and <u>Eleocharis</u> (spike-rush) as well as the species listed above.

In slightly deeper water <u>Cladium mariscus</u> (saw sedge) forms stands, usually fairly small, except at the two ends of the lake. These are characteristically species-poor with about six other common plants, but occasionally less ordinary species are found such as <u>Apium inundatum</u> (floating marsh wort), <u>Chara globularis</u> (stonewort), or in the most sheltered places <u>Bryum</u> <u>pseudotriquetrum</u> (moss).

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The west side of the lake is peat covered in parts, rocky elsewhere. In the dry grassland <u>Filipendula vulgaris</u> (dropwort) occurs with many of the commoner species of orchids, and about the rocks <u>Rhamnus</u> <u>cathartica</u> (buckthorn) and <u>Frangula alnus</u> (alder buckthorn) are frequent; the latter occurs also on islands in the lake in a prostrate form, though in the absence of grazing.

To complete the list of the less common plants <u>Eleocharis quinqueflora</u> (spike rush), <u>Equisetum trachyodon</u> (horsetail), <u>Rorippa islandica</u> (yellow cress) and the moss <u>Hyp num wilsoni</u> could be added.

All the duck species come to Lough Bunny as winter visitors, though in small numbers, and mallard, tufted duck, red-breasted merganser breed. Herons nest occasionally on one of the islands, great crested grebe, dabchick and mute swan regularly, and snipe, curlew, common sandpiper and redshank normally in the marginal vegetation. There is a black-headed gull colony on one of the islands.

The mollusc fauna includes <u>Aplexa hypnorum</u> (a snail), a local though widespread species in Ireland and also the normal species of <u>Limnea</u>, <u>Bithynia</u> and <u>Pisidium</u>.

<u>Evaluation</u>

This is an ecologically valuable area with a rich fen flora including species not found elsewhere in County Clare. The proximity of the two species of <u>Ophrys</u> is interesting. It has many associated species that are uncommon and is the centre of distribution of <u>Filipendula vulgaris</u> (dropwort). It is a typical east Clare lake and its ecology has been * examined, using water bugs as lake type indicators.

<u>Vulnerability</u>

Overgrazing and obliteration pose threats to the fen flora though at the moment an equilibrium state seems to operate in maintaining it.

<u>Recommendations</u>

Land use should continue as at present. Development such as buildings, car parks, etc., should not be allowed between the lake and the roads on the east or south-east sides.

* Lansbury, I. (1965) Proc. R.I.A. <u>64</u> B, 89-115



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| <u>Name of Area</u> | LOUGH CLEGGAN |
|----------------------------|----------------|
| <u>Acreage</u> | 12 ha |
| <u>Grid Reference</u> | R. 31,80 |
| <u>Scientific Interest</u> | Ornithological |
| Rating | Regional |
| <u>Priority</u> | В |

Description of Area

Lough Cleggan forms one of a natural pair with L. Ballyallia to the east: and wildfowl pass between the lakes when feeding. It seems to be a deeper lake and also differs in having more reed beds of <u>Phragmites australis</u> (reed). Some of these have willow bushes in them (<u>Salix cinerea</u>) and they probably provide nesting sites for coot, tufted duck and possibly grebes. Elsewhere, the marshy eastern edge is the most important.

In a mild winter (January, 1972), the following birds were counted, on about half the lake:-

| Wigeon | 150 |
|-------------|-----|
| Tufted duck | 85 |
| Pochard | 15 |
| Coot | 60 |

In cold weather, however, there is a large influx and a 1969 count shows the following population:-

| Whooper swan | 37 |
|--------------|-------------|
| Mallard | 100 |
| Teal | 100 |
| Wigeon | 800 |
| Tufted duck | 100 |
| Coot | 2 00 |

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Evaluation

These numbers show the lake to be very important and it probably sometimes contains the greatest density of duck in south Clare. Some of the coastal regions contain greater absolute numbers and L. Atedaun also does, but over a larger area.

<u>Vulnerability</u>

As for L. Ballyallia, disturbance and drainage may damage the feeding time or area available to wildfowl.

Recommendations

This lake should be maintained at its present level even if others in the area are lowered. The amount of disturbance by wildfowlers should be measured from time to time in consultation with the gun club and measures taken, if necessary, tollimit access to a certain number of guns a week.



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| <u>Name of Area</u> | L. GRANEY WOOD |
|----------------------------|----------------|
| <u>Acreage</u> | 10 ha |
| <u>Grid Reference</u> | R. 57, 91 |
| <u>Scientific Interest</u> | Botanical |
| <u>Rating</u> | Regional |
| <u>Priority</u> | В |

Description of Area_

Located on Silurian rocks exposed in the heart of an Old Red sandstone anticline, this appears to be the site of a former oakwood. It seems to have been clear cut perhaps thirty years ago and is now the scene of active succession and regeneration. The trees are growing well and some of the holly is 20-30 foot high, while occasional oak saplings reach forty feet and birches 50'. All trees are native species and are listed in approximate order of abundance.

| Betula pubescens | birch |
|--------------------|---------|
| Ilex aquifolium | holly |
| Crataegus monogyna | hawthom |
| Corylus avellana | hazel |
| Quercus sp | oak |
| Fraxinus excelsior | ash |

The lack of replanting or other modification has enabled the ground flora to persist and there is good species representation.

| Viola riviniana | violet | С |
|------------------------|---------------|------|
| Ajuga reptans | bugle | C |
| Rubus fruticosus | bramble | 1.c. |
| Sanicula europaea | wood sanicle | f |
| Blechnum spicant | hard fern | f |
| Carex sylvatica | wood sedge | f |
| Vaccinium myrtillus | frochan | f |
| Primula vulgaris | primrose | f |
| Polypodium vulgare | polypody fern | f |
| Cardamine flexuosa | wood cress | f |

Dryopteris dilatata broad buckler fern D. filix-mas male fern Pteridium aquilinum bracken Lysimachia nemorum yellow pimpernel Luzula pilosa hairy woodrush Hypericum androsaemum tutsan Digitalis purpurea foxglove crinkled buckler-fern Dryopteris aemula In places there are springs with a characteristic flora of Glyceria fluitans (flote-grass) and Salix cinerea (willow), while Juncus sp (rushes) occur along streams where there is enough light; Holcus lanatus (yorkshire fog) is found here too. The lake shore is lined by Crataegus monogyna (hawthorn) and Alnus glutinosa (alder) as well as further willows. Among the herbs that occur here are Eupatorium cannabinum (hemp agrimony) and Deschampsia caespitosa (tufted hair-grass).

The wood contains badgers and a large nesting population of birds.;

Evaluation

This is a good example of an acid woodland at an interesting stage of successsion when oak is replacing birch. The known timescale which would be possible to derive from records or tree ages adds to the value of the site. There are few, i if any, birchwoods of the same size in the county.

Threats to the Area

At the moment the natural succession appears to be the only process operating and there is little disturbance, though paths exist through the wood. Introducing conifers would be the greatest threat either by underplanting them or clearing the existing trees first.

Recommendations

Forestry development should not be allowed in this area.

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Name of AreaPOULNASHERRY BAYAcreage5.5 Km²Grid ReferenceR. 94, 57Scientific InterestOrnithologicalRatingRegionalPriorityB

Description of Area

This is a wide stony estuary with abundant growth of <u>Fucus</u> spp and other seaweeds over most of the area. <u>Mytilus</u> <u>edulis</u> (mussels), periwinkles (<u>Littorina</u> spp) occur as well as open areas of mud. At the edges especially such terrain is found, backed by areas of grazed saltmarsh. <u>Spartina townsendii</u> (cord grass) in ubiquitous, growing both on the saltmarsh and on the mud. It chokes many of the marginal channels where streams enter.

The saltmarsh was visited on the east side where it was heavily grazed and trampled by cows. It included the following species:-

| Festuca rubra | red fescue |
|-----------------------------------|--|
| Puccinellia sp. | sea poa |
| Juncus maritimus | sea rush |
| Arm eria ma riti ma | sea pink |
| Plantago coronopus | buckshorn plantain |
| P. maritimum | sea plantain |
| Salicornia europaea | glasswort |
| Cochlearia danica |) . |
| C. officinalis |) scurvy-grass |
| Fucus spiralis | terrestrial form of this seaweed \circ |
| Spartina townsendii | cord grass |

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The area holds a wintering population of duck, difficult to estimate due to its size. Counts between 1967 and the present give the following indications:-

| Wigeon | | 450 | (-2000) |
|-----------|-------|-----|---------|
| Teal | | 80 | (-300) |
| Shelduck | | 40 | |
| Mallard | up to | 400 | |
| Shoveller | | 20 | |
| Pochard | | 20 | |
| Goldeneye | | 20 | |

In addition, scaup and gadwall have been recorded and three species of geese visit the area. White-fronted geese occur at migration (up to 120), barnacle occasionally throughout the season (45) and brent more regularly (50).

<u>Evaluation</u>

This used to be the most important estuarye in County Clare after the Fergus system, but continued growth and spread of <u>Spartina</u> has put this position in doubt. However, it is still an important haunt, and has a greater variety of species than, for example, Clonderlaw Bay. The diversity of habitat from open mud, to mussel beds, to seaweed covered stones is reflected in this variety.

Threats to the Area

<u>Spartina</u> growth is unquestionably a threat to the future of this estuary as a wildfowl area. It grows on all levels from the <u>Zostera</u> beds on which brent geest feed, to the highest part of the saltmarsh. Isolated patches amongst the <u>Fucus</u> area cut down its area also by encouraging sedimentation.

Recommendations

Removal of Spartina by cutting or poisoning should be considered in conjunction with the local gun club in whose interests it clearly is. The estuarine habitat is one which is threatened from all sides and the maintainance of as many as possible in a productive state is desirable. With the damming and other development of several of the larger ones in Great Britain a redistribution of wildfowl populations will occur from which the Irish estuaries swill benefit.

Excessive disturbance should be curtailed if it becomes a factor that is driving the wildfowl away.

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| <u>Name of Area</u> | LOUGH ATEDAUN |
|----------------------------|----------------|
| <u>Acreage</u> | 202 acres |
| <u>Grid Reference</u> | R. 29, 88 |
| <u>Scientific Interest</u> | Ornithological |
| Rating | National |
| <u>Priority</u> | А |
| <u>Description of Area</u> | See Map 6. |

Lough Atedaun is a large turlough that does not dry out completely in summer. However, enough fluctuations take place that reeds and other marsh vegetation do not persist around much of the lake: the shore instead being grass covered. Limestone boulders with <u>Cinclidotus fontinaloides</u> (a Moss) are scattered in this grassland whose dominant species would appear to be:-

| Agrostis stolonifera | fiorin |
|----------------------|--------------------|
| Potentilla anserina | silverweed |
| Poa trivalis rou | gh meadow grass |
| Ranunculus repens | creeping buttercup |
| Cardamine pratensis | s lady's smock |
| Ranunculus flammula | a lesser spearwort |

The high winter level of the lake prevented much investigation at the time of this visit.

At the N.E. end however, a zone of tall <u>Phragmites australis</u> (reed) reedswamp is found. In this a few <u>Salix</u> (willow) bushes occur. The western part of this limb is now in fact overgrown and incoming water to the lake seeps through the marsh. A variety of <u>Carex</u> sp. occur here with such herbs as:-

Lythrum salicariapurple loosestrifePedicularis palustrisred rattlePhalaris arundinaceareed grassMyosotis scorpioidesforget-me-not

This extensive reedbed may provide cover for nesting and moulting wildfowl.

It is for wintering wildfowl that L. Atedaun is most important. The following counts were taken in 1967 and 1972

| Wild swan | 100 | | 120 |
|------------|------|-----------|-----|
| Wigeon | 1500 | | 300 |
| | | pintail | 20 |
| Other duck | 500 | shoveller | 15 |
| | | teal | 180 |

<u>Evaluation</u>: The numbers quoted above show L. Atedawn to be exceptionally rich in wildfowl. It seems to be the most important freshwater site in the county from this aspect and contains the greatest number of wild swans.

<u>Vulnerability</u>: Drainage would pose a serious threat to the future importance of this lake and its fluctuating character should be preserved. This gives rise to the grassy marginal vegetation that forms most of the food of the wildfowl present. These species are all vegetation eaters.

Excessive disturbance might derive from shooting from boats on several parts of the lake simultaneously and such possible developments should be watched. Land-based wildfowling may also become too dense but the size of the lake and the proximity of others is an alleviating factor.

<u>Recommendations</u>: This lake, along with L. Cleggan, deserves first priority as a wildfowl area. Its conservation, in this case, would be the maintenance of the water area within its present limits and a realistic limitation on disturbance if one is necessary. Adjacent lakes should be chosen for development if this is intended.



| <u>Name of area:</u> | SLIEVE CARRAN WOOD |
|----------------------|--------------------|
| Acreage: | 66 ha |
| Grid reference: | M 32, 03 |
| Scientific Interest: | Botanical |
| <u>Rating</u> : | Regional |
| Priority: | C |

<u>Description of area</u>: The woodland under the great cliff on Slieve Carran is one of the most natural tracts in the whole Burren. It consists of <u>Corylus</u> (hazel) in trees up to 20 ft. overtopped by a good number of <u>Fraxinus</u> <u>excelsior</u> (ash) and surrounded by fairly numerous birch trees (<u>Betula pubescens</u>) especially in the less shaded places. <u>Sorbus aucuparia</u> (rowan) is present in small quantity as is <u>Euonymus europaeus</u> (spindle-tree). The woodland canopy is open and there is good development of the ground flora though this is somewhat limited in species. Due to the extreme wetness and the presence of numerous boulders mosses attain great abundance and often cover more ground than the higher plants. The characteristic species are:-

| Oxalis acetosella | wood sorrel | a |
|-------------------------|--------------------------|---|
| Rubus fruticosus | bramble | a |
| Geranium robertianum | herb robert | С |
| Viola r iviniana | violet | С |
| Hedera helix | ivy | С |
| Brachypodium sylvaticum | false brome grass | С |
| Geum urbanum | wood | С |
| Potentilla sterilis | barren strawberry | С |
| Fragaria vesca | wild strawberry | f |
| Arum maculatum | cuckoo pint | f |
| Carex sylvatica | wood sedge | f |
| Lonicera periclymenum | honeysuckle | f |
| Lysimachia nemorum | yellow pimpernel | f |
| Epipactis helleborine | broad leaved helleborine | о |

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| Lathyrus montanus | heath pea | i |
|-------------------------|-------------------|---|
| Hylocomium brevirostre | mosses/liverworts | а |
| Mnium undulatum | п | С |
| Plagiochila asplenoides | п | С |
| Eurynchium striatum | II | C |
| Thuidium tamariscinum | п | С |

The uncommon species found in the woodland or on the cliff are apparently all bryophytes, and the following list is a selection:-

| Ulota vittata | mosses |
|-------------------------|----------------|
| Orthotrichum striatum | 11 |
| Cololejeunea rosettiana | moss/liverwort |
| Barbula spadica | 11 |
| Brachythecium glareosum | п |
| Anomobryum concinnatum | 11 |
| Seligeria doniana | 11 |
| Physcomitrella patens | n |
| Microlejeunea ulicina | . II |

A restricted Burren flora covers the top of the cliff and extends down it to a small extent. This includes <u>Minuartia verna</u> (spring sandwort), <u>Arctostaphylos uva-ursi</u> (bearberry), <u>Calluna vulgaris</u> (heather), <u>Dryas</u> <u>octopetala (mountain avens)</u>, <u>Festuca ovina (sheep's fescue)</u>, and <u>Hypericum</u> <u>pulchrum</u> (St. John's wort), with <u>Arabis hirsuta</u> (hoary rock cress) and <u>Saxifraga hypnoides</u> (mossy saxifrage) in small quantity:

Several cliff nesting birds frequent this cliff, including raven and kestrel. The peregrine formerly nested also.

Evaluation: With the woodland in the Glen of Clab these woods form the best developed, most natural and consequently most
valuable stand in the Burren. There are very few ashwoods on limestone in Ireland that are even approaching a climax forest and thus the Slieve Carran woods are ecologically important. They are useful, for example, as a comparative area for elucidating the reasons why the extensive areas of hazel scrub, which is usually a transitory stage, are not colonised and taken over by ash.

Some of the bryophytes listed above have only been found here in the whole of Clare; it was the first recorded station of them all.

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<u>Vulnerability</u>: Felling of trees, particularly ash, would be detrimental to the maintenance of the scientific interest of the area. It is far, however, from roads which might prevent this.

<u>Recommendations</u>: Planning control should be exercised especially with regard to tree felling. The wood is a valuable enough feature to be covered by a Tree Preservation Order but the difficulty of extraction probably is safeguard for its persistence.

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

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39 <u>Name of Area</u> <u>AUGHINISH I.</u> <u>Acreage</u> <u>4 ha</u> <u>Grid Reference</u> <u>Scientific Interest</u> <u>Rating</u> <u>Priority</u> <u>B</u>

Description of Area

The area of interest is shown overleaf. On the sheltered south side of the island a very shelly limestone sand occurs over a flat area. A closely grazed turf occurs, kept in this condition by a large rabbit population. The area as a whole is characterised by a few species each covering extensive areas.

<u>Tortula ruraliformis</u> (a moss) is by far the commonest plant, seldom being invaded by <u>Festuca rubra</u> (red fescue). Elsewhere this latter species is dominant and <u>Bellis perennis</u> (daisy), <u>Erodium cicutarium</u> (storksbill), <u>Cerastium diffusum</u> (chickweed) occur in it. The stabilized vegetation contains <u>Thymus drucei</u> (wild thyme) and <u>Cerastium arvense</u> (field mouse ear chickweed) as well as these.

On the stony shore below, <u>Raphanus maritimus</u> (sea radish) attains exceptional abundance covering areas of theshingle exclusive of other species. <u>Cochlearia</u> <u>danica</u> (scurvy grass), <u>Beta vulgaris</u> (sea beet). <u>Tripleurospermum maritimum</u> (scentless mayweed) and <u>Plantago</u> <u>coronopus</u> (buck'shorn plantain) accompany it.

Part of the shore is of blown sand in which <u>Eryngium maritimum</u> (sea holly) and <u>Eurphorbia paralias</u> (sea spurge) are found.

Evaluation

The ecological interest is related to the abundance of rabbits which has an inhibiting effect on vegetational succession on sand. For this reason there is an abundance of the inedible Tortula.

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<u>Raphanus maritimus</u> (sea radish) is a plant of very local occurrence around the Irish coast. Galway Bay being one of its headquarters it should be maintained on one part of the Clare coast.

<u>Vulnerability</u>

This site would be damaged by sand or shingle removal.

It is resistant to trampling and other summer usage.

Recommendations

Modification by the removal of beach material or that under the grassland should not be allowed. There are adequate amounts of these materials east of the area outlined.

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Name of Area"BALLYEIGHTER WOOD"Acreage12 haGrid ReferenceR. 34 93Scientific InterestBotanicalRatingLocalPriorityB

Description of Area

The scrub woodland near Ballyeighter Lough is a mixed and diverse community developed on a dry sloping site.

It is chiefly remarkable for the presence of oak (<u>Quercus</u> sp.) in the list of trees. This species is growing and regeneration well amongst a vegetation of <u>Corylus</u>, (hazel), <u>Ilex</u> (holly) and <u>Crataegus</u> (hawthorn). In open places <u>Rubus fruticosus</u>, (bramble) and <u>BFachypodium sylvaticum</u> (false brome grass) occur with the following species:-

| Rubia peregrina | madder | l.c. |
|---------------------|-------------------|------|
| Carex flacca | a sedge | a |
| Sesleria caerulea | blue sesleria | a |
| Dactylis glomerata | cock's foot grass | С |
| Prunus spinosa | blackthorn | f |
| Rubus saxatilis | stone bramble | f |
| Hypericum maculatum | StJohn's wort | 0 |
| Listera ovata | Tway blade | Θ |

<u>Viburnum opulus</u> (guelder rose), <u>Euonymus europaea</u> (spindle tree), <u>Fraxinus</u> <u>excelsior</u> (ash) and <u>Rosa</u> spp (roses) make up the woody plants in whose shade several typical woodland herbs occur, such as:-

| Oxalis acetosella | wood sorrel |
|---|------------------------|
| Carex sylvatica | wood sedge |
| Viola riviniana & V. reichenbachiana | violets |
| Circaea lutetiana | Enchanter's nightshade |
| Arum maculatum | cuckoo-pint |
| | |

Conopodium majuspignuLonicera periclymenumhoneyPolystichum setiferumshielScrophularia nodosafigwore

pignut honeysuckle shield fern figwort

The beetle fauna has been examined by Morris (1967) and he records two weevils as new county records.

<u>Evaluation</u>

This is a vegetation type unusual in the Burren region. In fact, such a concentration of oak (<u>Quercus</u>) individuals does not occur anywhere else on limestone in Clare.

Threats to the Area

Part of this area has been planted with conifers, including some of that within the site as outlined.

Recommendations

Afforestation should not be allowed to spread beyond its present limits in this area.

As the oak trees increase in size they should be protected by Tree Preservation Order, under Section 45, Local Government (Planning and Development) Act 1963.

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| <u>Name of Area</u> | BALLYOGAN L |
|----------------------------|-------------|
| <u>Acreage</u> | 63 ha |
| <u>Grid Reference</u> | R 37 90 |
| <u>Scientific Interest</u> | Botanical |
| Rating | Local |
| Priority | С |

Description of Area

The interest in this area is caused by the shallow peat development that has taken place around the lake, especially on the east side. This covers pure calcareous marl to a depth of 1-2 ft. Dominated by <u>Schoenus nigricans</u> (black bog rush) and <u>Molinia caerulea</u> (purple moor-grass) this includes such interesting species as:-

| Carex dioica | a sedge |
|------------------------|--------------------|
| Eleocharis multicaulis | spike rush |
| Drosera intermedia | sundew |
| Pinguicula lusitanica | pale butterwort |
| Polygala serpyllifolia | milkwort |
| Parnassia palustris | grass of Parnassus |
| Erica cinerea | bell heather |
| Epipactis palustris | marsh helleborine |

In the cuts which reveal the basal marl, <u>Juncus subnodulosus</u> (a rush) <u>Carex</u> <u>diandra</u> (a sedge), <u>Potamogeton lucens</u>, and <u>P</u>. <u>coloratus</u> (pondweeds) and <u>Utricularia intermedia</u> (bladderwort) grow amid dense charophytes. <u>Cladium</u> <u>mariscus</u> (saw sedge) occurs here and in the lake proper with <u>Phragmites</u> <u>australis</u> (reed), and <u>Carex lasiocarpa</u> (a sedge).

The acid communities have such mosses as <u>Sphagnum rubellum</u> and <u>Aulacomnium palustre</u> while the <u>Schoenus</u> area has <u>Acrocladium</u> spp., other <u>Sphagnum</u> sp. and <u>Campylium</u>.

Evaluation

The balance between the acidic peat and the richly alkaline substrate makes this an interesting ecological site allowing mineral requiring species to grow side by side with much less demanding types.

<u>Vulnerability</u>

Some turf remains in the area outlined, though it is not presently cut. As with any peaty area, fertilization to improve the grazing value would destroy the scientific interest.

<u>Recommendations</u>

Development at this corner of the lake should not be allowed. In fact, there is little likelihood that any would be suggested.

Turf-cutting should not be recommended.

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

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<u>Name of Area</u>: <u>Acreag</u>e: <u>Grid Reference</u>: <u>Scientific Interest</u>: <u>Rating</u>: Priority:

CAHERKINALLIA WOOD 3 ha R 1295 Botanical Local B

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Description of Area:

This is a small strip of oakwood situated on a shaley outcrop close to Lough Goller. Though so narrow it has many of the features of a western oakwood. The dominant tree is <u>Quercus petraea</u> (sessile oak) which forms spreading trees twenty or more feet high. Their branches support epiphytic <u>Polypodium</u> <u>vulgare</u> agg. (polypody) in quantity with mosses such as <u>Isothecium</u> sp., <u>Hypnum</u> <u>cupressiforme</u>, <u>Ulota</u> sp. and <u>Frullania</u> sp.

A lower canopy in the wood is composed of <u>Corylus</u> (hazel) <u>Ilex</u> (holly), <u>Betula</u> <u>pubescens</u> (birch) and <u>Sorbus aucuparia</u> (rowan).

The ground flora has roughly the following composition:

| Luzula sylvestris | great woodrush | f |
|-----------------------|----------------------|---|
| Rubus fruticosus | bramble | f |
| Blechnum spicant | hard fern | f |
| Oxalis acetosella | wood sorrel | f |
| Lonicera periclymenum | honeysuckle | f |
| Stellaria holostea | stitchwort | 0 |
| Potentilla sterilis | barren strawberry | 0 |
| Dryopteris aemula | crisped buckler fern | 0 |
| Digitalis purpurea | foxglove | 0 |
| Dryopteris filix-mas | male fern | 0 |
| Viola odorata | violet | r |
| Thuidium tamariscinum | mosses | с |
| Atrichum undulatum | mosses | f |
| Polytrichum formosum | mosses | f |
| Hookeria lucens | mosses | 0 |

This visit was in winter and other species, such as <u>Endymion non-scripta</u> (blue-bell) probably occur also. Weevils have been collected in the area; the number of species being thirteen.

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Evaluation:

This is an interesting wood showing clearly the relationship of tree growth to topography. Its position also makes it of educational value. It is the acid wood closest to the limestone woods of the Burren and is frequently visited for comparative purposes by groups of students. Being a wood where deciduous woods are so few, it is likely to be important to the bird life in the area.

<u>Vulnerability:</u>

Caherkinallia wood is probably only threatened by haphazard felling for firewood. There is however much afforestation in the area and though the shale slope is steep, the wood might be underplanted.

Recommendations:

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The wood should be maintained in its present form by protection with a Tree Preservation Order under Section 45, Local Government (Planning and Development) Act, 1963.

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Name of AreaCAHIRACON WOODAcreage5 haGrid ReferenceR. 228, 543Scientific InterestBotanicalRatingLocalPriorityB

Description of Area

Most of the old wood has now been felled and replanted with conifers but there is a narrow fringe on the sea side of the lowest path and a more substantial patch at the south end on steeply sloping ground that resemble natural oak woodland. The former part is a very open wood with scattered Ilex (holly) and Corylus (hazel) trees amid an abundance of Luzula sylvatica (great woodrush). This plant excludes many other herbs and seems also to inhibit oak regeneration which is almost non-existent. The plants that do occur are:-

| Lonicera periclymenum | honeysuckle | f |
|-------------------------------|-------------|---|
| Rubus fruti c osus agg | bramble | f |
| Dactylis glomerata | cock's-foot | f |
| Pteridium aquilinum | bracken | f |
| Polypodium vulgare agg. | polypody | 0 |
| Dryopteris pseudomas | male fern | 0 |
| Juncus effusus | soft rush | о |

The slate rocks overhang the sea and have sparse patches of <u>Festuca rubra</u> (red fescue) and <u>Armeria maritima</u> (sea pink) established ontthem.

Where the wood enlarges it also becomes more dense; the <u>Luzula</u> becomes scarcer, the trees more varied and ground flora richer. At the top of the slope

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large <u>Prunus spinosa</u> (blackthorn) and <u>Corylus avellana</u> (hazel) occur with such associated species as:-

| Allium ursinum | wild garlic | l.a. |
|--------------------|----------------|------|
| Veronica montana | wood speedwell | r |
| Glechoma hederacea | ground ivy | 0 |

Lower down oak is dominant and is regenerating. The ground flora here is a heathy woodland one including the following plants:-

| Erica cinerea | bell heather | f |
|----------------------------|--------------------------|-----|
| Calluna vulgaris | heather | f |
| Deschampsia caespitosa | tufted hair-grass | f |
| Stellaria holostea | stitchwort | 1.f |
| Teucrium scorodonia | wood sage | f |
| Vicia sepium | bush vetch | f |
| Dryopteris dilatata | broad buckler-fern | 0 |
| Brachypodium sylvaticum | false brome grass | ο |
| Veronica chaemedrys | germander speedwell | о |
| Asplenium adiantium-nigrum | black spleenwort | r |
| Carex divulsa | a sedge | r |
| Epipactis helleborine | broad-leaved helleborine | r |

On the woodland margins two uncommon species were found; <u>Equisetum</u> <u>telmeteia</u> (great horsetail) and <u>Carex pendula</u> (a sedge).

Fox and badger are present in the wood.

Evaluation

This is an interesting wood with several unusual species growing in it. Though modified by felling which has spaced out the individual trees, it retains several features of a western oakwood and being located on a different rock type than the other Clare examples it has some added ecological value. The success of regeneration and its failure in such proximity is another important situation.

<u>Vulnerability</u>

Felling or underplanting with conifers would be equally destructive to the scientific value of the area.

Recommendations

An agreement should be sought with the owner to preserve this part of the Cahiracon wood as it now is. Being easy of access it would be ideal for amenity development though it is on a steep slope. Its scientific value is not such that it would be destroyed by increasing the number of visitors, and a nature trail or picnic site might be established, especially along the coast.

If the wood is threatened by conifer afforestation it should be protected by Conservation Order.



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Name of Area'CLOONAMIRRAN WOOD'Acreage9 haGrid ReferenceR. 72, 87Scientific InterestBotanicalRatingLocalPriorityB

Description of Area

This is apparently an area of blanket bog that has been enclosed and is being naturally colonised by woodland. The result is an open wood of birch (<u>Betula pubescens</u>) and holly (<u>Ilex aquifolium</u>) both of which are anything up to 30 feet high. A few oaks are established (<u>Quercus</u> sp) and are regenerating and some <u>Fagus sylvatica</u> (beech) trees seem to have been recently planted.

As yet the woodland floor community is simple and mostly formed of pre-existing plants that have persisted, e.g.

| Pteridium aquilinum | bracken | С |
|---------------------|----------------|---|
| Rubus fruticosus | bramble | С |
| Vaccinium myrtillus | frochan | С |
| Blechnum spicant | hard fern | f |
| Galium saxatile | heath bedstraw | f |
| Potentilla erecta | tormentil | f |

However, at least two woodland species are found, i.e. <u>Potentilla sterilis</u> (barren strawberry) and <u>Lonicera periclymenum</u> (honeysuckle).

In the clearings a true blanket bog flora occurs with <u>Sphagnum</u> species, especially <u>S. rubellum</u>, <u>Erica cinerea</u>, <u>Erica tetralix</u> and <u>Calluna vulgaris</u> (heathers) and <u>Agrostis tenuis</u> (bent grass). <u>Hylocomium splendens and Pleurozium schreberi</u> are two widespread mosses.

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The area is grazed by cattle, at least in winter but as yet not severely.

Evaluation

This is a valuable ecological site as it shows one of the fundamental processes of ecology, namely plant succession. On few other areas has this phenomenon proceeded with so little human intervention and it raises important questions as regards the true climax vegetation of blanket bog. Dispersal and seedling establishment of holly or birch could be studied here as could the changes to the substrate brought about by tree growth.

Vulnerability

The undoubted value of the area is in danger of being partially destroyed by too great grazing pressure, which would prevent further tree establishment.

Some <u>Fagus</u> (beech) has been planted and more systematic planting of conifers may be under consideration.

Recommendations

Ideally the grazing of cattle should be completely stopped but a density could be arrived at where adequate regeneration was assured with some grazing value also.

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Name of area:DERRYHUMMA WOODAcreage:6 haGrid reference:R. 428, 850Scientific interest:BotanicalRating:LocalPriority:A

<u>Description of area</u>: This is a patch of native woodland set on the summit and north facing slope of an old red sandstone ridge surrounded by blanket bog. Oak (<u>Quercus petraea</u>) is the dominant tree on the flatter land while birch (<u>Betula pubescens</u>) takes over on the north facing slope, with willows (<u>Salix cinerea</u>) towards the bottom. The understorey is predominantly holly (<u>Ilex aquifolium</u>) which forms larger trees, some 20' high, than in Derrymore wood. The oaks are however smaller, though all ages are present. There is good regeneration on the margins of the wood though grazing keeps the trees small, and in the clearings. The same ground flora is found with the addition of <u>Digitalis purpurea</u> (foxģlove) and <u>Galum saxatile</u> (heath bedstraw).

The ground surface would seem to be wetter than in Derrymore and this is reflected by an even greater abundance of bryophytes.

The dominant mosses include <u>Hylocomium brevirostre</u>, <u>Thuidium tamariscinum</u> and <u>Eurhynchium striatum which usually cover the rocks completely</u>.

<u>Evaluation</u>: This site shows the remnants of a natural oakwood regenerating freely and invading surrounding areas including a wet birchwood. It is of interest ecologically for both of these reasons.

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Vulnerability

& as for Derrymore Wood Page 96 Recommendations



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Name of AreaGARRANNON WOODAcreage22 haGrid ReferenceR 49 60Scientific InterestBotanical, ZoologicalRatingLocalPriorityA

Description of Area

The oak wood at Cratloe is formed of 50 - 60 ft high trees spaced regularly from each other and forming a closed canopy above. It is an almost pure stand with the exception of one <u>Castinea sativa</u> (sweet chestnut), though at the east end birches (<u>Betula pubescens</u>), alder (<u>Alnus</u> <u>glutinos'a</u>) and hawthorn(<u>Crataegus monogyna</u>) play an increasing part, as one leaves the ridge that the main wood is situated on.

The understory is mostly of <u>Rubus fruticosus</u> (bramble), though a few holly (<u>Ilex aquifolium</u>) and rowan (<u>Sorbus aucuparia</u>) occur. Where <u>Rubus</u> is numerous, the ground flora is restricted to paths and clearings, but elsewhere it is more varied with <u>Vaccinium myrtillus</u> (frochan), <u>Luzula sylvestris</u> (great woodrush) covering the rockier places.

The flora present is of slight interest:-

| Stellaria holostea | greater stitchwort | f |
|------------------------------|--------------------|---|
| Lonicera periclymenum | honeysuckle | f |
| Viola riviniana | violet | f |
| Carex sylvatica | wood sedge/ | f |
| Geran ium robertianum | herb robert · | f |
| Oxalis acetosella | wood sorrel | f |
| Blechnum spicant1 | hard fern | о |
| Galium odoratum | woodruff | о |
| Sanicula europaea | wood sanicle | о |
| Geum urb a num | wood a vens | о |
| Calluna vulgaris | heather | о |

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Dryopteris dilatatabroad buckler fernD. aemulacrinkled buckler fern

The birchwood **at** the east end has a ground covering largely of <u>Deschampsia</u> <u>caespitosa</u> (tufted hair grass).

Six uncommon beetles have been recorded at Cratloe, several of them on oak. Pine martens have been seen in the forestry plantation nearby and may occasionally visit this wood, though its open character would discourage them.

<u>Evaluation</u>

This is a **fairly** even-aged stand of oak trees, if not originally planted then consistently grazed for the last fifty years preventing all regeneration. The ground flora is not of great interest but the trees themselves indicate the speed with which <u>Quercus</u> grows in this part of the country.

The oak wood is situated on a rocky knoll and is scenically attractive, contrasting with the varied but coniferous woods across the road.

<u>Vulnerability</u>

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The trees are large enough in places to produce valuable timber and are thus vulnerable to felling. As has been mentioned, overgrazing by cattle is currently preventing all regeneration.

<u>Recommendations</u>

If this wood is natural, it has been so modified by grazing that little scientific interest remains in the plant community. However, the oak trees themselves are of value, both scientific and commercial.

The wood appears ideal for limited exploitation. It will not survive if young

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trees are not allowed to persist. Therefore, selective thinning followed by replanting or a temporary cessation of grazing to allow natural seedlings to develop; would be the best sort of management.

The landowner should be approached with this in mind. Clear felling must be prevented at all costs, and a Tree Preservation Order applied if necessary, especially if illegal felling were to occur. The legal basis for the exploitation suggested would be a Tree Preservation Order, reviewed every five years and applied to different trees.



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

LOUGH DONNELL 68 ha R 00 71 Ornithological Local B

Description of Area

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Lough Donnell, near Quilty, is a lake impounded by a large storm beach. At this end the water is shallow and provides feeding for waders. Elsewhere numerous duck are found, especially in hard weather. Much of the surrounding fields are of marshy acid grassland with <u>Caltha palustris</u> (marsh marigold), <u>Lythrum salicaria</u> (purple loosestrife) and <u>Senecio aquaticus</u> (marsh ragwort) some of the commonest herbs.

Maximum winter counts available show the following:

| Whooper swan | 80 |
|------------------------|-----|
| Bewick's swan | 10 |
| Mallard | 100 |
| Teal | 120 |
| Gadwall | 9 |
| Red-breasted merganser | 10 |

Of wading birds, four plovers, two sandpipers, the two godwits, greenshank, ruff, little stint and whimbrell are annual visitors as well as the commoner species.

The snipe, redshank, ringed plover, oystercatcher, mallard and mute swan nest in the area.

<u>Evaluation</u>

The lake is important locally in hard weather especially because other wetlands nearby, e.g. at Doonbeg, have been drained and can no longer support wildfowl. The storm beach is an excellent example of this landform.

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<u>Vulnerability</u>

Drainage of the lake would naturally have adverse effects, but of the surrounding fields would do little damage. There is evidence of overshooting, partly derived from the fact that the number of places to shoot has been reduced.

Recommendations

The water area should be preserved intact and steps taken to reduce the shooting pressure, especially at the weekends.



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Name of area:LOUGH MURREEAcreage:14 haGrid reference:M 26, 11Scientific interest:Ornithological, Botanical, ZoologicalRating:LocalPriority:B

<u>Description of area</u>: Lough Murree is roughly triangular and was formed by the impoundment of water behind a storm beach. This has been subsequently stabilised by road building but there is still a connection with the sea through the water table. The water is noticeably opaque which may be caused by the abundant detritus on the lake bottom. Small rocks are scattered among this vegetable matter which seems mostly formed by <u>Potamogeton</u> sp. remains, especially <u>P. berchtoldii</u> (pondweed). <u>Elodea canadensis</u> (Canadian pondweed) occurs both in the centre and edges of the lake. It is joined in the marginal areas by:-

| Glyceria sp. | flote grass | С |
|------------------------------|--------------|------|
| Mentha aquatica | water mint | С |
| Juncus articulatus | jointed rush | l.a. |
| Rorippa nasturtium-aquaticum | water-cress | С |
| Lemna minor | duckweed | f |

Behind this, grassland of <u>Agrostis stolonifera</u> (bent), <u>Cirsuim palsutre</u> (marsh thistle), and <u>Prunella vulgaris</u> (heartsease) extends away from the lake except at the seaward end where residual salt or sea spray maintains a saltmarsh community with abundant <u>Plantago coronopus</u> (buckshorn plantain), <u>Armeria maritima</u> (sea pink), <u>Sagina maritima</u> (sea pearl wort) etc.

The lake is noted for the comparatively large numbers of pochard it supports. This is a species present in very small amount throughout Clare but here up to 100 are regularly seen. In march 1972, 85 were counted with several mute swans and coot. Other species occur from time to time.

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Little grebe, mute swan, moorhen, and ringed plover nest around the lake and shelduck nearby.

In a survey of invertebrates in the Burren lakes,* (Lansbury 1965), it was found that Lough Murree was the most productive lake sampled. Its corixid fauna differed markedly from other lakes due probably to mineral enrichment.

<u>Evaluation</u>: This lake is valuable as the chief resort of pochard in the county. It forms an ecological extreme as the most eutrophic of the sampled lakes though this is derived from pollution (by cattle) as well as the brackish water.

<u>Vulnerability</u>: The wintering duck population may be affected by disturbance but can probably take refuge on the sea during the most intensive shooting. Further pollution might place too great demands upon the lake for its purification.

Recommendations

Existing pollution levels should not be increased.

* Lansbury, 1. (1965) Proc. R.I.A. <u>64</u> B, 89 - 115



Name of AreaRINEANNA POINTAcreage21 haGrid ReferenceR 35 59Scientific InterestBotanical, geomorphological, zoologicalRatingLocalPriorityC

Description of Area

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Rineanna Point is formed of sloping limestone rocks added to by various shore deposits. These include pure shell sand of a pinkish colour and a peculiar shell-banded clay with lines of shells alternating with brownish silt. This has presumably been deposited by the river and further investigation is needed before an isostatical or historical importance can be given to them. This deposit, which is now covered by a turf of grass species including <u>Festuca</u> <u>rubra</u> (creeping red fescue), <u>Cynosurus cristatus</u> (crested dog's tail) and <u>Puccinellia</u> sp. with rosettes of <u>Bellis perennis</u> (daisy) and <u>Plantago coronopus</u> and <u>P. lanceolata</u> (plantains), is currently being eroded. Wave-rounded channels and bays penetrate into it, exposing the sediment.

The influence of the limestone allows such typical plants of Clare to grow as:-<u>Arabis hirsuta</u> (hoary rock-cress), <u>Euphrasia salisburgensis</u> (eyebright), <u>Euonymus europaea</u> (spindle tree) and <u>Geranium columbinum</u> (cranesbill). The maritime vegetation includes other interesting species, especially <u>Parapholis</u> <u>strigosa</u> (a grass) and <u>Carex extensa</u> (a sedge), which occur with:-

| Armeria maritima | sea pink |
|------------------------------------|--------------------|
| Plantago maritima | sea plantain |
| Salicor ni a europaea | glass wort |
| Cochlearia da ni c a | scurvy gràss |
| Spergularia rupicola | rock spurrey |
| Tripleurospermum maritimum | scentless may weed |



Evaluation

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This is an interesting area chiefly notable for the occurence of <u>Parapholis</u>, a grass very rare on the west coast. The river deposits with the incorporated molluscs seem potentially interesting and indicate periodic inundation and withdrawal by the sea. With investigation the rating of this site might rise significantly.

Vulnerability

Little of the scientific interest can be damaged by existing patterns of land use. However obliteration by some industrial scheme is possible, though unlikely.

<u>Recommendations</u>

Development should be prevented on this site by general planning control.
Name of AreaRINSKEA SHOREAcreage5 haGrid ReferenceR. 78 89Scientific InterestBotanicalRatingLocalPriorityB

Description of Area

This is an area of typical heathy Lough Derg shore, near enough to the spur of the Slieve Aughty range that lower Carnoniferous slates appear in places through a more continuous sheet of limestone.

The immediate shore is covered by gorse (<u>Ulex europaeus</u>) and juniper (<u>Iuniperus</u> <u>communis</u>) forming a community of equal height (about 10ft). Some of the junipers are columnar, some spreading from the base: all are fruiting and seedlings abound. The herbaceous plants associated with them are all common species such as:-

| bracken |
|----------------|
| cock's foot |
| fiorin grass |
| knapweed |
| false brome |
| heartsease |
| yellow rattle |
| tormentil |
| spotted orchid |
| |

Brambles (<u>Rubus fruticosus agg</u>) are common, some <u>Rosa canina</u> (dog rose) occurs and small quantities of <u>Calluna vulgaris</u> (heather). A single yew (<u>Taxus baccata</u>) was found in an exposed situation. The foreshore includes such plants as <u>Carex flacca</u> (a sedge), <u>Schoenus</u> <u>nigricans</u> (black bog-rush), <u>Filipendula ulmaria</u> (meadowsweet), <u>Myosotis</u> spp. (forget-me-not) as well as <u>Linum catharticum</u> (purging flax) and <u>Thymus drucei</u> (thyme) in drier situations, especially the nesting mounds of the ant, <u>Lasius</u> <u>flavus</u>.

At the point the <u>Juniperus-Ulex</u> association is backed by hazel woodland with some ash trees. This has a typical flora, including <u>Sanicula</u> <u>europaea</u> (wood sanicle, <u>Oxalis</u> <u>acetosella</u> (wood sorrel), <u>Glechoma</u> <u>hederacea</u> (ground ivy), <u>Arum</u> <u>maculatum</u> (cuckoo-pint) and <u>Viola</u> <u>riviniana</u> (violet).

<u>Evaluation</u>

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This seems to be the most interesting section of that part of the Clare shore of L. Derg based on limestone. The juniper wood though not deep is a well developed fringe and as a vegetation type is largely restricted to this lake.

The boundary between this and the hazel scrub is an important zone since both juniper and gorse are shade intolerant, while the hazel wood itself should be preserved for comparative purposes.

Vulnerability and Recommendations

The interest in the area would be destroyed by clearance for building purposes. It is far enough from the existing road that this threat may never arise.

The shore is visited by picnic parties and efforts should be made to ensure that their fires do not spread into the gorse and juniper scrub, which is inflammable. A notice should be sufficient.

A nature trail from the 'Irish cottages' might be considered as the area is fairly unusual and relatively robust. No rare plants are known to occur.

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Name of Area:ST. SENANS L.Acreage:11 haGrid Reference:R 049 540Scientific Interest:Ecological, botanicalRating:LocalPriority:B

Description of Area

This is a shallow acid lake, formerly with a greater area of water. Vegetation has invaded all sides of it. At the west end this is <u>Phragmites</u>-dominated, but along the south side a peculiar floating community is developed with great cushions of <u>Polytrichum commune</u> (moss) separated by <u>Sphagnum</u> spp. In order of abundance the species present are:-

Typha latifolia (bulrush)Polytrichum communeoccurs at the lake edgeSphagnum recurvumand Potamogeton alpinusS. palustre(powdered) in fairlyS. squarrosumshallow water.Eriophorum angustifoliumCarex rostrataMolinia caeruleaPotentilla palustrisAulacomnium palustreHolcus lanatus

bog cotton bottle sedge purple moor-grass marsh cinquefoil moss yorkshire fog sorrel devil's bit tormentil

moss

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Behind this area a more typical marsh exists with such species as <u>Iris pseudacorus</u> (flag iris), <u>Epilobium palustre</u> (willow herb), <u>Myosotis caespitosa</u> (forget-me-not) and <u>Carex</u> sp. There are records for <u>Lotus uliginosus</u> (great bird's foot trefoil), <u>Viola palustris</u> (marsh violet) and <u>Sparganium minimum</u> (least bur reed).

Rumex acetosa

Succisa pratensis

Potentilla erecta

Street Barry

Evaluation

Distinctive ecological conditions must have given rise to the above unusual plant cover which is not recorded in Tansley.* The Sphagnum species indicate mineral enrichment. It thus would be a most interesting site for investigations into the controlling environmental conditions.

Being an acid lake wildfowl populations are not likely to be large. However, teal and mallard may nest as do snipe, water rail and moorhen.

<u>Vulnerability</u>

Drainage would probably remove any scientific interest from the area. This has been derived from the relatively static water table conditions in the past.

Recommendations

Drainage should be prevented in this area, by agreement with the land owner.

* The British Islands and their Vegetation. A. G. Tansley, Cambridge (1939).

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

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Name of AreaWOOD NEAR ENNISAcreage9 haGrid ReferenceR 31 75Scientific InterestBotanical, ornithologicalRatingLocalPriorityB

Description of Area

On these small hills formed of limestone there has been much recent tree growth, of about thirty or forty years of age. The wood has not as yet obtained a widespread dominant, though ash would seem to be the most common tree. It is joined by <u>Crataegus</u> (hawthorn), <u>Corylus</u> (hazel), <u>Acer pseudo-platanus</u> (sycamore), <u>Sambucus nigra</u> (elder), <u>Betula pubescens</u>, (birch), <u>Fagus</u> (beech) and <u>Prunus spinosa</u> (blackthorn). In the centre of the area shown an artificial or natural cutting occurs, which has been modified by rock extraction for a lime-kiln. It is the site of an old road. <u>Clematis</u> <u>vitalba</u> (old man's beard) is here widespread though few other introduced species are found. The herb flora is especially rich and contains most if not all characteristic woodland plants. Sloping and level wetter ground occurs, with differing plants on each. The following were seen:-

| Sanicula europaea | wood sanicle | С |
|-------------------------------|-------------------|------|
| Viola riviniana | violet | с |
| Glechoma hederacea | ground ivy | с |
| Brachypodium sylvaticum | false brome grass | с |
| Veronica chaemedrys | wood speedwell | с |
| Lysimachia nemorum | yellow pimpernel | f |
| Oxalis acetosella | wood sorrel | f |
| Chrysosplenium oppositifolium | golden saxifrage | 1.a |
| Ranunculus ficaria | celandine | f |
| Potentilla sterilis | barren strawberry | f |
| Fragaria vesca | wild strawberry | f |
| Geum urbanum | wood avens | 1.f. |
| Arum maculatum | cuckoo-pint | f |
| Endymion non-scripta | bluebell | f |

| Conopodium majus | pignut | f |
|-----------------------|---------------------|---|
| Hypericum androsaemum | tutsan | 0 |
| Primula vulgaris | primrose | 0 |
| Carex sylvatica | wood sedge | 0 |
| Galium odoratum | woodruff | 0 |
| Orchis mascula | early purple orchid | 0 |

There are several niches for ferns, <u>Polystichum setiferum</u> and <u>Dryopteris</u> spp occur on the woodland floor with <u>Phyllitis scolopendrium</u> (hart's tongue) in the rockier parts. The shaded rocks on the east side of the cutting allow two species of <u>Polypodium</u> (polypody) to grow with <u>Asplenium</u> spp. (spleenworts) and luxuriant mosses. These include <u>Thamnium</u>, <u>Breutelia</u>, <u>Mnium</u> and <u>Calypogeia</u>.

The passerine population is as large and varied as one would expect from a young wood with frequent clearings. Even in March the number of song posts of song thrushes, robins, etc., indicated a dense spacing of territories. Pheasant and woodcock are also most likely to occur.

<u>Evaluation</u>

This is a fine example of a wood at quite a young stage of succession with a good representative ground flora. Situated so close to Ennis it has great educational value and would be a very good site for field studies.

<u>Vulnerability</u>

Clearance and underplanting with conifers are the two main threats to the area. At present the grazing intensity is scarcely sufficient to damage thee community but it should not be increased.

Recommendations

Land use should continue as at present. Other parts of the same line of hills have been planted with conifers, but this section should be preserved as deciduous woodland. It has more value in shooting and educational terms to the community as such.

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Name of AreaWOODS WEST OF TULLAAcreage15 haGrid ReferenceM. 34 01Scientific InterestBotanicalRatingLocalPriorityB

Description of Area

On the east side of the ridge that forms the boundary of Bouleevin townland glacial drift has been deposited in parallel strips by ice or by subsequent processes. These are separated by limestone pavement supporting a thin hazel scrub with occasional crab-apple trees (<u>Malus sylvestris</u>) in it.

Where the soil is thicker birch (<u>Betula pubescens</u>) plays an important part in the vegetation and the acid conditions favour such species as <u>Calluna vulgaris</u>, (heather), <u>Molinia caerulea</u> (purple moor-grass) and <u>Succisa pratensis</u> (devil's bit). The <u>Betula</u> (birch) individuals range up to about 30ft and in places form almost pure stands. <u>Rubus fruticosus</u> (bramble) is a frequent species as are:-

| Potentilla erecta | tormentil |
|--------------------|-----------------|
| Hypericum pulchrum | St. John's wort |
| Centaurea nigra | knapweed |
| Dactylis glomerata | cock's foot |

Below each group o birch. seedlings and quite large trees spread onto the pavement mixed in the usual pavement community of:-

| Sesleria caerulea | blue moor grass | a |
|--------------------|-----------------|---|
| Carex flacca | a sedge | a |
| Crataegus monogyna | hawthorn | С |
| Corylus avellana | hazel | С |
| Rosa spp. | rose | f |
| Rosa spinosissima | burnet rose | f |

Evaluation

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The interest in this area stems from the existence of birchwood - a community rare in the Burren or elsewhere on limestone. The ecological factors that allow such a situation to develop are worthy of investigation. Its condition does not merit a regional rating at the moment though with the minimum of protection this might be corrected.

<u>Vulnerability</u>

Fire and grazing appear the limiting factors on the maintenance or spread of this woodland but it is not of such value that these should immediately be stopped.

Recommendations

A general easing of the adverse processes of burning and grazing should be suggested to the landowner. The area is used for cattle pasturage at the moment and to burn it probably increases the cover of <u>Molinia</u> (purple moor-grass) at the expense of other more palatible species.

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



SECTION F

Unmapped Sites

1. Scariff river mouth (R. 65, 83)

An interesting area botanically with the best Lough Derg flora in County Clare. There is a zoned marsh vegetation including three unusual species, <u>Hydrochaeris morsus-ranae</u> (frogbit), <u>Stellaria</u> <u>glauca</u> (marsh stichwort) and <u>Oenanthe aquatica</u> (water dropwort).

The land is low-lying and not likely to be developed. However, additional piers and landing places should be carefully sited so as to destroy as little aquatic vegetation as possible.

2. Caher river (M. 15, 08)

In the middle part of this river an unusual hybrid pondweed occurs in fairly slow-moving water. This is <u>Potamogeton x lanceolatus</u>, a type recorded from only three localities in Ireland. On the river banks two <u>Equisetum</u> sp. grow: the upright form of <u>E</u>. <u>variegatum</u>, (horsetail) which reaches 3 ft in height and the hybrid <u>E</u>. x <u>litorale</u>.

These species would not seem to be in any danger but neither additional silt nor domestic effluent should be introduced into the river. The water is particularly clear at the moment.

| SECTION G | <u>Recommended actio</u> | n for each area of S | scientific interest | | |
|---|--------------------------|-----------------------------|-------------------------------|--------------------|-------------------|
| | No protection necessary | General Planning Control | Special Amenity Area Order | Conservation Order | Tree Preservation |
| Black Head | | * | * | * | |
| Coast line from Lurga Pt Spanish Point | | * | | | |
| Mullagh More | | | * | * | |
| Poulsallagh | | | * | * | |
| Cliffs of Moher | | | | | |
| Clonderlaw estuary | | * | | | |
| Cratloe [.] Creek | | * | | | |
| Derryvi nnaun Wood | | | | | * |
| Fanore Dunes | | | * | | |
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| | No Protection necessary | General Planning Control | Special Amenity Area Order | Conservation Order | Tree Preservation |
|-------------------------------|-------------------------|-----------------------------|-------------------------------|--------------------|-------------------|
| Glenomera Wood | | * | | | |
| Marine Island | * | | | | |
| Glen of Clab & Poulavallan | | | | | * |
| River Fergus estuary | | * | | | |
| Road Ford | | * | | | |
| Tullaher Lough | | | * | * | |
| Abbey Hill area | | | * | | |
| Ballyallia Lough | * | | 、 | | |
| Incnicronan Lough | | * | | | |
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|-----|------------------------|-------------------------|-----------------------------|-------------------------------|--------------------|-------------------|
| | | No Protection necessary | General Planning Control | Special Amenity Area Order | Conservation Order | Tree Preservation |
| | Inchiquin Lough | | * | | | |
| | Knockauns Mountain | | * | | | |
| | Loop head | | * | | | |
| | Lough Bunny | | * | | | |
| · · | Lough Cleggan | | * | | | |
| | Lough Graney Wood | | * | | | |
| | Poul na sherry Bay | | * | | | |
| | Lough Ateduan | | * | | | |
| • | Woods on Slieve Carran | * | | | | |
| | Ballycar Lough | | * | | | |
| | | | | | | |

| | No Protection necessary | General Planning Control | Special Amenity Cons Area Order | ervation Order | Tree Preservation |
|------------------------|-------------------------|-----------------------------|------------------------------------|----------------|-------------------|
| Ballycullinan Lough | | * | | | |
| Ballyvaughan Saltmarsh | | * | | | |
| Ballyvaughan Turlough | | * | | | |
| Craglea Quarry | * | | | | |
| Deer Island | | | | | |
| Derrymore Wood | | | | | * |
| Dromoland Lake | | * | | | |
| Fin Lough | | * | | | |
| Gortglass Lough | | * | | | |
| Aughinish Island | | * | | | |
| Ballyeighter Wood | | | | | |
| 1 | | | | | |

| lyogan Lough erkinallia Wood iracon Wood | No Protection necessary | General Planning Control * | Special Amenity Area Order | Conservation Order ? | Tree Preservation * |
|--|-------------------------|----------------------------------|-------------------------------|-------------------------|------------------------|
| lamirran Wood humma Wood nnon Wood | | * * | | | * |
| oneara un Donne l l | See Marine Islands | * | | | |
| Muree e Island | | · * ~ | | | |
| nna Point | | * | | | |